



AGENDA

AUCKLAND/WAIKATO FISH AND GAME COUNCIL

26th July 2025

AUCKLAND/WAIKATO FISH & GAME

A Meeting of Council will be held at the Fish and Game Office, 156 Brymer road and online, on Saturday 26th July 2025 commencing at 11:00 a.m.

AGENDA

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* Denotes attachments

** Denotes the need for council to make a decision.

**G Annan,
Interim Chair**

02/07/2025

AUCKLAND/WAIKATO FISH & GAME



Minutes of a Meeting of Council
held at Auckland/Waikato Fish and Game Office, 156 Brymer
Road, RD9, Hamilton.
on Wednesday the 22nd May 2025 commencing at 6.10pm

PRESENT:

Chairman: N. Juby
Councillor's present in person: D. Cocks, G. Annan, S. Smith G. Dickey
Councillor's present online: E. Williamson, O. Kent, P. Dell, A. Brown, A. Sapich
Staff: D. Klee, D. Lelievre, B. Jarvis-Child, A. Daniel(online)
Members of the Public: C. Sherrard

1. APOLOGIES:

M. Barker (to join late)

It was moved;
that apologies be accepted.

Smith/Cocks – CARRIED

2. POSSIBLE CONFLICTS OF INTEREST ARISING FROM MEETING AGENDA:

Nil.

3. MINUTES OF PREVIOUS MEETINGS OF 15th March 2025:

It was moved;
that the minutes of the previous meetings of the 15th March 2025 be accepted as true and correct records.

Cocks/Smith – CARRIED

4. MATTERS ARISING FROM PREVIOUS MINUTES:

Nil

5. INCOMING COUNCIL CORRESPONDENCE:

Two letters from the Minister of Hunting and Fishing James Meagre. The Chair highlighted the handwritten note at the bottom of the letter informing the council that he would ask DOC to address the Whakapapa Access Issue.

6. OUTGOING COUNCIL CORRESPONDENCE:

Letter sent by the Chair to NZ Council outlining 2025/26 budget application. It was noted that despite coming in under budget last year, our general reserves had fallen beneath the 20% threshold and therefore required topping up. This was due to the overestimation of licence sales targets during COVID recovery years, the spending of dedicated reserves on a national project and the levying of regional reserves to facilitate budget increases in other regions and National Office/NZ Council. Council noted that the levying of anything other than licence sales in the current year is contrary to the Act and legal opinions presented to NZC. The C.E. noted that the Auckland/Waikato levy had doubled over the past 2 years and both he, the previous CE, and CFO, had repeatedly informed NZC that their reserves were marginal and could drop beneath the 20% threshold. It was noted that Nelson/Marlborough had the same issue.

7. CHIEF EXECUTIVE'S BI-MONTHLY REPORT AND FINANCIAL STATEMENTS:

7.1 Bi-monthly Chief Executives Report

Trend Counts. Councillor Dickey asked whether the trend count report would include the Manukau Harbour as he had noted a lot of Swan and Geese on it whilst out fishing. Mr Jarvis-Child replied that he had recently received data from Auckland airport which will be included. The C.E. explained that we cannot count this harbour during trend flights due to flying restrictions. He had also received a request to cull a large number of swan last week, by the airport. He expressed disappointment that the business case to purchase a hovercraft to conduct non-lethal hazing activities around the airport had been declined by their board. He noted that populations in Northland and North Auckland had witnessed significant declines, and that this area constituted a sub-regional population. Swan are mobile species that move large distances and Swan numbers on the Manukau show large fluctuations seasonally. A meeting is scheduled with the Airport to develop a long-term management plan for swan on the Manukau.

Easement on Stone Jug Road Property.

The Chair asked whether we were entirely satisfied with the final wording on easement. Mr Daniel indicated that there had been a lot of dialogue over a long period of consultation with mana whenua and the district council to land the current wording. There are provisions to close public access for short durations if a Rahui is placed on the area. The access provisions will sit on the title in perpetuity, unless the river changes course and no longer flows through the property.

Taumarunui Prosecution

Councillor Annan requested an update on the prosecution against multiple defendants in Taumarunui. The CE explained that given that there were some risks involved in continuing with the prosecution and the evidence we would be relying upon, he decided to accept an

offer to settle the case for most of the defendants without pursuing formal prosecution on the following terms.

The person who initially posted the video would plead guilty to all charges, with fines and costs sought as set out in the SOF or otherwise as ordered by the court. Accept total diversion of \$5,250 (\$750 per defendant) for all the other defendants payable to a charity to fund wetland restoration activities in the region.

Ranging Activities

Councillor Brown asked whether there were any plans to go back to the areas on Arapuni that had exhibited high rates of noncompliance. Mr Daniel replied that there was a plan to check out the areas during spawning surveys and potentially go back next year to check some other maimais they hadn't made this year. The Chair suggested that the council should have a session on compliance at its February meeting. He noted that pre-emptive compliance could be conducted by placing notices on maimai informing hunters of compliance issues in their area and warning them to keep to the rules. Colin Sherrard suggested that a rural mail drop could also be implemented to inform landowners that shoot without licenses about the regulations. Councillor Brown also suggested that there should be discussion around the role of honorary rangers, noting the large disparity between noncompliance detection rates between staff and honorary teams.

The Chair thanked the CE and staff on behalf of the council for their excellent efforts this year noting it was the biggest ranging presence we have ever had in the region.

It was moved;

that the Chief Executive's Bimonthly Report and Financial Statements be accepted.

Dickey /Cocks – CARRIED

8. BUDGET LICENCE FORECAST AND LICENCE FEE RECOMMENDATION

Council had a wide-ranging discussion around the budget setting process and raised concerns regarding the lack of transparency of how this year's process was conducted, the basis NZC used for levying regions and NZC/National Office budget items.

Councillor Williamson noted that interest incomes should not be included in regional budgets as only licence revenue derived in the current FY should be subject to levy consideration.

It was moved;

That council provide feedback on the budget, licence forecast and licence fee recommendations in line with the CE recommendations and include points raised by Councillor Williamson.

Smith/Cocks – CARRIED

It was further moved;

That council approve the budget and licence fee recommendations to the Minister.

Cocks/Williamson – CARRIED

Councillor Barker joined the meeting at 7.26pm

9. NZC CONSULTATION DOCUMENTS

All of the consultation documents were discussed by council, referencing a discussion document provided by the CE. The concern was raised that there was a general disconnect regarding what NZC perceive their role to be when setting national policy especially when it comes to H&S noting that NZC is not a PCBU for regions. It was noted that the NZC H&S committee had not been involved in formulating the draft policy and an alternative approach had been mooted by Steve McKnight, CEO of the CSI region.

10. MODERNISING THE FAMILY LICENCE

Council do not support this proposal. It was noted that the proposed change had not been through the usual evaluation process of the licence working party and not all implications, especially financial ones had been appropriately evaluated. It was noted that the recommendations relied on a survey of a very small subset of licence holders who all belonged to 'women on the fly' and further consultation with the wider licence holder base should be conducted. Council understands that there is a licence optimization process underway and this would be an appropriate time to evaluate all licence categories. Other ideas were floated e.g. simply making it that every resident AWS licence holder can take 2 kids fishing which would achieve the same outcome. Council felt it was unfair that female angler in relationship would have their licence fee reduced, but a solo mother would still have to pay the full price.

It was moved; to provide feedback to NZC covering CEs discussion document and recommendations by council captured above.

Cocks/Dickey – CARRIED

11. OSH UPDATE:

The May 2025 OSH report was tabled.

The CE noted one near miss when Mr. Daniel fell over during drift diving surveys and that new spikes had been ordered for his wading boots to mitigate this risk moving forward.

Ms. Lelievre gave an update on the QR code H&S system that runs through google forms that is operating for volunteer work on F&G wetlands. She noted it was generally working well and importantly had an in-built risk assessment that all volunteers complete and must acknowledge.

It was moved;

that the OSH report for May 2025 is accepted.

Smith/Dickey – CARRIED

12. GENERAL BUSINESS:

The Chair pre circulated an email highlighting that he would need to take a step back from council duties until November to begin a new business venture.

The Chair stood down as NZC council representative. Councillor Cocks nominated Councillor Williamson. There being no further nominations, Councillor Williamson was declared NZC Council representative.

The Council discussed its options regarding the Chairs role and the CE provided the relevant parts of the council's standing orders and the Local Government Act 2002.

It was moved

that the Chair will take a leave of absence until November, remaining as a councillor only, with Grant Annan appointed as acting Chair for that period.

Smith/Dickey – CARRIED

The meeting closed at 8.45pm

**Bi-Monthly Chief Executive's Report
July 2025**

FOREWORD

Fish and Game Reform

There are lots of questions regarding the recently announced F&G reform, however, to date I have very few answers to provide. In terms of further input into the process, it remains unclear, what mechanisms regional councils or staff will have for feedback. It is my understanding that the initial legislative aspect of the review is well underway and due for completion in the 4th quarter of this year. In the interim it is BAU for the staff and I. At this stage staff had next to no opportunity to provide feedback to the minister or the DOC staff drafting the new legislation which has been disappointing.

Healthy River Plan Change

The interim decision has been released and overall, the results are somewhat disappointing. Much of the decision making for topics covered in F&G evidence have been relegated back to the WRC to further manage effects. The scope available to appeal any parts of the decision is limited. This process started in 2013 and we have put considerable, time, effort and funding into it.

PC1 will require some further fencing of waterways, and the development of farm environment plans which will hopefully provide some water quality improvement. The decision also provides some good commentary for the Waikare/Whangamarino Catchment based on the evidence provided by DOC and ourselves. e.g.

"[832] ... The evidence before us is that the wetland is under serious threat for two main reasons - changes to the hydrology and increased contaminant loads, particularly nitrogen, phosphorus and sediment.

[833] It is difficult to avoid the conclusion that without what are likely to be very significant changes to present management approaches to restore the wetland by addressing both causes of adverse effects, further deterioration of the wetland will be inevitable.

The Court decided that it was appropriate to maintain tighter consent requirements for this catchment.

Fish & Game was concerned that long term consents with Farm environment plans could 'lock in' existing leaching rates. Fish & Game's arguments did succeed on this point and generally only short-term consents (10-12 years) can be granted across all high-risk activities. At least, this means if current mitigations are ineffective, there will be an ability to review consents within a 10-12 year timeframe. Also, information is to be given to landowners and companies in high-risk catchments on what long term reductions are likely going to be required (in the contaminants nitrogen, phosphorus and sediment).

Overseer is to be retained to measure reductions in nitrogen from farming activities over time (on dairy farms, and possibly on drystock farms – tba) because the Court was not satisfied the alternative tool (Fonterra nitrogen risk scorecard) had been adequately peer reviewed or took

into account 'biophysical' factors that contribute to nitrogen leaching such as soils/rainfall. However the Chief Executive of WRC can authorise alternative tools in the future (MfE are developing other tools for measuring nitrogen loss).

Farm Environment Plans are to be reviewed every 5 years with fencing required up to the 10 degree contour within this 5 years and fencing up to the 15 degree contour required within (generally) 10 years – planning for this to be mapped out in FEP's.

Finally, largely based on Fish & Game's efforts, provisions restricting 'intensive winter grazing', are to be put back into the plan.

This interim decision leaves a lot of the detail to a further work programme, that is to be led by WRC, including the possibility that the hearings be reconvened (in September). Target date for the Court to issue its final decision is December 2025.

OUTPUT 1: SPECIES MANAGEMENT

Project 1111: Drift diving

Drift Diving

The 2025 drift diving report will be on hold until mid-July due to a lack of time. The 2024 drift diving report completed in December of 2024 will be presented to council.

Project 1115: Population Surveys

Lake Arapuni Spawning Survey

The first Lake Arapuni spawning survey of the year was conducted in conjunction with the opening day gamebird ranging in May. The second survey conducted 17 June 2025 documented significant rainbow and brown trout spawning with hatchery released fish spotted in two locations. The 2024 spawning survey report is provided later in the agenda requiring a decision on the future stocking of Lake Arapuni.

Project 1121: Fish Harvest Survey

Sterile fish report

Seven tagged trout were reported in May and June. All fish were in good condition (mean 1.34 Kg) and smelt were reported to be abundant in the lake during late summer. The sterile fish report will be completed in July or August. To date only 5% of sterile fish and 8% of normal fish have been returned (adjusted for a 50% reporting rate). The cost to licence holders of each sterile fish landed is about \$100 and \$60 per normal fish.

Project 1122: Game Harvest survey

Dani, Beau and an external helper have completed the first four periods of the Gamebird Harvest Survey. The first period included newly standardised questions on hunter satisfaction, while the latter periods also asked hunters for feedback on hunter opportunity (specifically season length) as well as their perception of mallards in their hunting area.

Project 1161: Trout Releases

Dune lake and Quarry Lake releases

Both Parkinson's and Wahtihua Lakes were stocked with 200 2-year-old trout in May. Parkinson lake has been suffering from poor water quality and a recent training session held by Sport Fly Fishing NZ produced several freshly released fish but only a single holdover rainbow trout. An additional 200 2-year-old trout were released in Quarry Lake for the July school holidays. We are evaluating our fish release programme and initial quotes from Eastern Region indicate that using their large tanker to conduct all the Auckland releases will be able to significantly reduce costs through fuel savings, not to mention, free up around 80 hours of staff time.

Release pipe rebuild

Adam rebuilt the flexible attachment point for the release pipe to make it easier to attach the 6 m of release pipe on a slope. The previous flexi pipe joint required two people to support the pipe to attach it.

Project 1173: Regulations

2025 regulation changes

The regulation changes have been submitted for approval by the Minister with the staff report, February council minutes, and an explanation of how the changes improve angler opportunity.

Project 1181: Game Bird Control

Dani and David had a meeting and are working with Auckland Airport around proposed swan control. Dani has written a summary of this which is discussed later in the agenda.

OUTPUT 2: HABITAT PROTECTION/MANAGEMENT

Project 1211: RMA

Proposed Pump Station Replacement – Island Block

Waikato Regional Council (WRC) has engaged with us regarding proposed upgrades to the Island Block Catchment drainage scheme. This involves decommissioning the two existing pump stations (north and south) and replacing them with a single pump station located approximately 60 metres from the current northern pump.

The re-routing of flows could impact the Auckland/Waikato Fish and Game-managed (Williamson) wetland and a meeting is scheduled with consultants to obtain further clarity around potential hydrological effects.

Paeroa Wastewater Treatment Plant (WWTP) Consent Renewal

The Paeroa WWTP is currently operating under a short-term consent, due to expire in December 2026. A long-term consent application is expected to be lodged for the upgraded plant, which is anticipated to be operational by mid-2026. As part of the upgrade, there are also ongoing discussions about the plant receiving wastewater from two additional iwi wastewater treatment facilities, including Ngata.

Clare recently attended a stakeholder meeting on the proposed consent and will continue to participate in ongoing discussions to raise and address any issues of concern.

Waitomo District Plan – decisions version

Waitomo District Council has made its final decision on the Proposed Waitomo District Plan to which we submitted and went to hearing on. Overall, a great outcome for Fish and Game interests including the following;

- The upper Awakino and Waipa River catchments included in the Benefit Lot provisions (an entitlement to subdivide which is awarded by the Council for providing an environmental benefit to the District) where legal access is created specifically for enabling fishing, due to these river's national importance as trout fisheries. Added as part of the decisions is that if there is no legal or practical means of moving up or downriver within the title, the addition of an enduring esplanade strip to facilitate this must be registered on the record of title.
- Noise generated from recreational hunting is exempt from the rules that apply to the discharge of noise in the general rural and natural open space zones.
- Fish and Game Council signs are deemed "official signs" meaning they can be erected as a permitted activity (not requiring resource consent).
- Stricter rules on vegetation clearance – such as limiting clearance around fences to within 2m of the fence.

NPS for Infrastructure

Mischa has been working with the national RMA team who are preparing submissions for the national Fish and Game office on a raft of proposals by the government to change and inform development of national direction under the resource management system. The government have proposed targeted amendments to 12 existing national direction instruments and the introduction of four new national direction instruments, through a combined consultation process.

Mischa is preparing a submission on Package 1 which concerns infrastructure and development. Important for Fish and Game is ensuring that gamebird and fishing values are provided for where proposed and re-consented infrastructure is in rivers, lakes and wetlands (i.e. the habitat of species we manage). We also want to ensure that spatial mapping is completed at least to some extent prior to the new National Policy Statement for Infrastructure coming into effect – as this would direct where and where not to locate infrastructure and development, and that those activities locate away from areas with significant natural values.

Waikato Expressway - Ngaruawahia Stormwater upgrades

We have been contacted for consultation on upgrades to the Waikato Expressway and the stormwater treatment at the Ngaruawahia section – as the stormwater discharges into Lake Areare. A concern for us is pollutants and any potential effect on water quality in the lake. We are planning to meet to discuss these concerns and ensure the water quality of the lake is protected from any adverse effects of the upgrades.

ICM Vessel Programme and Consenting

We have been contacted by the Waikato Regional Council for consultation on their resource consent application to complete river management works, to be undertaken by the new vessel Te Iaroa, along the Waikato and Waipa Rivers. Proposed works include protecting and stabilising banks, removing blockages and obstructions, gravel and sand extraction and relocation, fish passage remediation and controlling vegetation. Having read through the Assessment of Environmental Effects we have a few concerns which include ensuring that gamebirds and hunting seasons are properly considered and protected from adverse effects of the river works – namely when works disturb habitat during nesting season. We also want to ensure that river works do not take place in trout spawning periods and habitat. We would also like to have input into any off-setting or compensation package.

Project 1221: Council Land

Dani has been continuing to attend the Whangamarino Working Group meetings and workshops. Key priorities from a recent technical workshop showed naturalising the hydrological regime was in agreement with most parties present as being the highest priority. Within this the 3 key themes were Restore natural flows and fluctuations at Waikare and Whangamarino; Raise lake level and remove or divert Pungarehu Canal. Next on the priority list were Restoring marginal wetlands, hill country erosion control and managing pest fish. The next meeting in a couple of months' time will focus on assessing the options and deciding on how to prioritise the actions and where money would be best spent.

Project 1231: Non-Council Land

WCEET funding

WCEET funding of \$60,000 was secured for a project with Dave Dean – Pine Haven. The project will retire, fence and plant out a stream with several ponds running through his drystock property, along with creating a couple of new ponds along the waterbody. The property sits within the Waikare/Whangamarino Catchment, and the stream enters the Maramarua River a few km from the property. Primary goals of the project are to improve water quality and create habitat.

GBHT application

Dani is also applying for GBHT funding for a small wetland project in Naike, west of Whangape. The project aims to create a 0.8 ha area of shallow water habitat through the removal of around 30 mature crack willow trees; scraping out to approximately 0.5 m deep to create a lower pond area to hold water; installing a weir in the northeastern corner, within an existing

farm drain; and creating a bund will be created around the lower edge between the open water and the river to hold the water in the pond. It is being created with the intention of providing high quality dabbling habitat and brood rearing area.

Waihou Project

Councillor Juby and Dani have been coordinating on a small planting project on the Waihou River conjunction with the landowner and the Hamilton Anglers club. The club are going to carry out a planting day in august of plants supplied from F&G.

OUTPUT 3: PARTICIPATION

Project 1311: Access Negotiation

Beau has continued to explore options for improving our current mapping system. The hope here is to establish a mapping system that encompasses the whole of New Zealand, is easy to update, and includes data on fishing regulations, access points, and public access layers (like WAMS). If we move to a national app, progress for this will also be transferable across. Beau presented these ideas and a mock map to regional managers and is in the process of putting together a working group of regional experts to develop a plan for the path forward. Generally, regions have been supportive of this, and several staff members are keen to participate.

Project 1331: Magazine

Adam completed the A/W fishing magazine with editing from Beau and David. Adam also contributed to catch and release national article. The Spring flyer was started and will feature a catch and release education article.

Project 1351: Angler/Hunter PR

Dani and David attended the Korakonui school to help judge their annual maimai building competition, while they were out in the area for a couple of site visits. We brought along some prizes for the winners.

Project 1361: User group

Auckland Fly Fishing Anglers Club talk

Adam gave a talk on catch and release fishing to the Auckland Fly Fishing Anglers Club 12 May 2025. The club has found new club rooms and were concerned with potential interference with Fish & Game's advocacy role by the government.

OUTPUT 5: LAW ENFORCEMENT

Project 1511: Ranging

Ranging

As discussed at the May meeting, we had 6 teams out over the weekend. The two primary teams consisted of senior staff paired up with new field officers. The 4 other teams involved experienced honorary rangers that conducted activities mostly on public land. It was pleasing that everyone we checked had a Fish and Game hunting licence.

Staff team 1: On Friday afternoon, just ahead of opening weekend, David and Beau visited several duck camps and boat ramps in and around the Whangamarino. At one of the boat ramps, they caught up with DOC staff who were on site checking permits and raising awareness about local biosecurity concerns. Saturday saw David and Beau join forces with Ken Brown, a local DOC Biosecurity Ranger. The team spent the morning checking hunters on private properties across the Hauraki Plains, as well as public land near the Waihou River—an area that had been buzzing with bird activity leading up to the opener. In the afternoon, the trio pushed deep into private land within the Kopuatai Wetland, an area that hadn't seen ranger presence in some time. Over the course of the day, they checked more than 70 hunters, finding just four in breach of regulations. Offences included shooting over fed ponds and using lead shot. Three citations were issued, two shotguns were seized, and the parent of a child hunter received a verbal warning for using .410 lead. Overall, the rangers were encouraged by the high level of compliance. On Sunday, David and Beau responded to reports of protected species being shot. One hunter was cited after being found with two grey teal. Compliance among the rest of the hunters was strong—over 40 were checked with no further offences identified.

Staff team 2: Danielle, Adam and were accompanied by a DOC staff member and conducted ranging near Cambridge and on Lake Arapuni on the Saturday of opening weekend. We started by checking a couple of private ponds, one which we had previously received intel on where we found three hunters shooting over the pond with grain on it. Their neighbouring pond were compliant, but were packing up as they hadn't seen a duck yet! Three offence notifications were issues and firearms seized of the hunters shooting over the fed pond. Following this we headed to Lake Arapuni where 10 more shooters were contacted with 7 offence notifications issued, and all 7 firearms seized. The offenders were all licenced but either using lead shot or unplugged guns (or both). In addition, two failure to produce citations were issued, that both were later confirmed to be licenced. Six anglers were contacted and all were compliant. On Sunday Danielle and Adam conducted ranging on Lake Karapiro where 15 contacts were made, and three more offence notifications issued and firearms seized for a variety of lead shot, unplugged gun and being in possession of protected wildlife (2 grey teal). Adam and Danielle also investigated a report of shooters dropping shot on or shooting in the direction of a house Saturday morning. The maimai was located but no shooters were present (rangers will follow up). In total Adam and Danielle contacted 30 shooters and over the two days and issued 13 game offences, seized 13 shotguns.

Honorary ranger team 1: 18 licence checks, all compliant

Honorary ranger team 2: 7 licence checks, 1 offence for unplugged gun. 1 firearm seized.

Honorary ranger Team 3: 22 licences checked, all compliant.

Honorary Ranger Team 4: 15 checks all compliant

Summary Table	
Shooting Protected Wildlife	2
Lead Shot	9
Hunting Over Fed Ponds	5
Unplugged Guns	7
Offence notices issued	18
Guns Seized	17
Total Hunters Checked	202

Staff did further ranging throughout the game season with sporadic contacts and high compliance rates. Adam and Beau checked three men at Lake Arapuni parked on the Waipapa Dam Boat Ramp. Two men were fishing and quickly stopped when they saw the Fish & Game vehicle. After claiming they had forgotten their licences at home both men admitted they did not have a licence. Citations were issued and their rods were seized.

[Project 1531: Legal](#)

Prosecutions Update

Clare is currently progressing through a number of prosecutions. Several cases have been offered diversion, with some donations already received to support environmental restoration initiatives. Active prosecutions involve a range of offences, including:

- Exceeding the daily bag limit
- Providing false information
- Possession of lead shot within 200 metres of open water
- Possession of an unrestricted (unpinned) firearm
- Fishing without a licence
- Breaches of waterfowl baiting restrictions

Clare has been working closely with Anthony Van Dorp and Pamela Wright, gaining valuable experience and developing a solid understanding of the prosecutions process.

OUTPUT 8: PLANNING REPORTING

[Project 1841: National liaison](#)

Gold clam compliance

Adam has participated in the initial compliance group meeting for gold clam to prevent the clam from being spread to other regions. MPI are severely limited by funding but have agreed to develop a plan to improve surveillance and compliance. During the meetings it was

revealed that MPI are still allowing the import of used wake boats, which Adam suspects to be the pathway for the introduction of gold clams into NZ. Adam recommended restrictions on the import of wake boats to MPI in 2023, and the Gold Clam Technical Advisory Group also recommended banning the import of used wake boats in 2024, but no restrictions have been enacted. After extensive lobbying of MPI and DOC the process of restricting the import of used wake boats is now under consultation with MPI and DOC. With gold and quagga mussel now on the west coast of the USA the potential for an invasive species far worse than gold clams to enter New Zealand is high.

OUTPUT 9: ADMINISTRATION

Project 1912: Administration

Maritime

Dani and Beau were issued their Part 35 skipper's ticket.

Project 1924: Staff Training

Dani completed her first aid refresher course as this had expired.

D. Klee

Chief Executive

Financial Report for July 2025 Meeting

Licence Sales

Fish: We have hit budgeted sales targets and are currently sitting 179 LEQ above this time last year. Providing we continue to see similar licence sales trends in previous years this should continue with the sale of winter and day licences and total sales will be back at or slightly exceed pre-covid sales. In total we should receive an extra \$25,000 of income above budget.

Game: As foreshadowed in the May financial report, the projection of reduced sales this season were accurate and we will be around 200 LEQ down on last year and 300 LEQ (\$30,000) short of reaching budgeted targets. This was predictable, with many of our popular shooting swamps devoid of water leading up to the season. The arbitrary nature of setting targets (joining a line between two data points and calling it a trend) has been raised as an issue on several occasions, although with the proposed reforms, regional licence sales targets may soon become a moot point as they may no longer be considered in the allocation framework. For now, we are fortunate that the overall balance of fish and game sales will mean we will be close to achieving our overall budgeted income targets.

Reserves: Given that we will not have any surplus in our budgeted income, there is a risk that our reserves will drop beneath the 20% threshold again this year, even if we remain within budget. As presented in the May agenda, despite Auckland/Waikato making its requested budget cuts for the current financial year, NZC made the decision to pro rata NZC, national office and other regions deficits, across all regional budgets. We have questioned the legality of this action, given that it amounts to a levy of regional reserves, and await a response.

Other revenue received during May 2025 - June 2025

Reimbursement Habitat Work Non Council Land: \$24,136 reimbursed for work conducted on non-council land. A large portion of this is for contractor work done on the Rumball- Healy project and is being reimbursed by the landowner and external grant money.

Interest : \$8221, primarily for maturation of two term deposit.

Fish Licence Sales: \$13,091.

Game Licence Sales: \$353,893.

Prosecution/Fines: \$378 in prosecution fines.

Zon gun hire: \$414

NZC Legal fund; \$7,172 Reimbursement for legal/planning advice from NZC for S128 process for Whangamarino Weir and Plan Change 1.

Permit Income: \$1,173 for forestry permit, although 90% of this goes straight to Raynor and will be paid before the EOFY.

Expenditure during January 2025 - February 2025

Commission on Game and Fish Licences \$16,406 to eyede solutions.

Fish Releases: \$3,832 for purchase of 400 2-year-old rainbow trout, oxygen and repairs to fish release pipe. As mentioned in the Bi-monthly CE report, I am investigating the potential cost savings and efficiency that can be gained by using the Eastern Regions tanker to deliver fish in one trip rather than staff doing 6 individual trips.

FBT: \$6,814

Drift Diving Expenses: \$652 for decent wading boots for drift diving after the cheap ones purchased last year fell apart within 12 months.

Game Bird Harvest Survey: \$716 to pay for external surveyors.

Duck Stamp Levy: \$8,569 to GBHT for Auckland Waikato regional duck stamp sales.

Legal: \$8,409 for lawyers fees associated with Taumarunui case, with further invoices to follow as main defendant has applied for a discharge without conviction which we have opposed. As previously mentioned, given the significant increase in compliance activities that staff are conducting, we have more prosecutions to deal with, coupled with some complex cases. Despite being well down the track to internalising many of our prosecution costs by upskilling staff to conduct the majority of the work, it does take some time. In the interim we are some 13k over budget and this will likely land closer to 17k by the EOFY.

Council meeting expenses: \$192 for pizzas and drinks for May Council meeting.

Opening weekend ranging expenses: \$157 to pay for some food costs for rangers. Also includes \$33 for a bottle of port as a gift to landowner who provided free accommodation for the weekend.

Office Expenses: Total of \$1,050 on office related expenses.

Vehicle Fuel and RUC: \$2,850. Due to relatively low fuel prices, we are likely to come in under budget this year.

Vehicle Maintenance: \$1,644 on service costs and a new battery for

Habitat Work F&G Land: The majority of invoices for the current financial year have now been paid. We currently sit at \$39,289 total expenditure around 14k over budget. **We had budgeted to take \$11,000 from the lower Waikato wetland restricted reserve but will need a bit more than this. It is recommended that council pass a motion to transfer up to \$25,000 from the Lower Waikato Wetland restricted reserve as determined by the CE at the EFY to cover budget overruns.**

In summary, excepting Legal and Fish and Game Wetland costs, all other budget items are looking on track with only minor overruns anticipated.

David Klee

Chief Executive

National Game Licence Sales YTD to 9 June											
	Channel	GWA	GWJ	GWC	GDA	GDJ	Total	Game LEQ	Game Var	Game \$	Inc/Dec
Northland	Agency Online	1,173	122	30	16	1	1,342				
	Public Online	290	40	14	23	1	368				
	Total	1,463	162	44	39	2	1,710	1,502		\$141,074	
2023-2024	Agency Online	1,254	117	57	5	0	1,433				
	Public Online	250	45	30	29	1	355				
	Total	1,504	162	87	34	1	1,788	1,543	2.7%	\$148,923	\$7,849
2024-2025	Agency Online	5,089	449	171	43	1	5,753				
	Public Online	1,179	188	91	135	2	1,595				
	Total	6,268	637	262	178	3	7,348	6,427		\$603,543	
Auckland Waikato	Agency Online	4,864	440	194	34	1	5,533				
	Public Online	1,157	184	109	152	8	1,610				
	Total	6,021	624	303	186	9	7,143	6,182	-3.8%	\$596,692	-\$6,850
2023-2024	Agency Online	2,183	191	117	21	0	2,512				
	Public Online	388	84	34	72	1	579				
	Total	2,571	275	151	93	1	3,091	2,643		\$248,175	
2024-2025	Agency Online	2,334	210	125	13	1	2,683				
	Public Online	411	68	31	75	7	592				
	Total	2,745	278	156	88	8	3,275	2,818	6.6%	\$271,989	\$23,814
Eastern	Agency Online	1,440	126	49	20	1	1,636				
	Public Online	378	81	23	43	2	527				
	Total	1,818	207	72	63	3	2,163	1,871		\$175,677	
2023-2024	Agency Online	1,228	113	45	24	2	1,412				
	Public Online	478	83	28	41	6	636				
	Total	1,706	196	73	65	8	2,048	1,758	-6.0%	\$169,694	-\$5,983
2024-2025	Agency Online	775	68	31	2	0	876				
	Public Online	192	29	14	10	0	245				
	Total	967	97	45	12	0	1,121	988		\$92,804	
Taranaki	Agency Online	803	66	35	11	0	915				
	Public Online	230	26	13	23	0	292				
	Total	1,033	92	48	34	0	1,207	1,058	7.1%	\$102,117	\$9,313
Wellington	Agency Online	2,560	235	94	31	2	2,922				
	Public Online	564	109	39	88	3	803				
	Total	3,124	344	133	119	5	3,725	3,214		\$301,861	
2023-2024	Agency Online	2,518	241	113	25	4	2,901				
	Public Online	592	91	43	51	3	780				
	Total	3,110	332	156	76	7	3,681	3,191	-0.7%	\$308,018	\$6,157
2024-2025	Agency Online	712	57	22	10	0	801				
	Public Online	105	25	9	16	1	156				
	Total	817	82	31	26	1	957	838		\$78,703	
Nelson/Marl	Agency Online	702	59	28	2	0	791				
	Public Online	155	23	14	12	0	204				
	Total	857	82	42	14	0	995	876	4.5%	\$84,556	\$5,852
North Canterbury	Agency Online	2,139	143	79	19	0	2,380				
	Public Online	351	52	27	39	1	470				
	Total	2,490	195	106	58	1	2,850	2,539		\$238,468	
2023-2024	Agency Online	1,990	150	61	15	2	2,218				
	Public Online	412	42	25	36	5	520				
	Total	2,402	192	86	51	7	2,738	2,450	-3.5%	\$236,524	-\$1,943
2024-2025	Agency Online	162	17	7	1	0	187				
	Public Online	182	19	24	4	0	229				
	Total	344	36	31	5	0	416	352		\$33,055	
West Coast	Agency Online	140	13	2	4	0	159				
	Public Online	190	26	20	6	0	242				
	Total	330	39	22	10	0	401	340	-3.5%	\$32,790	-\$265
Central South Is	Agency Online	1,506	135	43	8	0	1,692				
	Public Online	439	65	26	71	5	606				
	Total	1,945	200	69	79	5	2,298	1,999		\$187,777	
2023-2024	Agency Online	1,619	131	46	6	0	1,802				
	Public Online	536	66	29	78	1	710				
	Total	2,155	197	75	84	1	2,512	2,211	10.6%	\$213,384	\$25,607
2024-2025	Agency Online	3,085	229	80	10	0	3,404				
	Public Online	765	109	56	29	1	960				
	Total	3,850	338	136	39	1	4,364	3,923		\$368,454	
Otago	Agency Online	3,146	244	94	17	1	3,502				
	Public Online	1,030	161	72	27	1	1,291				
	Total	4,176	405	166	44	2	4,793	4,265	8.7%	\$411,673	\$43,219
Southland	Agency Online	3,615	375	123	13	1	4,127				
	Public Online	760	145	59	8	0	972				
	Total	4,375	520	182	21	1	5,099	4,480		\$420,753	
2023-2024	Agency Online	3,038	318	115	9	0	3,480				
	Public Online	558	108	32	20	2	720				
	Total	3,596	426	147	29	2	4,200	3,686	-17.7%	\$355,805	-\$64,948
2024-2025	Agency Online	24,439	2,147	846	194	6	27,632				
	Public Online	5,593	946	416	538	17	7,510				
	Total	30,032	3,093	1,262	732	23	35,142	30,777		\$2,890,344	
TOTAL	Agency Online	23,636	2,102	915	165	11	26,829				
	Public Online	5,999	923	446	550	34	7,952				
	Total	29,635	3,025	1,361	715	45	34,781	30,378		\$2,932,165	
National Variance against 2024 YTD								-399	-1.3%	\$41,821	\$41,821
2024-25 Summary YTD Actual vs Total Budget											
2024-25 Annual Budget								31,340	100.0%	\$3,024,991	
2024-25 YTD Actual								30,378	96.9%	\$2,932,165	
Remaining to meet budget								-962	-3.1%	-\$92,826	

National Fish Licence Sales YTD to 9 June

Channel		FWF	FWA	FWNA	FSLA	FLAA	FWIA	FLBA	FSBA	FDA	FDNA	FWJ	FWNJ	FDJ	FDNJ	FWC	FWNC	FDNC	SRSE	DWLR	DWLN	Total Fish	Fish LEQ	Fish Var	Fish \$	Inc/Dec
2023-2024	Public Online	30	88	84	6	8	19	2	25	80	125	20	3	25	2	79	4	2	0	0	0	602				
	Agency Online	13	35	11	9	2	5	0	4	8	0	6	1	2	0	6	0	0	9	7	0	118				
	Total	43	123	95	15	10	24	2	29	88	125	26	4	27	2	85	4	2	9	7	0	720	443		\$58,927	
2024-2025	Public Online	48	117	119	12	10	13	4	26	135	196	30	7	38	10	111	7	3	0	0	0	886				
	Agency Online	8	34	6	8	2	2	0	0	8	3	6	0	1	0	3	1	0	3	5	0	90				
	Total	56	151	125	20	12	15	4	26	143	199	36	7	39	10	114	8	3	3	5	0	976	575	29.8%	\$77,989	\$19,062
2023-2024	Public Online	358	913	181	171	124	100	13	174	955	510	221	13	161	11	627	7	7	0	0	0	4,546				
	Agency Online	208	545	45	98	50	36	9	56	165	38	62	2	19	0	110	0	2	13	26	0	1,484				
	Total	566	1458	226	269	174	136	22	230	1120	548	283	15	180	11	737	7	9	13	26	0	6,030	3,509		\$466,860	
2024-2025	Public Online	430	1,028	196	187	137	99	14	162	1,089	687	338	13	219	9	930	7	4	0	0	0	5,549				
	Agency Online	147	474	41	101	40	21	6	61	141	31	68	1	14	0	87	1	1	24	24	0	1,283				
	Total	577	1502	237	288	177	120	20	223	1230	718	406	14	233	9	1017	8	5	24	24	0	6,832	3,688	5.1%	\$500,237	\$33,377
2023-2024	Public Online	1,257	1,025	178	259	561	211	52	652	2,534	873	283	23	367	20	1,153	7	12	0	0	0	9,467				
	Agency Online	925	774	117	238	852	114	23	246	678	457	176	6	122	20	117	0	6	48	24	47	4,990				
	Total	2182	1799	295	497	1413	325	75	898	3212	1330	459	29	489	40	1270	7	18	48	24	47	14,457	8,206		\$1,091,758	
2024-2025	Public Online	1,348	1,158	208	299	684	237	34	732	2,826	971	362	20	393	43	1,506	14	13	0	0	0	10,848				
	Agency Online	867	771	96	243	857	149	19	180	573	385	201	6	118	13	68	2	7	33	21	27	4,636				
	Total	2215	1929	304	542	1541	386	53	912	3399	1356	563	26	511	56	1574	16	20	33	21	27	15,484	8,663	5.6%	\$1,175,135	\$83,377
2023-2024	Public Online	205	498	137	92	77	77	6	150	461	367	162	7	95	2	360	1	1	0	0	0	2,698				
	Agency Online	103	364	80	127	61	40	2	25	123	343	73	1	21	7	40	0	2	8	16	43	1,479				
	Total	308	862	217	219	138	117	8	175	584	710	235	8	116	9	400	1	3	8	16	43	4,177	2,389		\$317,890	
2024-2025	Public Online	225	625	187	111	113	68	16	168	505	372	286	10	136	6	604	3	6	0	0	0	3,441				
	Agency Online	114	372	116	134	78	36	6	32	131	372	105	3	21	1	90	0	2	7	15	73	1,708				
	Total	339	997	303	245	191	104	22	200	636	744	391	13	157	7	694	3	8	7	15	73	5,149	2,849	19.2%	\$386,425	\$68,535
2023-2024	Public Online	58	215	91	33	25	21	2	54	137	255	55	4	44	3	289	1	0	0	0	0	1,287				
	Agency Online	44	201	7	51	19	14	4	35	40	14	51	0	12	0	67	0	0	11	22	0	592				
	Total	102	416	98	84	44	35	6	89	177	269	106	4	56	3	356	1	0	11	22	0	1,879	999		\$132,908	
2024-2025	Public Online	89	279	142	44	21	27	1	52	178	331	94	7	68	11	452	2	2	0	0	0	1,800				
	Agency Online	37	157	11	51	17	8	3	14	30	12	56	0	10	0	83	0	0	6	7	0	503				
	Total	126	436	153	95	38	35	4	66	208	343	150	7	78	11	535	2	3	6	7	0	2,303	1,178	18.0%	\$159,864	\$26,957
2023-2024	Public Online	224	801	124	155	145	81	10	68	473	275	218	3	122	7	740	3	2	0	261	76	3,788				
	Agency Online	154	654	11	142	104	39	3	26	76	39	157	0	46	2	150	0	0	43	65	0	1,711				
	Total	378	1455	135	297	249	120	13	94	549	314	375	3	168	9	890	3	2	43	326	76	5,499	2,990		\$397,817	
2024-2025	Public Online	251	803	63	174	173	63	4	57	466	161	321	2	126	4	814	1	0	0	244	62	3,789				
	Agency Online	128	559	16	158	119	28	3	17	117	15	221	2	60	0	215	0	0	31	58	1	1,748				
	Total	379	1362	79	332	292	91	7	74	583	176	542	4	186	4	1029	1	0	31	302	63	5,537	2,849	-4.7%	\$386,421	-\$11,396
2023-2024	Public Online	323	557	237	134	118	53	5	78	556	388	168	8	142	4	665	8	6	0	775	204	4,429				
	Agency Online	412	926	312	229	104	42	10	33	163	186	112	1	23	2	172	1	1	280	1,081	386	4,476				
	Total	735	1483	549	363	222	95	15	111	719	574	280	9	165	6	837	9	7	280	1856	590	8,905	4,296		\$571,543	
2024-2025	Public Online	364	650	233	145	124	53	8	90	509	481	273	10	166	6	766	9	1	0	869	247	5,004				
	Agency Online	318	758	256	216	105	41	5	42	95	282	128	9	24	1	154	0	5	200	836	415	3,890				
	Total	682	1408	489	361	229	94	13	132	604	763	401	19	190	7	920	9	6	200	1705	662	8,894	4,127	-3.9%	\$559,825	-\$11,717
2023-2024	Public Online	958	1,799	186	286	104	92	18	275	1,506	703	419	12	303	25	1,646	3	3	2,262	1,359	468	12,427				
	Agency Online	1,622	2,867	231	834	78	121	30	176	426	146	301	5	40	2	366	8	5	3,637	2,245	5	13,145				
	Total	2580	4666	417	1120	182	213	48	451	1932	849	720	17	343	27	2012	11	8	5899	3604	473	25,572	10,825		\$1,440,133	
2024-2025	Public Online	1,047	1,869	219	343	124	90	16	244	1,471	643	526	16	346	12	2,166	5	6	2,315	1,496	599	13,553				
	Agency Online	1,384	2,437	186	824	71	93	17	145	334	122	301	4	54	2	176	7	0	2,907	1,555	16	10,635				
	Total	2431	4306	405	1167	195	183	33	389	1805	765	827	20	400	14	2342	12	6	5222	3051	615	24,188	10,263	-5.2%	\$1,392,237	-\$47,897

National Fish Licence Sales YTD to 9 June

Channel		FWF	FWA	FWNA	FSLA	FLAA	FWIA	FLBA	FSBA	FDA	FDNA	FWJ	FWNJ	FDJ	FDNJ	FWC	FWNC	FDNC	SRSE	DWLR	DWLN	Total Fish	Fish LEQ	Fish Var	Fish \$	Inc/Dec
West Coast	Public Online	278	366	279	82	87	18	9	135	398	322	102	7	113	8	418	4	3	0	618	175	3,422				
	Agency Online	113	191	12	50	71	6	1	19	52	218	40	1	8	15	10	0	13	64	97	0	981				
2023-2024	Total	391	557	291	132	158	24	10	154	450	540	142	8	121	23	428	4	16	64	715	175	4,403	2,123		\$282,515	
	Public Online	314	475	189	80	117	36	13	154	435	360	193	7	78	4	594	10	4	0	605	169	3,837				
	Agency Online	80	168	11	53	66	8	4	18	25	155	54	2	8	13	18	0	12	47	51	0	793				
2024-2025	Total	394	643	200	133	183	44	17	172	460	515	247	9	86	17	612	10	16	47	656	169	4,630	2,125	0.1%	\$288,214	\$5,699
Budget																										
2127 \$288,532																										
23/24 Sept \$1,513																										
99.9% \$288,214																										
Var to budget \$1,195																										
Channel		FWF	FWA	FWNA	FSLA	FLAA	FWIA	FLBA	FSBA	FDA	FDNA	FWJ	FWNJ	FDJ	FDNJ	FWC	FWNC	FDNC	SRSE	DWLR	DWLN	Total Fish	Fish LEQ	Fish Var	Fish \$	Inc/Dec
Central South Is	Public Online	1,440	1,656	397	311	389	156	67	1,002	3,673	1,368	520	28	516	33	1,948	16	13	2,237	0	0	15,770				
	Agency Online	1,592	1,828	73	685	534	56	38	436	1,367	544	408	6	215	21	358	1	19	2,305	244	3	10,733				
2023-2024	Total	3032	3484	470	996	923	212	105	1438	5040	1912	928	34	731	54	2306	17	32	4542	244	3	26,503	12,013		\$1,598,219	
	Public Online	1,518	1,780	461	342	432	163	66	851	3,486	1,657	679	33	551	47	2,134	23	31	2,299	0	0	16,553				
	Agency Online	1,393	1,546	65	670	561	103	34	360	1,093	664	420	14	175	44	311	4	58	1,864	177	7	9,563				
2024-2025	Total	2911	3326	526	1012	993	266	100	1211	4579	2321	1099	47	726	91	2445	27	89	4163	177	7	26,116	11,944	-0.6%	\$1,620,228	\$22,009
Budget																										
12331 \$1,672,727																										
23/24 Sept \$16,413																										
96.9% \$1,620,228																										
Var to budget (\$36,086)																										
Otago	Public Online	1,936	2,387	592	375	358	139	41	407	2,630	2,368	586	41	401	122	1,944	18	79	0	1,531	644	16,599				
	Agency Online	2,074	2,955	212	754	153	73	19	146	505	722	387	12	65	41	11	12	32	512	1,397	138	10,220				
2023-2024	Total	4010	5342	804	1129	511	212	60	553	3135	3090	973	53	466	163	1955	30	111	512	2928	782	26,819	15,172		\$2,018,482	
	Public Online	2,023	2,620	618	363	421	172	45	515	2,894	2,735	795	64	400	136	2,390	27	93	0	1,616	655	18,582				
	Agency Online	1,767	2,613	208	816	156	88	24	148	484	662	450	23	60	48	53	7	33	382	1,160	269	9,451				
2024-2025	Total	3790	5233	826	1179	577	260	69	663	3378	3397	1245	87	460	184	2443	34	126	382	2776	924	28,033	15,224	0.3%	\$2,065,175	\$46,693
Budget																										
15410 \$2,090,400																										
23/24 Sept \$9,988																										
98.8% \$2,065,175																										
Var to budget (\$15,237)																										
Southland	Public Online	812	914	694	122	145	30	26	248	886	1,306	350	21	139	26	964	11	17	0	894	579	8,184				
	Agency Online	1,452	1,867	58	440	134	39	15	135	273	151	456	7	39	4	92	3	1	193	906	3	6,268				
2023-2024	Total	2264	2781	752	562	279	69	41	383	1159	1457	806	28	178	30	1056	14	18	193	1800	582	14,452	8,640		\$1,149,520	
	Public Online	723	930	815	127	185	53	18	274	1,005	1,382	421	27	153	39	1,064	12	20	0	940	569	8,757				
	Agency Online	1,205	1,563	37	462	149	25	16	118	291	155	432	5	39	3	67	1	7	135	805	2	5,517				
2024-2025	Total	1928	2493	852	589	334	78	34	392	1296	1537	853	32	192	42	1131	13	27	135	1745	571	14,274	8,242	-4.6%	\$1,117,993	-\$31,527
Budget																										
8595 \$1,165,930																										
23/24 Sept \$2,198																										
95.9% \$1,117,993																										
Var to budget (\$45,739)																										
TOTAL	Direct	7,879	11,219	3,180	2,026	2,141	997	251	3,268	14,289	8,860	3,104	170	2,428	263	10,833	83	145	4,499	5,438	2,146	83,219	37,514		\$4,991,059	
	AOL	8,712	13,207	1,169	3,657	2,162	585	154	1,337	3,876	2,858	2,229	42	612	114	1,499	25	81	7,123	6,130	625	56,197	34,090		\$4,535,512	
2023-2024	Total	16,591	24,426	4,349	5,683	4,303	1,582	405	4,605	18,165	11,718	5,333	212	3,040	377	12,332	108	226	11,622	11,568	2,771	139,416	71,605		\$9,526,571	
	Direct	8,380	12,334	3,450	2,227	2,541	1,074	239	3,325	14,999	9,976	4,318	216	2,674	327	13,531	120	183	4,614	5,770	2,301	92,599	41,132		\$5,579,650	
	AOL	7,448	11,452	1,049	3,736	2,221	602	137	1,135	3,322	2,858	2,442	69	584	125	1,325	23	126	5,639	4,714	810	49,817	30,594		\$4,150,091	
2024-2025	Total	15,828	23,786	4,499	5,963	4,762	1,676	376	4,460	18,321	12,834	6,760	285	3,258	452	14,856	143	309	10,253	10,484	3,111	142,416	71,726	-0.2%	\$203,170	\$203,170
Budget																										
72376 \$9,817,962																										
23/24 Sept \$52,144																										
99.1% \$9,729,742																										
Var to budget (\$36,076)																										

National Variance against 2023/2024 YTD					
		121	0.2%	\$203,170	\$203,170
2024-25 Summary YTD Actual vs Total Budget					
2024-25 Annual Budget		72,376	100.0%		\$9,817,962
2024-25 YTD Actual		71,726	99.1%		\$9,729,742
Variance to Budget		-650	-0.9%		-\$88,220

Estimate of Complete Season 2024-25 vs Total Budget 2024-25 based on current YTD variance					
2024-25 Budgeted LEQ's		72,376	100.0%		\$9,817,962
2023-24 Complete Season* LEQ's		73,435			
2024-25 Est year end based on current variance		73,559	101.6%		\$9,978,411
Est Shortfall/Surplus 2024-25 Season vs Budget		1,183	1.6%		\$160,449

*Complete Season is all sales in licence year, not financial year (excludes refunds/complimentaries)

****Important to note:**

Please use the LEQ differences when comparing your sales as the \$ amounts do not provide a clear picture due to the increase in licence price.

