# Snowy 2.0 Biosecurity Risk Management Plan

Annual Report for the Financial Year ended 30 June 2025

snowyhydro | snowy 2.0

# Executive Summary

This first Annual Report for the Snowy 2.0 Biosecurity Risk Management Plan (BRMP) covers activities undertaken from the Plan's endorsement on 25th October 2024 to 30th June 2025.

Full compliance with BRMP requirements was achieved during this reporting period.

Key findings include:

**Pest Fish Surveillance:** The Pest Fish Surveillance Program confirmed the expected distribution of pest fish species (Redfin Perch, Eastern Gambusia, Climbing Galaxias) within the surveillance catchments. An equivocal Environmental DNA (eDNA) result for Redfin in Tantangara Reservoir was re-sampled and confirmed negative, reinforcing the assumption that the reservoir remains Redfin-free. No additional surveillance is required or planned beyond the current program.

**Disease Surveillance and Management**: Surveillance for Epizootic Haematopoietic Necrosis Virus (EHNV) in Talbingo Reservoir resulted in two positive qPCR detections. As EHNV has now been confirmed in Talbingo Reservoir, the disease surveillance program will shift its focus to Tantangara Reservoir, targeting Rainbow Trout, and has been revised accordingly.

**Tantangara Reservoir Spill Management:** No spills occurred over Tantangara Dam during the reporting period.

**Tantangara Fish Screens:** The next stage of design for the Tantangara Fish Screens is nearing completion.

**Tantangara Creek Barrier:** Construction of the Tantangara Creek Barrier was completed in May 2025 and the structure is now operational. Pre-clearance surveys for Stocky Galaxias were undertaken, and any captured fish were relocated upstream.

# Acronyms and Definitions

| | |
|---|---|
| Approval | Infrastructure Approval for Snowy 2.0 Main Works issued under Section 5.19 of the *Environmental Planning and Assessment Act 1979* (Dated: 20th May 2020) (CSSI 9687) |
| Biosecurity Act | *Biosecurity Act 2015* (NSW) |
| Biosecurity Regulation | *Biosecurity Regulation 2017* (NSW) |
| BRMP | Biosecurity Risk Management Plan |
| CSSI | Critical State Significant Infrastructure |
| Dam | A physical structure to hold back water and raise its level, forming a reservoir of water |
| DAWE | Department of Agriculture Water and the Environment, now Department of Climate Change, Energy, the Environment and Water (DCCEEW) |
| DCCEEW | Commonwealth Department of Climate Change, Energy, the Environment and Water (formerly the Department of Agriculture Water and the Environment (DAWE) |
| DPE | NSW Department of Planning and Environment (formerly Department of Planning, Industry and Environment (DPIE) and now Department of Planning, Housing and Infrastructure) |
| DPHI | Department of Planning, Housing and Infrastructure (formerly DPIE and DPE) |
| DPIRD | NSW Department of Primary Industries and Regional Development, formerly NSW Department of Primary Industries (DPI), formerly part of the Department of Planning, Industry and Environment at the time of project consent |
| DPIE | Department of Planning, Industry and Environment, now known as Department of Planning, Housing and Infrastructure (DPHI) and the Department of Energy the Environment, Climate Change and Water (DEECCW) |
| eDNA | Environmental DNA |
| EHNV | Epizootic Haematopoietic Necrosis Virus |
| EIS | Snowy Hydro's Environmental Impact Statement for Snowy 2.0 Main Works (EMM, 2019) |
| EP&A Act | *Environmental Planning and Assessment Act 1979* (NSW) |
| EPBC Act | *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth) |
| FM Act | *Fisheries Management Act 1994* (NSW) |
| KNP | Kosciuszko National Park |
| M-E Tunnel | Murrumbidgee-Eucumbene Tunnel. A one-way tunnel linking Tantangara Reservoir with the Eucumbene Reservoir |
| NPWS | NSW National Parks and Wildlife Service |

| | |
|---|---|
| NSW | New South Wales |
| Pre-Connection | The period of time before Talbingo and Tantangara Reservoirs are hydrologically linked in an upstream direction via Snowy 2.0 |
| PHES | Pumped Hydroelectric Station |
| Post-Connection | The period of time after Talbingo and Tantangara Reservoirs are hydrologically linked in an upstream direction via Snowy 2.0 |
| Reservoir | The impoundment of water behind a dam |
| ROW | River Outlet Works |
| RtS | Response to Submissions for the Snowy 2.0 Main Works EIS (EMM, 2020) |
| Snowy 2.0 | A PHES that will link the existing Tantangara and Talbingo reservoirs via a new underground tunnel |
| RFMP | Recreational Fishing Management Plan |
| TFMP | Threatened Fish Management Plan |

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# 1. Introduction

The objective of the Biosecurity Risk Management Plan (BRMP) is to minimise the aquatic biosecurity risks associated with the development of Snowy 2.0, including the movement and/or spread of pests and pathogens.

This is the first Annual Report prepared under the BRMP for Snowy 2.0 Main Works.

This Report provides an update of all activities associated with the BRMP since the Plan was endorsed by the NSW Department of Primary Industries and Regional Development (DPIRD) Deputy Secretary Agriculture and Biosecurity, Rachel Connell on the 25th October 2024 up to the 30th June 2025.

Full compliance with the requirements of the BRMP was achieved during the reporting period.

Key components of the report include:

→ Outcomes from the Pest Fish Surveillance Program

→ Outcomes from the Disease Surveillance Program

→ Tantangara Fish Barrier Construction

→ Tantangara Fish Screen Design Update

The BRMP, alongside the associated Threatened Fish Management Plan (TFMP) and Recreational Fishing Management Plan (RFMP), demonstrate Snowy Hydro's commitment to minimising the potential impacts of the project on biosecurity and fish. They will underpin the DPIRD consideration of necessary instruments under the *Biosecurity Act 2015* that will be issued prior to the operation of the Snowy 2.0 Pumped Hydro-electric Power Station (PHES).

## 1.1 Snowy 2.0 Project Overview

Snowy Hydro owns, manages, and maintains the Snowy Mountains Hydroelectric Scheme (the Scheme). The Scheme currently includes 16 major dams, eight power stations, one pumped power station, 145 km of interconnected tunnels and pipelines, and 80 km of aqueducts. The Scheme, principally located within the Kosciuszko National Park (KNP), is one of the largest and most complex hydro-electric schemes in the world.

The pumped hydro-electric expansion of the Scheme (Snowy 2.0) will link the existing Tantangara and Talbingo reservoirs via a new underground tunnel and a PHES. Snowy 2.0 will provide an additional 2,200 MW of dispatchable generating capacity, along with approximately 350,000 MWh of large-scale energy storage that will be available on demand as quick-start electricity generation at critical times of peak demand.

For almost 75 years Snowy Hydro has responsibly operated the Snowy Scheme within KNP. Snowy Hydro is committed to avoiding and minimising potential impacts from Snowy 2.0, including biosecurity, as it does for the existing business.

## 1.2 Snowy 2.0 Project Approval

This project was designated Critical State Significant Infrastructure (CSSI 9687) and assessed under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Under sections 5.23 and 5.24 of the EP&A Act, certain separate approvals and licences are not required. The project was approved by the NSW Minister for Planning and Public Spaces under Section 5.19 of the EP&A Act on the 20th of May 2020.

A referral (EPBC 2018/8322) was also prepared and lodged with the Federal Minister for the Environment under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the proposal was subsequently determined to be a controlled action under that Act. The project was approved by the Department of Agriculture Water and the Environment (DAWE), now the Department of Climate Change, Energy, the Environment and Water (DCCEEW) under sections 130(1) and 133(1) of the EPBC Act on the 29th June 2020.

Full details of the Project Approval and supporting information can be found here.

## 1.3 Biosecurity Risk Management Plan Background

The BRMP and the Screens and Barrier described within, represent the key measures for Snowy Hydro to minimise the biosecurity risks associated with Snowy 2.0, including the movement and/or spread of weeds, pests and pathogens. In addition to the TFMP and RFMP, it is also a key measure to minimise the impact of the development on threatened fish species and their habitat, particularly the Macquarie Perch *(Macquaria australasica)*, and Stocky Galaxias *(Galaxias tantangara)* and minimise the impact of the development on recreational fishing in Lake Eucumbene. The three management plans are closely linked and have been designed in concert to avoid and minimise the potential aquatic and biosecurity impacts of Snowy 2.0.

A potential biosecurity impact of Snowy 2.0 identified during the impact assessment for the project included the potential transfer and subsequent establishment of pest fish species, in particular the Redfin Perch *(Perca fluviatilis)* (Redfin), Eastern Gambusia *(Gambusia holbrooki)* and Climbing Galaxias *(Galaxias brevipinnis)*, from Talbingo Reservoir to Tantangara Reservoir following hydrologic connection between Talbingo and Tantangara reservoirs to facilitate Snowy 2.0 operation (Cardno, 2019). The potential for these species to be entrained during pumping, survive transfer through the power station and subsequently establish within Tantangara Reservoir is uncertain, but, in the absence of controls, the possibility cannot be excluded.

