Summary of Southern Black Backed Gull Control Works Undertaken by the Braided River Revival Team

2024 – 2025 Season

INTRODUCTION

Southern Black Backed Gulls/Karoro are a bird species native to New Zealand, however they are one of only a few species of bird not protected under the Wildlife Management Act. While Karoro have their place in some natural ecosystems, particularly coastal areas, a recent and rapid expansion in their population has correlated with their expansion into new habitats, creating issues in their large numbers. Issues include predating and displacing other protected bird species from their natural habitats, particularly in braided river systems, negatively impacting local water quality through *Escherichia.coli* contamination, and creating a bird strike risk for air traffic. Karoro are controlled to locally mitigate the issues they can cause in their large numbers.

Environment Canterbury (ECan) has undertaken numerous Karoro controls over recent years, mainly focused on braided river systems where the birds create issues for other protected braided river species. ECan led control locations have included the Charwell and Clarence Rivers in North Canterbury, localized controls around Kaikoura township, the Ashley/Rakahuri Estuary area, the Waimakariri River and surrounding farmland, the Ashburton River and near Lake Heron.

The Braided River Revival Team (BRR) generally leads Karoro control in the Waimakariri River, which has been happening in earnest since 2016. These controls have been jointly undertaken with Christchurch International Airport Limited (CIAL) in an effort to both improve biodiversity values and water quality in the Waimakariri River, as well as reducing risk of bird strike to air traffic transiting Christchurch Airport. For the 2024 – 2025 season BRR was also asked to lead Karoro controls on the Ashburton River and the Cameron Fan near Lake Heron, arrange control and provide advice for works around the Ashley/Rakahuri Estuary and provide advice for a planned control on the Charwell River.

A summary of BRR team involvement in Karoro control works over the 2024 – 2025 includes:

- **Charwell River:**
  - Providing advice on control methodology and funding to the Northern Biodiversity and Biosecurity team. A group of Karoro being monitored on the Charwell River did not end up nesting at that location, so no control was required.
- **Ashley/Rakahuri Estuary**
  - Egg and nest destruction was undertaken in and around the Ashley Rakahuri Estuary area in an attempt to dissuade Karoro from nesting and reduce pressure on other bird species in the area.
- **Waimakariri River:**
  - Aerial survey flight to count nesting Karoro colonies;
  - Alphachloralose control of a large Karoro colony in the upper section of the river;
  - Egg pricking of a medium colony downstream from the main Alphachloralose control colony;
  - Egg oiling at a small colony behind McLeans Island;
  - Established a long term plan for the management of the Karoro population on this river.

- **Ashburton River:**
    - Alphachloralose control of a large Karoro colony in the lower section of the river.
- **Cameron Fan (near Lake Heron)**
    - Small, targeted Alphachloralose control of a Karoro colony establishing in this area.

A further summary of the details and outcomes of these various works are further outlined below. Full details and additional information may be available on request (additional reports listed in ***Appendix 1***).

BRR also lead a Karoro Special Interest Group (SIG) where interested parties convene every few months to share upcoming planned controls, results of past controls, best practice methodologies and any other information relevant to the group. The Group was originally intended to be specific to the Canterbury Region, however it has expanded over time and now includes members from Nelson City Council, Wellington Airport and Otago Regional Council. This expansion highlights the far-reaching issues that Karoro are causing around the country for various organisations. A Karoro SIG meeting was held at the start of this season (i.e. 8th August 2024) for members to outline upcoming Karoro control plans. This information is then documented and can be shared collectively with the group.

CHARWELL RIVER

Karoro controls have been carried out on several rivers in North Canterbury rivers over previous years, mainly targeting Karoro populations nesting near to known black-billed gull or black fronted tern colonies. Removing the Karoro from these locations is believed to reduce the direct predation pressure they put on the nearby protected species attempting to nest. The primary control method has generally been Alphachloralose poisoning, supplemented with some limited shotgun controls.

This control work was previously coordinated by a member of the Northern Zone Team, with the work part-funded by Braided River Revival in 2022 and 2023. However an internal restructure meant this season's work was picked up by the newly formed Northern Biodiversity and Biosecurity team. As these team members had not been directly involved with Karoro control work before, BRR was able to give advice on how to plan and prepare for Alphachloralose controls. BRR also agreed to provide funding towards the control work.

A group of Karoro congregating near to the Charwell River were intended to be removed using Alphachloralose once they began nesting in the river, near to a known black-billed gull colony. However it eventuated that this group of Karoro did not end up establishing as anticipated in the Charwell River, so the control was not required. Other mammalian predator trapping and monitoring of the black-billed gull colony continued throughout the season, with outcomes reported by the Northern team. BRR will look to work with the Northern Team on any Karoro controls that may be required in future seasons.

WAIMAKARIRI RIVER

Karoro are a significant issue within the lower Waimakariri River (i.e. below the Waimakariri Gorge), taking up large areas of prime nesting habitat on river islands, predating other protected bird species and negatively impacting local water quality particularly through *E.coli* contamination. Waimakariri Karoro also create an aviation hazard for air traffic transiting Christchurch Airport. Because of these issues, Environment Canterbury (ECan) and Christchurch International Airport Limited (CIAL) have been working together since 2016 on a control program attempting to reduce, or prevent the increase of, the local Karoro population within the Waimakariri River.

The primary control method has been with Alphachloralose poison, following a best practice standard for its application. Other control methods have included shotgun controls, egg and nest smashing and euthanizing of chicks. Alphachloralose is generally accepted as the best control method for large, densely packed Karoro populations in more remote areas of the Waimakariri River. However over time we are finding that the general Karoro populations especially in the lower reaches of the river are becoming more spread out and harder to target using Alphachloralose, so shotgun controls have been successfully used in their place. In past seasons we have also trialed direct handfeeding of Alphachloralose to target specific nests, egg and nest smashing to dissuade adults from congregating in certain areas, as well as egg oiling and pricking trials this season.

On 29th October 2024 we again undertook an aerial survey of the lower Waimakariri River to count nesting Karoro adults. These surveys have been completed within a two-week window at this time of year consistently since 2016. Over time we are building a picture of Karoro population trends within the river and how that correlates to our on-going control efforts. This season we engaged Leigh Bull of Blue Green Ecology as the independent consultant tasked with counting Karoro from the helicopter.

A total of 4,700 Karoro nests were recorded during this survey flight, between the Waimakariri Motorway Bridges and the start of the Gorge ("Woodstock"). On the surface this would indicate a decrease from the 5,045 nests counted in 2023, however a moderate fresh came through the river the week prior to the survey meaning the river was still slightly charged and some nests had been washed out prior to the count. A different counter was used this year than previous years, which may also cause some variation in data. Although the nest count was down slightly from the previous year, there is still a slight upwards trend since counts began in 2016. The survey results also indicate that the number of colonies is increasing, with the mean colony size decreasing (apart from one or two "super-colonies", greater than 400 nesting pairs). The full survey report is referenced in ***Appendix 1***.

Using a new Consultant for the aerial count this year highlighted the need to prepare a standardized methodology for these counts going forward. Questions to be answered include:

- Are we counting nests, or adults present (which would then have to be halved to estimate nests). The flood prior to the survey meant that many adult birds were present around colonies at the time of the count, but they were not included as they were not associated with a nest (which was what was being counted). Counting adults present would also include non-breeding individuals present at a colony.
- Formalizing "ground-truthing" requirements for the data.
- Flight height, so as not to disturb adult birds off nests (if that is what is being counted).