Summary of revenue from additional licences (see separate worksheet for regional breakdown)
 Note: these figures are not included in the total revenue figures or LEQ's above

Totals	Channel	SRSE	DWLR	DWLN	Total addi licences	Var	Value of addi cats ex comm & GST	Inc/Dec
	Direct	4,499	5,438	2,146	12,083		112,628	
	AOL	7,123	6,130	625	13,878		75,895	
2023-24 Total		11,622	11,568	2,771	25,961		188,523	
	Direct	4,614	5,770	2,301	12,685		119,637	
	AOL	5,639	4,714	810	11,163		69,977	
2024-25 Total		10,253	10,484	3,111	23,848	-2,113	189,613	1,090

BUDGET 2024/25				ACTUAL 2024/25 (as of 30/06/2025)			
Project	Expenditure	Income	Net Cost	Expenditure	Income	Net Cost	Variance
SPECIES MANAGEMENT							
POPULATION MONITORING							
Drift diving	3,520	1,500	2,020	958		958	(1,062)
Banding/shoveler study/wetlands stud	13,500		13,500	14,482	3,513	10,969	(2,531)
Aerial transects	-		-				-
Trend counts	5,000		5,000	6,262		6,262	1,262
Fish surveys	2,000	1,000	1,000	1,251		1,251	251
Gamebird Research				-			
HARVEST ASSESSMENT							
Gamebirds				876		876	876
RELEASES							
Fish	18,300	5,000	13,300	14,442		14,442	1,142
CONTROL							
Gamebirds (zon guns)	1,000	1,000		76	2,655	(2,579)	(2,579)
HABITAT PROTECTION/MANAGEMENT							
RESOURCE MAN. ACT							
R.M.A	25,000	20,000	5,000	18,634	17,645	989	(4,011)
FISH & GAME PROPERTIES							
Council Land-maint,grass,fence,spray	26,500	11,000	15,500	39,289	9,862	29,427	13,927
Rates	1,000		1,000	486		486	(514)
NON COUNCIL LAND							
Non Council Land	100,000	100,000		24,136	24,136		
MRP & Genesis mitigation monies	60,000	60,000			68,061	(68,061)	(68,061)
Trees	5,000	3,000	2,000	7,105			(2,000)
ASSESSING & MONITORING							
Assessment & Monitoring	1,000	-		25		25	25
PARTICIPATION							
ACCESS							
Access negotiation				218	2,609	(2,391)	(2,391)
Signs/tracks etc	500		500				(500)
NEWSLETTERS							
Magazine/Newsletters	-		-				-
OTHER PUBLICATIONS							
Pamphlets	200		200				(200)
PUBLIC PROMOTIONS							
Displays/promotions/PR	500		500	507		507	7

BUDGET 2024/25				ACTUAL 2024/25 (as of 30/06/2025)			
Project	Expenditure	Income	Net Cost	Expenditure	Income	Net Cost	Variance
COMPLIANCE							
RANGING							
Ranging	500		500	717		717	217
RANGER TRAINING							
Training	500	500	-	152		152	152
COMPLIANCE							
Legal	17,000	6,000	11,000	31,434	7,481	23,953	12,953
COUNCILS							
COUNCIL MEETINGS							
Meeting costs	2,000		2,000	1,576		1,576	(424)
PLANNING/REPORTING							
REPORTING/AUDIT							
Annual Report/Audit	16,000		16,000	11,613		11,613	(4,387)
NATIONAL LIAISON							
National Liason				145		145	145
ADMINISTRATION							
SALARIES							
Salaries	565,749		565,749	442,877		442,877	(122,872)
STAFF EXPENSES							
ACC Levy	2,300		2,300				(2,300)
Super/KS	33,995		33,995	26,573		26,573	(7,422)
Fringe Benefit Tax	7,000		7,000	6,814		6,814	(186)
Staff Training	4,950		4,950	248			(4,950)
Clothing	500		500	140		140	(360)
Reimb allowances	10,000		10,000	11,000		11,000	
OFFICE PREMISES							
Rent	1,500		1,500			-	(1,500)
Rates	1,420		1,420	1,110		1,110	(310)
Maintenance	20,000		20,000	1,024		1,024	(18,976)
Insurance (includes off equipment)	7,000		7,000	6,533		6,533	(467)
Power	2,000		2,000	1,487		1,487	(513)
OFFICE EQUIPMENT							
Purchases (Under \$2,000)	2,500		2,500	1,122			(2,500)
Asset Replacement Funding							
Eqpmt Maintenance	1,500		1,500				(1,500)
COMMUNICATIONS/CONSUMABLES							
Telephone/fax	15,000		15,000	9,781		9,781	(5,219)
Postage	200		200	267			(200)
Courier							
Stationery	5,000		5,000	337		337	(4,663)
Photocopying	1,000		1,000	1,166		1,166	166

BUDGET 2024/25				ACTUAL 2024/25 (as of 30/06/2025)				
Project	Expenditure	Income	Net Cost		Expenditure	Income	Net Cost	Variance
GENERAL								
Donations						50	(50)	(50)
Bank Charges (Interest calc by NZC)					75		75	75
General Office expenses	5,500		5,500		3,373		3,373	(2,127)
Insurance - General								
Legal - General	1,350		1,350		480		480	(870)
Public Liability insurance	3,000		3,000		1,828		1,828	(1,172)
GENERAL EQUIPMENT								
Purchases (Under \$2,000)	5,000		5,000		579		579	(4,421)
Asset Replacement Funding								
Equipment Maintenance	1,500		1,500		754		754	(746)
Equipment Insurance	-		-					-
Equipment Hire/rental/running expenses							-	-
VEHICLES								
Vehicle Maintenance	15,000		15,000		12,019		12,019	(2,981)
Vehicle Insurance	12,000		12,000		12,529		12,529	529
Vehicle Registration	1,000		1,000		409		409	(591)
Vehicle Fuel & RUC	40,000		40,000		22,743		22,743	(17,257)
	1,064,984	209,000	854,984		739,652	136,012	603,640	(251,344)

Aged Receivables Summary

Auckland/Waikato Fish & Game Council

As at 30 June 2025

Ageing by due date

CONTACT	CURRENT	< 1 MONTH	1 MONTH	2 MONTHS	3 MONTHS	OLDER	TOTAL
Dave & Anne Scott	-	-	-	462.46	-	-	462.46
Elizabeth Rumball	-	8,634.86	-	-	-	-	8,634.86
Eyede Solutions	76,045.60	-	-	-	-	-	76,045.60
Game Bird Habitat Trust	-	-	-	2,379.86	-	-	2,379.86
Herenga ā Nuku Aotearoa	-	-	-	-	-	1,828.53	1,828.53
New Zealand Fish & Game Council	776.25	-	-	-	-	-	776.25
Woodlands Estate	223.10	-	-	-	-	-	223.10
Total	77,044.95	8,634.86	-	2,842.32	-	1,828.53	90,350.66
Percentage of total	85.27%	9.56%	-	3.15%	-	2.02%	100.00%

Term Deposits

			<u>Term</u>	<u>Start Date</u>	<u>Matures</u>	<u>Interest paid</u>
0086	\$300,000.00	5.20%	12 months	15-Dec-22	15-Dec-23	\$15,600.00
0087	\$100,000.00	5.20%	12 months	17-Jan-23	17-Jan-24	\$5,250.00
0088	\$200,000.00	5.40%	6 months	24-May-23	24-Nov-23	\$5,444.38
0089	\$200,000.00	5.70%	12 months	24-May-23	24-May-24	\$11,431.23
0090	\$300,000.00	5.75%	8 months	13-Jun-23	13-Feb-24	\$11,578.77
0091	\$200,000.00	5.74%	8 months	13-Jul-23	13-Mar-24	\$7,674.30
0092	\$300,000.00	6.10%	8 months	11-Dec-23	11-Aug-24	\$12,233.42
0093	\$200,000.00	6.00%	6 months	18-Dec-23	18-Jun-24	\$6,016.44
0093	\$300,000.00	6.05%	8 months	18-Jun-24	18-Feb-25	\$12,182.88
0094	\$200,000.00	5.95%	6 months	25-Jul-24	25-Jan-25	\$5,998.90
0095	\$200,000.00	4.60%	4 months	13-Aug-24	13-Dec-24	\$3,075.07
0096	\$200,000.00	5.75%	8 months	13-Aug-24	13-Apr-25	\$7,752.45
0095	\$200,000.00	5.25%	6 months	13-Dec-24	13-Jun-25	\$5,235.62
0097	\$200,000.00	4.80%	6 months	3-Feb-25	3-Aug-25	
0098	\$200,000.00	4.40%	4 months	19-Feb-25	19-Jun-25	\$2,794.52
0099	\$300,000.00	4.10%	6 months	1-May-25	1-Nov-25	
0098	\$200,000.00	3.50%	4 months	19-Jun-25	19-Oct-25	

Transaction List

Mastercard Business Card - 5474-33** -**** -*520

			Current Balance as at 27/06/2025:	
			\$314.86 DR	
Payment Date	Description	Reference	Debit	Credit
26/06/2025	FIFO SUPERMARKET HAMILTON NZL	992606	\$19.98	
21/06/2025	Garmin Eastern Creek AUS	992106	\$20.00	
20/06/2025	Global Beverages Nz Li Taupo NZL	992006	\$69.99	
19/06/2025	DIRECT DEBIT PAYMENT			\$3,357.20
16/06/2025	Garmin Eastern Creek AUS	991606	\$20.00	
16/06/2025	Garmin Eastern Creek AUS	991606	\$20.00	
08/06/2025	ARLO 408 638 3750 IRL	990806	\$14.99	
05/06/2025	NZ TRANSPORT AGENCY EC PALMERSTON NO NZL	990506	\$48.50	
02/06/2025	KIWI FUELS LTD PIRONGIA NZL	990206	\$45.80	
29/05/2025	ADOBE ADOBE DUBLIN IRL	992905	\$21.90	
29/05/2025	ADOBE ADOBE DUBLIN IRL	992905	\$33.70	
23/05/2025	HELL PIZZA DINSDALE HAMILTON NZL	992305	\$170.00	
23/05/2025	Waikato Hunting Fish Te Rapa NZL	992305	\$882.03	
23/05/2025	WOOLWORTHS NZ 9432 DINSDALE NZL	992305	\$50.99	
21/05/2025	Garmin Eastern Creek AUS	992105	\$20.00	
19/05/2025	DIRECT DEBIT PAYMENT			\$180.59
16/05/2025	Garmin Eastern Creek AUS	991605	\$20.00	
16/05/2025	Garmin Eastern Creek AUS	991605	\$20.00	
16/05/2025	MediTrain Ltd Auckland Auc	991605	\$135.00	
13/05/2025	Mitre 10 MEGA Te Rapa HAMILTON HAM	991305	\$52.92	
10/05/2025	NZ TRANSPORT AGENCY TO PALM NTH NZL	991005	\$5.20	
08/05/2025	ARLO 408 638 3750 IRL	990805	\$14.99	
04/05/2025	NT CAFE BAKERY NGATEA NZL	990405	\$32.29	
03/05/2025	NGATEA HOTEL NGATEA NZL	990305	\$37.99	
03/05/2025	WOOLWORTHS NZ 9282 TE RAPA NZL	990305	\$58.22	
02/05/2025	NZ TRANSPORT AGENCY EC PALMERSTON NO NZL	990205	\$1,532.44	
02/05/2025	The Warehouse 185 Te R Hamilton Ham	990205	\$29.49	

Account Transactions

Auckland/Waikato Fish & Game Council

For the period 1 May 2025 to 30 June 2025

Date	Description	Debit	Credit
Commission on Sales Fish			
31 May 2025	Eyede Solutions - Commission - Fish	258.53	0.00
31 May 2025	Eyede Solutions - Commission - Fish	104.41	0.00
Total Commission on Sales Fish		362.94	0.00
Commission on Sales Game			
31 May 2025	Eyede Solutions - Commission - Game	12,667.64	0.00
31 May 2025	Eyede Solutions - Commission - Game	3,375.94	0.00
Total Commission on Sales Game		16,043.58	0.00
Council Meeting Expenses			
22 May 2025	Woolworths - Supplies for meeting	44.34	0.00
22 May 2025	Hell Pizza - Food for council meeting	147.83	0.00
Total Council Meeting Expenses		192.17	0.00
Displays/Promotions PR			
26 May 2025	Adam Daniel - KMart26/5/25Kids fishing items	40.00	0.00
20 Jun 2025	Adam Daniel - PaknSave20/6/25Fishing bait	17.06	0.00
Total Displays/Promotions PR		57.06	0.00
Expense - Drift Diving Surveys			
01 May 2025	Adam Daniel - Glass wizard - RaglanMirror	16.52	0.00
22 May 2025	Waikato Hunting & Fishing - Boots	635.71	0.00
Total Expense - Drift Diving Surveys		652.23	0.00
Expense - Fish Releases			
14 May 2025	Mitre 10 Mega - Glue to fix pipe	16.57	0.00
20 May 2025	Eastern Fish and Game Council - 2+ Rainbow Trout	1,642.00	0.00
20 May 2025	Eastern Fish and Game Council - 2+ Rainbow Trout	1,642.00	0.00
23 May 2025	Mitre 10 Mega - Fish release items	174.79	0.00
30 May 2025	Master Trim Ltd - Fish release pipe	120.00	0.00
31 May 2025	BOC Limited - Oxygen - Fish releases	124.02	0.00
04 Jun 2025	Adam Daniel - Extreme Zero Waste4/6/25Pipe	3.48	0.00
17 Jun 2025	Mitre 10 Mega - Items for fish release	85.63	0.00
19 Jun 2025	Adam Daniel - Bunnings19/06/25Pails	24.03	0.00
Total Expense - Fish Releases		3,832.52	0.00
Expense - Habitat Works F & G Land			
06 May 2025	Cartrack NZ - Cartrack sub	15.00	0.00
05 Jun 2025	Cartrack NZ - Cartrack sub	15.00	0.00

Total Expense - Habitat Works F & G Land	30.00	0.00
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Expense - Habitat Works Non F & G land

22 May 2025	Porters Pest Control - Koi Carp clean up of canal	3,854.00	0.00
Total Expense - Habitat Works Non F & G land		3,854.00	0.00

Expense - Trees/Seeds

13 May 2025	Appletons Tree Nursery - Deposit for tree order	729.72	0.00
Total Expense - Trees/Seeds		729.72	0.00

Field Equipment Maintenance

14 May 2025	Garmin - David Klee - Satellite sub	17.39	0.00
14 May 2025	Garmin - David Klee - Satellite sub	17.39	0.00
19 May 2025	Garmin - Beau Jarvis-Child - Satellite sub	17.39	0.00
19 May 2025	Garmin - Beau Jarvis-Child - Satellite sub	17.39	0.00
14 Jun 2025	Garmin - Adam Daniel - Satellite sub	17.39	0.00
Total Field Equipment Maintenance		86.95	0.00

Fish Licence Sales – AOL

31 May 2025	Eyede Solutions - Fishing licences 24/25	0.00	3,034.97
31 May 2025	Eyede Solutions - Hunting & Fishing Whitianga - unpaid	7,180.35	0.00
31 May 2025	Eyede Solutions - Fishing licences 24/25	0.00	2,192.17
Total Fish Licence Sales – AOL		7,180.35	5,227.14

Fish Licence Sales – POL

15 May 2025	Leo Juby - Refund of licence from Full whole season to family.	135.65	0.00
31 May 2025	Eyede Solutions - Fish Licences 24/25	0.00	7,864.35
Total Fish Licence Sales – POL		135.65	7,864.35

Fringe Benefit Tax

03 Jun 2025	Inland Revenue - Fringe benefit	6,814.43	0.00
Total Fringe Benefit Tax		6,814.43	0.00

Game Bird Habitat Stamp

Opening Balance		0.00	12,700.11
01 May 2025	Darren Robers - TAM - Joel Elliott	0.00	4.35
02 May 2025	Loftus Stanford - TAM - Taylah McWhinney	0.00	4.35
02 May 2025	Kurt Beatty - TAM - Daniel Hall	0.00	4.35
02 May 2025	Ethan Dickey - TAM - Albie Metcalf	0.00	4.35
31 May 2025	Eyede Solutions - Habitat stamp	0.00	12,213.04
31 May 2025	Eyede Solutions - Habitat Stamp	0.00	2,991.30
31 May 2025	Eyede Solutions - Habitat stamp	0.00	3,317.39
Total Game Bird Habitat Stamp		0.00	18,539.13
Closing Balance		0.00	31,239.24

Game Bird Harvest Surveys

19 May 2025	Matta Daniel - Matta Daniel	Gamebird surveys	48.00	0.00
19 May 2025	Travis Kendall - Travis Kendall	Gamebird surveys	200.00	0.00
27 May 2025	Travis Kendall - Travis Kendall	Gamebird surveys	168.00	0.00
10 Jun 2025	Travis Kendall - Travis Kendall	Gamebird surveys3rd harvest survey	160.00	0.00
25 Jun 2025	Travis Kendall - Travis Kendall	Gamebird surveys4th harvest survey	140.00	0.00
Total Game Bird Harvest Surveys			716.00	0.00

Game Licence Sales - AOL

02 May 2025	Chris Hamilton - Refund of licence	Have heart operation and cannot hunt66	100.87	0.00
31 May 2025	Eyede Solutions - Game licences	25	0.00	243,271.30
31 May 2025	Eyede Solutions - Game licences	25	0.00	64,097.39
Total Game Licence Sales - AOL			100.87	307,368.69

Game Licence Sales - POL

01 May 2025	Hunter Parker - Hunter Parker - 6636273	Junior Game	22.61	0.00
31 May 2025	Eyede Solutions - Game licences	25	0.00	46,524.35
Total Game Licence Sales - POL			22.61	46,524.35

Income - Access Negotiation

01 May 2025	Timothy Foote - Forest Permit - Timothy Foote		0.00	43.48
02 May 2025	Joe Morgan - Forest permit		0.00	43.48
02 May 2025	Luke Kingstone - Forest Permit		0.00	43.48
04 May 2025	Shane Tipiwai - Forest Permit		0.00	43.48
05 May 2025	Andrew Tombleson - Forest Permit		0.00	43.48
07 May 2025	Michael Mackenzie - Forest Permit		0.00	43.48
07 May 2025	Greg Bartlett - Forest Permit		0.00	43.48
07 May 2025	Jonathan Williams - Forest Permit		0.00	43.48
07 May 2025	Murray Newland - Forest Permit		0.00	43.48
07 May 2025	Joseph Wilson - Forest permit		0.00	43.48
08 May 2025	Craig Cuthbert - Forest Permit		0.00	43.48
08 May 2025	Sam Burrows - Forest permit		0.00	43.48
08 May 2025	Nathan James - Forest permit		0.00	43.48
12 May 2025	Mason Reed - Forest Permit		0.00	43.48
12 May 2025	Chris Marra - Forest Permit		0.00	43.48
15 May 2025	Paul Lapwood - Forest permit		0.00	43.48
20 May 2025	Philipp Spahn - Forest permit		0.00	43.48
22 May 2025	Gary Millar - Forest Permit		0.00	43.48
23 May 2025	Garry Richards - Forest Permit		0.00	43.48
23 May 2025	Nick Coster - Forest Permit		0.00	43.48
24 May 2025	Tom Farrell - Forest Permit		0.00	43.48
26 May 2025	Hasan Zuberi - Forest Permit		0.00	43.48
26 May 2025	Brooke tyler - Forest Permit		0.00	43.48
27 May 2025	Oakley Orme - Forest Permit		0.00	43.48
27 May 2025	Ben Roche - Forest Permit		0.00	43.48
03 Jun 2025	Brett Fenton - Forest Permit		0.00	43.48
19 Jun 2025	Donald Grey - Forest Permit		0.00	43.48

Total Income - Access Negotiation	0.00	1,173.96
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Income - Designated Waters

31 May 2025	Eyede Solutions - Designated waters	0.00	4.16
Total Income - Designated Waters		0.00	4.16

Income - Game Bird Control (Zon guns)

23 Jun 2025	Richard Bain - Zon gun hireSerial: 18063346	0.00	110.00
23 Jun 2025	Richard Bain - Zon gun hire	0.00	110.00
26 Jun 2025	Woodlands Estate - Zon gun hire	0.00	194.00
Total Income - Game Bird Control (Zon guns)		0.00	414.00

Income - Habitat Works Non F & G land

22 May 2025	Department of Conservation - Reimbursement for clean up of Koi Carp at F	0.00	1,927.00
22 May 2025	Waikato Regional Council - Reimbursement for clean up of Koi Carp at Pur	0.00	1,927.00
28 May 2025	Elizabeth Rumball - Wetland works completed by Site Land Development.	0.00	7,508.57
03 Jun 2025	Waikato Regional Council -Support for Rumball/Healy Koi Barrier	0.00	12,773.58
Total Income - Habitat Works Non F & G land		0.00	24,136.15

Interest Income

31 May 2025	Westpac - Interest	0.00	9.84
31 May 2025	Westpac - Interest	0.00	1.19
31 May 2025	Westpac - Interest	0.00	180.32
13 Jun 2025	Westpac - Interest	0.00	5,235.62
25 Jun 2025	Westpac - Term deposit 0098	0.00	2,794.52
Total Interest Income		0.00	8,221.49

KiwiSaver Employer Contribution

02 May 2025	Superannuation	1,300.96	0.00
16 May 2025	Superannuation	1,300.96	0.00
30 May 2025	Superannuation	1,300.96	0.00
13 Jun 2025	Superannuation	1,300.96	0.00
27 Jun 2025	Superannuation	1,300.96	0.00
Total KiwiSaver Employer Contribution		6,504.80	0.00

Legal Funding Received NZFGC

01 May 2025	New Zealand Fish & Game Council - Whangamarino Weir r	0.00	2,400.00
14 May 2025	New Zealand Fish & Game Council - Reimbursement:Healthy Rivers	0.00	1,262.76
03 Jun 2025	New Zealand Fish & Game Council - Whangamarino Weir reimbursement	0.00	1,012.50
03 Jun 2025	New Zealand Fish & Game Council - Reimbursement:Healthy Rivers	0.00	1,822.50
30 Jun 2025	New Zealand Fish & Game Council - Whangamarino Weir reimbursement	0.00	675.00
Total Legal Funding Received NZFGC		0.00	7,172.76

Legal/Court Prosecutions

26 May 2025	Stainton Chellew - Taumaranui ShootDisbursements	34.78	0.00
26 May 2025	Stainton Chellew - Fees	8,375.00	0.00

Total Legal/Court Prosecutions		8,409.78	0.00
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NZ F&G Levy

06 May 2025	New Zealand Fish & Game Council - FY25 Quarterly Levy Installment 3 of 4	57,026.75	0.00
Total NZ F&G Levy		57,026.75	0.00

Office General

01 May 2025	Warehouse Stationery - Stationary and kitchen supplies	25.64	0.00
08 May 2025	Arlo - Camera sub	13.03	0.00
12 May 2025	Mitre 10 Mega - Windscreen cleaner and anti damp	46.02	0.00
13 May 2025	Adam Daniel - Coffee	18.26	0.00
14 May 2025	Roslyn Simmonds - Office supplies	23.02	0.00
23 May 2025	David Klee - Coffee	8.70	0.00
28 May 2025	Adobe Systems Software - Acrobat standard	19.04	0.00
28 May 2025	Eastern Fish and Game Council - May subscription - Xero accounting pack	72.25	0.00
28 May 2025	Eastern Fish and Game Council - Additional Employee Charges	6.00	0.00
28 May 2025	Adobe Systems Software - Acrobat Pro	33.70	0.00
31 May 2025	Allied Security - Alarm monitoring	44.68	0.00
31 May 2025	Roslyn Simmonds - Look sharp31/5/25Forks for kitchen	3.48	0.00
31 May 2025	Roslyn Simmonds - Woolworths9/6/25Kitchen items	27.51	0.00
04 Jun 2025	Adam Daniel - Raglan Roast4/6/25Coffee	22.61	0.00
08 Jun 2025	Arlo - Camera sub	13.03	0.00
13 Jun 2025	Roslyn Simmonds - Woolworths13/6/25Coffee	14.60	0.00
24 Jun 2025	Roslyn Simmonds - Coffee	17.37	0.00
28 Jun 2025	Adobe Systems Software - Acrobat standard	21.90	0.00
Total Office General		430.84	0.00

Office Power

06 May 2025	Meridian - Power	136.61	0.00
06 Jun 2025	Meridian - Power	170.75	0.00
Total Office Power		307.36	0.00

Office Premises Rates (inc Water)

25 Jun 2025	Hamilton City Council - Metered Water18/3/25 to 18/6/25	112.70	0.00
Total Office Premises Rates (inc Water)		112.70	0.00

Photocopier

19 May 2025	Canon - Photocopier	152.87	0.00
19 Jun 2025	Canon - Photocopier	47.18	0.00
Total Photocopier		200.05	0.00

Postage

08 May 2025	Roslyn Simmonds - Nawton Stationery8/5/25Courier bags	10.43	0.00
08 May 2025	Roslyn Simmonds - Nawton stationery8/5/25Courier costs	108.52	0.00
13 Jun 2025	Roslyn Simmonds - Nawton Stationery18/6/25Courier	11.74	0.00

23 Jun 2025	Clare Robertson - NZ Post11/6/25Courier	20.10	0.00
23 Jun 2025	Clare Robertson - NZ Post28/5/25Courier	11.85	0.00
23 Jun 2025	Clare Robertson - Nawton startionery23/6/25Courier	23.48	0.00
24 Jun 2025	Roslyn Simmonds - Courier	9.13	0.00
Total Postage		195.25	0.00

Prosecutions Fines

22 May 2025	Ministry of Justice - Ridgeway/Kevin/Philip	0.00	108.02
22 May 2025	Ministry of Justice - Shelley/Joshua	0.00	90.00
26 Jun 2025	Ministry of Justice - Ridgeway/Kevin/Philip	0.00	108.02
26 Jun 2025	Ministry of Justice - Shelley/Joshua	0.00	72.00
Total Prosecutions Fines		0.00	378.04

Public Liability Insurance

30 May 2025	New Zealand Fish & Game Council - Charge for Statutory Liability Insuranc	763.42	0.00
Total Public Liability Insurance		763.42	0.00

Public Online Sales Fees Excl GST

31 May 2025	Eyede Solutions - Licence Bank Fees	1,123.59	0.00
Total Public Online Sales Fees Excl GST		1,123.59	0.00

Public Online Sales Fees Incl GST

31 May 2025	Eyede Solutions - Licence DPS Fee	149.89	0.00
Total Public Online Sales Fees Incl GST		149.89	0.00

Ranging & Field Gear

02 May 2025	Woolworths - Food for opening weekend	50.63	0.00
02 May 2025	Thirsty Liqour - Accommodation while ranging	33.03	0.00
03 May 2025	Ngatea Cafe - Lunch on opening day	28.08	0.00
03 May 2025	Adam Daniel - The backyard gastropub3/5/25Ranging supplies	26.08	0.00
03 May 2025	Adam Daniel - Karapiro Cafe4/5/25Food	19.43	0.00
Total Ranging & Field Gear		157.25	0.00

Rates - F & G Land

09 May 2025	Auckland Council - Rates - 147 Bethells Road, Bethells	164.57	0.00
Total Rates - F & G Land		164.57	0.00

Reimburesment Allowance

28 May 2025	Clare Robertson - Allowance	1,000.00	0.00
28 May 2025	Mischa Davis - Allowance	1,000.00	0.00
28 May 2025	Roslyn Simmonds - Allowance	1,000.00	0.00
28 May 2025	David Klee - Allowance	2,000.00	0.00
28 May 2025	Adam Daniel - Allowance	2,000.00	0.00
28 May 2025	Beau Jarvis-Child - Allowance	2,000.00	0.00
28 May 2025	Danielle Lelievre - Allowance	2,000.00	0.00
Total Reimburesment Allowance		11,000.00	0.00

RMA

14 May 2025	Mischa Davis - Accommodation for EDS Conference	191.43	0.00
31 May 2025	Resourced AF Limited - Review WRC updated consent conditions and send	1,012.50	0.00
03 Jun 2025	S J Ongley - Attendances since my last invoice of 26 November 2024 includ	1,822.50	0.00
Total RMA		3,026.43	0.00

Salaries

02 May 2025	Earnings	21,682.67	0.00
16 May 2025	Earnings	21,682.66	0.00
30 May 2025	Earnings	21,682.66	0.00
13 Jun 2025	Earnings	21,682.67	0.00
27 Jun 2025	Earnings	21,682.67	0.00
Total Salaries		108,413.33	0.00

Staff Branded Clothing

22 May 2025	Waikato Hunting & Fishing - Jacket	131.27	0.00
04 Jun 2025	TG Branding Ltd - Embroidery on Clare's jacket	8.95	0.00
Total Staff Branded Clothing		140.22	0.00

Staff Training

15 May 2025	Waikato Meditrain - First aid courseDanielle Le Lievre23/5/25	117.39	0.00
03 Jun 2025	Meditrain Limited - Workplace First Aid Course (6400 series) for Danielle Le	73.91	0.00
19 Jun 2025	The Whisky and More - Gift	60.86	0.00
Total Staff Training		252.16	0.00

Stationery

27 May 2025	OfficeMax - Stationery	108.05	0.00
09 Jun 2025	Douglas Emmett - Warehouse Stationery9/6/25Printer cartridges	143.10	0.00
13 Jun 2025	Doug Emmett - Reimbursement mistake	0.00	143.10
Total Stationery		251.15	143.10

Telephone/fax/internet

02 May 2025	PureLink - Voice service	69.00	0.00
07 May 2025	one.nz - Broadband - Broadband - 156 Brymer Road	118.00	0.00
10 May 2025	Spark - 0800 - 0880 Phone	20.00	0.00
12 May 2025	Beau Jarvis-Child - Broadband - Beau Jarvis-Child	82.59	0.00
17 May 2025	one.nz - A Daniel - Broadband - Adam Daniel	108.66	0.00
19 May 2025	David Klee - INV-NZL-1640103-94376-36BroadbandDavid Klee	138.26	0.00
22 May 2025	Clare Robertson - Inv:155732634Clare RobertsonMay 2025	43.48	0.00
23 May 2025	one.nz - Mobiles - Mobiles	301.21	0.00
31 May 2025	Danielle Lelievre - BroadbandDanielle Le Lievre	100.00	0.00
03 Jun 2025	PureLink - Voice Services	69.00	0.00
07 Jun 2025	one.nz - Broadband - Broadband	118.00	0.00
10 Jun 2025	Spark - 0800 - 0800 phone	19.99	0.00
17 Jun 2025	one.nz - A Daniel - BroadbandAdam DanielMay - June 25	109.28	0.00

19 Jun 2025	David Klee - INV-NZL-1717754-55549-52BroadbandJune-July 2025	138.26	0.00
22 Jun 2025	Clare Robertson - Inv:156764109BroadbandJune 2025	43.48	0.00
23 Jun 2025	Mischa Davis - BroadbandMay 2025	43.48	0.00
23 Jun 2025	Mischa Davis - BroadbandJune 2025	43.48	0.00
23 Jun 2025	one.nz - Mobiles - Mobiles	321.29	0.00
Total Telephone/fax/internet		1,887.46	0.00

Vehicle Fuel & RUC

01 May 2025	NZ Transport Agency - RUC - QDK979	1,332.56	0.00
09 May 2025	NZ Transport Agency - Toll fees - QKG972 - Beau Jarvis-Child	4.52	0.00
31 May 2025	BP Oil New Zealand Limited - Diesel	1,338.36	0.00
31 May 2025	Z Energy Limited - Diesel	135.60	0.00
31 May 2025	Kiwi Fuels - Diesel	39.83	0.00
Total Vehicle Fuel & RUC		2,850.87	0.00

Vehicle Maintenance

13 May 2025	Research Motors Ltd - Replacement battery MGE86	389.63	0.00
21 May 2025	B Select Te Rapa - 5w30 VERTEX PREMIUM OIL	180.86	0.00
21 May 2025	B Select Te Rapa - OIL FILTER (GENUINE)	63.47	0.00
21 May 2025	B Select Te Rapa - LABOUR SERVICE ECONOMYCarry out service with v	180.00	0.00
21 May 2025	B Select Te Rapa - ENGINE FLUSH	23.47	0.00
21 May 2025	B Select Te Rapa - ONE SHOT WINDSCREEN WASHER ADDITIVE	5.21	0.00
21 May 2025	B Select Te Rapa - COPPER SUMP PLUG WASHER	4.34	0.00
21 May 2025	B Select Te Rapa - AIR FILTER (GENUINE)	95.65	0.00
29 May 2025	B Select Te Rapa - Puncture repair for ATV	39.00	0.00
16 Jun 2025	B Select Te Rapa - Service & wheel alignmentNSM958	662.52	0.00
Total Vehicle Maintenance		1,644.15	0.00

Vehicle Registration

04 Jun 2025	NZ Transport Agency - Rego - MGE86	42.17	0.00
Total Vehicle Registration		42.17	0.00

Westpac Term Deposit - 0095

Opening Balance		200,000.00	0.00
13 Jun 2025	Westpac - Maturity term deposit 095	0.00	200,000.00
Total Westpac Term Deposit - 0095		0.00	200,000.00
Closing Balance		0.00	0.00

Westpac Term Deposit - 0099

Opening Balance		0.00	0.00
01 May 2025	Westpac - Term Deposit - 0099	300,000.00	0.00
Total Westpac Term Deposit - 0099		300,000.00	0.00
Closing Balance		300,000.00	0.00

From: [Nigel Juby](#)
To: [David Klee](#)
Subject: Fwd: Access and H5N1 (bird flu) updates FYI
Date: Tuesday, 27 May 2025 10:46:50 am

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

----- Forwarded message -----

From: **Megan Robinson** <Megan.Robinson@parliament.govt.nz>
Date: Mon, 26 May 2025, 14:21
Subject: Access and H5N1 (bird flu) updates FYI
To: phil@bpmnorth.co.nz <phil@bpmnorth.co.nz>, Nigel Juby <nigeljuby@gmail.com>, Mark <sceats@xtra.co.nz>, Bruce Bates <bruce@ngamatea.co.nz>, Chris Donald <chrisdonald518@gmail.com>, p.dewar@gmail.com <p.dewar@gmail.com>, nelsonmarlborough@fishandgame.org.nz <nelsonmarlborough@fishandgame.org.nz>, Alan Strong <astrong@fishandgame.org.nz>, Andrew Simpson <andrew.simpson@me.com>, Peter Bayliss <petebayliss@xtra.co.nz>, Adrian McIntyre <point.farm@outlook.co.nz>, Barrie Barnes <BBarnes@fishandgame.org.nz>, davidmack@farmside.co.nz <davidmack@farmside.co.nz>
Cc: Corina Jordan <cjordan@fishandgame.org.nz>

Dear Chairs,

The Minister has asked me to share two updates he received from DOC last month for your awareness as below.

1. Health & Safety potential legislation changes and issues.

This item updates you on changes to the Health & Safety at Work Act 2015 (HSWA), and how this relates to access for hunters across private land.

Changes to the Health and Safety at Work Act 2015

- Hon Brooke van Velden, Minister for Workplace Relations and Safety has proposed changing the HSWA regarding landowners' responsibilities and recreational safety. Currently, it is not unusual for neighbouring landowners (farmers, forestry, school boards etc) to restrict access to recreationalists due to 'health and safety' concerns.
- The new health and safety legislation changes set out how the HSWA legislation could reduce unintended impacts for recreational users.
- MBIE has been reviewing the HSWA, and in December 2024, several recreational organisations (NZDA, Federated Mountain Clubs, NZ Alpine Clubs and others) provided submissions to MBIE and also released them publicly.
- They were critical of the lack of clarity in HSWA around recreational activities and noted that recreational access to land was being unnecessarily restricted due to fears of the HSWA implications.
- Our visitor safety team shared comments with MBIE through the HSWA review. We support changes to HSWA that improve clarity on when:
 - an activity is considered purely recreational and when an activity is a work safety matter
 - landowners have obligations for control and mitigation of natural hazards, in relation to recreational activity. For example, the impact of weather and landslides, when people are hunting in the back country.
- Previously, WorkSafe has provided guidance on the difference between workplace and recreational safety. However, this may not have sufficient to allay the fears from landowners, leading to access being denied.
- Even with the change, some issues may remain, for example landowners restricting access due to illegal activity (e.g. spotlighting, poaching) by some hunters, landowners not abiding by easement agreements etc.

2. Impact of H5N1 (bird flu) on game bird hunting

- At your meeting with officials on 24 March, you asked for more information on some aspects of our planned response to H5N1 (bird flu):
 - The plan and process for closing areas
 - Overall coordination of work related to H5N1.

Closing areas

- If H5N1 is detected in wild birds in New Zealand, MPI and DOC do not plan to use Biosecurity Act powers to restrict access to areas where there are outbreaks. This is because H5N1 will not be able to be eradicated in wild birds, and while closing areas may be done in some instances for other purposes (such as to protect human health or threatened species), it is not considered to be an effective measure to stop the spread of the disease.
- If Fish and Game Councils wished to halt game bird hunting in a particular area (e.g. to protect game bird stocks), they could submit a new draft Open Season Notice between May 2025 and February 2026. Any such notice would apply to a particular area or region, and not nationally.
- If we need to close areas of PCL to protect threatened species or to protect the health of visitors during significant outbreaks of H5N1, there are mechanisms available to us under conservation legislation (e.g. Conservation Act, Reserves Act). However, it is likely that in most cases we would provide advice of the hazard (bird flu outbreak) via signage, rather than using legislation to close areas.
- When H5N1 has arrived in other countries, it has resulted in outbreaks of varying severity and duration. It is unlikely that all game bird hunting sites in a region would have simultaneous outbreaks, so most people should be able to continue hunting somewhere in their region.

Coordination of activities

- Our planned approach to H5N1 is based on local planning and delivery with national coordination and support.
- Each District has already developed a plan for management of H5N1 at key sites, and each District has an associated communications plan.
- Districts have been encouraged to connect with Treaty Partners and key stakeholders including Fish and Game Councils, Regional Councils and other territorial authorities, public health authorities, and major landowners.
- Our national HPAI team is in the process of organising tabletop exercises in some districts to test these plans; exercises will involve participants from Fish and Game Councils and other stakeholders and partners.
- If restrictions to site access are to be considered, there will be clear communications at the local level to ensure good distribution of information and awareness. We know that Fish and Game Councils are key stakeholders and they would be included in discussion of any site closures that would impact hunters. Treaty partners, territorial authorities and other landowners will also be an important part of discussions.

