Waimakariri Black-billed Gull Monitoring
Season Report 2025/2026

Keystone Ecology

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INTRODUCTION

The lower Waimakariri River is a specialised ecosystem because it is the major hydrological feature in the region. It is driven by weather and geological processes over a hundred kilometres away and influences the whole landscape bounded between Te Waihora/Lake Ellesmere and the Ashley Rakahuri River. Black-billed gulls are currently at risk - declining on the national conservation threat status (Hugh A. Robertson et al., 2021), and have been monitored yearly on this section of the river since formal records began in 2008. For the 2025/26 braided river bird breeding season, funding was reduced for the monitoring of breeding outcomes, and therefore, the scope was reduced to only cover the monitoring of black-billed gull colonies.

Keystone Ecology undertook the annual braided river bird monitoring on the lower reaches of the Waimakariri River (downstream of the Waimakariri Gorge Bridge). The reduced scope for the 2025/26 breeding season meant the only target monitoring species was black-billed gulls (*Chroicocephalus bulleri).* The scope of the monitoring included locating all breeding colonies on the lower Waimakariri and recording breeding data until colony collapse or the last observed chick fledged. In 2025/26, these observations spanned from the 7th of October 2025 to the 19th of January 2026. Standard colony monitoring techniques, as per Mischler & Maloney 2019, were used to gather the breeding data, and two trail cameras were placed approximately 100m from the colony to inform on any catastrophic collapse event.

METHODOLOGY

The methodology used to monitor the black-billed gulls differs from that of the other braided river bird species due to the colonial nature of the gulls, forming densely populated colonies. The monitoring methodology follows the Department of Conservation Protocol for best practice in monitoring braided river birds. The dense colonies that are typical of black-billed gulls mean the nest-specific detailed monitoring is not viable, and longer periods of observation every three to five days are preferred (Mischler & Maloney, 2019). Funding constraints limit the methods and frequency of monitoring, whereby weekly visits are done, and tools such as drones are used.

Prior to nesting, Keystone Ecology was present on the river many times for unrelated projects. This allowed observations to be made and insights to be gathered about locations of congregating black-billed gulls in the lead-up to nest-making.

The ECan and Christchurch International Airport-funded black-backed gull monitoring flight provided a complete overview of the lower Waimakariri River in early November, as observers (not Keystone Ecology) were able to share information on black-billed gull locations. Additionally, the flight observations were followed up by drone searching at approximate previous colony locations and by observing transiting birds flying overhead.

Once all colonies were located, regular site visits were conducted, where counting incubating birds was done through analysis of drone imagery taken from a height of 20m above ground level. When operating

the drone, it is important that the flight path does not mimic a bird of prey. The lowest flight level where the behaviour of the gulls was stable, and disturbance was low, but present, was 20m. This height still allows for good-resolution images that are capable of counting the total nests present. The number of incubating birds is determined close to, but before, the first chick observation as the colony is settled. Counting chicks and fledglings was done through a spotting scope from a nearby elevated vantage point.

Trail cameras were utilised at the colony as a method for determining colony collapse. Two trail cameras are approximately 100m away from the colony, in the direction of the closest public access point. The cameras point towards the colony but are far enough away not to be motion sensor-triggered by regular colony behaviour. Human disturbance is a major concern with black-billed gull colonies, and this aims to record any humans or domesticated dogs that may interact with the colony and cause abandonment.

Throughout the breeding season, monitoring data is collated into an Excel spreadsheet where colony milestones, like the earliest fledging date, are forecast ahead of time so that effective monitoring can be planned.

MONITORING SUMMARY

BLACK-BILLED GULLS

Black-billed gulls were monitored over the whole lower Waimakariri River. The only location on the river that black-billed gulls were known to establish was at Downs Road, with access from the north bank of the river. Prior to the first observation of nesting, groups of black-billed gulls were observed at numerous other locations on the river. However, the only location where breeding was observed on the lower Waimakariri was out from Downs Road. Monitoring data was gathered for the colony at Downs Road on the north bank from 17/11/25 until one week after the nest site was washed out by a flood on 12/1/26. On 19/1/26, the high count of 316 fledglings was recorded. The key observations and colony outcomes for the black-billed gulls are summarized below in chronological order.

