PRR Internal Report 2026/01

Project River Recovery Annual Report 2026

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Te Papa Atawhai

Te Kāwanatanga o Aotearoa
New Zealand Government

Summary

- This report summarises Project River Recovery's (PRR) progress towards achieving its six key objectives during the period from 1 July 2025 to 15 June 2026.
- PRR's highest priority continued to be preventing weed invasions of the near-pristine upper rivers above lakes Pūkaki and Takapō. In the Tasman River, lupins and other weeds were targeted by ground control teams, and aerial spraying.
- PRR also delivered weed control at several other priority sites including in the Upper Ōhau River, Lake Poaka, Pūkaki River, Dobson Valley, Takapō River and Coal River.
- This year was the twenty-second year of trapping in the Tasman valley, a joint programme between PRR and the Department of Conservation's (DOC) kakī programme.
    - A total of 1,019 predators were caught in kill traps and live-capture traps this year.
    - A walk-through river bird survey and black-fronted tern nest monitoring were conducted to assess the effectiveness of the trapping network.
- This year was the seventeenth year of intensive predator trapping around an island-nesting black-fronted tern colony in the Upper Ōhau River (the tenth year since the trapping network was reduced from a 1km to 500m radius).
    - A total of 283 predators were caught in the kill trap network on the Upper Ōhau River.
    - Vegetation on the island (*Tern Island*) was controlled by hand weeding and herbicide spray, and fresh gravels were added to the upstream half of the island to enhance nesting habitat.
    - Black-fronted tern nest success was monitored only in October. For the second consecutive season a disruptive snow event has occurred in late October; and a large, black-billed gull colony nested on the island.
- Walk-through river bird surveys were completed in the Pūkaki, Upper Ōhau and Lower Ōhau Rivers for the third and final year of the current survey cycle.
- Black-fronted tern nest monitoring was carried out in the Takapō River to understand baseline breeding success at an unmanaged site with no predator control.
- The programme of flag-banding black-fronted terns to better understand natal site fidelity continued this year. A total of 13 large tern chicks were flag banded, all from the Tasman River.
- Robust grasshoppers were monitored at Patersons Terrace, Fork Stream, and the Pūkaki, Snowy and Lower Ōhau Rivers to understand long-term population trends. Distribution surveys were also conducted at Snowy River and Fork Stream for the second year, confirming the species distribution at those sites aligns with historic records. PRR also continued to work on evicting lizards from the Patersons Terrace robust grasshopper fence.
- Populations of Lakes skinks and Mackenzie skinks were surveyed again this year.
- Twelve wetlands were surveyed for Australasian bitterns using acoustic recording devices.
- PRR continues to maintain nine built trout barriers and monitor two natural waterfall barriers to protect native fish species.
- PRR continued to deliver weed control and water-level manipulation at Ruataniwha wetlands, with a focus on benefiting threatened ephemeral plants.
- PRR spent $817,617 in the 2025-26 financial year.

Cover image: The Godley River delta by Dave Murray ©

1. Introduction

Project River Recovery (PRR) commenced operations in 1991 following the establishment of a compensatory funding agreement between the Department of Conservation and electricity generators in the upper Waitaki Basin which recognised the adverse impacts of hydroelectric power development on braided river and wetland ecosystems. Since the programme was founded, it has focussed on maintaining the integrity of braided river ecosystems by protecting habitats and species from the impacts of introduced and invasive plants and mammals. These and other goals are set out in the current interim strategic plan (Nelson et al., 2020) which replaces the 2012 – 2019 plan (Rebergen & Woolmore, 2015). This annual report summarises progress towards the six key objectives identified in the strategic plan for the year from the 1 July 2025 to 15 June 2026, which was Project River Recovery's official final day of delivery.

2. Staff

Dean Nelson was the project's Principal Ranger.

Jennifer Schori continued to be seconded into the Senior Ranger role.

The project's biodiversity and outcome monitoring were delivered by Biodiversity Rangers Sam Turner, and Tom Goodman who filled Jennifer's substantive role for most of the year. Emily Hewison filled the seasonal ranger role over the summer period.

The project's predator control operations were led and delivered by Ranger Felix Keys.

PRR also utilised members of the DOC Twizel team to support the delivery of weed control, predator control and threatened plant work this year.

3. Project delivery

The delivery of Project River Recovery is guided by a strategic plan that outlines the work objectives of the project. Each strategic plan normally spans consecutive seven-year cycles, allowing regular review, reporting, and realignment. The previous strategic plan spanned 2012 to 2019 (Rebergen & Woolmore, 2015), and PRR is currently working to an interim strategic plan (Nelson et al., 2020) that was prepared to lead the project through until the expiry of the generators' operating consents.

This year was the final year of delivery of PRR. The project officially transitioned into Kahu Ora on 16 June 2026, following the renewal of Meridian's operating consent.

4. Progress towards objectives of the strategic plan

PRR's progress towards achieving the objectives of the current interim strategic plan is summarised below. Detailed reports of some work programmes are recorded through PRR's internal report series and are available on request.

4.1 Objective 1: Maintain indigenous biodiversity; protect and restore terrestrial and aquatic river and wetland habitat and the ecological communities within it by controlling and where possible, eradicating invasive weeds

PRR gives the highest priority to preventing new incursions of invasive weeds and removing newly established infestations at priority locations, especially in the upper catchment rivers above lakes Pūkaki and Takapō. Priority sites are generally still relatively 'clean' in terms of the number of weed species and the extent of their distribution, but may include other sites where there are high biodiversity values present. The total area of braided-river habitat in the upper Waitaki basin is approximately 32,000 hectares.

4.1.1 Tasman River

In the lower Tasman River (between the delta and the transmission lines), predominantly Russell lupin (Figure 1) was controlled by contractor ground crews. Other weeds encountered (e.g., broom, gorse, willow, false tamarisk) were also sprayed. False tamarisk is a relatively recent arrival in the Mackenzie Basin and strenuous efforts are being made to ensure that it doesn't establish. As per recent years, all the upper Tasman River, and Birch Hill delta were controlled by aerial spot spraying from a helicopter. Other feeder streams and rivers (Hoophorn, Black Birch, and Kitchener Streams plus the Hooker River) traditionally controlled by PRR were covered under International Visitor Levy (IVL) funding for weed control in Aoraki Mt Cook National Park. Aerial control is more cost effective and allows greater accessibility to hard-to-reach parts of the riverbed than using ground crews. It also enabled large patches of Russell lupins to be identified for ground crews to control as helicopter spot spraying, while efficient on scattered plants, becomes much more expensive in large, concentrated patches.

Figure 1. A Russell lupin plant growing near a water channel in the Tasman River.

4.1.2 *Tern Island* vegetation control

The Upper Ōhau River supports a nationally significant breeding colony of tarapirohe/black-fronted terns (*Chlidonias albostriatus*), which return annually from coastal wintering areas to breed on a gravel island colloquially named *'Tern Island'* by the project team. Weed management was undertaken on both *Tern Island* and an adjacent island upstream to maintain open habitat and reduce potential predator cover. Dense dead stalks, primarily of woolly mullein (*Verbascum thapsus*) and viper's bugloss (*Echium vulgare*) were removed by hand from the island on the 8th and 10th of September 2025 (Figure 2). This greatly reduced vegetative obstruction of nesting areas and improved accessibility for nesting terns. This also enhanced the effectiveness of subsequent herbicide application.

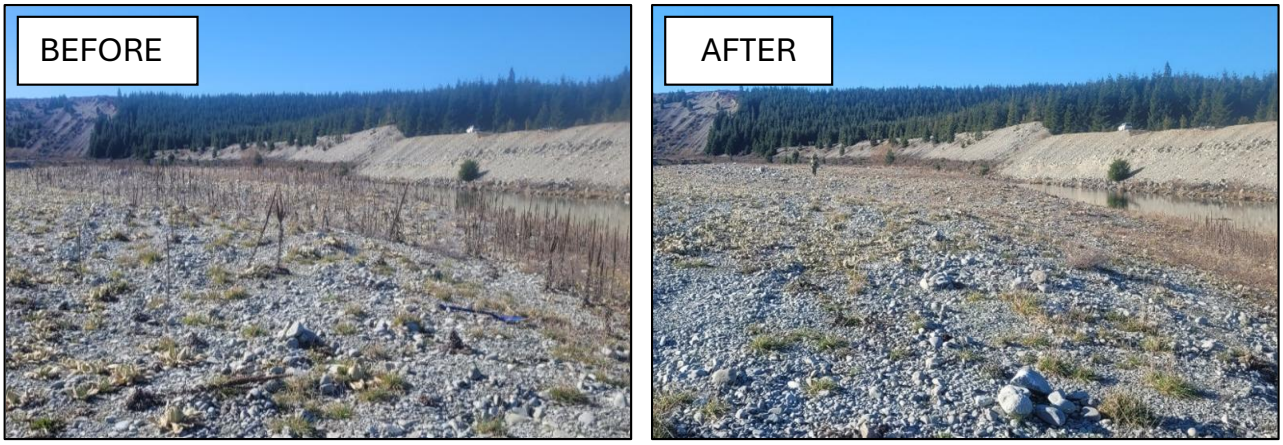

Figure 2. Before and after manual removal of woolly mullein and viper's bugloss from *Tern Island* (Upper Ōhau River), 8-10 September 2025, improving nesting habitat for black-fronted terns.

Tern Island was sprayed with herbicide using a drone on the 11th of September 2025. Glyphosate spray mix was applied over 1.32 ha (Figure 3). This was supplemented with ground spraying of the island's margins to target grasses growing along the edges. A second drone application of herbicide was completed after the breeding season on the 9th of March 2026. This time, the spray flight path had denser coverage to target the dense patches of vipers bugloss and included the water's edge to target common couch grass (*Elytrigia repens*; Figure 3). Aerial drone spraying was generally effective in reducing weed cover. Operational time to spray *Tern Island* (including edges) and the upper island was 43 minutes, comparatively this takes multiple days when manually sprayed.

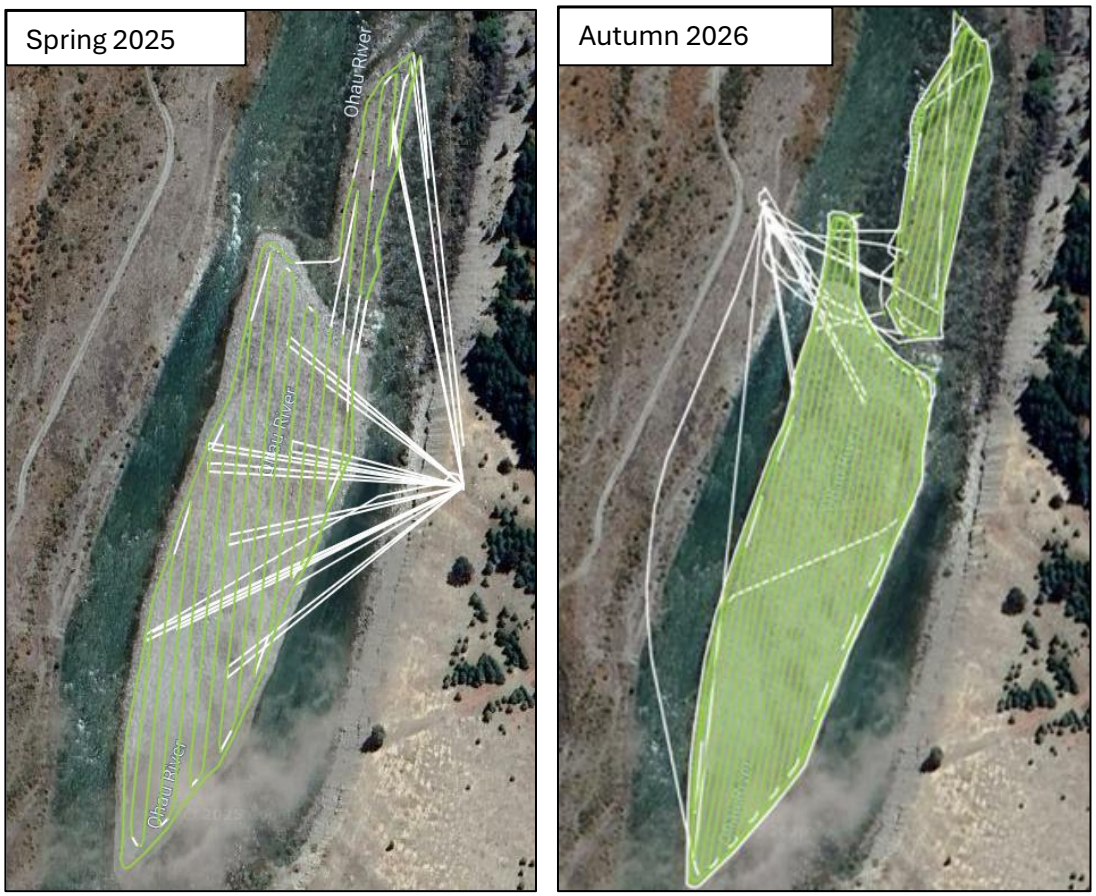

Figure 3. Drone flight paths for aerial herbicide application across *Tern Island* and the upstream island: initial treatment (left; 11 September 2025) and higher coverage follow up application including island edges and shoreline margins (right; 9 March 2026).

4.1.3 Improving habitat quality on *Tern Island* through the addition of gravel

On the 18th of March 2026 PRR collaborated with Fish and Game to add 690m^3 of fine 'AP20' sized gravel (all passing <20mm) to the upper section of *Tern Island* to enhance nesting habitat for black-fronted terns. The edges of the island were not gravelled to avoid loss of gravel in high water events (Figure 4). An all-terrain truck or "Moxy" was used to deliver up to 40 tonnes of gravel to *Tern Island* per trip (Figure 4), and a 20-tonne digger was used to make a smooth crossing for the Moxy across the river, and to spread the gravels out over the surface of the island. Traps and bait stations on the island were removed prior to the work being done and were reinstated after completion of the work.

Figure 4. An aerial image of *Tern Island* showing where the finer gravel was added to improve nesting habitat (top left). Upper end of *Tern Island*, viewed from the true right bank of the Upper Ōhau River, showing newly deposited gravels and unmodified river margins (top right). The all-terrain truck (or "Moxy") delivering gravels to *Tern Island* (bottom left and right).