Next steps

- We will update you if there are any significant developments in our planning for H5N1, or in the distribution of the disease and the likelihood of its arrival in New Zealand.
- Although DOC and MPI do not anticipate needing to close sites using legislative measures, we will not know the scale of impact of H5N1 until it arrives here. Once the disease arrives, we will work closely with our One Health partners (MPI and Health agencies) and others to ensure any approach is well coordinated and supported.

Many thanks,

Megan



Megan Robinson

Private Secretary (Hunting and Fishing) | Office of Hon James Meager

Minister for the South Island

Minister for Hunting and Fishing

Minister for Youth

Associate Minister of Transport

Phone: 027 270 8384

Private Bag 18041, Parliament Buildings, Wellington 6160, New Zealand

Subject: Fish & Game Reform Update - Minister's Proposals & Select Committee Process

Kia ora Councillors,

I wanted to update you on the Fish & Game reform proposals announced by the Minister and share key information from recent briefings.

Reform Overview

The Minister aims to create a unified Fish & Game organisation with uniform positions across regions. The proposed changes include:

Structural Changes:

- Regional council size reduced from 12 to 8 members maximum
- Central licence sales system with NZC issuing licences and collecting licence fees nationwide
- National coordination of advocacy priorities through binding NZC policy
- Shared national experts across regions for example, scientists, lawyers and governance specialists
- Standardised reporting requirements across all regional councils
- NZC will be made up of regional Fish & Game Council Chairs

Funding Model Changes:

- NZC will allocate licence fee revenue based on a funding allocation model set in secondary legislation
- The allocation model will be based on three buckets:
 1. key functions or activities,
 2. level of angler and hunter activity in each region,
 3. business case-based funding
- NZC will set financial strategy in consultation with regional councils to define principles and objectives for fund use
- Regional councils retain authority over their own budgets to meet statutory obligations and local priorities
- Regional councils can still directly receive income from other sources such as donations following Conservation Act provisions

Advocacy Changes:

- NZC would set binding advocacy policy that all regional councils must follow
- Regional councils could only take court action on advocacy matters with explicit written approval from either NZC or the Minister

Operational Changes:

- Fish & Game would gain enhanced authority without requiring DOC sign-off for many operational decisions
- NZC would take responsibility for administrative tasks currently handled by regional councils, reducing their administrative burden (detail below)
- NZC would lead performance monitoring and improvement initiatives across the entire organisation
- Regional councils would focus their expertise specifically on decisions that directly support hunting and fishing opportunities in their regions
- Proposed ministerial powers described as "backstop measures in extremis" - intervention only in exceptional circumstances such as removing councillors or appointing up to two additional regional councillors
- Local seasons, bag limits, and area management would remain entirely with regional councils

Administrative changes that NZC would do:

- Issuing licences and collecting licence fees
- Setting financial strategy and managing the allocation of licence fee revenue
- Compiling all 13 regional annual reports into one Fish & Game annual report for the Minister
- Setting binding policies for various functions (HR, health & safety, monitoring, compliance, advocacy)
- Determining mandatory forms and templates for sports fish and game management plans, annual work plans, and annual reporting
- Collating and editing Anglers and Game Notices for clarity before submission to Minister

Governance & Electoral Changes:

- All resident adult licence holders would be eligible to vote and stand in elections with an opt-out for electronic voting and consultation
- Fish & Game subregions would be abolished
- Regional councils could choose to fill vacancies only by election, and must hold elections if councillor numbers drop below 3
- Modernised election procedures including electronic voting and consultation capabilities
- Professional standards requirements for all councillors including fit and proper person tests
- Councillors cannot be Fish & Game employees
- Enhanced requirement for councils to consider the interests of non-hunters and non-fishers in decision-making
- Regional councils must provide written rationale to NZC and Minister if they change their Chair (and therefore NZC representative)
- Improved transparency through better and more consistent reporting standards

National Policy Framework:

- NZC would set binding policies for key regional council functions in consultation with regional councils
- NZC would set non-binding policies for other regional council functions which councils can adapt to local needs
- Binding policies would include monitoring, compliance, human resources, and health & safety standards
- Regional councils would provide information requested by NZC for coordination purposes

Specialist Staff & Corporate Functions:

- NZC can hire specialist staff to work across the organisation for example including freshwater ecologists, population biologists, lawyers and governance specialists
- NZC would set binding human resources policies including standard job descriptions and salary bands
- NZC would set binding minimum health & safety standards

Reporting & Transparency:

- NZC would determine mandatory forms and templates for sports fish and game management plans, annual work plans, and annual reporting
- NZC would compile all 13 regional annual reports into one Fish & Game annual report for the Minister
- Regional councils would retain decision-making authority over content but follow NZC templates and binding policies
- Additional minimum requirements for considering 'other users' in sports fish and game management plans

Sports Fish & Game Management:

- Regional councils retain full decision-making power over regional and local species and habitat management while complying with binding monitoring and compliance policies.
- Regional councils continue to prepare Anglers and Game Notices including seasons, bag limits and conditions
- NZC would collate and edit notices for clarity before Minister approval but not change content
- NZC may provide independent advice to Minister on sustainability, suitability and consistency of notices
- Regional councils must ensure aviation safety is not compromised and conservation of isolated populations of threatened native fish is not hindered

Other Changes:

- Minister can amend Anglers Notices before approval and Game Notices at any time of year
- Process for regional mergers clarified but not mandated
- Commercial upland game preserves streamlined through Gazette notice rather than Order in Council
- Annual reporting to DOC on legal proceedings required
- Councillors can be reimbursed for actual and reasonable expenses
- Transition period provided for implementation

What Remains with Regional Councils

Core Decision-Making Authority:

- Full decision-making power over regional and local species and habitat management
- Authority to set local seasons, bag limits, and area management decisions
- Preparation of Anglers and Game Notices including seasons, bag limits and other local conditions
- Setting regional priorities for monitoring, compliance and other functions while meeting minimum national requirements

Budget & Financial Authority:

- Retain authority over their own budgets to meet obligations and local priorities
- Continue to receive income from other sources such as donations (following Conservation Act provisions)
- Decision-making on how much advocacy action to take within their budget and advocacy strategy

Local Adaptation:

- Ability to adapt non-binding policies set by NZC to local needs without requiring approval
- Deciding content of sports fish and game management plans, annual work plans, and annual reports (subject to NZC templates and binding policies)

Staffing:

- Hiring their own Chief Executive or Manager (following NZC's corporate HR policy)
- Chief Executives/Managers hire their own staff
- Access to specialist staff provided by NZC when needed

Ongoing Functions:

- Assessing and monitoring sports fish and game populations, licence holder activity and satisfaction, and habitat conditions
- Conducting compliance activities according to binding national policies
- Inputting to local processes (such as RMA processes) within their budget and advocacy strategy
- Ensuring aviation safety is not compromised and conservation of isolated native fish populations is not hindered

Minister's Rationale for Change

The Minister has indicated that these proposals aim to address issues identified in several reviews and audits of Fish & Game, including:

Organisational Cohesion: The Minister cites a lack of cohesion between councils as hindering best practice development and national resource management.

Efficiency Concerns: Duplicated administrative processes across the organisation are described as inefficient use of licence holder funds.

Governance Standards: Variable governance performance and outdated legislation are cited as impacting decision-making quality.

Electoral Representation: The current electoral system is described as lacking fair representation of membership.

Advocacy Effectiveness: The Minister suggests advocacy has not always served licence holders' best interests.

Stakeholder Consideration: Non-hunting and non-fishing interests may not always be adequately considered.

Key Questions & Responses

During the Q&A session, several important clarifications emerged:

On Ministerial Powers: The Minister's office has indicated these would be reserve powers used only when normal processes fail, including the ability to remove councillors and appoint up to two additional regional councillors in exceptional circumstances.

On Regional Autonomy: Under the proposals, local decision-making for hunting and fishing regulations would remain with regional councils using licence holder fees.

On Advocacy Coordination: The proposals would establish binding advocacy policy from NZC, with regional councils requiring approval for court action on advocacy matters.

On Funding & Administration: The proposed model would have NZC collect licence fees and allocate revenue based on a funding allocation model set in secondary legislation. This model would allocate revenue based primarily on levels of angler and hunter activity in each region while ensuring key functions are adequately funded and providing some business case-based funding. Regional councils would retain authority over their own budgets to meet obligations and local priorities.

On Electoral Changes: More licence holders would become eligible to vote and stand in elections, with modernised procedures aimed at encouraging wider participation.

On Timeline: The Government intends to introduce a Bill by the end of 2025, with the select committee process for public feedback anticipated in late 2025.

Select Committee Process

When the Bill is introduced, there will be formal opportunities for public engagement through the select committee process.

Important Guidelines for Staff Participation: If Fish & Game staff wish to make personal submissions, they must follow the Public Service Standards of Integrity and Conduct:

- Submissions must be made in personal capacity only
- Avoid connecting submissions to your employment
- Don't use work-only information in submissions
- Seek manager approval if uncertain
- Staff cannot make submissions as 'Fish & Game' representatives

Public Information & Queries

We've established a dedicated webpage with information about the reform proposals and key documents.

For licence holder queries, we're providing factual information about what has been proposed. Here's a standard response:

The Minister's proposals include central licence sales, national advocacy coordination, smaller regional councils, shared experts, and standardised reporting. Under these proposals, local seasons, bag limits, and area management would remain with regional councils. These are proposals subject to select committee review where licence holders can make submissions before any changes become law.

NZC Role

As this process unfolds, our role is to serve as an impartial information conduit, ensuring transparency while acknowledging the diverse views on these proposals. We'll continue updating you on all developments throughout the reform process.

The select committee stage will provide the formal avenue for public input on the proposed legislation.

Appendix One – Schedule of Legislative Amendments for Fish and Game Governance and Organisational Improvements Amendment Bill

Key to abbreviations used in table:

NZC = New Zealand Fish and Game Council; **FGC** = Fish and Game Council;

CA = Conservation Act 1987; **FFR** = Freshwater Fisheries Regulations 1983; **FGCER** = Fish and Game Council Elections Regulations 1990; **SFGMP** = sports fish and game management plan;

WA = Wildlife Act 1953; **WR** = Wildlife Regulations 1955; **TFR** = Taupo Fishery Regulations 2004

No.	Summary of problem	Summary of proposed changes
	Functions	
	Nationwide policy consistency	
1.	<p><i>General</i> NZC is responsible for coordinating the work of FGCs but has no function to develop policies for the work of FGCs. This impedes national coordination of work by FGCs.</p>	<p>The NZC to have the ability to develop national policies for the work of Fish and Game, both NZC and FGCs. These would be non-binding (except for certain specified areas (described below)) to maintain the independence of FGCs in their regional work.</p>
2.	<p><i>Compliance</i> Each FGC can decide its own policy for ensuring compliance with hunting and fishing regulations. This creates inconsistency of treatment across different regions, and raises questions about natural justice.</p>	<p>To create consistency of approach across councils, the NZC, in consultation with FGCs, to set policy binding on FGCs for things such as:</p> <ul style="list-style-type: none"> • How compliance activity is conducted (e.g., standards of behaviour and approach) • How compliance activity is reported • Spatial coverage of compliance work • How to apply any approved infringement policy in different circumstances (the Minister to continue to approve any infringement policy as set out in s.26HA(2) of CA). <p>The NZC, in consultation with FGCs, to set the minimum levels of compliance work undertaken by FGCs for this key activity.</p>
3.	<p><i>Monitoring</i> Each FGC can decide its own policy for resource and activity monitoring in its region, sometimes resulting in incomplete or inconsistent national-level data. This impedes national coordination and prioritisation of effort.</p>	<p>To create consistency of approach for monitoring activity (as set out in s.26Q(1)(a) of the CA) the NZC, in consultation with FGCs, to set policy binding on FGCs for things such as:</p> <ul style="list-style-type: none"> • Standardised methodologies for conducting monitoring activity – including monitoring of sports fish and game resources, licence holder activity and satisfaction, and habitat condition • Spatial coverage of different types of monitoring • Standardised reporting of data. <p>The NZC, in consultation with FGCs, to set the minimum levels of monitoring work undertaken by FGCs for this key activity.</p>
4.	<p><i>Corporate</i> Each FGC sets its own corporate, business, and personnel policies and processes, leading to duplication of effort and inconsistent standards and staff salaries across regions.</p>	<p>To create consistency of approach and systems for corporate activity, the NZC, in consultation with FGCs, to set policy binding on FGCs for things such as:</p> <ul style="list-style-type: none"> • Business processes and systems • Corporate policies • Health and safety (minimum standards)

No.	Summary of problem	Summary of proposed changes
		<ul style="list-style-type: none"> Personnel policies (including staff conditions). <p>This will ensure consistency of approach across the organisation, providing greater efficiencies, and enabling better planning and staff management.</p>
5.	<p><i>Advocacy</i> Some FGC advocacy work and court action has been contrary to wider Fish and Game interests, but the NZC has no way to intervene.</p>	<p>To create consistency of approach across councils and protect the interests of Fish and Game as a whole, the NZC, in consultation with FGCs, to set policy binding on FGCs for things such as:</p> <ul style="list-style-type: none"> General advocacy undertaken by FGCs to advance the interests and aspirations of anglers and hunters (including, potentially, a national advocacy strategy) Advocacy undertaken by FGCs via statutory planning processes to advance the interests and aspirations of anglers and hunters FGC appearances before courts and tribunals. <p>To ensure court action is timely but well considered, court proceedings, other than for enforcing offences, may only be filed by regional Fish and Game councils with the authorisation of the National Council or the responsible Minister as appropriate.</p> <p>Additionally, all FGC court action to be subject to the direction of the NZC, except when the FGC is challenging the NZC or another FGC.</p> <p>NZC to be empowered to intervene in local advocacy actions undertaken by FGCs when such actions are contrary to the agreed-upon binding advocacy policy.</p>
6.	<p><i>Sports Fish and Game Management Plans</i> NZC has no ability to determine policy content of sports fish and game management plans (SFGMPS) in the areas where the NZC can set policy binding on FGCs (see above).</p>	<p>To create consistency of approach across councils, the NZC, in consultation with FGCs, to determine minimum provisions for inclusion in draft SFGMPS prepared by FGCs in relation to:</p> <ul style="list-style-type: none"> compliance and enforcement monitoring of resources, and licence holder activity and satisfaction statutory planning processes.
	<p>Functional support</p>	
7.	<p><i>NZC Work Plan</i> The NZC is to have new operational functions and responsibilities, and appropriate transparency and accountability is needed.</p>	<p>The NZC to be required to prepare an annual operational work plan (as FGCs do currently). This will deliver transparency and accountability by providing outcomes and measures to report against (see also rows below).</p>
8.	<p><i>Specialist staff</i> The small size of many FGCs often prevents the engagement of specialist staff, and sharing staff between regions is administratively difficult.</p>	<p>The NZC to have a new function to provide specialist expertise to FGCs – such as planners, ecologists, scientists, lawyers, accountants, etc – who can work across several regions. Such staff may be located in the regions they work.</p>
9.	<p><i>Servicing and reporting</i> The servicing of councillors and business planning and performance reporting need to receive adequate attention and support.</p>	<p>The NZC to have a new function to determine, in consultation with FGCs, minimum work programmes to be implemented by FGCs in relation to the key activities of:</p> <ul style="list-style-type: none"> the servicing of FGC meetings and support to councillors annual business planning and performance monitoring.

No.	Summary of problem	Summary of proposed changes
		The NZC to have a responsibility to ensure that FGC minimum work programmes for all key activities (including rows 2 and 3 above) are adequately funded.
10.	<p><i>Templates and timeframes</i> Each FGC may decide its own structure and format for work planning, annual reporting, and SFGMPs, which can lead to inconsistencies across councils and make comparisons difficult.</p> <p>Time delays can cause problems in collation work undertaken by the NZC.</p>	<p>The NZC to have a new function to determine the forms and templates to be used by FGCs in all work planning, performance reporting, and SFGMPs.</p> <p>Clarify that the NZC may determine processes and timeframes for work planning, annual reporting and the preparation of Anglers and Game Notices.</p>
	Issuing of licences	
11.	FGCs currently issue all licences, and collect all revenue, requiring multiple handling of money via inefficient redistribution mechanisms.	<p>The NZC to issue all sports fishing and game hunting licences and receive all fee revenue.</p> <p>Licences are currently sold via a central website – licence holders buy directly from website, and licence sales agents sell via a portal to this website. This method of selling licences would continue. The website is operated by a specialist contractor.</p> <p>To maintain clarity, rename “Special licences” as “Special permits” in FFR.</p>
	Allocation of funding	
12.	<p>Allocation of funding (derived from licence fee revenue) among FGCs has been problematic since licences issued by FGCs became valid nationwide.</p> <p>Annual allocation of funding to each FGC (after redistribution by NZC) is based largely on the level of funding received by each FGC in previous years. This means management effort is not always directed to areas of greatest potential benefit to licence holders.</p>	<p>Allocation of funding among FGCs to be determined by the NZC according to a funding model set in secondary legislation (<i>regulations or Gazette to be determined</i>).</p> <p>The funding model (yet to be fully developed) is expected to direct the bulk of funding to FGC regions in proportion to the level of licence holder activity in each region, while ensuring funding for key activities (see above), national research, and NZC work, and include a contestable fund.</p> <p>The NZC to have a new function to develop, in consultation with FGCs, a financial strategy.</p>
	Transparency and reporting	
	Performance reporting	
13.	<p><i>Performance measures</i> Operational work planning lacks accountability and transparency, and is not aligned with existing annual reporting requirements for Fish and Game</p>	<p>NZC and FGC annual operational work plans to be required to include:</p> <ul style="list-style-type: none"> • A concise explanation of what each class of outputs is intended to achieve • A concise explanation of how the performance of each class of outputs will be assessed. <p>NZC and FGC annual operational work plans to be considered final once dated and signed by the Chair and the Manager of the respective FGC or NZC.</p>

No.	Summary of problem	Summary of proposed changes
		NZC and FGC annual operational work plans must be consistent with any approved SFGMP and any binding policy set by the NZC.
14.	<i>Report against performance</i> NZC and FGC annual reporting in CA does not align with NZC and FGC requirements specified in Public Finance Act 1989 and Crown Entities Act 2004.	NZC and FGC annual reports to each contain statements of performance against the performance expectations in their annual operating plan. Each FGC annual report to be dated and signed by the FGC Chair and FGC Manager before submission to NZC.
15.	<i>Full reporting on enforcement</i> FGCs must report annually on enforcement activity under an infringements system, but not on actions leading to court action (complaints from public, adherence to procedures, etc)	Requirements on FGCs to report annually on enforcement work under any infringement system to be expanded to cover all enforcement work.
16.	<i>Combined annual report</i> NZC and each FGC is independent and provides its own separate annual report to Minister, none of which are reviewed individually, or across Fish and Game as a whole. (For example, there is no equivalent to the annual select committee reviews of Crown agencies.)	The NZC to compile NZC and FGC annual reports (currently 13 in all) into a single annual report for the Minister to present to the House. The NZC combined annual report be required to: <ul style="list-style-type: none"> • Contain the statements of performance against performance expectations for the NZC and each FGC (as provided by each FGC); and • Summarise any discrepancies between the performance and performance expectations of the NZC and each FGC; and • Provide an overall review of Fish and Game (all 13 councils) as a whole. The NZC combined annual report to be dated and signed by the NZC Chair and NZC Manager before submission to the Minister.
17.	<i>Information to enable coordination</i> The NZC has been hindered in its coordination role by FGCs declining to provide information necessary for coordination and oversight of Fish and Game work. FGCs have not been fully informed of NZC activities.	The NZC to have a clear oversight function and a new power to require Fish and Game Councils to provide information on request (for the functions where the NZC sets binding policy) related to: <ul style="list-style-type: none"> • financial information • performance reporting information • compliance information (including actions of enforcement officers) • monitoring information and data • matters relating to adherence with corporate policies, including personnel policies (subject to Privacy Act considerations for staff employed by the FGC rather than the NZC). FGCs to have a power to require the NZC to provide information on request (for the functions where the NZC sets binding policy) related to: <ul style="list-style-type: none"> • financial information • performance reporting information • compliance information (including actions of enforcement officers)

No.	Summary of problem	Summary of proposed changes
		<ul style="list-style-type: none"> • monitoring information and data • matters relating to adherence with corporate policies, including personnel policies (subject to Privacy Act considerations for staff employed by the NZC rather than the FGC) • matters relating to the development by the NZC of binding policies.
18.	<p><i>Information to inform audits</i> NZC has a function to audit the activities of FGCs but lacks the necessary power to require FGCs to provide financial information to NZC, thus preventing NZC fulfilling its role.</p>	<p>The NZC to have a function to audit the activities and performance of FGCs, and of Fish and Game as a whole. An FGC must provide any information (including financial, performance, or other information on its activities, assets or liabilities) that is requested by the NZC as part of an audit.</p>
	<p>Reporting to DOC</p>	
19.	<p>DOC is not always aware of circumstances and results of legal proceedings under CA, despite having accountability for operation of Act</p>	<p>NZC and FGCs to be required to report to DOC on circumstances and results of all legal proceedings made under the CA, as is currently required under WA.</p>
	<p>Modernising Fish and Game</p>	
20.	<p><i>Communication with licence holders</i> Fish and Game can have difficulty communicating with licence holders on matters of interest, including consultation on proposed Anglers and Game Notice conditions, and advising of SFGMP reviews.</p>	<p>Provide that, in addition to newspapers, Fish and Game may place public notices and consult with licence holders via electronic methods, Internet sites (with free public access) and by emailing eligible voters (who have provided an email address when buying a licence) or other electronic notification (e.g. subscription via website).</p>
21.	<p><i>Online meetings</i> There is uncertainty about legality of NZC and FGC meetings held online.</p>	<p>Allow NZC and FGC meetings to be held online, and votes taken (including electronically), as if meeting was in person.</p>
22.	<p><i>Role clarity</i> There has been uncertainty within Fish and Game about the NZC's role in processes for approvals of SFGMPs, Anglers Notices, and Open Season for Game Notices. Anglers Notices and Game Notices are becoming unnecessarily complex and different between regions, but there is also a need to maintain FGC independence over local resource management decisions.</p>	<p>NZC to collate and edit (form, readability and useability only) Anglers and Game Notices before submitting them to the Minister for approval.</p> <p>NZC may provide independent advice to the Minister on the sustainability (e.g. will the resource become depleted), suitability (e.g. is there a good rationale for a particular condition), and consistency (within and between regions) of Anglers and Game notice conditions recommended to the Minister by FGCs. However, the NZC will not be able to amend or decline the substance of Anglers and Game notices prepared by FGCs before submission to Minister.</p> <p>NZC may provide independent advice to the Minister on the suitability of provisions in draft SFGMPs submitted to the Minister for approval by FGCs.</p>
	<p>Ministerial powers</p>	
23.	<p><i>Review function</i> Minister has no explicit function to review the operations or performance of FGCs and NZC</p>	<p>Minister to have a function to review operations and performance of Fish and Game as a whole, or individual FGCs or the NZC at any time.</p>

No.	Summary of problem	Summary of proposed changes
		NZC and FGC to be required to provide any information requested by the Minister as part of a review, including any financial, performance, or other information on their activities, assets, or liabilities.
24.	<i>Anglers Notice amendment</i> Minister cannot amend an Anglers Notice before approving it – unlike for a Game Notice where the Minister can amend before approving	Minister to be able to either approve a draft Anglers Notice or amend the draft notice before approving.
25.	<i>Game Notice amendment</i> Minister cannot amend an approved Game Notice until after season begins.	Minister to be able to amend an approved Game Notice before or during the Open Season that it relates to.
Governance		
Eligibility to vote in elections		
26.	<i>Everyone may vote</i> Only adult whole-season licence holders may currently vote; this excludes many licence holder interests. Licence holders must also ask to be listed on the electoral roll, creating an impediment to future participation in elections.	All New Zealand residents who have held an adult sports fishing or game bird hunting licence in the three years leading up to a Fish and Game election to be eligible to vote in that election. Buyers of licences to be automatically included on electoral roll, rather than needing to ask to be on roll. The partner of the holder of a family whole-season licence to be able to vote in FGC elections.
27.	<i>One vote only</i> Licence holders currently vote in the regions they buy their whole-season licence(s) from, and if they buy their fishing and hunting licences in different regions, they may vote in elections for two regions.	Licence buyers to be required to select a voting region for election purposes when buying a licence, and no longer able to vote in two regions. Where a person purchases more than one licence to hunt or fish in the three years before an election, the FGC region specified at the time the most recent licence was purchased shall be the region they are entitled to vote in. Where a region is to be divided at the time of an election (as part of a reorganisation of regions and boundaries), the NZC must ask eligible voters for that region which new region they wish to vote in.
28.	<i>No subregions</i> The current subregions do not deliver local representation as voters vote for candidates in all subregions and a candidate can stand anywhere.	Remove provisions for Fish and Game regions to have subregions.
29.	<i>Electoral roll maintenance</i> FGCs must maintain electoral rolls, but in practice this has long been done centrally	NZC to maintain electoral rolls rather than FGCs.
Elections procedures		
30.	<i>Allow electronic voting</i> The CA provides for electronic (online) voting, but the FGCE do not.	Electronic voting to be provided for in regulations. Voting papers able to be provided via email and Internet links, in addition to via post.

No.	Summary of problem	Summary of proposed changes
	The requirement for alphabetical listings on ballot papers favours candidates with surnames earlier in alphabet, affecting election outcomes.	Remove requirement for election candidates to be listed alphabetically by surname on ballot papers.
31.	<p><i>Publicity for elections and rolls</i> Elections and results currently advertised only via newspapers. Personal contact details are currently publicly available via electoral roll.</p>	<p>Elections and election results to be advertised also via electronic methods, Internet sites (with free public access), and by emailing eligible voters (who have provided an email address when buying a licence) or other electronic notification (e.g. subscription via website). Align voter privacy with modern expectations and privacy principles by making elector contact details (postal and email addresses) included on electoral roll no longer publicly available.</p>
32.	<p><i>Keeping elections aligned</i> The discharge of a FGC would currently result in that FGC having future elections at different times to all other FGC elections</p>	<p>FGC election timing to be kept aligned across all regions in the event of a council being discharged by Minister. A council elected to replace a discharged council to hold office only until the next three-yearly elections (unless this would result in a term of less than 1 year, in which case the term shall be until the end of the term and for an additional 3 years.</p>
	NZ Council membership	
33.	<p>NZC will have increased functions and responsibilities. FGCs may replace their NZC representative at any time, which leads to NZC members focusing on maximising benefits for their FGC, not all licence holders nationally. NZC may replace its Chair at any time for any reason, creating policy continuity risks.</p>	<p>The NZC to be comprised of the Chairs of the FGCs, in recognition of the additional roles and responsibilities. To deter FGCs changing their NZC representative frequently (creating policy and governance continuity difficulties):</p> <ul style="list-style-type: none"> • If a FGC replaces its Chair, the FGC must advise the NZC and Minister in writing of that replacement and the reasons for that replacement • If the NZC replaces its chair, the NZC must advise the Minister in writing of that replacement and the reasons for that replacement. <p>The NZC and FGCs to appoint their own Chairs as currently.</p>
	FGC membership	
34.	<p><i>Council size</i> The current size of 12 councillors per FGC is too large given the level of decision making required.</p>	Each FGC to have up to eight elected members (not including co-opted or appointed members).
35.	<p><i>Include wider interests</i> Criteria for FGC membership are too narrow, and exclude many anglers and hunters from being councillors (and exclude the interests they might represent)</p>	<p>Any resident adult who has held a sports fishing or game bird hunting licence in the three years prior to an election to be eligible for election to a FGC. The partner of the holder of a family whole-season licence (held in the three years prior to an election) to be eligible for election in FGC elections.</p>
36.	<p><i>Updated “fit and proper person” test</i> Current criteria whereby people are deemed unsuitable to hold FGC membership are too narrow – convictions for offences involving</p>	<p>A person is to be not eligible to stand for election to a FGC (or remain a councillor if in office) if they:</p> <ul style="list-style-type: none"> • Are an undischarged bankrupt

No.	Summary of problem	Summary of proposed changes
	firearms, freshwater habitat, or any freshwater fish are as relevant as existing matters; matters from s.30 of Crown Entities Act 2004 are also relevant.	<ul style="list-style-type: none"> • Have been convicted of an offence involving freshwater fish, or game, or protected wildlife, or freshwater habitat, or the use of firearms (whether an offence under the CA or any other Act) • Have been convicted of an offence punishable by imprisonment for a term of 2 years or more, or who has been sentenced to imprisonment for any other offence, unless that person has obtained a pardon, served the sentence, or otherwise suffered the penalty imposed on the person • Are disqualified under another Act. <p>MoJ Criminal record check and public register check to be required of all election candidates to confirm eligibility prior to election (paid for by the FGC and facilitated by returning officer). Candidates to also sign a statement to that effect.</p> <p>(Note that committing an <u>infringement</u> offence would not prevent someone from standing for election.)</p>
37.	<i>Councillors not to be employees</i> Allowing people to be both councillors and employees can create accountability problems	No FGC or NZC councillor to be able to be an FGC or NZC employee while the councillor is in office.
38.	<i>Avoiding immediate re-election</i> If a person is removed from a FGC by the Minister there is nothing preventing them being immediately re-elected to office.	If an elected councillor has been removed from office by the Minister, that person is to be ineligible to be a FGC member for a period of three years from the date of removal (i.e. a full term stand-down).
39.	<i>Declaration of previous removal</i> If a person has previously been removed from office by the Minister, there is no requirement for electors to be advised of this.	If an elected councillor has previously been removed from office by the Minister (for any reason) and that person stands again for election, they must advise electors of the previous removal.
40.	<i>Remedying skills gaps</i> Elected FGCs sometimes lack the full range of skills required for good decision-making	Minister may appoint up to two members (additional to elected members) onto a FGC. Such appointed members to be entitled to vote on any matter, but may not be elected as the FGC chair by the council members.
41.	<i>Transparency of resignation</i> Any FGC member may resign by writing to Minister only, and NZC may not be immediately aware of situation and potential issues.	Any member of a FGC may at any time resign from a FGC by writing addressed to the Minister, signed and dated, with a copy to the FGC and NZC.
42.	<i>Non-democratic process to fill vacancies</i> Process for replacing elected FGC members who resign is not democratic.	At any election, all vacant positions must be filled unless there are fewer eligible candidates standing than vacancies. A FGC can choose to fill a vacancy or vacancies, or not, by election at any time during its term if the number of its elected members is below eight but at or above a minimum of three.

No.	Summary of problem	Summary of proposed changes
		A FGC must hold an election to fill all vacant positions if FGC membership falls below the minimum number of three elected members.
43.	<i>Member of multiple FGCs</i> It is possible for someone to be elected as a member of two FGCs at the same time, and potentially the chair of both leading to potential uncertainty about NZC voting rights.	Fish and Game councillors to be prohibited from serving on more than one Fish and Game Council at the same time.
	Behaviour while in office	
44.	<i>Removal of councillor for “just cause”</i> Circumstances under which Minister may remove a councillor from office are outdated and not aligned with similar legislation	The Minister to be able to remove any member of a FGC from office at any time for any “just cause”, including misconduct, inability to perform the functions of office, neglect of duty, and breach of any of the collective duties of the FGC or NZC or the individual duties of FGC or NZC members (depending on the seriousness of the breach).
45.	<i>Standards for conduct of meetings and councillors</i> Conduct of FGC meetings and behaviour of some councillors has often been less than optimal, including in relation to conflicts of interest	Ensure council meetings and councillor conduct is consistent with good public entity standards and practice, including noting and taking account of conflicts of interest, by enabling the Minister to establish by notice in the <i>Gazette</i> : <ul style="list-style-type: none"> • rules for the conduct of all NZC and FGC meetings • rules for the conduct of all NZC and FGC councillors while performing their duties. Compliance with these rules to be mandatory for all council meetings and councillors.
	Fees and expenses	
46.	<i>Expenses</i> FGC and NZC members cannot be reimbursed for expenses.	Enable NZC and FGC councillors to be reimbursed for actual and reasonable expenses (funded from licence fee revenue) incurred in performing functions as a councillor.
47.	<i>Fees</i> Elected FGC and NZC councillors will continue to be volunteers, but FGC councillors appointed by the Minister will also be unable to receive remuneration for their services.	Enable Ministerial appointees to FGCs to be paid meeting fees in accordance with Cabinet Fees Framework (funded from licence fee revenue). Elected FGC councillors and NZC members to continue to be volunteers, but the Minister to retain the ability to pay councillors in future (enabled by a regulation process).
48.	<i>No compensation for loss of office</i> Remove any entitlement to compensation or payment if no longer a council member.	An NZC or FGC councillor who leaves or is removed from their position as a councillor shall cease to be paid and will not be entitled to compensation for loss of office.
	Mergers of Fish and Game Regions	
49.	<i>Enable regional mergers</i> Currently, mergers of FGC regions are not feasible as the CA does not have the provisions needed to manage assets, end councillor terms of office, etc.	Minister to have power to alter or merger FGC regions, and consider requests for mergers from FGCs (no change from current powers). When regions are merged or altered: <ul style="list-style-type: none"> • The Minister to be able to allocate and transfer assets as Minister considers appropriate. • All proceedings by or against an FGC may be continued.

No.	Summary of problem	Summary of proposed changes
		<ul style="list-style-type: none"> Land Registrars be empowered to give effect to any transfer of land. All fishing and hunting licences, Anglers Notices, Game Notices, and SFGMPs in respect of affected regions to continue in force until their expiry, replacement or cancellation. <p>All councillors of a region that is abolished to continue to hold office until the end of the three-year term of office and (for clarity) at the election the old council(s) and region(s) cease to exist, and new ones come into existence.</p>
50.	<p><i>Minimum number of regions</i> Too many regional mergers could leave NZC with too few councillors, or FGCs with insufficient local knowledge</p>	<p>Number of Fish and Game regions to be no fewer than 7 and no more than 12.</p>
Needs of other interests		
51.	<p><i>Treaty partners</i> Treaty partners sometimes wish the periodic transfer of sports fish to isolated fisheries to cease, to meet cultural objectives. Minister responsible for Fish and Game currently has no ability to prevent this.</p>	<p>The Minister to have a new power to prohibit the transfer of live sports fish to a location where the species already exists.</p>
52.	<p><i>General functions</i> FGC management to maximise angler and hunter benefit often overrides the needs of other interests, and has sometimes impacted aviation safety and threatened native fish</p>	<p>The FGC function to manage, maintain, and enhance sports fish and game resources in the recreational interests of anglers and hunters to become <u>subject to</u> the following:</p> <ul style="list-style-type: none"> ensuring aviation safety is not compromised ensuring the conservation of isolated populations of threatened native fish is not impeded having regard to the impact of management on other natural resources and other users of the habitat
53.	<p><i>Provisions in SFGMPs</i> Similar to the above, the current requirement for sports fish and game management plans (SFGMPs) to maximise angler and hunter opportunities often overrides the needs of other interests</p>	<p>Have new requirement that SFGMPs must include provisions to:</p> <ul style="list-style-type: none"> ensure aviation safety is not compromised ensure the conservation of isolated populations of threatened native fish is not impeded describe how any conflict between sports fish and game management and “other natural resources and the needs of other users of the habitat” (i.e. non-hunting interests) will be managed.
54.	<p><i>Require compliance with policy</i> FGCs have not always complied with their approved sports fish and game management plans and there has been no way to make them comply.</p>	<p>Have a clear requirement that FGCs and NZC must comply with:</p> <ul style="list-style-type: none"> any approved SFGMPs any General Policies under conservation legislation any binding policy determined by the NZC (applies to FGCs only).
55.	<p><i>Empowered to manage game</i> FGCs have a function to manage game birds but lack the powers needed to manage game birds</p>	<p>Director-General of Conservation to be able to delegate to FGCs the DG’s powers to directly manage game birds</p>

No.	Summary of problem	Summary of proposed changes
	impacting farm crops or aviation safety. Requiring case by case permits from DOC is impractical.	impacting crops, etc, subject to any conditions specified by the DG. The DG would be able to revoke the delegation if an FGC used the delegation inappropriately or in ways contrary to any conditions required by the DG.
56.	<i>Enable establishment of commercial preserves</i> Authorisation of commercial upland game preserves currently requires an Order in Council, which is an unnecessary level of process.	Commercial upland game preserves to be authorised by Notice (in the same way that non-commercial preserves are authorised).
Other matters and removal of spent provisions		
57.	<i>Creation of Separate Act</i> There is a need to better recognise Fish and Game's role as a key organisation in the hunting and fishing sector.	Create a standalone Fish and Game Act, maintaining all necessary linkages with CA and other legislation (as modified by the reforms elsewhere in this schedule) but making no other changes to policy.
58.	<i>Appointment of staff</i> The CA has NZC and FGC councillors appointing all staff, not only NZC and FGC managers	Clarify that elected councillors appoint managers, and that managers appoint other staff (making current practice lawful) Appointments of managers and staff to be subject to staff policy determined by NZC (see above).
59.	<i>Use of money from court fines</i> Section 46(7A)(b) of CA largely restricts the uses of fines recovered to the operation of hatcheries.	Align with similar provisions in WA such that money from court fines under CA may be applied for purpose of any FGC functions.
60.	<i>Remedy appointment gap</i> Sections 26FA(1) and (2) of CA allows appointment for the purposes of the CA but not the Wildlife Act.	Allow appointments of enforcement officers for the purposes of WA also.
61.	<i>Update headings</i> Sections 26H and 26W of CA call NZC and FGCs "Crown Entities" when they are no longer such.	Update cross-headings to reflect current legislation (Public Entity status).
62.	<i>Remove transition provisions</i> Provisions relating to Transitional Fish and Game Council became spent over 30 years ago.	Remove spent provisions relating to transitional Fish and Game Councils from FGCR.



6 June 2025

Chair, New Zealand Fish and Game Council

Via email:

Auckland/Waikato Fish and Game response to consultation documents.

Dear Barrie,

The Auckland/Waikato Fish and Game Council discussed the following consultation documents provided by your Council at its meeting on May 22, 2025.

- Proposed Licence fee and forecasting.
- Draft Resource Management and Legislation Policy.
- Health and Safety and Wellbeing Policy.
- Lone Worker Policy.
- Modernizing Family licence proposal.

The Auckland/Waikato Council provides the following formal response on these items.

Proposed Licence Fee and Forecasting.

Budget Process

The Council has several concerns with this year's budget setting process, many of which have been articulated previously. Council considers that there is an urgent need to develop a policy which should be given a high level of priority. The current budget consultation information presented by NZC lacks some significant information required to allow the Auckland/Waikato Fish and Game council to make an informed decision on the appropriateness of the proposed budgets, licence fees and regional levy/grants. This year's process did not provide a coherent framework uniform budget presentation that allowed for comparisons. This council is of the opinion that NZC has provided insufficient information regarding NZC and National Office budgets and how regional levies/grants are being allocated.

Reserves

Despite staying within budget last year, this region dropped below the 20% reserve threshold. We remain disappointed that despite making the requested budget savings and on top of our increasing levy, it is proposed to again pro-rata budget deficits approved by NZC across all regions. This equates to a levy on our reserves which are already insufficient and will likely drop us below the 20% threshold again. This is compounded by the methodology used to set licence sales targets for regions which will be covered later. This council is of the opinion that

Statutory managers of freshwater sports fish, gamebirds and their habitats.

Auckland/Waikato Region

156 Brymer Rd, RD 9, Hamilton 3289, New Zealand. Telephone (07) 849 1666

Email: aucklandwaikato@fishandgame.org.nz www.fishandgame.org.nz

any levying of regions on anything other than licence income in the current financial year is unlawful and contrary to the provisions of the Act. It also appears that the increase costs that were predicted for the magazine which was used as rationale for increased NZC /national office budgets and subsequent levying of regions have not come to fruition leading to large surpluses. Council seeks transparency and confirmation that these surpluses will be returned to regions from which they were levied.

Recommendation

Auckland/Waikato Council accepts the budget and proposed licence fee but notes that the council is unable to determine the appropriateness of levies and grants being proposed for regions due to insufficient information on which to base that decision. Council urges NZC to prioritise budget policy in consultation with regions to avoid the issues that occurred during this year's budgeting process. NZC and National Office should provide a detailed budget and operational work plan that underpins it. Auckland/Waikato Fish and Game considers that rational for the reallocation of funding has not been appropriately provided to the regions in a transparent manner. Any surplus funds levied from regions, should be returned to the regions rather than being allocated to NZC reserves.

Fish Licence Sales Targets

Council acknowledges the work that has gone into improving the licence forecasting system used to set regional licence targets. The proposed updates appear to provide a more accurate methodology to predict future licence sales. It is still unclear why the organization has not adopted the FFWG proposal to levy regions on actual sales at the end of year rather than predicted sales. This would be in line with the requirements of the Act and ensure that the levying is equitable, full recommendation below.

Recommendation 5 of the Future Finance Working Group. That budgets are set based on the above-suggested formula, but actual grants and levies are adjusted to reflect actual license sales at the end of the season.

One current failure of the system is that budgets are approved, and levies/grants set based on forecasted license sales. If more licenses are sold in a region the region keeps the additional revenue. If fewer licenses are sold, the region must use reserves to top up the shortfall.

When licence sales fall below that forecasted in a levy-paying region then levy is paid on money that was never received. While occasionally is sustainable a sustained decline will deplete reserves. When licence sales exceed the forecast this money is often put into reserves at a regional level.

If reserves drop below 20%, NZC will then top this up. This leads to some regions building up large reserves and others requiring a reserve top up. This is due to the challenges of forecasting future sales (LEQ's).

It is recommended that budgets be set, and the final levy/grant is adjusted at the end of the season to reflect actual sales. This means that all regions will have the budgeted amount of money remaining - not an amount that is higher or lower than forecast.

This reduces the need for reserves and the issues and complexity that this creates. Of course dedicated reserves would remain as the status quo.

If an event like a cyclone, earthquake, or covid causes a large reduction in activity and license sales, the levy for that year will be reduced once actual sales are finalised. This means that the region will not have to deplete reserves for that year. If proportional activity and license sales for a region are higher than expected, the budget for the following three years will be lifted but the current year remains constant.

Game Licence Sales Targets

Unlike the process being used for fish licence sales, no similar correction is being proposed for game, and it is unclear why this is the case. This region will not meet its game licence sales targets due to the extended drought leading up to, and into, the game bird hunting season this year. Given we can predict with the same degree of certainty the total sales likely to occur for game as for fish at this time of the year, the same methodology should be used. As for fish, council considers that the fairest way to levy regions is to adopt the FFWG recommendation and reconcile the levy on actual sales, but if this is not adopted, the same methods should be employed for Game licence sales targets as for fish.

Recommendations:

- Adopt the FFWG recommendation to base levies and grants on actual sales and reconcile these at the end of the financial year to prevent some regions acquiring large reserves and others operating at a deficit due to inaccuracies in the licence sale predictions.
- Remind NZC that their powers under the Conservation Act only allow them to levy actual licence sales revenue - not predicted sales.
- If the above is not accepted then use the same approach for game licence sales as for fish licence sales, in which case the Auckland/Waikato sales targets for game should be reduced significantly in 2026 based on extrapolated sales for the current season.

Resource Management & Legislation Policy

The Auckland/Waikato Fish and Game Council views that the proposed policy provides a significant shift away from the original intent of the fund. The fund was established to support regional RMA cases, and it appears that it may now be used to provide funding for national advocacy initiatives.

Council noted that the policy often self identifies as a 'strategy' and the terms are used interchangeably. Council agrees that renaming the document a funding strategy is more appropriate.

It was agreed that having some basis for evaluating RMA funding applications is helpful, however the proposal lacks clarity of intent and implementation. The issue around evaluating the merits of RMA cases has been discussed previously. It was suggested at the time, that a group of senior RMA practitioners from the regions and external planning/legal experts could

be used to provide feedback on fund applications. The current document stays silent on the decision-making process and who would be involved, but presumably it would be NZC. The matrix might be a useful starting point, but many of the categories are subjective and therefore a consensus decision making approach using several experts would be much more appropriate.