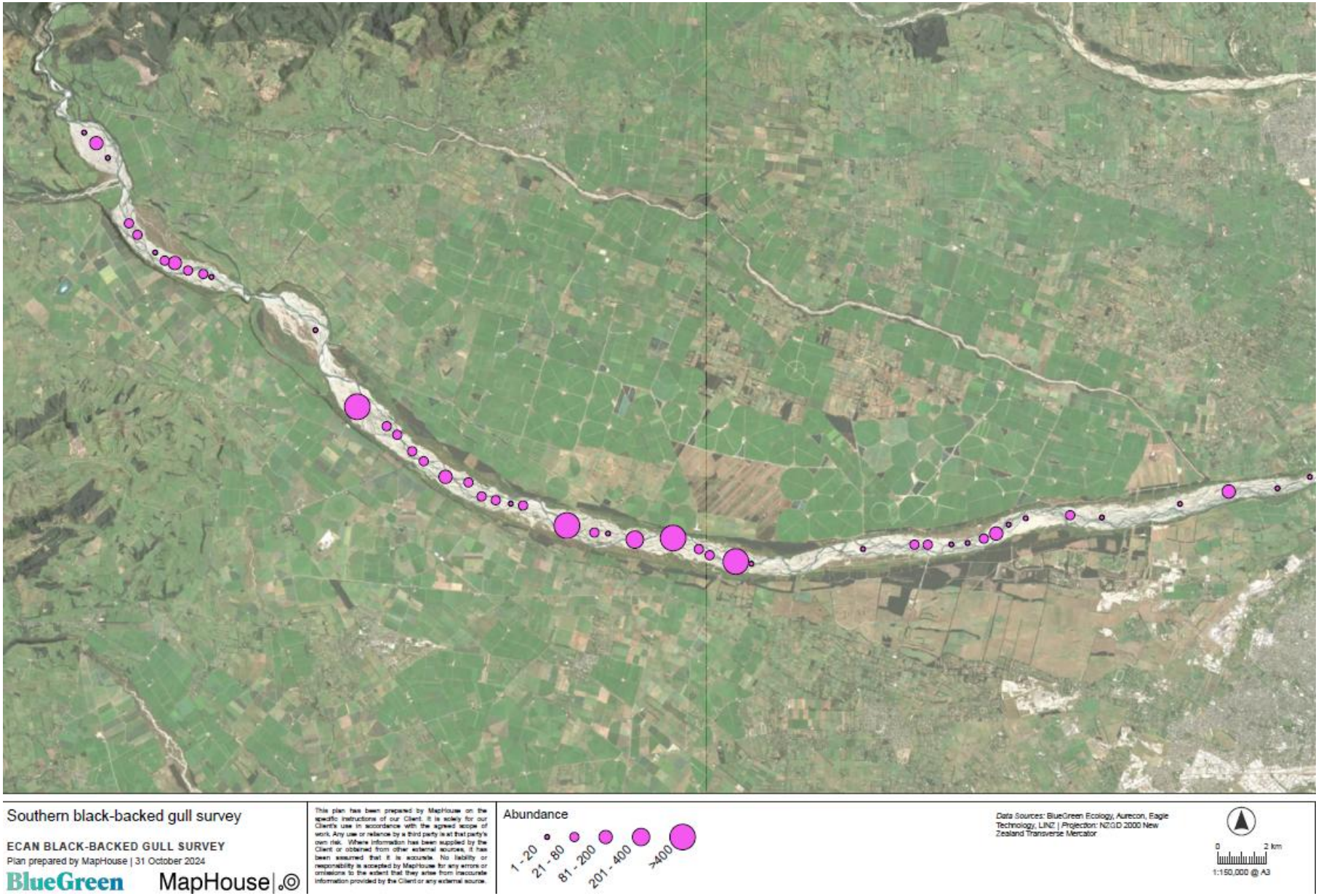


Image 1: Map extract from BlueGreen aerial survey report, showing the spatial layout of Karoro throughout the Waimakariri River, and indicative colony size.

Summary of Works: Bleak House Road

A standard Alphachloralose Control was undertaken on a large colony of Karoro nesting upstream of Bleak House Road, towards the Waimakariri Gorge Bridge (**Map 1**). This colony was estimated at around 800 nests during the aerial survey, however there was estimated to be closer to 3,000 adult Karoro present prior to poison work starting. Landcare Services were engaged to complete the work after tendering a competitive price and offering either the use of pack raft, jetboat and/or helicopter to access the site and ensure work could go ahead even with river crossings.

Landcare Services were also tasked with undertaking egg pricking at a second colony of around 800 birds downstream from the main control site (see Map 1). They were able to time the egg pricking with other visits to the main control site, to reduce costs.

The works near Bleak House Rd progressed as follows:

- 18th September 2024 – site visited with Landcare Services to assess access options and nesting stage of birds. Use of pack rafts was confirmed and preferred access method, with access from the south side of the river, upstream of Bleak House Rd.
- Birds were monitored regularly over the subsequent weeks to gauge nesting stage and schedule control for the height of egg laying.
- First pre-feed undertaken on 12th November 2024. The birds frenzied as expected, however there were concerns over a predicted weather front due to hit later in the week. Pre-feeds were paused for three nights, with another pre-feed undertaken on Saturday 16th November and the final baiting on the evening of Sunday 17th November.
- The team from Landcare Services accessed the colony via pack raft, then split up to four different locations throughout the colony. Using radio communications, the contractors then simultaneously laid the bread baits at the four locations spaced evenly through the colony. This was deemed to be the most efficient method of placing the bait, as the colony covered a big area (>1km in length). This methodology was replicated during all the pre-feeds and baiting.
- Courtney from the BRR team observed the final pre-feed and subsequent baiting. Conditions for the baiting were excellent with a calm evening, moderate temperature and little wind. Birds displayed very strong feeding frenzy behavior and bait ingested very quickly (before the contractors had left the site). No non-target bird species were observed within the feeding zones or transiting overhead while on site.
- Courtney stayed to watch for approx. 30 mins. Gulls were observed becoming drowsy and losing motor control. Most appeared to return to their nests although some were observed taking refuge in the water and subsequently floated away. The Contractor also noted several birds flying overhead on the south bank towards the berm and adjacent land. Not an alarming amount, but worth noting that birds will scatter even under excellent conditions.
- Contractor returned at first light the following day (Monday 18th November) and undertook a thorough clean of the area, assisted by helicopter to scout river islands and adjacent river berm, and remove carcasses. The helicopter did not search adjacent farmland or private property.
- 1550 adult gulls were collected and 850 chicks were dispatched the following day. Most of the chicks were very small and still in the nest. The higher number of chicks is likely due to the control being delayed for a few days due to weather, meaning more small chicks hatched in that time.
- There was a report of gulls found on farmland adjacent to the control site. Landcare Services managed to contract the landowner and arrange disposal of those gulls.
- Courtney returned to the site a week later and removed a further 60 gulls that had died since the control or were missed during clean up (interesting to note possible incidence of secondary poisoning and requirement to re-visit the site for future controls). We estimate a further 150 gulls to add to the control tally.

The finding of additional deceased birds on site one to two weeks following the Bleak House Road control is an interesting observation and one that will need further exploration in future controls. Upon visiting the site two weeks later there were several freshly deceased birds found and collected. It is unclear whether these birds had somehow died from secondary poisoning (scavenging on missed poisoned carcasses) or had otherwise succumbed to unknown variables. Consideration should be made for requirements to continue visiting a control site for a period of time following a control, to ensure carcasses are removed and risk of secondary poisoning is reduced.