4.1.4 Patersons Terrace vegetation trial

PRR trialled grading as a method to mechanically remove weeds from the Patersons Terrace grasshopper habitat and expose more gravels. A short 100m section of the road was graded and exposed a mix of gravels and dirt (Figure 5). PRR will monitor how the substrate changes with exposure, and how the grasshoppers respond to the newly exposed substrate.

Figure 5. The Patersons Terrace road before (left) and after (right) mechanical removal of vegetation using a grader.

4.1.5 Pūkaki River

Lizard habitat enhancement at Simons Pass Conservation Area continued with extensive pine removal along the terrace, funded by Ministry for Primary Industries (MPI; Figure 6). Wilding pine trees occurring within the sensitive lizard habitat (boulder/cobble areas on the slope) were cut, pasted and removed off the slope by hand or with a winch. Felled trees were removed off the slope so that interstitial spaces between the cobbles, which provide refuge for lizards, were not filled in with needles and woody debris. Removing the trees also maintained open space for the lizards to bask. Dense stands of pine occurring elsewhere on the terrace were aerially sprayed.

Figure 6. Photo point monitoring site SPM 05 at the Pūkaki River terrace before (left) and after wilding pine control (right). Photos: PRR.

4.1.6 Other Weed Control

This year, PRR also delivered weed control at the following sites:

- **Fork Stream**. Russell lupins and broom in Fork Stream above and below the general area of the Mackenzie District Council water intake for Takapō were sprayed by ground contractors. Fork Stream is a key weed source for the Takapō River and as PRR contributes to a multi-agency weed control programme in the Takapō, it makes sense to limit weed spread from Fork Stream.
- **Upper Ōhau River**. Exotic trees, predominantly eucalyptus and silver birch, were frilled and filled on several terraces in the Upper Ōhau River to improve habitat quality for Lakes skinks.
- **Dobson Valley**. PRR contributed $20,000 to the ECan led multi-year, landscape scale weed control project in the Dobson Valley. It aims to control elderberry, cotoneaster, buddleia, willows, and Russell lupin, as well as some miscellaneous garden escapees (such as raspberry, gooseberry, currant, and flowering cherry). The project outcomes align well with PRR's weed management objectives which include removing priority weeds from Mackenzie Basin rivers and improving wetlands through willow control. ECan, LINZ and the Glen Lyon Station also contribute funding to this project.
- **Takapō River**. PRR also contributed a total of $35,440 towards the annual weed control programme carried out by ECan in the upper Takapō River, a river which provides habitat for threatened species including kakī, black-fronted terns and robust grasshopper.
- **Coal River**. Gorse and broom were sprayed using a drone in a reach of the Coal River between the Lilybank Rd bridge and the Godley River confluence. LINZ and DOC funded the spraying of weeds in the reach upstream of the bridge. The Coal River is a key tributary and seed source for the delta area of the Godley River.

4.2 Objective 2: Test and where possible, improve the effectiveness of and implement experimental predator control for population recovery of braided river and wetland fauna

4.2.1 Tasman Valley

The Tasman Valley project's goal is to reduce predation of braided river birds to a level where depleted populations are recovering, and large populations are in a stable state. The project takes a large-scale approach, using a wide variety of control methods that are applied throughout the year. Success of the project is assessed on achieving target increases in fledging success and population growth for a range of river birds. PRR continues to service the extensive trap network of 2,541 traps (kill and live-capture traps) which extends from the Tasman River delta up to the Hooker and Tasman lakes (Figure 7). Trap lines also extend up adjacent valleys to reduce predator influx from the surrounding valleys into the Tasman River (Figure 7).

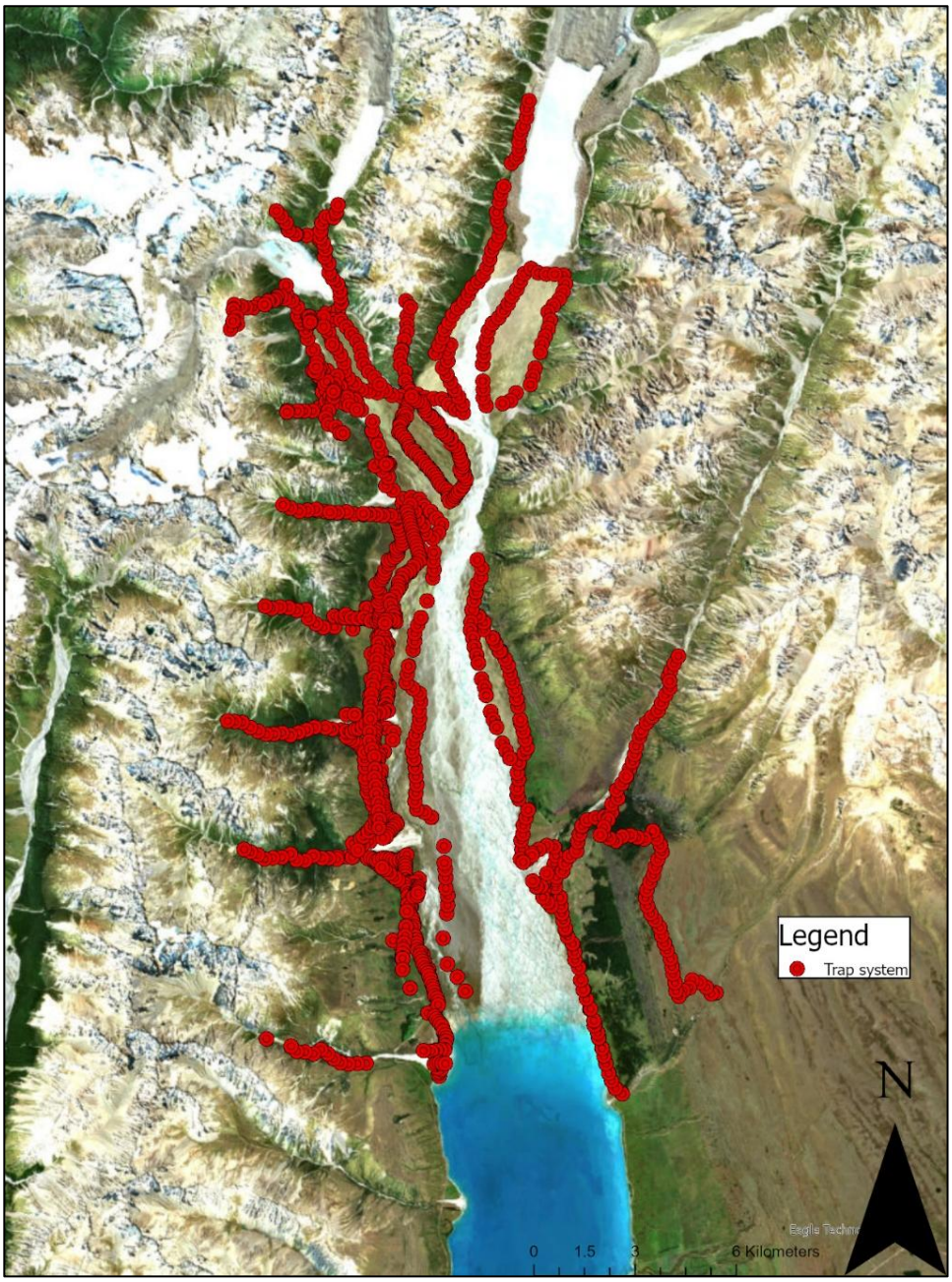

Figure 7. Tasman Valley trapping network of kill traps and live capture traps (*n*=2541) managed by PRR.

Predator control

Predator control efforts in the Tasman Valley removed 1,019 predators between the 1st of March 2025 and the 29th of February 2026 using both kill-trap and live-capture methods (Table 1). Hedgehogs were the most frequently captured predator (*n* = 382 individuals captured), followed by stoats (*n* = 304), possums (*n* = 116), weasels (*n* = 93), cats (*n* = 69), ferrets (*n* = 37) and rats (*n* = 18). Most of these individuals were captured in the valley's kill-trap network (Table 1).

Table 1. The total number of target and non-target species caught in Tasman River predator kill trapping network between the 1 March-28/29 February, seasons 2017-18 and 2025-26.

Year	2017 -18	2018 -19	2019 -20	2020 -21	2021 -22	2022 -23	2023 -24	2024 -25	2025 -26
Target species									
Cat	117	82	123	101	93	47	72	63	56
Ferret	35	26	31	43	51	37	34	52	37
Hedgehog	672	488	525	708	409	245	492	525	372
Rat	4	14	44	34	8	7	28	27	17
Possum	9	4	6	17	11	67	61	54	12
Stoat	334	476	366	470	362	228	421	351	288
Weasel	33	31	44	44	22	35	67	71	93
Total	**1204**	**1121**	**1139**	**1417**	**956**	**666**	**1175**	**1143**	**875**
Non-target species									
Rabbit	197	238	249	334	16	20	63	51	34
Mouse	26	41	28	19	15	4	17	42	20
Other	23	24	9	15	6	9	17	9	11
Total	**246**	**303**	**286**	**368**	**37**	**25**	**97**	**102**	**65**
Grand Total	**1450**	**1424**	**1425**	**1785**	**993**	**699**	**1273**	**1245**	**940**

Kill trapping network

The highest number of individuals caught in a single month occurred in February 2026, with 163 individuals captured in kill traps (Figure 8). This was comprised of mostly hedgehogs (*n* = 72 individuals captured) and stoats (*n* = 62), which were the highest monthly totals recorded for any species during the year. The second-highest month was March 2025 with 155 individuals captured, again largely due to high numbers of hedgehogs (*n* = 65 individuals captured), stoats (*n* = 41) and weasels (*n* = 27). The total number of individuals captured was the lowest in winter and spring, reaching their lowest point in October 2025 (*n* = 10 catches) before increasing steadily over summer (Figure 8). Other notable species peaks included cats, which reached a maximum of 11 catches in April, ferrets, which peaked at 9 catches in both March and June, and rats, which recorded their highest monthly total of 4 catches in March. Weasel catches were the highest since 2017 with 93 individuals caught in total.

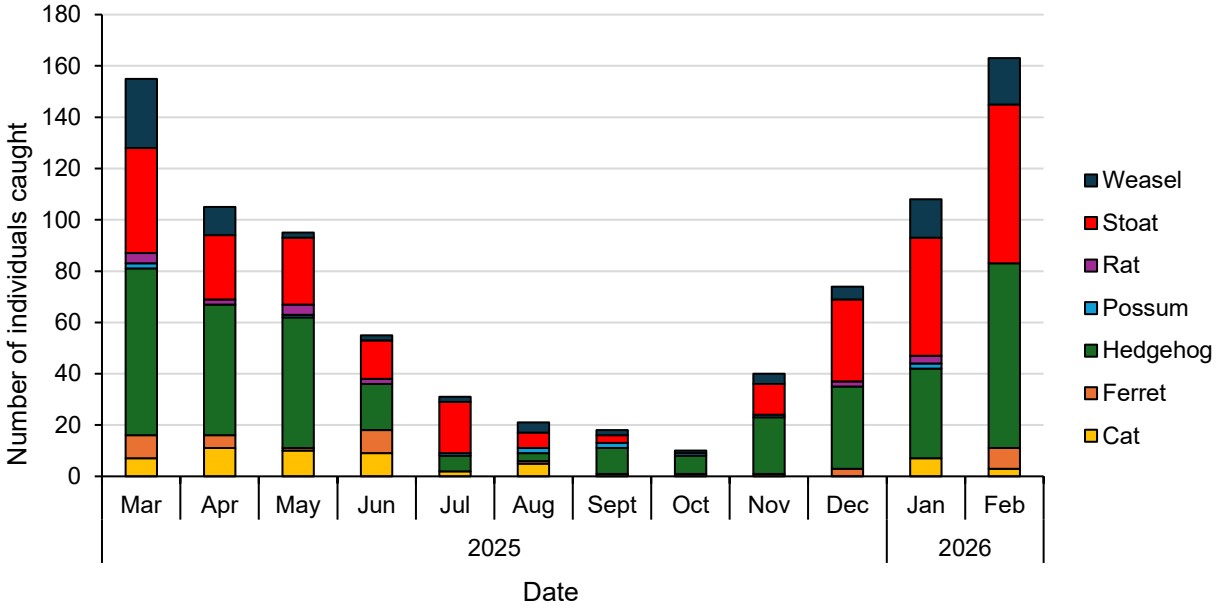

Figure 8. Total monthly captures of predator species caught in the Tasman Valley predator kill trapping network between the 1 March 2025 and the 28 February 2026.

Live-capture network

The Tasman Valley kill trapping network is supplemented by two additional live-capture trap networks that use leg-hold and cage traps. Leg-hold traps are deployed seasonally in autumn, with blocks of traps being opened on rotation each year and checked for 10 consecutive nights. Leg hold trapping is an effective way to target feral cats that have become trap shy and will not interact with kill traps. This year, leg-hold traps were deployed in April 2025 in Glentanner Reserve and successfully caught 15 stoats, 10 cats, 10 hedgehogs, 4 possums and 1 rat (Figure 9). Cage traps are used around Aoraki Village to target cats and possums. These traps are serviced by Aoraki DOC staff and volunteers. Live-capture cages were set year-round in Aoraki Village around residential areas and local business. A total of 104 predators were caught and dispatched, comprising of 100 possums, 3 cats and 1 stoat (Figure 9).