Decision: Council does not support the proposed policy and suggests the following amendments

Recommendations: For the Auckland/Waikato Council to support the policy the following amendments need to be made.

- Rewrite the document to clearly stipulate that funding is for regional RMA support.
- Classify the document as a funding strategy rather than national policy.
- In further consultations with expert RMA practitioners within the regions, develop a funding evaluation process.

Health and Safety and Wellbeing Policy.

This policy appears to largely duplicate the policy consulted on and subsequently approved by NZC at its June 2024 meeting. It is unclear whether this latest document is supposed to replace that policy. The word 'wellbeing' has been shoehorned into the title; however, the policy itself does not address any issues related to wellbeing such as workload management, work-life balance and stress.

It remains unclear what the purpose of a national H&S policy is. National Office are not a Person Conducting a Business or Undertaking (PCBU) for regions. Regions have their own H&S systems and whilst guideline documents may be useful, this should not be confused with national policy that must be implemented by regions.

Council notes that NZC has established an H&S committee of which Auckland/Waikato Fish and Game are providing resourcing in the form of staff time. We understand the NZC council staff have not been able to attend regular meetings of the committee and therefore they have had limited input. The purpose of the H&S committee is codified in the adopted 2024 H&S policy. *"To support consistency of approach, the NZ Council and the Regional Councils will establish a National Health and Safety Committee, comprising regional representatives and a representative from the NZ Council. The Committee will monitor incidents, review Council policies and plans, and share practices and learnings."*

The H&S committee has not had the opportunity to have input to or review the current policy and therefore the current adopted policy has not been appropriately considered.

Decision: Council does not support the proposed policy and suggests the following amendments.

Recommendation: The document should be retitled as guidance rather than policy and NZC should focus on assisting and coordinating the practical implementation of H&S through the H&S committee as per existing adopted policy.

Draft Lone Worker Policy

The Auckland/Waikato council agrees that improvements can and should be made to how F&G manage workers conducting high risk activities. This council remains committed to achieving a safe working environment for all staff and volunteers. Some of the information in the document is useful but it should be incorporated into existing regional H&S systems rather than needing a standalone national policy.

The Auckland/Waikato Region has made significant improvements to how we manage lone workers in the past 12 months, including volunteers. This will be improved further in the 25/26 financial year, with the approval of budget for a fit for purpose one stop shop to evaluate risk, track, and communicate with lone workers. The coordinated practical implementation of such a system and assisting regions to update H&S safety policy is where NZC focus should lie. This should be done through the NZC H&S committee which will ensure a ground up approach.

Not all work conducted by 'lone workers' has a high element of risk and therefore having a set of mandatory criteria to be implemented regardless of the activity makes little sense. A risk-based approach is required.

As with other proposed H&S policies NZC is not the Person Conducting a Business or Undertaking (PCBU) for regional councils and there appears to be some confusion regarding the roles and responsibilities of Regional Councils and NZC within this document.

Decision: Council does not support the proposed policy and suggests the following amendments.

Recommendation: The policy is reviewed through the H&S committee and NZC focus on assisting regions with the implementation of fit for purpose systems to manage lone workers within their current H&S frameworks.

Modernising The Family Licence.

The Auckland/ Waikato Fish and Game Council thank NZC for the initial review of the family licence and agree that it is useful to review licence categories regularly to determine whether improvements can be made. Council supports the concept of promoting enhanced participation for underrepresented groups and wish to promote the women on the fly project. Staff are in the process of collaborating with organisers to host women on the fly workshops in this region in the coming year.

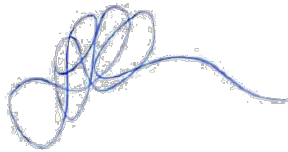
It was noted that the recommendations have not been evaluated by the licence working party and considers that the implications, especially financial ones require further evaluation. Further, the recommendations relied on a survey of a very small subset of licence holders and further consultation with the wider licence holder base should be conducted to obtain more representative feedback.

Council understands that there is a licence evaluation and optimization process underway and this would be an appropriate time to evaluate all licence categories. Council considers other options for providing a similar or better outcome could be considered. For example, simply allowing every adult whole season holder to take up to two children under the age of 16 fishing could achieve a similar outcome. Council felt there were equity issues with the current proposal whereby a female angler in relationship would effectively have their licence fee reduced, but a solo mother would still have to pay the full amount.

Decision: Council does not support the proposal in its current form.

Recommendation: Auckland/Waikato support further work by the licence working party to ensure that any proposed changes to licence categories are appropriately considered and recommends that any changes should be included in the licence category evaluation and optimisation process.

Kind Regards

A handwritten signature in blue ink, appearing to be 'Grant Annan', with a long, sweeping tail extending to the right.

Grant Annan
Chairperson
Auckland/Waikato Fish and Game Council.



Trend Count Report for Paradise Shelduck, Black Swan, and Canada Geese

Beau Jarvis-Child 2025

1 SUMMARY

Auckland Waikato Fish & Game Council monitor paradise shelduck (*Tadorna variegata*), black swan (*Cygnus atratus*) and Canada geese (*Branta canadensis*) via aerial surveys of known moult sites at set times each year. Specifically, paradise shelduck are monitored in the King Country and north of Auckland via two separate surveys¹, while swan and geese are monitored in the Waikato lakes and harbours.

This report focuses primarily on estimating the population index and trends for paradise shelduck in the King Country and swan in the central Waikato lakes and harbours. North Auckland paradise shelduck and swan are also included (despite more limited data), as are Canada geese (despite no longer being managed by Fish & Game).

We employed hierarchical models (similar to route regression) to estimate an annual population index for each species, accounting for missing data and differences across locations. From these estimates, trends are calculated to determine the trajectory of the species in long-term and short-term scenarios.

Estimates of population index and associated trend indicate that:

- The King Country paradise shelduck population has decreased slightly in the last 10 years and seems to be following a downward trend of -1.35% annually since 1983.
- The central Waikato lakes and harbours' black swan population index appears relatively stable from 1986 to 2025.
- The central Waikato lakes and harbours Canada geese numbers have increased exponentially at a rate of 8.5% annually from 1986 to 2025.
- The North Auckland paradise shelduck population was reasonably stable from 2001 to 2016 and has increased significantly in the last decade.
- The North Auckland black swan population has declined slightly across the study period when counts of the Manukau harbour based on Auckland Airport and Bird NZ data are included. Trends appear to have remained stable over the last 10 years, but may have increased in recent years. When Manukau harbour counts are excluded, F&G counts indicate a drop in population, which, when coupled with Auckland Airport data, indicate that a number of swan have shifted from the Kaipara Harbour to the Manukau due to shifts in available food sources, resulting in concerns for aviation safety.

2 INTRODUCTION

The Auckland/Waikato Fish and Game Council uses aerial trend count surveys to estimate trends in populations of several game bird species, notably paradise shelduck and black swan. Although Canada geese are no longer managed by Fish & Game, we continue to monitor this species as these counts coincide with swan surveys.

These species congregate in areas for different annual phases, such as moulting or post-moult recovery, which results in a high proportion of birds being concentrated. Trend counts are timed to match the moult/moult recovery periods (around mid-January) and to coincide with a high tide event. Trend counts are not a full population count, even if, in some cases, a high proportion

¹ To date Northland have included the North Auckland paradise counts as part of their aerial monitoring survey.

of the population is counted. It does, however, provide a “snapshot” of how the local population may be trending – either up or down. The underlying assumption is that the counts of the sample of sites (normally major sites) reflect what is happening to the local population as a whole.

3 METHODS

3.1 SURVEY METHOD

The counts are conducted from a fixed-wing aircraft (often a Cessna) at an altitude of approximately 150 metres (500 feet) with one or more observers. Observers count the number of birds at each site (or count one species each). Photographs are also taken to ground-truth the counts and verify observer accuracy².

3.2 FLIGHT SURVEYS

Three separate flights/surveys are conducted. Specifically:

1. The King Country, paradise shelduck flight.
2. The Central Waikato lakes and harbours, swan and Canada geese flight.
3. The North Auckland paradise shelduck and swan flight³.

Maps of the sites are shown in the appendix.

3.3 DATA CLEANING

In some years, counts for specific sites are not made and are represented as NA values. It is unclear how the data was recorded in earlier years. For example, in the King Country Paradise counts, there are 25 sites in total; however, in 1983, only eight sites had non-zero counts. The concern here is that zero values are incorrectly assigned to sites instead of NA. We considered manipulating the data to change these counts to NA values until a non-zero count is observed. However, we instead opted to exclude data prior to 1988, as this is when many sites started reporting non-zero counts.

In some instances, sites with consecutive zero counts are excluded from the survey and are considered “lapsed”. In the analysis, lapsed sites were removed because they contribute little data (i.e., a few counts over a 20-year period). In addition, all sites with sub-counts are combined to represent a single location.

Counts of paradise shelduck and swan north of Auckland are limited to a few sites and include significant missing data, especially in earlier years. To mitigate this, we included an additional eight sites from the Northland count data, which were identified as being close to the border and therefore constitute data from the same sub-regional population. Combining these counts is appropriate, in particular for swan, as large flights of birds are known to move between the Auckland Waikato region and the Northland region (Williamson, 1980, 1977).

For the North Auckland swan counts, data from Auckland Airports' swan surveys in Manukau Harbour were included. However, this monitoring began in 2014, meaning it does not provide

² To reduce observer error, observers also practice estimating aerial counts using resources such as <https://www.fws.gov/waterfowlsurveys/forms/countingtest.jsp?menu=counting.test>

³ Historically conducted by the Northland Fish & Game region as part of their lower Northland survey.

information towards the long-term trend of this population. To account for this, we (1) estimated a population index for swan that excluded the Manukau Harbour, and (2) when including Manukau Harbour counts, we imputed counts for years prior to 2014 based on data trends from the Birds NZ National Waterbird Census. The Bird NZ counts indicated that fewer than 500 swan were observed on the Manukau Harbour between 2001 and 2014, and we imputed values of 500 for these counts.

For the Central Waikato lakes and harbours swan and goose counts, overlap in non-zero counts were investigated to determine if there were patterns in birds being recorded (i.e., sites being surveyed). However, there was no clear evidence of a significant change in sites monitored over time, so all zero values were retained (see Appendix Table 4). Swan data for 1984 and 1985 were excluded because the goose surveys began in 1986, and it is unclear whether all sites were surveyed in these years.

3.4 MODELLING

If no data is missing, then the total count of birds can be used to make comparisons between years. Although this total count does not enable us to estimate the population size, we can assess its relative trend over time, provided we have reasonable coverage of ponds in the region. When missing data is present, statistical models can be used to account for this.

Historically, Fish & Game councils have used route regression to analyse trend count data. However, hierarchical models have been proposed over route regression due to their easy implementation, ability to address missing data, improved precision (smaller confidence intervals), and potential application of covariates Sauer (2011)⁴.

We, therefore, model bird counts using a generalised linear mixed model (GLMM) via the *glmmTMB* package in R. Where Y_{ij} the bird count at site i in year j is modelled as a negative binomial distribution⁵:

$$Y_{ij} \sim \text{Negative Binomial}(\mu_{ij}, \theta)$$

Where μ_{ij} is the expected bird count and θ is the overdispersion parameter of the negative binomial distribution. The log expected bird count is then estimated as a linear function:

$$\log(\mu_{ij}) = \beta_0 + \beta_j \text{Year}_j + u_i$$

$$u_i \sim N(0, \sigma^2)$$

Where β_0 is the overall intercept, $\beta_j \text{Year}_j$ represents the fixed effect of year, and u_i represents the random effect of site.

This model includes year as a fixed effect to allow for explicit estimation of the annual variation in bird counts. Treating year as a categorical variable (i.e., factor) rather than a continuous variable ensures that the population index is estimated for each year, enabling the detection of nonlinear patterns over time. Year could be treated as a random effect following Sauer (2011); however, results were similar, and a marginal effect of year was deemed more intuitive to interpret.

⁴ Hierarchical models can be implemented under the Bayesian or frequentist framework. Here, the frequentist method is used.

⁵ Due to it being count data, where the variance exceeds the mean.

A random intercept for site was incorporated to account for differences in bird abundance across different locations. By doing this, the model ensures that the estimated effect of year (the trend over time) is not biased by differences in the absolute number of birds at each site. Without this adjustment, a lake with naturally high bird counts could influence the year effects disproportionately, resulting in misleading conclusions about population trends. Essentially, the random effect for lake helps separate spatial variation (differences between lakes) from temporal variation (changes over years), improving the accuracy of the estimated trend. The inclusion of a random intercept for sites is particularly useful in handling missing data. Here, partial pooling helps estimate missing observations based on patterns observed in other years and other lakes.

For some models, the area (km²) of the survey site was included in the model (either as a covariate or offset term) to account for the effect of pond size if it was deemed to improve model fit (measured via AIC).

Predictions are generated using the `ggpredict()` function in R. Predictions represent the expected bird count for each year, considering only the fixed effect of year while ignoring lake-specific variability. These predictions provide a generalised population-level estimate rather than site-specific estimates by excluding random effects.

3.5 ESTIMATING TRENDS

Sauer (2011) proposes that trends are estimated and expressed in two ways. Trends can be estimated as a consistent long-term population change by plotting a regression through the indices, or a more interval-specific estimate of the trend can be calculated based on the endpoints.

The first method looks at how the population has changed over time by drawing lines through the data. Here, the data is the annual estimates of the population index. These lines help show whether the population is generally increasing, decreasing, or staying stable.

- We draw one line that covers all the available years (shown in blue), which gives a big-picture view of the long-term trend.
- We also draw lines just for the last 10 years (red) and the last 5 years (orange). These help us determine whether recent trends differ from the long-term pattern.

To estimate the percentage change over time (per year), log-linear models were used to determine the rate of exponential change, which is then converted into a percentage. When plotting trends, log-linear estimates were back-transformed. The added benefit is that if there is an exponential pattern in population growth, it will be better captured by the model.

The second method estimates how much the population changes from one point in time to another. For example, if the estimated population index is 100 in 2010 and 200 in 2025, this method calculates the average annual growth rate over that period based on the counts of these two years. This helps show whether the population has increased or decreased over this time period. We apply this approach to the full-time span (from the first to the last data point), as well as to the most recent 10-year and 5-year periods. This provides the expected average percentage change in population index from one year to the next for each of those timeframes. Specifically, Sauer (2011) defines this as:

$$\text{Trend} = 100 \times \left(\left(\frac{\text{marginal effect} [\text{Max } t]}{\text{marginal effect} [\text{Min } t]} \right)^{\frac{1}{\text{Max } t - \text{Min } t}} - 1 \right)$$

4 RESULTS

4.1 KING COUNTRY PARADISE SHELDUCK POPULATION INDEX

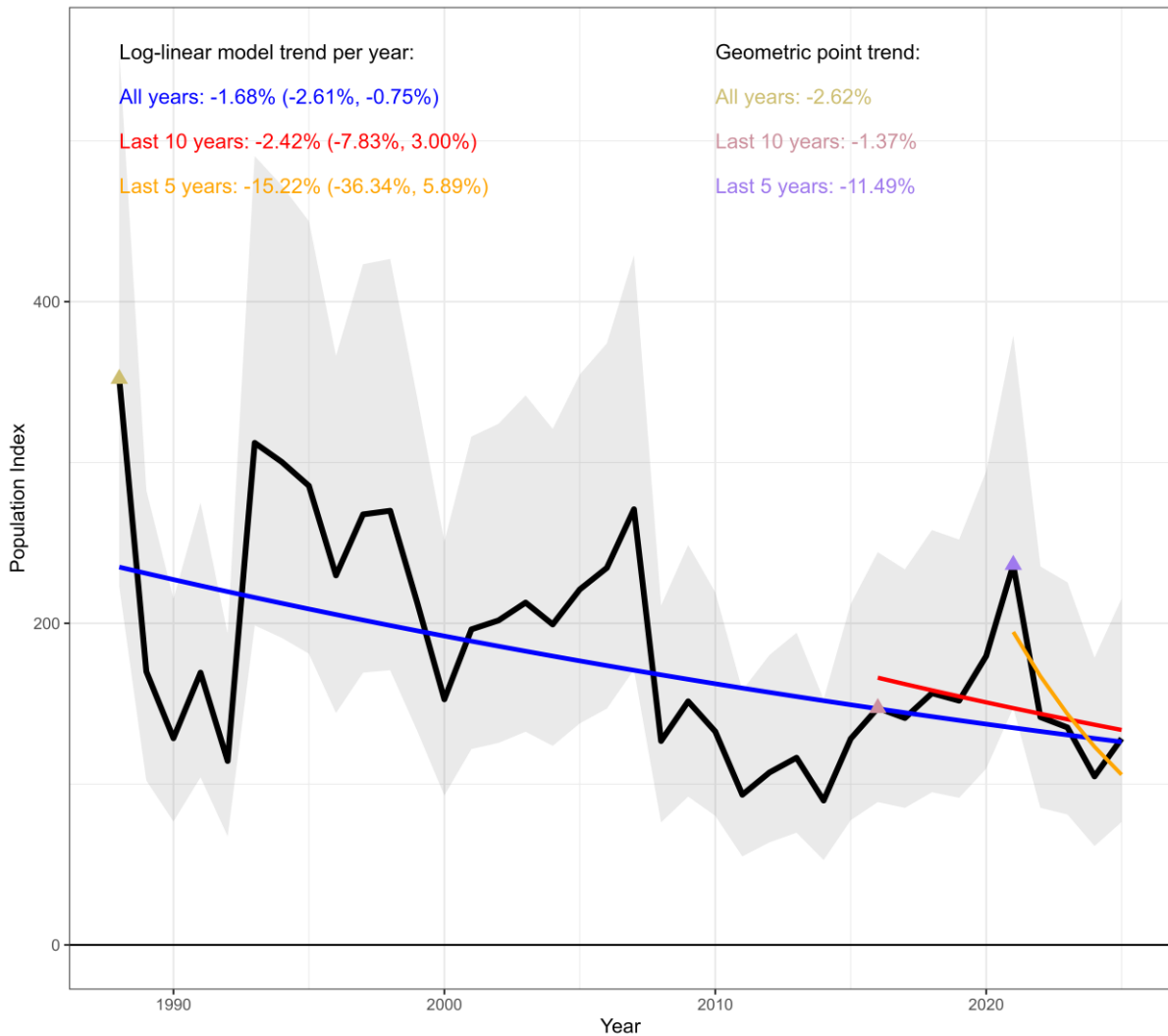


Figure 1: Estimated population index for paradise shelduck based on the King Country counts (black line) and associated confidence intervals (light grey). Log-linear models illustrating trends in indices for all years (blue), prior 10 years (red) and prior 5 years (orange) are also shown with corresponding estimates of percent annual change and 95% confidence intervals in parentheses. Geometric trends are also presented for all years (gold), the prior 10 years (pink) and the prior 5 years (purple). The starting points for these periods are represented by a coloured triangle.

4.2 CENTRAL WAIKATO LAKES AND HARBOURS SWAN POPULATION INDEX

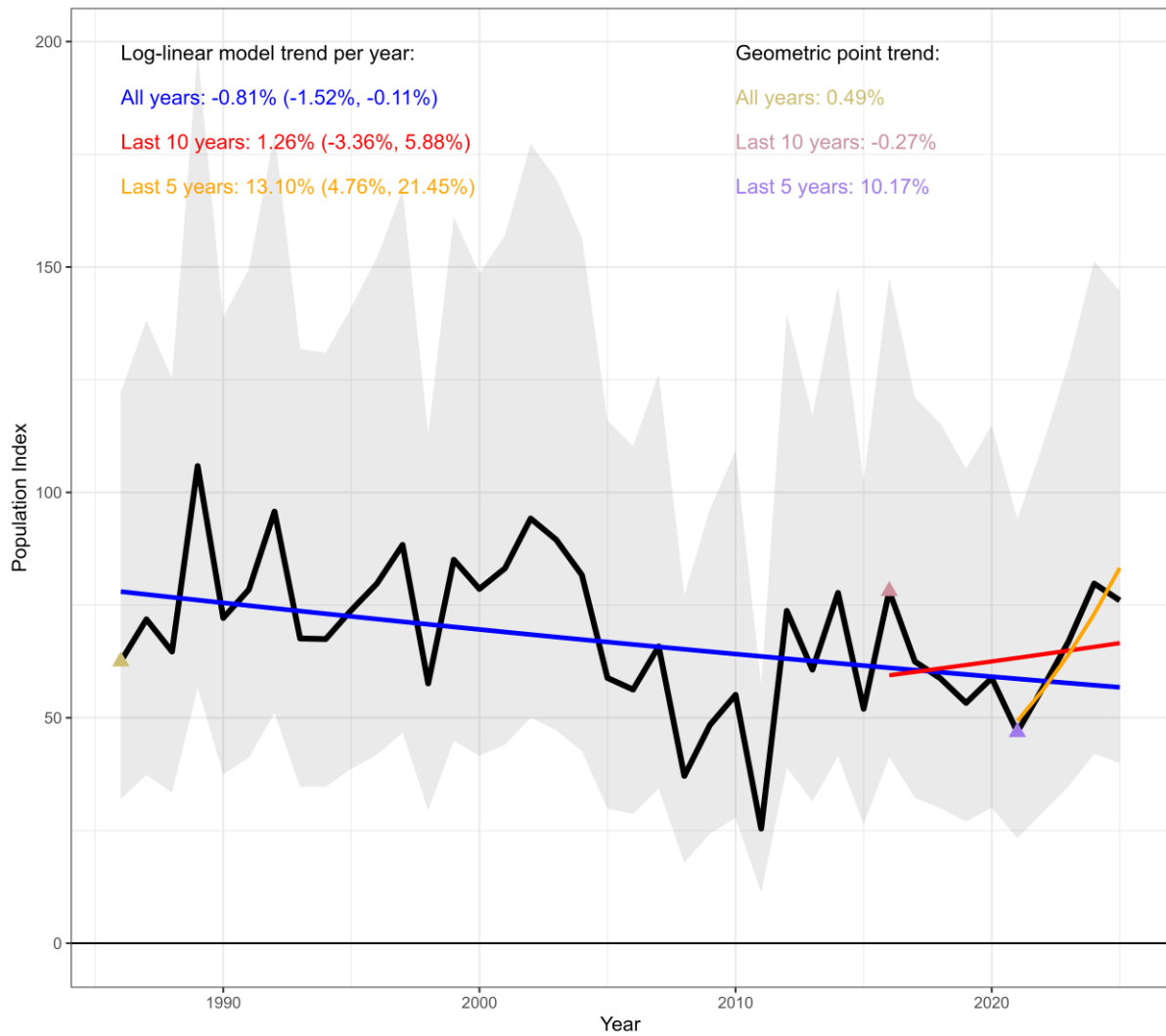


Figure 2: Estimated population index for black swan based on the Central Waikato lakes and harbours counts (black line) and associated confidence intervals (light grey). Log-linear models illustrating trends in indices for all years (blue), prior 10 years (red) and prior 5 years (orange) are also shown with corresponding estimates of percent annual change and 95% confidence intervals in parentheses. Geometric trends are also presented for all years (gold), the prior 10 years (pink) and the prior 5 years (purple). The starting points for these periods are represented by a coloured triangle.

4.3 CENTRAL WAIKATO LAKES AND HARBOURS CANADA GEESE POPULATION INDEX

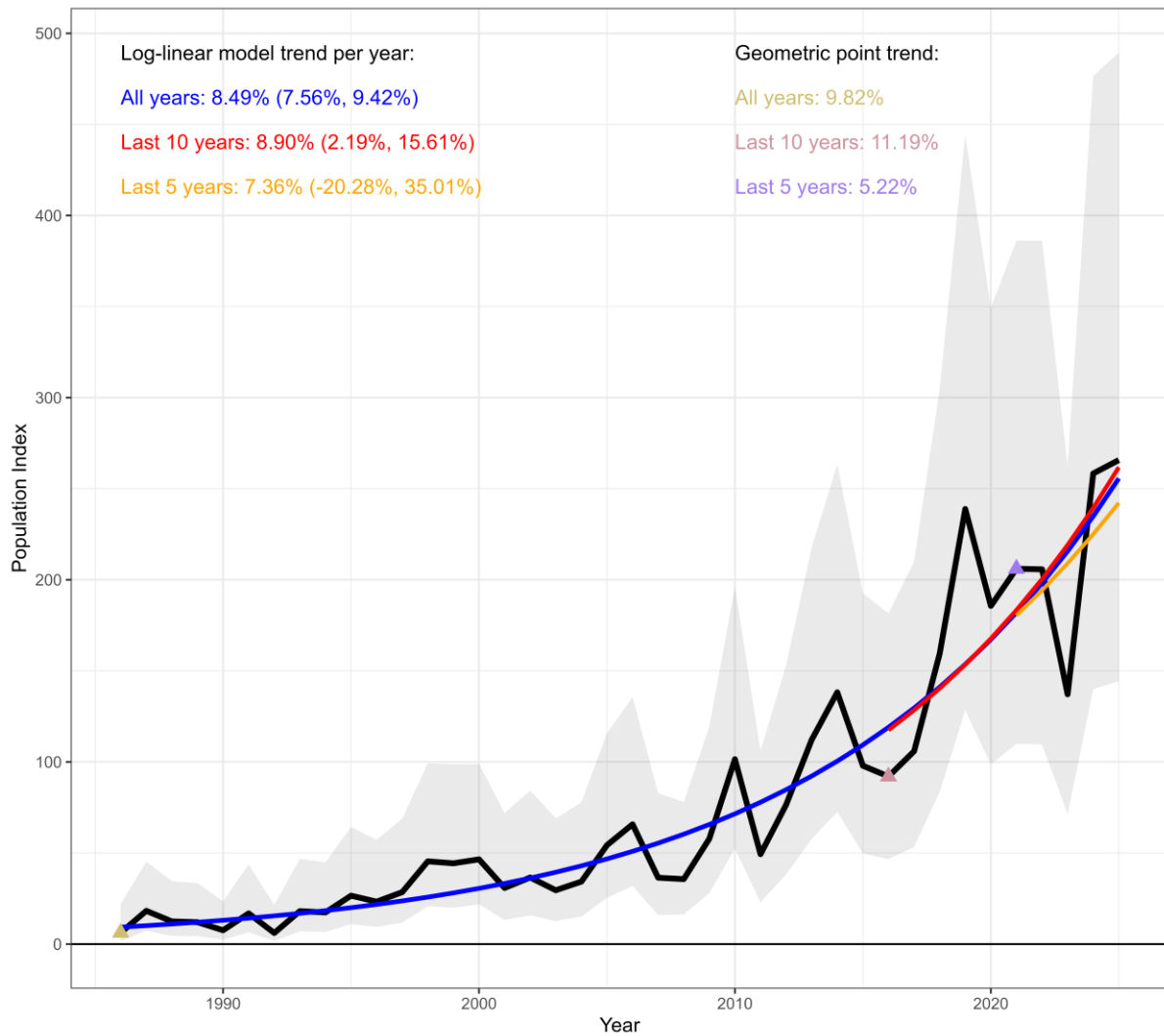


Figure 3: Estimated population index for Canada geese based on the Central Waikato lakes and harbours counts (black line) and associated confidence intervals (light grey). Log-linear models illustrating trends in indices for all years (blue), prior 10 years (red) and prior 5 years (orange) are also shown with corresponding estimates of percent annual change and 95% confidence intervals in parentheses. Geometric trends are also presented for all years (gold), the prior 10 years (pink) and the prior 5 years (purple). The starting points for these periods are represented by a coloured triangle.

4.4 NORTH AUCKLAND PARADISE SHELDUCK POPULATION INDEX

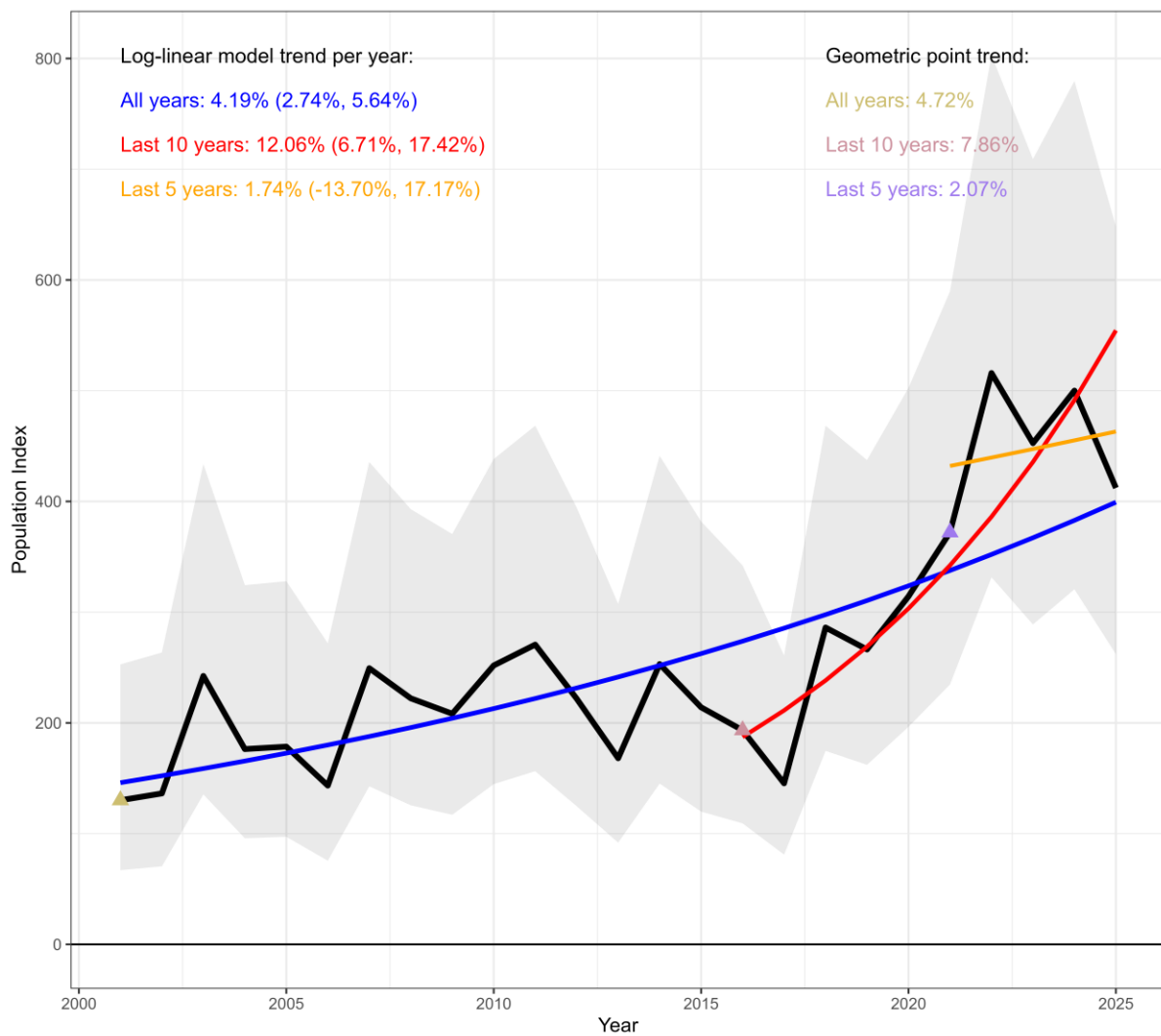


Figure 4: Estimated population index for paradise shelduck based on the north Auckland counts (and nearby Northland sites) (black line) and associated confidence intervals (light grey). Log-linear models illustrating trends in indices for all years (blue), prior 10 years (red) and prior 5 years (orange) are also shown with corresponding estimates of percent annual change and 95% confidence intervals in parentheses. Geometric trends are also presented for all years (gold), the prior 10 years (pink) and the prior 5 years (purple). The starting points for these periods are represented by a coloured triangle.

4.5 NORTH AUCKLAND BLACK SWAN POPULATION INDEX

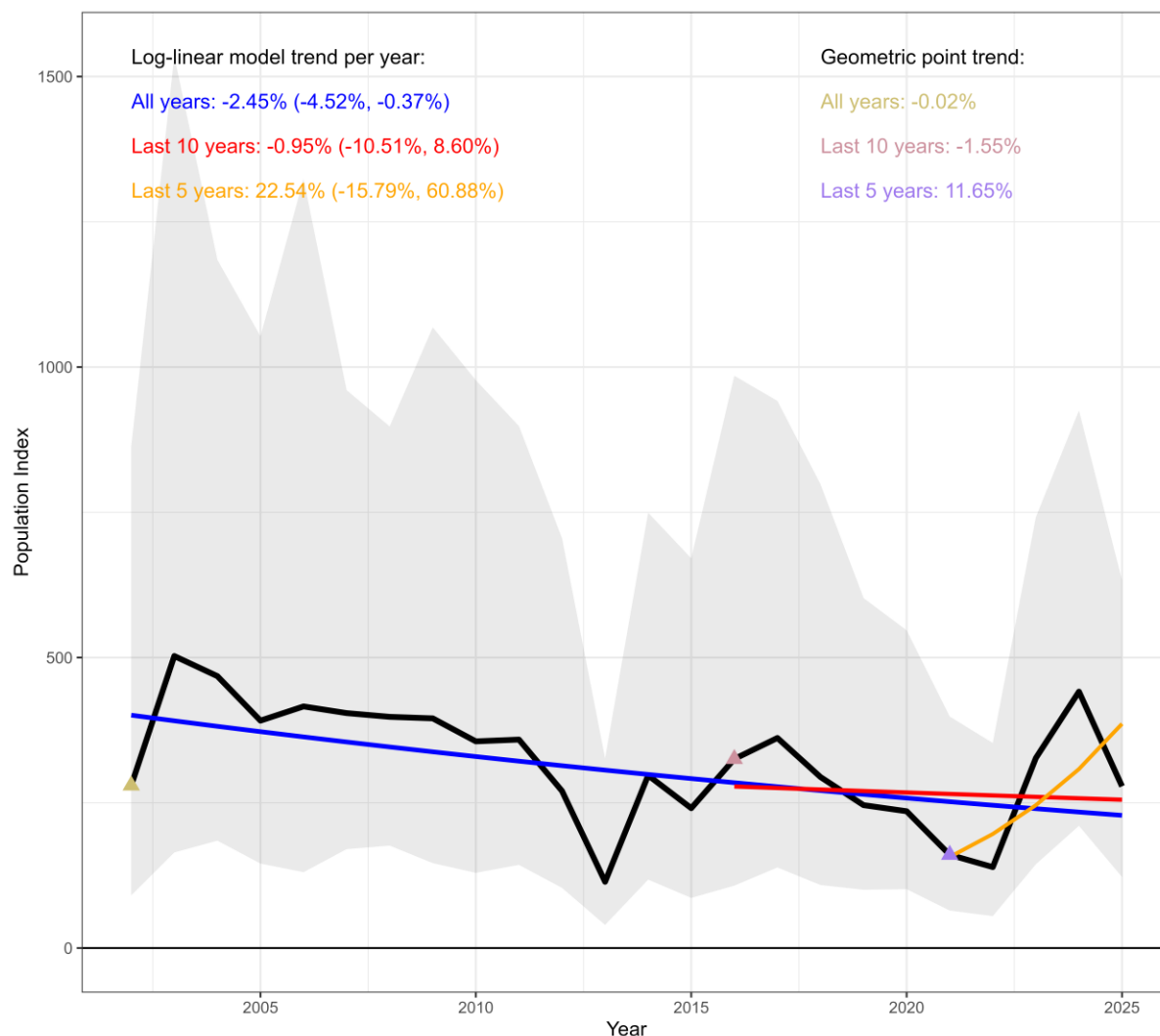


Figure 5: Estimated population index for black swan based on the north Auckland counts (and nearby Northland sites) and Auckland Airport counts of Manukau Harbour (black line) and associated confidence intervals (light grey). Here, Auckland Airport counts of the Manukau harbour prior to 2014 are imputed with values of 500 based on data from the Birds NZ National Waterbird Census. Log-linear models illustrating trends in indices for all years (blue), prior 10 years (red) and prior 5 years (orange) are also shown with corresponding estimates of percent annual change and 95% confidence intervals in parentheses. Geometric trends are also presented for all years (gold), the prior 10 years (pink) and the prior 5 years (purple). The starting points for these periods are represented by a coloured triangle.

5 DISCUSSION

Data for the King County paradise shelduck survey have good spatial coverage and complete records dating back to the early 1990s. Model estimates and associated trends indicate that the paradise population in the King Country is decreasing from 1988 to 2025 with a long-term linear decline of -1.68% (95% CI from -2.61% to -0.75%) per year. Over the last 10 years, the population has exhibited a similar decreasing trend; however, in more recent years, the decline appears to have accelerated (-15.22%, with a 95% CI that overlaps zero), albeit from a relatively high estimate circa 2021.

The Central Waikato lakes and harbours' black swan surveys also benefit from more complete data and longer temporal coverage. Estimates and associated trends indicate that the black swan population at these sites has declined slightly from 1986 to 2025 at a rate of -0.81% (95% CI from -1.52% to -0.11%) per year. In recent years, the population appears to have increased. However, this increase coincides with population estimates similar to those of the period between 1990 and 2000. In other words, the population may have recently returned to similar levels as observed in the 90s, after dropping around 2010.

Canada geese estimates based on data from the survey of Central Waikato lakes and harbours indicate that the population follows a pattern of exponential growth. From 1986 to 2025, the population increased at a rate of 8.49% (95% CI from 7.56% to 9.42%) per year. Trends based on estimates of the prior 10 and 5 years show no evidence that this is slowing down.

The North Auckland paradise shelduck survey includes counts from 11 sites in the Auckland/Waikato region⁶ and eight sites in the Northland region close to the region's border. Including the Northland sites allowed us to extend the temporal coverage of our estimates and provided more data in the earlier years where estimates had high uncertainty. Model estimates and associated trends indicate that the paradise population north of Auckland is increasing over the period from 2001 to 2025, with a long-term linear trend increase of 4.19% (95% CI from 2.74% to 5.64%) per year. Over the last 10 years, the population has experienced a dramatic increase of 12.06% (95% CI: 6.71% to 17.42%) per year. However, in more recent years, the population growth appears to have stabilised (1.74% population increase, with 95% CI overlapping zero).

The North Auckland swan survey includes counts from 11 sites in the Auckland/Waikato region and eight sites in the Northland region, near the regional border. Counts of the Manukau Harbour based on Auckland Airport monitoring post 2014 are also included, with counts prior to 2014 imputed at 500 swans based on data from Bird NZ National Waterbird Census⁷. If counts before 2014 are not imputed, estimates suggest a significant population decline, which does not align with expert opinion. When comparing estimates of swan excluding the Manukau Harbour (Figure 11) with Manukau Harbour counts (from Auckland Airport and Birds NZ), it becomes apparent that one decreases while the other increases. This pattern would suggest a redistribution of birds, i.e., from Kaipara to Manukau. Overall, model estimates and associated trends indicate that the black swan population around and north of Auckland may be decreasing across the period from 2001 to 2025, with a long-term linear trend of -2.45% (95%

⁶ Estimates and associated trends of paradise north of Auckland based on just the Auckland Waikato F&G sites are presented in the appendix.

⁷ Estimates and associated trends of swan north of Auckland, excluding the Manukau Harbour, are presented in the appendix.

CI from -4.52% to -0.37%) per year. Over the last 10 years, it appears stable, with a slight increase of 0.41% (95% CI overlap zero: -9.02% to 9.84%) per year. However, in more recent years, the population growth appears to be significantly greater, with an estimated annual growth rate of 23.90% (with a 95% CI that overlaps zero). It is worth reiterating, however, that these estimates are based on data from multiple sources (with varying survey methodologies) as well as imputations. This means that while they may provide a more accurate representation of the broader population, they are not without their limitations.

Future efforts in monitoring bird numbers in these areas should focus on the current sites used in this analysis. While including new sites is always advantageous, it is more important to have long-term data on specific sites. Furthermore, excluding sites because they are no longer holding birds does not align with a structured monitoring programme. Estimates of black swan North of Auckland would also benefit from non-imputed counts in the Manukau Harbour before 2014.

5.1 MANAGEMENT IMPLICATIONS

- King Country Paradise: retain current bag limits and season durations. Decreasing counts may result in fewer special seasons if this decreasing trend continues.
- Swan: Retain current bag limits and season durations.
- North Auckland Paradise: an increasing trend may allow for more liberal harvest regulations for the gamebird season and special season North of the Auckland Harbour Bridge. For example, bag limits could be increased to match Northland's limits of 25. This will be considered in the upcoming regulation review.

6 REFERENCES

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Williams, M. (1977). *Locations of recoveries of Black Swans, Cygnus atratus Latham, banded at Lake Whangape and Lake Ellesmere, New Zealand*. Wildlife Service, Department of Internal Affairs.

Williams, M. (1980). *The demography of New Zealand's Cygnus atratus population*.

7 APPENDIX

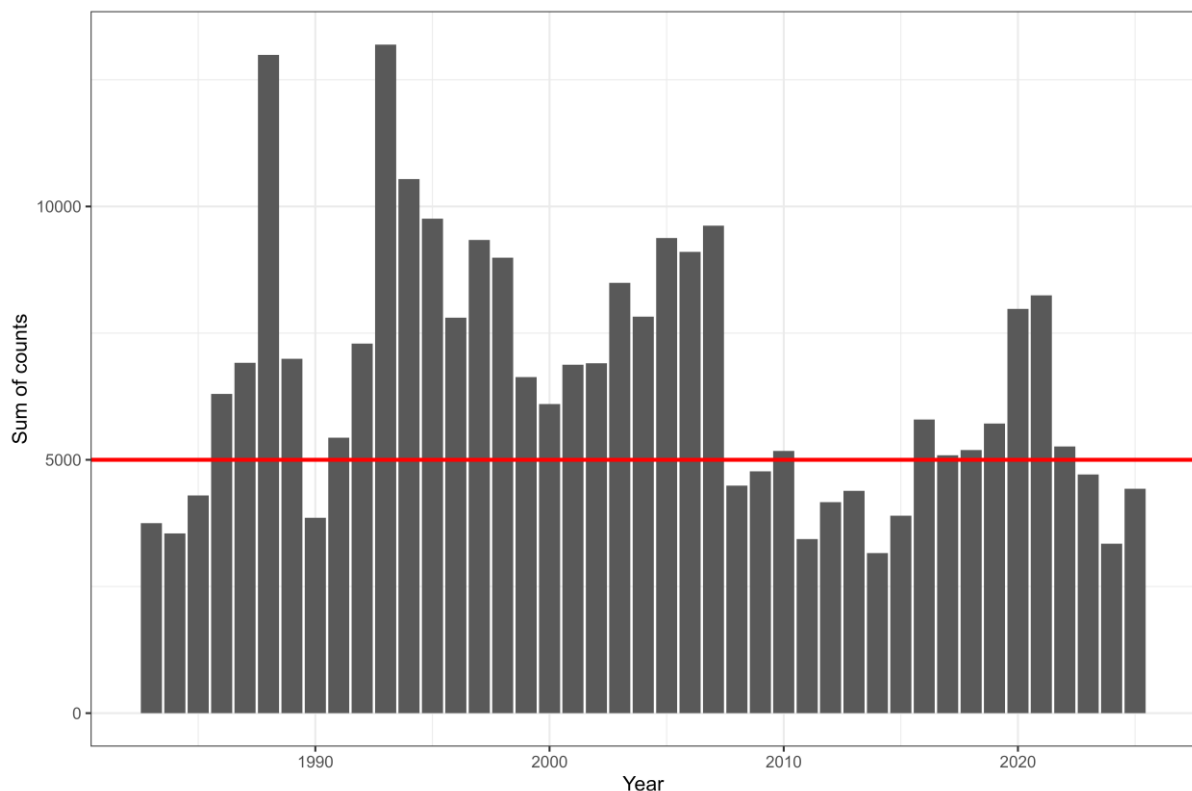


Figure 6: Sum of counts of King Country paradise shelduck. Because most sites are counted each year the total across all sites has historically been used to estimate relative change in the population over time. Further, a total of 5,000 birds across the sites is used as a threshold for hosting a “special season” in summer (red line).