Should Redfin establish in Tantangara Reservoir, impacts to salmonids could include predation and/or competition resulting in impacts to the population. Similar, but less likely, impacts could also occur if a population of Eastern Gambusia establish. These impacts could also occur in Lake Eucumbene if Redfin or Eastern Gambusia establish in Tantangara Reservoir and are subsequently transferred and establish in Lake Eucumbene. Should Redfin establish in Tantangara Reservoir, and subsequently be transferred and establish in the mid-Murrumbidgee River downstream of Tantangara Dam, impacts to Macquarie Perch could include predation and/or competition resulting in impacts to the population (Cardno, 2020). If Climbing Galaxias are transferred to Tantangara Reservoir and subsequently migrate and establish in Tantangara Creek, impacts to Stocky Galaxias could include predation and/or competition resulting in impacts to the population (Cardno, 2019).

Redfin (and, to a lesser extent Rainbow Trout *(Oncorhynchus mykiss)*) are known hosts of the fish disease Epizootic Haematopoietic Necrosis Virus (EHNV). There is potential that water transfer through Snowy 2.0 could increase the range of EHNV. Several native species, including Macquarie Perch, are susceptible to EHNV under laboratory conditions, although natural disease events caused by EHNV have never been detected in species other than Redfin and Rainbow Trout (Hick et al., 2019; Cardno, 2019).

Snowy Hydro comprehensively assessed the likelihood of these potential impacts and options to avoid transfer of pest fish through Snowy 2.0 as well as options to minimise potential impacts. This information is provided with the Snowy 2.0 Environmental Impact Statement (EIS) and Response to Submissions (RtS) (EMM, 2019; 2020). This assessment found that the most reasonably practicable way to minimise biosecurity risks and impacts to threatened species was to install structures to minimise the potential for pest fish to enter the habitat of threatened species (Tantangara Creek and the mid-Murrumbidgee River below Tantangara Dam), and Lake Eucumbene. As a result, Snowy Hydro committed to designing and constructing:

- → A 'Galaxiid barrier' at the downstream extent of the Stocky Galaxias habitat (subsequently imposed as Condition 21(a) of the Infrastructure Approval)
- → Fish screens at Tantangara Dam and the inlet to the Murrumbidgee to Eucumbene tunnel (M-E Tunnel) to prevent the transfer of all life stages of fish so far as is reasonably practicable from Tantangara Reservoir through the Dam to the mid-Murrumbidgee River and to Lake Eucumbene (subsequently imposed as Condition 21(b) of the Infrastructure Approval).

Once these controls are in place, the likelihood of Climbing Galaxias being transferred to Tantangara Reservoir from Talbingo Reservoir, establishing in the upper Murrumbidgee catchment then migrating upstream of the planned barrier and establishing in upper Tantangara Creek leading to competition with and extinction of Stocky Galaxias was assessed by Cardno (2019) as rare. Similarly, the likelihood of a reservoir spill or a failure of the proposed screens leading to transfer and establishment of Redfin in

the mid-Murrumbidgee River downstream of Tantangara Reservoir leading to competition with and impacts to the population of Macquarie Perch or Transfer of Redfin to Lake Eucumbene was also assessed as rare (Cardno, 2019).

The Critical State Infrastructure Assessment Report for the project found that the controls proposed by the project, being the screens at Tantangara Dam and the barrier on Tantangara Creek, were expected to minimise any adverse biosecurity impacts of the project as far as is reasonably practicable. The three management plans, being the BRMP, TFMP and RFMP, are intended to collectively complement these measures to further minimise any adverse biosecurity impacts, should the controls fail (NSW DPIE, 2020).

Measures described in the TFMP are intended to assist NSW DPIRD Fisheries and DCCEEW in protecting these endangered fish species. Such measures may improve the resilience of Stocky Galaxias and Macquarie Perch to withstand competition from Climbing Galaxias and Redfin respectively, should the controls fail at some point in the future. Similarly, measures described in the RFMP are intended to ensure that any impacts to recreationally important salmonids in both Tantangara Reservoir and Lake Eucumbene can be minimised via the targeted fish stocking of these reservoirs if and as required.

Tantangara Reservoir represents the potential initial pest fish incursion location associated with the operation of Snowy 2.0 due to the establishment of the hydrological connection with Talbingo Reservoir. It is assumed that all other catchments may only be impacted from the operation of Snowy 2.0, if transfer of pest fish from Talbingo Reservoir and establishment of pest fish populations in Tantangara Reservoir occurs.

## 1.4 BRMP Implementation

Snowy Hydro is responsible for the implementation of activities to be undertaken as part of the BRMP for the life of the development. Under the EPBC approval, the BRMP must be implemented until the end date of the approval (31 December 2140) unless otherwise agreed by the Commonwealth Minister[1] in writing.

Works to be undertaken as part of the BRMP will be informed by the outcomes of previous studies and based upon the requirements to successfully achieve the objectives of the BRMP.

## 1.5 BRMP Annual Report Requirements

Each year, by 31 August, or as otherwise advised to NSW DPIRD in writing, Snowy Hydro will publish an Annual Report detailing the monitoring data (excluding sensitive ecological data) and outcomes from surveillance and management Activities undertaken as part of this Plan.

Where relevant, the Annual Report will also include planned deviations from the surveillance activities detailed in Appendix E and F for subsequent years as well as any deviations that occurred in the previous year.

Once finalised, this report will be publicly available via Snowy Hydro's website (www.snowyhydro.com.au).

[1]Minister means the Australian Government Minister administering the EPBC Act including any delegate thereof.

# 2. Surveillance Catchments

The pest fish and disease surveillance activities and management measures referred to in this BRMP Annual Report have occurred within the following catchments (surveillance catchments) (Figure 1):

1. Tantangara Reservoir
2. Upper Murrumbidgee Catchment (including Tantangara Creek)
3. Mid-Murrumbidgee catchment
4. Lake Eucumbene
5. Talbingo Reservoir.

# 3. Aquatic Assets

The key aim of the pest fish and disease surveillance programs in the BRMP are to identify if a pest fish or disease incursion occurs within an area of habitat of threatened species or recreationally important salmonids, where they are not already present.

For the program, the key aquatic assets include:

→ Stocky Galaxias

→ Macquarie Perch

→ Salmonids.[2]

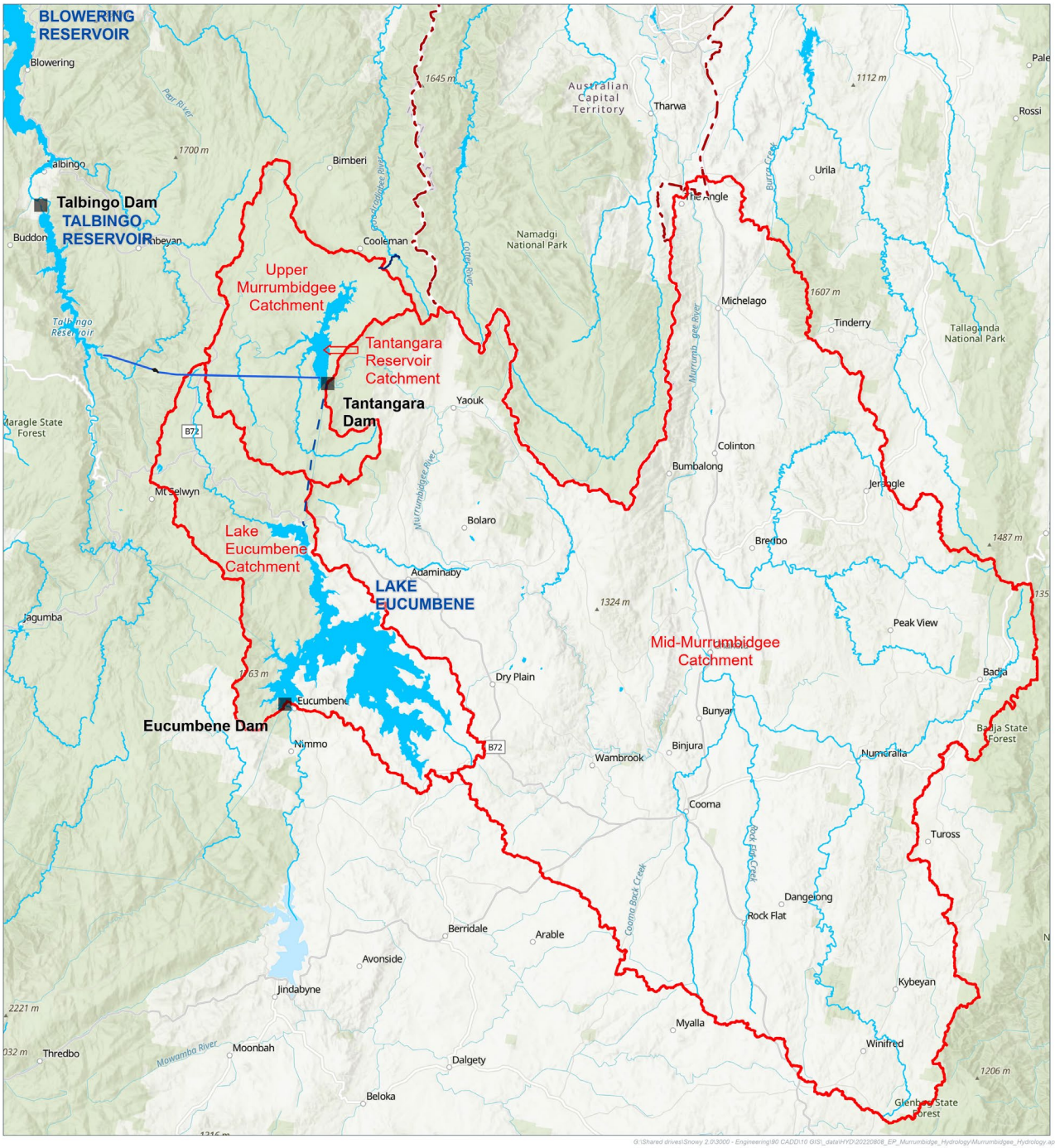
The known distribution of the aquatic assets within the surveillance catchments as of February 2024 is provided in Table 1. A table of the distribution of all fish species in the surveillance catchments and surrounding areas as at 2019 was provided in the EIS and is replicated in Appendix D of the BRMP (Cardno, 2019).