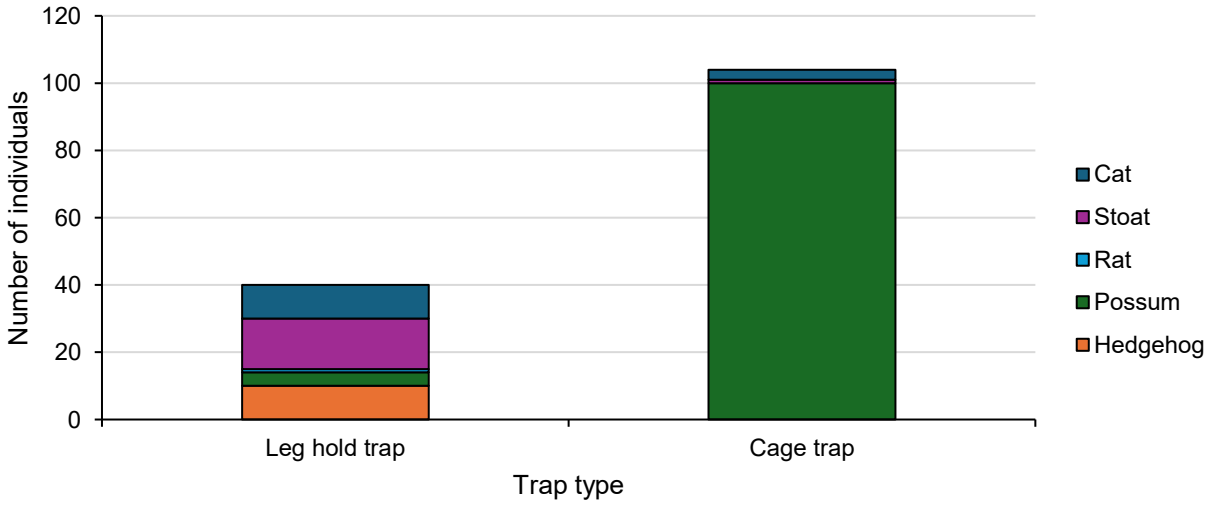

Figure 9. The total number of predators captured and dispatched using live-capture methods in the Tasman Valley predator control network between thethe 1 March 2025 and 28 February 2026.

Changes in the kill trap network

Additional kill trap lines were installed around Twin Stream and the Jollie River confluence to target the high number of predators that appear to be moving from the upper side valleys out onto the riverbed. Additional kill traps were also placed on river islands at other tributary confluences to target predators travelling down the tributaries onto the Tasman River.

Night shooting

A total of 3 feral cats were shot over 3 nights of shooting this season. Night shooting for lagomorphs was delivered across the entire length of the Tasman River on the true right side in April and again in May to reduce their impacts on native braided river vegetation, and to indirectly control predator populations. A total of 64 rabbits and 111 hares were removed over 12 nights of shooting.

Outcome monitoring

Project River Recovery monitors the outcome of the predator trapping by monitoring the breeding success of the Nationally Endangered black-fronted tern/tarapirohe (*Childonias albostriatus*; Robertson et al., 2021). Five breeding colonies, ranging from nine to 79 nests in size, were monitored in the Tasman River this season (Turner 2026a). A total of 138 nests were recorded, of which 99 had known outcomes. Hatching success (defined as at least one chick hatched from a nest) was 54%. Of the nests that failed, flooding was the main cause (accounting for 48% of failures; Figure 10). Trail cameras captured the impacts of flooding which varied in severity from rainfall pooling in the nest bowl to significant channels flooding the nest and the surrounding area. Predation was the second most common cause of nest failure (accounting for 40% of failures). Trail cameras captured nests being depredated by kāhu, hedgehogs and rats (Figure 11). For a second consecutive year there was a heavy snow event in late October. This timing coincides with when many braided river birds may be incubating eggs or have young chicks, and it can have significant impacts on their seasonal breeding success. The impact of this year's snow for black-fronted terns in the Tasman River is unknown because we did not have a record of the nests prior to the snow event.

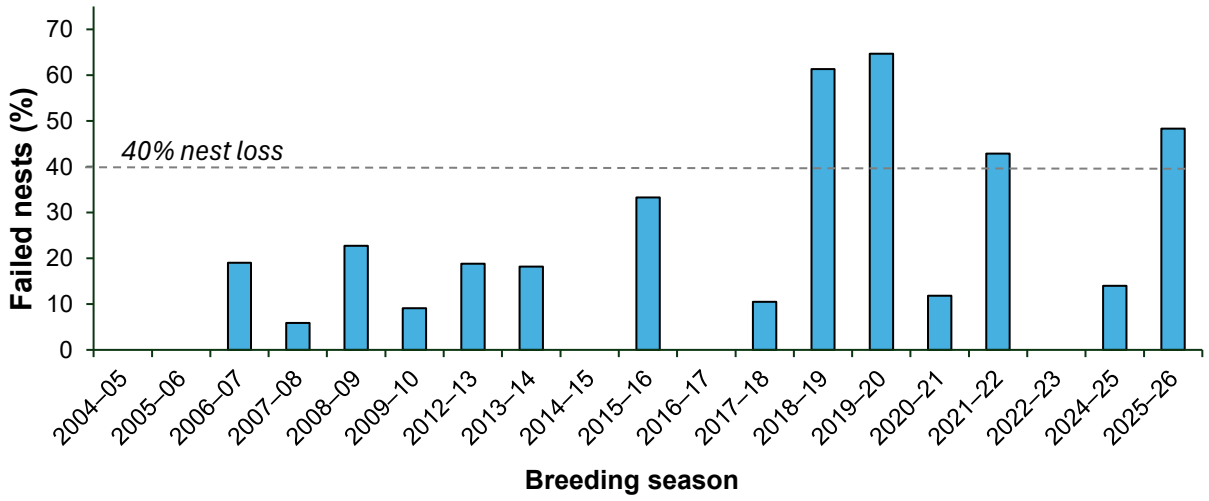

Figure 10. The percentage of monitored black-fronted tern nests that failed because of flooding in the Tasman River during the breeding seasons 2004-05 to 2025-26.

Figure 11. A selection of trail camera detections of predation events of black-fronted tern nests on Tasman River during the 2025-26 season. Kahu depredation at the Jollie colony (left). Hedgehog depredation at the airport colony (middle) and rat depredation at the Jollie colony (right).

The annual Tasman River bird survey was conducted on 12th of November 2025, with 10 observers recording birds from the Mount Cook Airport to the delta. The survey recorded 22 river bird species and 1724 individual birds, including six threatened species (Table 2). This year, the highest number of black-fronted terns (*n* = 816 individuals) and South Island pied oystercatcher count (*n* = 140) were recorded since 2004. Wrybill counts were also high (*n* = 188) compared to other survey year.

Table 2. Results of river bird surveys on the Tasman River between 1992 and 2024. Results from the three-year cycle from 1992 to 1994 and the first 11 years following commencement of the Tasman predator control project (2004-2014) are averaged, as is the 5-year period between 2017 and 2021.

Species, threat ranking*		1992-94 (range)	2004-14 (range)	2017-21 (range)	2022	2023	2024	2025
Banded dotterel/tūturiwhatu	NV	565 (523-599)	658 (395-858)	721 (568-946)	729	785	518	599
Black stilt/kakī	NC	2 (1-5)	11 (2-32)	8 (2 -17)	11	23	17	13
Black-backed gull/karoro	NT	585 (537-609)	240 (95-413)	51 (29 – 64)	51	13	45	77
Black-billed gull/tarāpuka	D	13 (7-25)	25 (5-113)	129 (60 – 218)	226	505	104	132
Black-fronted tern/tarapirohe	NE	121 (79-175)	137 (47-217)	388 (192 -648)	539	598	353	816
Caspian tern/taranui	NV	2 (2-2)	1 (0-3)	2 (0 – 3)	5	2	2	2
Hybrid stilt	n/a	4 (1-9)	4 (0-10)	1 (0 – 4)	0	6	0	0
Pied stilt/poaka	NT	17 (12-21	11 (0-54)	5 (1 – 8)	7	2	3	6
South Island pied oystercatcher/tōrea	D	60 (46-76)	72 (52-109)	89 (62 – 123)	108	128	95	140
Spurwing plover	NT	19 (17-23)	20 (5-37)	15 (6 – 25)	16	19	18	15
Swamp harrier/kāhu	NT	5 (0-11)	3 (1-3)	3 (0 – 9)	3	1	0	0
Waterfowl and shags	n/a	366 (334-407)	406 (177-842)	286 (154 – 494)	249	269	299	302
White-faced heron/matuku	NT	2 (1-2)	1 (0-3)	2 (0 – 7)	5	1	6	5
Wrybill/ngutu pare	NV	133 (120-151)	110 (32-165)	147 (122 – 207)	192	129	137	188

*Threat rankings, from most to least threatened: Nationally Critical (NC), Nationally Endangered (NE), Nationally Vulnerable (NV), Declining (D), Not Threatened (NT).

4.2.2 Upper Ōhau River/*Tern Island*

Trapping for predatory mammals

Project River Recovery began predator control in the Upper Ōhau River in 2009. Its aim was to test the effectiveness of intensive localised predator control on improving tern breeding success and increasing colony size (Anderson, 2011). The initial predator control network was designed as a 1km “Ring of Steel’ which combined predator trap systems and poison baits being placed in the landscape surrounding *Tern Island*, an island in the upper section of the Ōhau River where a large colony of tarapirohe / black-fronted terns (*Childonias albostriatus*) breed annually. In 2016 the predator control network was scaled back to a 500m radius around the island to see if similar results could be replicated with lower costs and effort. Since then, the network has been extended down to Lake Ruataniwha, with the aim of intercepting predators moving up the lake and river margins towards the tern colony. The predator control network currently consists of 639 kill traps that target feral cats, mustelids hedgehogs, possums and rats (Figure 12) and 152 toxin bait stations targeting rats (Figure 13; Keys & Turner, 2026).

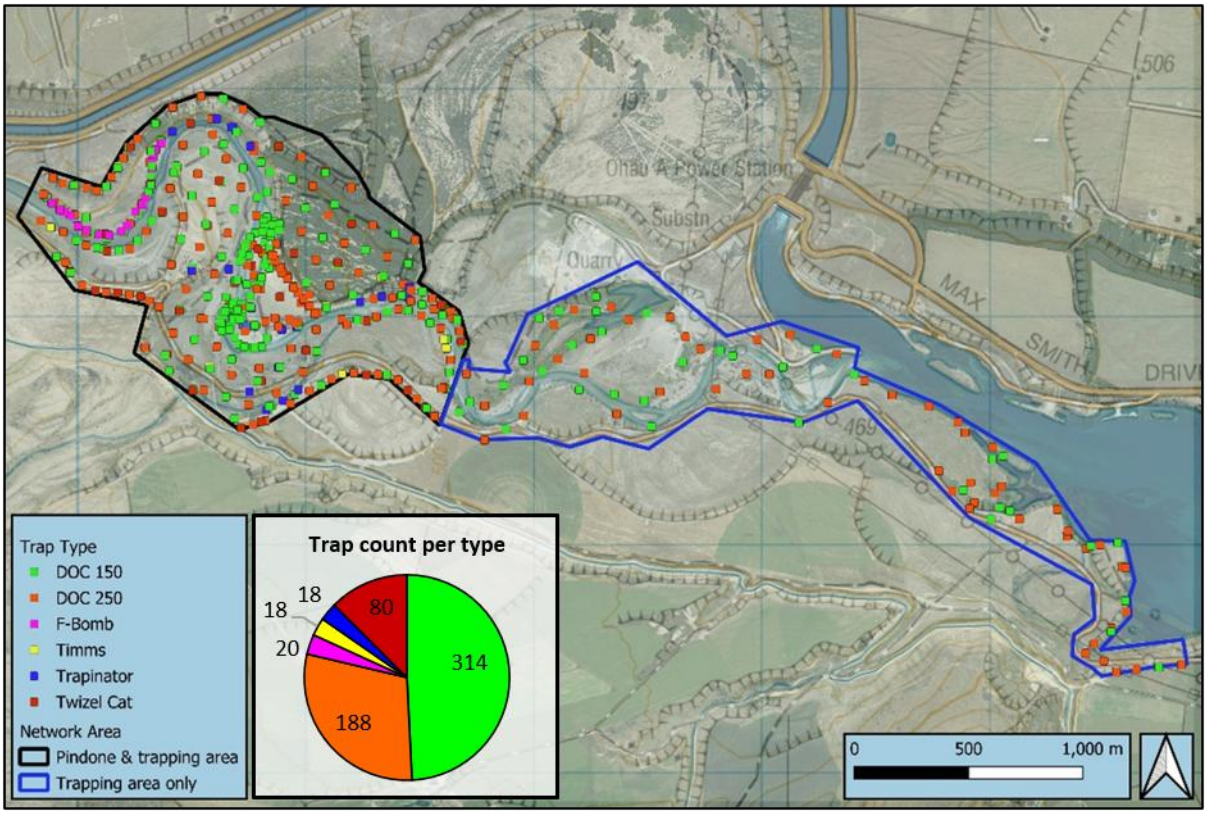

Figure 12. The Upper Ōhau River predator control kill trap network in 2025-26, and trap network composition (*n* = 638 traps in total).

A total of 512 animals were captured in kill traps between the 1st of March 2025 and the 28th of February 2026. Of these, 283 were target species (54%) and 247 were non-target (46%). Rabbits, a non-target species, were the most frequently caught animal in the traps and accounted for 39% of total captures (Table 3). Among predatory species, hedgehogs were the most frequently caught (13% of total captures), followed by ferrets and feral cats (both comprising 10% of total captures; Table 3). The highest number of possums and rats since trapping began were captured this year. Stoats (2% of total captures) and weasels (0.6%) continued to be captured infrequently (Table 3).

Table 3. Summary of total annual kill trap catches within the Upper Ōhau predator trap network from 2010 - 2026. Years begin from 01 March to 28/29 February. Trapping occurred across a was 1-km radius around *Tern Island* until 2016, when the network was reduced to a 500m radius.

