

# Waimakariri River Regional Park

## Braided River Bird Management

### 2017-2018 Season



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## **Introduction**

The Waimakariri River Regional Park (WRRP) consists of Environment Canterbury (ECan) owned land between the stopbanks from the Waimakariri river mouth to the Gorge Bridge, also including McLeans Island. The WRRP is managed primarily by the ECan Parks team, who oversee a variety of recreation and biodiversity projects within the park boundaries including involvement in managing the Braided River Birds during breeding season.

The Waimakariri River is home to some very rare and unique braided river bird species, including the Wrybill, Banded Dotterels, Black and White Fronted Terns and the Black-billed Gull. The Department of Conservation (DOC) is the lead agency for protection of native species in New Zealand, however DOC tend to have limited involvement in the lower Waimakariri River. Our ECan Parks Team has actively engaged in braided river bird management and monitoring in the WRRP for the past nine seasons with some resources available to assist DOC.

Our main priority for the previous breeding seasons has been centred around management of Black-billed Gulls (*Chroicocephalus bulleri*) breeding within the WRRP boundaries. Black-billed Gulls are a critically endangered native species that breed in a few dense colonies along the riverbed, meaning our funding could be targeted towards a few specific areas adjacent to the Black-billed Gull colonies. The lower Waimakariri River is a relatively large space to manage so we recognise that targeting resources at Black-billed Gull colonies also has flow on benefits for other bird species around the periphery of these colonies, for example through managing vehicle access to those areas or through mammalian predator trapping.

## **Management Strategies:**

The main strategies used in previous seasons include:

- Use of a contract ornithologist to monitor and report on the nesting locations and breeding status of the target bird species,
- Mammalian predator trapping next to main breeding colonies (both Black-billed Gulls and Black-fronted Terns),
- Trialling of man-made island sites (areas of shingle cleared of vegetation and raised above the average flood level),
- Placing blocks and other barriers where possible to prevent vehicles accessing bird colonies,
- Putting out information signs, talking to members of the public, handing out stickers and other forms of public education,
- Control of Southern Black Backed Gull (*Larus dominicanus*) numbers in the lower Waimakariri River in conjunction with Christchurch International Airport (CIAL).

On 31st July 2017 we hosted a Technical Advisory Group (TAG) meeting to seek advice from several ornithologists, ecologists and related industry specialists on the best management strategies and most appropriate ways to channel resourcing for the upcoming season (*see Attachments*).

The outcome of this meeting was that the strategies used in previous seasons are still relevant and should be used again for the upcoming season, but with the following changes:

- Increase the monitoring and protection of Black-fronted Terns (*Chlidonias albostratus*) as much as possible, as well as the Black-Billed gulls,
- Investigate options to continue annual river wide survey of the lower Waimakariri River to build up a better picture of long term trends (current monitoring is ad-hoc as the Ornithologist just records what is around him when out in the river). There used to be periodic river wide surveys in the lower Waimakariri River, but these had not been completed for several years now.

## **Contract Ornithologist**

Our main strategy for Braided River Bird management for previous breeding seasons has been to engage an ornithologist for the duration of the season. This Ornithologist monitors the location and progress of target bird species (primarily the Black-billed Gull colonies) and reports this information back to the us. The ornithologist has advised of any action they think may be necessary to help protect birds in certain situations, including placing blocks or signage to manage the public, and also undertaking mammalian predator trapping on the periphery of target colonies. This season Niall Muga of Keystone Ecology was the Ornithologist working under this contract. Niall has many years' experience working with the birds in the lower Waimakariri River and an established working relationship with our ECan Parks team.

Previously, the Ornithologist Contract has been focussed mainly around monitoring and reporting information on the birds, with the Ornithologist logging the locations and breeding status of the birds as he found them while out searching the riverbed. Once the main colonies of Black-billed Gulls had been found the Ornithologist was able to return to those locations and update the status of that colony, with information on other individual birds being captured ad-hoc on his travels. Most of the funding under the contract went towards this monitoring and reporting work, with any remaining funds allocated to the undertaking mammalian predator trapping adjacent to the target colonies.