**Table 1: Known distribution of aquatic assets within the surveillance catchments**

| | Talbingo Reservoir | Tantangara Reservoir | Upper Murrumbidgee catchment | Upper Tantangara Creek | Mid-Murrumbidgee River | Lake Eucumbene |
|---|---|---|---|---|---|---|
| **Stocky Galaxias** | - | - | - | Present* | - | - |
| **Macquarie Perch** | - | - | - | - | Present | - |
| **Salmonids** | Present | Present | Present | - | Present | Present |

*Stocky Galaxias are currently only known to occur in Upper Tantangara Creek (part of the Upper Murrumbidgee catchment), above the Tantangara Creek Waterfall where salmonids are absent and in Sallys Flat Creek, a tributary of the Goodradigbee River (Lintermans and Allan, 2025).

- Not detected.




snowy 2.0
Surveillance Catchments

Legend
- Catchment Boundary
- Goodradigbee River Aqueduct
- Murrumbidgee - Eucumbene Tunnel
- Tantangara - Talbingo Tunnel (Snowy 2.0)

N

Prepared by:
RG14442
Date: 12/12/2022

0 6.5 13 19.5 km
Spatial Reference: GDA2020 MGA Zone 55



**Figure 1: Overview of surveillance catchments**

# 4. Pest Fish Surveillance

All pest fish surveillance was undertaken as required by the BRMP Pest Fish Surveillance Program set out in Appendix E of the BRMP. This surveillance program is based on advice provided by Dr Tarmo Raadik and Associate Professor Mark Lintermans (Raadik and Lintermans, 2022).

## 4.1 Surveillance Objective

As Snowy 2.0 is not yet operational, the objective of the activities during the reporting period was to ensure the pre-connection distribution of pest fish in the surveillance catchments is well known.

### 4.1.1 Target Pest Species

The target pest fish species for surveillance under the BRMP include:

- Redfin Perch (Perca fluviatilis) (Redfin), exotic, notifiable under Schedule 1 of the NSW Biosecurity Regulation 2017
- Eastern Gambusia *(Gambusia holbrooki)*, exotic
- Climbing Galaxias *(Galaxias brevipinnis)*, native to the Snowy River catchment (including Lake Eucumbene) but considered translocated outside of its natural range into the Murray and Tumut River catchments.

### 4.1.2 Expected Distribution

The expected distribution of the target pest species within the surveillance catchments is provided in Table 2. A table of the distribution of all fish species, including pest fish, at the time of the Snowy 2.0 EIS preparation is provided in Appendix D of the BRMP.

**Table 2: Expected distribution of target pest fish species within the surveillance catchments**

| | Talbingo Reservoir | Tantangara Reservoir | Upper Murrumbidgee catchment | Mid-Murrumbidgee River | Lake Eucumbene |
|---|---|---|---|---|---|
| **Redfin** | Present | - | - | - | - |
| **Eastern Gambusia** | Present | - | - | Present | - |
| **Climbing Galaxias** | Present* | - | - | - | Present (endemic) |

*Climbing Galaxias has been detected within the Yarrangobilly River and Tumut River, hydrologically connected tributaries. The species has not been recorded in Talbingo Reservoir using traditional physical sampling and eDNA sampling techniques (Cardno, 2019; Griffiths et al., 2024).

- Not detected.

## 4.2 Surveillance Overview

Surveillance during the reporting period was a combination of physical surveys using a variety of sampling methods and environmental DNA (eDNA) analysis of water samples.

Austral Research and Consulting was engaged to undertake physical sampling in Talbingo Reservoir, Tantangara Reservoir, Lake Eucumbene and the Upper Murrumbidgee catchment while EnviroDNA undertook eDNA analysis of samples collected by staff from Austral Research and Consulting, EnviroDNA and Snowy Hydro from all five surveillance catchments. Full details of the methods and level of effort are detailed in *Appendix A – Snowy 2.0 Pest Fish Surveillance Program Report* and *Appendix B – Snowy 2.0 Environmental DNA Surveillance Report.*

In addition to the required surveillance, other surveys in the catchments provided additional strength to the findings. Additional eDNA and physical surveys occurred in the Mid-Murrumbidgee catchment for the Macquarie Perch population and catchment surveys (Lintermans, 2025 and Duncan and Sarwer, 2025) and in Tantangara and Sallys Flat Creeks for population surveys for Stocky Galaxias (Lintermans and Allan, 2025) undertaken for the TFMP. These reports are available in the *Snowy 2.0 Threatened Fish Management Plan, 2024/25 Annual Report* (in preparation). The pre-clearance survey for Stocky Galaxias at the Tantangara Barrier construction site also provided additional data in this location (Section 8; Austral Research and Consulting, 2025b).

## 4.3 Surveillance Results

Surveillance activities during the reporting period confirmed the expected distribution of pest fish within the surveillance catchments (Table 3). The full results of the physical surveys are provided in Appendix A and the eDNA analysis in Appendix B.

**Table 3: Summary of Pest Fish Sampling Results from the reporting period**

| | Talbingo Reservoir | Tantangara Reservoir | Upper Murrumbidgee catchment | Mid-Murrumbidgee River | Lake Eucumbene |
|---|---|---|---|---|---|
| **Redfin** | Detected (Physical & eDNA) | Not Detected (Physical) & Equivocal (eDNA)[#] | Not Detected (Physical & eDNA) | Not Detected (Physical & eDNA) | Not Detected (Physical & eDNA) |
| **Eastern Gambusia** | Detected (Physical & eDNA) | Not Detected (Physical & eDNA) | Not Detected (Physical & eDNA) | Detected (Physical & eDNA) | Not Detected (Physical & eDNA) |
| **Climbing Galaxias** | Not Detected (Physical & eDNA)<br>NB. Assumed Present[*] | Not Detected (Physical & eDNA) | Not Detected (Physical & eDNA) | Not Detected (Physical & eDNA) | Detected (Physical & eDNA)<br>NB. Species is endemic to this catchment |

[*]Climbing Galaxias has previously been detected within the Yarrangobilly and Tumut Rivers, hydrologically connected tributaries (Cardno, 2019; Griffiths et al., 2024).

[#]Resampling in the same location returned a negative result. See Appendix B for more detail.

Results from physical and eDNA sampling confirmed the presence of Redfin and Eastern Gambusia within Talbingo Reservoir. Climbing Galaxias was not detected in either the physical or eDNA surveys (Austral Research and Consulting, 2025a and Griffiths et al., 2025). This is not unexpected as the species has only previously been detected in tributaries upstream of the reservoir (Cardno, 2019). A positive eDNA detection for Climbing Galaxias from 2024 in the Tumut River, upstream of Talbingo Reservoir, confirms the ongoing presence of this species within this catchment (Griffiths et al., 2024).

An equivocal result for Redfin was returned for Tantangara Reservoir from the eDNA sampling however, re-sampling returned negative results and no Redfin were detected during physical sampling. As such, this species is still assumed absent from this catchment and the Upper Murrumbidgee, as is the Eastern Gambusia and Climbing Galaxias (Austral Research and Consulting, 2025a and Griffiths et al., 2025).

Redfin DNA was detected in the Gudgenby River, a tributary of the Murrumbidgee River, downstream of Angle Crossing where the species is known to occur. Multiple eDNA surveys in the Mid-Murrumbidgee River upstream of Angle Crossing did not detect any Redfin, nor did the physical sampling undertaken for the Macquarie Perch population and habitat surveys (Griffiths et al., 2025, Lintermans, 2025 and Duncan and Sarwer, 2025). Climbing Galaxias was also not detected in any of these surveys. Eastern Gambusia is known to occur in this catchment and was detected as far upstream as Adaminaby in the eDNA sampling and Macquarie Perch population surveys (Griffiths et al., 2025, Lintermans, 2025).