Species	2010-16 (min, max)	2016 -17	2017 -18	2018 -19	2019 -20	2020 -21	2021 -22	2022 -23	2023 -24	2024 -25	2025 -26
Trap checks		*36*	*17*	*15*	*22*	*24*	*26*	*12*	*23*	*14*	*11*
No. Traps		*365*	*365*	*365*	*365*	*371*	*371*	*499*	*499*	*669*	*638*
Target species											
Cat	76 - 94	60	65	58	38	36	43	22	59	67	54
Ferret	101 - 208	65	58	83	74	73	91	79	135	65	54
Hedgehog	157 - 205	88	106	109	127	99	71	55	48	92	70
Norway Rat	9 - 33	6	21	27	24	18	17	24	15	27	41
Possum	7 - 20	14	11	8	14	13	26	18	15	25	48
Stoat	16 - 29	16	16	4	6	9	11	4	26	28	13
Weasel	0 - 10	5	5	4	8	2	2	2	7	2	3
Total	**390 - 512**	**254**	**282**	**293**	**291**	**250**	**260**	**204**	**305**	**306**	**283**
Non-target species											
Rabbit	50 - 104	69	210	91	176	163	175	186	125	157	207
Mouse	20 - 199	-	-	-	-	20	9	8	8	11	3
Other	8 - 14	-	-	-	-	1	36	21	36	38	34
Total	**130 - 280**	**69**	**210**	**91**	**176**	**184**	**221**	**215**	**169**	**206**	**244**
Grand Total	**540 - 778**	**323**	**492**	**384**	**467**	**413**	**480**	**419**	**474**	**512**	**527**

Pindone control Norway rats

Pindone was used again this year to control Norway rats in the Upper Ōhau River around *Tern Island* (Keys, 2026). Pindone bait stations (*n* = 152) were positioned 50m apart along river margins 500m up-and down-stream and around the perimeter of *Tern Island* (Figure 13). Bait stations were set with 300g Pindone Possum and Rat cereal pellets (0.5 g/kg) from the 19th of August 2025 until the 28th of February 2026.

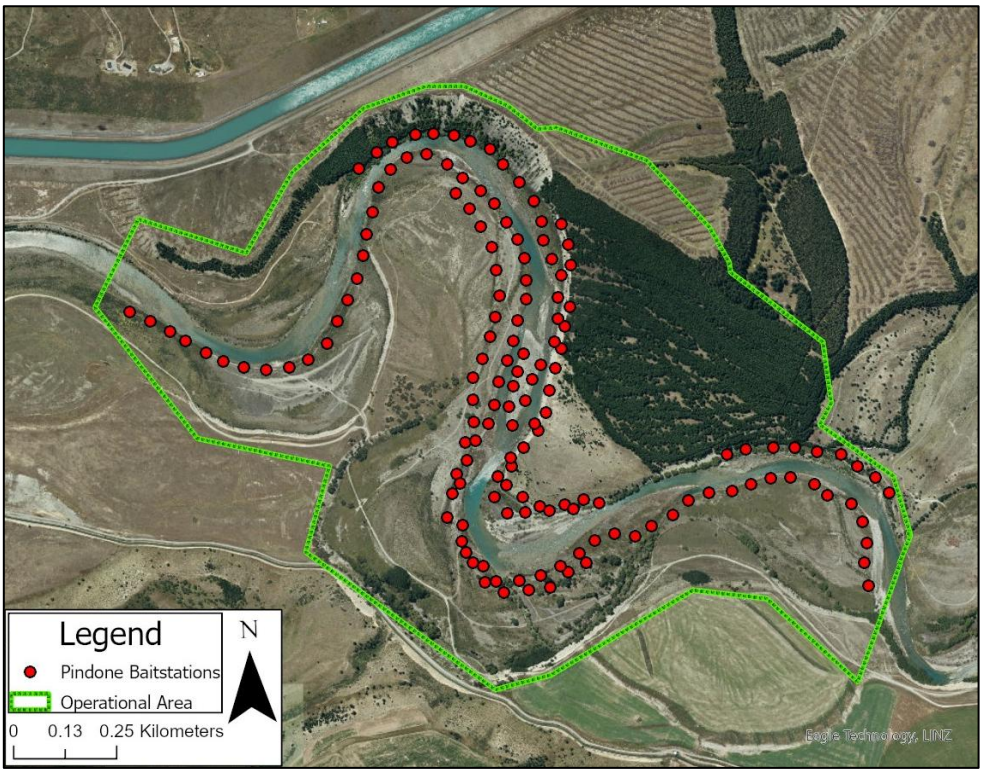

Figure 13. The Upper Ōhau River pindone bait station network in the 2025-26 season.

Bait take was low in early spring following deployment but increased significantly in November 2025 through to January 2026 (Figure 14). Bait take from stations was highest on the true left of the Ōhau River, above *Tern Island* in the forested area and on the terrace area directly downstream of the island. Bait take was also comparatively high in the vegetated area downstream of the island on the true right side of the river. Low rat detection numbers from the two visits of the rodent detection dog team suggest good uptake of pindone within the local rat population.

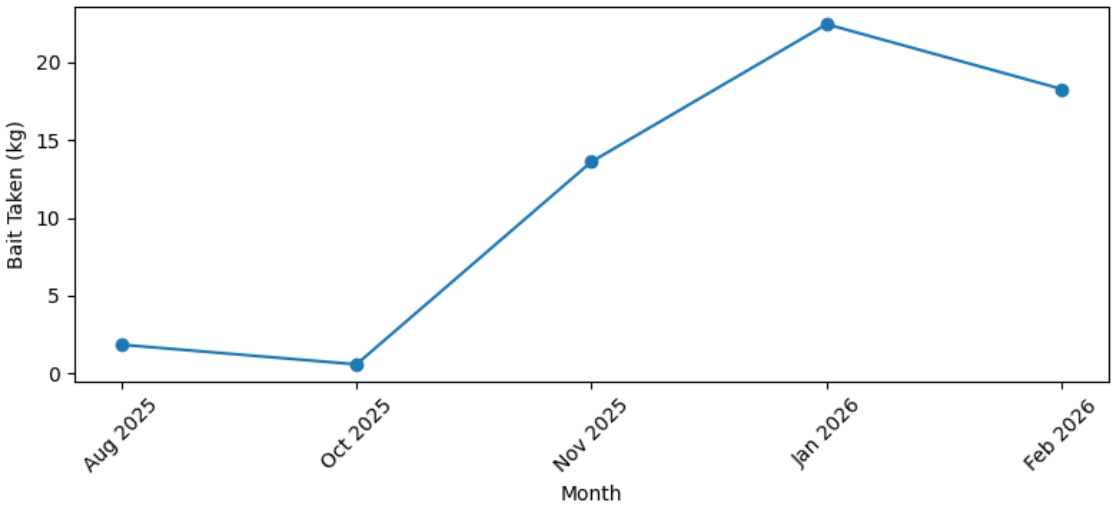

Figure 14. Pindone bait taken (kg) in the Upper Ōhau River predator control network between 19 August 2025 and 28 February 2026.

Rodent and mustelid detection dogs

A rodent detection dog and handler from Wildlife Protection Services and a mustelid detection dog team from the DOC Conservation Dogs Programme assisted PRR's predator control efforts around *Tern Island* by searching for rat and stoat presence along the river banks and margins upstream and downstream of *Tern Island*, and around the western end of Lake Ruataniwha.

Rodent searches were conducted on the 2nd and 3rd of October and 15th and 16th of November. Rodent activity was low in both October and November, with no nests and little scent detected near or on the island (Figure 15). It was noted that debris from a recent flood could provide potential habitat for rats in the following season.

Stoat searches were conducted on the 12th and 18th of September and 3rd and 4th of November. Mustelid activity was confirmed on both the true left and true right river margins, with multiple strong scat indications and one strong scent track recorded (Figure 15). Fresh scat was found near a recent rabbit kill, along with additional 1–2 day-old scat, indicated that at least one stoat had been actively hunting in the area, particularly downstream of *Tern Island* where activity had also been recorded in previous years. A dead stoat found nearby was several weeks old, and the freshness of new sign confirmed the presence of another animal. Overall, these results showed ongoing stoat presence in the vicinity of the tern colony, with evidence suggesting regular movement along the river margins near the Island.

Figure 15. Rodent detection dog, Katie, searching for rodent scent on *Tern Island* in spring 2025 (left). Locations of mustelid and cat scent identified by Katie in the Upper Ōhau River on 12-13 November 2025 (right).

Night shooting for cats

Department of Conservation staff shot 10 cats over 2 nights in September and October (Figure 16). Cat dispatches occurred on the true right of the river near *Tern Island* and downstream towards Lake Ruataniwha

with many kills occurring on or very close to the main access track. The true left side of the river could not be accessed for shooting this season due to security reasons.

Figure 16. Map of night shooting cat kills on true right of the Upper Ōhau River 2025-2026 season.

Outcome monitoring of black-fronted terns/tarapirohe

Project River Recovery measured the effectiveness of predator control in the Upper Ōhau River by monitoring the breeding success of tarapirohe/black-fronted terns. At the *Tern Island*, 514 adult terns and 257 active nests were recorded at a single point in time, with a total of 286 nests located over the season (Figure 17; Keys & Turner, 2026). Nest outcome monitoring was restricted to only October and was heavily influenced by adverse weather and access constraints, including flooding, snowfall, and a precautionary suspension of nest checks following a security incident. As a result, outcomes were confirmed for only 43 nests (15% of all nests found), and the results should be interpreted with caution. Preliminary monitoring indicated a hatching success rate of 21% (at least one egg hatched), of those nests the main causes of failure included: black-billed gull predation (35%), abandonment (likely associated with snowfall; 19%), and flooding (12%). Several significant events shaped the breeding season, including the establishment of a large, black-billed gull colony on *Tern Island* that peaked at approximately 1,200 birds, an eight-fold increase in river flow following heavy rainfall that overtopped the Lake Ōhau weir, and a late October snowfall that buried nests under approximately 20 cm of snow for the second consecutive year (Figure 17). Trail camera footage captured adults continuing to incubate eggs while buried in snow (Figure 17), chicks hatching during the snow event despite prolonged interruptions to incubation, and the survival of chicks that had hatched prior to the snowfall. Despite the challenging season and low monitoring coverage, both black-fronted terns/tarapirohe and black-billed gulls achieved some breeding success. In January 2026, black-billed gull chicks and 10 black-fronted tern fledglings were observed on *Tern Island* and the true left terrace. This season, in addition to counting all the nests for peak colony size, PRR captured drone imagery of nesting birds on *Tern Island* to test and explore the use of drones as an alternative low impact method to count nests.

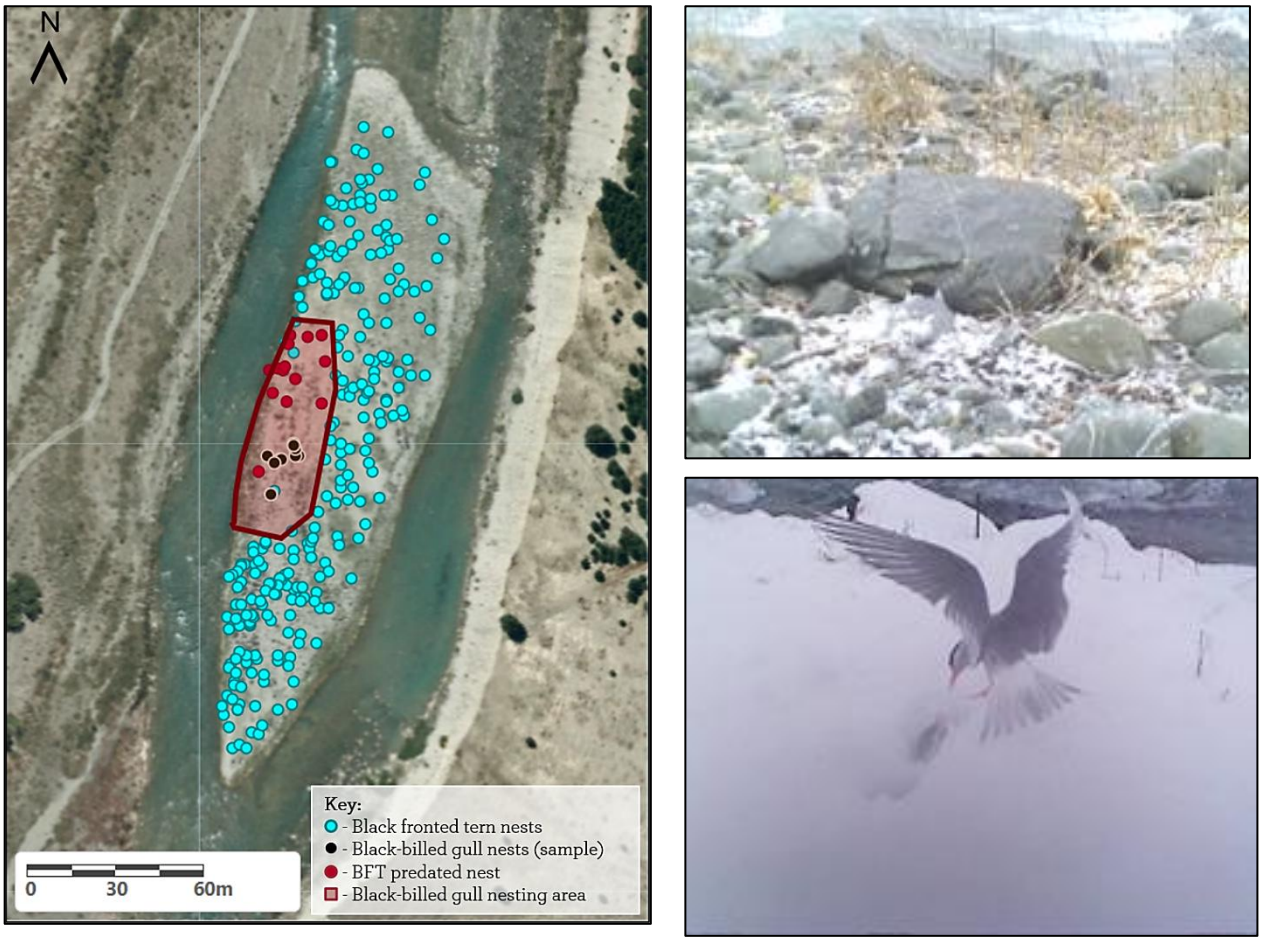

Figure 17. A map of *Tern Island* during the 2025-26 season showing black-fronted tern nests (blue circles), tern nests predated by black-billed gulls (red circles), a sample of black-billed gull nests (black circles) and the area occupied by the black-billed gulls (red polygon; left). A black-fronted tern incubating a nest as snow begins to fall (top right), and a black-fronted tern feeding its incubating partner buried in snow (bottom right).