Due to the scale of the lower Waimakariri River and difficulties keeping track of all birds in this large space, our ECan Park Rangers would also report bird locations back to the Ornithologist and Contract Manager as they came across them while out in the riverbed, to help keep information on bird locations up to date throughout the season. While this information was somewhat helpful for the Ornithologist when the main colonies of Black-billed Gulls were found, the information tended to be sporadic. This season a Park Ranger was freed up for up to one day each week specifically to work with the ornithologist and search the riverbed, supplementing the contract monitoring work.

This increased Ranger time meant our Ornithologist could spend more time going directly to the Black-billed Gull and Black-fronted Tern colonies and monitoring their status and behaviours, rather than first having to drive around trying find the birds. This Ranger assistance also allowed the Ornithologist to undertake more mammalian predator trapping adjacent to target colonies than in previous seasons. We will make sure this dedicated Ranger assistance continues in future seasons.

## **Bird Survey**

The river wide survey of the lower Waimakariri River was carried out from the 21<sup>st</sup> to the 24<sup>th</sup> of November 2017. The river was broken in to four sections, with surveyors walking 10 to 14km transect lines down the river each day, counting the bird species they encountered as they walked (*see attachments*). This followed the methodology of surveys completed by DOC in the early 2000s, so that data could be compared.

Previously our Ornithologist would capture data on individual birds as he passed them while travelling to monitor our main target colonies for the season, which provided points of interest but didn't build a usable picture of the bird species present in the lower Waimakariri River over a season, or concurrent seasons. Completing the bird survey allowed a snap shot of species present throughout the riverbed at a point in time. This survey should continue to be completed on a three-year rotation so that species trends can be monitored over time.

## **Season Timeline**

### *September 2017*

- Rooney Earthmoving constructed a large raised island in the main channel of the river near their extraction site upstream of Weedons Ross Road. This Island was originally a shingle stockpile which they flattened the top off, so the island was much higher than any surrounding areas.
- Early September: Multiple Black Fronted Terns observed hanging around a site near Harrs Road—possibly a nesting site, but highly susceptible to vehicles and people.
- Mid-September: 6-700 Black-billed Gulls were gathering within 100 metres of the Rooney's island site, but on a much lower area. SBBG (several hundred) were also nearby and seen divebombing and harassing the Black-bills on several occasions.
- 29<sup>th</sup> September: Large Flood (between 3.5 and 4 metres at the Gorge), with river levels remaining high for over a week afterwards. The Black-billed gulls that were near Rooney's island site have gone, although the island itself remained relatively intact.

### *October 2017*

- Early October: Following the flood, around 500 Black-billed Gulls were hanging around the Black-fronted Tern site near Harrs Road, although none had settled.
- 2000+ Black-billed Gulls were hanging around near the end of Courtenay Road, although not settled or nesting. This appeared to be a good site in the middle of the river surrounded by a good flow of water.
- Rooney's island slightly smaller after recent high water but still relatively intact with a good surface area above water, although little to no interest from any birds.
- Mid October: Around 600 hundred Black-billed gulls found out from Reids Reserve at Kaiapoi Island, upstream from the motorway bridges (*Appendix 3, Figure 1*). The birds appeared to be settling in and were not disturbed by a large jet boat event over the weekend.
- Around 30 pairs of Black-fronted Terns nesting out from Dixons Bay (*Appendix 3, Figure 3*).
- By the end of October we had:
  - 600+ Black-billed Gull pairs starting to nest at Reids Reserve,

- 2000+ Black-billed Gulls starting to settle near Courtenay Road, along with 45+ pairs of Black-fronted Terns,
- A third group of Black-billed Gulls and roughly 35 pairs of Black-fronted Terns starting to establish near Dixons Bay (*Appendix 3, Figure 3*).