Salmonids were also confirmed to be absent in the habitat of the Stocky Galaxias through both physical and eDNA surveys (Austral Research and Consulting, 2025a, Griffiths et al., 2025, Austral Research and Consulting, 2025b, Lintermans and Allan, 2025).

These results are all in accordance with previous sampling undertaken in these catchments for the Snowy 2.0 project (Cardno, 2019; Griffiths et al., 2017; Griffiths et al., 2020; 2021; 2022; 2023; 2024; Robinson et al. 2019; Weeks et al. 2019)

## 4.4 Outcomes/future plan

As the sampling did not detect any target species in any locations where it is not currently expected, no additional surveillance beyond the program in the BRMP is required and there is no need to review the current program.

As physical sampling is only required once prior to connection, this requirement has now been fulfilled.

# 5. Disease Surveillance and Management

Disease surveillance was undertaken as required by the BRMP Pest Fish Surveillance Program set out in Appendix F of the BRMP. This surveillance program is based on advice and reports provided by Dr Ben Diggles (Diggles, 2022a; Diggles, 2022b) and Dr Paul Hick at the Elizabeth Macarthur Agricultural Institute (Hick et al., 2019).

## 5.1 Surveillance Objective

The primary objective for the disease surveillance activities for the BRMP is to determine whether Epizootic Haematopoietic Necrosis Virus (EHNV) is present in the Talbingo Reservoir Redfin population prior to the connection of Talbingo and Tantangara reservoirs by Snowy 2.0.

A secondary objective is to establish the distribution of *Lernaea cyprinacea* (Lernaea), also known as anchorworm, in the surveillance catchments.

### 5.1.1 Target Diseases

The target diseases for the BRMP Disease Surveillance Program are EHNV and Lernaea.

At the time of the Snowy 2.0 EIS and BRMP preparation, previous outbreaks of EHNV had been detected in nearby Blowering Reservoir, however, an outbreak or evidence of infection has never been reported within Talbingo Reservoir, including following limited surveillance undertaken for the Snowy 2.0 EIS (Cardno, 2019; Hick et al., 2019; Diggles, 2022a).

Given that EHNV is predominantly a disease of Redfin, which are only known to occur within Talbingo Reservoir, the priority for the disease surveillance program was to identify whether EHNV disease is currently present within the Talbingo Reservoir Redfin population.

## 5.2 Surveillance Overview

Austral Research and Consulting was engaged to undertake the collection of whole fish and blood samples which were then shipped to the Elizabeth Macarthur Agricultural Institute (EMAI) for EHNV analysis. Details on the fish collection methods and full results of all fish observed during sampling is provided in *Appendix A – Snowy 2.0 Pest Fish Surveillance Program Report*. The sample collection protocol and preparation details are provided in *Appendix C – 2025 EHNV Sample Collection Protocol.*

## 5.3 Surveillance Results

Surveillance for EHNV in Talbingo Reservoir involved the collection of 204 adults and 51 young of year (YOY) whole fish samples which were sent for analysis using quantitative polymerase chain reaction (qPCR) analysis. Where practicable, blood samples were also collected for ELISA analysis.

All fish were observed to be in good condition with no external evidence of disease or infection with Lernaea (see Appendix A).

The qPCR analysis returned two positive results for EHNV. All 131 serology samples were negative. The full table of results is provided in Appendix D – EHNV and Lernaea Results. The two positive results for EHNV were sent to the Australian Centre for Disease Preparedness (ACDP) at the Commonwealth Scientific and Industrial Research Organisation (CSIRO) in Geelong who undertook further sampling to verify the positive detections. A copy of this report is provided in *Appendix E – CSIRO Positive Detection Verification Report.*

### 5.3.1 Response to Positive Detection

Notification to DPIRD in response to the positive detection was undertaken in accordance with legislative requirements.

As EHNV has now been confirmed to occur within Talbingo Reservoir, the focus of the BRMP Disease Surveillance program will shift to determining the status of Tantangara Reservoir which is considered to be Redfin free.

The Surveillance Program has been revised with the new Program detailed in *Appendix F – Revised BRMP*

*Disease Surveillance Program*. The target species for this Program will be Rainbow Trout as this is the only other species that has historically been infected by EHNV in a non-experimental setting (Hick et al., 2019).

As Snowy 2.0 is not yet operational, the Pest Fish and Disease Response and Control Plan (Appendix C of the BRMP) is not activated by this detection.

# 6. Tantangara Reservoir Spill Management

Condition 22(b) requires that spills over Tantangara Dam are prevented so far as is reasonably practicable. There were no spills over Tantangara Dam during the reporting period.

# 7. Tantangara Fish Screens

As part of the EIS, Snowy Hydro made a commitment to construct fish screens at Tantangara Dam (Figure 2) to prevent, so far as is reasonably practicable, the movement of pest fish (in all its forms: eggs, larvae, juveniles and adults) and spread of disease from Tantangara Reservoir to the mid-Murrumbidgee River and Lake Eucumbene. This commitment was subsequently imposed as Condition 21(b) of the Infrastructure Approval.

The screens will filter water released from environmental flows through the Tantangara Dam River Outlet Works (ROW) to the Murrumbidgee River and water entering the existing Murrumbidgee-Eucumbene tunnel to Lake Eucumbene (Figure 3).

## 7.1 Activity during the reporting period

Since approval of the BRMP, fish screen optioneering has been completed, and two contracts, for the integrated fish screen system design and the design and supply of the fish screens, have been tendered. Negotiation and contract executions were completed early January 2025 with Aurecon awarded the hydraulic, civil, structural and integrated fish screen system design, and AWMA the design and supply of the fish screens, collector pipes and associated equipment.

As at the end of June 2025, Aurecon and AWMA have completed the first stage of design and the next stage of 'Issue for Tender (IFT)' design is in progress. Snowy Hydro will continue to keep DPIRD updated as the design progresses.

Once further details are available, Stage 2 of the BRMP will be submitted to DPIRD and other agencies.


**Figure 2: Tantangara Dam, Spillway and ROW and M-E Tunnel Intake**

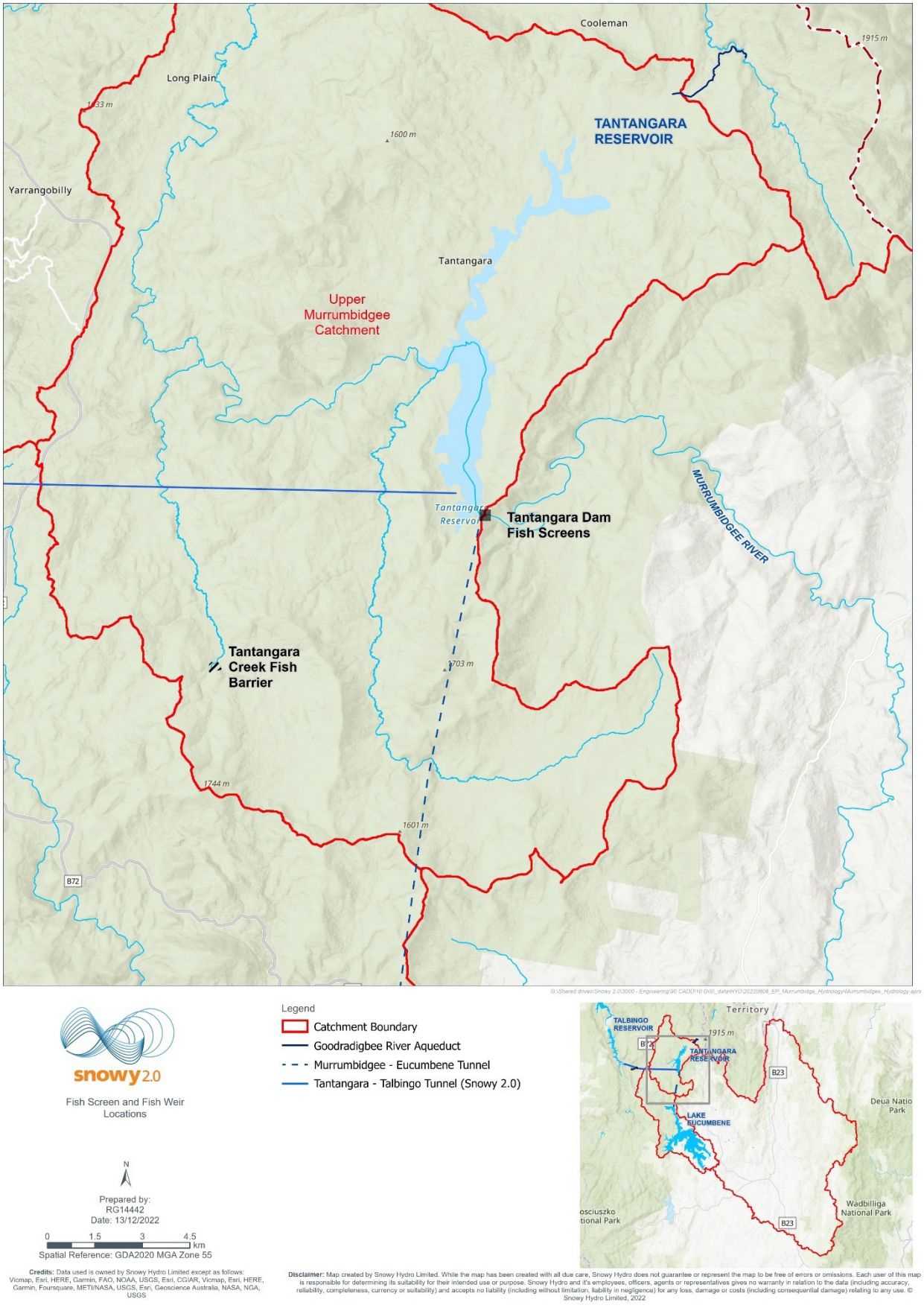



**Figure 3: Locality map showing the location of the Tantangara Fish Screens and the Tantangara Creek Fish Barrier**

# 8. Tantangara Creek Barrier

As part of the EIS, Snowy Hydro made a commitment to construct a fish barrier on Tantangara Creek. This commitment was subsequently imposed as Condition 21(a) of the Infrastructure Approval. The objective of the Tantangara Creek Barrier (the Barrier) is to prevent so far as is reasonably practicable, Climbing Galaxias reaching the existing population of Stocky Galaxias in the upper reaches of Tantangara Creek.