Total estimated birds controlled:

Alphachloralose = 1700 adults, 850 chicks
Egg Pricking = approx. 400 nests tampered over 2 months, reducing nesting success to around 25%

Costings for Bleak House Road controls:

Control Method	Cost (excl GST)	Notes
Pre-works bird survey	$3,318.79	This was on the higher side as it was a very large area to survey
Egg Pricking	$2,482	This doesn't include costing for ECan staff time and an additional egg-pricking undertaken "in-house"
Alphachloralose (Contractor)	$31,984.75	Includes use of helicopter for carcass collection
Carcass disposal	$5,279.50	Skips delivered to, and collected from, near the control site at Bleak House Rd. Very efficient.
Independent Ornithologist present during final pre-feed and baiting	$1,000	This is completed internally by ECan Staff (Courtney) – approx. 10 hours at $100/hour

Alphachloralose control = approx. $25/adult bird (excl GST)

Chicks are not included in these calculations.

Other Season Expenses:

Heli Survey - $6,200 excl GST (flight time)

Ornithologist to undertake aerial survey and prepare report: $6,600 excl GST

CIAL contributed to expenses for the season (approximately half). Egg oiling and chick euthanasia including use of a dog behind McLeans Island is not included in expenses and it was completed in-house by Courtney.

Additional Waimakariri River Works:

An egg oiling trial was also undertaken on approx. 60 nests behind McLeans Island, with 20 chicks humanely dispatched at the same time. Eggs were completely submerged in a milk pottle containing canola oil, then replaced in the nest. Some birds did appear to recognize their eggs had been tampered with, although most returned to the nest to incubate. No final data was collected on the success of the eggs due to timing with Christmas holidays, although a subsequent visit to the site revealed no chicks had hatched from the oiled eggs

remaining. This method may be more effective than egg pricking going forward, as it doesn't require the same level of repeated visits to the colony to re-tamper eggs.

A dog was used to help locate nests and chicks at the McLeans Island colony. The dog proved invaluable as high weed cover (predominantly lupin) at the site meant that many of the nests and chicks the dog found might otherwise have been missed. Chicks tend to run and hide under bush cover when disturbed. Karoro have also shown a preference for, or at least an indifference to, nesting under shrub cover.

An invaluable win for the management of Karoro in the Waimakariri River this season has been the establishment of the *Waimakariri River Control and Monitoring Plan for Karoro/Southern Black Backed Gulls* (Bell, M). This Waimakariri Karoro Control Plan outlines clear guidance for making a landscape scale reduction in the number of Karoro nesting and breeding in the Waimakariri River, and defining the level of monitoring required going forward. The plan outlines the sections of river where works should be focused and recommends a mix of larger scale Alphachloralose poisoning, accompanied by egg addling and the use of firearms to control adults where poison is not suitable.

Unfortunately an ECan "stop-works" on the use of firearms meant no firearm control of Karoro was able to proceed this season. Euthanasia of chicks by firearm has been a common control method to supplement our poison control works throughout past years, where birds were not able to be targeted with poison, or for additional control following a poison. An internal policy for the use of firearms is currently being implemented, but it remains unclear whether firearms usage for the control of Karoro will be permitted going forward.

Last season, BRR supplied 60 culled (via shotgun) Karoro to Landcare Research for testing. Landcare Research are interested in establishing a research program based on Karoro, investigating their place as a potential indicator and transmitter of pathogens within and between landscapes. Karoro may also provide insights into the status of Avian Influenza within New Zealand. This research has the potential to provide valuable insights into the braided river systems we are managing. Unfortunately a request for an exemption from the current stop-works on firearms usage to collect gulls for further testing this season was also declined, so Landcare Research were not able to continue their studies.

If shotgun control of Karoro cannot be completed internally (i.e. by ECan staff) going forward, then hopefully contractor controls may still be permitted. Unfortunately this will result in significant increased costs which can hopefully be accommodated in future budgets. If no Karoro control using firearms is permitted in future, then other ways of controlling the population will need to be found which may limit works or bring significant increased costs.


Image 2a: a pointer dog was used to help locate nests and chicks amongst shrub cover at the McLeans Island colony site. Image2b: chicks often run and hide under shrub cover when disturbed, making them hard to locate.

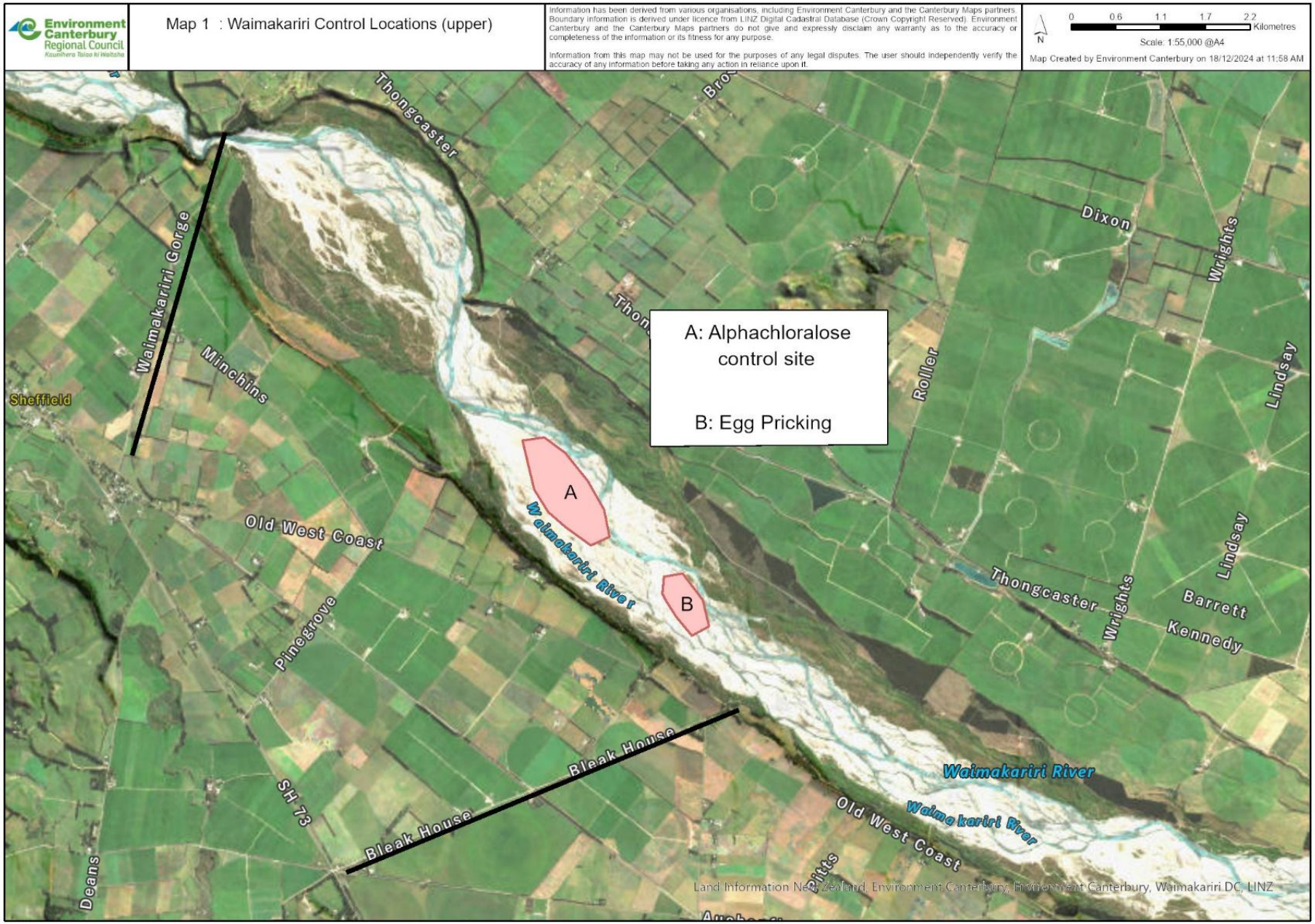
Season outcomes compared with Waimakariri Karoro Control Plan Recommendations:

The Waimakariri Karoro Control Plan proposes a regime of culling 20% of the adult bird population and reducing productivity to <0.4 chicks/pair each nesting season, over the next 10 years.