Outcome monitoring of lakes skinks

Lakes skinks (*Oligosoma aff. chloronoton* "West Otago") are a nationally vulnerable lizard species found from the Eyre Mountains to the Pūkaki River (Hitchmough et al., 2021). In 2013, a Lakes skink population was discovered in the Upper Ōhau River within the predator control network implemented for a nearby black-fronted tern colony. PRR commenced annual monitoring using pitfall traps in 2016-17 to assess potential benefits of predator control. However, the trapping network was reduced in 2017, resulting in the monitored skink population occurring on the periphery of the predator control area. The aim shifted to understand the population trend through long-term monitoring over the nest 5-10 years. Each year the traps were open for a week, and captured skinks are temporarily marked to identify recaptures, and standard morphometric data and photographs are collected (Figure 18). Research from last season found that some natural markings can be used for long-term individual identification and that the population at this site is likely declining (Bourke et al., 2026). This season was the 10th year of monitoring. A total of 13 individuals were captured, and 1 was recaptured, resulting in the lowest Lakes skink capture rate to date, 5.3 per 100TN (Figure 19). However, monitoring this year was carried out in late March, rather than early February, and the later date meant monitoring was delivered in suboptimal conditions. In addition to pitfall population monitoring, this season trail cameras were mounted on tripods and set to record skink interaction with the pitfall traps to test trail cameras as a potential monitoring tool (Figure 18).

Figure 18. Lakes skink side profile photo for inter-year identification (left) and trail camera set on a tripod capturing aerial view of pitfall trap (right). Photos: PRR.

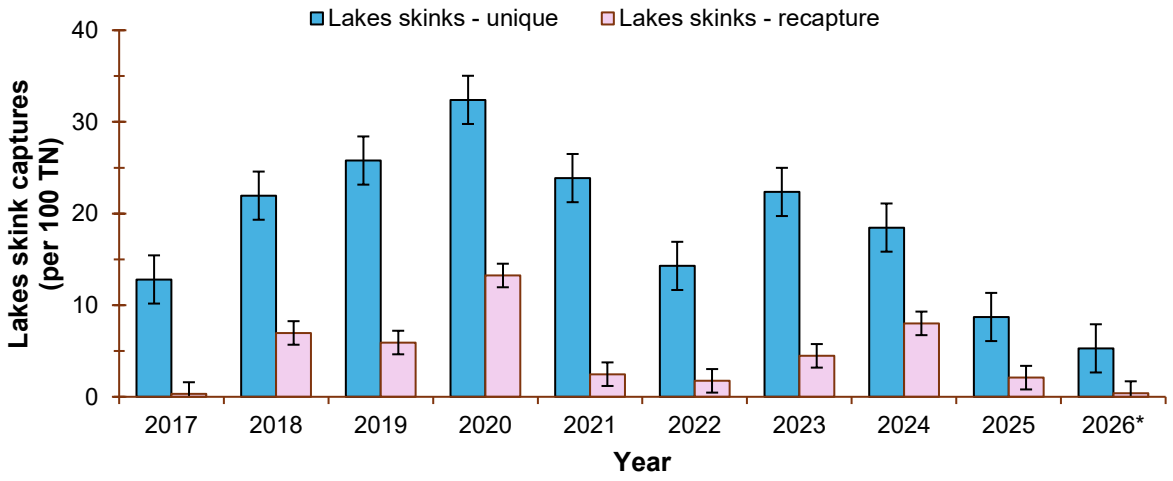

Figure 19. Annual pitfall trap Lakes skink captures and recaptures per 100 trap nights (TN) in the Upper Ōhau River in February from 2017 to 2026. Total monitoring days were aimed at 7 days. Exceptions due to weather conditions include 2017 (8 days), 2023 and 2026 (6 days). * Note that 2026 pitfall traps were opened in late March.

4.2.3 Robust grasshopper predator exclusion fence

In 2018, the Te Manahuna Aoraki Project installed a mammal exclusion fence around a portion of the robust grasshopper habitat at Patersons Terrace with the aim of understanding whether excluding mammalian predators results in a population increase relative to unprotected populations (Murray 2022). Although the fence is short, no mammals have been recorded to breech the fence since it was installed. Project River Recovery has supported outcome monitoring for the trial since it began. After observing a large increase in skink numbers inside the fence in 2019-20, DOC Science Advisor, Dr Tara Murray advised evicting skinks from the fenced area to further reduce predation pressure on the robust grasshopper. Skinks were captured using pitfall traps and artificial cover object (ACO) checks depending on the weather. The first skink removal occurred in 2020-21 and resulted in 348 skinks removed from inside the fence (Lettink 2021; Figure 20). Evictions continued in 2021-22 with a further 147 skinks removed. In 2022-23 season there was more effort

with a seasonal worker carrying out wētā surveys and resulted in a further 175 skinks removed. To prevent skink reinvasion, particularly of neonates that are small enough to fit through the fence mesh, PRR installed a polyethylene membrane around the bottom third of the fence which was completed 5 April 2024. During the following season, 84 skinks were removed. This season was the sixth season of skink removal with 43 skinks were removed. To date, a total of 797 skinks have been removed from within the fenced area with varied levels of effort over the years (Figure 20).

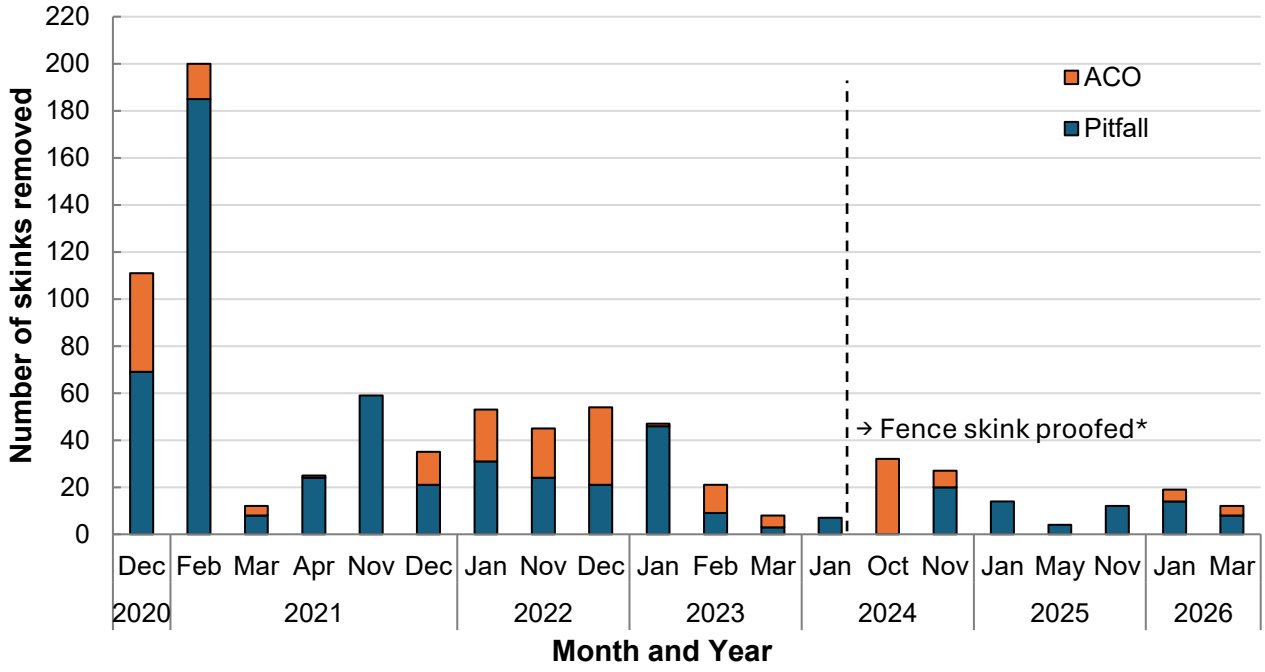

Figure 20. The total number of skinks captured and removed from the predator-exclusion fence that protects a portion of robust grasshopper habitat at Patersons Terrace during each month of removal effort from 2020 to 2026. *Skink-proofing of fence was completed on 5 April 2024.

4.3 Objective 3: Increase public awareness of braided rivers and associated wetlands within a changing environment

Project River Recovery gave a presentation at the Braided River Aid Conference (BRAid) held at Lincoln University in July, reflecting on the past 35 years of Project River Recovery. This year, PRR also produced several media stories about its work, including:

- **Pink robust grasshopper**. PRR released a story about a pink robust grasshopper that was found during annual population monitoring. The story attracted a lot of attention, going viral across the globe. The DOC website experienced a spike in searches for the robust grasshopper.
  Rare pink grasshopper spotted in Mackenzie basin: Media release 18 November 2025

- **Mallard ducks depredating pūteketeke chicks**. Following a novel observation of mallard ducks depredating pūteketeke chicks at Lake Alexandrina, PRR released a media story to share the news. Mallards were not a known predator of pūteketeke chicks prior to this. This story generated a lot of interest and discussion.
  DOC shock as ducks kill pūteketeke chicks: Media release 4 February 2026

- **New population of lowland longjaws discovered, and their first ever translocation**. PRR shared the discovery of a new population of critically endangered lowland longjaw galaxiids, and also news of the first ever translocation for this species.
  DOC takes out insurance for rare tiny fish: Media release 30 April 2026

- **Pūteketeke nesting at Ōhau C boat ramp**. PRR released a story campaigning for campers and recreational boaters to respect pūteketeke nesting near the Ōhau C campground, following several seasons with very high numbers of birds nesting at this popular recreation site. PRR also installed signage at the boat ramp to inform campers about the nesting birds.
  New campaign for pūteketeke/crested grebe: Media release 4 December 2025

- **Late snowfall impacts nesting black-fronted terns**. PRR shared a story of how a significant labour day snowfall event impacted black-fronted terns nesting at *Tern Island* and on the Tasman River. We shared some inspiring photos of black-fronted terns incubating their nests in neck-deep snow, and only leaving when the snow began to cover their heads.
  True love takes a 'tern' in the Mackenzie basin: Media release 19 November 2025

4.4 Objective 4: Gain ecosystem knowledge in upper Waitaki rivers and wetlands through research and monitoring

4.4.1 Braided river bird surveys

PRR seeks to better understand river bird distributions in the Upper Waitaki Basin, and how they are changing over time. In the early 1990s, PRR completed surveys of all the upper Waitaki rivers over three years. PRR sequentially re-surveys the rivers over three consecutive years on a rotational basis to record trends of threatened as well as more common braided river birds. PRR uses standardised walk-through methodology to record counts of native (e.g., banded dotterels, wrybill) and non-native (e.g., Canadian geese) braided river birds and record GPS locations of nesting colonies and rare birds (e.g., black-fronted terns, kakī/black stilts). The standardised methodology allows the data collected to be compared directly with historic surveys, as well as other nation-wide braided river bird surveys.

The Upper and Lower Ōhau rivers and the Pūkaki River were surveyed for the third consecutive year (Table 4). The Cass River was scheduled for survey; however, access was not possible during the required survey period due to lambing operations and late snowfall, which resulted in elevated river levels. Overall, bird counts showed several notable changes compared with historical surveys. The Pūkaki River recorded lower numbers of banded dotterels, with counts below those recorded during the 1990s. The Upper Ōhau River recently supports high numbers of black-billed gulls following the establishment of a nesting colony on *Tern Island* and recorded increased counts of black-fronted terns and New Zealand scaup. Black-backed gull numbers have also increased over the past two years (8-16 birds) compared with historical counts of 1-3 birds during the 1990s. In contrast, the Lower Ōhau River recorded reduced numbers of banded dotterels, black-fronted terns, pied stilts, and South Island pied oystercatchers, while Canada goose numbers were higher than in previous surveys.

Table 4. Braided river bird species recorded in the current round of walkthrough surveys of the Pūkaki and Upper and Lower Ōhau Rivers compared to the most recent previous round of surveys. Data shows the minimum and maximum number of birds observed during the previous survey rounds.

Species, threat ranking*		Pūkaki River				Upper Ōhau River				Lower Ōhau River			
		1992-94	2023	2024	2025	2008 -10	2023	2024	2025	2008-10	2023	2024	2025
Australasian bittern	NV	0	0	0	0	0-1	0	0	0	0	0	1	0
Australasian crested grebe/pūteketeke	NV	0	0	0	0	0-1	0	0	0	0	0	0	0
Australasian shoveler/kuruwhengi	NT	0	0	0	0	0	0	0	0	0-9	0	2	0
Banded dotterel/tūturiwhatu	NV	28-60	18	21	7	0	7	13	4	51-91	14	10	22
Black-billed gull/tarāpuka	NC	0-2	0	0	4	0	0	13	689	0-3	0	0	11
Black-fronted tern/tarapirohe	NE	3-43	41	10	18	124-125	474	206	179	40-108	9	15	65
Black shag/kawau	NU	0-2	0	0	3	1-2	0	2	3	1-3	0	2	10
Black stilt/kakī	NC	0	0	0	0	0	0	0	0	0	0	0	0
Black swan/kakīānau	NT	0	0	2	0	0	0	0	0	0	0	0	2
Canada goose	I/N	5-20	20	15	0	0-2	0	3	0	46-86	51	148	189
Caspian tern/taranui	NV	0	0	0	0	0-1	1	0	0	0-5	0	0	5
Grey duck/pārera	NC	0-2	0	0	0	0-2	0	0	0	0-9	0	0	0
Grey teal/tētē	NT	0	0	0	0	0	0	0	0	0	0	0	0
Hybrid stilt	n/a	0-1	1	0	0	0	0	0	0	0	0	0	0
Indeterminate duck species	n/a	0	2	0	0	0-4	5	0	0	0-25	4	0	0
Little shag/kawau paka	NT	0	0	0	0	0-2	0	0	0	0-8	0	2	1
Mallard/rakiraki	I/N	0-2	0	2	3	0-16	0	17	23	1-10	14	23	47
New Zealand scaup/ pāpango	NT	0	0	0	0	0	0	4	10	0	0	0	0
Paradise shelduck/pūtakitaki	NT	0-3	7	3	8	2	16	9	1	6-8	0	10	7
Pied stilt/poaka	NT	3-11	1	8	5	0	0	0	0	11-16	0	0	0
South Island pied oystercatcher/tōrea	D	3-4	7	2	2	0	0	0	0	3-11	1	1	0
Southern black-backed gull/karoro	NT	6-50	0	2	8	1-3	1	16	8	3-32	3	6	32
Spur-winged plover	NT	0-5	2	3	2	0	4	0	2	1-11	2	3	0
Swamp harrier/kāhu	NT	1-19	0	1	2	1-4	2	1	1	1-5	0	3	10
White-faced heron/matuku	NT	0-3	2	0	1	0-1	3	2	1	5-13	6	12	10
Wrybill/ngutu pare	NV	0-1	0	1	1	0	0	0	0	0	0	0	0
Total number of species		**16**	**10**	**12**	**13**	**13**	**9**	**11**	**11**	**18**	**10**	**12**	**13**

4.4.2 Black-fronted tern / tarapirohe natal site fidelity study

Project River Recovery seeks to better understand natal site fidelity of black-fronted terns. This is important for understanding whether investment in predator control at one colony can contribute to an increase in total population size for the species. If protected colonies are productive, but their offspring nest elsewhere in unprotected rivers and fail to produce offspring of their own, that indicates that more widespread predator control is required to benefit the species. PRR began flag banding adult birds in the Tasman (blue flag/white text), Cass (black flag/white text) and Ōhau Rivers (green flags/white text) in 2018. The site fidelity project began in 2022-23 season and continues to band large chicks near fledging and observe for resighting's of banded birds at these and other sites. In the 2025-26 season, PRR rangers' flag banded 13 chicks in total in the Tasman River (Turner 2026b; Figure 21). Snow and flooding disrupted access to the Cass River.