#### *November 2017*

- 1<sup>st</sup> November: CIAL completed an aerial survey of the lower Waimakariri River to count SBBG. The initial visual survey showed SBBG as widespread throughout the entire lower Waimakariri, although the largest, dense colony below the gorge bridge that would be prioritised for control this season (*appendix 5*).
- 8<sup>th</sup> November: Large 3.5 metre flood through the river leaving few areas remaining above water. The Black-billed Gulls at Reids Reserve, Dixons Bay and Courtenay Road were washed out.
- Mid November: The Black-billed Gulls at Reids Reserve re-settled there and appeared to have more birds present than before. The birds at Dixons Bay mostly abandoned that site. A new colony of around 600 Black-billed Gulls pairs formed near Courtenay Road.
- Late November: A large group of roughly 50 Black-fronted Tern pairs settled on an island out from Groyne 52 near Diversion Road. Niall placed an extensive trap line adjacent to this colony.
- Late November: 10 Black-fronted Terns found nesting directly below the old Main North Road Bridge over the Waimakariri River, in a highly public and disturbed area. ECan Rangers placed extensive signage and fencing around the site to keep the public out.
- 21<sup>st</sup> – 24<sup>th</sup> November: Bird survey completed through the lower Waimakariri River (ie gorge to Motorway bridges). The survey results are supplied in *attachments*.
- 30<sup>th</sup> November: A group of 600 Black-billed Gull pairs re-formed downstream from Dixons Bay.

#### *December 2017*

- Reids Reserve had between 180 – 200 adult Black-billed Gull pairs, with multiple chicks on the ground by the end of the month.
- The Sanctuary had around 100 adult Black-billed Gull pairs on eggs.
- Dixons Bay colony 6-700 adult Black-bill pairs, most on eggs.

#### *January 2017*

- A Fairy Prion (*Pachyptila turtur*) and White-winged Black Tern (*Chlidonias leucoptera*) were observed flying in the riverbed this month – interesting species to note.
- Early November: The Sanctuary Colony of 200 nests now has less than 40 chicks on the ground, with evidence of Black-billed Gull adults also being predated nearby. Niall caught a large cat nearby in the following week.
- Chicks at the Reid's Reserve Colony very close to fledgling,
- The Dixons Bay Colony chicks were also close to fledging but still a week or two behind the Reids Reserve birds.
- No Black-billed Gulls remained at Courtenay Road.
- 12<sup>th</sup> January: A moderate fresh came through the river, measuring 2.85 metres at the gorge.

Most of the current chicks were large enough to survive this fresh in mid-January. By the end of January the Reids Reserve colony had fully fledged 300 chicks, which moved to below the Motorway Bridges until mid-February before flying away. The Sanctuary Colony largely survived the fresh, but only produced 24 fledglings due to suspected cat harassment and predation. The Dixons Bay colony only just survived the flood. Some chicks were swept up by the water but most were large enough to swim and survive. By the end of January Niall reported that the Dixons Bay colony had also fledged around 300 chicks from approximately 700 adult pairs.

## **Season Results**

### **Black Billed Gulls**

<i>Colony</i>	<i>Final Recorded Number of Adult Pairs</i>	<i>Estimated Chicks Fledged</i>	<i>Success Rate</i>
Reids Reserve	185	196	1.06
The Sanctuary	144	24	0.17
Dixons Bay	700	300	0.43

### **Comparison of Black-billed Gull Chicks Fledged and Success Rates for Previous Four Seasons**

<i>Season</i>	<i>Recorded Adult Breeding Pairs</i>	<i>Number of Known Chicks Fledged</i>	<i>Success Rate</i>
<b>2017 - 2018</b>	1029	520	0.51
<b>2016 - 2017</b>	1120	738	0.66
<b>2015 - 2016</b>	804	339	0.42
<b>2014 - 2015</b>	1143	1550	1.1
<b>2013 - 2014</b>	243	121	0.5

### **Black-fronted Terns**

A management priority set for us at the pre-season TAG meeting was to increase our work around monitoring and counting Black-fronted Tern numbers. We have included some monitoring and trapping work around Black-fronted Terns in previous seasons as resourcing allowed, but the goal for this season was to more accurately monitor the Black-fronted Tern Colonies in the lower Waimakariri River and record the breeding successes for each as we do with the Black-billed Gull numbers.