Note: The black-billed gull colony at Downs Road initially had three groups. Two of these groups were connected by land but had approximately 40m separating the groups and a small pool of water. This was denoted Colony 1 and at the maximum had 2720 pairs. There was a smaller group of black-billed gulls nesting a further 50m away from the main colony. This group consisted of 140 pairs and was separated by a moderate channel. Being separated by a channel was the factor that delineated these 140 pairs as Colony 2.

- During October 2025, groups of black-billed gulls were observed congregating at Weedons Ross Road, Bleakhouse Road, and Pitts Road. All viewed from the south bank and varying in size from 300 birds to 1000 birds.

- 5/11/25: ECan observation flight to count black-backed gulls observed two groups of black-billed gulls. Group 1 was approximately 1400 birds downstream of Weedons Ross Road. Group 2 was smaller and congregated approximately 3km downstream of the Waimakariri Gorge Bridge.

- On 12/11/25, on-foot and drone scouting failed to locate any black-billed gulls at the two locations identified by the observation flight on 5/11/25.

- The first observation of black-billed gulls incubating eggs was on 17/11/25, and this was at the Downs Road Colony (see note above about assigning Colony 1 and Colony 2 at Downs Road). The drone was used to take images from an elevation of 20m above ground level. Colony 1 had approximately 1000 pairs, and Colony 2 had 140 pairs on this date. Counted from drone imagery.

- A flood event on 19/11/25 washes out all 140 incubating black-billed gulls of Colony 2. Flood stage height measured at the Waimakariri Gorge was 2.63m.

- A monitoring visit on 1/12/25 observed that the total number of nests increased to 2720. The previously washed-out birds of Colony 2 look to have joined Colony 1. Again, drone imagery was used to estimate the total number of incubating birds.

- The first observation of black-billed gull chicks was on 9/12/25.

- While observing on 16/12/25, an adjacent colony of white-fronted terns was located. This colony was on the other side of a moderate channel, approximately 150m away, and contained 48 pairs.

- On 22/12/25, the white-fronted tern colony contained 55 pairs; this number subsequently remained stable at 55 pairs. Two trail cameras were placed on the river near the black-billed gull colony so that any potential disturbance events may be captured.

- A major flood event on the Waimakariri occurred in the early hours of the morning of 26/12/25. The recorded stage height at Waimakariri Gorge was 3.074m. Observations on the morning of 26/12/25 showed approximately three-quarters of the colony was underwater. Approximately 1800 incubating birds abandoned their nests as a result. Mobile chicks were able to move to the highest part of the colony that was not inundated by the flows. At the time of this flood. Trail Camera 2 recorded the predation of a black-billed gull chick by an adult black-billed gull. See Figure 1 below.

Figure 1. Black-billed gull chick in the mouth of an adult black-billed gull on 26/12/25 when the river was in a major flood event.

- Following the flood event on 26/12/25, a high count of chicks at the colony was observed to be 1110 on 30/12/25. The location of the chicks at this stage was variable, with approximately 50% at the nest site and 50% spread over five downstream islands. The oldest chicks at the time of this observation were three weeks old, with the vast proportion being closer to one week old. When the chicks are displaced from the nest site and grouped up on downstream islands, they are much more susceptible to predation by avian predators.

- The first white-fronted tern chicks were observed on 5/1/26. The white-fronted tern colony remained above the flood peak on 26/12/25.

- The first fully fledged black-billed gulls were observed on 5/01/26. Within the colony, there were 110 birds that exhibited the visual appearance of a fully-fledged bird. These birds were not observed flying but were classed as fully fledged.

- Total colony abandonment occurred when the whole colony was submerged by a flood event on 12/1/26. This flood event had a peak stage height in excess of 3.5m measured at Waimakariri Gorge. Observations show that 1840 nests (most re-clutched) failed due to the flooding. The effect this event had on chicks was also significant. Chicks were washed down the river and were stranded in many different groups over seven downstream islands that spanned three kilometres. The full impact of this flood was difficult to determine due to the difficulty of searching many kilometres downstream looking for chicks. Some areas of the river were inaccessible due to high flows, and this meant that an accurate count of chicks and fledglings was hindered. Trail Camera 1 was washed away in the flood and associated data was lost.