This season we culled approximately 1,700 adult Karoro, which equates to around 18% of the population as counted in the November aerial survey (4,700 nests counted implies 9,400 breeding adults). Therefore, the number of adult birds culled was less than recommended by the plan (especially if we account for the number of nesting pairs being low due to flooding at the time of count). Being unable to undertake any supplementary shotgun controls this season was a significant limiting factor in being able to reach our overall population reduction target.

While we did have success in greatly reducing the nesting outcomes of colonies both at Bleak House Road and McLeans Island, the actual productivity reduction is very hard to measure. The Waimakariri Karoro Control Plan recommends reducing overall nesting productivity to <0.4 chicks/pair throughout the river, which we are unlikely to have achieved. Better ways to count and measure egg addling and population reduction measures in future seasons should be sought.

While we did manage to remove a good portion of the Karoro population this season, we will need to find ways to increase our controls and meet the recommended targets in future years. Next year, the plan recommends an Alphachloralose control of birds in the section of river roughly between Courtenay Road and Thompsons Road where there are a good number of birds to target. We will also look to increase our egg oiling efforts in the remaining sections of river. If the internal use of firearms remains limited, this could be a significant limiting factor in our on-going control efforts.


Environment Canterbury Regional Council
Kaunihera Taiao Ki Waitaha
Map 1 : Waimakariri Control Locations (upper)
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N
0 0.6 1.1 1.7 2.2 Kilometres
Scale: 1:55,000 @A4
Map Created by Environment Canterbury on 18/12/2024 at 11:58 AM
A: Alphachloralose control site
B: Egg Pricking
A
B
Thongcaster
Waimakariri Gorge
Minchins
Sheffield
Old West Coast
Pinegrove
SH 73
Bleak House
Deans
Roller
Dixon
Wrights
Lindsay
Barrett
Kennedy
Waimakariri River
Land Information New Zealand, Environment Canterbury, Environment Canterbury, Waimakariri DC, LINZ

Ashley Rakahuri Estuary (Spit area)

Egg and nest destruction was undertaken in and around the Ashley Rakahuri Estuary area (Map 2) to dissuade Karoro from nesting and to reduce the breeding productivity of those birds that did remain to nest. The area partially falls within a Department of Conservation (DOC) public conservation area, so a concession is required from DOC to complete this work. The work was undertaken internally by an ECan Park Ranger, who would visit the spit once a week and spend around an hour walking the area and destroying any Karoro eggs or nests found. Completing the work internally reduced costs from the previous year when the work was contracted out.

The site was first visited on the 26th of August 2024, to scope out the area and gauge if Karoro had begun to nest. No nesting activity was found on that occasion, but subsequent weekly visits identified the first signs of nesting activity in early September. The Park Ranger continued weekly site visits, destroying any nests and eggs found in the target area.

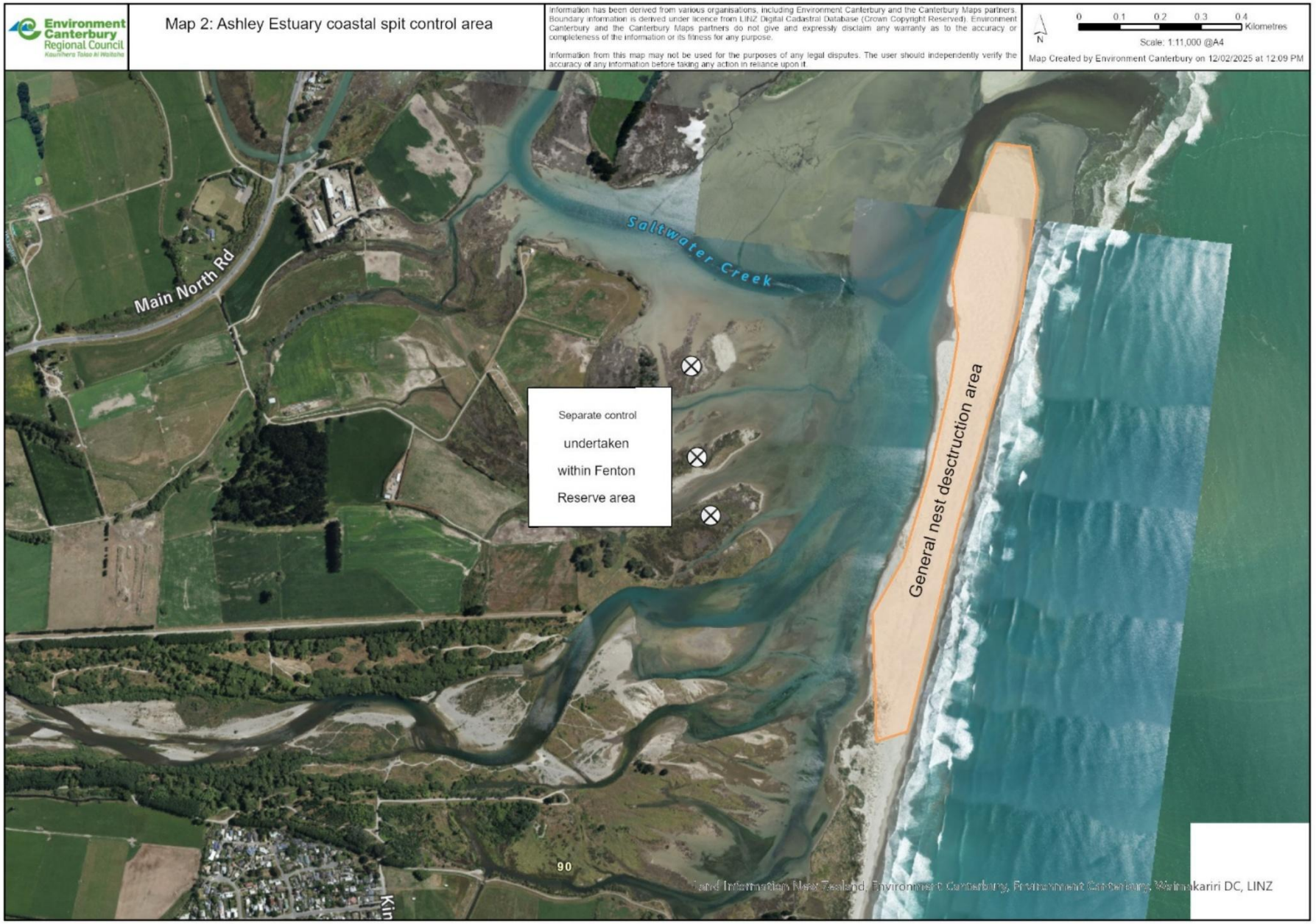
The Park Ranger observed around 200 adult Karoro during first visits, then noted a decline in the number of nests and birds present over time as the nest destruction continued. The Park Ranger estimated only around 100 birds present towards the end of season (roughly half of the population that was observed on site early in the nesting season). As this information is largely anecdotal, it would be useful to complete more formal bird counts in future years. Later in the season (January site visits), birds were also observed leaving the spit area and flying over to the join other Karoro on the Fenton Reserve side of the estuary when the Park Ranger arrived (perhaps anticipating the disturbance event).

This nest destruction work continued until the end of January. The Park Ranger observed 10 Karoro fledglings on their final visits to the site towards the end of January, which had obviously been missed from destruction at some point. As it was late in the season, these fledglings were likely from second clutches laid by birds after their nests and eggs were previously smashed. 10 fledglings from an original population of around 200 adult Karoro is still greatly reduced productivity from the site.

Further comments and feedback from the Park Ranger for future work are:

- Use of two people would be helpful to grid search the area, as nests/eggs can be hard to spot (two people would speed up the work, so unlikely to add much additional cost);
- Use of a Garmin or similar to map nest locations and track logs;
- More accurate count of the number of birds present (may also be able to use eBird or similar to make notes on other bird species present).