Black-fronted Terns were included in the Ornithologist monitoring contract and our Ranger supplementing this work was also asked to report back on Black-fronted Tern colony locations. However as the season progressed, we realised this monitoring and accurate reporting would be much more challenging than

initially thought. Black-billed Gull colonies are easy to spot once formed, as they are dense cluster of white birds. The Black-fronted Tern colonies were much more challenging to locate, as the colonies were dispersed over quite large areas and most of the birds present were camouflaged amongst the shingle unless disturbed.

Initially there were colonies identified of 25+ Black-fronted Tern pairs at Courtenay Road, Harrs Road and Dixons Bay. Niall set up traps next to these colonies and attempted to keep track of birds present. However as the season progressed, we found more pockets of Black-fronted Terns, with another large group found upstream of Weedons Ross Road, and another further upstream from that. Traps were placed adjacent to the Weedons Ross colony. We suspect there were also probably smaller colonies on river islands that we couldn't locate. The bird survey further emphasized that we were likely to miss several pockets of Black-fronted Terns without completing regular thorough sweeps of the riverbed, as many pockets of Black-fronted Terns were identified which were previously unknown to us. Regular river sweeps are unlikely given current resourcing and the increased disturbance this would cause to other nesting birds.

We also found that reliable data and monitoring of the Black-fronted Tern colonies was very difficult given the dispersed nature of the birds within a colony. Niall attempted to track the progress of the birds at the Harrs and Courtenay Road colonies, however keeping track of birds and, especially chicks once mobile, was extremely difficult. We also found the Weedons Ross Road colony to be much larger than we initially thought, after attempting to walk the perimeter of the colony and realising how far it was actually spread.

To accurately monitor these birds and keep records of the adults and chicks present, we would need daily site visits and dedicated time to just monitoring these colonies. As an agreed interim solution between ECan Parks and our Ornithologist Niall, when we identified a Black-fronted Tern colony we agreed to:

- Record our observations of the general colony layout (eg the Courtenay Road colony was split between three river islands, with roughly a third of the birds on each island),
- Take a GPS point at each end of the colony so the rough area of the colony could be estimated,
- Attempt to track the number of breeding pairs/complete a rough count of adults each month so we could track if there was an obvious increase/decrease in numbers,
- Use "sample" breeding pairs from within the colony that are easiest to watch and keep track of. Track the progress of those breeding pairs throughout the season as a representation of the overall group.

We will use these agreed methods for our Black-fronted Tern monitoring work next season. I would also like to increase the Bird Monitoring contract so that there is enough resourcing for one day working on Black-Billed Gull colony monitoring and trapping each week, plus one day monitoring and trapping adjacent to Black-fronted Tern colonies. This would again be supplemented by Ranger observations.

### **Black-fronted Terns in a Public Area**

In November 2017 we located a group of around 12 Black-fronted Tern Pairs nesting below the railway bridge at Kaiapoi Island. This is a very public area and often has dozens of fishermen, whitebaiters and swimmers present on a good day during summer. Our Rangers placed warratahs and electric tape fencing around the perimeter of this colony, plus six information signs.



Despite this fencing, signage and regular Ranger visits to the site, there were often tyre tracks through the middle of the colony and the number of adults on nests present decreased over the following weeks. Vehicles were also observed doing donuts behind the electric tape. Eventually all adults abandoned this site and no chicks are known to have successfully fledged.

While this may seem like a failure, we can still take positives from this situation. Many people were enjoying the river near this colony and came over to read the signage and ask information about the birds. A lot of people visiting the river learned about these birds from seeing signage in place and talking to our Rangers. We also had examples of the local fishermen and whitebaiters attempting to protect the colony and warn off vehicles and people from entering the site, many of whom admitted not knowing about the birds previously.





## **Southern Black Backed Gull Control**

Southern Black Backed Gulls (SBBG) are widespread throughout the lower Waimakariri River and have a negative impact on other threatened and protected native bird species attempting to breed in the same space. Although SBBG are a native bird, they are generally accepted as a pest species that predate the chicks and eggs of other bird species and take up most of the prime breeding habitat, displacing the other threatened species to less favourable habitat. Christchurch International Airport Limited (CIAL) have worked collaboratively with us for several seasons to reduce SBBG numbers, as the birds in the lower Waimakariri also pose a risk of bird strike to CIAL air traffic.