- The final fledgling count was done on 19/1/26. 178 fully fledged birds were present in 5 groups downstream of the nest site. A further 28 chicks, less than one week from fledging, were part of these groups also. We believe that the 110 fully fledged birds observed on 5/1/26 are likely not present close by and were not double-counted. The total number of confirmed fledglings from the colony was 316. There was a further group of 321 birds that was inaccessible for counting, and at the closest possible distance, and by drone, the fledglings were not distinguishable from the adults. These birds were not included in the fledgling number but may have had a proportion of fledglings among them.

The key summary details of the black-billed gull colony are shown below in Table 1.

Table 1. Summary of information from the monitored black-billed gull colony at Downs Road.

Breeding colony	**Downs Road Colony 1**	**Downs Road Colony 2**
Location (Lat/Long)	1548900E, 5188493N	1548860E, 5188464N
Estimated establishment date	Around 10-Nov	Around 10-Nov
Estimated incubation start date	17-Nov	17-Nov
Estimated date of first chick	10-Dec	-
Max no. chicks observed	1110	0
Max no. fledglings observed	316 (could be as high as 450, but only 316 confirmed)	0
Estimated number of nests & breeding adults	2720 (Total incubating birds estimated by drone image taken on 1/12/25)	140
Estimated date of collapse	Washed out in flood on 12-Jan 2026	Washed out in flood on 19-Nov 2025
Nesting success (chicks per nest)	0.408	0
Fledging success (fledglings per nest)	0.116	0

WHITE-FRONTED TERNS

White-fronted terns (*Sterna striata*) are observed most years to nest on the Waimakariri River in association with a black-billed gull colony. Keystone Ecology believes there could be significance in this relationship, in terms of genetics or consistent individuals. This may present opportunities for further research and could add to the significance of the Waimakariri River as a breeding location. In the 2025/26 breeding season, there was a colony of 55 white-fronted terns alongside the black-billed gull colony at

Downs Road. This colony produced 6 chicks at the highest count, and this observation was made 7 days prior to the flood on 12/1/26 that washed out the colony completely. See Table 2 below for the key summary details.

Table 2. Summary of information from the adjacent white-fronted tern colony at Downs Road.

Breeding colony	**White-fronted tern colony Downs Road**
Location (Lat/Long)	1549022E, 5188449N
Estimated establishment date	Around 7-Dec
Estimated incubation start date	11-Dec
Estimated date of first chick	6-Jan
Max no. chicks observed	6
Max no. fledglings observed	0
Estimated number of nests & breeding adults	55
Estimated date of collapse	Washed out in flood on 12-Jan 2026
Nesting success (chicks per nest)	0.109
Fledging success (fledglings per nest)	0

AUSTRALASIAN HARRIERS

The presence of Australasian harrier (*Circus approximans*) on the Waimakariri River is a threat to braided river nesting birds. Their population is being driven by anthropogenic change, and their increased numbers are detrimental to threatened braided river birds. A predation of black-billed gull chick by a harrier at Downs Road was recorded this season on a trail camera (see Figure 2 below). This report acknowledges that a large proportion of this predation goes unreported due to the impracticality of capturing this data by long periods of in-person monitoring or trail camera observations on a colony scale. Particularly during and following a disturbance event, including significant flooding, black-billed gull chicks are susceptible to predation when scattered and forced away from the safety of the colony. The adult black-billed gulls continue to attempt to keep chicks safe from predation, although their efforts are less effective and fatiguing when small groups of chicks are scattered.

Figure 2. Harrier captured during predation of black-billed gull chick during flood event on 12/1/26.

BLACK-BACKED GULLS

Black-backed gulls are numerous throughout the lower Waimakariri River but are documented in this report only to log several observations of isolated black-backed gull individuals loitering near the black-billed gull colony at Downs Road (captured in Figure 3 below). Keystone Ecology believes that, similarly to harrier, the impact of predation on the black-billed gulls by black-backed gulls is underrepresented. This is due to the small subset of time that the observer is on the site. Although no confirmed predation was witnessed, the opportunistic nature of the few black-backed gull individuals present, combined with the numerous disruptive flood events during the season, provided adequate opportunity for the typical type of black-backed gull predation of black-billed gull chicks to occur. Following the flood events, when chicks that survived the flows were spread out and grouped up in small numbers downstream of the colony, it is likely that both harriers and black-backed gulls used this vulnerability to predate black-billed gull chicks.