## 8.1 Activity during the reporting period

Construction of the Tantangara Creek Barrier commenced and was completed in the reporting period and the structure is now operational (Figure 4). Construction was completed by principal contractor Leed. In late 2024 Leed mobilised to site and completed track upgrades to Nungar Creek Trail and Alpine Creek Trail required to facilitate construction at the barrier site. In February 2025, works commenced on the construction of the barrier through diversion of Tantangara Creek, completion of bulk earthworks, completion of detailed ground preparation, formwork and steel installation, concrete pouring, and final hardware fixing, concluding in May 2025. Following this, rehabilitation and demobilisation from the site occurred.

Initial verification of the structures function has occurred with inspections and verification scheduled on an ongoing basis. The works took place in close consultation with relevant environmental regulators without any environmental incidents reported.

Prior to the commencement of construction, the area to be affected by the water diversion around the site was surveyed for Stocky Galaxias using techniques and a level of effort endorsed by NSW DPIRD. Any captured Stocky Galaxias were relocated upstream outside of the disturbance boundary for the works. A report on this work is provided in *Appendix G – Tantangara Barrier Pre-clearance report*.

**Figure 4: The completed Tantangara Creek Barrier**

# 9. Additional Barriers

To minimise potential impacts of pest fish movement on Stocky Galaxias and Macquarie Perch, the EPBC Approval for the project includes a requirement to investigate reasonable measures, including the installation of secondary fish barriers, to protect tributaries identified as priority receiving sites for the establishment of stocking insurance populations of the Macquarie Perch and Stocky Galaxias (Condition 13).

The identification of potential locations for the establishment of additional populations of Stocky Galaxias and Macquarie Perch is an activity to occur as part of the Habitat Surveys for each of these species under the TFMP. Detailed habitat surveys for both species occurred under the TFMP during the 2024/25 activity period, however, specific re-introduction sites have not yet been identified.

# 10. Conclusion

This inaugural Annual Report for the BRMP details the comprehensive activities undertaken from the Plan's endorsement on 25th October 2024 to 30th June 2025. Demonstrating full compliance with all BRMP requirements, the reporting period has seen significant progress in meeting biosecurity obligations for the Snowy 2.0 project.

The Pest Fish Surveillance Program confirmed the expected distribution of pest fish species. The Disease Surveillance Program detected Epizootic Haematopoietic Necrosis Virus (EHNV) in Talbingo Reservoir. This Program will now be adapted to shift its focus to Tantangara Reservoir.

No spills occurred over Tantangara Dam, the design for the Tantangara Fish Screens is ongoing and the Tantangara Creek Barrier has been successfully constructed and is now operational, with pre-clearance surveys and fish relocation conducted as planned.

The successful implementation of these measures, alongside the ongoing commitment to the TFMP and RFMP, underscores Snowy Hydro's dedication to minimising potential impacts on biosecurity and native fish populations. The findings of this report will continue to inform and refine future biosecurity management strategies as the Snowy 2.0 project progresses towards full operation.

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# Appendix A

# Snowy 2.0 Pest Fish Surveillance Report

a u s t r a l

research and consulting

# Snowy 2.0 Pest Fish Surveillance Program Report 2025

- Final
- August 2025

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a u s t r a l

research and consulting

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# 1. Introduction

Austral Research and Consulting (Austral) were contracted by Snowy Hydro to undertake the physical sampling component of the Pest Fish Surveillance Program as outlined in *Appendix E* of the *Snowy 2.0 Biosecurity Risk Management Plan* (Snowy Hydro, 2024)). This program is based on specific advice provided by Raadik and Lintermans (2022).

This surveillance program aims to ensure the distribution of pest fish in the surveillance catchments is well known ahead of the operation of the Snowy 2.0 project and once the project is operating, detect the presence of target pest fish species as early as possible if an incursion occurs (Snowy Hydro, 2024). The sites sampled across the program are shown in the Figure 1 below.

Pest species targeted in the program include Redfin (*Perca fluviatilis*), Eastern gambusia (*Gambusia holbrooki*) and Climbing galaxias (*Galaxias brevipinnis*). The program also aimed to confirm the continued absence of salmonids in the habitat of the Stocky galaxias (*Galaxias tantangara*).

This report details the methods used to undertake the surveillance program and details the results of the surveys.

Austral was also contracted to collect fish for the Snowy 2.0 Disease Surveillance Program (*Appendix F* of the *Snowy 2.0 Biosecurity Risk Management Plan)* which involved an intensive program of sampling in Talbingo reservoir targeting the collection of Redfin for disease analysis. Fish catch and observation data from surveys undertaken for the Snowy 2.0 Disease Surveillance Program are also reported here.

All surveys and activities were conducted under NSW Animal Research Authority – RVF21/3375 (Animal Ethics), NSW DPI fisheries permit Section 37 Research Permit – FP24/89 and Animal Research Licence number – 82073.

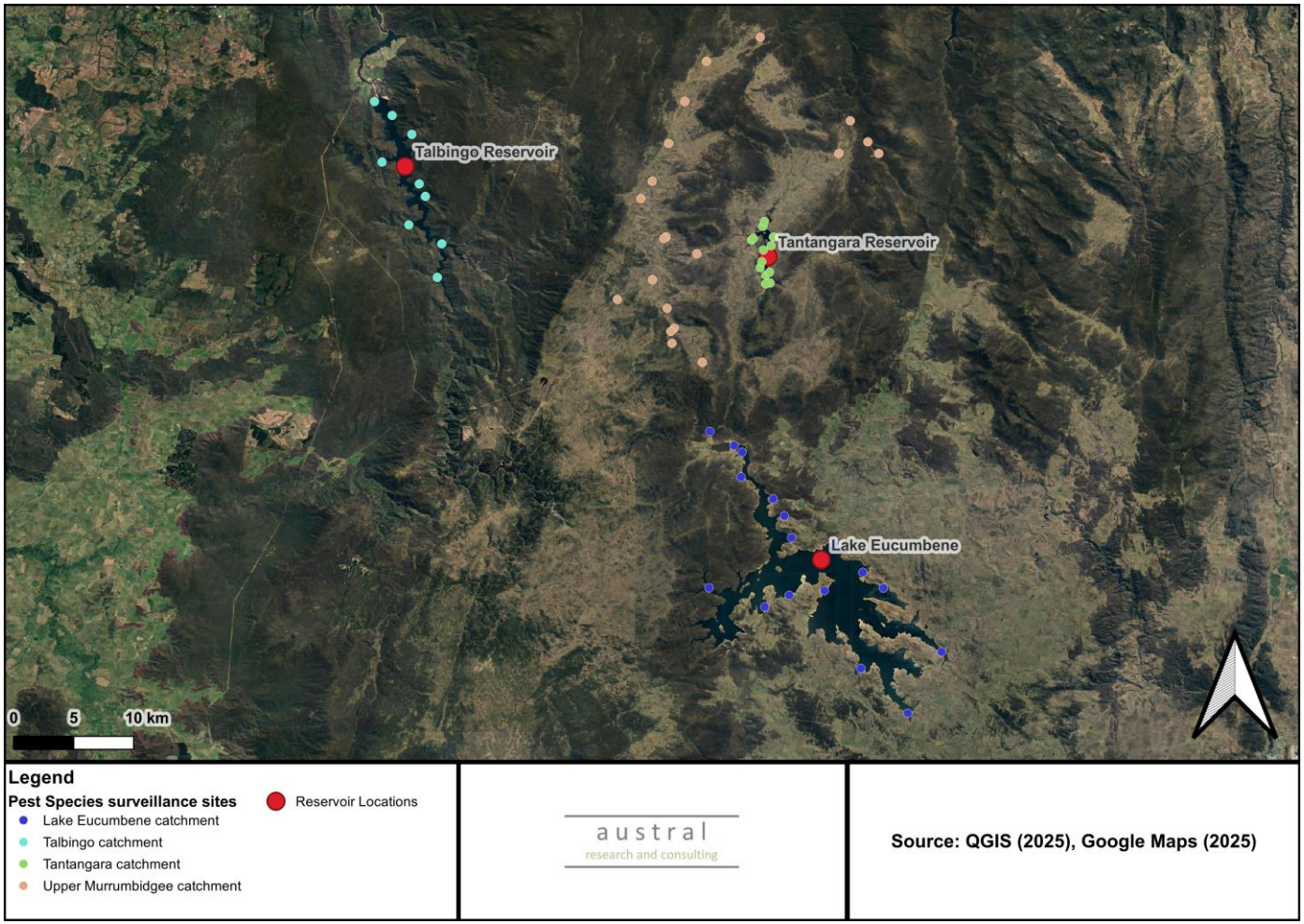


**Figure 1: Site locations of Pest Fish Surveillance Program.**

# 2. Methods

The Pest fish surveillance program consisted of physical sampling including backpack electrofishing and boat electrofishing across selected sites. These activities were completed from the 9th to the 26th of February 2025. Environmental DNA (eDNA) samples were also collected at each pest fish monitoring site. The methods and results of this sampling has been reported separately (Griffiths, Reid, & Licul, 2025).