Figure 21. **Flag banded black-fronted tern chick at the Tasman River (blue flag, white text; left) and an almost fledged chick in the braided river habitat (right).**

Some black-fronted terns that were flag banded at *Tern Island* were resighted during the non-breeding season at Aramoana (Dunedin), and Ashley River (Christchurch) which is ~245km away (Figure 22). A first-year *Tern Island* flag banded tern was spotted ~109km away in a tern colony in the Rangitata River during the breeding season 2025-26. Green flag 49, banded in 2023-34 season, was seen at *Tern Island* as a first year, then resighted ~177km away in Aramoana saltmarsh in March 2026 and recently resighted at *Tern Island* twice in September 2026 as a 3rd year, of breeding age.

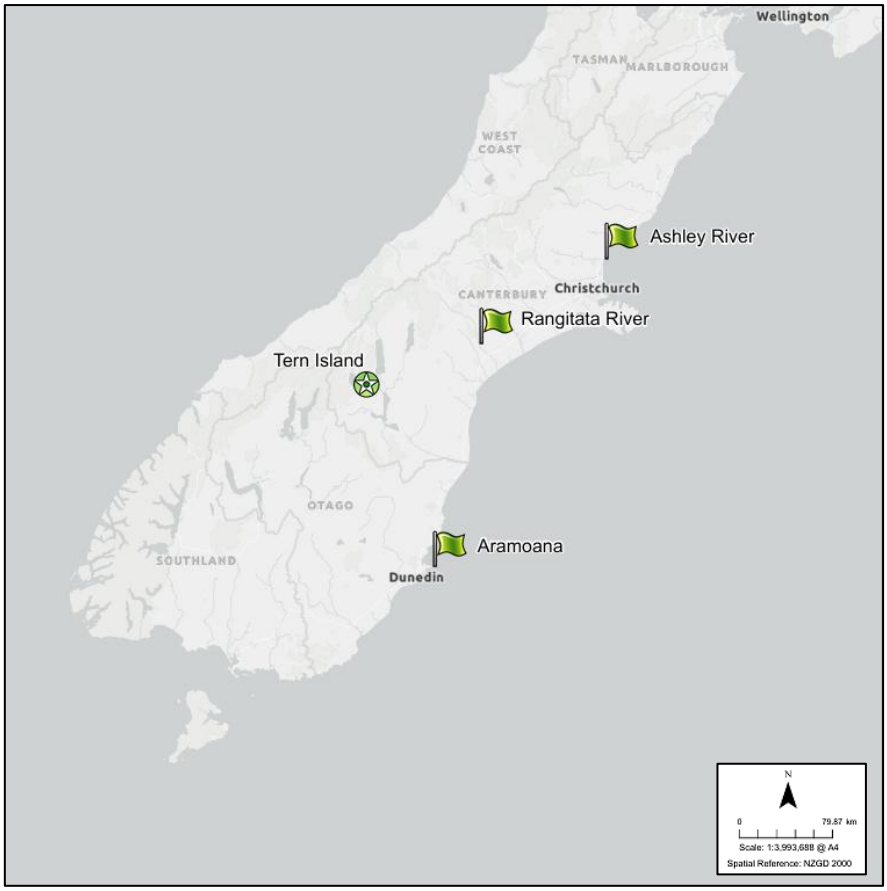

Figure 22. Location of resightings of flagbanded black-fronted terns originally banded as chicks at *Tern Island* in the Upper Ōhau River.

4.4.3 Australasian Bittern / matuku hūrepo distribution study

The Australasian bittern/matuku hūrepo (*Botaurus poiciloptilus*) is a large, cryptic wetland bird found across Australasia including New Zealand, Australia, and New Caledonia. They inhabit wetlands and raupō-fringed lakes, feeding on fish, eels, frogs, lizards, and freshwater invertebrates. In recent decades, populations of Australasian bittern/matuku hūrepo have steeply declined, primarily because of habitat loss but also due to pressure from predatory mammals and birds. Up to 90% of their wetland habitat in New Zealand has been destroyed, and the remaining wetlands are often of poor quality because of water pollution or reduced food sources. Currently, Australasian bittern/matuku hūrepo are ranked as ‘Nationally Critical’.

In the Mackenzie Basin, historic records from the 1930s-1970s show Australasian bittern/matuku hūrepo occurring on the shores of Lakes Benmore, Ōhau and Pūkaki, Alexandrina and Tekapō, and in the Ahuriri, Dobson and Pūkaki Rivers. Very little is known about the current distribution and breeding of bitterns in the Mackenzie Basin today. During the breeding season, male bitterns produce a distinctive low frequency ‘boom’ call to attract a mate. PRR use acoustic recording devices (ARDs) to detect these calls and determine breeding occupancy at wetlands throughout the basin.

PRR aims to better understand the current distribution of bittern across the Upper Waitaki Basin and identify wetlands that continue to provide important breeding habitat, helping to guide future protection and management efforts. In October and November 2025, PRR deployed 17 ARDs across 12 wetlands and raupō fringed lakes across the upper Waitaki Basin (Figure 23). These were sites PRR began monitoring in 2024 and include some sites that have historic records of bittern presence, such as Raupō Lagoon. Wind disturbance was high this season affecting over half of the analysed sound files and compromising the detection of booms. Since 2019, we have deployed ARDs at 45 stations across 28 wetlands. Bittern booms have been detected at 17 of those stations, and at 11 wetlands (Figure 23). Monitoring effort has varied between seasons due to capacity constraints, acoustic recorder faults and weather conditions.

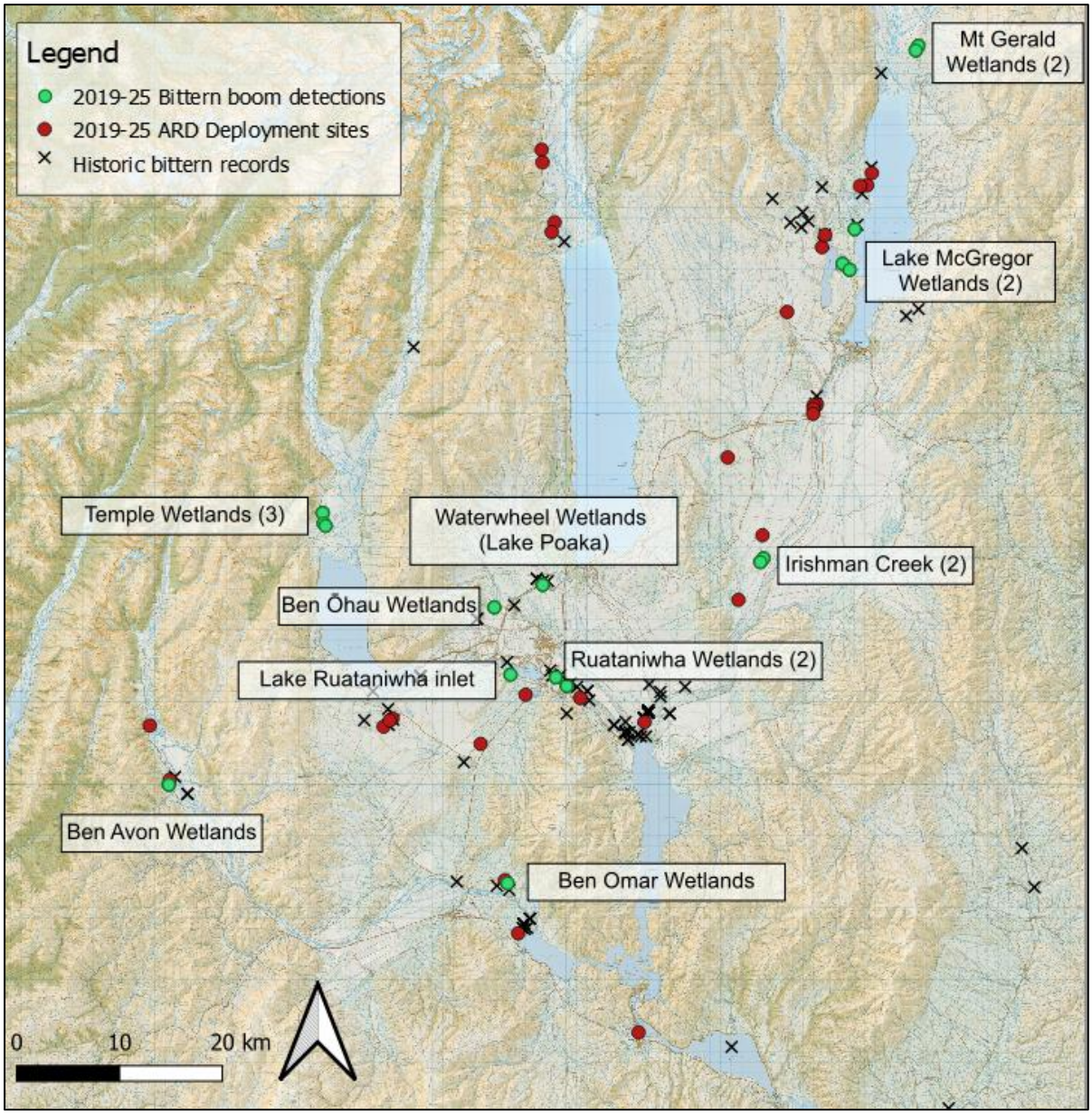

Figure 23. Confirmed presence of bittern detected by acoustic recording devices (ARDs) from 2019 to 2025, and locations of historic sightings 1944-2007, including 2 sightings from 2021 and 2022. Data from the Australasian Bittern National database in development DOCDM-452068.

4.4.4 Takapō River black-fronted tern nesting success

We monitored tarapirohe (black-fronted tern) nesting attempts along the Takapō River over two weeks in November during the 2025-2026 field season. Monitoring resources were redirected from the Upper Ōhau River to the Takapō River mid-season following a security event in the Upper Ōhau River. The purpose of the nest monitoring at Takapō River was to establish baseline data of nesting success of black-fronted terns at a site that receives no predator control. Monitoring focused on a large breeding colony in the upper third of the river, where an ECAN funded drone river bird survey (on the 4th of November 2025) recorded the highest tern abundance. We conducted colony counts, systematic nest

searches and nest monitoring using visual checks and cameras to assess tern abundance, hatching success, and predation pressures in the absence of active management. Monitoring effort was limited to three visits due to a late start and repeated flooding that restricted access. The combination of snowmelt from the late October snow event and high rainfall elevated lake levels at Lake Takapō, which consequently resulted in controlled spills down the Takapō River.

We located and monitored 62 nests containing 108 eggs within the main colony (Colony A; Figure 24). Of the 30 nests with known outcomes, 77% hatched at least one chick, indicating relatively high hatching success. At least 28 chicks hatched, and during one nest check we observed four large chicks close to fledging (26th November 2025), indicating successful nest survival and incubation of eggs through a late October snow event. Trail cameras (*n* = 6) recorded five hatching events, and instances of rabbit disturbance at night. We also found a smaller upstream colony comprising four nests with seven eggs located 3.5 km above the main site.

Due to the limited access to the river during the monitoring period, half of the monitored nests had unknown outcomes. Many of those nests were likely impacted by the flooding. While the results confirm successful hatching, they provide limited insight into chick survival to fledging. Because monitoring was confined to a restricted midseason window, hatching success was likely overestimated, as early and late nesting stages—when predation pressure is typically higher—were not captured. Nearly fledged chicks of black-fronted terns and banded dotterels were seen on trail cameras just before Christmas suggesting successful breeding outcomes (Figure 25).

These results contrast with findings from Katie Gray's research (University of Otago), who monitored three black-fronted tern colonies on the Takapō River in 2022 (*n* = 76 nests) and recorded low hatching success (10.5–30%), with the lowest success at the same site as Colony A (*n* = 38 nests). Most nest failures in 2022 occurred during the egg stage and were attributed to predation, abandonment, or unknown causes. Trail cameras improved identification of failure causes but often did not capture definitive outcomes. Predation included adult depredation by feral cat and rat, and chick depredation by rat, ferret, hedgehog, and harrier; hedgehogs were also a key cause of banded dotterel nest failure. The 2022-23 season indicated high predation pressure was likely an important constraint on breeding success. Colony sites differed in their vulnerability to predators depending on whether they nested on an island or not.

Together, these findings provide initial baseline breeding information for black-fronted terns in the Takapō River, an unmanaged, hydro-regulated river. Full-season monitoring would better quantify predation impacts and inform future consideration of management options. The islands within the colony were relatively raised and safe. Enhancements such as island creation and modification may reduce flooding risk and better deter predators that are reluctant to cross river channels, such as hedgehogs, from accessing nests.