CIAL completed an aerial survey of the lower Waimakariri River (ie between the Waimakariri Gorge Bridge and the motorway bridges) in November 2017 to count SBBG present at that time (*see attachments for results*). This is the second year in a row CIAL have completed this SBBG survey using Wildlife Management International Ltd and shared the data with our ECan Parks team. The results from the survey this season showed 3031 pairs, compared with 5015 at a similar time last season. While this would indicate a decline, it is too short of a timeframe to draw conclusions as there could be any number of factors influencing the number of SBBG present on a given day. We hope to continue this survey work with CIAL in future seasons to build a more definite picture of SBBG population trends over time.

In addition to funding the SBBG aerial survey, CIAL also provide a significant contribution to our SBBG control programme to reduce numbers in the lower Waimakariri River. Our main method for reducing SBBG numbers is through targeted alpha-chloralose poisoning of birds in main breeding colonies. This season we undertook two alpha-chloralose controls. The colony targeted for both controls was just below the Waimakariri Gorge bridge, with well over 1000 adult birds present. This colony was identified on the aerial survey flight and chosen for control as it was one of the larger and more dense colonies in the riverbed with very few other native birds in the immediate area. In addition, birds in the lower half of the river have shown potential bait shyness behaviour in previous seasons, so we planned to focus on SBBG in the upper section of the river for two years to attempt to reduce bait shyness in the lower sections for future poison controls (*see Popenhagen, C. 2015. Waimakariri River Regional Park 2014-2015 Black-billed Gull Breeding Season. Unpublished report, Environment Canterbury*).

We completed the first control on the 13<sup>th</sup> of November 2017. Niall completed three pre-feeds of the target colony, under the observation of an independent Ornithologist Andrew Crossland, according to our Best Practice Technical Standard (*attached*). The SBBG displayed the appropriate frenzy behaviour to eat the bread so all parties agreed to undertake the alpha-chloralose control the following night. The operation appeared to go successfully, with Niall laying the bait shortly before dark and then observing the birds frenzying and taking up all bait present. Niall and his Keystone Ecology team returned to the site at first light the next morning to collect all SBBG carcasses and clean up the site.

This appeared to be a successful operation, with no bait found remaining on the ground and upwards of 1000 adult birds having been culled. However as the clean-up progressed it became apparent that the birds had dispersed slightly further afield than what we would hope for. It may be that a wind picked up in the evening after the poison had been eaten, or there was some other contributing factor that prevented the SBBG from re-settling in their immediate nesting area. Adult SBBG were found several hundred metres from

the immediate control site, however the Keystone Ecology team undertook several sweeps of the wider area and were confident they had removed all birds they were able to find.

In addition to the controlled SBBG being quite scattered following the control, Niall also discovered two Labrador type dogs within the control area during the carcass collection. The dogs were still alive but were drowsy and one had obviously been eating the dead birds. As there were no people in the area and no houses for several kilometres, Niall took the dogs to the nearest vet in Darfield who successfully revived the dogs. It eventuated that the dogs were from a farm several kilometres away where they did not get tied up at night. The dog owner said the dogs regularly left his property to roam the riverbed at night time and often returned with dead birds. We had a follow up conversation with the vet to explain our practices and methodology and he was happy with the outcome.

From this incident, we undertook a review of our Best Practice Technical Standard (attached) before any more alpha-chloralose controls could happen for the season (or in future seasons). One outcome from this review was to add more thorough requirements for notifying landowners adjacent to an intended control site, as well as signage requirements. This notification would include letting any local veterinary clinics know our plans prior to a control operation.

The night after this first control, Darryn and Courtney from the ECan Parks did completed a sweep through the colony to euthanise remaining chicks and any drowsy adults found, removing around another 120 birds (many of these chicks were still very small and would have been unlikely to survive, but should be humanely euthanised according to best practice).

Niall undertook the second alpha-chloralose control on Thursday 21<sup>st</sup> December, again targeted at the same SBBG colony as the first. We re-targeted the same colony due to knowing this area and access points, being relatively isolated and away from more publicly used sections of the river as well as wanting to really reduce this large population as much as possible. As there were now less birds present, the scale of the operation was roughly halved.