Other general notes for this work are that the person undertaking the egg and nest destruction must have a reasonable level of bird identification skills, to avoid disturbing other birds nesting in the area and to ensure the correct eggs and nests are targeted. The observation that bird numbers in the area gradually decreased and that birds were also observed leaving to the Fenton Reserve side are also interesting. A similar observation was made on the Fenton Reserve side (works outlined below) that bird numbers there decreased over the season and that birds became aware of the intended disturbance when someone entered the site. These observations may imply that we did achieve our goal of reducing the number of Karoro present and nesting within the general Rakahuri Estuary area over the season.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Regional Council
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Map 2: Ashley Estuary coastal spit control area
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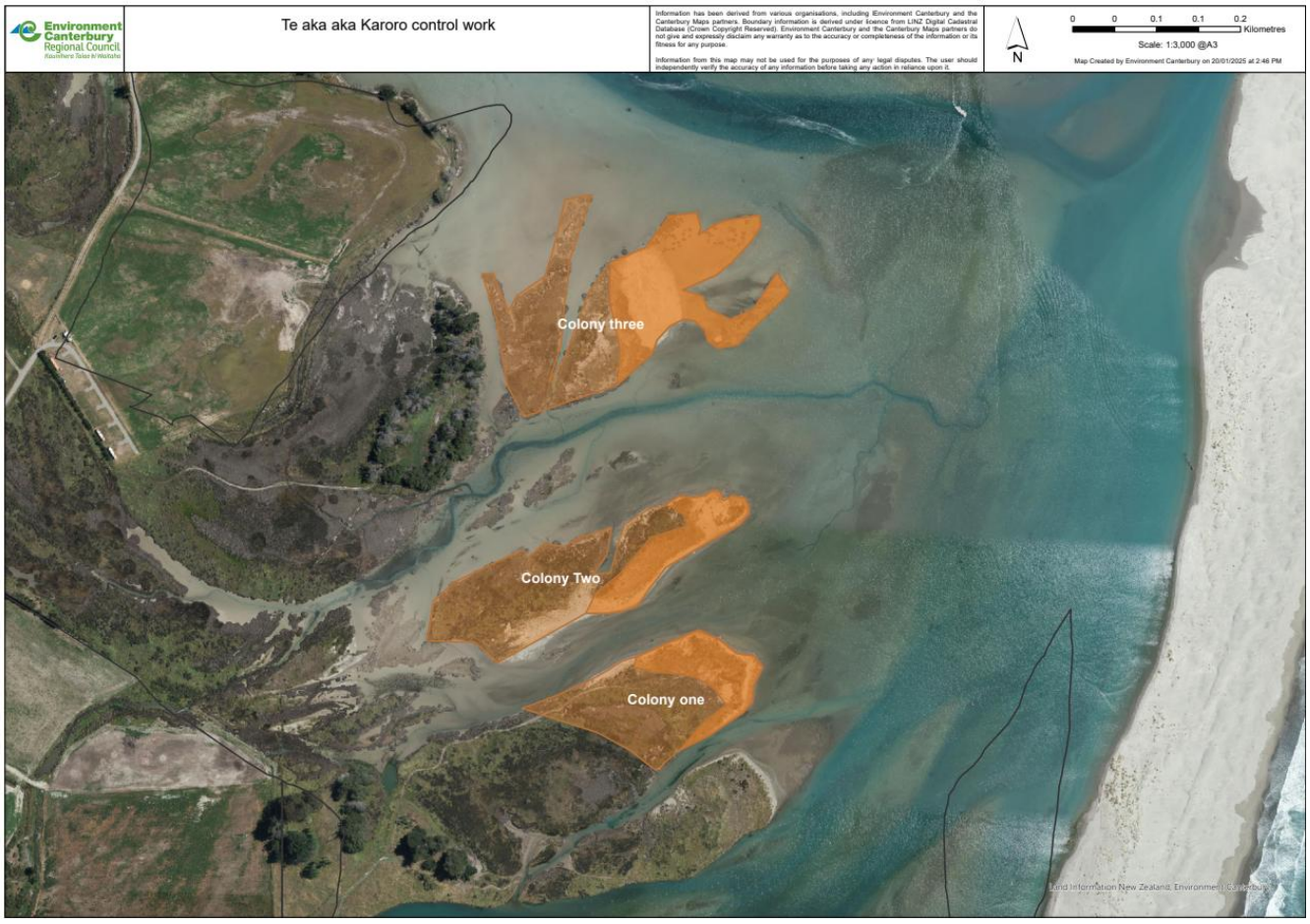
0 0.1 0.2 0.3 0.4 Kilometres
Scale: 1:11,000 @A4
Map Created by Environment Canterbury on 12/02/2025 at 12:09 PM
Main North Rd
Saltwater Creek
Separate control undertaken within Fenton Reserve area
General nest desctruction area
90
Land Information New Zealand, Environment Canterbury, Environment Canterbury, Waimakariri DC, LINZ

Ashley Rakahuri Estuary (Fenton Reserve Side)

In Te Aka Aka, Karoro eggs and nests were targeted over eight weeks in November and December. Work was performed by Mātua Reuben Smith, brother of Nick Rupene and recommended by members of the Fenton trust who hold a cultural harvest entitlement for the area.

By the time works commenced, laying was already underway. Control was performed on three distinct colonies each occupying an island. Laying and nest building seemed to be preferentially located on the seaward side of each island. Egg laying also commenced at the easternmost flanks of the islands, moving west through the control period.



Map 3: Locations of Karoro colonies in Te aka aka, saltwater estuary. Preferred nesting areas highlighted.

One interesting behavior observed was the creation of burrows. Mātua Smith followed several burrows that had been created leading back through the cover of jointed rush and saltmarsh ribbonwood, with a nest constructed at the back.


Images 3a and 3b: Karoro “burrows” found within the nesting areas. Nests were found at the back of these burrows.

Overall, the feeling following control was that Karoro were certainly unsuccessful in their nesting attempts and dissuaded from establishing nests in Te Aka Aka. Both nest and egg numbers declined throughout the control period and Mātua Smith certainly had the impression that Karoro were leaving the immediate area throughout. He records that: “*They certainly knew me when I turned up!”.*

Image 3 Karoro nesting on mud flats - low tide

LOWER ASHBURTON/HAKATERE RIVER

Karoro control on the Ashburton River has been performed sporadically over previous years as funding has allowed. This season, a portion of external funding was dedicated to a large-scale Karoro Control in the lower section of the river where Karoro take up large areas of nesting habitat that would otherwise be available to more at-risk bird species.

The control location was mostly surrounded by farmland, with the Hakatere Hut community on the North bank adjacent to the control site, and the ecologically sensitive Hapua roughly 1km downstream (**Map 4**). Alphachloralose was deemed to be the best control method at this site due to the high number of Karoro present and their dense nesting arrangement.

High Country Contracting (HCC) were selected via standard procurement as the Operator to undertake the control work. HCC have the ability to drone-map a control site to count gull nests and map gull density before and after control works. HCC also suggested the use of a helicopter for carcass collection, and to assist work if the river was too swollen to access the control site. Don Geddes, a local bird enthusiast, was engaged as an independent ornithologist to help oversee the work.

Several weather events and concerns around river conditions delayed the initial planned control dates. To prevent chicks hatching before the control could proceed, HCC visited the site the week of November 18th and oiled eggs found within the control area. HCC treated 272 nests within the control area with a mineral oil, each nest averaging around two eggs. This egg oiling was very effective and will be a useful tool in future years. Delaying chicks from hatching allows the contractor more of a window to plan controls and adapt to more favorable weather and river conditions.