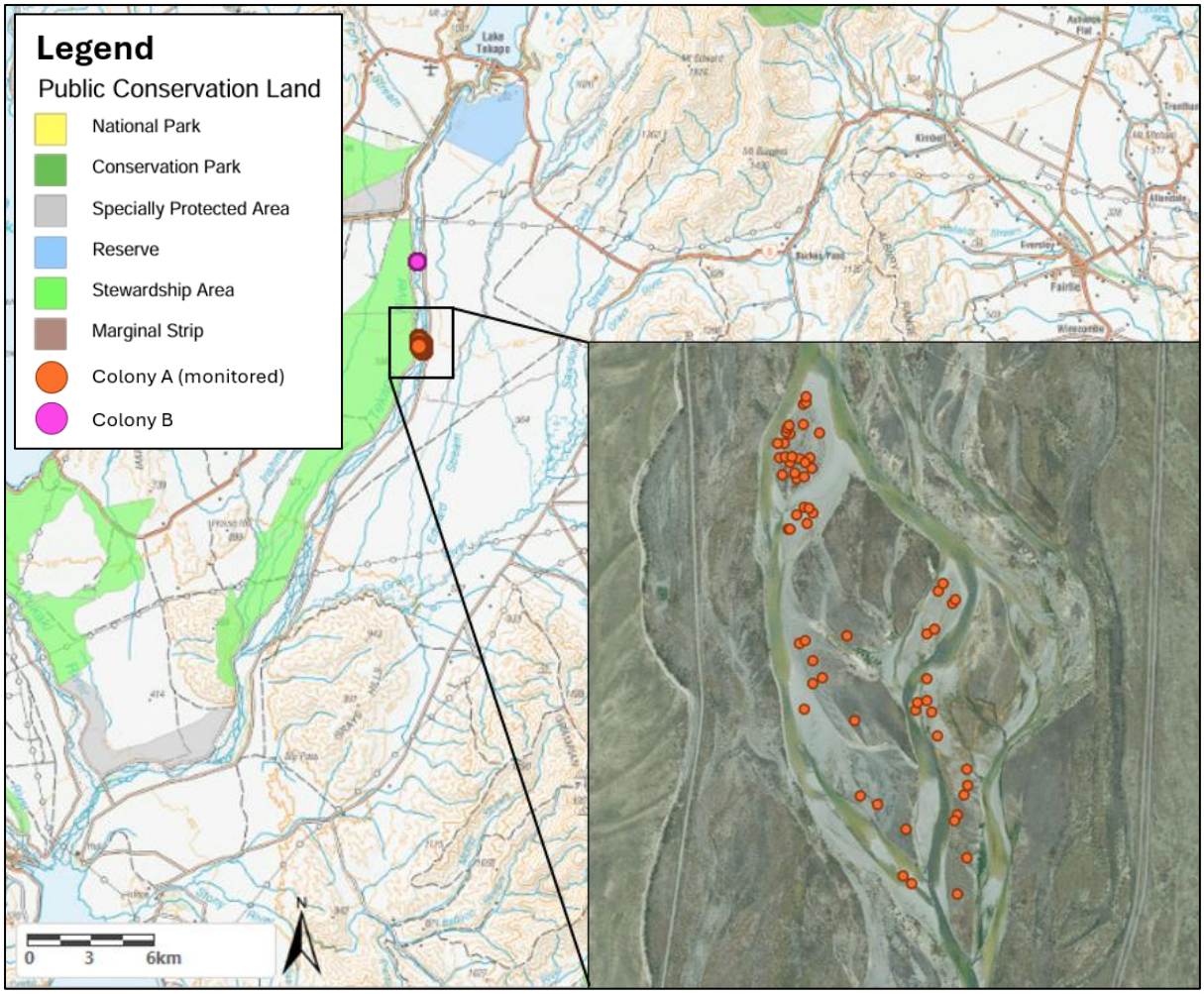

Figure 24. Locations of tarapirohe / black-fronted tern (*Chlidonias albostriatus*) colonies in the upper third of the Takapō River. Colony A (nests = orange circles) was monitored by Project River Recovery in November 2025 (62 nests); flooding subsequently restricted further nest checks. Colony B was a smaller colony (fuchsia circles, 4 nests).

Figure 25. Images captured by trail cameras monitoring black-fronted tern nests on theTakapō River in summer 2026 showing an adult tern incubating a nest on raised, stable and weedy habitat (left), and a fledlgling walking past a nest site (right).

4.4.5 Robust grasshopper population and distribution study

The Nationally Endangered robust grasshopper (*Sigaus robustus*) is a braided river specialist, found only on the gravels of riverbeds and their associated terraces in the Mackenzie Basin (White 1994). This large, flightless grasshopper camouflages among the rocks of the braided rivers. It is a generalist herbivore that feeds on lichens, mosses, and other leafy vegetation of the braided riverbeds. PRR seeks to understand the population dynamics of the threatened braided river invertebrate, and how its distribution has changed over time.

In 2017, PRR began annually monitoring population density at six key populations of robust grasshopper located in the Ōhau River, Forks (incorporating the gravel pits and military land), Patersons Terrace, Pūkaki River, Snowy River, and Takapō River. Population density monitoring occurs each spring and focusses on monitoring the breeding population, recording only large adult females. The Takapō River population was not monitored this year due to high river flows during the monitoring period (Figure 27).

Additionally, PRR has been resurveying sites with historic records of robust grasshoppers to better understand the current distribution of the species. PRR resurveys two sites each March and visits each site for two consecutive years. This year, PRR conducted the second consecutive survey of the Fork Stream (16 March 2026) and Snowy River (11 March 2026). The survey team detected thirteen grasshoppers at Snowy River. Two individuals were recorded on the riverbed itself, and the remaining individuals were detected on the adjacent plains habitat in what appears to be a dried river channel (Figure 26). At Fork Stream, a total of 26 individuals were observed comprising of 23 individuals sighted on the riverbed, and three on an adjacent gravel road (Figure 26).

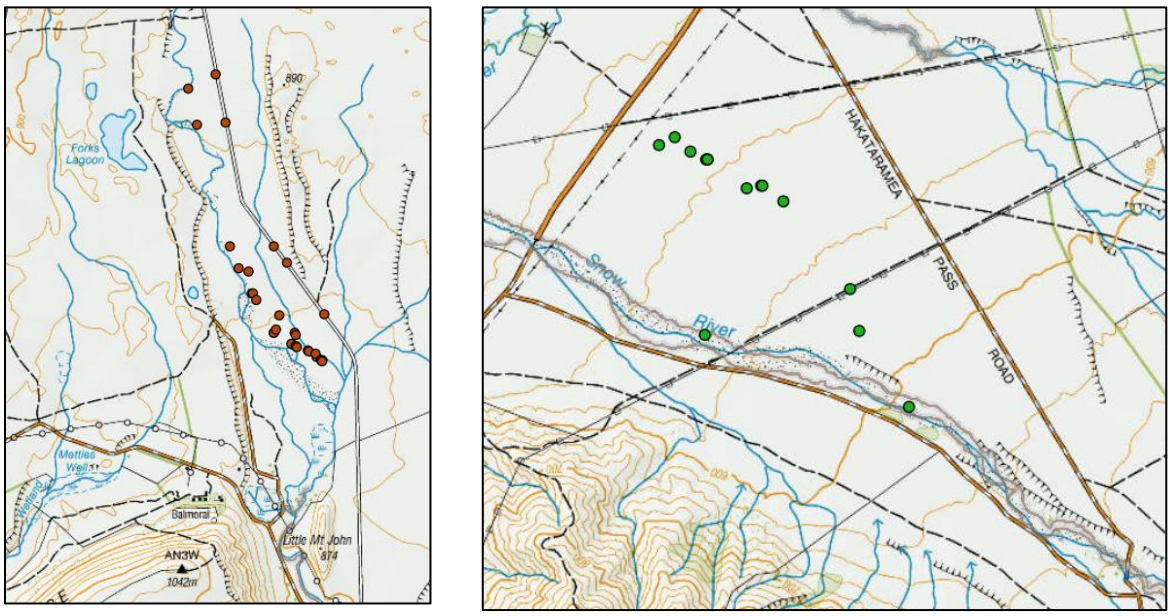

Figure 26. The locations where robust grasshoppers were detected in the Fork Stream (left; orange circles) and Snowy River (right, green circles) during the distribution surveys of these sites in March 2026.

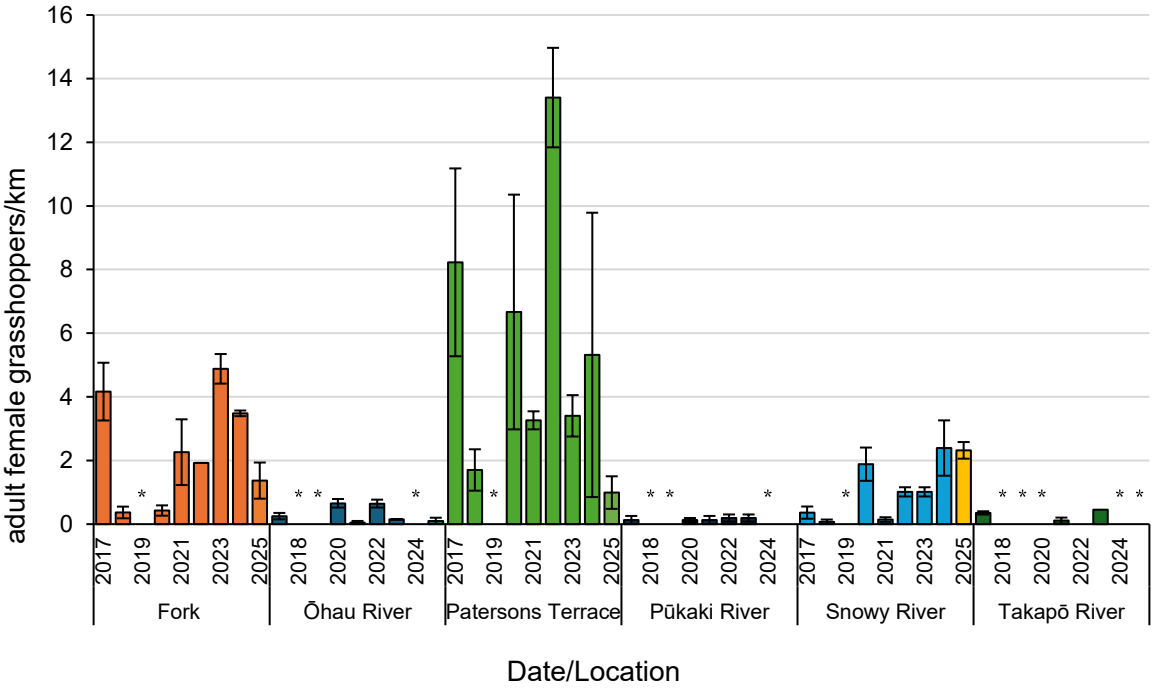

Figure 27. The mean (± SE) number of adult female *Sigaus robustus* grasshoppers per kilometre (km) during surveys of six populations from 2017 to 2024. Data from 2017 sourced from van Eyndhoven and Murray 2017. Data from 2018 sourced from surveys conducted by Murray and McIver (data file DOC-6704288). Fork includes data from Fork Gravel Pits and Fork Military Road. *Indicates that site was not monitored in that year.

4.4.6 Lake Alexandrina Southern Crested Grebe/ pūteketeke

Lake Alexandrina is one of four major strongholds left in the South Island for the Nationally Vulnerable Southern crested grebe/pūteketeke (*Podiceps cristatus*). Pūteketeke generally create floating, or semi-floating nests made of aquatic weeds and sticks from around the lake's edge. Since the 2020/21 season, a large proportion of the population of pūteketeke on Lake Alexandrina has nested in a short 50 metre section of stream at the lake's outlet. Often these nests are more likely to be located on solid ground rather than floating on water. With active nests sometimes only one metre apart in this small area, territorial disputes and breeding displays occur in abundance. PRR continues to supply bait to the Lake Alexandrina Conservation Trust volunteer trapping group, who service traps around the site.

This season followed similar patterns to previous seasons with a maximum of 56 active nests counted on 9th January. However, on 22nd of January, DOC received a call from a bach owner at the lake informing us that mallard ducks were killing and eating pūteketeke chicks. Photographic evidence of this unusual behaviour was obtained from two keen wildlife photographers and DOC staff also observed the predation of one chick from the back of an adult during one of several visits. The mallards appeared to be keying in on the sound of newly hatched chicks and then either grabbing them off the nest or off the backs of their parents. Chicks were swallowed whole (Figure 28).

Managing the problem was complicated by the fact that Lake Alexandrina has an overlaying Wildlife Refuge Status and the period this was happening was outside the duck shooting season. Consultation with DOC legal staff determined that authorisation for DOC staff "to hunt or kill wildlife causing damage" was permitted under section 54 (1) of the Wildlife Act. Eventually DOC staff destroyed eight mallards but there was concern that they were learning the behaviour from each other and potentially more were contributing to the problem. At least nine pūteketeke chicks were observed to be predated by mallards but there could have been significantly more. Staff saw at least one pair of parents taking a young chick out onto the lake but due to other priorities, no survey of the lake could be undertaken to determine whether many, if any chicks survived.

Figure 28. A mallard swallowing a pūteketeke chick at Lake Alexandrina.

4.4.7 Freshwater fish

Objectives 4 and 5 include undertaking freshwater fish distributional surveys, monitoring fish populations and protecting fish species by appropriate installation and maintenance of trout barriers, removal of invasive fish species and controlling aquatic macrophytes. There are three threatened fish species in the Te Manahuna Twizel district, and they are the focus of all work carried out (Nelson et al., 2026). The non-migratory, “pencil” (so-called due to their uniformly slim bodies) galaxiid species are *Galaxias* aff. *cobitinis* “Waitaki”, the Nationally Critical lowland longjaw galaxias (hereafter referred to as ‘lowland longjaw’); *Galaxias macronasus*, the Nationally Vulnerable bignose galaxias (referred to as ‘bignose’); and *Galaxias* aff. *prognathus* “Waitaki”, the Nationally Vulnerable upland longjaw galaxias (referred to as ‘upland longjaw’; Dunn et al., 2023).

Other species found in the district include *Anguilla dieffenbachii* (longfin eel, Declining), *Galaxias brevipinnis* (kōaro, Declining), *Galaxias vulgaris* (Canterbury galaxias, Declining), *Galaxias paucispondylus* (alpine galaxias, Naturally Uncommon) and the Not Threatened *Gobiomorphus breviceps* (upland bully) and *Gobiomorphus cotidianus* (common bully). Galaxiids, particularly the “pencil” species and juveniles, are prey of introduced species such as trout. PRR continues to maintain 10 built trout barriers and monitor two natural waterfall barriers to protect threatened native fish species across the basin.