Fish collection for the Snowy 2.0 Disease Surveillance Program in Talbingo reservoir occurred from the 3rd to the 17th of February 2025. As boat electrofishing proved ineffective, a variety of methods including gill netting, line fishing and bait traps were also employed. This program of sampling was more intensive than that within other catchments which explains the higher catch rates.

All captured fished were assessed for presence of parasites including *Lernaea*.

Section 2.1 details the methods used during the surveillance program.

## 2.1. Survey Methodology

### 2.1.1. Backpack electrofishing

Backpack electrofishing was performed at suitable sites using a Smith-Root LR-24 electrofisher. The sampling procedure involved electrofishing all wadable areas of the waterways targeting available fish habitat such as rocks, snags and riffles. The amount of survey effort employed at each site was determined by the size of the waterway and availability of wadable water. The survey effort was recorded at each site.

### 2.1.2. Boat Electrofishing

Boat electrofishing was performed across all navigable areas at selected sites, targeting suitable fish habitat. Austral used a 4.3 m electrofishing vessel “MSV11735” for the surveys. The vessel was equipped with a Grassl electrofisher unit, two boom arms with 16-dropper anode arrays and hull cathode. During each shot immobilised fish were netted from the water and transferred to a holding tank to recover until the end of the 90 second duration shot. At the end of each shot all fish were identified, counted and their body lengths were measured. Fish observed as affected by the electric field and positively identified, but not captured, were also counted. The fishing effort at each site was recorded.

### 2.1.3. Gill Netting

Gill nets are a passive trap that are 10 to 30m long with varying mesh sizes (20 to 100mm). Floats and weights are used to hold the net in position. The nets are monitored continuously and are physically inspected a minimum of every 30 minutes.

### 2.1.4. Line Fishing

Line fishing with lures was used in areas unsuitable for boat electrofishing. 10lb braided line was used with a mixture of vibe lures, soft plastics and trawling lures. Vibe lures proved the most successful.

### 2.1.5. Bait Traps

Bait traps were set within appropriate habitat. Bait traps consisted of a 2mm mesh and are approximately 250mm x 250mm x 450mm. This size rating complies with restrictions set by NSW Fisheries (i.e. that a single bait trap must not be larger than 450mm x 350mm x 250mm with an entrance not larger than 60mm and mesh between 10mm and 40mm). Bait traps have a small aperture and are a passive trap.

## 2.2. Limitations

These surveys gather data in the form of a ‘snap shot in time’. Results may vary depending on the time of year surveys are undertaken.

### 2.3. Surveillance Effort

The methods used and electrofishing total effort for each site are detailed in Table 1 and Table 2.

**Table 1: Method and effort completed at each Pest Fish surveillance site.**

| Site | Catchment | Backpack Electrofishing | Boat Electrofishing | EF On-time (secs) |
|---|---|---|---|---|
| BC1 | Upper Murrumbidgee | ✓ | | 600 |
| GR1 | Upper Murrumbidgee | ✓ | | 1200 |
| GR2 | Upper Murrumbidgee | ✓ | | 1200 |
| GR3 | Upper Murrumbidgee | ✓ | | 900 |
| GU1 | Upper Murrumbidgee | ✓ | | 750 |
| TA1 | Upper Murrumbidgee | ✓ | | 1200 |
| TA2 | Upper Murrumbidgee | ✓ | | 1200 |
| TA3 | Upper Murrumbidgee | ✓ | | 1200 |
| TA4 | Upper Murrumbidgee | ✓ | | 900 |
| TA5 [1] | Upper Murrumbidgee | ✓ | | 8562 |
| TA6 [2] | Upper Murrumbidgee | ✓ | | |
| SF1 [2] | Upper Murrumbidgee | ✓ | | |
| TAT1 | Upper Murrumbidgee | ✓ | | 600 |
| UMU1 | Upper Murrumbidgee | ✓ | | 1200 |
| UMU2 | Upper Murrumbidgee | ✓ | | 1200 |
| UMU3 | Upper Murrumbidgee | ✓ | | 1200 |
| UMU4 | Upper Murrumbidgee | ✓ | | 1200 |
| UMU5 | Upper Murrumbidgee | ✓ | | 1200 |
| UMU6 | Upper Murrumbidgee | ✓ | | 1200 |

| Site | Catchment | Backpack Electrofishing | Boat Electrofishing | EF On-time (secs) |
|---|---|---|---|---|
| UMU7 | Upper Murrumbidgee | ✓ | | 1200 |
| GG1C | Lake Eucumbene | ✓ | | 600 |
| LE1 | Lake Eucumbene | | ✓ | 1080 |
| LE10 | Lake Eucumbene | | ✓ | 1080 |
| LE11 | Lake Eucumbene | | ✓ | 1080 |
| LE12 | Lake Eucumbene | | ✓ | 1080 |
| LE13 | Lake Eucumbene | | ✓ | 1080 |
| LE14 | Lake Eucumbene | | ✓ | 1080 |
| LE15 | Lake Eucumbene | | ✓ | 1080 |
| LE16 | Lake Eucumbene | | ✓ | 1080 |
| LE2 | Lake Eucumbene | | ✓ | 1080 |
| LE3 | Lake Eucumbene | | ✓ | 1080 |
| LE4 | Lake Eucumbene | | ✓ | 1080 |
| LE5 | Lake Eucumbene | | ✓ | 1080 |
| LE6 | Lake Eucumbene | | ✓ | 1080 |
| LE7 | Lake Eucumbene | | ✓ | 1080 |
| LE8 | Lake Eucumbene | | ✓ | 1080 |
| LE9 | Lake Eucumbene | | ✓ | 1080 |
| TR1 | Tantangara | | ✓ | 1080 |
| TR10 | Tantangara | | ✓ | 1080 |
| TR11 | Tantangara | | ✓ | 1080 |
| TR12 | Tantangara | | ✓ | 1080 |
| TR13 | Tantangara | | ✓ | 1080 |
| TR2 | Tantangara | | ✓ | 1080 |
| TR3 | Tantangara | | ✓ | 1080 |

| Site | Catchment | Backpack Electrofishing | Boat Electrofishing | EF On-time (secs) |
|---|---|---|---|---|
| TR4 | Tantangara | | ✓ | 1080 |
| TR5 | Tantangara | | ✓ | 1080 |
| TR6 | Tantangara | | ✓ | 1080 |
| TRA1 | Tantangara | | ✓ | 1080 |
| TRA2 | Tantangara | | ✓ | 1080 |
| TRA3 | Tantangara | | ✓ | 1080 |

Note 1 – High EF effort due to Stocky galaxias salvage for the Tantangara Creek barrier project occurring concurrently (Austral Research and Consulting, 2025).
Note 2 – Sites sampled by M. Lintermans and H. Allan (Lintermans & Allan, 2025).

**Table 2: Method and effort completed at each disease surveillance area in Talbingo Reservoir.**

| Site | Boat Electrofishing | EF On-time (secs) | Bait Traps | Gill Netting (min) | Line Fishing (min) | Seine Netting |
|---|---|---|---|---|---|---|
| TAL1 | ✓ | 2340 | 10 | 120 | 1350 | |
| TAL2 | | | | 360 | 1080 | |
| TAL3 | ✓ | 1560 | | 480 | 2400 | |
| TAL4 | ✓ | 1500 | | 120 | 540 | |
| TAL5 | | | | | 960 | |
| TAL6 | ✓ | 120 | | | 261 | |
| TAL7 | | | | | 360 | |
| TAL8 | | | Not Surveyed [1] | | | |
| TAL9 (TL1C) | | | | 420 | 600 | |
| TAL10 (SUE1) | | | | 150 | 750 | ✓ |

Note 1 – Not surveyed due to weather and access at time of survey.

