Rakitata Braided River Bird Monitoring
Season Report 2025/2026

Keystone Ecology

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Introduction

Keystone Ecology undertook the annual braided river bird monitoring on the lower reaches of the Rakitata River. The monitored area was from the pylons approximately 4km upstream of the SH1 Bridge, downstream to the river mouth. The target monitoring species reported upon are listed as follows: Black-billed gulls (*Chroicocephalus bulleri),* banded dotterel (*Charadrius bicinctus*), wrybill (*Anarhynchus frontalis*), and black-fronted terns (*Chlidonias albostriatus*). The monitoring was conducted over the breeding season for these four species, with observations spanning from the 9th of October 2025 to the 26th of January 2026. Standard monitoring techniques were used to record the breeding data presented in this report.

The Rakitata River is one of the major hydrological features of the Canterbury Plains. As with many of the braided rivers in Canterbury, the Rakitata is alpine-fed with the headwaters emanating from the Main Divide. This is a large area of influence, whereby weather and geological processes from over a hundred kilometres away influence the whole riverine landscape from the Southern Alps to the Pacific Ocean. The importance of the species that reside within the habitats of the Rakitata River is only strengthened when the conservation threat statuses of these species are considered. The conservation threat status of the monitored species is listed as follows. Black-billed gulls are at risk – declining. Black-fronted terns are nationally endangered. Banded dotterel are at risk – declining, and wrybill are nationally increasing (Hugh A. Robertson et al., 2021). Furthermore, the threatened status of these braided river bird species places high importance on protecting the river ecosystem and the species-specific critical habitats that this river possesses.

Methodology

The methodology used to conduct the braided river bird monitoring follows the standard methods outlined in Mischler & Maloney (2019); Protocol for best practice in monitoring braided river birds. Limited resourcing reduced the frequency of monitoring visits to approximately once per week as opposed to the preferred frequency of every three to five days. Tools such as drones and kayaks were used to monitor and search the length of lower Rakitata, so that typically inaccessible locations of the river were represented during monitoring. Trail cameras were not used on the Rakitata this season due to the susceptibility to flooding and the lack of feasibility for a Christchurch-based staff member to collect any cameras following a flood alert. Furthermore, the river mouth was particularly busy with recreational activities that increase the risk of camera theft. Monitoring visits consisted of approximately three hours of travel and 6.5 to 9.25 hours spent monitoring on the ground. Over the course of the breeding season, weekly visits were planned for monitoring, although several flooding events at times hindered this schedule. When kayak monitoring was conducted, there were two or three staff members monitoring concurrently for logistics and safety. The access points that were used on the river for monitoring (access by kayak, four-wheel-drive, and on foot) are shown below in Figure 1.

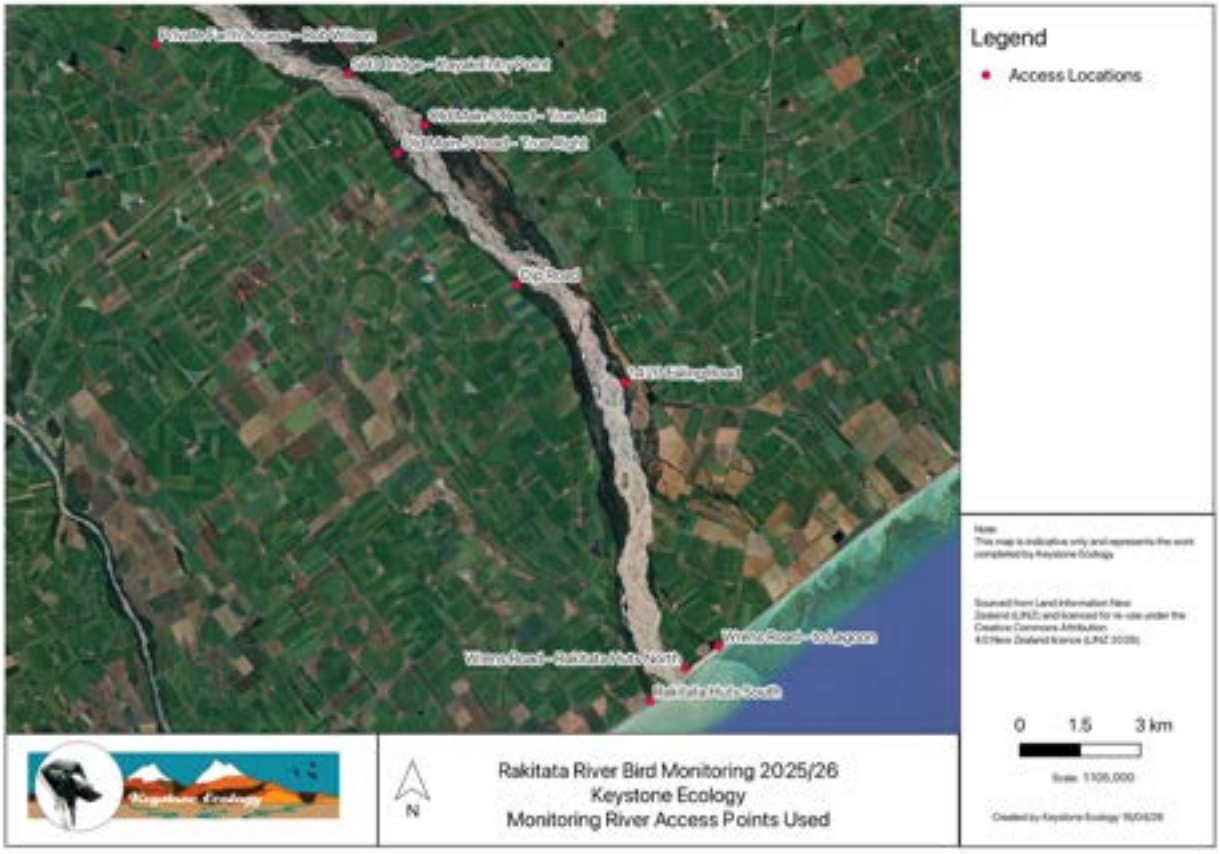

Figure 1. Access locations used for monitoring over the 2025/26 breeding season.

In terms of species-specific monitoring, the following approaches were used:

Banded dotterel and wrybill were approached first because they began nesting earlier than the black-billed gulls and the black-fronted terns. For banded dotterel and wrybill, any nests present were located by systematically searching likely habitats for the presence of incubating birds. The likely habitats for each of the monitored braided river birds are highly nuanced, and the main variables are (but are not limited to) gravel size, vegetation cover, and elevation within the riverbed. Searching was done by observers on foot and, in some instances, a kayak was used to paddle down the river with observers searching islands on foot during the paddle. Once a nest was located, it was GPS tagged, and a small cairn was placed approximately 2 – 3m away on the downstream side of the nest. At the river mouth, taking a photo of the nest location was preferred over the use of cairns to minimise the detectability of the nest to the public. Note that this marking process was completed quickly to minimise the level of disturbance to the incubating bird. Subsequent monitoring visits were sporadic at times, but aimed for once per week and put emphasis on determining the estimated hatching and fledging dates, such that effective monitoring could capture data at these critical times.