A major achievement during the year was the discovery of a new lowland longjaw population in the Maryburn Conservation Area, detected through eDNA sampling and confirmed with follow-up electric fishing. The season also saw the first translocation of lowland longjaw galaxias into the true left barrier

site at Waterwheel Wetland (Figure 29), with fish sourced from Fraser Stream, Maryburn, and Omarama Station.

Figure 29. Celebrating the first translocation of lowland longjaw galaxias into the trout exclusion barrier site on the true left of Waterwheel Wetland.

Additional monitoring and survey work was completed with support from the DOC National Freshwater Team and University of Canterbury staff. Results varied across sites. Fraser Stream continued to support both lowland longjaw and bignose galaxias, although lower-than-expected longjaw numbers were recorded in the lower monitoring site and two large rainbow trout and four large kōaro were removed from the system. Corbies Creek which had a large flood through it in 2022, recorded unexpectedly low catches despite earlier observations of healthy populations. In Fork Stream, extensive trout removal work undertaken alongside Rūnanga, Fish and Game, and Defence Force staff removed 351 brown trout and 99 rainbow trout and catch per unit effort suggested progress towards reducing trout numbers in the catchment.

Some concerns arose at the upper Otamatapaio River natural waterfall barrier site, where eDNA showed trout were present above a natural barrier that had previously protected native fish populations. The trout had likely gained access because of a large flood event. Conversely, at the request of a landowner, surveys at Twaddles Swamp confirmed that bignose galaxias remained abundant despite concerns about habitat quality, while eDNA surveys in an Irishman Creek tributary identified a potentially valuable future translocation site free of trout.

4.4.8 Pūkaki River lizards

PRR carried out a second season of monitoring for the Nationally Vulnerable Mackenzie skink (*Oligosoma prasinum*) at Simons Pass Conservation Area, repeating baseline surveys first conducted in 2019 (Turner, 2025a). During a 10-day monitoring period from February 25 to March 6, 2026, 96 pitfall traps across 6 sites were opened and checked daily. A total of 34 unique Mackenzie skinks were captured with no recaptures (Figure 30). The overall capture rate of 3.5 skinks per 100 trap days was lower than rates recorded in both 2019 (5.3 skinks/100TN) and 2025 (13.3 skinks/100TN).

Several factors may have contributed to the lower capture rates observed this season. Monitoring coincided with less favourable weather conditions than last year with lower temperatures. Extensive wilding pine control across the terrace undertaken between survey seasons may have temporarily influenced skink distribution and behaviour. Habitat changes following wilding pine removal may have also improved habitat availability and connectivity across the terrace, potentially dispersing skinks over a wider area than in previous years when shading from pines limited suitable habitat. Predation pressure is also a potential concern with a feral cat sighted near the access gate, and a weasel recorded at Site 6 on the final day of monitoring. Mice were also observed on the terrace last season. The absence of recaptures is consistent with the species' anecdotally described as “shy”. Notably, Site 4, which produced 49 Mackenzie skink captures in 2025, only captured two this season. This decline may have been influenced by abundant fruiting of porcupine shrub (*Melicytus alpinus*), with natural food availability potentially reducing attraction to pear-baited pitfall traps (Figure 30).

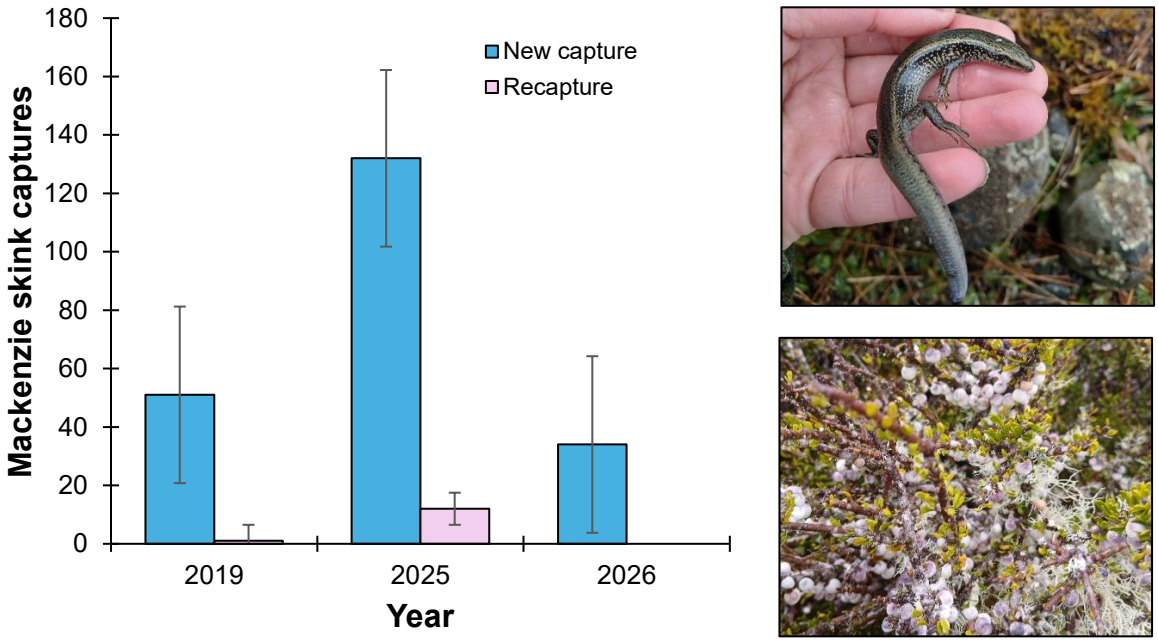

Figure 30. Total number (± SE) of Mackenzie skink (*Oligosoma prasinum*) captured during a 10-day pitfall survey across six sites with 16 pitfalls each at Simons Pass February 2019, 2025, and 2026 (left). A Mackenzie skink with a temporary mark on its head (top right) and berry laden porcupine shrub (*Melicytus* alpinus) from site 4 (bottom right). Data from 2019 sourced from Tocher 2018. Photos: PRR.

4.5 Objective 5: Protect and manage upper Waitaki wetlands

The Ruataniwha wetlands (Figure 31) were created in the 1990s to compensate for wetland habitat lost during the development of the hydro-electric scheme. The intention was to provide habitat for kakī (*Himantopus novaezelandiae)* and other wetland bird species. However, management now focuses on benefiting several Nationally Threatened ephemeral plants (Gale & Hooker 2025). Ephemeral plants are specialised to live in habitats that cycle through being dry and inundated with water, such as the margins of ponds where water levels fluctuate throughout the year. Water levels within the Ruataniwha ponds are controlled by PRR who adjust the height of weirs at the outlet of each pond to manipulate its water level, thus manipulating the duration of dry and wet events at pond margins.

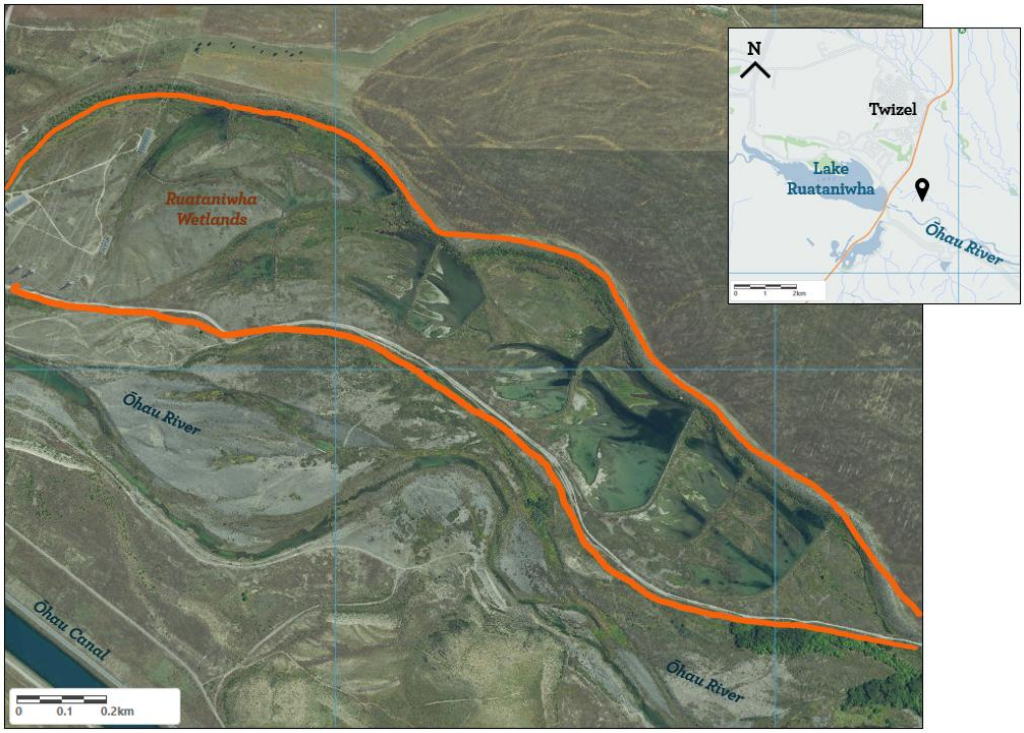

Figure 31. Satellite imagery of the Ruataniwha Wetlands (outlined in orange) located adjacent to the Lower Ōhau River.

Project River Recovery continues to build understanding of how the water level manipulations impact the occurrence and abundance of native ephemeral species by monitoring percentage cover of vegetative species at a high, mid and low water levels during March of each year. So far, monitoring indicates that ephemeral zones that are flooded for the longest period have the greatest availability of substrate, lowest densities of non-native species, and the highest cover of native turf species (Gale & Hooker 2025).

At Lake Poaka, contractors were used to spray, cut down or drill and fill alder, willow and silver birch at the western end of the lake. This has been a PRR project to date, however this year, the work was funded by a $30,000 external contribution. Lake Poaka and the connected wetlands and stream provide habitat for Australasian bittern, marsh crake and bignose galaxiids.

4.6 Objective 6: Facilitate research by various agencies, including universities, to improve our understanding of the ecology of braided river systems

In 2016, PRR determined that funding should be used to facilitate research by University students or other researchers to investigate relevant management issues associated with braided rivers and wetlands or the ecology of their fauna and flora. Research topics that are selected for support must align with PRR's six strategic goals. PRR did not facilitate any external research this year, due to it being the final year of the project's delivery.

5. Project River Recovery's relationship with the Te Manahuna Aoraki Project

Te Manahuna Aoraki Project (TMAP) a landscape scale conservation project focusing on restoring the natural landscapes and threatened species of the upper Mackenzie Basin and Aoraki/Mt Cook National Park, officially launched in 2018. The project aims to enhance biodiversity across 310,000 ha of land including braided river systems and alpine habitats. As such, there is some overlap with PRR on the rivers, wetlands, and lakeshores in the project area from the Ben Ōhau Range in the West to the Two Thumb Range in the East. This includes some of our major lakes and rivers including Lakes Pūkaki and Tekapō and the Tasman, Cass, Godley and Macaulay Rivers and Fork Stream. PRR works in collaboration with TMAP to gain ecosystem knowledge and maintain weed and predator control in overlapping areas.

6. Project River Recovery's financial support for the Kakī programme

Traditionally kakī have not been part of the PRR programme; however, over recent years, PRR has become more involved by funding the operational cost of the Tasman Predator Control programme which was fundamentally driven by the need to secure and increase the kakī population. Results of the Tasman Predator Control programme are reported in the PRR Annual Reports. Kakī are seen as the flagship species for the protection and recovery of braided rivers in the Mackenzie Basin and if kakī are increasing in the wild, this reflects better survival of other populations of braided river bird, lizard, and invertebrate species.

7. Project River Recovery's financial statements 1st July 2025 – 15th June 2026

Project River Recovery spent $817,617 in the 2025-2026 financial year. PRR's revenue and expenditure for this financial year are itemised in Table 5.

Table 5. Project River Recovery statement of financial performance for year ending 30th June 2026.

	2026 ($k)	2025 ($k)	2024 ($k)	2023 ($k)	2022 ($k)	2021 ($k)	2020 ($k)	2019 ($k)	2018 ($k)	2017 ($k)	2016 ($k)	2015 ($k)
REVENUE												
Stakeholder Transfers from revenue in advance	707	688	647	656	588	465	554	544	539	513	528	495
Other revenue	30	0	0	0	0	16	0	0	0	0	0	10
TOTAL REVENUE	**737**	**688**	**647**	**655**	**588**	**481**	**554**	**544**	**539**	**513**	**528**	**505**
EXPENDITURE												
Personnel costs												
Salaries	276	314	129	132	139	104	113	83	44	80	125	117
Wages	90	0	17	33	37	13	57	15	50	51	48	39
Other Personnel		0	0	3	3	0	0	0	0	0	-3	0
Total personnel costs	**366**	**314**	**146**	**168**	**179**	**117**	**170**	**98**	**93**	**132**	**170**	**156**
Administration costs												
Accommodation	25	0	20	0	20	0	20	20	22	20	20	27
Total administration costs	**25**	**0**	**20**	**0**	**20**	**0**	**20**	**20**	**22**	**20**	**20**	**27**
Operating costs												
Professional fees/contracts	0	6	2	0	7	32	5	8	5	1	11	1
Travel	2	0	0	1	0	2	2	1	3	1	1	3
Vehicle expenses	38	26	6	2	28	4	36	34	35	36	36	35
Field operations	385	430	472	480	351	325	319	382	371	321	289	281
Information and publicity	7	0	1	0	3	1	2	1	1	2	1	2
Grants and miscellaneous	0	0	0	5	0	0	0	0	8	0	1	0
Total operating costs	**432**	**462**	**481**	**488**	**390**	**364**	**363**	**426**	**424**	**361**	**338**	**322**
TOTAL EXPENDITURE	**818**	**776**	**647**	**656**	**588**	**481**	**554**	**544**	**539**	**513**	**528**	**505**
NET SURPLUS (DEFICIT)	-81	-88	0	0	0	0	0	0	0	0	-1	0

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