Figure 3. Isolated black-backed gull loitering approximately 50m from the black-billed gull colony.

FLOOD EVENTS

Over the course of the breeding season, there were four major flood events on the Waimakariri River. The first of these was prior to any nesting on 24/10/25. The subsequent three events of note affected breeding to various degrees; these events were on 19/11/25, 25/12/25, and 12/01/26. For the duration of the breeding season, the river flow data was monitored using the ECan River Flow Data website (Environment Canterbury, 2026). The data recording locations of the Waimakariri at Esk, Waimakariri Gorge, and Old Highway Bridge were used extensively, as together they give indications of the magnitude and timing of flood events that will impact breeding birds. The stage height as measured at the Waimakariri Gorge was the major measure for flood magnitude, where 2.0 m is considered moderate, and 4.0 m is a significant flood, where the whole riverbed is underwater. Below is a list of each flood and the associated impacts on the birds and monitoring.

24/10/25

Stage height: Unknown, instrument error.

Major event: A major event caused the monitoring station to go out of order; the flood stage height is unknown but in excess of 3.5m. Evacuations of residents in the lowest reach of the river. The black-billed gulls, prior to this flood, had been observed congregating in three groups but not nesting or nest-making.

28/10/25

Stage height: Above 2.5m

Moderate event: A secondary peak following the major event on 24/10/25. Events like this at this time of the season are valuable because they inform any species yet to begin nesting, where the higher locations on the river that may be suitable are. This encourages the birds to locations that are generally above a moderate flood event.

19/11/25

Stage height: Above 2.5m

Major event: A nesting group of black-billed gulls adjacent to the main colony was washed out. 140 pairs failed due to this flood event; all were incubating eggs. These birds appeared to join the main colony and re-nest after this event.

16/12/25

Stage height: Above 2.5m

Moderate event: No observed effect on the black-billed gull colony.

25/12/25

Stage height: 3.074m

Major event: Approximately three-quarters of the colony was observed underwater on the morning of 26/12/25. See image below. A significant number of incubating birds abandoned their nests, approximately 1800 nests. Mobile chicks were able to move to the highest part of the colony that was not inundated by the flows. Following the event, a high count of chicks at the colony was observed to be 1110.

12/01/26

Stage height: Above 3.5m

Major event: Total colony abandonment occurred when the whole colony was submerged by this flood event. Observations show that a further 1840 nests (most re-clutched) failed due to the flooding. The effect this event had on chicks was also significant. Chicks were washed down the river and were stranded in many different groups, making monitoring difficult.

REFERENCES

Environment Canterbury. (2026). *River Flow Data*. Retrieved from Environment Canterbury Regional Council: https://www.ecan.govt.nz/data/riverflow/

Hugh A. Robertson et al. (2021). *Conservation status of birds in Aotearoa New Zealand, 2021.* Wellington: Department of Conservation.

Mischler, C. and Maloney, R. 2019. *Protocol for best practice in monitoring braided river birds.* Department of Conservation. 42pp.