Niall again undertook three pre-feeds under the supervision of Andrew Crossland as the consultant Ornithologist. The birds displayed the appropriate feeding behaviour so we agreed the poison control could go ahead on the fourth night. To try and avoid the scatter of birds that was observed after the first poison, Niall left the control until as close to dusk as possible (hoping the birds would settle straight back on their nests). Although the weather looked to be closing in (some drizzle), the evening remained clear and still while the birds frenzied and appeared to eat all the baited bread before Niall and Andrew left the site.

Niall and his Keystone Ecology team again returned at first light to collect the carcasses, assisted by members of the ECan Parks team and volunteers from CIAL. As we moved through the colony we noticed all of the bread had been eaten, except for a small patch right near the end of the site (ie the last baited bread that would have been fed out). There was a small pile of baited bread still on the ground. We also noted that there were only around 230 SBBG culled, much less than the anticipated target of 4 – 500.

This low result and the leftover baited bread was quite an unusual outcome. Niall and Andrew suggested that contributing factors could have been the drizzle/rain coming in shortly after dark and putting the birds

off feeding, or that the birds learned what was happening extremely quickly and many were put off feeding by seeing their affected peers. That seems unlikely though as the birds appeared to be frenzied over the bread as they had on all of the pre-feeds. It's also possible that, although the bread was spread throughout the core of the colony, it may have been the same more dominant birds moving along eating all of the bait, leaving the outlying and less dominant birds unaffected. Once the dominant birds were affected by the poison, the final pieces of bread may have remained untouched.

We will have to undertake further review of this process over the winter months and decide how best to undertake alpha-chloralose controls before next season. One likely outcome is that we won't do the controls so close to dusk, so there is still some daylight to assess that all the baited bread is definitely eaten. We may also put off controls if there is drizzle or any chance of rain.

The two poison controls for the season came to:

#### **November**

Labour	\$4,800
Poison	\$2,240
Milage	\$450.50
Bread	\$130
Excavator	\$286
Consultant	\$720
Ornithologist	\$171.70
Vet Bill	\$500
SaniPak Disposal	\$2,000

#### **December**

Labour	\$2,640
Consultant Ornithologist	\$720
Consultant Milage	\$164
Milage (Niall)	\$535
Poison	\$1,120
Dump Fee (SaniPak)	\$380
Bread	\$180

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Total Spent	\$17,037
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For this, we've estimated to have removed around **1,265 SBBG** from the Waimakariri River.

In addition to alpha-chloralose control, we have continued in house trials of shot gunning SBBG's as an alternate means of controlling numbers, with ever improving success. We chose a colony of SBBG adjacent to The Sanctuary for the shot gun trials as these had proven to be bait shy two years ago and were not able to be targeted since.

Darryn and Courtney from the ECan Parks team pre-fed frozen rabbit guts and bread at the site for three mornings prior to the intended shoot. They left the site so as not to disturb the birds eating the bait, so didn't witness any frenzy type behavior, but the pre-feeds were always eaten by the following day. Darryn and Courtney set up at 5.30am on the morning of the shoot and hid in some willow scrub adjacent to the rabbit guts that had been placed roughly five meters out from their hiding spot. The SBBG did not frenzy over the food or even come in to land, but a few came in close enough to be picked off with the shot gun.

Once the first couple of gulls were shot, they were set up in wire frames around the food so they looked like standing decoys. Over time more gulls were drawn in by the "decoys" and could be picked off one by one and added to the decoy pile around the rabbit guts (only the first two were in wire frames, the rest were just propped up on the rocks).

As the pile of "decoys" grew, the easier the process became as more adult gulls were drawn in to look at the site. By around 9am, 60 adult SBBG had been killed and placed at the shooting site, with around another 20 shot but unrecoverable. We had to stop the process at this time due to the semi public nature of this location, but could have easily continued.

The weather was ideal that morning as it was a very still with the slight breeze very much in our favor. We replicated the process at the same location two weeks later and recorded similar results (although not quite as successful likely due to a slightly different wind).