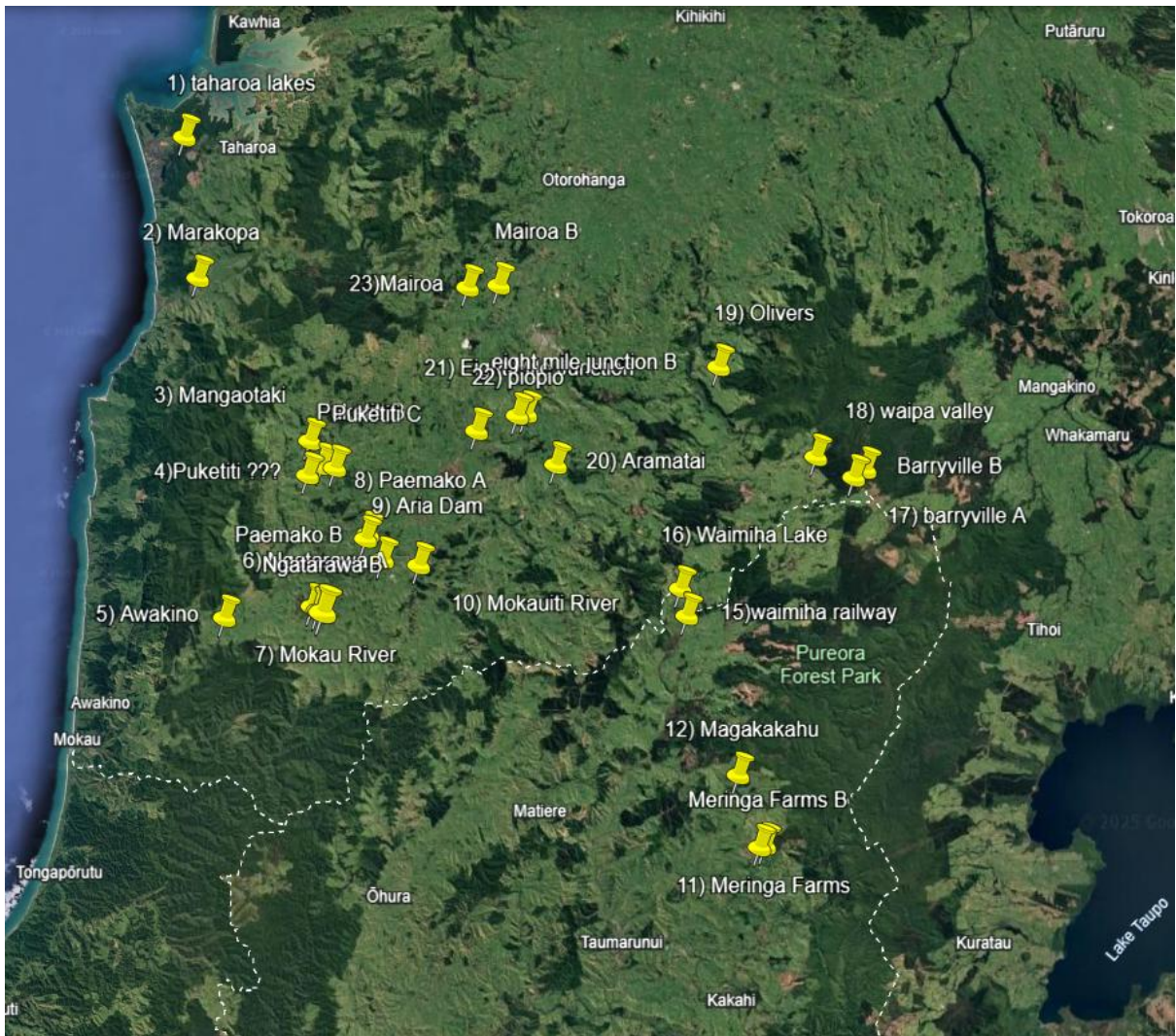


Figure 7: King Country Paradise sites.

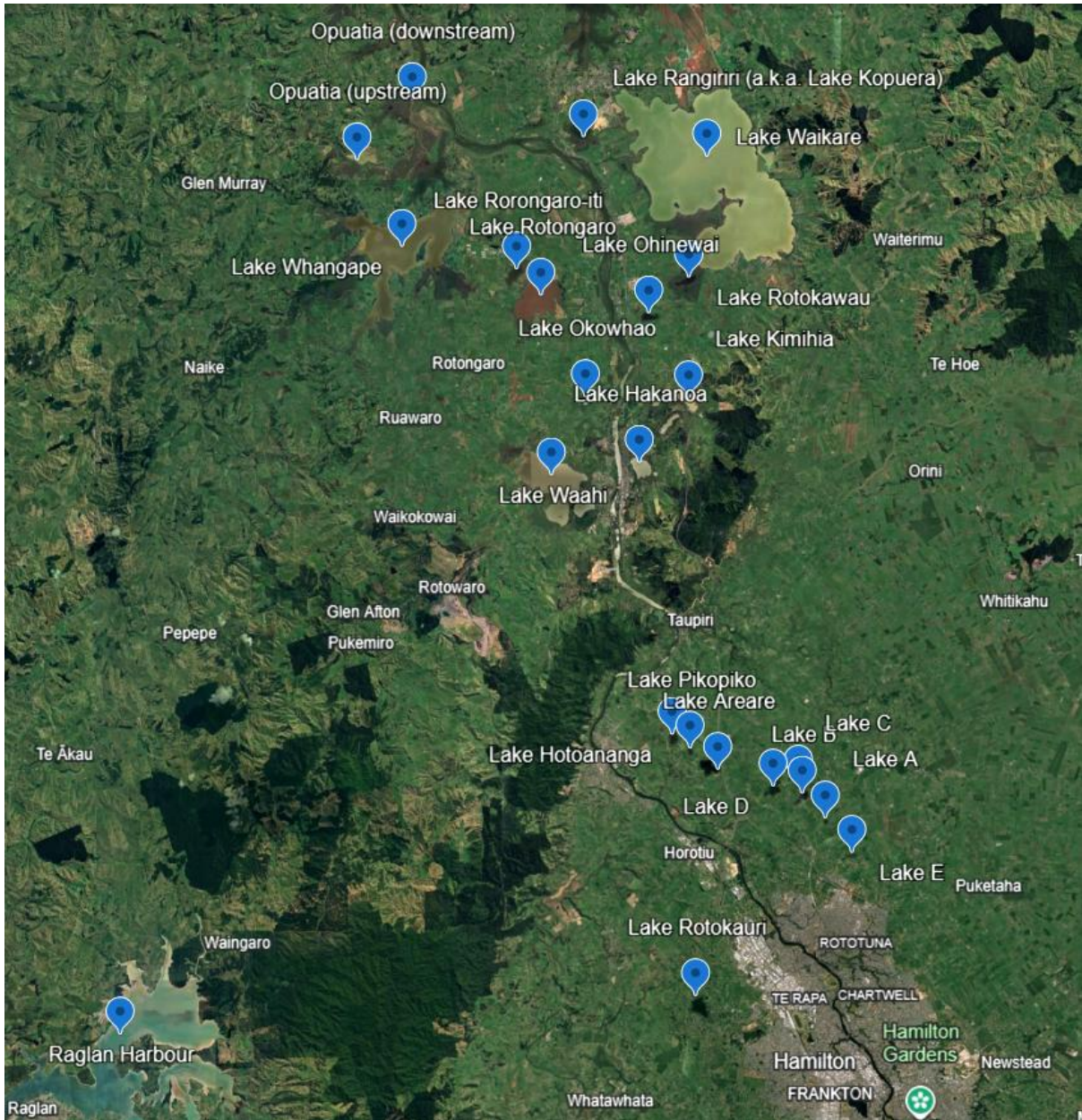


Figure 8: Central Waikato lakes and harbours black swan and geese sites (1 of 2).

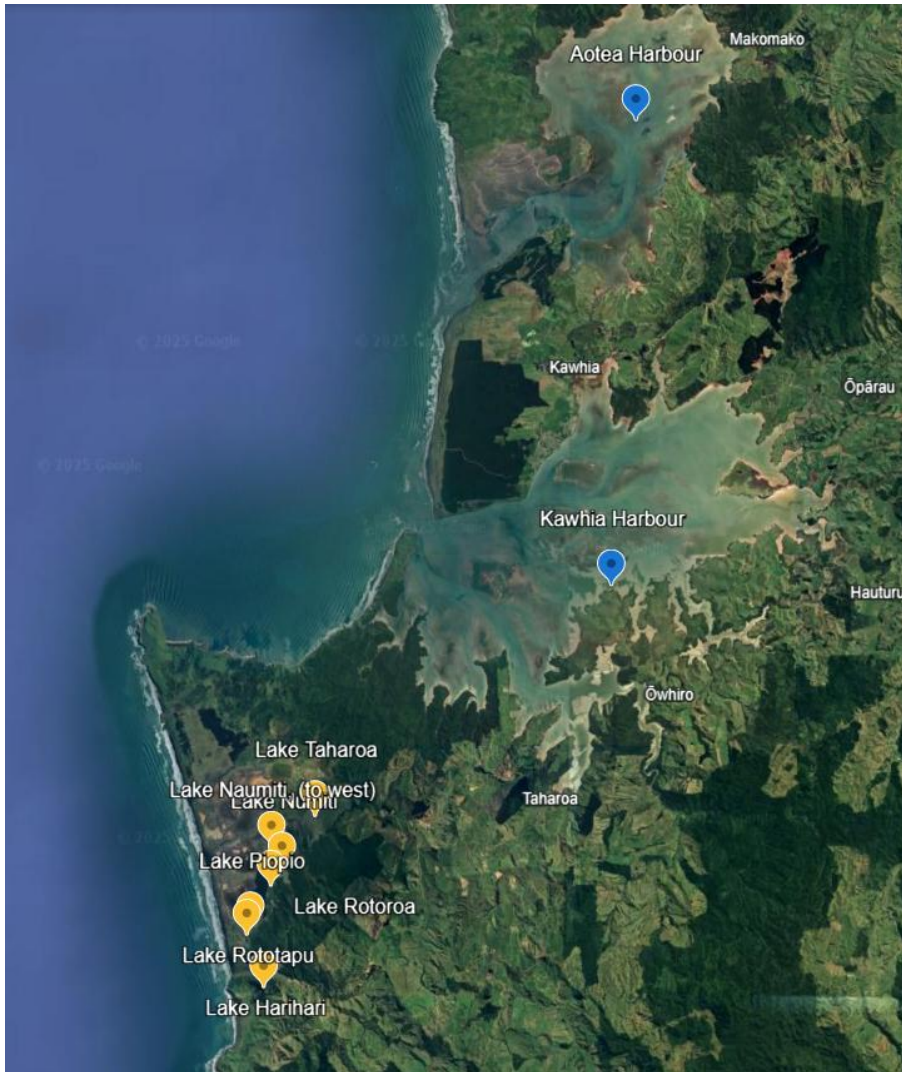


Figure 9: Central Waikato lakes and harbours black swan and geese sites (2 of 2).

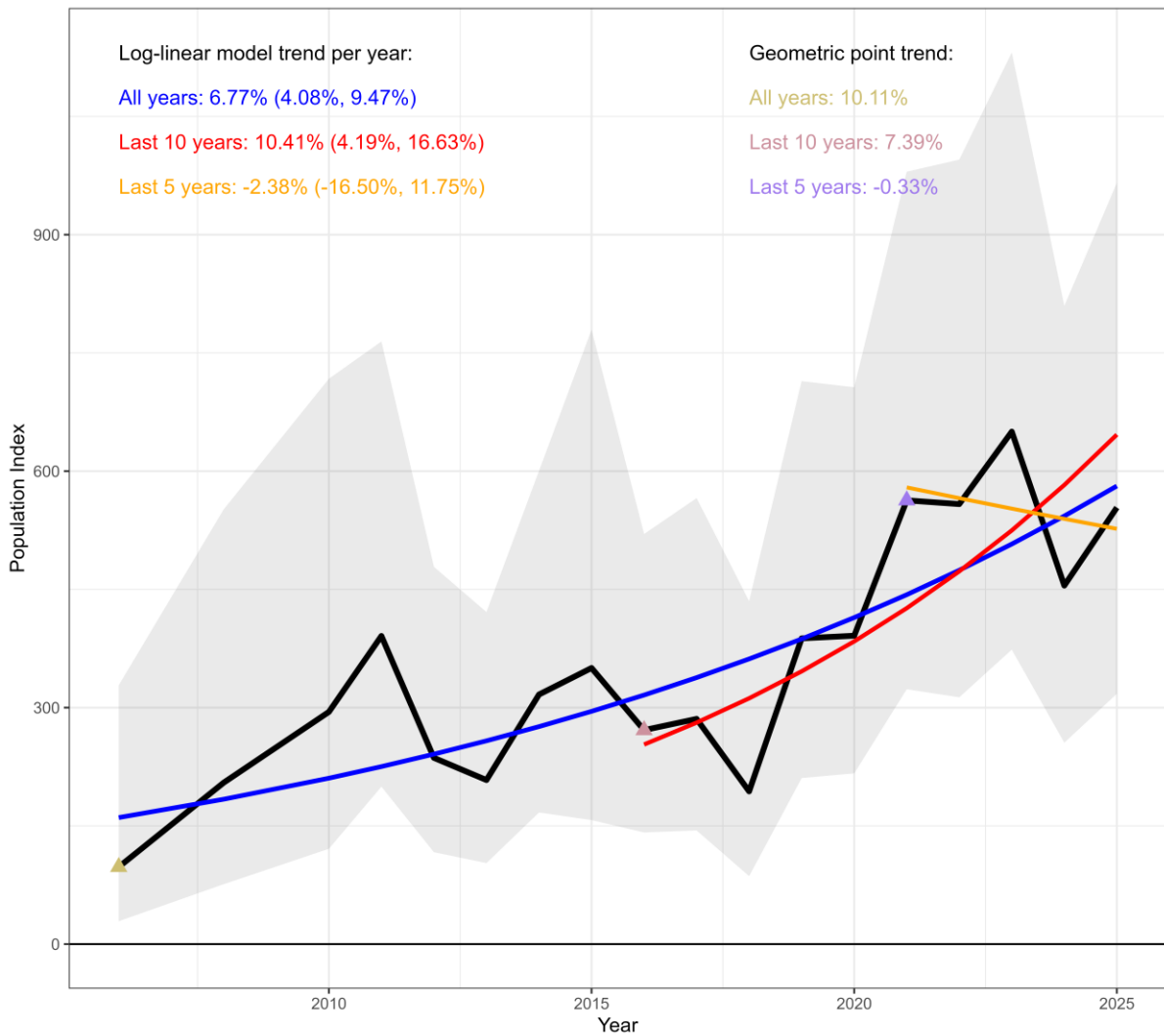


Figure 10: Estimated population index for paradise shelduck based on the north counts **in the Auckland Waikato region only** (black line) and associated confidence intervals (light grey). Log-linear models illustrating trends in indices for all years (blue), prior 10 years (red) and prior 5 years (orange) are also shown with corresponding estimates of percent annual change and 95% confidence intervals in parentheses. Geometric trends are also presented for all years (gold), the prior 10 years (pink) and the prior 5 years (purple). The starting points for these periods are represented by a coloured triangle.

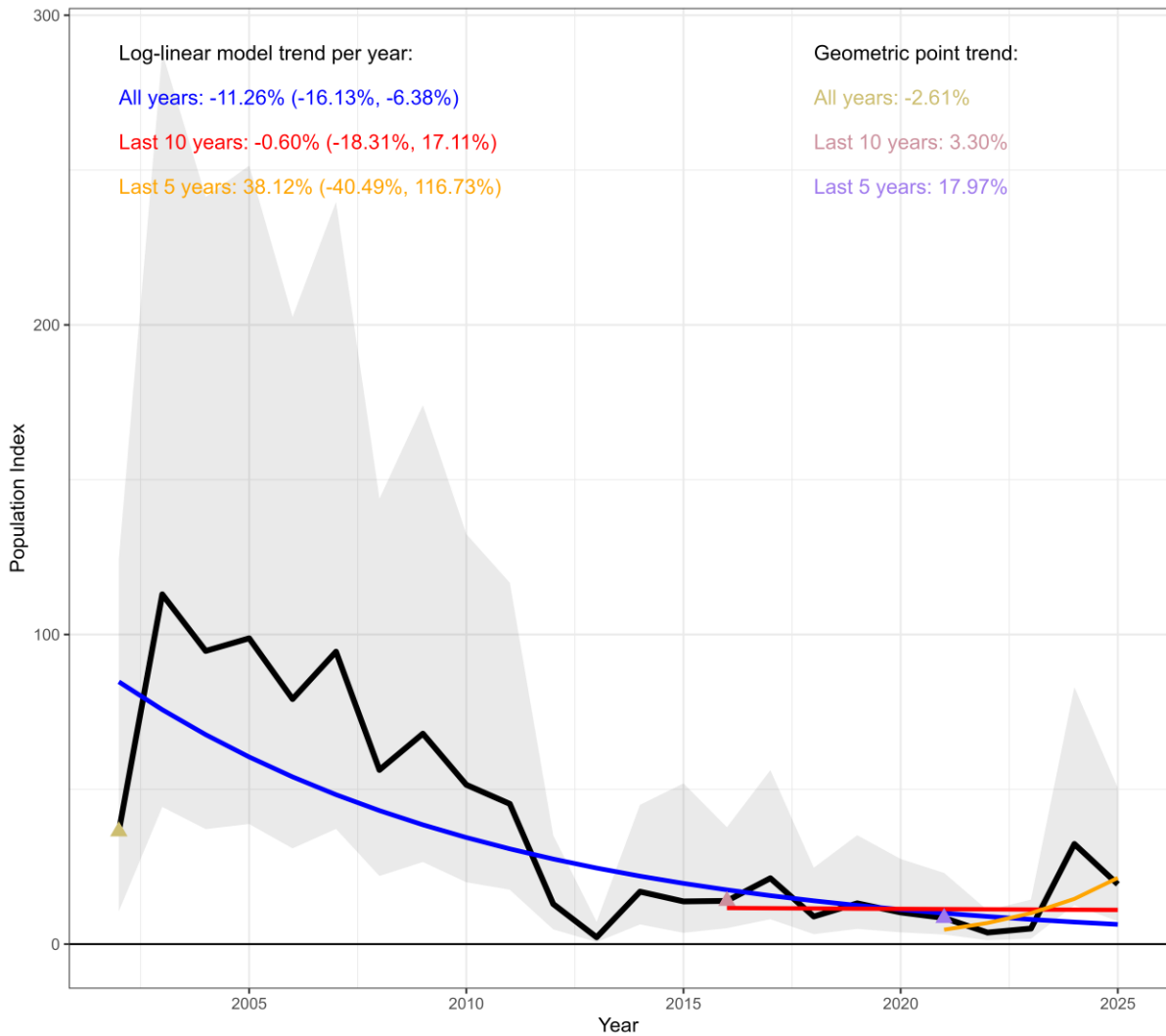


Figure 11: Estimated population index for black swan based on the North Auckland counts (and nearby Northland sites). **Auckland Airport counts of the Manukau Harbour are excluded.** Log-linear models illustrating trends in indices for all years (blue), prior 10 years (red) and prior 5 years (orange) are also shown with corresponding estimates of percent annual change and 95% confidence intervals in parentheses. Geometric trends are also presented for all years (gold), the prior 10 years (pink) and the prior 5 years (purple). The starting points for these periods are represented by a coloured triangle.

Table 1: Raw counts for King Country paradise.

Lake	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Taharoa Lakes	1020	1350	610	1139	1198	1000	825	250	270	82	20	80	130	142	52	50	60	30	260	280	530	130
Marakopa River Flats	210	0	200	90	0	130	154	50	70	300	350	350	360	350	380	490	260	280	360	130	30	180
Mangaotaki	600	475	590	150	780	1438	0	60	490	400	1550	850	600	470	440	350	350	380	910	950	750	950
Puketiti	0	0	345	920	850	752	220	40	300	100	250	300	360	300	70	100	150	70	110	50	70	20
Awakino River	0	0	0	0	0	325	300	520	290	0	75	70	75	90	80	200	40	10	40	140	290	170
Ngatarawa Rd	0	0	0	0	0	112	300	35	45	0	260	300	550	60	870	590	680	770	820	780	1150	1650
Mokau River	0	0	0	0	0	158	120	270	22	0	100	150	355	300	370	160	100	520	135	120	230	80
Paemako Ponds	0	0	0	0	0	118	380	140	220	0	10	100	345	210	110	150	195	360	240	175	350	350
Aria Dam	0	0	660	110	120	460	175	20	25	1	20	20	20	2	70	10	20	0	1	2	0	5
Mokauiti River	0	0	0	0	50	50	15	20	90	0	480	500	325	200	260	100	50	40	60	10	200	50
Meringa Farms	0	0	0	0	320	650	450	60	340	180	850	750	650	900	450	510	300	280	250	130	250	50
Mangakahu Pond	200	345	380	102	60	934	550	400	370	450	800	800	850	600	925	450	350	320	470	340	400	350
Waione	0	0	0	0	0	112	0	0	70	80	150	100	25	1	10	5	20	0	0	10	0	0
PiroPiro	0	0	0	0	180	554	15	40	15	12	20	40	30	50	6	5	2	0	0	0	0	0
Waimeha Railway	490	328	240	470	310	900	460	200	50	3	220	100	15	70	215	90	180	110	80	50	60	40
Waimeha Lake	0	0	0	0	0	641	290	500	300	550	1200	850	700	700	650	850	600	620	650	400	620	520
Barryville	800	568	765	2200	1870	2826	1040	350	800	2000	2200	1800	1600	1200	1740	1650	1350	940	1000	1400	950	1300
Waipa Valley	0	0	0	0	0	0	265	130	380	87	669	450	220	115	120	110	20	0	20	20	15	10
Oliver's Pond	0	0	0	18	130	115	235	290	200	400	550	350	248	455	460	300	550	320	300	260	10	60
Aramati	230	235	140	180	130	285	380	300	270	350	250	180	100	380	70	600	120	320	250	350	190	250
8 Mile Junction	200	245	295	700	690	1080	580	125	400	500	800	500	600	180	100	350	80	10	10	200	280	200
PioPio	0	0	0	0	0	0	0	0	100	0	740	200	70	20	190	220	250	10	20	60	112	160
Mairoa	0	0	70	220	226	351	240	55	120	200	180	200	330	120	640	350	100	60	240	50	900	200
Te Kuiti Ox Pnd	0	0	0	0	0	0	0	0	200	1300	1100	1200	850	850	1000	1200	800	650	650	1000	1100	1100
Otorohanga OX Pond	0	0	0	0	0	0	0	0	0	300	350	300	350	40	60	100	5	0	0	0	5	0

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
410	655	510	450	495	575	310	517	585	440	236	71	69	108	273	309	240	245	223	79	179
156	380	240	180	220	191	220	20	87	480	550	713	354	705	1356	1242	1504	778	833	491	631
1200	1070	1250	750	790	680	450	460	840	60	370	595	790	367	372	818	1210	720	120	522	438
900	770	570	100	280	300	15	355	315	200	260	314	296	196	439	430	287	60	390	404	235
60	110	290	40	20	40	20	55	42	15	2	74	489	150	64	159	154	596	195	154	185
1090	980	890	400	415	870	250	310	110	130	350	443	664	97	450	180	530	200	450	154	340
180	210	580	80	72	0	30	15	135	40	228	70	20	302	112	212	106	250	210	147	225
490	495	560	270	235	120	55	45	70	20	5	6	24	18	4	0	69	6	80	66	223
0	5	40	20	115	50	0	55	60	50	90	89	27	30	0	2	92	10	12	30	0
150	150	150	60	5	0	0	0	0	20	30	0	5	0	0	25	170	0	192	0	0
240	200	250	220		40	10	220	190	130	120	291	296	729	428	380	375	43	158	92	155
550	420	350	100	100	60	100	150	220	120	180	448	287	297	383	200	285	180	198	180	180
0	0	0	0	0	50	0	0	0	0	0	0	90							0	0
0	0	0	0	0	20	150	2	0	0	0	0								0	8
20	30	80	0	17	50	10	40	2	4	10	7	36	40	85	120	65	25	12	40	0
800	800	300	20	100	60	300	200	50	80	120	160									
1300	1400	1250	650	340	560	355	170	470	500	420	1092	1039	1227	807	1610	1804	900	687	161	695
0	10	20	0	8	70	1	0	0	0	0		0	8	0	2	12	0	0	0	6
10	120	280	150	475	450	20	0	10	0	40		24	0	0	0	24	15	30	0	6
600	350	290	160	250	180	140	150	30	20	90	0	80	93	98	3	18	68	22	134	120
30	10	50	60	90	90	0	20	2	0	100	87	37	45	136	153	230	170	200	136	100
300	220	530	200	110	150	380	320	220	420	180	250	351	308	159	52	35	12	0	0	0
70	20	180	220	135	20	10	30	520	190	70	336	2	87	173	82	85	36	85	80	90
820	700	950	360	495	550	610	1030	420	200	400	750	110	355	360	2000	950	950	613	470	612
0	0	10	0	5	0	0	0	10	40	45	0	0	30	16	0	0	0	0	4	0

Table 2: Raw counts for Central Waikato lakes and harbours black swan.

Lake	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Lake Rotokauri	18	56	210	220	340	197	230	110	206	120	180	190	230	170	0	10	0	3	10	0	0
Lake E	0	0	0	0	0	0	0	0	1	84	0	0	7	0	0	6	8	10	0	0	0
Lake A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lake B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	20	0	0	0
Lake C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0
Lake D	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0
Lake Areare	0	0	10	6	10	0	0	0	0	0	0	4	0	8	0	0	10	0	0	0	0
Lake Pikopiko	0	0	5	5	0	2	0	0	36	0	0	54	10	0	0	0	10	10	0	0	0
Lake Hotoananga	0	0	11	9	54	80	60	15	7	0	40	0	40	20	40	10	10	10	0	0	0
Lake Hakanoa	0	0	0	12	55	20	12	0	26	0	2	2	10	20	15	10	20	10	10	10	40
Lake Kimihia	0	0	2	0	31	15	4	0	10	0	0	1	5	0	10	10	10	5	10	10	10
Lake Ohinewai	0	0	0	7	11	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
Lake Rotokawau	0	0	0	0	0	0	1	3	0	0	0	1	0	120	5	5	5	10	5	10	20
Lake Kopuera	0	0	0	6	0	4	0	8	1	0	0	0	0	40	10	0	10	450	50	10	20
Opuatia Lower Wetland	0	63	80	0	65	35	1	1	2	12	8	4	0	3	2	4	2	10	30	5	0
Lake Whangape	5780	5330	3494	11337	900	3160	900	870	1880	1000	500	900	1790	3235	4700	4800	4330	4440	5880	3950	3010
Lake Waikare	60	203	201	133	145	225	153	261	283	200	80	200	320	134	20	130	90	70	130	80	450
Lake Rotongaro	55	0	269	89	110	52	30	80	65	100	70	142	10	5	25	10	10	10	80	20	220
Lake Rotongaroiti	0	0	0	0	0	90	12	8	13	12	5	6	10	75	0	20	0	0	30	50	0
Lake Okowhao	0	0	0	9	85	50	390	40	82	34	60	70	50	0	50	50	50	10	10	30	10
Lake Waahi	40	205	129	160	100	50	0	110	126	112	400	140	260	540	150	450	50	300	290	260	1600
Raglan Harbour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	0	20
Aotea Harbour	0	53	761	467	470	1580	1450	1210	1072	690	1230	870	1325	1262	510	1660	1010	810	1060	1920	1460
Kawhia Harbour	0	75	469	429	313	1570	1300	1025	1260	940	960	1290	534	361	365	1570	300	400	760	1650	750
Taharoa Lakes	9980	1280	1014	1497	2200	2000	1900	1940	2240	3060	1850	1100	1920	2920	1200	510	1570	2060	1910	1300	1170

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
0	10	10	0	2	0	0	3	16	2	0	24	0	0	40	0	0	0	5	4	4
0	0	5	0	5	5	0	0	0	6	0	4	0	5	0	0	0	2	5	0	1
0	0	0	0	0	0	0	5	0	4	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	1	4	0	2	0	0	10	4	0	0	9	0
0	0	0	0	0	0	0	0	0	20	0	2	0	0	0	0	0	0	1	0	0
0	0	0	10	25	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0
0	0	0	10	0	0	0	8	3	8	18	6	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	4	2	2	0	3	0	0	0	0	0	0	0	0	0
0	10	10	0	0	0	0	3	0	0	0	2	1	0	1	0	0	0	0	1	0
0	20	20	0	5	5	0	7	2	15	19	14	12	0	3	13	0	20	0	0	1
8	0	10	0	0	5	0	27	80	7	5	5	0	6	2	20	4	13	20	17	15
0	0	0	0	5	0	0	2	0	25	0	0	0	0	0	5	0	0	0	12	50
4	50	30	0	0	5	18	12	7	30	0	9	3	0	36	5	21	33	41	109	60
0	0	10	0	5	0	0	110	10	20	14	138	10	35	13	6	15	18	56	50	120
0	5	5	0	0	0	0	0	10	5	5	5	12	6	0	0	0	3	30	2	6
270	130	230	110	75	85	36	155	80	81	80	44	79	218	117	75	66	135	157	115	310
60	490	190	240	140	147	65	105	227	132	200	265	314	315	208	302	316	593	1,100	451	364
50	10	50	30	10	28	110	90	5	4	0	35	9	25	4	10	7	70	79	8	90
80	5	20	10	0	20	0	60	30	22	20	18	24	62	0	60	0	0	18	3	65
10	5	10	10	0	0	0	35	0	2	0	0	0	0	0	0	0	1	3	0	0
120	80	50	0	65	245	0	50	35	12	35	158	73	10	24	42	16	33	10	102	89
30	0	0	0	0	0	0	15	20	12	15	47	7	12	0	0	1	12	0	12	3
1090	630	850	760	1210	2695	886	1725	1190	1502	1330	2112	1308	1917	1563	2198	1647	1,894	1,956	1765	1071
1230	590	570	820	1550	1605	1165	760	1415	1705	1272	1781	2674	2018	914	1506	2114	1,108	929	3125	1629
2130	2210	1280	1140	735	710	670	660	571	600	732	683	860	592	1252	725	491	291	622	1189	924

Table 3: Raw counts for Central Waikato lakes and harbours Canada geese.

Lake	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Lake Rotokauri	0	15	0	0	2	0	0	0	0	0	0	0	0	0	5	0	0	0	0
Horsham Down Lake E	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
Horsham Down Lake A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Horsham Down Lake B	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	20
Horsham Down Lake C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	400
Horsham Down Lake D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lake Areare	10	27	0	0	0	0	26	0	0	0	0	0	0	0	0	0	130	50	50
Lake Pikopiko	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	120	0
Lake Hotoananga	0	0	0	0	0	15	0	0	0	0	0	0	0	50	10	0	0	0	0
Lake Hakanoa	0	12	0	0	0	0	0	0	30	20	34	100	30	40	20	10	0	0	0
Lake Kimihia	0	0	0	0	0	0	0	12	0	0	0	0	5	10	10	5	0	0	0
Lake Ohinewai	0	24	0	22	100	140	32	10	0	150	610	570	140	150	280	500	80	0	500
Lake Rotokawau	0	0	0	0	0	0	0	0	180	0	0	0	15	0	30	0	0	0	0
Lake Rangiriri	0	0	0	0	0	0	0	0	0	0	320	10	10	0	0	600	0	0	500
Opuatia Lower Wetland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lake Whangape	0	0	0	0	0	0	0	110	200	65	260	560	910	620	70	440	390	470	1180
Lake Waikare	250	340	500	138	180	550	620	1140	700	980	865	780	1025	1060	1170	315	710	1160	410
Lakeside Te Kauwhata																			
Lake Rotongaro	0	61	29	80	0	170	0	0	4	500	0	80	680	365	200	160	540	150	50
Lake Little Rotongaro	0	0	4	0	0	0	0	65	0	6	0	0	10	120	30	0	360	10	0
Lake Okowhao	0	0	0	7	340	100	0	0	0	0	0	0	0	0	10	0	0	0	0
Lake Waahi	200	210	390	350	0	380	0	220	140	145	320	385	75	700	130	210	140	80	80
Raglan Harbour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aotea Harbour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kawhia Harbour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tahoroa Lakes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
0	0	0	0	0	20	0	2	0	4	0	10	0	0	77	250	150	120	160	110	60
0	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
0	0	0	0	0	30	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	10	60	60	0	0	0	5	0	0	0	0	20	20	0	17	50	35
0	0	0	15	20	20	22	2	0	0	0	0	0	0	0	0	0	0	23	0	0
0	0	0	0	25	0	0	0	9	0	0	23	0	180	0	0	0	0	0	0	0
0	40	0	0	0	45	410	10	160	260	280	50	195	0	530	256	165	220	300	300	80
50	50	20	20	60	5	0	45	0	30	0	0	0	50	110	8	50	0	15	21	32
0	0	0	20	0	0	0	25	20	30	0	10	0	0	0	6	0	0	0	21	42
10	10	0	20	0	20	0	0	120	70	120	110	0	80	307	106	130	310	260	105	220
5	20	0	0	5	10	0	0	170	250	30	0	20	42	5	0	0	3	130	30	90
140	180	450	0	80	130	160	40	30	35	50	68	33	18	189	200	45	160	30	120	470
0	0	0	300	25	10	290	65	30	50	25	5	268	60	7	70	50	50	45	60	230
100	60	80	20	65	5	0	95	120	550	250	194	331	340	600	268	128	540	60	320	375
60	10	40	0	20	25	0	0	20	30	30	20	8	40	0	21	38	12	10	40	60
990	170	946	50	135	410	55	630	500	472	270	308	909	2499	1431	987	992	1,558	145	1420	1467
220	1820	1050	490	745	665	840	315	1040	811	315	629	2002	1561	3175	874	1040	2,867	732	3129	2336
																	450	0	188	
1300	240	0	300	540	700	510	250	480	460	280	948	1215	1915	694	1266	2966	276	740	1680	790
650	10	1325	160	200	80	400	395	50	650	450	125	160	100	1591	220	1633	2,230	240	460	520
0	0	50	0	0	0	0	0	0	14	0	20	0	0	90	70	50	72	0	0	30
270	800	180	0	55	125	165	255	370	120	240	0	419	820	1082	885	1250	496	350	870	611
0	0	0	160	0	0	0	0	185	336	370	1049	1075	1281	1955	637	1233	1,361	687	1158	1673
0	0	0	0	0	12	0	125	40	15	65	60	41	130	516	450	410	605	607	1037	1263
0	40	0	0	0	35	12	132	220	270	250	1009	0	1067	1525	1046	1447	1,342	1,123	1800	1500
0	0	0	0	0	86	0	15	16	90	300	221	41	204	610	888	369	706	627	920	1635

Table 4: Raw counts for North Auckland paradise shelduck. Note: Lapsed ponds (AWx) were excluded from the analysis. Sites in the Northland region near the border were also included (Region = NL).

SITE	Region	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Wellsford Oxidation Ponds	AW	250	250	450	400	350	500	600	550	300	700	800	550	800	900	700	650	800
Tapora/Journeys End/Kaipara Harbour	AW																	
Gibbs Farm	AW																	250
Helensville Oxidation Ponds	AW																	
Parakai ponds x 2	AW																	
Lake Ototoa and surroundings	AW																	
Snells Beach oxidation pond	AW																	
Tongue Farm pond	AW																	
Omaha Beach Oxidation Pond	AW																	
Tomarata , Slipper, Spectacle lake	AW															80	0	0
Irrigation Pond Te Hana (silver hill)	AW	140	150	440	300	390	60	550	380	500	700	500	700	120	550	1000	1230	1000
Wayby Flats pond near pines	AWx											100	8	6				
Tapora Peninsula wetlands	AWx														350		300	
Kaipara Harbour environs	AWx																60	400
Pond just north Riverhead Forest	AWx											70	0					
Woodcocks Rd old & new pond	AWx											80						
Tawharanui Peninsula	AWx														255			
Snells Beach pond	AWx														400			
Pond north-west of Tomarata lakes	AWx												150					
Mangawai WWTP Northland border	AWx												800	830			1250	750
Ruakaka/Waipu Oxidation + Wilsons Dam+ Mountfield	NL	190	90	440	286	185	400	462	385	470	620	502	290	355	320	410	435	660
Brynderwyn Pond	NL							300	250	90	120	150	180	150	150	120	150	100
Mangawahi Oxidation + Worsfold ponds	NL																1100	800
Bald Rock Dams x2	NL	130	192	330	60	270	230	320	380	230	60	380	740	830	800	680	12	45
Topuni CHH	NL				100	30	40	200	200	75	100	12	0	4	25			
Kaiwaka Railway Pond and oxidation pond	NL	350	350	175	120	60	85	280	150	350	200	150	50	300	44	0	25	100
Maungaturoto Oxidation	NL	80	190	370	150	200	150	150	150	200	300	375	350	180	400	150	250	250
Taipuha(Waalkens)	NL	300	550	400	350	380	280	100	150	135	100	440	300	30	200	500	120	0

2018	2019	2020	2021	2022	2023	2024	2025
975	600	700	1727	1098	460	1050	1060
942	640	600	870	1265	1150	1123	846
1320	600	970	650	2200	1960	2200	2000
	70	50	24	0	6	0	12
		200	35	30	4	320	128
		154	230	365	178	110	83
		200	414	350	300	280	260
		12	162	280	440	620	80
		480	435	600	130	180	680
170	150	380	573	480	1490	800	641
930	1100	1100	2393	1950	1720	2400	2210
				0			
				50	0	0	0
							1
725	500	550	630	925	954	1330	882
200	200	300	120	410	260	600	760
750	600	650	650	1218	940	860	400
122	40	50	120	68	580	44	18
				70	190	40	40
50	150	275	250	650	410	260	55
350	350	400	400	750	580	720	1030
6	300	300	80	550	560	580	260

Table 5: Raw counts for North Auckland black swan counts. Note: Lapsed ponds in the Auckland Waikato region are not shown and were excluded from the analysis. Sites in the Northland region near the border were also included (Region = NL), as well as Auckland Airport counts of the Manukau Harbour.

SITE	Region2	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Wellsford Oxidation Ponds	AW		0						0					0	2	6		
Silver hill Irrigation Pond Kaiwaka/Wellsford	AW		0					6	30					0	0	0		
Kaipara Harbour Sth Tapora	AW			10000	8500	9000	7000	9000	5000	6000	4500	4000	1000	100	1450		1200	1800
Gibbs Farm	AW																	
Ponds to north/west of Parakai airstrip	AW																	
Lake Ototoa and surroundings	AW																	
Tomarata Lakes	AW																	
Ruakaka/Waipu Oxidation + Wilsons Dam+ Mountfield	NL	0	30					14	60	45	90	25	20	10	4	2		20
Brynderwyn Pond	NL								0					0	0	0	0	
Bald Rock Irrigation Dams	NL		16					2	30				10	2	14	5	6	45
Topuni CHH	NL				12	6		8	20			5	2	0				
Kaiwaka Railway Pond and oxidation	NL		120		30	25		30	30	100	40	20		44	14	12		10
Maungaturoto Oxidation	NL		0		6	0			4					0		0		
Taipuha(Waalkens)	NL		40						10			50	40	0		0		
Manukau Harbour	AW/NL														3050	1885	3884	2147

	2018	2019	2020	2021	2022	2023	2024	2025
		0	0	0			11	0
		25	0	0	8	14	50	30
714	1300	839	800	241	150	3058	1400	
60	36	88	60	26	120	160	1200	
		2	0	6	28	40	49	
		20	26	0	11	20	0	
		3	3	0	65	25	10	
32	3	36	0	7	94	20	30	
	0	0	0	0	6	2	0	
10	0	0	4	0	0	0	9	
		0	0	0	10	5	0	
	8	20	14	4	35	60	20	
	3	8	0	0	0	0	0	
	0	0	0	0	10	4	0	
3946	4612	5156	4390	2822	7385	9388	6729	

Table 6: Distribution of non-zero counts of black swan and geese for the Central Waikato lakes and harbours survey. Values of 1 (green) indicate that both the black swan count and the goose count were equal to zero. If there were long periods at sites where zero birds were counted, we may have reason to suspect that these sites were not surveyed. No evidence of this is found.

Lake	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025				
Lake Rotokauri	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	1	0	0	1	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0		
Lake E	1	1	1	1	1	1	0	0	1	1	0	1	1	0	0	0	1	1	1	1	1	0	1	0	0	1	1	1	0	1	0	1	1	0	1	1	1	0	0	1	0	0		
Lake A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Lake B	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0	1	1	1	1	0	0	0	1	1	0	0	1	0	1	1	0	0	1	0	0	0	0	0		
Lake C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	0	0	0	0	0	1	0	1	0	1	1	1	1	1	1	1	0	1	1			
Lake D	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	0	0	1	0	1	0	1	1	1	1	1	1	1	1	1		
Lake Areare	0	0	0	1	1	1	0	1	1	0	1	0	1	1	0	1	0	0	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0		
Lake Pikopiko	0	0	1	0	1	1	0	1	1	0	0	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0		
Lake Hotoananga	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1	1	1	0	0	0	1	1	1	0	0	0	1	0	0	1	0	0	1	0	0	1	1	1	0	0	
Lake Hakanoa	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Lake Kimihia	0	1	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Lake Ohinewai	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Lake Rotokawau	1	1	1	1	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Lake Kopuera	1	0	1	0	1	0	0	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Opuatia Lower Wetland	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	
Lake Whangape	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Lake Waikare	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Lake Rotongaro	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Lake Rotongaroiti	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Lake Okowhao	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	1	1	0	0	0	0	0	0	1	0	0	
Lake Waahi	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Raglan Harbour	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aotea Harbour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Kawhia Harbour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Taharoa Lakes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Auckland/Waikato Fish & Game Council Annual Drift Dive Monitoring Program Report 2024



Author: Dr Adam Daniel
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Auckland/Waikato Fish and Game Council
Hamilton New Zealand

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1. Executive summary

Drift dive surveys are conducted annually to ensure fish populations can sustain the current bag limits and to detect catastrophic collapses of the fish population requiring emergency closures. Events like chemical spills, large storms, slips, volcanic eruptions, droughts and heatwaves can cause trout populations to collapse. Long term monitoring also allows Fish & Game to improve the management of streams by looking at increases or declines in trout populations corresponding with land use change or management actions such as fencing and riparian planting.

Drift dive surveys were successfully conducted on the Awakino, Waihou, Waitawheta, Whakapapa and Kauaeranga Rivers. Drift dives were conducted from mid-January to early March of 2024. Rainfall was below average during January and February with the first major rain occurring after surveys were completed in early March of 2024 (Figure 1.1). There were no significant recruitment failures or other alarming findings amongst the Auckland/Waikato Streams monitored during the 2024 drift dives.

Due to nearly three years of non-lethal temperatures both the Kauaeranga and Waitawheta Rivers are sustaining trout populations after several years of poor fishing due to high summer temperatures. Fishing reports from the Waitawheta and Ohinemuri Rivers have been excellent during the past year. Water temperatures in the Ohinemuri River are normally above 19°C from early November to late March but the summer of 2022 was extremely mild with only short periods above 19°C. Fly fishing competitions in the Ohinemuri River were abandoned in 2018 due to low catch rates (mean catch of 7.8 fish per competitor) and high water temperatures. The annual Ohinemuri competition was resumed in 2024 and competitors averaged 17.3 each likely due to successful recruitment that occurred in 2022.

Multiple attempts were made to drift dive the Mangatutu River during mid-January and February that were abandoned due to low visibility. Significant earthworks (Figure 1.1) from a new farm track and felling operations with inadequate erosion control allowed moderate to large amounts of sediment into the Mangatutu River significantly reducing water clarity in the survey reach. The discharge was reported to Waikato Regional Council who investigated. Due to the site previously being forestry, the track building and subsequent runoff were classed as a forestry activity and covered by permitted activity rules. As a result, no charges were laid but “corrective instructions” were given to the new landowner. Sediment is the single most influential factor for reducing the health of wadable streams and their fish populations (Pingram et al. 2019), so it is disappointing that the incident occurred.



Figure 1.1. Tree felling and earthworks on the Mangatutu Stream January 2024.