Upon visiting the site to observe the final pre-feed, Courtney noted that Don (the ornithologist) was unable to find one suitable location to oversee the feeding. Because of this, Don was walking down the river at the same time as the contractor to closely observe the feeding behavior of the Karoro. The benefit of this approach was that Don was able to locate and GPS mark a spoonbill nest within the feeding zone. Don observed the spoonbills during the prefeeds, noting that they showed no interest in the bread, returning quickly to their nests once the disturbance of the feeding was over. Because the spoonbills showed no interest in the bread and returned quickly to their nests, it was deemed suitable for the control activities to proceed.

Once the feeding was completed Don planned to walk back through the colony to reach the start point, which would likely disturb any Karoro that had eaten bait on the night of the control. Best practice would be to exit the colony without creating any additional disturbance to the birds. Clear guidelines and requirements for ornithologists overseeing an Alphachloralose control should be documented for future.

The poison baiting generally went ahead as planned. The Gulls frenzied and rapidly ate all bait on site. However on the night of control, the weather was hot with some wind. Courtney expressed concerns to the contractor about the weather not being ideal, however HCC assured that the conditions were fine and in line with previous operations they had undertaken. The control proceeded as planned without much issue, however a southerly weather front came through later in the evening bringing strong winds. A number of gulls were pushed over the north bank from the control site, towards the Hakatere Hut community.

HCC returned to the site at first light the following morning to commence clean up, prioritizing a sweep of the nearby Hakatere Huts community before commencing cleanup of the river-island site. HCC used a helicopter to

assist with removing birds from the riverbed and to scout for birds on adjacent land. Complaints were received about the use of the helicopter and landing on farmland to retrieve poisoned gulls. Communications around any future operations using helicopters must expressly discuss the use of those helicopters, following any recommendations of the current ECan Helicopter Safety Policy (which may include written permission from landowners to transit over or land on their property).

The Ashburton Depot also fielded complaints from members of the public, particularly in the Hakatere Huts community, where people were distressed about the presence of some dead birds. HCC were already in the area collecting gull carcasses and readily responded to public queries to collect any further dead gulls that were located. For any future controls, the Ashburton Depot should have a nominated staff member as the on-site point of contact, able to respond to queries and visit the site if required.

HCC report that helicopter and staff were used to collect 70 Karoro from adjacent land (including the Hakatere Huts community) on Friday 29th November (the day following the control). A further 30 gulls were located within the river itself and an additional 47 were recovered from the beach approximately six kilometers north of the Ashburton River Mouth on Monday 3rd December. These birds found further up the beach were likely washed out the river and carried by a current to this northern location. Future clean ups should account for additional days and a wider area to scout, including placing signage at this beach location (Wakanui Beach).

A total of 1,670 Karoro are assumed removed by this control operation (based on waste disposal of 1,670 kg and an average weight of 1kg per adult bird). If we consider approximately 117 of those birds were recovered "off-site" (i.e.: from surrounding land), then that is only 7% of the total birds that scattered from the site. This number may have been lower if the southerly front had not come through on the night of the control, however we should still consider that the vast majority of birds were recovered from the river island as intended.

Summary of work progression:

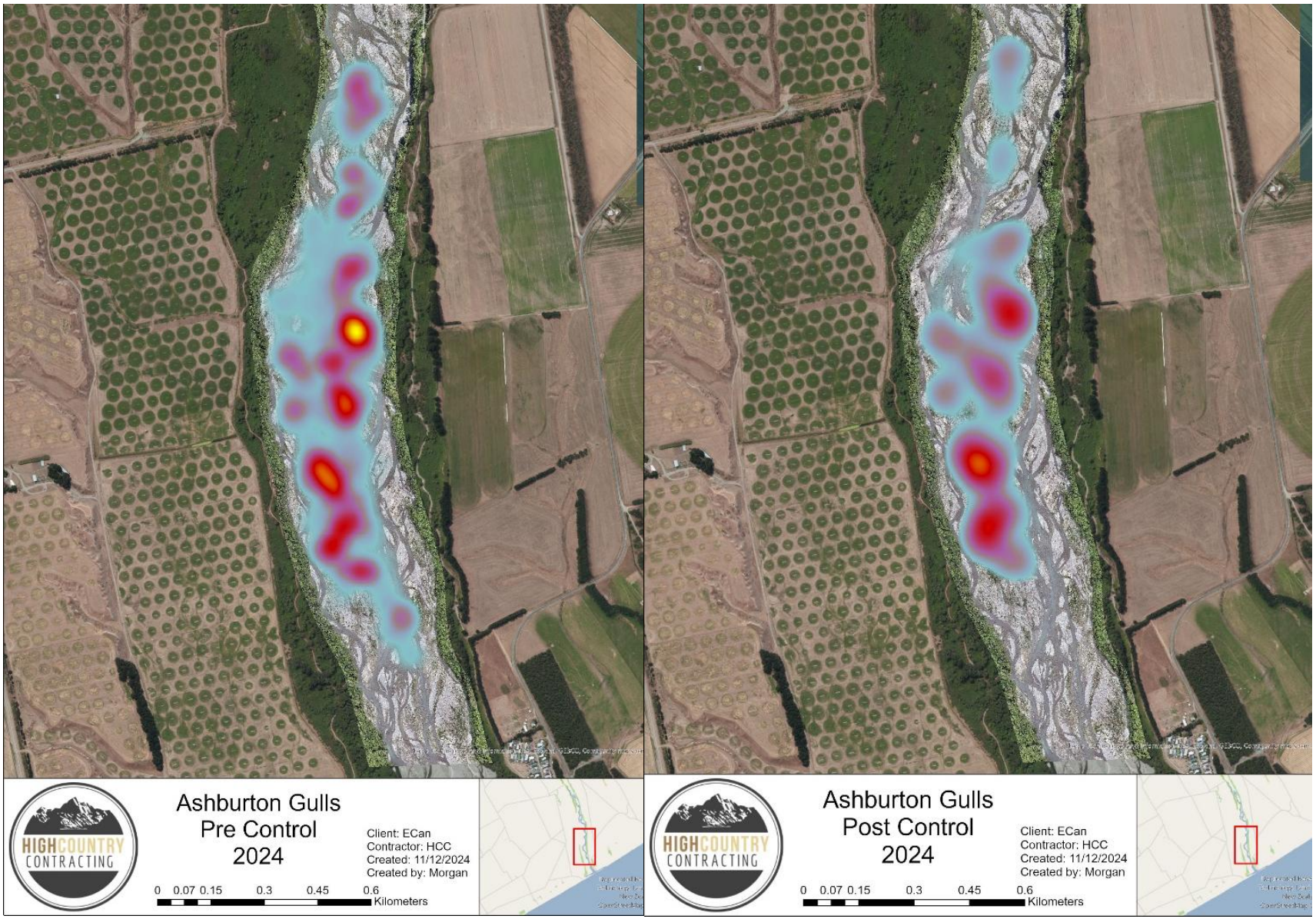
- September 2024: Planning stages with contractors engaged and job sheets/paperwork prepared. Agreement with HCC that the plan for access would be via 4WD and on foot, with helicopter as a back up option if needed.
- October 2024: A list of adjacent landowners was compiled, who were then phoned (by ECan) and sent follow up emails if necessary. A note was added to the Hakatere Huts community newsletter about the control. ECan Notice of Operations were also circulated, along with a notice of works going live on the ECan webpage. Five vet practices in Ashburton were also contacted to advise of the control, on the off-chance that a sick animal was taken to a vet having ingested any bread bait or poisoned carcasses. All vets requested additional information, particularly on the poison, how to treat an animal that may ingest it and timing of the operations. This is useful information to have at hand for future communications.
- October 30th: Drone survey undertaken to count nests present within the colony and better plan for the control operation. Approximately 1,649 adult Karoro were counted within the surveyed area.
- November 2024: Weather events and flooding in the river delayed operations. During the week of November 18th, HCC were able to access the site to oil all of the eggs present within the control area to prevent chicks from hatching before the control could go ahead.