APPENDIX A: SUMMARY TABLE OF BLACK-BILLED GULL COLONIES

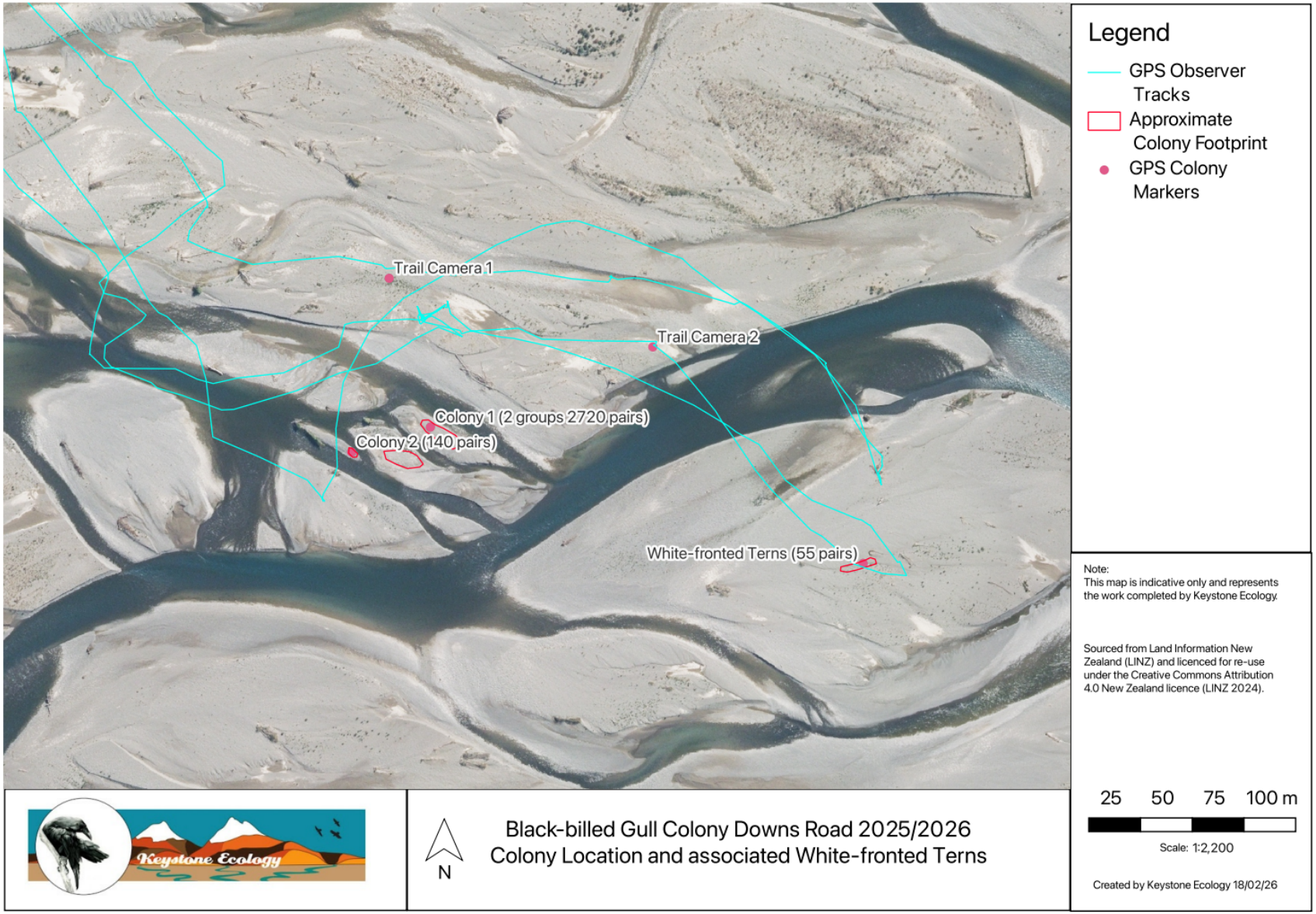
Table A1. Table of colonies that were being monitored but failed without fledging chicks:

Black-billed gulls			
Location	***Peak number of birds counted nesting***	***Chicks observed***	***Comments***
Downs Road Colony 2	140	No	This colony was separate from the main colony as it was on the other side of a channel. This colony was counted by drone on 17/11/25, and then a 2.5m flood event on 19/11/25 washed out all nests. These pairs then joined the main colony 100m away.

Table A2. Table of monitored black-billed gull and black-fronted tern colonies known to have produced chicks this season:

Black-billed gulls				
Location	***Peak number of birds counted (pairs)***	***Peak number of chicks counted***	***Estimated number of fledglings***	***Comments***
Downs Road Colony 1	2720	1110	316	This approximate location (300m away) contained a colony in the 2023/24 breeding season. The colony in 2025/26 was established in mid-November and grew steadily over the following two weeks. The first observation of chicks was on 9/12/25. From 26/12/25, multiple major flood events impacted the colony by washing away eggs and chicks. A small proportion of chicks were stranded on downstream islands, and this led to a greatly reduced estimate of 316 fledglings from the colony.