2. Introduction

Auckland/Waikato Fish & Game is tasked with managing the region's freshwater sports fisheries for present and future generations with the goal of maintaining and improving wild, self-sustaining populations (Wilson 2021). To successfully manage the region's wild trout population staff are required to monitor populations and their trends over time. (Wilson 2021). Detecting significant changes in trout populations is important for setting bag limits and emergency closures if trout populations are significantly impacted. Drift diving is the primary tool used to monitor the Auckland/Waikato region's trout populations.

It is impractical to monitor all the region's streams, so a diverse set of representative streams that meet the criteria for drift dive monitoring are selected annually and surveys are conducted mid-summer. Drift dives also allow staff to monitor water quality, check on access, discuss issues with landowners and conduct compliance.

Drift diving is not the most precise means of monitoring fish with fish count accuracies of 21-90% (Hagen and Baxter 2005; Young and Hayes 2001). Inexperienced divers often count 50% fewer trout compared to seasoned divers, introducing significant error into counts. Water clarity is the primary factor affecting accuracy of drift dive counts. Low water clarity, similar to that found in the upper North Island (4 m), can result in fish counts that represent only 20% of the actual population; water clarity approaching 16 m can increase accuracy to nearly 90% (Hagen and Baxter 2005). However, most drift dive accuracy assessment work has been done on larger rivers where divers cover 5m lanes (Hagen and Baxter 2005) with flows of at least 2 m³ per diver. In contrast Auckland/Waikato divers cover about 2.5 m lanes with flows of about 0.7-1.6 m³ per diver.

Despite not being a total count of a river's trout population, drift dive data is very useful for monitoring long term trends in the same river. Several variables like instream habitat, depth, flow, and water clarity make comparisons between rivers dubious. But comparing the same stream reach under similar conditions in consecutive years controls for these variables,

providing a good low-cost monitoring tool. The standard error of drift diving data in water clarity below 10 m is likely to be very high ($\pm 30\%$) and thus the data should only be used to make management decisions when large shifts (40%+) in trout populations are indicated.

Water temperatures above 24°C are often lethal to trout (Huysman et al. 2020; Wismer and Christie 1987) and are a significant limiting factor for trout populations in the Northern half of the Auckland/Waikato Region. Rivers like the Ohinemuri and Waikato Rivers regularly breach the 24°C mark for extended periods during most summers (Figure 1.1 & 1.2). Rainbow and brown trout die quickly at 26°C, and only 50% survived at 25°C with prolonged periods of temperatures above 24°C causing significant mortality. Due to the mild temperatures during the summers of 2022 and 2023 adult fish counts in heat impacted streams like the Kauaeranga and Waitawheta are expected to rebound.

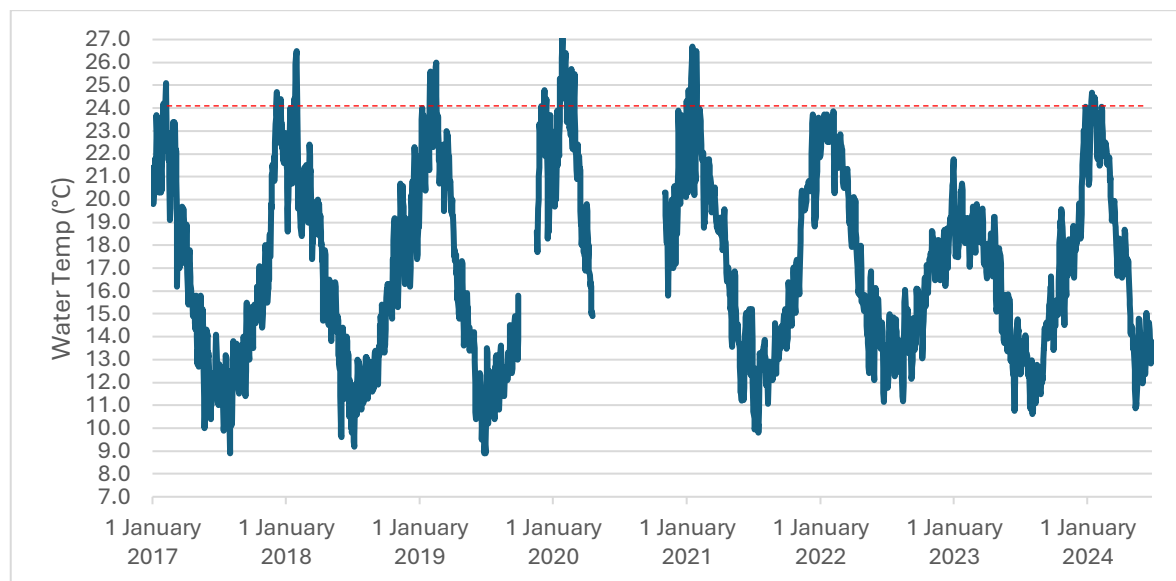


Figure 1.1. Ohinemuri River temperature from Jan of 2017 to Aug 2024. The red dotted line indicates lethal water temperature for trout.

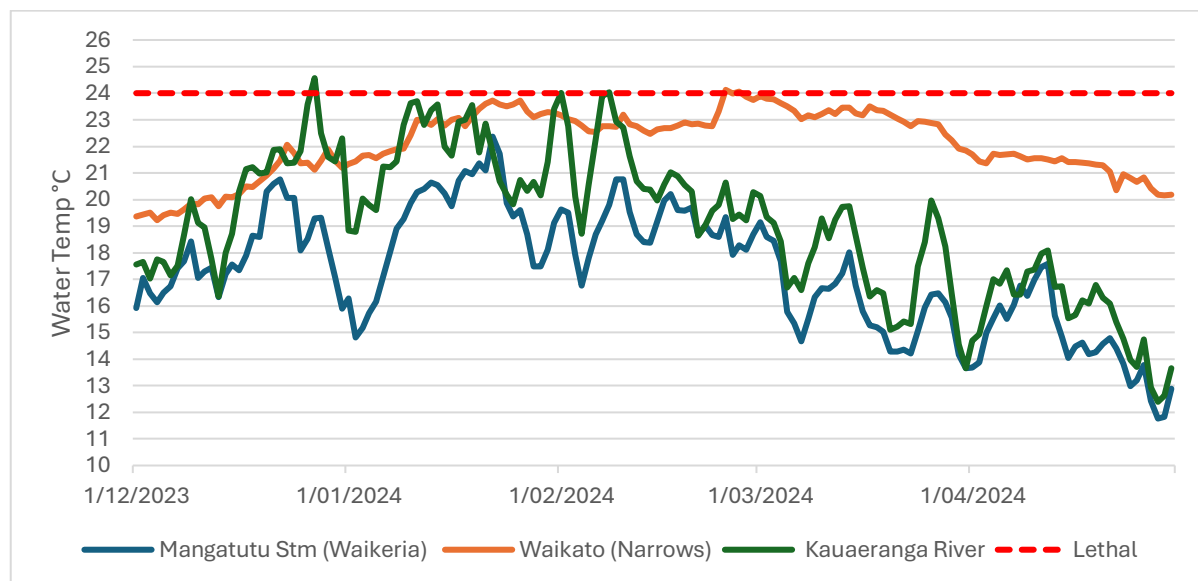


Figure 2.1. Water temperature from Jan. of 2023 to Mar of 2024 in the Mangatutu Stream (blue line), Waikato River (brown line), Kauaeranga River (green line). The red dotted line indicates lethal water temperature for trout.

3. Methods

Drift dives in the Auckland/Waikato Fish & Game Region (A/W) are conducted in streams with at least 3.5 m of visual clarity and depth of at least 300mm. Poor water clarity excludes most streams in the region from being monitored. Dive reaches are 0.9 to 2 km long and are surveyed for obstructions and dangerous rapids prior to each dive. Although it is preferable to survey multiple reaches of a river, poor visual clarity, high water temperatures, low water or limited access restrict most river surveys to one or two reaches.

Drift dives are conducted with two to four divers drifting in a parallel line downstream equipped with wetsuit, mask, snorkel, and wrist-mounted recording slates. Divers maintain a parallel line perpendicular to the bank, spaced so they can see the banks and their adjacent diver or divers. The number of divers needed to survey a river is dependent on their ability to see the bottom of the river and their corresponding diver. To avoid double counting fish, divers only count fish passing in the upstream direction. Dive teams stop at the end of each pool or reach to tally fish numbers and compare notes. Fish are sorted into species and size classes (<10 cm, 10-20 cm, 20-30 cm, 30-40 cm and 40+ cm) by each team member during each stop. Data is recorded by each individual diver on slates attached to their arm and then combined on a data sheet by the team leader at the end of each dive.

Prior to diving, water clarity is measured using a 20 cm black disc. The disk is walked backwards as it is observed using an underwater viewer. When the black disk just disappears, the distance to the viewer is recorded. Water temperature is recorded, and dive surveys only preceded in reaches with water temperatures of <19°C as fish commonly migrate out of warmer areas.

4. Awakino River

4.1. Awakino River introduction

Awakino River use has dropped from 840 angler days in 2001/2002 to 380 in 2014/15 (Unwin and Rouse, 2016) but stabilized at 420 angler days in the 2020/21 survey (Stoffels and Unwin 2023a). The drop in angler use corresponds with the recovery of the Whakapapa River after the 1992 eruptions and mirrors other popular fisheries like Lake Arapuni. One possible explanation for the drop in angler use is that anglers bypass the Awakino for the Whakapapa. The Awakino is easily accessible and still considered a nationally significant trout stream with exceptional scenic values and easy access.

The Awakino River is well studied with an established relationship between high winter/spring flows and failed or reduced recruitment (Figure 4.1; Wilson 2009). Recruitment is drastically reduced when winter/spring flow events exceed 50 times base flow. The occurrence of a high flow event (>200 cubic meters per second between July and September) has consistently resulted in failed trout recruitment. In addition to high flow related reductions in recruitment, the Awakino River also has a reduction of adult fish during low flow years as observed in 2013-2014. Since 2015 no major floods have been recorded in Awakino, although summer temperatures are still a threat.

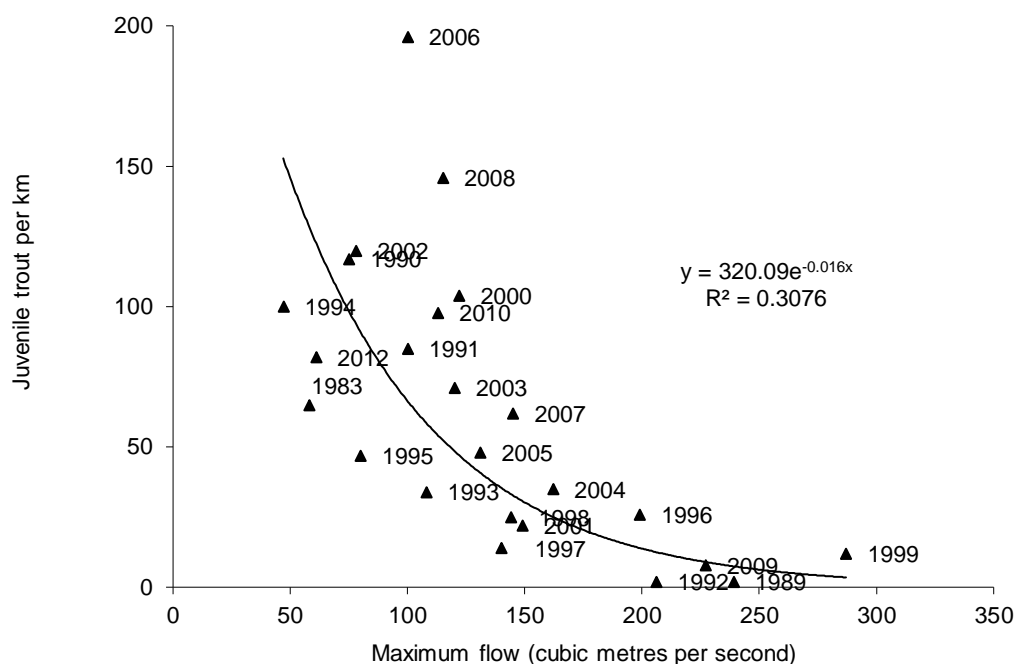


Figure 4.1. The number of juvenile trout counted in the summer drift dive survey of the Awakino River versus the maximum river flow during the previous July-September. The curve provides a model for the relationship between the maximum flow and juvenile trout recruitment (Wilson 2009).

Water quality in the upper reaches of the Awakino River is generally high but gradually deteriorates downstream as the river flows through pastoral land. There is a noticeable decline in water quality immediately downstream of the confluence with the Mangaorongo Stream. The Mangaorongo Stream is largely unfenced and areas like the Puketiti Station present significant opportunities for improving water quality in the catchment. The Awakino is one of many hill country areas that would have substantially benefited from mandatory fencing rules.

Rainbow and brown trout reproduce naturally in the Awakino River, so there is no artificial supplementation of the trout population even in years of recruitment failure. Brown trout contribute less than 2% of the historic angler catch and drift dive count.

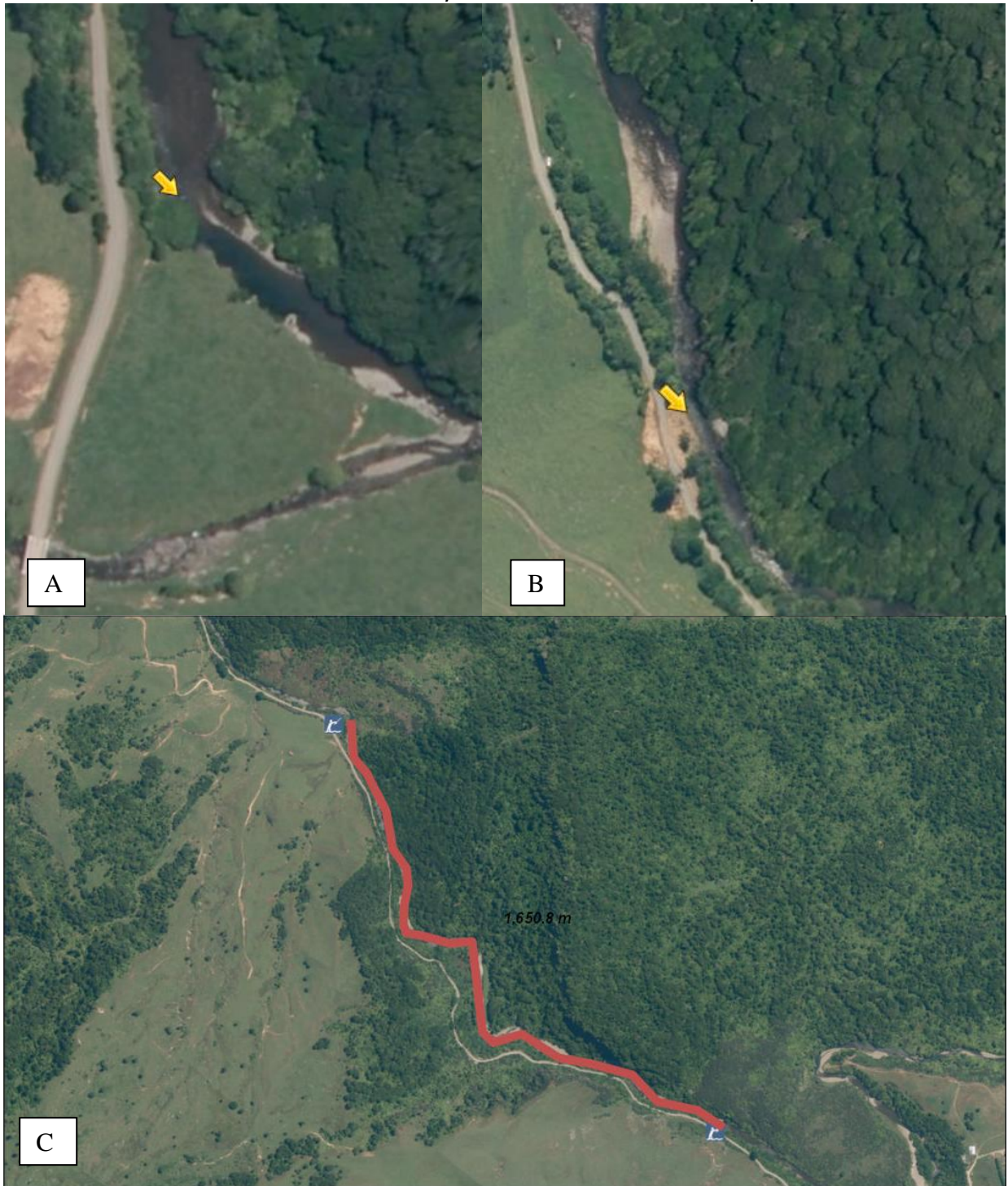
4.2. Awakino River study area

The Awakino River has a catchment area of 226 km² in the steep rolling hill country of the Herangi Ranges on the west coast of the North Island. In the upper reaches, upstream from the village of Mahoenui, the Awakino River meanders through mixed podocarp hardwood forest and pastoral land, providing a procession of runs and pools over a riverbed of gravel, cobble, and small boulders. River flow is measured by the Waikato Regional Council at Rauroa Farm Bridge (NZTM:1754098, - 5725781). Minimum flows are about 2.5 m³/s, mean flows about 13 m³/s, and maximum flows can be over 300 m³/s. Two reaches of the Awakino River have previously been surveyed, the traditional long term monitoring site (upper site) and a reach approximately 2 km past Mahoenui (lower

reach). Due to high water temperatures and low fish numbers monitoring of the lower reach was abandoned in 2020.

4.3. Awakino River methods

The upper Gribbon Road drift dive (Figure 4.2; Appendix A) was conducted in 2024. Results of the dive were adjusted to fish per kilometer for comparison to previous surveys and other catchments. The drift dive survey was conducted with two experienced divers.



June 27, 2018

Hunting, Fishing and Access Points

 Fishing Spot

0 0.07 0.15 0.3 mi
0 0.1 0.2 0.4 km
Sourced from the LINZ Data Service and licensed for re-use under the Creative Commons Attribution 3.0 New Zealand licence

Figure 4.2. Map of the 2024 upper Awakino drift dive start “A”, finish “B” and total monitoring reach “C”.

4.4. Awakino River results

The Awakino drift dive survey began at 12:00 pm on the 7th of March 2024. Water clarity was low for the Awakino River at 3.7 m (mean 4.5 m; range 3.7-6.4 m) likely resulting in undercounting. The water temperature was about 3°C below the normal summer temperature at 14.9°C (mean 17.7 °C; range 14.9-19.0 °C) due to consistently cloudy weather. Flows were slightly elevated at 5.3 m³. No large floods were recorded during the winter of 2023, with only moderate floods occurring in July 2022 (Figure 4.3) that were about half of what would be required to pose a risk to recruitment.

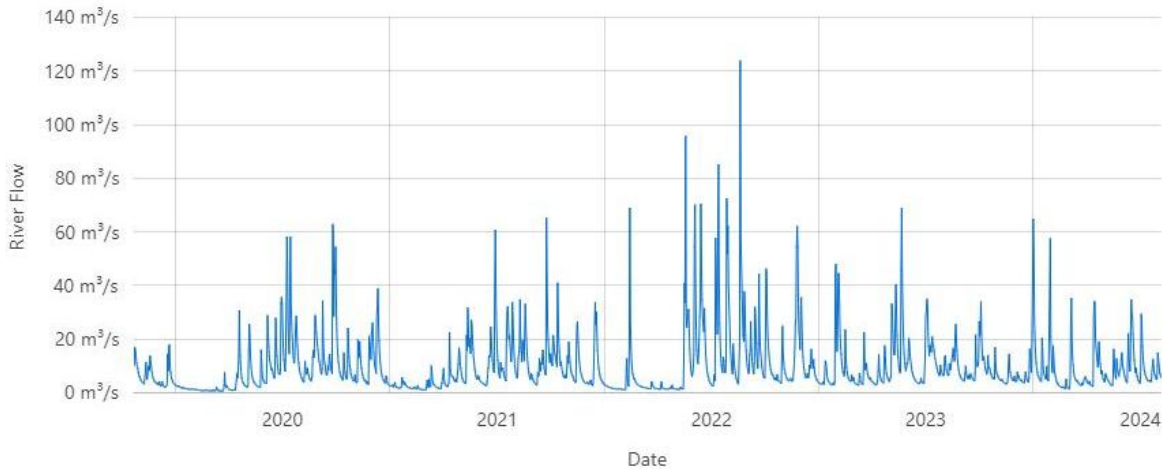


Figure 4.3. Awakino River hydro graph from the Waikato Regional Council website June to Dec 2019 to Aug 2024.

Despite the cool weather and moderate visibility there were good numbers of 40+ cm adult rainbow trout observed in 2024. It is likely that similar to 2023, fish were not concentrated in the monitoring area due to cool water allowing trout to survive further downstream, spreading out the population and reducing the count. The number of medium and age zero fish were a positive sign, indicating a relatively healthy fishery (Table 4.1 and Figure 4.4). All size classes were within the normal expected range for the Awakino River during a year with low to moderate spring flooding and very cool water temperatures.

Table 4.1. The size, frequency and species of trout seen in the upper Awakino River on the 2022-2024 drift dive surveys. Trout less than 20 cm in length were not identified to the species level. Trout identified as rainbow trout (R), or brown trout (B) are labelled as such.

Year	<10 cm	10-20 cm	20-30 cm	30-40 cm	40+ cm
2022	3	11R	9 R	6 R	30 R 0 B
2023	21	27R	7R	4R	6R 3B
2024	18	139R	36R	9R	19R 4B

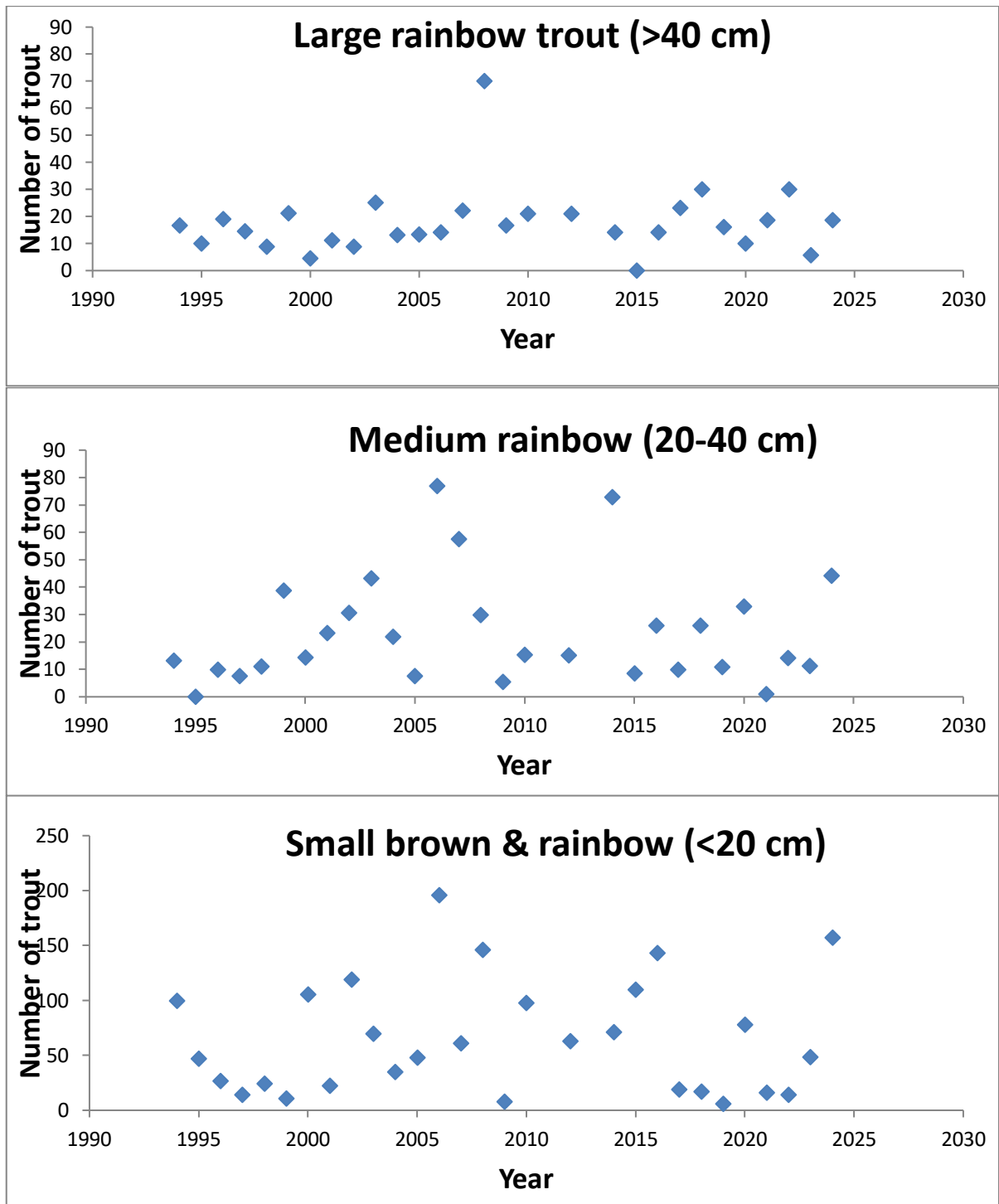


FIGURE 4.4. Large, medium, and small rainbow trout per km (blue squares) counted from 1994 to 2024 during the Awakino River drift dives.

4.5. Awakino River discussion

As discussed in previous reports, the magnitude of floods during the July-September period is the main but not the only environmental factor controlling trout numbers as low annual rainfall with high river temperatures can also impact the upper Awakino River. The lack of significant flooding and cool water has increased the survival of age 0 and 1 fish over the last two years. Adult fish numbers in the upper reaches of the river were likely low due to the low water temperature allowing fish to occupy a much larger area, reducing the number of trout forced upstream into the drift dive survey area.

5. Whakapapa River

5.1. Whakapapa River introduction

The Whakapapa River is the only major fishery in the region that has had a steady increase in angler use over time (Figure 5.1), as it has recovered from the devastating Mount Ruapehu eruption in 1995. At 3772 angler days the Whakapapa River has similar angler use to Lake Arapuni, the Auckland/Waikato Regions most popular fishery. Fish & Game's management objective for the upper Whakapapa River is to maintain a trophy trout fishery. Increasing access to the Whakapapa has also been identified as important to maintaining quality fishing as angler use grows. Since 2011, trophy trout numbers have leveled off at what may be the carrying capacity for the Whakapapa River under the current flow regime, but angler use is still climbing. New fees imposed by iwi in the Taupō fishery have increased use by guides and YouTube influencers, boosting publicity and use of the Whakapapa fishery.

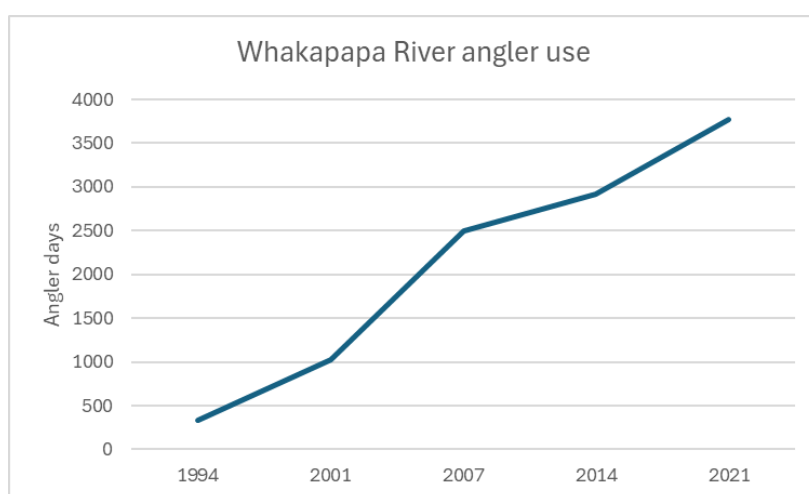


Figure 5.1. Angler use (angler days) 1994 -2021 derived from Stoffels and Unwin (2023).

The Whakapapa & Whanganui River Angler Use Monitoring Study completed in 2016 (Daniel 2017) confirmed that limited access above Owhango has led to low angler use and improvements to angler access in the upper river are still required. The closure of the Whakapapa Intake Road has exacerbated the issue and reopening the road is a high priority for staff. The overall angler use (>0.5 km from parking areas) of the upper Whakapapa in 2014 and 2015 was very low at only 2 anglers per month on average (Daniel 2017) due to the lack of public access. The successful purchase of 1.2 km of the lower river just upstream from the Kakahi landing in 2019 helped spread out anglers but the limited access available is becoming overcrowded.

5.2. Whakapapa River study area

The Whakapapa River is formed by the joining of the Whakapapa-nui and Whakapapa-iti Streams. Both streams drain small glaciers and snowfields on the western slopes of Mt. Ruapehu and are cold, swift and clear. The only major nutrient or sediment inputs in the upper Whakapapa River are runoff and wastewater discharge from the Whakapapa Village. DOC has proposed upgrades to the wastewater treatment plant that should increase consistency of the discharge and reduce the overall impact to the Whakapapa River but have been held up in the RMA process for nearly a decade. In addition, there is also seasonal disturbance from the Whakapapa Ski fields and corresponding access roads.

The Whakapapa Intake of the Tongariro Power Scheme is located about two kilometers downstream from the confluence of the Whakapapanui and Whakapapaiti streams. The Whakapapa Intake structure is a major impediment to the river's trout population as it blocks significant spawning and critical summer habitat for fish that move upstream to avoid the extreme summer heat in the Whanganui River below Taumarunui. Although there is good access to the Whakapapanui and Whakapapaiti, the Whakapapa intake structure isolates this population limiting fish density.

Below the intake, the Whakapapa is a turbulent river alternating between steep rapids and short deep pools. Here the river is quite narrow, generally about 10 to 20 m wide. Access to the intake is via the Whakapapa Intake Road through the Taurewa Station and was closed to the public in 2019. The gauging foot bridge is the starting point for the traditional upper river drift dive, and it is located about 1 km below the Whakapapa Intake structure. Unfortunately, the legal access to the upriver site is no longer accessible to staff.

The Owhango Bridge site is located 20 km downstream from the intake and is the first publicly accessible section of the river below the Whakapapa Intake Road. The Owhango Bridge site is easily accessible and heavily fished. This reach has high numbers of rainbow trout likely due to predominantly catch and release fishing documented in the Whakapapa & Whanganui River Angler Use Monitoring Study, where less than 1% of anglers were recorded with dead fish (Daniel 2017).

5.3. Whakapapa River methods

Only one reach of the Whakapapa River was surveyed in 2024 as the foot bridge drift dive survey was not conducted due to the closure of the Whakapapa Intake Road. The Owhango Bridge monitoring reach begins 1 km upstream from the Whakapapa Bush Road bridge and ends approximately 50 m upstream from the bridge (Figure 5.2).

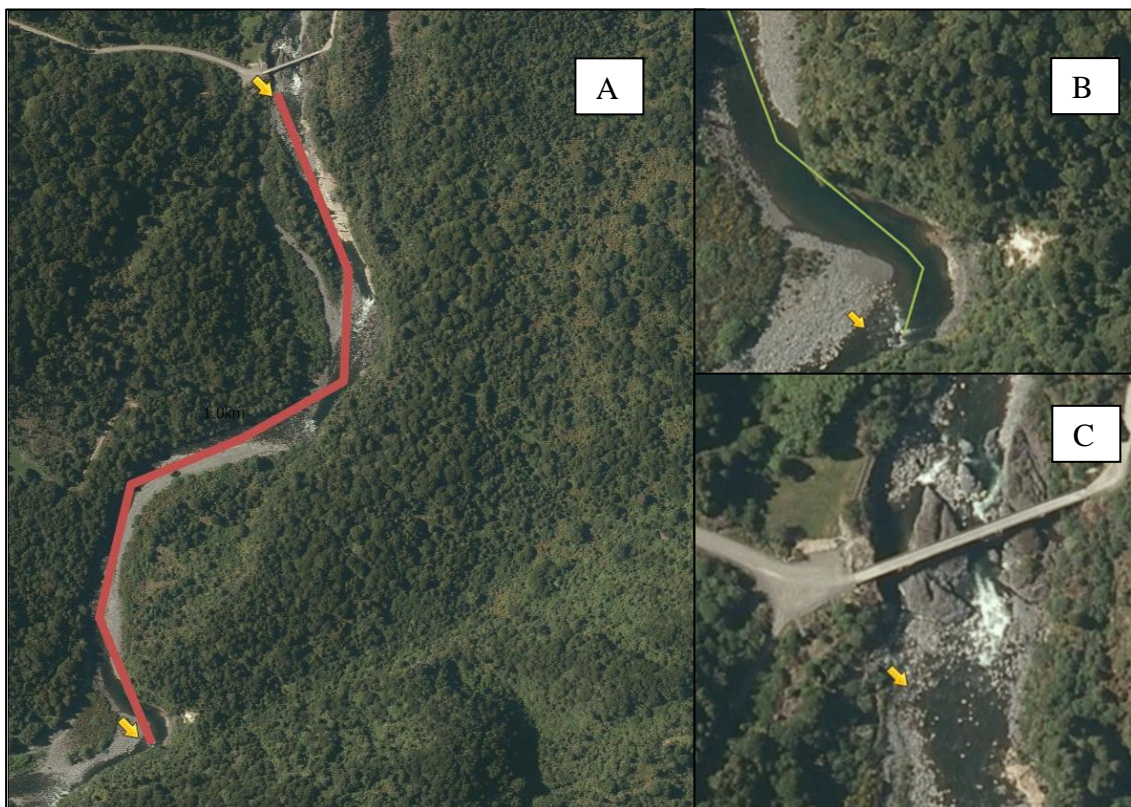


Figure 5.2. Owhango drift dive monitoring area (A), put in site (B) and take out location (C).

Rapids are a safety risk to divers so only pools and riffles were surveyed. As a result, very little habitat suitable for small fish was investigated.

5.4. Whakapapa River results

The Owhango dive survey started at 12:00 pm on the 25th of February 2024. Water clarity was 4.0 m with a temperature of 16.1°C. The Owhango reach had one of the highest counts of large fish (40+ cm) on record (Figure 5.3; Table 5.1). Brown trout were seen in low numbers similar to previous counts (Figure 5.3; Table 5.1). Age 0 fish were spotted in shallow pools above the takeout indicating successful spawning in 2023.

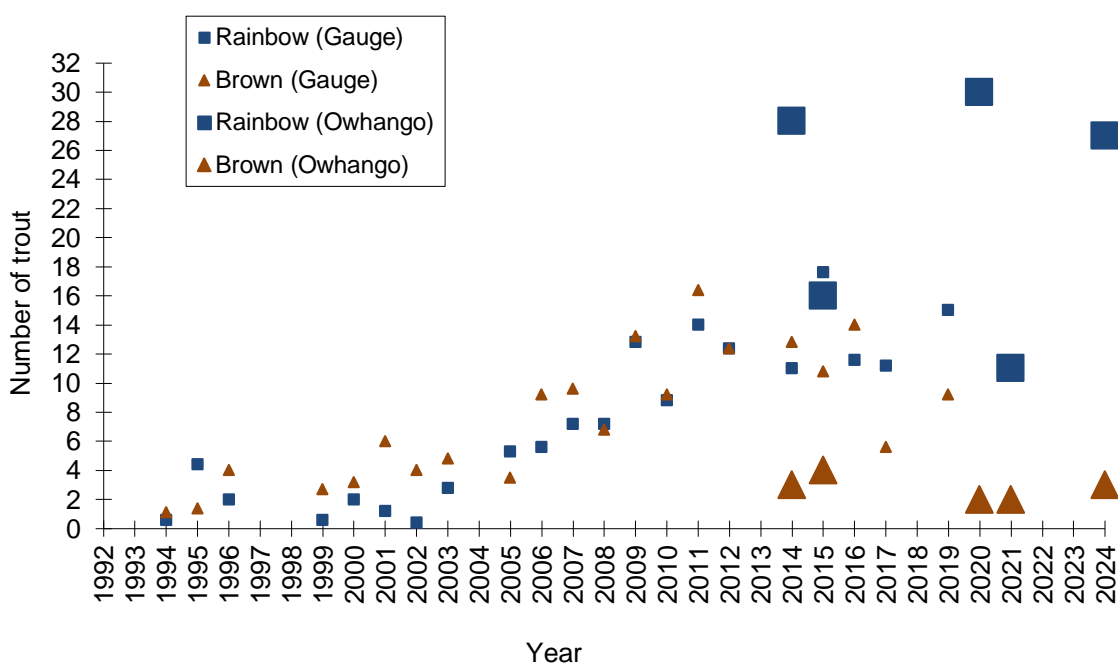


Figure 5.3. Number of large (≥ 40 cm) trout per km of the upper Whakapapa River at the gauging station bridge (gauge; small symbols) and above the Owhango Bush Road (Owhango; large symbols) 1994-2024.

Table 5.1. Number of fish counted during each of the last three Whakapapa River drift dives 2020, 2021 and 2024.

Year	<10 cm	10-20 cm	20-30 cm	30-40 cm	40+ cm
2020	8	9R	4R	11R	30R
		0B	0B	2B	0 B
2021	0	2R	0R	0R	11R
		0 B	0 B	0 B	3B
2024	14	41R	15R	6R	27R
		0 B	0 B	0 B	4B

5.5. Whakapapa River discussion

Overall, the Whakapapa fishery has moderate to high numbers of large (40+ cm) rainbows and brown trout. Water clarity during the 2024 survey at Owhango was normal at 4 m. The clarity is significantly reduced due to the influence of the Piopotea Stream. The rainbow trout population has been stable for over a decade and has not been significantly affected by increased angler use (Stoffels and Unwin 2023b).

The influence of the Piopotea catchment combined with loss of water and habitat to the Tongariro Power Scheme are the biggest anthropogenic limitations to the Whakapapa River trout population. Volcanic activity, such as the 1992 eruption that devastated the Whakapapa River trout population, could also reoccur.

Flows in the upper river are substantially modified by the intake weir operated by Genesis Energy, which maintains a minimum flow of 3 m³/s and can divert up to 40 m³/s. The intake weir reduces the magnitude of floods such that moderate rainfall usually has negligible effect on flows resulting in dramatic increases and decreases in flows rather than rain induced spikes, followed by a gradual reduction in flow. Although such a dramatic hydrograph could cause mass stranding of fish, the steep channelized morphology of the Whakapapa riverbed does not allow for lateral flooding that would likely strand fish. But the sudden spikes likely wash most of the small fish downstream, leading to the very large population of mostly 40+ cm fish.

. In terms of long-term management, the Whakapapa and Whanganui Rivers will be a key focus area for Auckland Waikato Fish & Game due to the high quality of the fisheries. Angling pressure is currently low to moderate on the upper Whanganui River and improving fish quality on the Whanganui will ultimately take pressure off the Whakapapa (Daniel 2017).

6. Waihou River

6.1. Waihou River introduction

The upper Waihou has easy access and abundant small fish making it a great location for beginners and experienced anglers. The Whites Road section of the Waihou River is well developed with walking paths in the riparian zone that extend for over four kilometers upriver of the car park and include a composting toilet. The location, water clarity, fish numbers and ease of access make the Waihou a priority asset in terms of the Auckland/Waikato regions current fisheries.

The Waihou is a large spring-fed river near Putāruru and is one of the most popular fishing waters in the Auckland/Waikato region, with angler usage in the 2021-22 season estimated at 1018 angler days, a significant drop from 1930 angler days during the 2013-14 season (Unwin and Rouse 2016). This decline is highly suspicious as the Waimakariri Stream is listed as having higher use at 1394 (Stoffels and Unwin 2023a) and is far less popular with anglers. Most of the angling pressure occurs immediately above the Whites Road bridge near the Blue Spring where the water is clear. Water quality rapidly declines as the river flows through several intensive dairy farms.

6.2. *Waihou River study area*

The Waihou River starts as small streams that wind through scrub and plantation pine forest on the Mamaku Plateau. Near Putāruru, land use transitions to dairy and flow is increased by a series of large springs.

Immediately downstream from the Blue Springs, water clarity is high with visibility exceeding 10 m. Most of New Zealand's bottled water is sourced from the Waihou River near the study site. However, water quality quickly deteriorates and 2 km downstream from the springs at the end of the drift dive survey reach, water clarity is typically less than 6 m. Water quality continues to deteriorate and was measured at less than 3.5 m at the confluence of the Waimakariri Stream just 3.8 km downstream from the walkway.

A 4.7 km walkway extends from Whites Road to the Blue Springs upper parking lot. During the past decade most of the upper Waihou has been fenced. However, buffer widths are far too narrow and critical source areas on neighboring farms still deposit fine sediment into the stream at an alarming rate. Despite much of the river being fenced and planted, water quality still deteriorates quickly, likely due to the intensive agriculture throughout the catchment. The lower Waihou is among the dirtiest rivers in the North Island with significantly elevated nutrient levels and heavy sediment loads.

6.3. *Waihou River methods*

The drift dive was 1.7 km and the GPS positions for the start and end points are listed in Appendix A and shown in Figure 6.1.





Figure 6.1. Maps of the reaches covered in the 2024 drift dive surveys of the upper Waihou River including: “A” Waihou survey reach, “B” end point, “C” start point.

6.4. Waihou River results

The 2024 Waihou drift dive was conducted on the 10th of January at 10:00 am. Water clarity on the Waihou was low for the study reach at only 5.5 m and clarity did diminish during the dive due to diver interaction with the substrate. As in previous years only rainbow trout were observed on the dive. The size and frequency of rainbow trout observed on the last three drift dives (2020-2024) are summarized in Table 6.1. The Waihou River had lower fish numbers compared to 2023 with a low number of large 40+ cm fish (Table 6.1 & Figure 6.2).

Table 6.1. The size and frequency of rainbow trout seen per kilometre in the Waihou River during the 2021-2024 drift dive surveys.

Year	Size and frequency of rainbow trout per kilometre of river			
	<20 cm	20-30 cm	30-40 cm	>40+ cm
2022	58	27	24	14
2023	71	74	42	17
2024	7	44	23	6

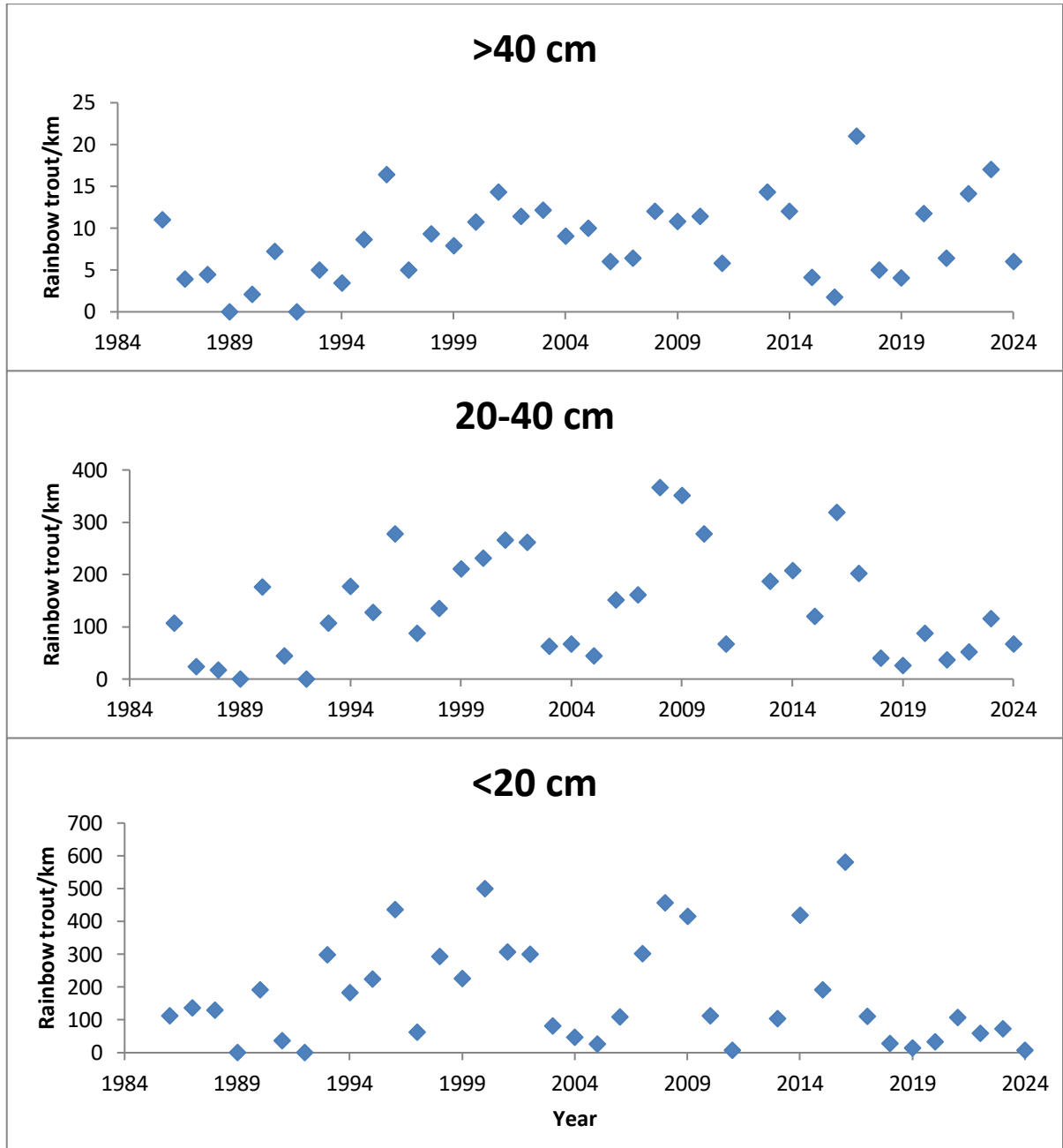


Figure 6.2. Number of rainbow trout per kilometre of the Waihou River above Whites Road as observed on drift dive surveys undertaken since 1986. Fish are grouped into small (<20), medium (20-40 cm) and large (>40 cm) categories.