- November 25th – 27th: Pre-feeds undertaken in the evenings, with Don Geddes present to observe Karoro feeding frenzy behavior and ensure no non-target birds species entered the feeding zone. Courtney was also present to observe the final prefeed on the 27th November. The Karoro were observed to frenzy appropriately and the bread was rapidly eaten.
- November 28th: Toxin distribution went ahead. Dani from ECan BRR present to observe, along with Don Geddes. HCC started at the western end of the colony and walked quickly and calmly through the colony, spreading bait as they went. The gulls frenzied appropriately and rapidly ate all bait on site. HCC reported observing many gulls had quickly exhibited signs of the toxin taking effect, with the vast majority landing on or near their nests.
- November 29th: Return at first light for cleanup, prioritising Hakatere Hut community before focusing on river island site.
- December 3rd: A further visit to the site and surrounding land for a secondary clean up.

Summary of Costings:

LOWER ASHBURTON FINAL COST SUMMARY (excl GST)	
Control	$34,824
Additional carcass collection	$1,818
Monitoring	$6,246
Don (lower Ashburton)	$1,500.75
Signage	$129
Total	**$44,518**

Alphachloralose control = approx. $27/adult bird (excl GST)



Images 5a and 5b: Pre and post-control heat mapping of the lower Ashburton Karoro Control site.

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Map 4: Ashburton Karoro Control Zone

N

0 0.1 0.3 0.4 0.6 Kilometres

Scale: 1:9,000 @A3

Map Created by Environment Canterbury on 13/02/2025 at 2:54 PM

Cameron Fan/Lake Heron

A small group of Karoro had been identified nesting on the Cameron Fan near Lake Heron (Map 5) in 2023 and it was presumed these birds would return to nest again in 2024. The Cameron Fan and wider Lake Heron area are significant natural habitat areas for a variety of threatened bird species. The Canterbury Southern Black-backed Gull/Karoro Management Strategy (The Strategy) recommends a containment control approach of Karoro in high value high country rivers whereby Karoro numbers should be maintained at zero density, preventing encroachment of the birds into these high value spaces. Based on this information, a decision was made to target this group of Karoro using Alphachloralose, aiming for their removal from the Cameron Fan.

High Country Contracting (HCC) were selected to complete the work, which they could organise concurrently with their lower Ashburton control and utilize drones for pre and post-control surveys. A site visit was undertaken with HCC on the 15th of August where 60 Karoro were observed already beginning to nest on site, deeming the control work necessary to proceed.

Planning for this control included obtaining written permission from both the landowner (LINZ) and the lessee (Philip Todhunter) agreeing to the works. Neither party objected. DOC were also notified due to their interest in the general conservation values of the wider area. Other interested parties (e.g. Rūnanga, District Council, Fish and Game) were notified via a standard Notice of Operations, with a notice also placed on the ECan website. Notifications for this location were simpler than for the Ashburton and Waimakariri controls due to a lack of multiple adjacent landowners.

Don Geddes was again engaged as the independent ornithologist overseeing these works. Don completed a pre-works bird survey of the control site 19th of November 2024, recording 11 banded dotterels within the survey area (the survey area was approximately a 100m radius around the planned control site, plus any main access tracks). The beginnings of one banded dotterel nest was identified and marked with a stone cairn (Images 6a and 6b).

Images 6a and 6b showing a banded dotterel nest scrape location and close up view of the nest scrape.

HCC visited the site on 18th November to oil all eggs present within the colony and prevent any chicks from hatching prior to control work commencing. 151 Nests were found, with an average of three eggs treated with mineral oil in all nests. As with the lower Ashburton control, this oiling allowed for a larger window for the control to proceed should weather conditions not be favorable (wind was a particular concern at this site).

Pre-feeding commenced on Tuesday 3rd December. Don Geddes was onsite for the final pre-feed Thursday 5th December and noted that HCC were approaching the colony from an upstream access, different from the one he had surveyed. A banded dotterel was observed exhibiting breeding behaviour near this access route, near which Don eventually located a nest with eggs. Don photographed what he believed to be a boot print immediately adjacent to the nest, indicating the dotterel eggs had come very close to being destroyed (Image 7). Access routes and works areas must be expressly agreed on between contractor and ornithologist in future to avoid this potential risk to protected species.

Image 7: Photo supplied by Don Geddes of what he believed to be a boot print, with three dotterel eggs pictured immediately adjacent to the "toe" of the boot.

The control proceeded on the evening of 5th December. 1,296 toxin-infused baits were laid quickly and calmly throughout the colony. As HCC retreated from the river they noted a slight increase in the wind on site and observed a small portion of the birds in flight, following the general direction of the wind. HCC noted the direction of the birds for collection the following morning.

HCC returned at first light the following morning for carcass collection. The initial focus was the core of the colony where 150 gull carcasses were removed. The search then extended across a wider radius around the colony, with extra focus on the area gulls were observed travelling towards the previous night. 47 additional gull carcasses were retrieved from the wider area.

Overall, 197 carcasses were removed. A follow-up drone survey following carcass collection recorded 28 gulls remaining in the control area, indicating an 88% reduction from the 248 gulls originally surveyed on site. This would indicate 23 gulls unaccounted for. While some may have been missed during cleanup, it's also possible that some were disturbed from the site and simply not present for the final survey. The final tally of gulls removed has been recorded as 200.

CAMERON FAN FINAL COST SUMMMARY (excl GST)	
Control	$6,000
Monitoring	$1,000
Don (ornithologist)	$1,621.50
Total	**$8,622**

200 adult Karoro removed.

Alphachloralose control = approx. $43/adult bird (excl GST)

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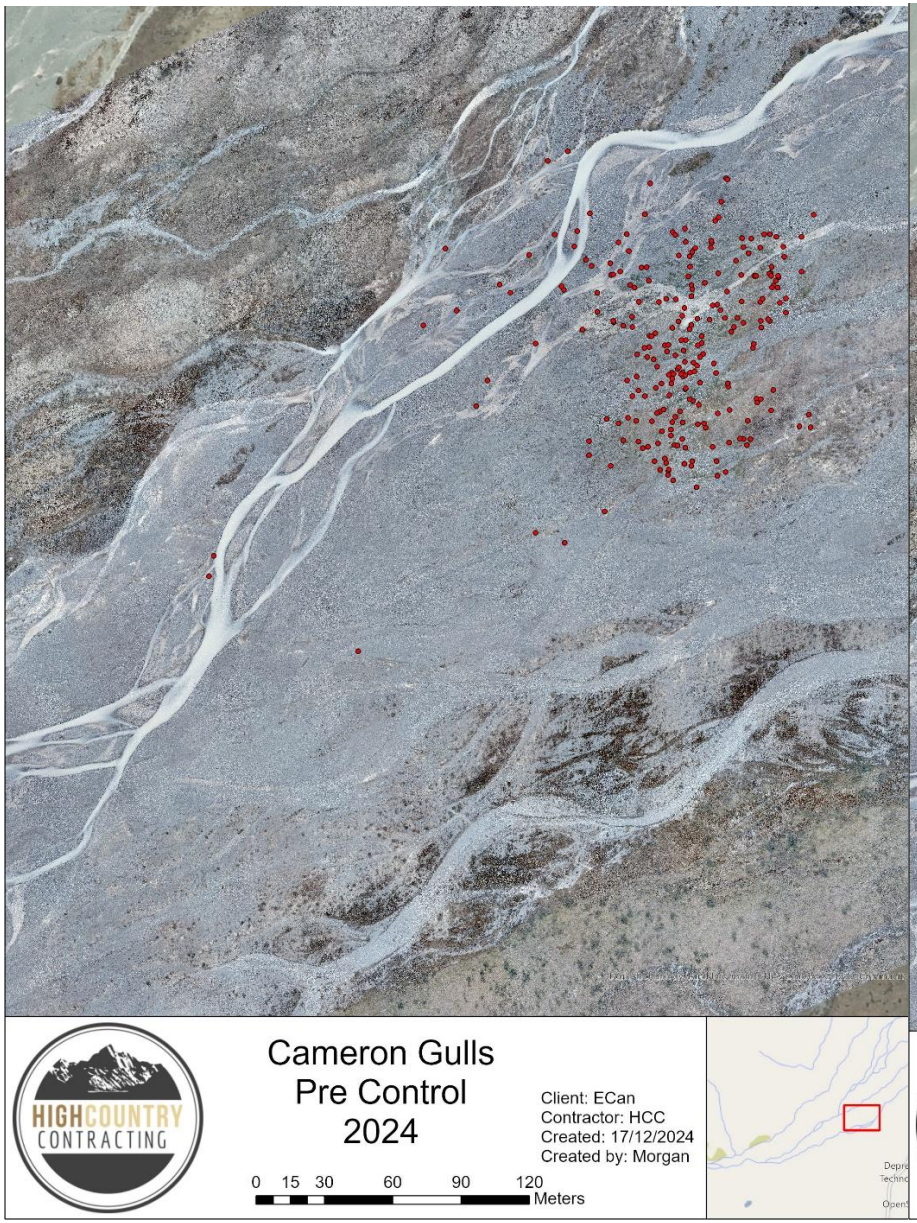
Map 5: Cameron Fan Karoro Control