The estimated cost of shot gun control trials:

- Ranger time (x2 Rangers @ \$50/hour) - \$500
- Ammo (6 boxes 12 guage duck rounds, air rifle pellets\*) - \$120
- Rabbit guts and bread - \$5

(\*Wounded Gulls were euthanized with an air rifle)

This works out to be between \$7 - \$10 per bird (depending on our final tally of kills)

Currently poisoning is up around \$14 per bird, although this is still preferred for larger scale controls.

It is worth noting that during the second shot gun control, a Black-billed Gull and a White Fronted Tern also came in to inspect the bait and decoy pile. Our Park Rangers undertaking the control were easily able to identify these birds and stop shooting until the non-target species had left the site. It would be very important for anyone undertaking this work in future to have bird identification knowledge and clearly be able to distinguish between SBBG and Black-billed Gulls (or any other birds) at a distance.

With further fine tuning of this shot gunning process, this could become a valuable tool in controlling SBBG numbers where alpha-chloralose operations are not appropriate or ineffective. Shot gunning control may also be successful outside of the breeding season for continued reduction of the SBBG population, and we intend to undertake more trials in the upcoming months.

### **Season Expenditure**

SBBG Control	\$15,000 (CIAL \$10,000 ECan Parks \$5,000)
Bird Survey	\$3,000
Bird Monitoring and Predator Trapping Contract	\$15,000

Miscellaneous	\$2,000
Off season predator trapping	\$5,000
Island Creation	\$0 (sponsored by Rooneys)

The total budget available for this season was originally \$40,000.

CIAL originally agreed to contribute \$10,000 for SBBG control this season, but subsequently agreed to contributing slightly more so that the second control could go ahead (to total \$12,037 contribution). This brought the available budget for the season to just over \$42,000.

The figures above are only best estimates of expenditure breakdown for the season, as final budgets were not available at the time of writing this report.

We had initially predicted the bird survey and island creation would cost more than they did, which has left us with roughly \$3-5,000 still available at the end of the season. This money will be well spent on mammalian predator trapping coming in to the winter months, to reduce predator numbers river wide and better prepare for next bird breeding season (and contribute to the 2050 predator free vision). We will particularly focus on areas adjacent to known preferred breeding habitat (The Sanctuary, Dixons Bay and Courtenay Road) and will target feral cats and mustelids.

### **Further Discussion**

This season the lower Waimakariri River had two reasonably successful Black-billed Gull colonies with average to good chick fledging rates, and one colony with poor results at The Sanctuary. The Reid's Reserve colony has been very productive for two years in a row now and has benefited from predator trapping, a good river flow either side of the island, lack of floods and members of the public generally respecting signage and keeping clear of the area. There is also a lower abundance of SBBG in the very lower reaches of the Waimakariri River, as compared to upstream sections.

The Dixons Bay Colony was also reasonable successful, but with a lower fledgling success rate than Reids Reserve. This could be partially contributed to the colony being a couple of weeks behind in the breeding cycle than Reids Reserve and some of the chicks being washed away in the late January flood.

The Dixons Bay colony was very disappointing. Initially there were a good number of chicks on the ground and the colony appeared to be doing well, but numbers plummeted rapidly in subsequent weeks with adult birds also disappearing. We suspected a Harrier may be harassing the colony, but eventually our contractor caught a large feral cat very close to by which could have easily caused the disruption and loss of chicks. Bird numbers remained stable once this cat was removed. The smaller size of this colony may also have made it less able to protect itself and more vulnerable to predators.

Early on during the breeding season over 2000 Black-billed Gulls were observed at the Courtenay Road site alone, but by the end of the breeding season only 1029 breeding pairs of Black-billed Gulls were counted across all three known sites. There was also a Black-billed Gull colony near Thompsons Road that was

identified during the bird survey which could not be relocated on subsequent river visits. Potentially the colony didn't settle and moved on, but there is a possibility that pockets of birds are missed from our monitoring due to the size and scale of the lower Waimakariri River. This could mean our results are not an accurate representation of the overall breeding numbers for that season if pockets of birds are not identified for monitoring. However, what the numbers do provide is a gauge of the general success of these birds breeding in the lower Waimakariri and helps us to understand what the main challenges are that they face. We also noted this difficulty when monitoring Black-fronted Terns

We trialled the creation of a man-made island site again this season. Our initial plan following the TAG meeting was to clear vegetation from a large existing island area to improve habitat. However finding a suitable area for clearing vegetation proved difficult, with the most suitable areas below the gorge very expensive to transport appropriate machinery too. These sites were also already inundated with Southern Black-Backed Gulls.