In relation to black-fronted terns, the methodology was very similar to that of wrybill and banded dotterel. While the black-fronted terns were predominantly monitored through a telescope at a distance, the colonies were predominantly located by watching flying black-fronted terns through binoculars and observing their behaviour when landing on the riverbed. Exact nest locations were often not gathered due to the unnecessary disturbance that deliberate walk-throughs cause. Longer periods of observation were favoured as the resulting data is sufficient to determine breeding success. Many of the braided river birds experience repetitive disturbance from external factors like human recreation and other animals (predators included) over the length of the breeding timeline. To our knowledge, there is no indication of what level of repeat disturbance is enough to cause nest abandonment. Thus, not disturbing monitored birds for data collection by an observer is preferred.

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 approximately weekly visits are done, and tools such as drones are used. Colonies were located by a mixture of searching methods. For the river section upstream of State Highway 1 (SH1), drone and on-foot searching were used predominantly. Downstream of SH1, searching was a paired approach using both kayaking and on-foot searching. 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 nes]ts 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 not utilised at the river mouth colony purely due to the risk of theft and vandalism at a highly public location.

Throughout the breeding season, the data for all monitored species was collated into an Excel spreadsheet, where solitary and colonial nesting milestones, like the earliest fledging date, are forecast ahead of time so that effective monitoring can be planned.

Monitoring Summary

Whilst monitoring for the 2025/26 breeding season, a decision was made to mark and record all observations of wading birds in addition to the species outlined in the contract. This mainly concerned documenting observations of black-fronted dotterel (*Elseyornis melanops*), pied stilt (*Himantopus leucocephalus*), South Island pied oystercatcher (*Haematopus finschi*), and white-fronted tern (*Sterna striata*), in addition to black-billed gulls, banded dotterel, wrybill, and black-fronted terns. The reason behind this is that the observed density of braided river birds on the Rakitata was, in Keystone Ecology's experience, low, and gaining further insight into these other species allowed a more complete ecological picture of the Rakitata to be viewed.

Banded dotterel

Two instances of breeding banded dotterel were observed in the 2025/26 season. Every sighting of banded dotterel (breeding or non-breeding) was recorded due to the lack of individuals observed whilst monitoring. On the 9th October 2025, there were two separate observations of breeding banded dotterel recorded. During on-foot searching on the south side of the river out from Old Main S Road, one pair of was located rearing two chicks that were approximately 1 week old at the time of observation. This pair was labelled BD01Ra. The exact nest location and total egg number were unknown, although the nest would have been on the same river island and within several hundred metres of the observation. Also on the 9th October, a second pair of breeding banded dotterel was observed and labelled BD02Ra. One chick was observed with one adult on the edge of a low-flow channel. The chick at the time of this observation was approximately two to three weeks old. Similar to BD01Ra, the first observation of BD02Ra was post-hatching. Thus, the nest location and number of eggs in the clutch are not known.

Following the initial observations of these banded dotterel chicks, multiple floods prevented access to the river from 10/10/25 until 31/10/25. The most significant of these flooding events occurred on the 23rd October 2025, when the Flood Alert System reached ALM(2) status. This flood event caused major disruption to breeding birds and prevented access to the river for monitoring. Subsequent monitoring attempts on 31/10/25 and 13/11/25 both failed to locate any chicks in the vicinity of Old Main S Road. During these additional visits, adult banded dotterel were observed nearby but were not exhibiting behaviour pertaining to rearing chicks. Following attempts to locate chicks on the 13th November, at the

estimated time of fledging, were unsuccessful. It was concluded that both of these pairs of banded dotterel lost their chicks as a result of the flood events on either 10/10/25 or 23/10/25. Table 1 shows the summary data of all banded dotterel observations over the breeding season on the lower Rakitata River.

Table 1. Summary data of all banded dotterel observations over the breeding season on the lower Rakitata River.

Pair ID	Date	Observation Type/Comments	Location (NZTM: E, N)
BD01Ra	9-Oct 25	Two young chicks were observed with one adult. chicks estimated to be one week old.	1474191, 5119500
BD02Ra	9-Oct 25	One young chick observed with one adult. Chick estimated age approximately 2 weeks.	1474034, 5119913
BD01Ra	31-Oct 25	Area searched, no banded dotterel present	1474191, 5119500
BD02Ra	31-Oct 25	One adult in proximity to first observation, no chicks observed, no indication that chicks were present	1474034, 5119913
BD01Ra	13-Nov 25	(Approximate time of fledging) The conclusion is that two chicks failed due to moderate flooding on 10/10/25 or the major event on 23/10/25. Chicks unable to be located since first observation	1474191, 5119500
BD02Ra	13-Nov 25	(Approximate time of fledging) The conclusion is that the chick failed due to moderate flooding on 10/10/25 or the major event on 23/10/25	1474034, 5119913
Sighting	11-Dec 25	1 individual feeding	1474057, 5120251
Sighting	23-Dec 25	22 individuals non-breeding young birds (one year old birds), congregating.	1480310, 5106824

Wrybill

Wrybill were searched for throughout the whole length of the monitored section of the Rakitata River over the length of the breeding season. Searching included many locations accessible by kayak that would be difficult to access on foot. For wrybill, suitable habitat is not limited to but is often observed to be large open areas of clean gravel (no vegetation) where the gravel size is similar in size to that of their eggs. Additionally, wrybill are nuanced when it comes to nest location in relation to river water level, as they tend to use areas that get inundated with flows semi-regularly. Only one breeding pair of wrybill was located for the 2025/26 breeding season on the Rakitata River. This breeding pair nested at the river mouth on the south side of the main braid. Additionally, wrybill were only observed at the river mouth during monitoring. The monitored breeding pair was located on 26/11/25, incubating two eggs. The first observation of chicks was on 19/12/25, where one chick was located near the original nest location. Further monitoring on 6/1/26 and 26/1/26 failed to locate any chicks or fledglings at and around the estimated time of fledging. The breeding outcome of this pair is unknown, due to not observing the chick at or near fledging. Table 2 shows the summary data of all wrybill observations over the breeding season on the lower Rakitata River.

Table 2. Summary data of all wrybill observations over the breeding season on the lower Rakitata River.

Pair ID	Date	Observation Type/Comments	Location (NZTM: E, N)
WB01Ra	26-Nov 25	Nest located (two eggs) on the true-right bank close to where the river discharges into the sea. Public spot, quad bike tracks numerous in the area.	1480603, 5106184
WB01Ra	11-Dec 25	Empty nest, confirmed the location had not been underwater. One adult loitering nearby, not displaying behavour indicating chicks.	1480603, 5106184
WB01Ra	19-Dec 25	1 chick located approximately 200m away from the nest site. Windy and dusty, did not observe for long to reduce stress on the young chick.	1480367, 5106428
Sighting	23-Dec 25	Two birds feeding near river mouth.	1480515, 5106704
WB01Ra	26-Jan 26	No evidence of any young birds at the estimated time of fledging. The breeding outcome of the wrybill chick is unknown.	1480603, 5106184

Black-fronted terns

Black-fronted terns were searched for and monitored over the stretch of the Rakitata River as per the other species in the report. Over the course of the breeding season, numerous individuals and pairs were observed whilst feeding or flying overhead. These observations informed monitoring efforts in the search for colonies. Multiple observations documented black-fronted terns transiting upstream past the SH1 bridge, and this indicated there may have been colonies beyond the monitored area. Throughout the breeding season, two colonies were located in the monitored area. One colony (BFT1) was located on the 11th of December, whilst kayaking downstream from the SH1 bridge to the river mouth. The other colony (BFT2) was located on the 23rd December whilst searching on foot near the river mouth for active nests. BFT1 registered a peak incubating count of 3 pairs and BFT four pairs. Both of these colonies were washed out by separate flood events before hatching chicks and therefore were unsuccessful. Subsequent efforts to locate renesting birds were also unsuccessful. Table 3 shows the summary data of the black-fronted tern observations over the breeding season on the lower Rakitata River.