N

0 0.7 1.3 2 2.6 Kilometres

Scale: 1:46,000 @A4

Map Created by Environment Canterbury on 24/02/2025 at 1:27 PM



Images 8a and 8b: Red dots indicating the location of Karoro before and after alphachlorase control was carried out.

SUMMARY OF KEY LEARNINGS FOR FUTURE SEASONS:

- Alphachloralose continues to be the most efficient method for controlling larger and more densely packed Karoro colonies. The cost per bird generally increases with smaller colony sizes, as indicated by the cost per bird of the Cameron Fan control compared with both the Ashburton and Waimakariri controls ($43/bird vs $27/bird and $25/bird respectively).
- The Ashburton control worked out slightly more expensive per bird than the Waimakariri Control, however those works also included a portion of drone monitoring that the Waimakariri work did not.
- Using a pack raft for access was an extremely cost-effective solution on the Waimakariri and could be utilized elsewhere.
- Cleanup needs to extend longer than one day following a control. Dead Karoro were removed from the Waimakariri site one to two weeks after the original control, possibly indicating secondary poisoning (Karoro may have scavenged on any poisoned carcasses that were missed during the original clean up?). Additional Karoro carcasses were also removed from the Ashburton control site on a second visit following the original clean up.
- The Ashburton control highlighted the need to check a wider area for controlled carcasses, e.g. those that were washed in the current to Wakanui Beach. Signage may be placed at this location next time.
- Pre-works communications need to be extended for future seasons. We should contact landowners at least two properties back from the control site (where those properties are larger land blocks). In the case of the Hakatere Huts community, a flyer drop and possible in-person comms may be required.
- If helicopters are used for future controls, we need to ensure we follow current ECan helicopter use policy, currently meaning contractors may have to use suppliers from our own plant hire book, and we need express permission from landowners to hover over their land (even if helicopter doesn't touch down).
- The Ashburton control highlighted the need for someone local to that control (i.e. from the Ashburton depot) to be available to help oversee the work, particularly to assist with public queries during the clean-up phase.
- Egg oiling appeared to be more efficient than egg pricking, although it is worth repeating trials again next season to compare outcomes. Egg oiling was useful prior to an Alphachloralose control to prevent chicks from hatching and widen the window for the control to go ahead.
- Firearms play a significant role in supplementing Karoro controls on the Waimakariri River (or being the main control method where poisoning is not possible). Being unable to use firearms this season meant we weren't able to achieve the target population reduction numbers. We will need to find ways forward for the use of firearms under the new ECan Firearms Policy (or find alternate control methods).
- We need to document a standardized methodology for the Ornithologist undertaking the start of season aerial Karoro count up the Waimakariri River. There needs to be some clarity particularly around whether it's best to count nests or adult birds present, timing around floods and ground truthing requirements (there may be some overlap with methodology for recently undertaken black billed gull surveying).
- There is also a need to document the requirements for any ornithologist that may be on site during an Alphachloralose control.
- The pre-works bird-survey around the Cameron Fan site should have extended further. The contractor also needs to use agreed access points or seek clarity around areas that have been checked for non-target bird species present.

Appendix 1: Additional Reports Referenced

Bell, M.D.; Harborne, P. 2019. Canterbury Southern Black-backed Gull/Karoro control strategy discussion document. Unpublished Wildlife Management International Technical Report to Environment Canterbury.

Bell, M. 2024. Waimakariri River control and monitoring plan for Karoro/Southern Black-backed Gull. Unpublished Toroa Consulting Report to Environment Canterbury.

Bull, L. 2024. Lower Waimakariri River: Karoro/Southern Black-backed Gull Survey. Unpublished BlueGreen Ecology Ltd Report to Environment Canterbury.

Appendix 2: Notes from Ashburton and Waimakariri Karoro Control Comms Debrief Meeting (22nd January 2025)

My summary of communication adjustments for next year's controls were as follows:

- Phoning landowners and other interested parties (e.g. vets) in the first instance is still the best option. However we should also attempt to send a follow up email so that people have our contact details readily available, should they need them.
- The information flyer (attached) needs to have contact details listed.
- It is still most appropriate to list the project manager as the point of contact for the control (rather than the contractor etc). As was highlighted with the Ashburton Control, it is better if the project manager is located nearby to the intended control location, or is available at or near the control location on the collection day following works. If the project manager is not nearby to the control, then another person should be made available nearby in order to respond to calls (and visit the site) if necessary.
- If the Hakatere Huts community need to be notified again in future, a notice in the community newsletter is still useful but we also need to complete a flyer mailbox drop.
- We can also look at "targeted" Facebook posts, aimed at specific locations/communities. These don't go on the main ECan Facebook page and are more like ads targeted at specific communities that may be relevant to the Karoro control work. These ads can link to a webpage with more information and a comprehensive FAQ list (this has been successful for past aerial spraying notifications).
- We need to broaden our net of landowners being contacted adjacent to a control site, ie look to contact 3 or 4 properties back from a control site, rather than just the first one or two.
- If helicopters or drones are to be used during a control, there needs to be a specific conversation with landowners about this. Current ECan policy is that helicopters/drones are not permitted to fly or hover over private land parcels without express written permission from those landowners. This obviously also extends to the need to land on those land parcels (e.g to collect dead birds).
- An "all of office" email may be appropriate to notify specific depots of high-risk works due to happen (this would have been appropriate to the Ashburton depot so that everyone knew the works were scheduled). This may be followed up with an emailing confirming actual dates of the works once they are known (this update should also be sent to Customer Services). This is in addition to the usual Notice of Operations that gets circulated.

A couple of other notes:

- Update the signage to include a photo of the bread bait and a photo of Karoro.
- The signage may need to be A2 instead of A3 to improve visibility and display of information
- Photo of the bread bait should also be on the information webpage (see High Country Sign for example).
- Melinda is going to check the QR code usage and how many people actually visited the webpage for information.

As I said, please let me know if you have anything else to add or any other points that should be noted down prior to next season.

Thanks again,

Courtney