# 3. Results

The species and number of individuals captured during the surveys in each catchment are detailed below (Table 3, Table 4, Table 5, Table 6).

Native species captured during the surveillance program included Flathead gudgeon (*Philypnodon grandiceps*), Trout cod (*Maccullochella macquariensis*), Climbing galaxias, Common Yabby (*Cherax destructor destructor*), Spiny crayfish (*Euastacus* sp.), Mountain galaxias (*Galaxias olidus*), Two-spined blackfish (*Gadopsis bispinosus*) and Stocky galaxias. Climbing galaxias was only captured within the Lake Eucumbene catchment where it is considered endemic.

Spiny crayfish were only identified to genus due to the similar external morphological characteristics and requirement to destructively sample to accurately differentiate species via gastric mill morphology (T. Raadik pers. com; Morgan, 1997).

Three Platypus (*Ornithorhynchus anatinus*) were also observed during the program, one in Lake Eucumbene and two within Tantangara Reservoir.

No captured fish was observed with parasites or *Lernaea* during the Pest Fish surveillance program or the Disease surveillance program.

In Talbingo Reservoir a total of 493 introduced individuals were captured with 386 Redfin, 105 Eastern gambusia, one Rainbow trout (*Oncorhynchus mykiss*) and one Goldfish (*Carassius auratus*) recorded (Table 3). Additionally, a further 40 Redfin at TAL3 and 20 Eastern gambusia at TAL4 were observed.

A total of 133 introduced individuals were captured in Lake Eucumbene including three Goldfish, five Oriental weatherloach (*Misgurnus anguillicaudatus*), three Rainbow trout and 122 Brown trout (*Salmo trutta*) recorded (Table 4).

A total of 10 introduced individuals were captured in the Tantangara Reservoir including seven Rainbow trout and three Brown trout. Additionally, one unidentified trout was observed (Table 5). Due to low water levels at the time of survey, sites TR7, TR8 and TR9 were replaced with sites TRA1, TRA2 and TRA3 (new locations).

A total of 178 introduced individuals were captured in the Upper Murrumbidgee catchment with 155 Brown trout and 23 Rainbow trout recorded. One additional unidentified trout was observed (Table 6).

**Table 3: Fish Species and numbers of individuals captured during surveys in Talbingo Reservoir. Values in brackets are observed numbers.**

| Taxon Common Name | Taxon Scientific Name | TAL1 | TAL2 | TAL3 | TAL4 | TAL5 | TAL6 | TAL7 | TAL9 (TL1C) | TAL10 (SUE1) | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Native species*** | | | | | | | | | | | |
| Common yabby | *Cherax destructor destructor* | 1 | | | | | | | | | **1** |
| Flathead gudgeon | *Philypnodon grandiceps* | 11 | | 6 | | | 150 | | | 200 (1000+) | **367** |
| Trout cod | *Maccullochella macquariensis* | 3 | | | | | | | | | **3** |
| Two-spined blackfish | *Gadopsis bispinosus* | | | 1 | | | | | | | **1** |
| ***Introduced species*** | | | | | | | | | | | |
| Eastern gambusia | *Gambusia holbrooki* | | | 5 | (20) | | 100 | | | | **105** |
| Goldfish | *Carassius auratus* | | | | | | | | 1 | | **1** |
| Redfin | *Perca fluviatilis* | 34 | 6 | 89 (40) | 75 | 30 | 45 | 42 | 10 | 55 | **386** |
| Rainbow trout | *Oncorhynchus mykiss* | | | | | | | | | 1 | **1** |
| **Total** | | **49** | **6** | **101** | **75** | **30** | **295** | **42** | **11** | **256** | **865** |

**Table 4: Fish Species and numbers of individuals captured during surveys in the Lake Eucumbene catchment.**

| Taxon Common Name | Taxon Scientific Name | GG1C* | LE1 | LE2 | LE3 | LE4 | LE5 | LE6 | LE7 | LE8 | LE9 | LE10 | LE11 | LE12 | LE13 | LE14 | LE15 | LE16 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Native species*** | | | | | | | | | | | | | | | | | | | |
| Climbing galaxias | *Galaxias brevipinnis* | 4 | | | | | | | | | | | | | | | | | **4** |
| Common yabby | *Cherax destructor destructor* | | | | | | | | | | | | | | | | 100 | 50 | **150** |
| Spiny crayfish | *Euastacus* sp. | 1 | | | | | | | | | | | | | | | | | **1** |
| ***Introduced species*** | | | | | | | | | | | | | | | | | | | |
| Brown trout | *Salmo trutta* | 81 | 19 | 2 | 3 | | 5 | | | | 1 | 1 | | 3 | 1 | | 2 | 4 | **122** |
| Goldfish | *Carassius auratus* | | 3 | | | | | | | | | | | | | | | | **3** |
| Oriental weatherloach | *Misgurnus anguillicaudatus* | | 3 | | | | | 1 | | | | | | | | | 1 | | **5** |
| Rainbow trout | *Oncorhynchus mykiss* | | | | | | | | 1 | | | | 2 | | | | | | **3** |
| **Total** | | **86** | **25** | **2** | **3** | **0** | **5** | **1** | **1** | **0** | **1** | **1** | **2** | **3** | **1** | **0** | **103** | **54** | **288** |

* Site GG1C is located on Gang Gang Creek, a tributary of Lake Eucumbene. This is a site where Climbing Galaxias are known to be present so serves as a positive control site to confirm that techniques applied are able to detect this species. All other sites in this table are located within Lake Eucumbene.

**Table 5: Species and numbers of individuals captured during surveys in Tantangara Reservoir.**

| Taxon Common Name | Taxon Scientific Name | TR1 | TR2 | TR3 | TR4 | TR5 | TR6 | TR10 | TR11 | TR12 | TR13 | TRA1 | TRA2 | TRA3 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Native species*** | | | | | | | | | | | | | | | |
| Common yabby | *Cherax destructor destructor* | | | | | | | | | | | 5 | | | **5** |
| ***Introduced species*** | | | | | | | | | | | | | | | |
| Brown trout | *Salmo trutta* | | | 1 | | | | 1 | 1 | | | | | | **3** |
| Rainbow trout | *Oncorhynchus mykiss* | | | | 2 | | | | 2 | 2 | | | | 1 | **7** |
| Trout | Trout sp. | | | 1 | | | | | | | | | | | **1** |
| **Total** | | **0** | **0** | **2** | **2** | **0** | **0** | **1** | **3** | **2** | **0** | **5** | **0** | **1** | **16** |

**Table 6: Species and numbers of individuals captured during surveys in the Upper Murrumbidgee catchment.**

| Taxon Common Name | Taxon Scientific Name | BC1 | GR1 | GR2 | GR3 | GU1 | TA1 | TA2 | TA3 | TA4 | TA5 | TAT1 | UMU1 | UMU2 | UMU3 | UMU4 | UMU5 | UMU6 | UMU7 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Native species*** | | | | | | | | | | | | | | | | | | | | |
| Mountain galaxias | *Galaxias olidus* | | | | | | 3 | | | | | | | 1 | | | | | | **4** |
| Spiny crayfish | *Euastacus* sp. | 14 | 1 | | | 5 | 5 | 2 | 6 | | | | 1 | 3 | | 3 | 4 | 4 | 3 | **51** |
| Stocky galaxias | *Galaxias tantangara* | | | | | | | | | | 87 | | | | | | | | | **87** |
| ***Introduced species*** | | | | | | | | | | | | | | | | | | | | |
| Brown trout | *Salmo trutta* | 1 | | | | 6 | 2 | 3 | 2 | 27 | | 2 | 6 | 3 | 1 | 8 | 11 | 82 | 1 | **155** |
| Rainbow trout | *Oncorhynchus mykiss* | | 4 | 9 | 6 | | | | | | | 2 | | | | 1 | 1 | | | **23** |
| Trout | Trout sp. | | | | | | | | | | | | | | 1 | | | | | **1** |
| **Total** | | **15** | **5** | **9** | **6** | **11** | **10** | **5** | **8** | **27** | **87** | **4** | **7** | **7** | **2** | **12** | **16** | **86** | **4** | **321** |

# 4. Summary

Across all surveillance sites a total of 1490 individuals from 14 different fish species (674 individuals from 8 native species and 816 individuals from 6 introduced species) were captured.

All catch data for both native and introduced species was in accordance with the previously reported known distributions (Snowy Hydro, 2024). The catch data for the target pest fish species is also aligned with the results from eDNA samples collected in the same locations (Griffiths, Reid, & Licul, 2025).

Redfin and Eastern gambusia were confirmed present in Talbingo Reservoir, and they were not detected in any other location targeted in this survey. Climbing galaxias was not detected in Talbingo reservoir, although this is not unexpected as they have only ever previously been detected in the Yarrangobilly River catchment, not the reservoir itself (Snowy Hydro, 2024).

Introduced salmonid species, including Brown and Rainbow trout, were ubiquitous within all catchments but, as expected, were not detected within the Stocky Galaxias habitat above the waterfall on Tantangara Creek.