Table 3. Observations of monitored black-fronted tern and one-off sightings during the 2025/26 breeding season.

Colony ID	Date	Observation Type/Comments	Location (NZTM: E, N)
Sighting	13-Nov-25	Four BFT flying upstream, overhead	SH1 Bridge
Sighting	13-Nov-25	Two BFT were seen feeding in the area	Out from Dip Road
Sighting	13-Nov-25	Two BFT were seen feeding in the area	Out from 1420 Ealing Road
Sighting	26-Nov-25	11 pairs congregating at the river mouth - not nesting	At river mouth
Sighting	11-Dec-25	3 pairs congregating - not nesting	1474091, 5120174
BFT1	11-Dec-25	3 pairs incubating eggs, low lying and close to a main channel.	1479457, 5112851

Colony ID	Date	Observation Type/Comments	Location (NZTM: E, N)
BFT1	19-Dec-25	All pairs washed out by flood event (464m3/s on the morning of 16/12/25)	1479457, 5112851
BFT2	23-Dec-25	Two pairs observed incubating u/s of the river mouth on the true left.	1480354, 5107124
Sighting	23-Dec-25	Two pairs were observed feeding out in the middle of the river.	1474144, 5119774
Sighting	23-Dec-25	One individual observed feeding.	1480131, 5106846
BFT2	29- Dec-25	The same two pairs were observed incubating. Approximately 20 non-breeding birds were present.	1480354, 5107124
Sighting	29-Dec-25	Two pairs were observed feeding out in the middle of the river.	1473290, 5120837
BFT2	06-Jan-26	The number of incubating birds increased to four.	1480354, 5107124
BFT2	26-Jan-26	A flood event on the 11th and 12th of January washed out all nests from this colony.	1480354, 5107124

Black-billed gulls

Black-billed gulls were monitored over the whole lower stretch of the Rakitata River below pylons that are approximately 4km upstream of the SH1 Bridge. Early in the season, a large group of black-billed gulls mixed with white-fronted terns was located at the river mouth on an island. This group consisted of 2000 black-billed gulls. The group looked settled but moved on the spit between the beach and the lagoon to begin nesting. Subsequently, this colony at the Rakitata Lagoon was the only black-billed gull colony in monitored reach. The nesting timeline was smooth until the holiday period, when human disturbance is the main suspect, leading to the premature collapse of the colony. The black-billed gull colony contained 2407 pairs and fledged 713 birds as a result. The key observations and colony outcomes for the black-billed gulls are summarised below in chronological order.

- The 9th of October was the first indication of black-billed gulls on the Rakitata for the breeding season. At the river mouth (viewed from the south side), there was a group of black-billed gulls and white-fronted terns on a low-lying island at the river mouth. The estimated number of black-billed gulls was 2000.

- A flood event on 23/10/25 pushed the group of black-billed gulls and white-fronted terns off the island on which they were settling. Some birds looked settled for the period leading up to the 23rd October, but they were not incubating eggs at this time.

- Following the initial group at the river mouth, a colony began to establish on the spit between the lagoon and the sea on the north side of the Rakitata. The black-billed gulls have previously used this location for breeding.

- The first observation of black-billed gulls incubating eggs was on 26/11/25 at the Rakitata Lagoon; incubation likely began within the week prior to this observation. Drone images taken on 26/11/25 counted 2407 black-billed gulls incubating.

- The first observation of black-billed gull chicks was on 19/12/25.

- The high count of chicks was recorded on 23/12/25 with the observed number 1592.

- Monitoring continued over the holiday period, where increased human presence was observed. Jet boats, fishing, quad bikes, and dirt bikes were observed near the colony on 23/12/25, 29/12/25, and 6/01/26. On one occasion during a site visit on 29/12/25, one jet boat in the lagoon was observed driving close to the edge of the water by the colony, such that the wake washed ashore and splashed chicks occupying the water's edge.

- The first fledgling observation was made on 29/12/25 with a small number (52) counted within the colony.

- There was a major disturbance event sometime between 30/12/25 and 5/01/26. The colony split into four groups, and many birds were pushed to the south along the spit. There was evidence of vehicle tracks at the colony site. In addition, there was a cluster of feathers that was consistent with a bird being plucked.

- Post disturbance, the colony was observed on 6/01/26. No chicks or adults were loitering at the nest site. Some of the chicks away from the colony were close to fledging, and thus, the number of fledglings was recorded as 713 (split over four groups).

- During the monitoring at the nest site on 6/01/26, one individual black-backed gull was loitering at the colony. The behaviour of the bird indicated that it was observing its surroundings and waiting for a disturbance to initiate opportunistic predatory behaviours. In this case, the black-backed gull showed interest in the presence of the person monitoring the colony and counting nearby chicks. It is plausible that this bird, over the length of the season, has used many instances of members of the public walking past (for the purposes of fishing) as an opportunity to take advantage of the black-billed gull colony disturbance and prey on chicks and eggs. The full extent of the impact of the individual black-backed gull on the black-billed gull colony is unknown, but may be considerable given the large amount of human traffic past the colony on the spit.

- The nest site was inspected on 26/01/26. At the nest site, there were 1036 deceased chicks counted in various stages of decay. There were 19 deceased adults observed and 5 intact abandoned eggs.

- On 26/01/26, 713 fledglings were confirmed as they were grouped up (with accompanying adults) where the main braid of the Rakitata meets the sea.

The key summary details of the black-billed gull colony are shown below in Table 4.

Table 4. Summary of information from the monitored black-billed gull colony at the Rakitata Lagoon.

Breeding pair	**Black-billed gulls River Mouth Lagoon**
Location (Lat/Long)	1481542E, 5106389N
Estimated establishment date	Around 30-Oct
Estimated incubation start date	Around 20-Nov
Estimated date of first chick	11-Dec
Max no. chicks observed	1592
Max no. fledglings observed	713
Estimated number of breeding adults	2407
Estimated date of collapse	Initial disturbance sometime between 30 Dec and 5 Jan led to scattering of chicks and subsequently premature collapse.
Nesting success (chicks per nest)	0.661
Fledging success (fledglings per nest)	0.296

White-fronted terns

White-fronted terns (*Sterna striata*) were observed both congregating and nesting at the river mouth of the Rakitata. They were not part of the monitoring scope, but their presence is noted here. The colony contained approximately 100 pairs. To begin with, the white-fronted terns were congregating alongside the black-billed gulls near the river mouth and were displaced by high river flows. Subsequently, the white-fronted terns nested at the end of the spit where the lagoon intersects the river close to the sea.

South Island pied oystercatcher

South Island pied oystercatcher (*Haematopus finschi*) were noted when nests were incidentally located, or a nest was suspected based on the behaviour being displayed by a nearby adult. Throughout the monitoring season, three South Island oystercatcher pairs were observed to be nesting upstream of the SH1 bridge. Similarly, downstream of the SH1 bridge, there were 11 pairs observed nesting from October to December. These nests were not marked, but their existence was noted as the data collected may be able to inform on a picture of the Rakitata River habitats. This same approach was taken for the following species: black-fronted dotterel, pied stilt, and black-backed gulls.