6.5. Waihou River discussion

The Waihou fish counts were low in 2024 but within the range seen in the river during historic counts. The boom-and-bust cycle of the Waihou population is not unusual and the 66 medium size fish (20-40cm) would be considered high in most other rivers. The closure of the walkway has cut off most of the fishing in the upper Waihou so it will be interesting to see if the number of large fish rebounds during the 2025 drift dive.

7. Waitawheta River

7.1. Waitawheta River introduction

The Waitawheta River rises on the eastern slopes of Mt Aroha in the Kaimai-Mamaku State Forest and then flows for about 20 km northward before entering the Ohinemuri River opposite the township of Karangahake. The Waitawheta is a critical spawning tributary and thermal refuge for the once productive Ohinemuri River. The historic Masonry Dam near the town of Waihi prevents fish passage to the upper reaches of the Ohinemuri River that would provide both thermal refuge and spawning habitat making the Waitawheta a critical spawning tributary and thermal refuge. Although high summer water temperature and fish passage limits trout production during most summers, the catchment is still a popular destination due to the proximity to Auckland. Extensive fencing and planting upstream could improve conditions for trout in the Ohinemuri but ultimately climate change is working against restoration efforts. The Ohinemuri and Waitawheta trout populations do bounce back during years of cool conditions similar to the conditions observed in 2024.

7.2. Waitawheta River study area

The drift dive survey occurs in the upper reaches of the Waitawheta River on the boundary of the State Forest at the end of Franklin Road. Here the river consists of a series of long deep pools separated by short turbulent runs/rapids. Although the river was modified for logging and mining the upper catchment is nearly pristine aside from the DOC tracks.

7.3. Waitawheta River methods

The drift dive was 1.2 km and the dive reach and GPS positions for the start and end points are displayed in Figure 7.1 A and B in addition to Appendix A.

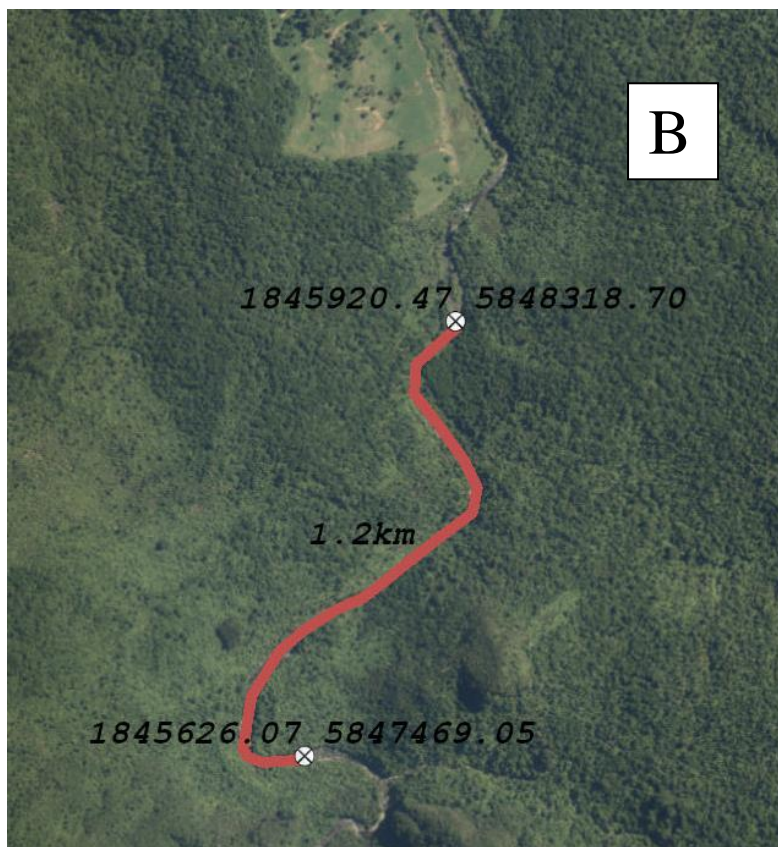
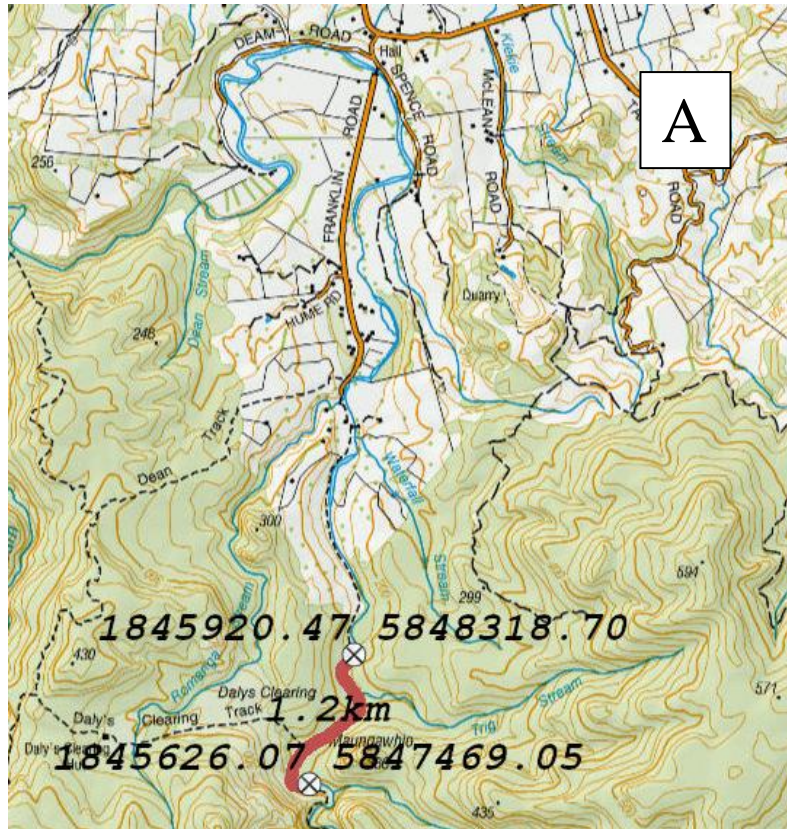


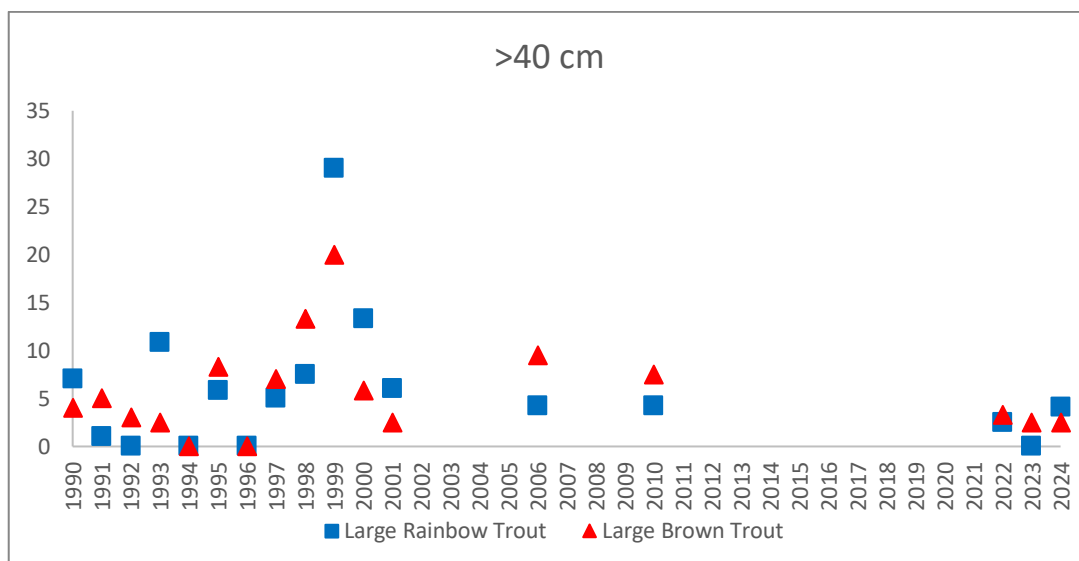
Figure 7.1. (A) Drift dive location showing Franklin Road (B) photo of the drift dive area with GPS points in NZTM for the start and stop locations.

7.4. Waitawheta River results

The Waitawheta drift dive was conducted 3 January 2024 at 10:00am. The Waitawheta River does not have a river gauge, but the river was at base flow during the dive. Water temperature was 15.2°C with water clarity at 4.0 m due to heavy periphyton and low water. Two divers conducted the dive searching all accessible water. Several shallow runs were skipped due to low water and the heavy algal growth. The largest number of Age 0 fish ever recorded were seen on the dive indicating successful recruitment during the winter of 2023 (Table 7.1 & Figure 7.2). However low numbers of adult trout were detected, and no large rainbow trout were spotted on the dive (Table 7.1 & Figure 7.2). It is possible that the large rainbows that normally seek thermal refuge in the park were downstream due to low water temperatures.

Table 7.1. Trout per kilometre for the last three drift dives in the Waitawheta River.

Year	<10 cm	10-20 cm	20-30 cm	30-40 cm	40+ cm
2022	13.3	75	2.5	1.6	2.5 3.3 B
2021	7	12	5	0	0 2.5 B
2024	36	118	7	4	4 2.5B



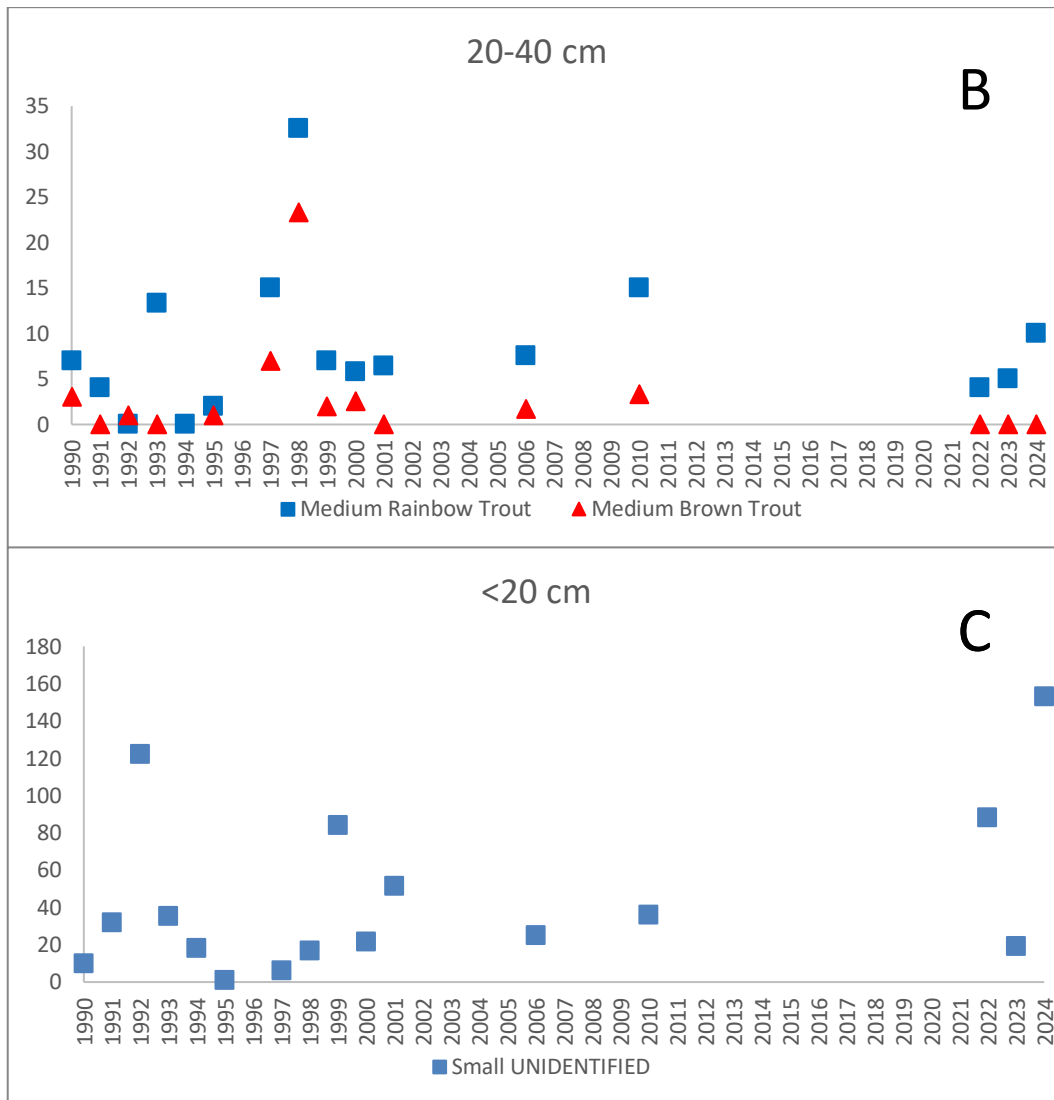


Figure 7.2. Number of large (≥ 40 cm; A), medium (20-40cm; B) and small < 20 cm; C) trout per km of the Waitawheta River 1990-2024. Red triangles represent brown trout, and blue squares represent rainbow trout counted during the drift dive survey.

7.5. Waitawheta River discussion

A summary of drift diving results for the Waitawheta River since 1990 (Figure 7.2 A-C) indicates the reach monitored only occasionally holds high numbers of large trout. The consistent cool weather and large cohort of small fish in 2022 should translate into increased numbers of large fish during the 2025 survey. Fishing reports from the area indicate exceptional survival that should repopulate the river until the next major drought.

8. Kauaeranga River

8.1. Kauaeranga River intro

Fish & Game management objective for the Kauaeranga River is to maintain a wild trout population that will provide a satisfactory fishing experience for anglers. However, climate change will make this goal increasingly difficult, and it is likely that fishing will only be “satisfactory” during periods with multiple back-to-back cool summers.

8.2. *Kauaeranga River study area*

The Kauaeranga River rises in the Coromandel Range and flows in a southwesterly direction for about 32 km before entering the Thames estuary at Thames. The catchment area of about 121 km² is generally steep with regenerating native bush and scrub in the upper reaches, and exotic pine plantation, native scrub and pastoral land in the middle and lower reaches.

For much of the year, the Kauaeranga River can be described as a stream flowing over the bed of a large river. The wide riverbed does not allow for shading, increasing the daily peak water temperature. Although base flows in the Kauaeranga are low (mean annual 7-day low flow of 0.62 m³/s), massive floods are not uncommon as the Coromandel Range is often subjected to torrential rain from northerly storms and the remnants of tropical cyclones. These massive floods have gorged out long deep pools and created broad shallow runs. Bed materials in the upper/middle reaches consist of boulders, cobbles, and hard gravels. Further downstream below the Coromandel Forest Park there are increasing quantities of mud and silt.

A large part of the Kauaeranga catchment is in the Coromandel State Forest Park, and here the river is visited by many people, especially in the summer. A metal road with numerous DOC camping areas follows the river valley for some 25 km.

8.3. *Kauaeranga River methods*

The drift dive covered 1.2 km and the dive reach and GPS positions for the start and end points are displayed in Figure 8.1 A and B in addition to Appendix A. The drift dive involved two divers floating downstream using snorkeling equipment and counting trout as they became visible. Inexperienced drift divers were used for the survey potentially influencing the data collection and making comparisons between years less reliable. The wide riverbed and low water created thousands of pools making it very difficult to cover all of the available water. If there was an impact on data collection it would likely result in the undercounting of fish making the estimate a minimum.

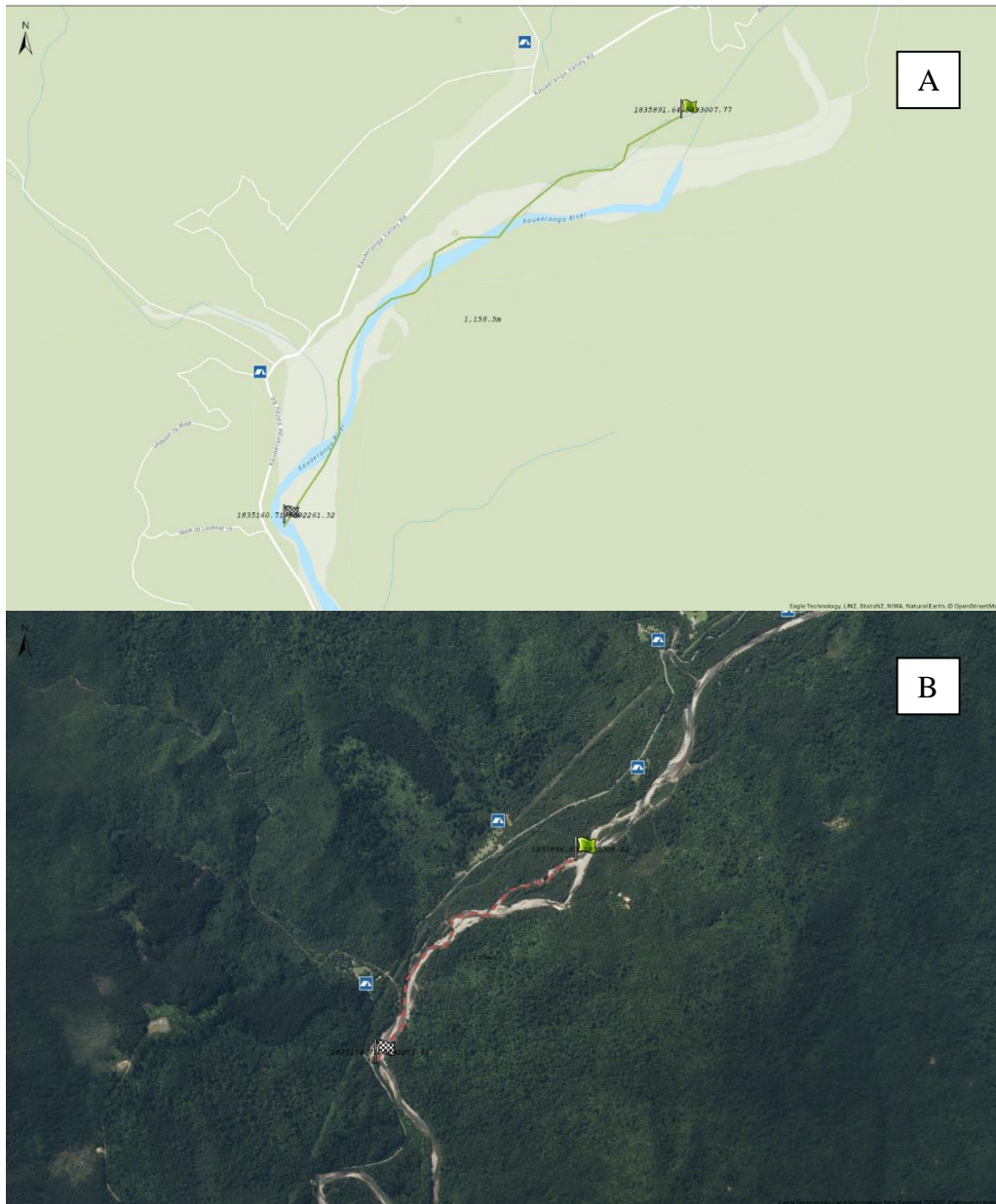


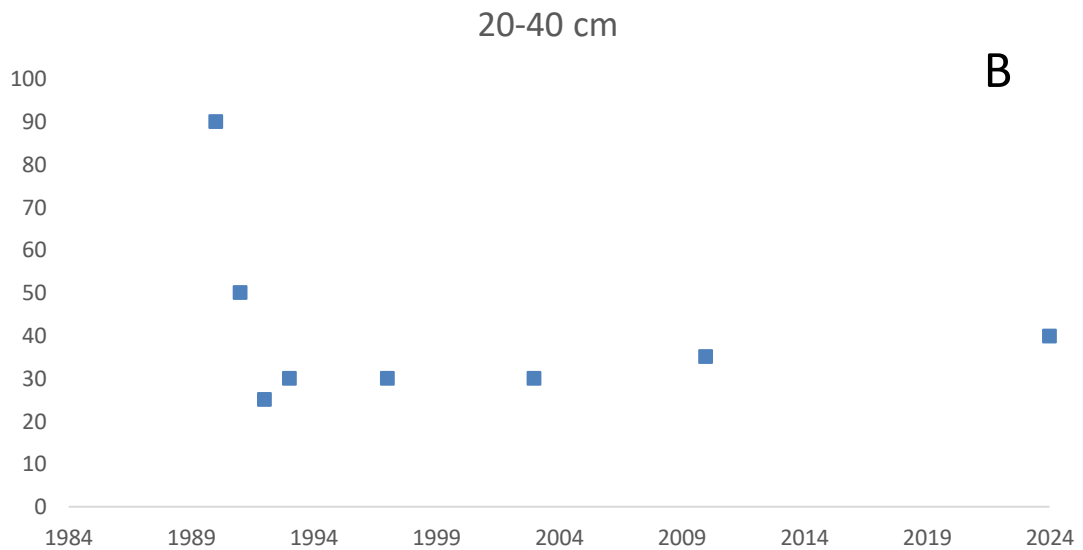
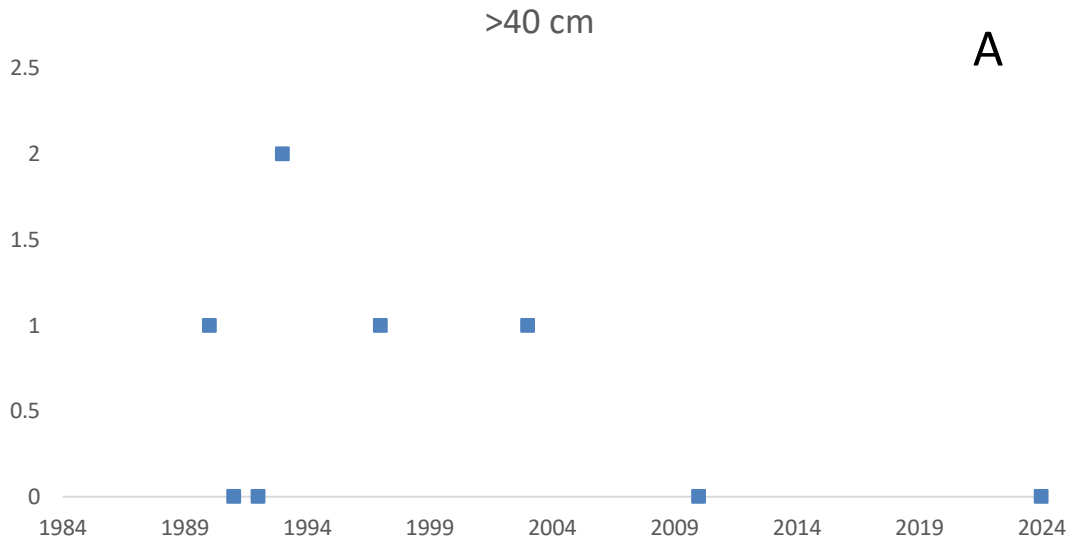
Figure 8.1. (A) Drift dive location showing the put in (green flag) and take out (checkered flag). (B) Photo of the drift dive area with GPS points in NZTM for the start (green flag) and stop location (checkered flag).

8.4. Kauaeranga River results

The Kauaeranga River Drift dive started at the top end of the Boom Flat Island at 1:00pm on February 18th, 2024, with 10.2 m visibility and water temperature of 21 C°. Although the water temperature was extremely high there was a noticeable influence of groundwater in many pools creating thermal refuges far below the surface temperature. The number of native fish was remarkable with hundreds of smelt in some pools. Although trout numbers were low there were positive signs for the population with relatively high numbers of small fish (Table 8.1; Figure 8.2).

Table 8.1. The size and frequency of rainbow trout seen in the Kauaeranga River on the last three drift dive surveys (2003, 2010 and 2024).

Year	< 10 cm	10-20 cm	20-30 cm	30-40 cm	40+ cm
2003	12	19	23	7	1
2010	3	0	30	5	0
2024	9	31	8	3	0



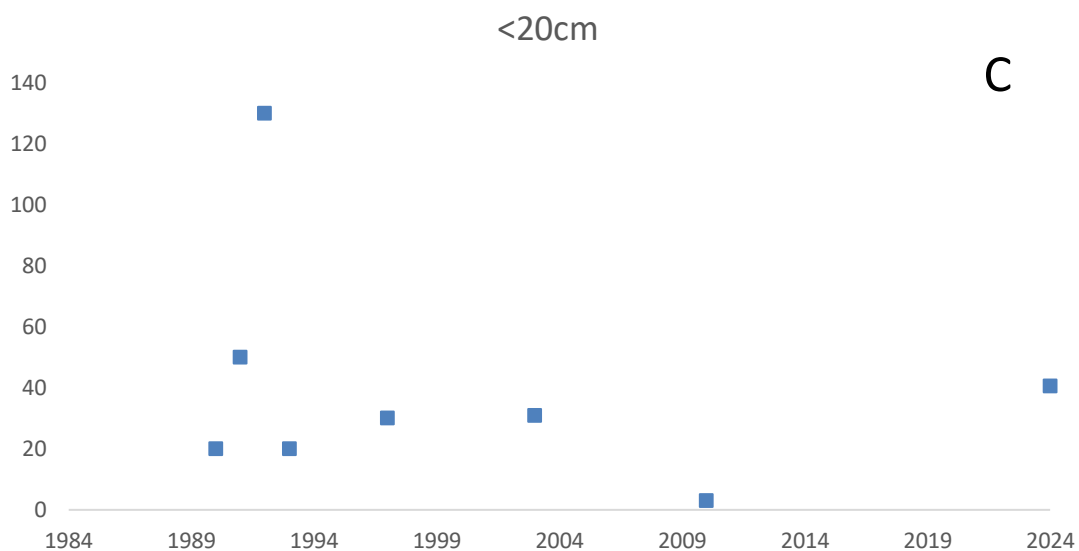


Figure 8.2. Number of large (≥ 40 cm; A), medium (20-40cm; B) and small < 20 cm; C) rainbow trout per km of the Kauaeranga River (1990-2024). Only years surveys were conducted are listed.

8.5. *Kauaeranga River discussion*

Although the Kauaeranga River has low trout numbers it is an exceptionally scenic location with popular DOC campgrounds. The river has a wide stream bed with limited shading in the main channel due to frequent high intensity floods. High summer temperatures limit recruitment during hot summers making the Kauaeranga River an intermittent fishery. The last significant recruitment of trout was in 1992 when there were similar cool conditions that facilitated spikes in the trout population in both the Kauaeranga River and Waitawheta Rivers. There are no practical management interventions that could improve conditions as the upper catchment is already a forest park. However, the river is worth monitoring to inform anglers when fish are present.

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10. Appendix A Dive locations

River	Reach	Start		Stop		Distance (km)
		X NZTM	Y NZTM	X NZTM	Y NZTM	
Awakino	Upper Gribbon	1757293	5734677	1757491	5734051	0.75
Whakapapa	Owhango	1807552	560061	1807709	5680870	1.0
Waihou	Blue springs	1847743	5787062	1847057	5787905	1.7
Waitawheta	Park boundary	1845628	5847472	1845905	5848404	1.2
Kauaeranga	Booms Flat	1835891	5893007	1835163	5892258	1.2

Acknowledgements

This work would not have been possible without assistance from Roslyn Simmonds, Ollie Bassett, and Viktoriia Levchenko.

Arapuni Reservoir 2024 Spawning Report and Stocking Recommendations

By: Dr Adam Daniel

13 Oct. 2024

Executive summary/management implications

The proportion of wild rainbow trout (*Oncorhynchus mykiss*) returned in the Lake Arapuni fishing competition fell from an average of 51% (2006-2012) to below 10% (2016 and 2017). Although wild fish rebounded to 60% of the catch in 2024, Auckland/Waikato Fish and Game Council prioritised spawning surveys in Lake Arapuni to evaluate natural spawning. The management implication of surveys and the subsequent review of hatchery stocking was to determine if the fish stocking program was best practice or if natural spawning alone was sufficient to sustain the Lake Arapuni rainbow trout fishery.

Four spawning surveys were conducted between 21 June and 13 September. With peaks in spawning during June and September. It is highly likely spawning began in May, and future surveys should begin in late May or early June. The surveys indicated that ample spawning was occurring in Tributary C to sustain fish stocks in the lake, but the other monitored streams were underutilised.

Previous studies of Lake Arapuni spawning tributaries have not identified why rainbow trout predominantly spawn in Tributary C and avoid several other similar tributaries. During the 2024 spawning surveys temperature loggers were installed to monitor Tributary C and two underutilised streams with suitable habitat. The temperature profile of Tributary C was vastly different from the neighbouring streams, with a far less fluctuation in daily temperature indicating groundwater infiltration (spring fed). It is highly likely that Lake Arapuni rainbow trout are selecting Tributary C due to the ground water rather than other factors like spawning gravel availability. Spawning salmonids are known to select spring fed streams as the cool water and stable flow can increase spawning success. Restoration of neighbouring streams that are not spring fed would likely be pointless as the rainbow trout are excluding the tributaries due to a lack of groundwater.

Nearly 20% of the spawning rainbow trout observed during the 2024 spawning surveys were tagged hatchery fish. The high proportion of hatchery spawning fish could have significant population level implications. Recent publications have indicated that stocking salmonids (salmon and trout) has unintended detrimental effects that potentially lower the population size by adding hatchery fish. It is possible that stocking fish in Lake Arapuni has reduced the overall population size by lowering the survival of the offspring of spawning fish. Hatchery fish are known to pass on traits selected for in the hatchery environment that are detrimental to wild populations, significantly reducing the survival of hatchery offspring for several generations. Recruitment models based on Lake Arapuni spawning data indicate the potential for a significant reduction in the overall population due to hatchery releases. The negative impacts of

stocking salmonids are not limited to Lake Arapuni and should be considered when evaluating stocking programmes around the country.

The sterile trout program will not be concluded until 2026 but has yielded ample data to draw some conclusion about stocking rainbow trout in Lake Arapuni. The sterile trout used in the study were intended to address the negative genetic impacts of stocking trout in Lake Arapuni but catch rates were low for sterile fish. The cost of stocked Lake Arapuni sterile trout is about \$80 per fish caught. Non-sterile hatchery fish cost about \$40 per fish caught and an adult one-day fishing licence sells for \$25. Overall, the stocking program is not cost effective and may be reducing the overall rainbow trout population in the lake.

Staff recommendations include:

1. There is an overwhelming body of evidence endorsed by Trout Unlimited that indicates hatchery releases should only be used to prevent extinction or where no natural recruitment exists. The following policies are recommended for Auckland/Waikato Fish & Game and should also be considered for the NZ Fish & Game Council:
 - a. Hatchery releases should be considered detrimental to wild spawning fish and are only advantageous to fish populations that have no natural spawning.
 - b. Prior to hatchery releases being funded there must be a documented recruitment failure of natural spawning or no natural spawning.
2. Many fisheries like Lake Arapuni have had significant drops in angler use with no review of the need for continued supplemental stocking. A request to NZ Council for an independent review of the funding for all New Zealand Fish & Game salmonid stocking programs would be a prudent step considering the high cost and dubious benefits to anglers.
3. Although Lake Arapuni has limited spawning habitat it is recommended that stocking is paused for a period of five years or until there is evidence of recruitment failure. The impact of spawning fish may linger for multiple generations so it is likely that there will be reduced catch rates for up to four years.
4. Temperature monitoring should be expanded to identify other spring fed tributaries to Lake Arapuni for potential thermal refuges and spawning enhancement.

Background

Lake Arapuni is the single biggest fishery in the Auckland/Waikato region, with angler use similar to the Whakapapa River at about 3,800 angler days in the 2021 angler use survey (Stoffels & Unwin, 2023). Since angler use data has been collected, fishing pressure at Lake Arapuni has halved from 7,298 angler days in 1994 to a low of 3,371 in 2014 (Stoffels & Unwin, 2023) like other Waikato fisheries (Figure 1).

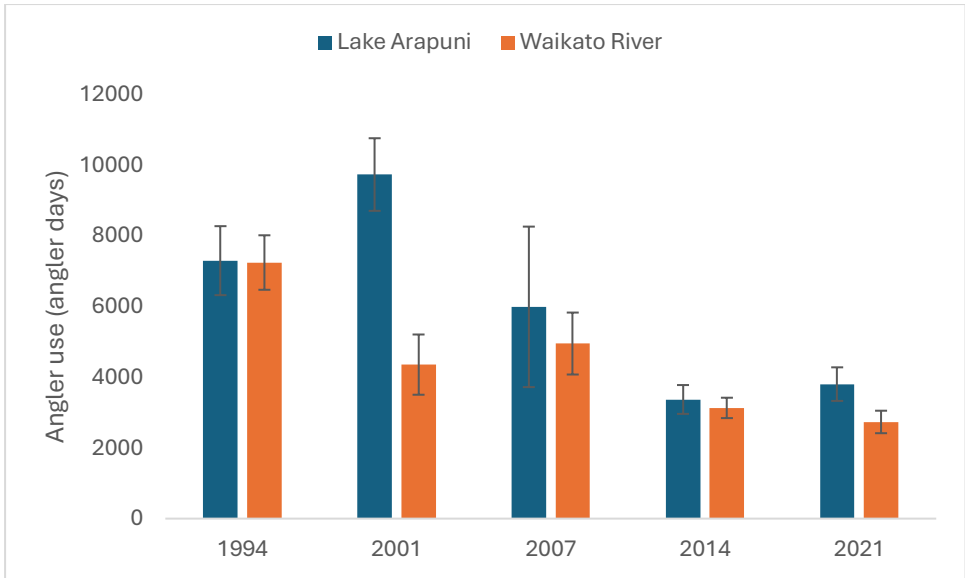


Figure 1. Angler use of Lake Arapuni and the Waikato River (below Karapiro Dam).

The first significant liberations of trout in Lake Arapuni were conducted in August of 1964. Tag returns from 1964-1974 averaged 1.7% with fish reaching the 2.6 kg mark. The size of fish has not changed dramatically with the largest rainbow trout caught annually from 2005-2020 averaging 2.5 kg (3.1 kg max). The average tag return rate during this period was 3.6%.

Lake Arapuni was originally identified as having limited spawning success in the 1980’s (Strickland 1980, Ward 1983). In addition, it was suggested that spawning could be improved by fencing and planting Tributary C or adding spawning gravel (Strickland 1980). The fencing and planting were completed in the 1990’s resulting in a full canopy cover over and riparian margin along Tributary C. Subsequent spawning surveys indicated that natural spawning was successful in Tributary C so additional spawning gravel was not tested as it was unnecessary.

The annual Lake Arapuni fishing competition held on the second weekend in May has produced a significant long-term dataset that can be used to track the wild and hatchery population from 1998 to present. The proportion of wild rainbow trout (*Oncorhynchus mykiss*) returned in the Lake Arapuni fishing competition fell from an average of 51% from 2006-2012) to below 10% in 2016 and 2017 (Figure 2).

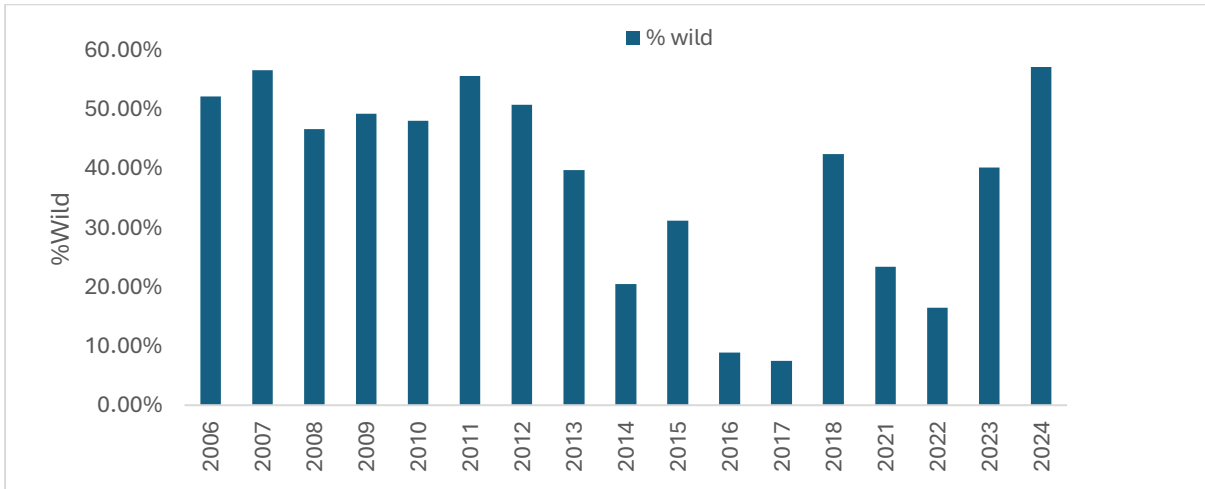


Figure 2. Percentage of wild rainbow trout returned in the annual Lake Arapuni Fishing Competition 2006-2024.

A test of sterile hatchery fish is ongoing in the lake and as a result all hatchery fish are marked providing a unique opportunity to identify all hatchery fish in spawning streams. Approximately 1000 sterile and 1000 normal hatchery trout from the Ngongotaha Trout Hatchery were released annually in Lake Arapuni from 2020 to 2023. Half of the overall hatchery population would not be expected to spawn or migrate into spawning streams as they are sterile. There are no documented “spawning” events of sterile trout in the wild but sterile salmon have gone through the motions when placed next to spawning females in laboratory studies (Fjellidal et al., 2014a). If male sterile hatchery trout did induce spawning in the wild the resulting ova would be unfertilised.

Hatchery releases of rainbow trout in Lake Arapuni during the 1990’s occurred in response to high fishing pressure and have not been reviewed in the last three decades. Reductions in the proportion of wild rainbow trout harvested from 2014–2018 (Figure 2) has prompted a review of literature on the impacts of hatchery releases and a spawning survey to ensure natural reproduction is occurring if hatchery releases are paused.

Current hatchery releases

During the last four years 2000 tagged hatchery fish from the Eastern Region Fish hatchery have been released annually. Half of the hatchery released fish were sterile, and to date, none of the 4000 sterile fish have been captured at the base of the Waipapa Dam during the annual spawning run. Sterile trout were also sampled to ensure they were triploid (sterile) by the University of Waikato and 100% of trout checked were triploid. Sterile fish should not have the urge to spawn and should not enter small tributary streams for the purpose of spawning. However, some sterile male salmonids placed in tanks next to viable females have displayed spawning behaviour during laboratory experiments despite being infertile (Fjellidal et al., 2014) indicating the possibility of spotting sterile male trout in spawning streams despite there being no possibility of genetic interactions.

The use of sterile fish could eliminate the negative genetic effects of introducing hatchery fish in terms of disrupting wild spawning success. Similar to results from studies of sterile trout in North American lakes, Lake Arapuni sterile trout have been caught at lower rates compared to non-sterile hatchery fish (Koenig et al., 2011; Pease et al., 2023). Tag returns for sterile trout in Lake Arapuni have been about half the rate of non-sterile hatchery fish making them prohibitively expensive to realise the equivalent benefits for anglers (Table 1). However, even when factoring in a 50% reporting rate for tags (based on 2024 angler survey data) even non-sterile hatchery fish cost licence holders about \$40 each (Table 1).

Table 1. Number of “sterile” and “non-sterile” rainbow trout tagged and “released” in Lake Arapuni. “Returned” indicates the number of rainbow trout returned for each group during each release “year”. Percent returns are calculated from the total number of tagged fish released divided by tag returns. Cost is based on the actual cost to release fish divided by the number of returns and corrected for an estimated 50% return rate.

Year	Sterile			Non-sterile		
	Released	Returned	% Return	Released	Returned	% Return
2020	1000	41	4%	1000	66	7%

2021	1000	16	2%	1000	48	5%
Total	2000	57	3%	2000	114	6%
% returns			33%	67%		
Cost 50% return			\$79.65	\$39.82		

Arapuni Reservoir hatchery fish grow quickly and do not often survive more than three years in the reservoir with only 9% of tag returns from fish exceeding 2 years in the lake (3 years old) and only 1% exceeding 3 years (4 years old; Figure 3). Rainbow trout can live up to 10 years in streams making the Arapuni hatchery fish relatively short lived. The likely cause of mortality of hatchery released fish is heat and spawning stress. Tag returns from hatchery released fish vary from year to year but average about 4% excluding the 2016 and 2017 release years where tag returns were reduced due to covid lockdowns (Figure 4).

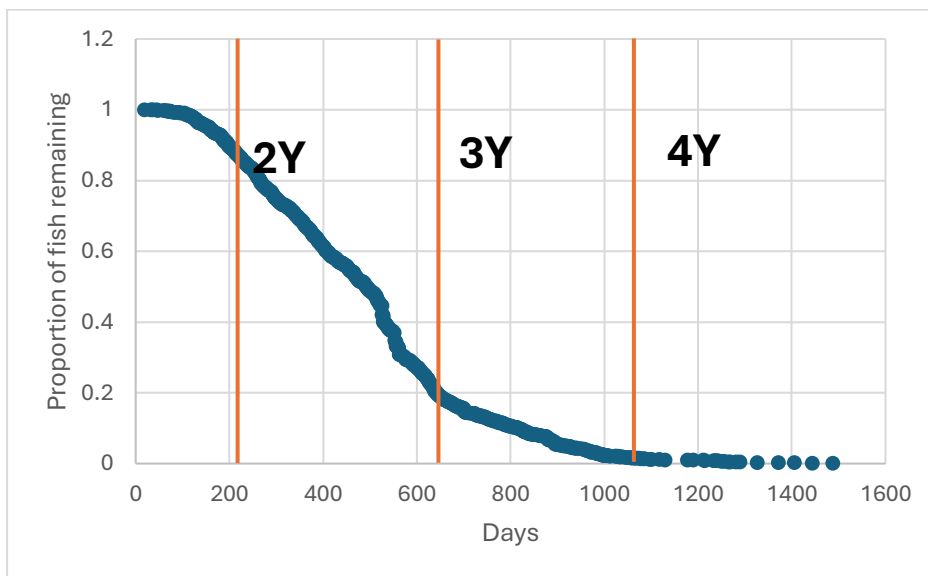


Figure 3. Estimated survival curve derived from the proportion of hatchery released fish remaining in Lake Arapuni over time (N=2050).