APPENDIX B: MONITORED COLONY LOCATIONS 2025/26



Legend

- GPS Observer Tracks
- Approximate Colony Footprint
- GPS Colony Markers

Note:
This map is indicative only and represents the work completed by Keystone Ecology.

250 500 750 m

Scale: 1:15,000

Created by Keystone Ecology 18/02/26

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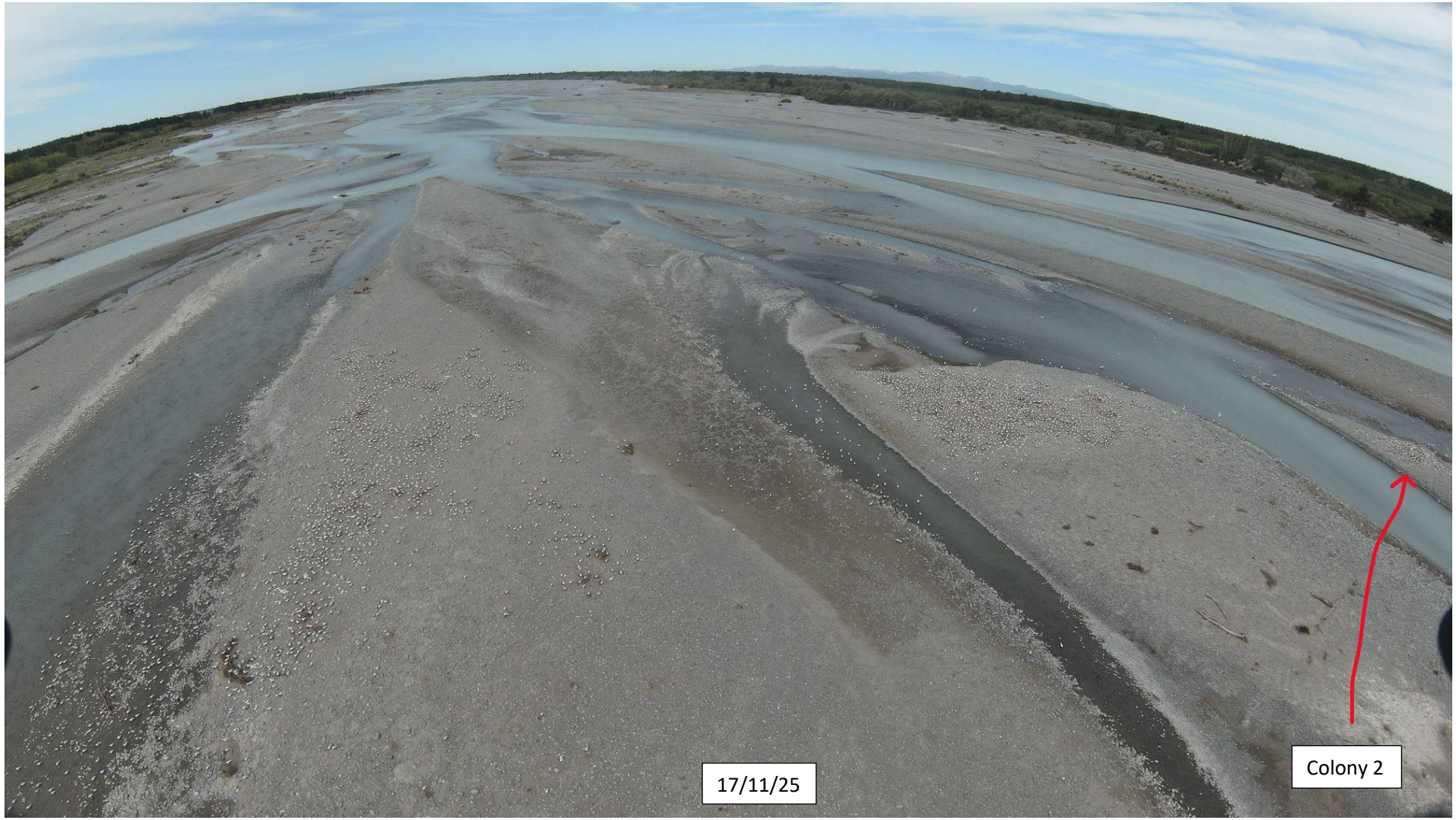
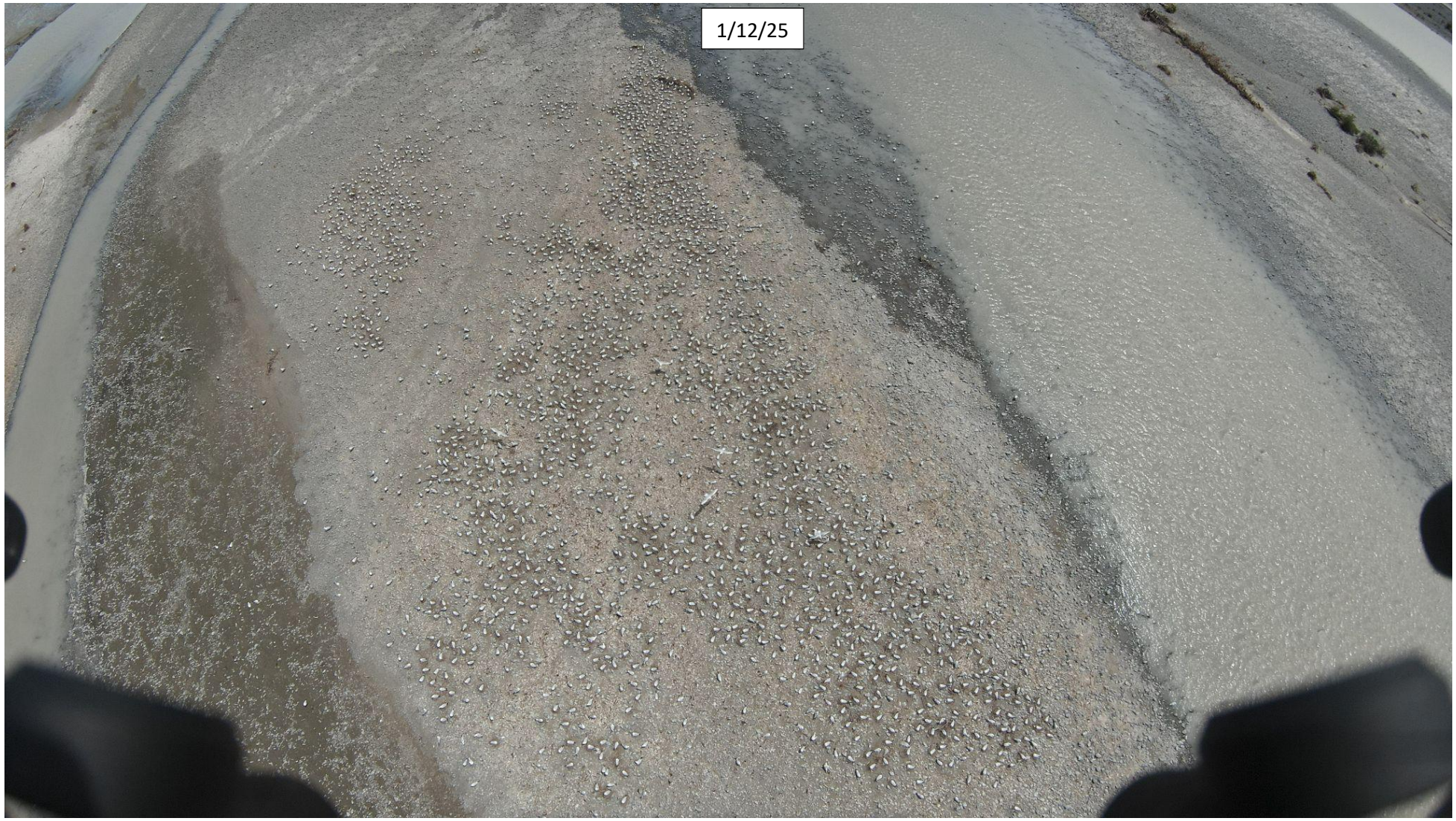
Black-billed Gull Colony Downs Road 2025/2026
Colony Location and associated White-fronted Terns

APPENDIX C: CAPTURED DRONE IMAGES OF THE DOWNS ROAD BLACK-BILLED GULL COLONY




1/12/25


1/12/25


9/12/25


26/12/25


5/1/26