Black-fronted dotterel

As mentioned above, observations of black-fronted dotterel (*Elseyornis melanops*) were recorded during monitoring due to their Naturally Uncommon conservation status (Hugh A. Robertson et al., 2021) and the potential importance of the data to the wider ecological picture. Over the season, black-fronted dotterel were observed at many spots of a geographical spread downstream of Old Main S Road to the river mouth. 10 individuals were observed and recorded over the breeding season. Of these 10 individuals, two were suspected of nesting nearby, although nests were not located. The presence of all of these individuals is significant on the Rakitata River at this time of the year. The Rakitata may be supporting numerous breeding pairs of black-fronted dotterel.

Pied stilt

Observations of pied stilt (*Himantopus leucocephalus*), similarly, were recorded during monitoring. Five colonies were observed on the lower Rakitata over the breeding season. The colony size varied from one nest to six nests. As per the other wading bird species that were not part of the contract, pied stilt

observations were documented at the time of sighting, and no return monitoring was conducted. Thus, the data is limited to a known presence for breeding with unknown breeding outcomes.

Black-backed gulls

Black-backed gulls (*Larus dominicanus*) are abundant throughout the lower Rakitata River and dominate a significant proportion of the habitat on the river. Whilst surveying the river by kayak, the main colonies of black-backed gulls were marked by GPS. This is because these large colonies tend to exclude other braided river birds from nesting in the vicinity of the black-backed gulls. The observations documented nine major colonies within the monitored stretch of the Rakitata River. There were two colonies in the section upstream of the SH1 Bridge and seven downstream. All of these colonies were large enough to dominate the surrounding habitats and negatively impact the other indigenous braided river birds. When on the ground, monitoring was focused on areas away from large colonies.

In relation to the black-billed gull colony at the river mouth, during monitoring, there were three individual black-backed gulls that were loitering around the edges of the colony. This behaviour is not representative of the whole population of black-backed gulls, although, a learned behaviour in a smaller proportion of the population. As is widely known, black-backed gulls are opportunistic predators, and these three observed individuals were noted due to their presence loitering at the black-billed gull colony, as has been seen in previous years on adjacent rivers. No predation event was observed whilst the observer was present, although this only represents a very small portion of time. Predation of black-billed gull chicks or eggs may have been possible by black-backed gulls, given their opportunistic nature and the individuals present at the colony.

Comments on observed habitats and species present.

Over the course of the breeding season, during monitoring sessions, the habitat elements existing on the river were evaluated qualitatively against the previous experience that Keystone Ecology has on other braided rivers, like the Waimakariri River. This process of evaluation was started from the outset of the monitoring because immediately, the species composition of birds present and absent was not as expected. The river contained fewer wrybill, banded dotterel, and black-fronted terns than expected. Conversely, observations of South Island pied oystercatcher, black-fronted dotterel, pied stilt, and black-backed gulls were more numerous than expected. This led to hypotheses surrounding habitat suitability and quality on this monitored section of the Rakitata River. As these species are not specifically braided river specialists, they are known to occupy and breed within more marginal habitats. Attributes like gravel particle size, the gradient of the river, and weed coverage were key factors that subtract from the quality of the habitat. From the observations of Keystone Ecology, when compared to the Waimakariri River (a river where Keystone Ecology has a lot of experience), the Rakitata River has a steeper gradient, a larger gravel particle size, contains a significant proportion of woody weeds, and large colonies of black-backed gulls. For example, in the lower sections of the Rakitata compared to the Waimakariri, a 100m elevation drop occurs over 17.5km compared to 30km, respectively. This steeper gradient may also influence the observed larger gravel particle size on the Rakitata. All of these considerations are possible hypotheses on an observed lower abundance of the monitoring target species.

Flood Events

Over the course of the breeding season, there were two major flood events on the Rakitata River and five moderate events. A major event is defined as an event that triggered the ECan Telemetry flood warning system. A moderate event, for the purposes of this report, is a peak flow over 500m3/s or a high-flow event of any flow rate that had an observable effect on known breeding birds. 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 location of the *Rangitata River at Klondyke* was used to monitor river flows as it is the only gauging station on the Rakitata River. For context, the gauging station is approximately 35km upstream of the top end of the bird monitoring area, and the average once-per-year flood flow rate is 1230m3/s. Below is a list of each flood and the associated impacts on monitored breeding birds. Figure 2 below also shows the flow rate measured at the *Rangitata River at Klondyke* gauging station over the length of the 2025/26 breeding season (FlowRate Aotearoa, 2026; Environment Canterbury, 2026).

10/10/25

Peak flow: 365m3s

Moderate event: This event was the first period of high flow that occurred during the season of bird monitoring. This event was the start of a string of high-flow events that prevented access to the river for monitoring until 31/10/25. As monitoring was unable to be completed, for 20 days following this event, it is uncertain which of the flood events during this period caused the failure of the banded dotterel chicks BD01Ra and BD02Ra.

21/10/25

Peak flow: 515m3s

Moderate event: Prevented access to the river for monitoring.

23/10/25

Peak flow: 1487m3s

Major event: ALM(1) and ALM(2) (Rangitata River flood trigger levels) reached. Exceeded the annual average flood flow of 1230m3/s. This flood event is assumed to be the cause of failure for the banded dotterel chicks of both pairs BD01Ra and BD02Ra due to it being the most significant flood with widespread impacts on the whole river (further to comment about the 10/10/25 flood event above). Furthermore, this event displaced the congregation of black-billed gulls and white-fronted terns from the island at the river mouth; they subsequently moved to the spit at the lagoon. This event caused major bank erosion, changed major channels, and hindered access to the river at some locations for the remainder of the breeding season.

19/11/25

Peak flow: 565m3/s

Moderate event: Prevented access to the river for monitoring.

27/11/25

Peak flow: 521m3/s

Moderate event: Prevented access to the river for monitoring.

16/12/25

Peak flow: 464m3/s

Moderate event: Washed out the black-fronted tern colony containing three pairs that were incubating nests (BFT1). The following monitoring visit on 19/12/25 showed evidence of high water levels and no black-fronted terns present at the location.

12/01/26

Peak flow: 769m3/s

Major event: This event washed out the second monitored black-fronted tern colony of the breeding season (BFT2). This colony, at the time of the flood, contained four pairs of black-fronted terns incubating nests. The nest site was confirmed to have been completely inundated on the next monitoring visit, and no black-fronted terns were present.