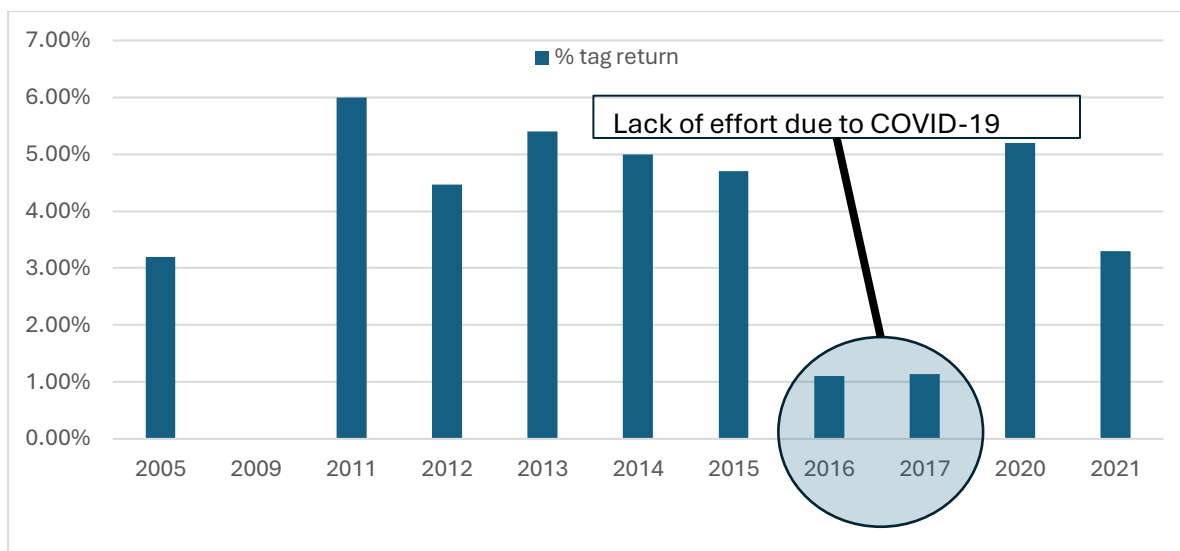


Figure 4. Percent of tagged fish reported by release year.

Hatchery fish released in Lake Arapuni are from the Eastern Region Fish hatchery and are selected from the Lake Tarawera or Ngongotaha Stream fish traps. The Eastern Region Fish breeding program selects the largest and best-looking trout to create the hatchery stock with most of the fish coming from Lake Tarawera. Lake Tarawera is oligotrophic with water clarity of nearly 6 m and maximum summer temperatures of 22 °C. In comparison the Arapuni Reservoir is riverine in the upper third of the reservoir with water clarity of just over 2 m and a maximum water temperature of 24 °C.

Methods

Study area

Streams identified as spawning sites in previous surveys (Strickland 1980, Ward 1983 and Unknown 1993) and streams with resident trout populations potentially contributing to the Lake Arapuni population are listed in Table 2 and mapped in Figure 5. The 2024 surveys were focused on streams with previous known spawning (Table 1; Figure 5). Streams with trout populations that could be contributing to the lake Arapuni population have also been listed and mapped (Table 1 A-D; Figure 5 A-D). Previous spawning reports have not documented the survey reaches, so the areas surveyed are based on access and likely historical sites.

Table 2. Spawning streams (1-4) and streams with known or suspected upstream resident trout populations (A-D) that could contribute to the Lake Arapuni trout population. “**Map**” indicates the label for each site in Figure 5. “**Max**” is the maximum observed spawning trout (“**R**” rainbow & “**B**” brown trout).

Map	Stream name	Max	X	Y
1	Makomako Stream	6B	175°40'28.39"E	38°13'8.85"S
2	Mangarewa	11R	175°40'48.67"E	38°13'17.62"S
3	Te Rimu	17R	175°40'39.95"E	38°14'41.67"S
4	Tributary C	95R	175°40'38.38"E	38°15'43.11"S
A	Mangare	0*	175°36'47.49"E	38° 7'0.72"S
B	Mangawhio	0*	175°40'46.91"E	38°16'32.24"S

C	Tumai	0*	175°41'10.53"E	38°17'9.97"S
D	Waipapa	*	175°40'49.19"E	38°18'4.93"S

* Potential contribution from resident upstream populations.

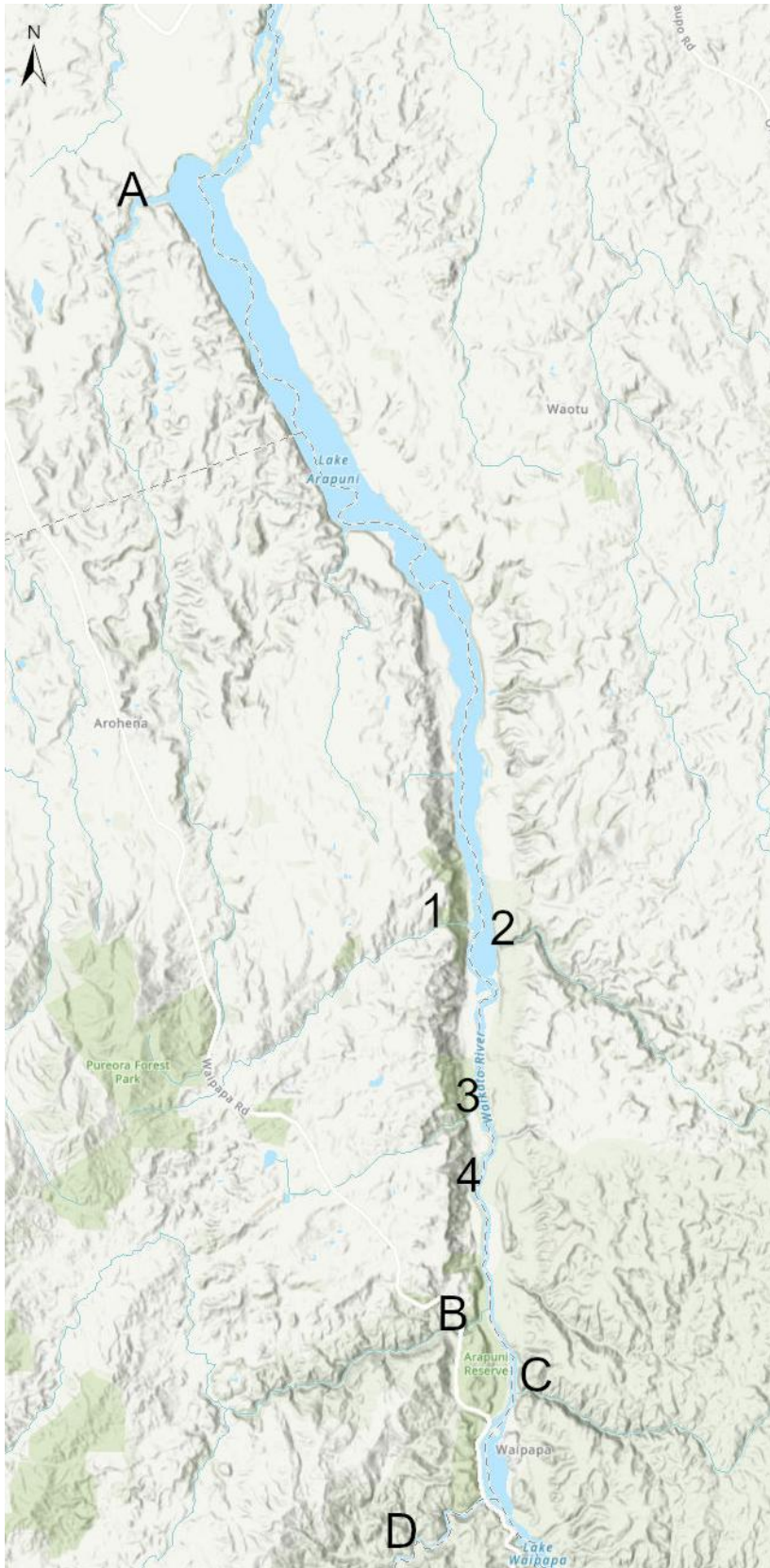


Figure 5. Known spawning streams 1-4 and steams with known or suspected upstream resident populations A-D that could contribute to the Lake Arapuni trout population. Stream names and coordinates are listed in Table 1.

Makomako Stream

Makomako Stream (38°13'8.85"S 175°40'28.39"E) was surveyed for approximately 70m from the confluence of Lake Arapuni to the first impassable waterfall (Figure 6). Although there was limited habitat available fresh gravel from a slip had replenished the stream with 30-60 mm stones (Figure 7).



Figure 6. Makomako Stream survey area (red dotted line) with start and end points marked with red dots.



Figure 7. Makomako Stream with spawning brown trout, fine sediment (bottom of photo) and fresh gravel.

Mangarewa Stream

The Mangarewa was surveyed from the confluence (38°13'17.64"S, 175°40'48.64"E) for approximately 100m upstream (38°13'18.01"S, 175°40'50.87"E; Figure 8 and 9). The area had some spawning substrate but was of steep gradient with logs and boulders. Future studies should attempt to access the stream from the bike trail to look further upstream.

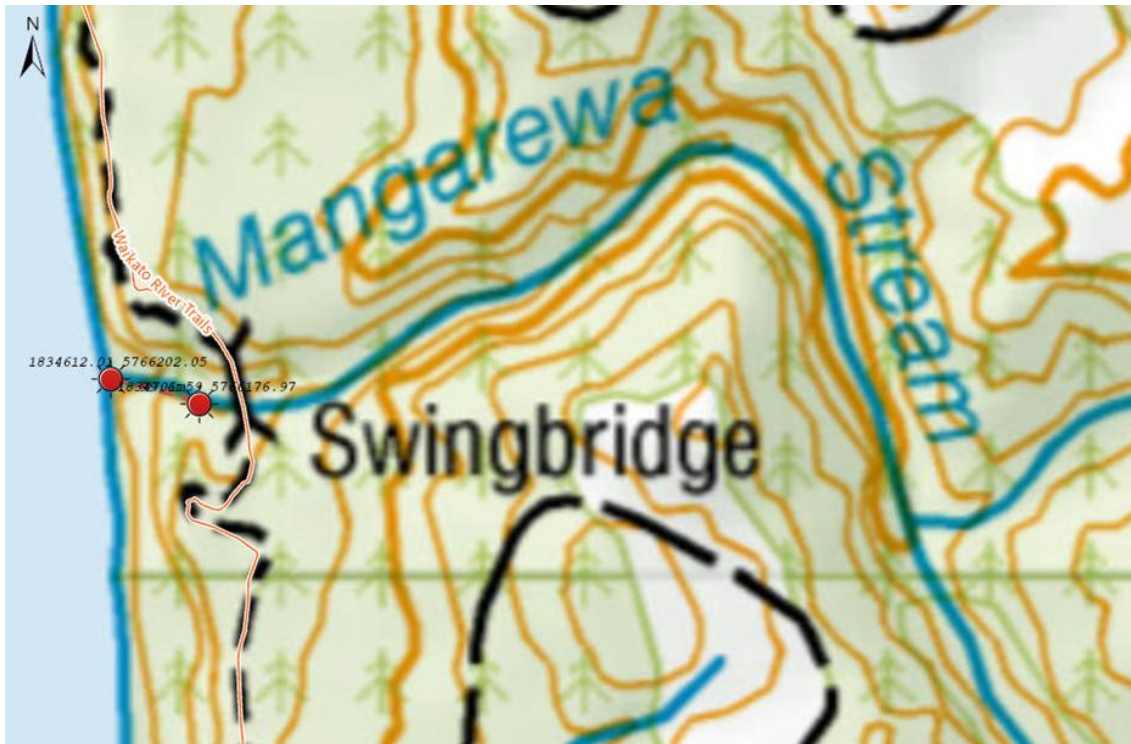


Figure 8. Mangarewa Stream survey area (red dotted line) with start and end points marked with red dots.

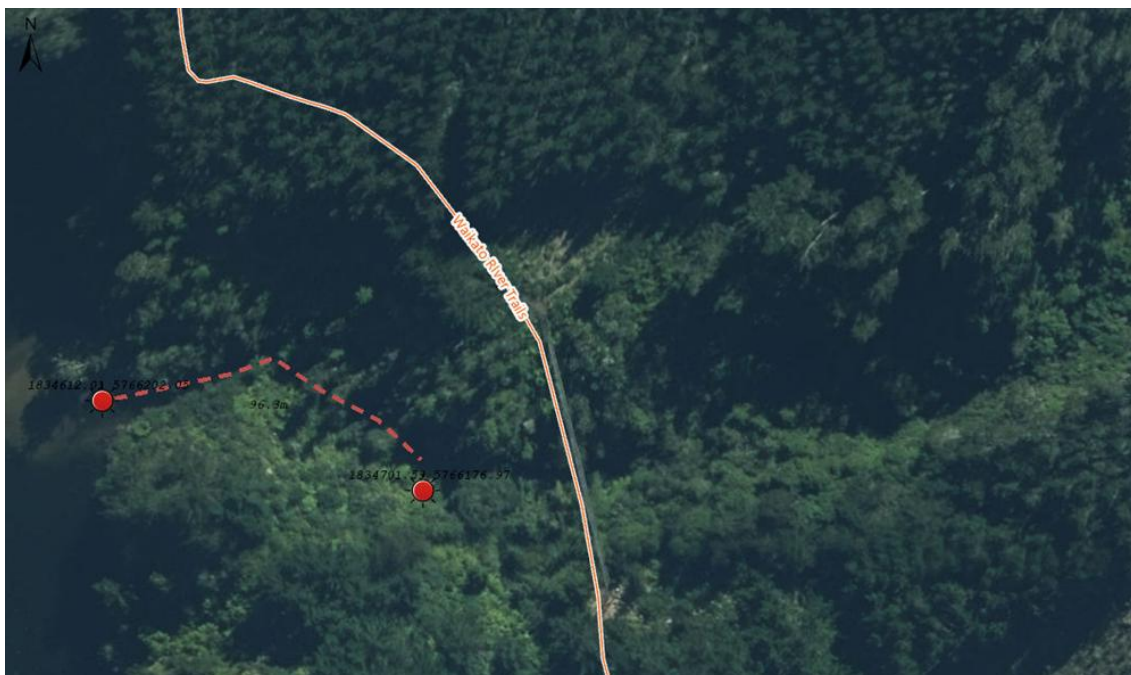


Figure 9. Mangarewa Stream survey area (red dotted line) with start and end points marked with red dots.

Te Rimu Stream

The Te Rimu Stream was surveyed from 136 m below the waterfall to the base of the falls (38°14'45.11"S, 175°40'35.26"E; Figure 10 and 11). The substraight was predominantly sand and fine sediment but areas of suitable spawning gravel were present.

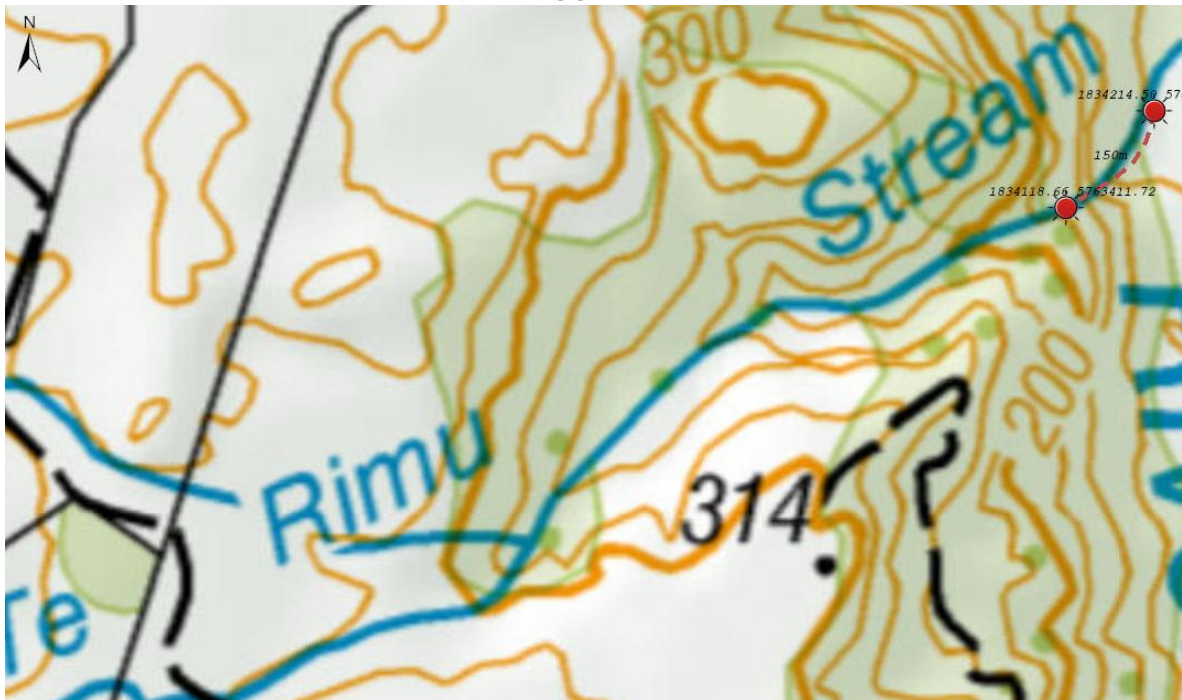


Figure 10. Te Rimu Stream survey area (red dotted line) with start and end points marked with red dots.



Figure 11. Te Rimu Stream survey area (red dotted line) with start and end points marked with red dots.

Trib C

Tributary C was surveyed from the confluence with the Waikato River to a point approximately 615m upstream (straight line distance; 38°15'43.11"S 175°40'38.38"E; Figure 12 and 13). It is possible that historic surveys continued further upstream into private land. The stream bed had sparse spawning gravel in the first 300m with a high percentage of fine gravel and sand with large areas of scour. The upper half of the survey area had several moderate sized gravel beds (Figure 14) suitable for spawning.



Figure 12. Tributary C survey area (red dotted line) with start and end points marked with red dots.



Figure 13. Tributary C survey area (red dotted line) with start and end points marked with red dots.



Figure 14. One of several gravel beds in the upper reaches of the Tributary C (left) with gravel predominantly from 18-25mm (right).

Tumai Stream

The Tumai Stream (Figure 15) was surveyed in the hope gravel from the adjacent bike path may have improved conditions in the stream. The survey was conducted approximately 60 m from the confluence to just below the first waterfall. The substrate was not ideal for spawning and was dominated by sand, but an upstream population of trout could be present.



Figure 15. Tumai Stream survey area (red dotted line) with start and end points marked with red dots.

Spawning survey

Due to the small size (<1 m wide and under 200mm average depth) and good water clarity staff were able to slowly walk from the Arapuni Reservoir up the spawning streams to observe spawning fish. Although logs and undercut banks provided some cover most fish were defending redds (spawning beds) prior to being disturbed and were mid-stream in gravel beds. Fish were identified by species and rainbow trout were checked for tags to identify hatchery fish. All hatchery released fish in Lake Arapuni were tagged during the 2024 survey due to the ongoing sterile fish project. Fish were categorised as tagged, wild or unknown as some fish could not be observed long enough to rule out a tag.

Due to a lack of detail in previous spawning surveys reports it is unlikely that surveys have been conducted in a similar way and should not be directly compared to historic surveys. Tributary C was likely undercounted in 2024 due dense blackberry and private property. The area that was covered was sufficient to determine if spawning was occurring.

Spawning interaction calculation

The estimate of hatchery reared fish during the spawning survey was derived from the total number of fish released adjusted using the survival curve derived from tag returns (Figure 3). The population estimate for spawning fish was then calculated using a conservative estimate of spawning wild fish (80%; based on catch data and spawning data) to give a total population of 4835 adult rainbow trout. A simple model of 15 offspring surviving the first year per pair (1500 ova at 1% survival) was adjusted using relative fitness data from McMillan et al. (2023) based on a global synthesis of 208 peer-reviewed papers. Fish were assigned random pairing based on the ratio of wild and hatchery fish observed during spawning surveys and then three relative fitness scenarios were tested including “Best,” “Mid” and “Worst” based on the relative survival rates (Table 3) from (McMillan et al., 2023). For example, the “Best” relative fitness would give a single offspring for two wild parents and 0.6 offspring for a wild hatchery cross and 0.2 offspring for a hatchery X hatchery cross. For every 10 fish produced by two wild parents we would estimate only 2 surviving offspring from two hatchery parents.

Due to the relatively high proportion of wild fish observed during the spawning survey the relative fitness estimate will not show the worst-case scenario where up to 90% of fish could be of hatchery origin based on Lake Arapuni competition data. Due to the assumptions used in deriving a population estimate the spawning interaction calculation should be used as an example of potential impacts rather than a true model of actual conditions. The purpose of theoretical model is to show the potential impact of hatchery fish spawning in the wild based on observed field data from published sources.

Table 3. “Best,” “Mid,” and “Worst” relative survival rates from derived from McMillan et al. (2023). “Wild” represent a wild spawning rainbow trout parent and “Hatch” is a hatchery parent.

Cross	Best	Mid	Worst
Wild X Wild	1.00	1.00	1.00
Wild X Hatch	0.60	0.50	0.20
Hatch X Hatch	0.20	0.10	0.02

Temperature monitoring

Onset pendant temperature data loggers were installed on waratahs (steel fence posts) on the stream bed of Tributary C, Te Rimu, and Makomako Streams from 20 August to the 5th of November 2024. The loggers were intended to identify differences in the temperature profile of Tributary C compared to the other streams that do not support significant spawning despite having some suitable habitat. This information could inform the council about the restoration potential of streams not currently being utilised by trout for spawning. The temperature monitoring was installed mid spawning season after suitable and available spawning habitat was observed to be unused.

Results

Spawning surveys

Five streams were surveyed in total during four survey trips from Jun to August of 2024 (Table 4). Only Tributary C and the Makomako stream were observed on each survey. All of the rainbow trout observed during the 2024 spawning surveys were located in Tributary C with a maximum count of 22 fish in June (Table 4) despite other tributaries having similar habitat. Most of the trout counted in Tributary C were located in the upper reaches of the survey area and it is likely there were more spawning fish upstream. The lower reaches of Tributary C are a mix of scoured bed, fine gravel and sand (Figure 16).

Table 4. Spawning survey data from Lake Arapuni June to September 2024. The total number of fish counted (Fish), fish identified as hatchery or wild (I.D.) and fish identified with tags (Tag). Blanks indicate no survey was conducted and counts ending in “B” were identified as brown trout.

Stream	21 June 2024			1 Aug 2024			20 Aug 2024			13 Sep 2024		
	Fish	I.D.	Tag	Fish	I.D.	Tag	Fish	I.D.	Tag	Fish	I.D.	Tag
Trib C	22 2B	20	5	13	11	4	11	10	2	21	10	1
Makomako	6B			2B			0			0		
Mangarewa				0								
Te Rimu				0			0			0		
Tumai	0											



Figure 16. Adult rainbow trout in Tributary C on an area of sand and fine gravel.

Of the rainbow trout counted in the 2024 spawning survey, 23% were identified as hatchery released fish. Accounting for tag loss and unidentified fish it is likely that up to a quarter of the spawning fish in Lake Arapuni were hatchery released fish reared from Lake Tarawira brood stock.

Only ten brown trout were spotted during the three spawning surveys with eight of the ten browns located in the Makomako Stream with the remaining two in Tributary C. The Makomako Stream has recently experienced a slip that left coarse gravel in the limited habitat below the waterfall. It is likely that brown trout are spawning earlier in the year and were missed in the 2024 surveys.

The Te Rimu Stream did not have any spawning fish and is dominated by fine sediment in the lower reaches but does have suitable unused gravel near the waterfall. The Mangarewa had large amounts of slash and moderate rockfalls that could pose as passage barriers, but no fish were spotted in the limited available spawning habitat. Although the Tumi is dominated by sand in the accessible reaches there may be an upstream population of trout. Similarly, the Mangarewa Stream has unsuitable habitat for spawning near the lake but is likely to have a resident trout population upstream. The Waipapa River and Mangawhio Stream were not surveyed but both streams hold significant populations of resident trout that could be contributing to the Lake Arapuni population via downstream migration.

Temperature Monitoring

The temperature profile of Tributary C has far less variation than the Makomako Stream or Te Rimu Stream (Figure 17), indicating some form of thermal buffering. The Makomako and Te Rimu Streams had nearly identical temperature profiles that better represent swings in air temperature. Tributary C's relatively stable temperature is likely due to groundwater influence (springs) keeping the temperature from varying drastically with air temperature. The temperature profile of Tributary C seems to be unique for the area and should be investigated further.

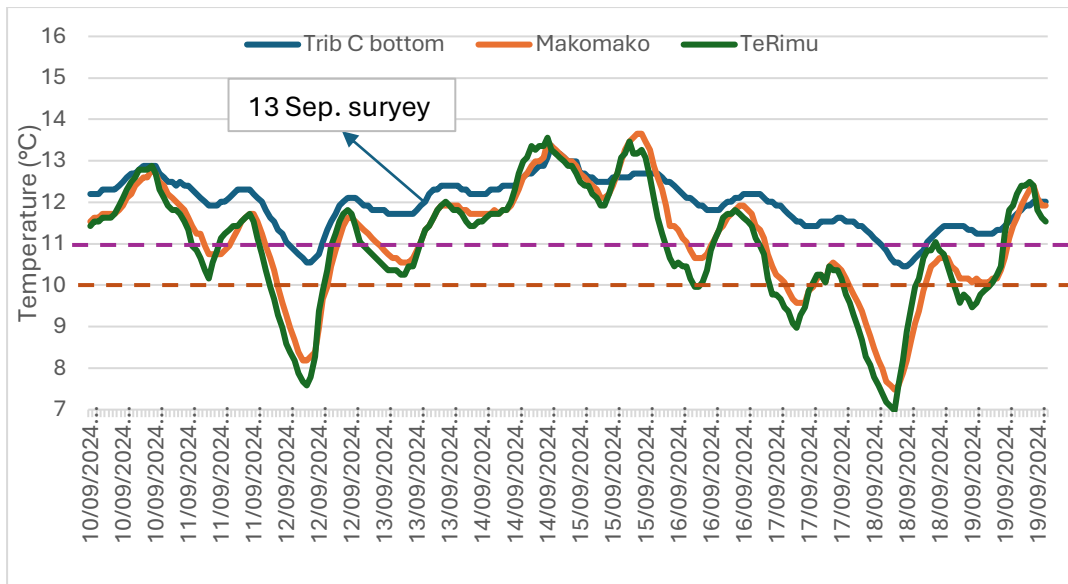


Figure 17. Hourly water temperature of Tributary C (blue), Makomako Stream (orange) and Te Rimu Stream (green) from 10 September to 19 September 2024. Dashed lines indicate the theoretical maximum temperature rainbow trout (purple dashed line) and brown trout (brown dashed line) initiate spawning. The arrow marks the approximate time of the 13 September 2024 survey.

Rainbow and brown trout eggs can mature in a wide range of temperatures, but the act of spawning is only initiated at a maximum of 10°C for brown trout and 11°C rainbow trout. Temperature monitoring was started mid spawning season and water temperatures did not often fall below 11°C but a cold snap prior to the 13 September 2024 survey (Figure 17) may explain the large number of fish observed so late in the spawning season. Maximum weekly average temperature for spawning and embryo survival of brown and rainbow trout are 8°C and 9°C respectively (Brungs & Jones, 1977) and the minimum weekly average temperature recorded in this study was in excess of 11°C. It is likely that temperatures earlier in the spawning season prior to monitoring were within this range.

Temperature monitoring was not continuous with several floods causing significant bed movement in the streams that damaged posts (Figure 18) and likely removed any reds present at the time. Reduced flows in October were noticeable and the Te Rimu Stream logger was exposed to air 22 October 2024.



Figure 18. Staff member Adam Daniel with a damaged logger mounting post in the Makomako stream.

Discussion

Spawning in Lake Arapuni tributaries

There is no indication of spawning failure in Lake Arapuni. The lake has limited but suitable spawning tributaries. Although spawning does not indicate recruitment success, the high adult returns of wild fish in 2024 would suggest there are no chronic recruitment issues. The main rainbow trout spawning season last from May to September in the Arapuni Reservoir with historic surveys averaging 34 individuals per count. Compared to historic surveys of Tributary C the 2024 surveys recorded the lowest daily peak on record (Figure 19). It is likely that there were additional uncounted fish upstream of the survey area on private land and the peak of spawning was missed as previous surveys have occasionally documented peak spawning in June.

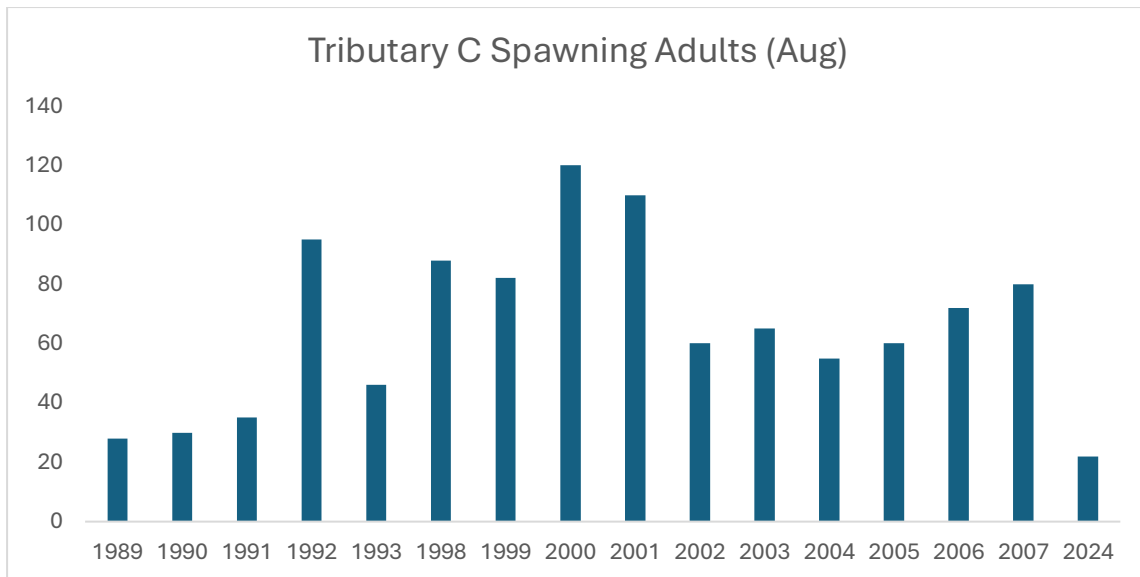


Figure 19. Historic annual peak daily counts of rainbow trout in Tributary C.

It would only take a small number of successful spawning females to naturally restock Lake Arapuni. For example, if we use a simple model based on moderate survival during the first year (3%) with only 100 females successfully spawning annually the adult population would be approximately 4,500 fish. When the additional fish washing in from upstream populations are considered it is likely that the naturally spawning fish are sufficient to sustain the Lake Arapuni population. However, with all or nearly all of the spawning fish in a single tributary there is a higher risk of recruitment failure due to flooding, slips or other natural causes. Evidence of historic poaching was also uncovered at the site raising concerns about the vulnerability of the population.

Restoration options

The discovery of groundwater infiltration in Tributary C is very important for determining potential restoration options for Lake Arapuni spawning streams. Survival of rainbow trout eggs in well oxygenated ground water influenced streams with sand bottoms is extremely high (Sowden & Power, 1985) making the addition of spawning substrate unnecessary. Although spawning gravel was traditionally thought of as essential for spawning success spring creeks like the upper Waihou have little or no suitable spawning gravel and very high recruitment rates.

It is unlikely that restoring other nearby streams that lack groundwater influence would be successful in terms of improving recruitment to Lake Arapuni. The temperature profile of Tributary C is unique and explains why the stream is the preferred spawning location. However, it may be possible to locate other groundwater influenced streams in the reservoir through temperature monitoring although the remaining unmonitored streams are small and restricted by falls and other obstacles.

Contributions for upstream populations

Lake Arapuni has two upstream populations of resident fish that could be contributing to a small proportion of the population. It is likely that rainbow trout from both the Waipapa River and Mangawhio Stream are washed into Lake Arapuni. Tag return data has documented that 2.5% (13 of 513) of hatchery fish released in Lake Arapuni passed the dam into Lake Karapiro and 13.3% of tag returns (2 of 15) from fish released in Lake Karapiro were recovered in the

Waikato River. It is likely that trout from upstream populations are washed into Lake Arapuni during years of significant rainfall. However, based on comparable data it is likely to be a relatively small proportion of the population.

The impact of hatchery stocking (literature review)

Hatchery stocking has long been seen as detrimental to wild populations of trout and salmon. A recent comprehensive review of published papers on hatchery stocking found that 83% reported adverse effects on wild spawning trout and salmon (McMillan et al., 2023). There are several detrimental impacts of hatchery stocking on wild spawning fish including disease, direct competition, competition for spawning redds and the dilution of advantageous adaptations. There has been no sign of new disease in the Lake Arapuni rainbow trout population but there was a sustained dip in the wild fish catch during 2016 and 2017 (Figure 20).

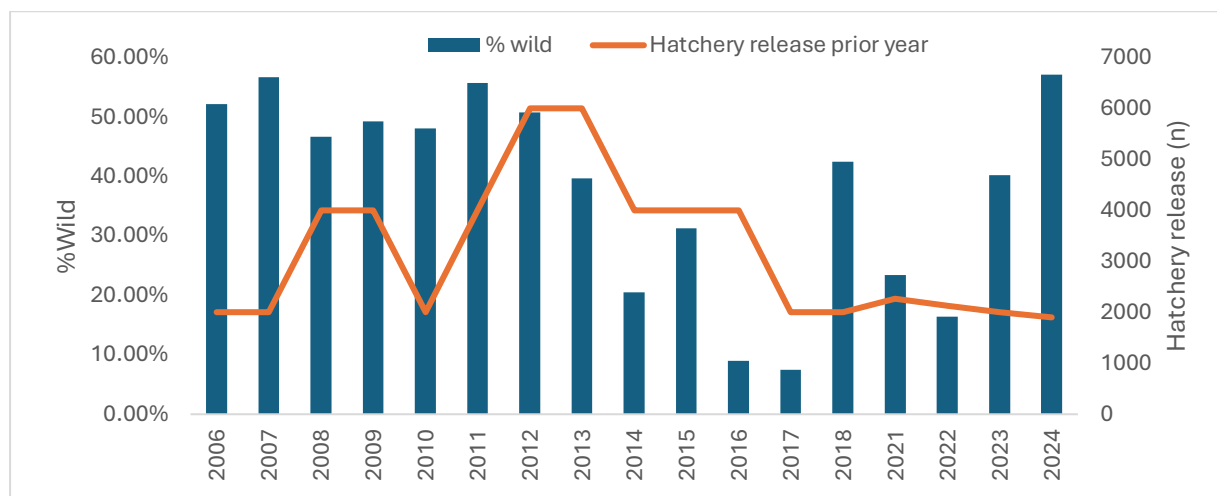


Figure 20. Percentage of wild fish returns annually (blue bars) from the Lake Arapuni Fishing Competition on the left axis and the number of hatchery rainbow trout releases the prior year (orange line) right axis.

Hatchery selection has long been known to rapidly alter fish populations because traits that allow fish to survive in hatcheries are very different than traits that help wild fish survive (Araki et al., 2008). The detrimental traits selected for in hatcheries reduce wild populations when hatchery fish interbreed with wild spawning fish that have adapted to the local environment by passing on detrimental traits. For example, in the hatchery fish that aggressively come to the surface when they see a shadow (hatchery worker with food) are likely to be eaten by shags or other predators in the wild.

The reproductive success of hatchery and wild fish are compared using “relative fitness”. For example, the relative fitness of hatchery wild hybrids (one hatchery and one wild parent) may be 0.50 indicating that for every surviving offspring from wild fish (two wild parents) there are 0.50 (half) the surviving offspring from hatchery hybrid fish (one wild and one hatchery parent). Most studies are conducted on sea run rainbow trout and the only comparable lake run rainbow trout study found that compared to wild spawning fish hatchery wild hybrids only produce 0.59 as many returning adults with pure hatchery fish returning only 0.21 as many adults (Miller et al., 2004). This detrimental impact is reduced with each generation spawning in the wild but can last for several generations.

Nonlocal (fish from another catchment) hatchery stocks are notorious for poor recruitment in the wild with some salmonid stocks returning only 2 offspring for every 100 produced by wild fish (Araki et al., 2008). Lake Arapuni is stocked with fish from another catchment entirely so traits that are advantageous in Lake Tarawira are added to the selection that occurs in the hatchery. The relative fitness of hatchery sea run rainbow trout compared to wild fish ranged from 0.02-0.80 with a mean of 0.42 (Araki et al., 2008). There is no way of knowing the extent of the negative selection and corresponding reduction in population caused by adding hatchery fish to the Arapuni Reservoir, but it is highly likely that the impact is negative.

Spawning interaction example

As a theoretical example, if we have a population of 4000 adult trout and 25% of fish spawning are hatchery stock using a 0.70 relative fitness for hatchery hybrids and 0.60 relative fitness for pure hatchery fish (mean overall fitness of 0.77 after a generation) the next generation would return 3080 fish. By continually diluting the traits of successful wild spawning fish hatchery releases could be effectively reducing the population by at least as much as the 1000 fish planned for the 2025 release. Sterile hatchery fish were intended to address the hatchery wild interactions but are not a cost-effective option due to the low catch rates to date.

Table 3 shows three simple models to demonstrate a potential range of outcomes from using best to worst relative fitness of hatchery fish spawning in the wild based on 20% hatchery to wild spawning fish and fitness estimates from McMillan et al. (2023). The resulting recruitment after a year “1000 1-year-old release” is compared to the estimated population with “No release”. The resulting reduction in recruitment ranges from 2842-5243 fish after their first year. The theoretical change in recruitment is between 16-30%. It is important remember that the estimates presented are far from an exact model, but they are useful to demonstrate the potential detrimental effects of hatchery releases.

Table 3. Estimated recruitment for a population of 4835 adult trout one year after spawning with and without hatchery releases of 1000 fish annually. “**Best**”, “**Mid**” and “**Worst**” estimates are based on the relative survival rates from (McMillan et al., 2023). The percent changed from the no hatchery release option “**% Reduction**” is compared to the three relative survival scenarios with hatchery fish spawning in the population.

	Recruitment		
	Best	Mid	Worst
1000 1-year-old release	14,918	14,279	12,517
No release	17,760	17,760	17,760
% Reduction with stocking	-16%	-20%	-30%

Hatchery stocking and catch rates

Hatchery stocking can have significant advantages and is necessary where there is no natural production like dune lake fisheries. There is a perception that adding hatchery fish will increase catch rates but the catch per unit effort (CPUE) from the Lake Arapuni Fishing Competition is not well correlated with fish stocking. The R value for the correlation between fish stocking the previous year and CPUE is only 0.26 with 0 being no correlation and 1 a direct correlation. Water temperature is far better correlated with an R value of -0.63 indicating an inverse effect with increased water temperature producing lower catch rates.

Catch rates in Lake Arapuni are low to moderate at 0.27 fish/hr. In comparison, Otago Lake fisheries have a historic mean of 0.41 fish/hr (range 0.16-0.71; Scott & Wright, 2007). The mean condition factor of trout in Lake Arapuni is good at $K=1.3$ (range 1.12-1.57) indicating that food availability is not a limiting factor. It is possible that the reduced catch rates are related to the timing of the monitoring period (March) when the lake temperature is above optimal for fishing. There is scope to improve catch rates with education around optimal summer fishing methods.

Cost benefit of stocking Lake Arapuni

The cost of hatchery stocking in terms of the price per fish caught by anglers has not been well documented. Based on tag return rates from a 2024 angler survey 44% of anglers return tags. If we use a conservative estimate of 50% reporting rate each hatchery reared fish caught by anglers in the Arapuni Reservoir would cost the council about \$40. If sterile trout were used in the reservoir to reduce the impact of genetic interactions the cost would rise to about \$80 per fish caught. Considering that an adult day licence is only \$25 and catch rates are not well linked to hatchery stocking it seems unlikely that stocking Lake Arapuni is benefiting anglers.

Conclusions

Rainbow trout spawning in tributary C are likely sufficient to restock Lake Arapuni with the current angler use. Hatchery liberations in Lake Arapuni should be paused for a period of at least five years to determine the impact of naturally spawning hatchery fish on the overall population. To determine if eliminating disruptive hatchery genes from entering the Arapuni population is effective no other interventions should be trailed during this period. However, it would be prudent to continue monitoring Tributary C and to try to identify other spring fed tributaries.

There are risks to pausing hatchery liberations primarily related to extreme weather events or poaching. Both extreme heat during the summer and flooding during the spawning season could reduce the Lake Arapuni fish population. The lack of hatchery fish could also reduce catch rates in the short term but may not impact the overall population or future catch rates. It will be critical to continue monitoring the Lake Arapuni fishing Competition to evaluate the impact of any changes made.

The temperature monitoring data revealed that Tributary C is likely spring fed and the overwhelming preference for this spawning site may not be related to available spawning gravel or factors associated with being fenced and planted. Trout and salmonids in general have a strong preference for groundwater upwelling or springs in spawning streams (Schuett-Hames & Pleus, 1996). Spawning in fine sediment (like tributary C) can be very successful in spring fed systems where fish select for areas of high oxygen rather than spawning gravel (Sowden & Power, 1985). Spawning gravel allows water to flow over deposited ova to keep them oxygenated but is not a requirement for successful spawning in spring creeks when oxygen levels are high making the enhancement of spawning beds unproductive.

The thermal refuges created by cool tributaries are critical to the local trout population. Identifying spring creeks in the Arapuni reservoir and enhancing summer thermal refuges could benefit the trout population but will be difficult to achieved.

Reducing hatchery liberations would have a significant financial benefit for the Auckland/Waikato Fish & Game Council (A/W Council) and the New Zealand Fish & Game Council. Pausing the Lake Arapuni liberations for five years would save the A/W Council over \$41,000.

Staff recommendations

1. There is an overwhelming body of evidence endorsed by Trout Unlimited that indicates hatchery releases should only be used to prevent extinction or where no natural recruitment exists. The following policies are recommended for Auckland/Waikato Fish & Game and should also be considered for the NZ Fish & Game Council:
 - a. Hatchery releases should be considered detrimental to wild spawning fish and are only advantageous to fish populations that have no natural spawning.
 - b. Prior to hatchery releases being funded there must be a documented recruitment failure of natural spawning or no natural spawning.
2. Many fisheries like Lake Arapuni have had significant drops in angler use with no review of the need for continued supplemental stocking. A request to NZ Council for an independent review of the funding for all New Zealand Fish & Game salmonid stocking programs would be a prudent step considering the high cost and dubious benefits to anglers.
3. Although Lake Arapuni has limited spawning habitat it is recommended that stocking is paused for a period of five years or until there is evidence of recruitment failure. The impact of spawning fish may linger for multiple generations so it is likely that there will be reduced catch rates for up to four years.
4. Temperature monitoring should be expanded to identify other spring fed tributaries to Lake Arapuni for potential thermal refuges and spawning enhancement.

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OSH Report for July 2025 Council Meeting

Accidents/Near Misses. No accidents, one near miss when jumper leads were incorrectly connected to a vehicle battery.

Track Me. The CE had a meeting with Dean Kelly, CE of the West Coast, who has recently implemented the system in their region. He is finding it great and highly recommends it. We have not had any feedback on the prospect of a national system and hence will look to set up track me in our region early in the new FY.

National H&S Committee. No further meetings have been held and everything has been put on hold until after the June NZC meeting.

Ranging Health and Safety. All rangers in the region completed their training prior to the season. Adam prepared a comprehensive ranging plan which included H&S provisions for rangers prior to opening weekend. This included updated check in and out procedures for all rangers participating.

Completed tailgate forms since previous agenda

Date	Activity
16/06/25	Arapuni Spawning Surveys- Beau and Adam
03/06/25	Wetland site visit for GBHT application Dani and David.
30/05/25	Wetland site visit for WCEET application Dani and David

David Klee
Chief Executive
 04/07/2025