We found a suitable back up option near Rooney Earthmoving's extraction site upstream from Weedons Ross Road. Rooneys had suitable machinery already on site and agreed to donate their time to create an island habitat for us. There was a large pile of shingle left stockpiled out in the main flow of the river near Rooney's extraction site which they levelled the top off to leave us with a large, raised island area for bird nesting habitat. However, despite surviving several floods, no target bird species were observed using these islands over the course of the breeding season, so the island trial was unsuccessful.

The scale of the lower Waimakariri River means there are lots of habitat sites for birds to choose from, making it difficult to encourage them towards the preferred man-made sites that we provide. Island creation has also been trialled in previous seasons in the lower Waimakariri river with no success, including attempting to use decoys to lure Black-billed Gulls to the man-made sites, which also proved unsuccessful. We would be reluctant to continue these island trials in future seasons as they have not shown any value to date.

Removing predators, both mammalian and avian, from the riverbed will continue to be a main focus for future seasons. One cat potentially caused almost complete collapse of The Sanctuary colony this season, which could have otherwise produced a much higher number of chicks. We have funding remaining this year which will go towards an off-season predator trapping programme to try and reduce both cat and mustelids in the riverbed before next breeding season. The ideal situation would be a permanent trapping programme throughout the lower Waimakariri River to permanently reduce predator numbers.

We will also continue SBBG shot gun trials to see if the process can be successfully replicated outside of breeding season. There is potential to continue this control year-round, to further reduce the pressure from SBBG during the breeding season. We will still undertake alpha-chloralose control of larger SBBG colonies next year if appropriate.

We were again helped by good river conditions this season, with flood events mostly happening at the start of the season and then towards the end of the season when a lot of the chicks were old enough to survive. Arguably the floods early in the season are quite helpful, as they discourage birds from nesting on the lower island areas and push them up to higher ground before they settle. The flood event in January may have

washed away several chicks, especially from the Dixons Bay colony, but if it had come a week or two earlier the damage would have been much worse.

## **References**

Popenhagen, C. 2017. Waimakariri River Regional Park 2016-2017 Black-billed Gull Breeding Season. Unpublished report, Environment Canterbury.

Thierry, A., Dutton, P. and Popenhagen, C. 2016. Waimakariri River Regional Park Black-billed Gull Management 2015-2016 Breeding Season. Unpublished report, Keystone Ecology and Environment Canterbury Report.

Popenhagen, C. 2015. Waimakariri River Regional Park 2014-2015 Black-billed Gull Breeding Season. Unpublished report, Environment Canterbury.

## **Attachments:**

1. Lower Waimakariri River Braided River Birds – Technical Advisory Group Pre-Season Meeting Minutes (2017-2018 season)
2. Waimakariri Bird Technical Advisory Group Meeting – Action Points
3. Black-backed Gull Control Best Practice Guidelines UDPATED 2017
4. Wildlife Management International Ltd, Report on SBBG Numbers in the Lower Waimakariri
5. Lower Waimakariri River Bird Survey Results 2017



## An aerial photograph of a rural landscape in New Zealand. The Reids River flows from the top right towards the bottom left. A red dot is placed on the riverbank within the Reids Reserve. Surrounding roads include Hawke Road, Moke Road, Grey Road, and State Highway 1. The terrain is a mix of green fields and brownish, possibly eroded or dry, areas. A small settlement is visible near the bottom center.

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Figure 3: Black-billed Gull colony near Dixons Bay, Waimakariri River



Figure 4: River wide context of the main 2017-2018 Black-billed Gull breeding locations in the lower Waimakariri River.

Appendix 2:

Water Level at the Waimakariri Gorge Between 2<sup>nd</sup> October 2017 and 30 January 2018

River Flow in Cubic Metres/second