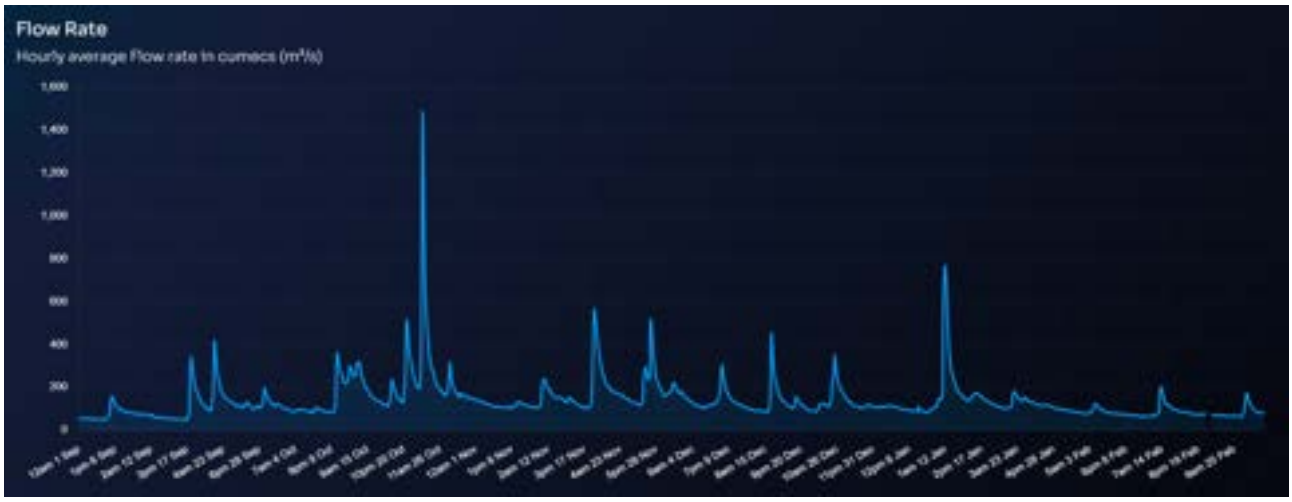

Figure 2. Rakitata River flow rate over the period 1/09/25 to 28/02/26 measured at *Rangitata River at Klondyke* gauging station. Retrieved from https://flowrate.co.nz/river/rangitata-river/klondyke (FlowRate Aotearoa, 2026; Environment Canterbury, 2026).

Discussion

The 2025/26 breeding season on the lower section of the Rakitata for indigenous braided river birds produced mixed results with a number of different factors involved. Firstly, the river flows over the nesting period were in a state of constant flooding cycles, which included a significant flood event in late October that exceeded the annual one-year flood flow rate. The timing of this event (23rd October) may have impacted solitary nesting species disproportionately due to the tendency of banded dotterel and wrybill to nest earlier in the season than the colonial nesting species, such as black-billed gulls and black-fronted terns. On top of this, moderate flood flow events were regular and numerous over the critical period (as seen in Figure 2). By viewing the previous two years of flow data (FlowRate Aotearoa, 2026), the 2025/2026 breeding season appeared to have higher magnitude and frequency of flooding events over the nesting period than the 2023/2024 and 2024/2025 breeding seasons. This observation only has a sample size of three seasons, although it is the basis on which future observations can build, as we see changes to the flooding cycles and weather patterns. Secondly, the quality of the braided river bird habitats was lower than expected on the Rakitata, in Keystone Ecology's experience. The habitats that the river mouth contains, and those up to approximately two kilometres upstream from the river mouth, contained good amounts of suitable habitat, and this was reflected in the density of target-species observations. Lastly, the interactions between humans and breeding birds/colonies were, based on observed evidence, a significant factor that impacted the productivity of the black-billed gull colony that nested at the river mouth lagoon. Despite the disturbances, the black-billed gulls had some success in fledging 713 young birds from the colony.

Acknowledgments

Thank you to the ECan Braided River Revival team, project manager Courtney Bamber, for your support over the season. Lisa Ree (ECan Ashburton) Thank you for sourcing the signs used at the black-billed gull colony. Thank you also to Rob Wilson, of Rangitata Dairies, for allowing access to the river across their land.

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Appendix A: Summary Table of Black-billed Gull and Black-fronted Tern Colonies Rakitata River 2025/26

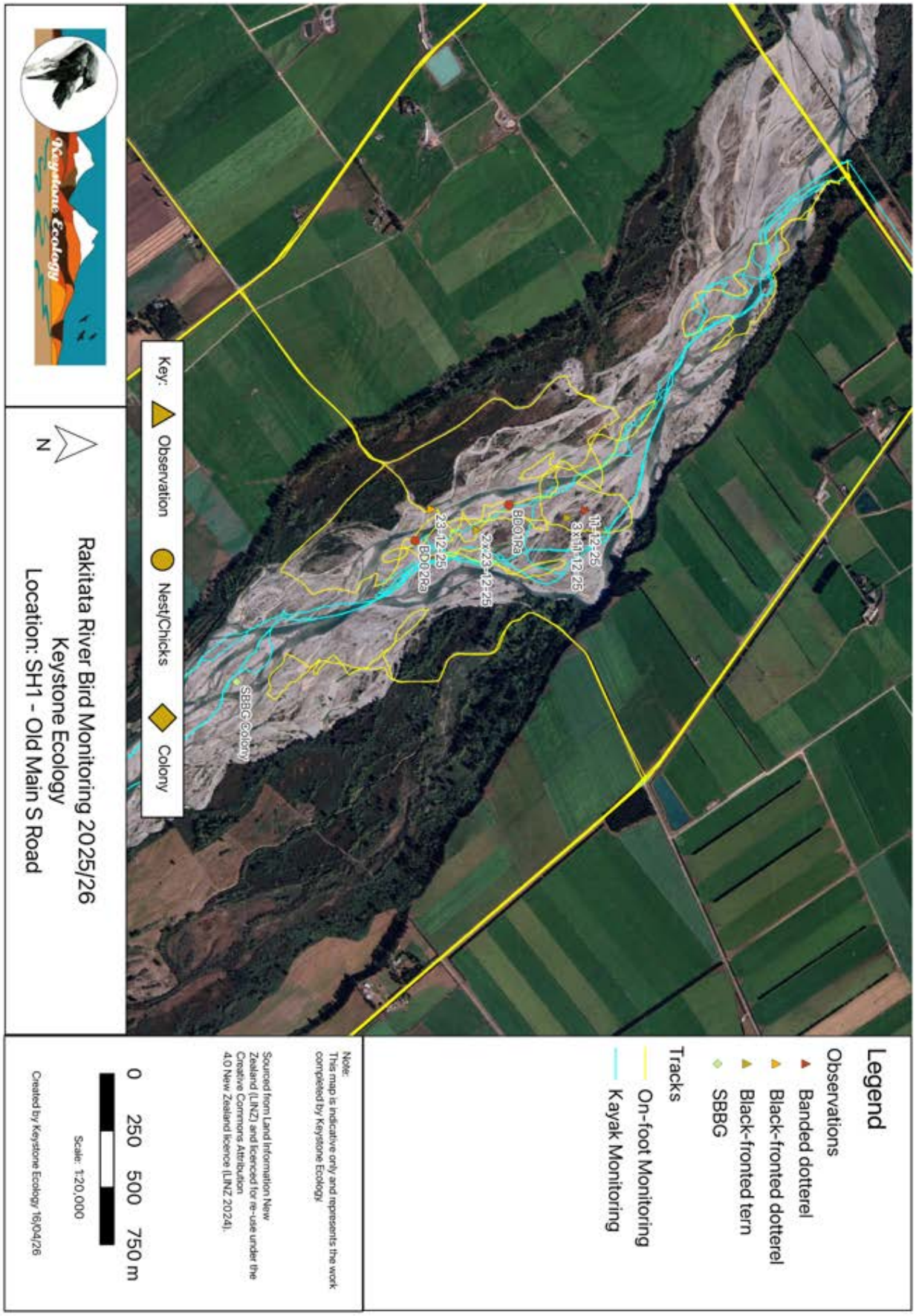
Table A1. Table of colonies that were being monitored but failed without fledging chicks:

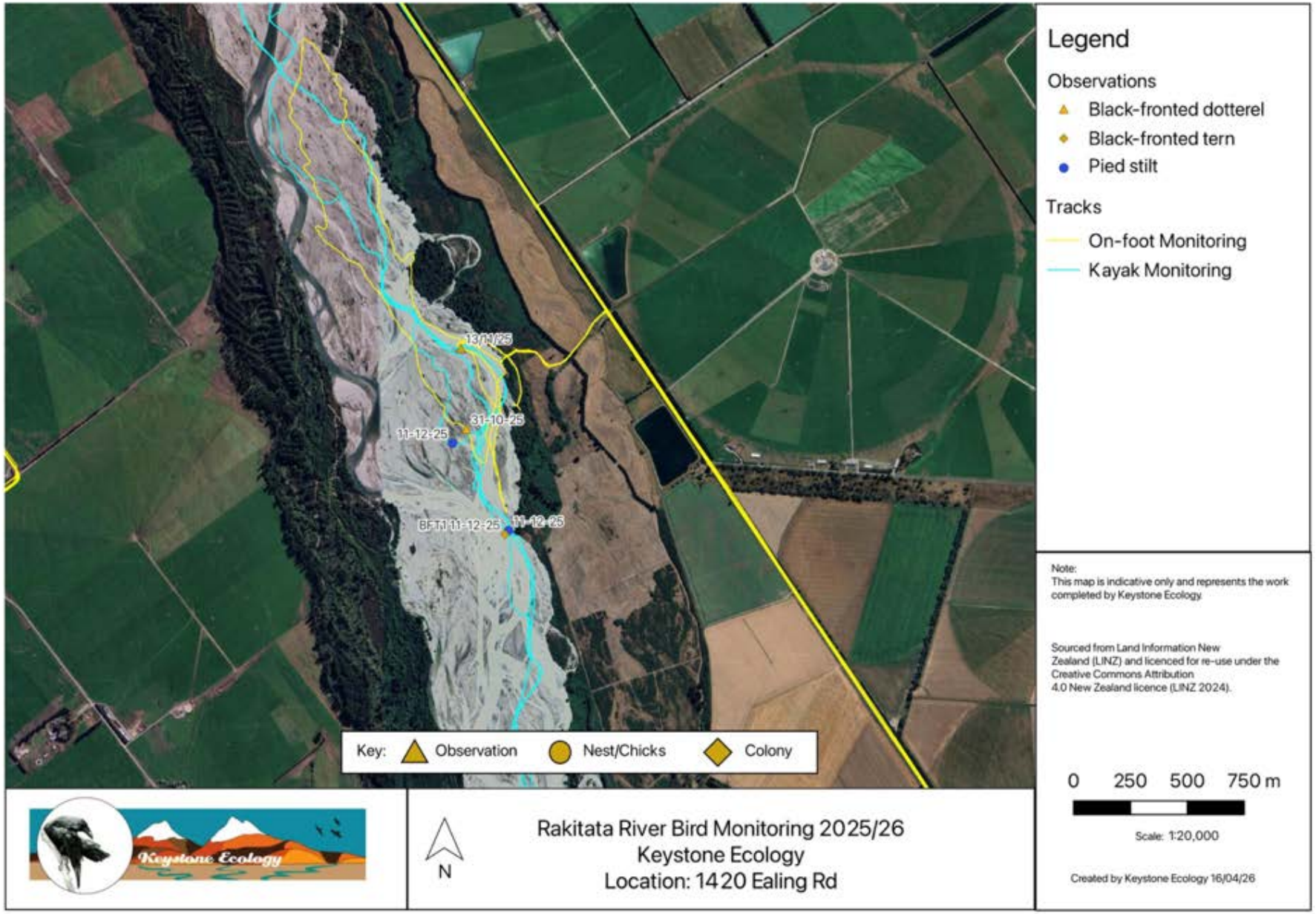
Black-billed gulls			
Location	***Peak number of birds counted nesting***	***Chicks observed***	***Comments***
-	-	-	-
Black-fronted terns			
Location	***Peak number of birds counted nesting***	***Chicks observed***	***Comments***
1420 Ealing Rd 1479457E, 5112851N (BFT1)	3 pairs	No	Located on 11/12/25 whilst monitoring by kayak. The colony was lowlying and contained three pairs, all incubating. the colony was washed out on 16/12/25 during a flood event peaking at 464m3/s.
Upstream of Rangitata Huts North 1480354E, 5107124N (BFT2)	4 pairs	No	Located on 23/12/25 whilst monitoring on-foot. On 29/12/25 a group of 20 non-breeding black-fronted tern were observed congregating nearby. The colony initially contained two pairs until an observation on 6/1/26 observed the colony expanded to four pairs. The colony was washed out on 12/01/26 during a flood event peaking at 769m3/s. All pairs are assumed to have been still at the incubation stage.

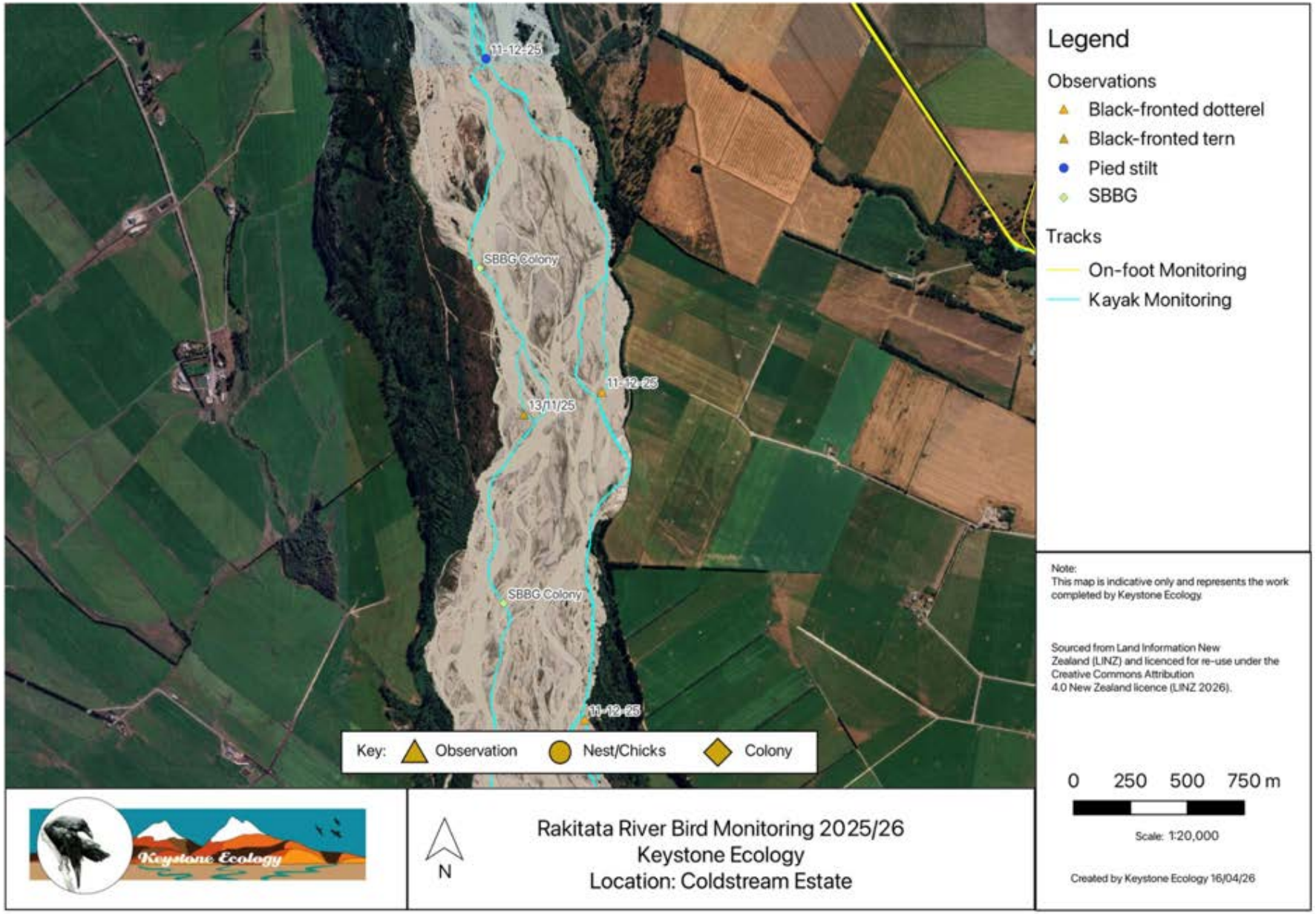
Table A2. Table of monitored black-billed gull and black-fronted tern colonies known to have produced fledglings this season:

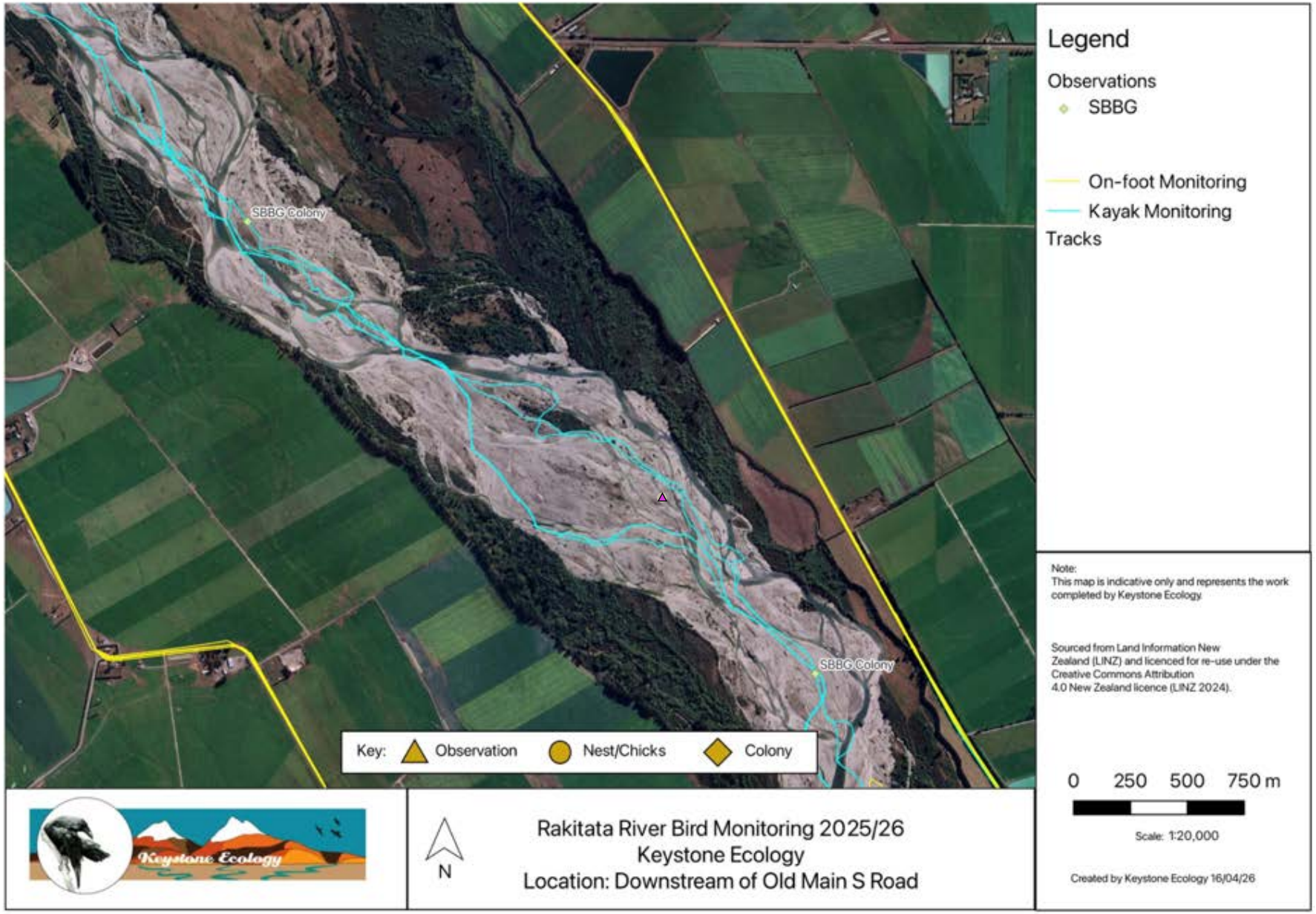
Black-billed gulls				
Location	***Peak number of birds counted (pairs)***	***Peak number of chicks counted***	***Estimated number of fledglings***	***Comments***
River mouth - on the spit between the lagoon and the ocean. 1481542E, 5106686N	2407	1592	713	The colony began to establish on the spit between the lagoon and the sea on the north side of the Rakitata. The first observation of black-billed gulls incubating eggs was on 26/11/25. The first observation of black-billed gull chicks was on 19/12/25. The high-count of chicks was recorded on 23/12/25 with the observed number 1592. Following a regular timeline up until this point, the subsequent period of time was marred with disturbance events and premature abandonment. Human disturbance is thought to be the main factor. On 26/01/26, 713 fledglings were confirmed as they were grouped up (with accompanying adults) where the main braid of the Rakitata meets the sea.
Black-fronted terns				
Location	***Peak number of birds counted (pairs)***	***Peak number of chicks counted***	***Estimated number of fledglings***	***Comments***
-	-	-	-	No black-fronted terns were recorded to produce chicks or fledglings.

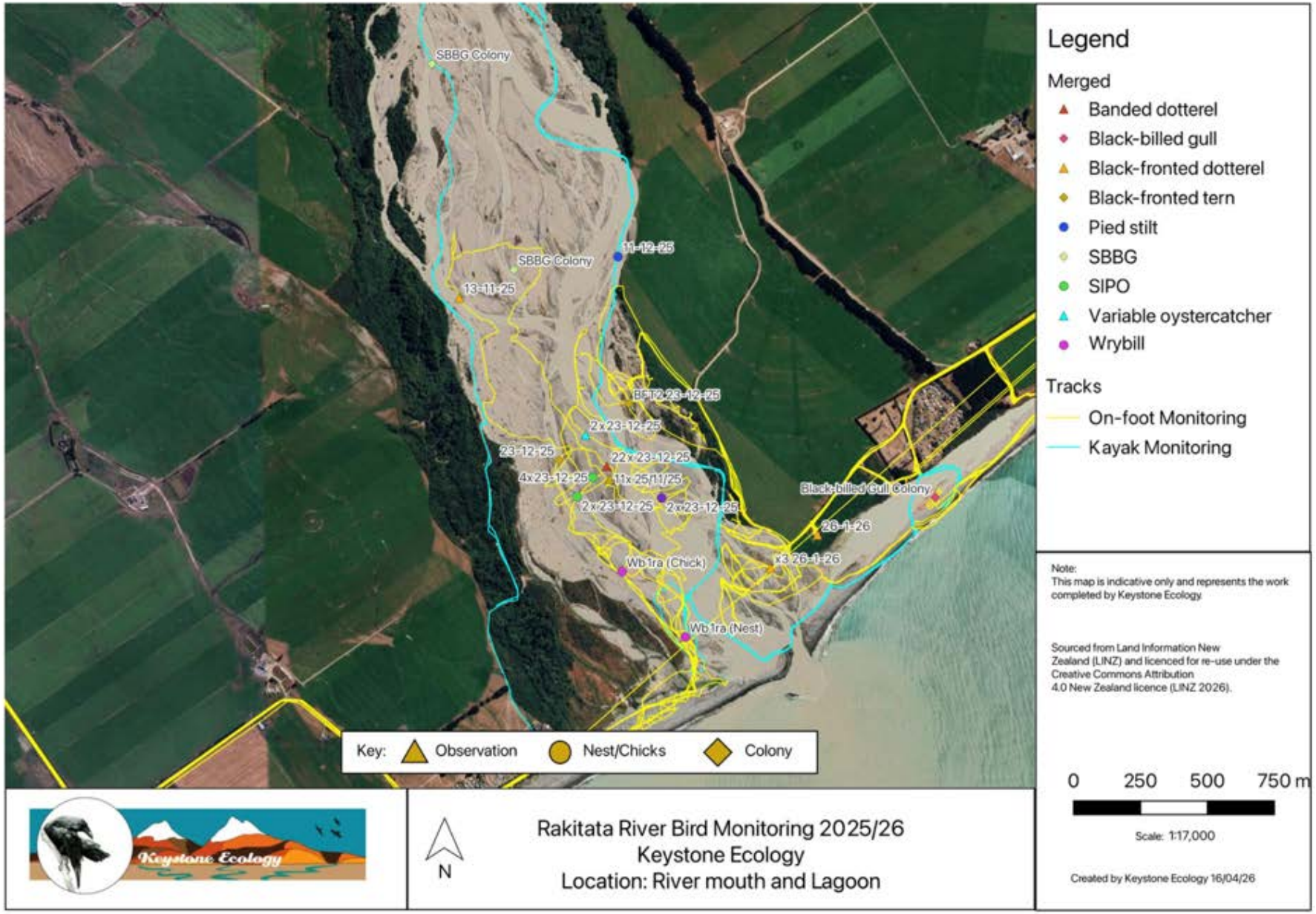
Appendix B: Maps of Monitored Nests, Colony Locations, and Observations with GPS Tracks 2025/26




13/11/25
31-10-25
11-12-25
BFT1 11-12-25
11-12-25
Key: Observation Nest/Chicks Colony
Legend
Observations
Black-fronted dotterel
Black-fronted tern
Pied stilt
Tracks
On-foot Monitoring
Kayak Monitoring
Note:
This map is indicative only and represents the work completed by Keystone Ecology.
Sourced from Land Information New Zealand (LINZ) and licenced for re-use under the Creative Commons Attribution 4.0 New Zealand licence (LINZ 2024).
0 250 500 750 m
Scale: 1:20,000
Created by Keystone Ecology 16/04/26
Keystone Ecology
N
Rakitata River Bird Monitoring 2025/26
Keystone Ecology
Location: 1420 Ealing Rd


11-12-25
SBBG Colony
13/11/25
11-12-25
SBBG Colony
11-12-25
Key: Observation Nest/Chicks Colony
Legend
Observations
Black-fronted dotterel
Black-fronted tern
Pied stilt
SBBG
Tracks
On-foot Monitoring
Kayak Monitoring
Note:
This map is indicative only and represents the work completed by Keystone Ecology
Sourced from Land Information New Zealand (LINZ) and licenced for re-use under the Creative Commons Attribution 4.0 New Zealand licence (LINZ 2026).
0 250 500 750 m
Scale: 1:20,000
Created by Keystone Ecology 16/04/26
Keystone Ecology
N
Rakitata River Bird Monitoring 2025/26
Keystone Ecology
Location: Coldstream Estate


SBBG Colony
SBBG Colony
Key: Observation Nest/Chicks Colony
Legend
Observations
SBBG
On-foot Monitoring
Kayak Monitoring
Tracks
Note:
This map is indicative only and represents the work completed by Keystone Ecology.
Sourced from Land Information New Zealand (LINZ) and licenced for re-use under the Creative Commons Attribution 4.0 New Zealand licence (LINZ 2024).
0 250 500 750 m
Scale: 1:20,000
Created by Keystone Ecology 16/04/26
Keystone Ecology
N
Rakitata River Bird Monitoring 2025/26
Keystone Ecology
Location: Downstream of Old Main S Road


SBBG Colony
SBBG Colony
11-12-25
13-11-25
BFT 23-12-25
2x 23-12-25
23-12-25
22x 23-12-25
4x 23-12-25
11x 25/11/25
2x 23-12-25
2x 23-12-25
Black-billed Gull Colony
26-1-26
x3 26-1-26
Wb 1ra (Chick)
Wb 1ra (Nest)
Key: Observation Nest/Chicks Colony
Legend
Merged
Banded dotterel
Black-billed gull
Black-fronted dotterel
Black-fronted tern
Pied stilt
SBBG
SIPO
Variable oystercatcher
Wrybill
Tracks
On-foot Monitoring
Kayak Monitoring
Note:
This map is indicative only and represents the work completed by Keystone Ecology
Sourced from Land Information New Zealand (LINZ) and licenced for re-use under the Creative Commons Attribution 4.0 New Zealand licence (LINZ 2026).
0 250 500 750 m
Scale: 1:17,000
Created by Keystone Ecology 16/04/26
Keystone Ecology
N
Rakitata River Bird Monitoring 2025/26
Keystone Ecology
Location: River mouth and Lagoon

Appendix C: Captured Drone Images of the Black-billed Gull Colony at the Rakitata River Mouth

APPENDIX D. EVIDENCE DISTURBANCE ACTIVITY AT THE BLACK-BILLED GULL COLONY

Photos presented in this part of the Appendix were taken on 6/01/26 when the colony was no longer present at the nest site. The premature departure from the site, combined with the following photos, indicates human-based disturbance. It is possible that dogs were also involved.

Figure D1. Evidence of black-billed gull feathers that appear to have been plucked from a carcass.

Figure D2. Deceased chicks in the foreground and in the centre of the image, an unhatched intact egg that is not within a nest.

Figure D3. A nest that has intact eggs following the abandonment of the colony. This suggests a disturbance occurred.

Figure D4. Egg shells inside the nest are not common under normal circumstances. Several reasons exist for this, of which disturbance and predation are possible causes.