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# Appendix B

# Snowy 2.0 Environmental DNA Surveillance Report

# Monitoring for the presence of pest fish species within the Snowy Scheme using environmental DNA, 2025.

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## Disclaimer

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This report is to be referenced as:

Griffiths J, Reid, C, and Licul, S. (2025) Monitoring for the presence of pest fish species within the Snowy Scheme using environmental DNA, 2025. Report prepared by EnviroDNA for Snowy Hydro Limited.

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## Version control

| Date | Version | Description | Author | Reviewed By |
|---|---|---|---|---|
| 17/07/2025 | 1.0 | Draft report | JG | SHL |
| 12/08/2025 | 2.0 | Final report | JG | |

## Abbreviations

| Abbreviations | Description |
|---|---|
| eDNA | environmental DNA |
| qPCR | quantitative polymerase chain reaction |
| EIS | Environmental Impact Statement |

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## Executive Summary

A comprehensive monitoring program using environmental DNA to detect *Perca fluviatilis*, *Gambusia holbrooki* and *Galaxias brevipinnis* has been implemented since 2019 as part of environmental investigations for the Snowy 2.0 project. EnviroDNA, with assistance from Austral Research and Consulting, were engaged to repeat these surveys across six subcatchment areas in February 2025 with the sampling program following the requirements of the Snowy 2.0 Biosecurity Risk Management Plan, Pest Fish Surveillance Program.

A total of 246 water samples from 92 sites, plus additional field negative controls (6), were collected throughout the area with 220 samples from 79 sites analysed for the presence of *P. fluviatilis DNA,* 192 samples from 72 sites analysed for *G. holbrooki* DNA and 198 samples from 80 sites analysed for *G. brevipinnis* DNA. Two independent assays for *P. fluviatilis* targeting different gene regions were used for all samples to provide additional confidence in results for this species. A small subset of 10 sites were also analysed for several trout species.

*Perca fluviatilis* was detected in Talbingo Reservoir (positive control site) as well one site in the downstream section of the Middle Murrumbidgee where this species is known to occur. Widespread detections of *Gambusia holbrooki* were recorded throughout waterways of the Middle Murrumbidgee. *Galaxias brevipinnis* was detected at one site in the Upper Eucumbene catchment where it is considered endemic. All positive detections were within areas the species' are known to occur.

A possible detection of *P. fluviatilis* was recorded in a single sample within Tantangara Reservoir but was not supported by the second assay. Follow-up sampling within the Reservoir also did not detect the species.

Brown and rainbow trout were detected at sites Tantangara and Eucumbene Reservoirs and adjacent waterways where they are expected to occur. Samples upstream of the waterfall along Tantangara Creek where critical *Galaxias tantangara* habitat exists were negative for trout species.

## Background

The Snowy Hydro Scheme incorporates a number of reservoirs and river systems in the Kosciuszko National Park, New South Wales. New hydrologic connections between separate catchment areas are being established to increase the capacity of Snowy Hydro's hydro-electric Scheme (Snowy 2.0) with associated construction and operational activities. This increases the risk of facilitating dispersal of aquatic organisms into catchment areas where they don't currently occur. Alien species (native or introduced) have the potential for significant detrimental impacts (i.e. predation, competition, pathogens) on resident native and/or recreational fish species if they were to become established (Koehn 2004; Crowl *et al.* 1992; Forsyth *et al.* 2013; Russell *et al.* 2012).

To understand the current distribution of pest fish within catchments connected to the Snowy Scheme, on behalf of Snowy Hydro, EnviroDNA has implemented a comprehensive surveillance program using environmental DNA to assess the potential presence of several invasive fish species in different catchment areas. Environmental DNA (eDNA) is a non-invasive sampling technique that detects traces of genetic material from a target species secreted into its surrounding environment (i.e. water). Quantitative comparisons with traditional sampling methods have demonstrated that eDNA methods can be superior in terms of sensitivity and cost efficiency, particularly for scarce, elusive or cryptic species (Biggs *et al.* 2015; Smart *et al.* 2015; Thomsen *et al.* 2012; Valentini *et al.* 2016; Lugg *et al.* 2018; McColl-Gausden *et al.* 2020), enabling effective detection of species at low densities and at all life stages. High detection probabilities are critical to reduce the incidence of false negatives in monitoring surveys (assuming a species is absent when it is actually present), which is particularly important when assessing early incursions of invasive species (Mehta *et al.* 2007). However, the replication required to achieve high detection rates with traditional techniques is often unfeasible. The high sensitivity of eDNA methods is particularly powerful for early detection of incursions of alien species (Dejean *et al.* 2012; Furlan and Gleeson 2016; Robson *et al.* 2016).

The current pest fish eDNA surveys complement and build on previous monitoring undertaken annually since 2019 (e.g. Weeks *et al.* 2019; Griffiths *et al.* 2024). During this project, eDNA was used to primarily assess the presence of redfin (*Perca fluviatilis*), eastern mosquitofish (*Gambusia holbrooki*), and climbing galaxias (*Galaxias brevipinnis*) in Lake Eucumbene and Tantangara Reservoir, as well as waterways of the middle and upper Murrumbidgee catchment areas upstream and downstream of Tantangara Reservoir. *Gambusia holbrooki* and *P. fluviatilis* are known to be present in Talbingo Reservoir and sections of the Murrumbidgee catchment below Tantangara Reservoir. *G. brevipinnis* is considered endemic to the Lake Eucumbene catchment and has previously been detected in the Yarrangobilly River, a tributary of Talbingo Reservoir (Griffiths *et al.* 2017; Weeks *et al.* 2019; Griffiths *et al.* 2020, 2021). These species are expected to be absent elsewhere in the surveyed area outside of these known distributions. Recent surveys also included samples to explore the presence of several trout species (*Salmo trutta*, *Oncorhynchus mykiss*, *S. fontinalis*).

# Methods

## Water sampling

A comprehensive pest fish surveillance program has been developed based on existing knowledge of distributions and expected activities associated with Snowy 2.0 (Raadik and Lintermans 2022). The purpose of the program is to ensure early detection of new incursions or range expansions of key pest fish species to protect existing aquatic values. Sites surveyed during the 2025 monitoring were in accordance with the program and are largely consistent with those surveyed previously (Griffiths *et al.* 2022, 2023) with additional sites in the Middle Murrumbidgee catchment area added (Griffiths *et al.* 2024). Sites were sampled at Talbingo Reservoir as positive controls for *P. fluviatilis*, in Gang Gang Creek as a positive control for *G. brevipinnis* and in the Upper Murrumbidgee for trout species.

Water sampling attempted to target suitable habitat for the relevant species where possible. For example, sampling sites within reservoirs were focused around edge habitat, tributary inlets and where potentially suitable habitat was identified for *P. fluviatilis* and *G. holbrooki* (e.g. vegetation, rocks, snags). In river and stream locations, sampling focused on *G. brevipinnis* habitat preferences where possible (e.g. clear fast-flowing shady streams with rocks, boulders and logs).

Sampling was undertaken by EnviroDNA and Austral Research and Consulting with staff from Snowy Hydro during February 2025. Sampling in Lake Eucumbene and Tantangara Reservoir was primarily by boat while other sites were accessed by vehicle and foot. In total, 92 sites were sampled across the six subcatchment areas – Talbingo Reservoir ($n$ = 3), Upper Eucumbene ($n$ = 1), Lake Eucumbene ($n$ = 16), Tantangara Reservoir ($n$ = 15), Upper Murrumbidgee ($n$ = 19) and Middle Murrumbidgee ($n$ = 38).

At each site, water samples were collected and filtered by passing 0.51-8.00 L of water (average 3.30 L) through a 5 μM self-preserving Smith Root filter using an eDNA sampling system (Smith-Root, USA; Thomas *et al.* 2018). If any initial sample volume was <1 L due to the filter clogging from in-stream sediments or algae, a second sample was taken at the site to improve detectability. Two replicate samples were achieved in the smaller lotic systems where DNA is expected to be distributed more homogenously due to the flow of water. Four replicate samples were obtained in the larger lentic systems to improve detection where DNA may be more patchily dispersed and overall water volumes are greater. Each filter was divided in half prior to analysis to create two replicates (apart from sites where a second sample was taken and each sample was processed independently). A total of 246 samples were analysed across all sites.

Filtration was undertaken on site to reduce DNA degradation during transport of whole water samples (Yamanaka et al. 2016). Care was taken to minimise contamination between sites by using clean equipment and gloves at each site and avoiding the transfer of water, soil, or organic matter. The Smith-Root eDNA sampler was designed to minimise contamination risk in the field by using a negative pressure filtration pump where only the filter housing comes in contact with the water at any site with the remainder of the system “upstream” of the filter (Thomas *et al.* 2018). In-field negative controls were taken ($n$ = 6) to check for any sampling or equipment contamination. Negative controls were obtained by filtering approximately 500 mL of DNA-free water, following sampling at sites where the target species are expected to

occur from previous surveys (Appendix 2). Following filtration, all samples were placed in individual snap-lock bags, stored out of sunlight and at ambient temperature before being transported to the laboratory for processing.

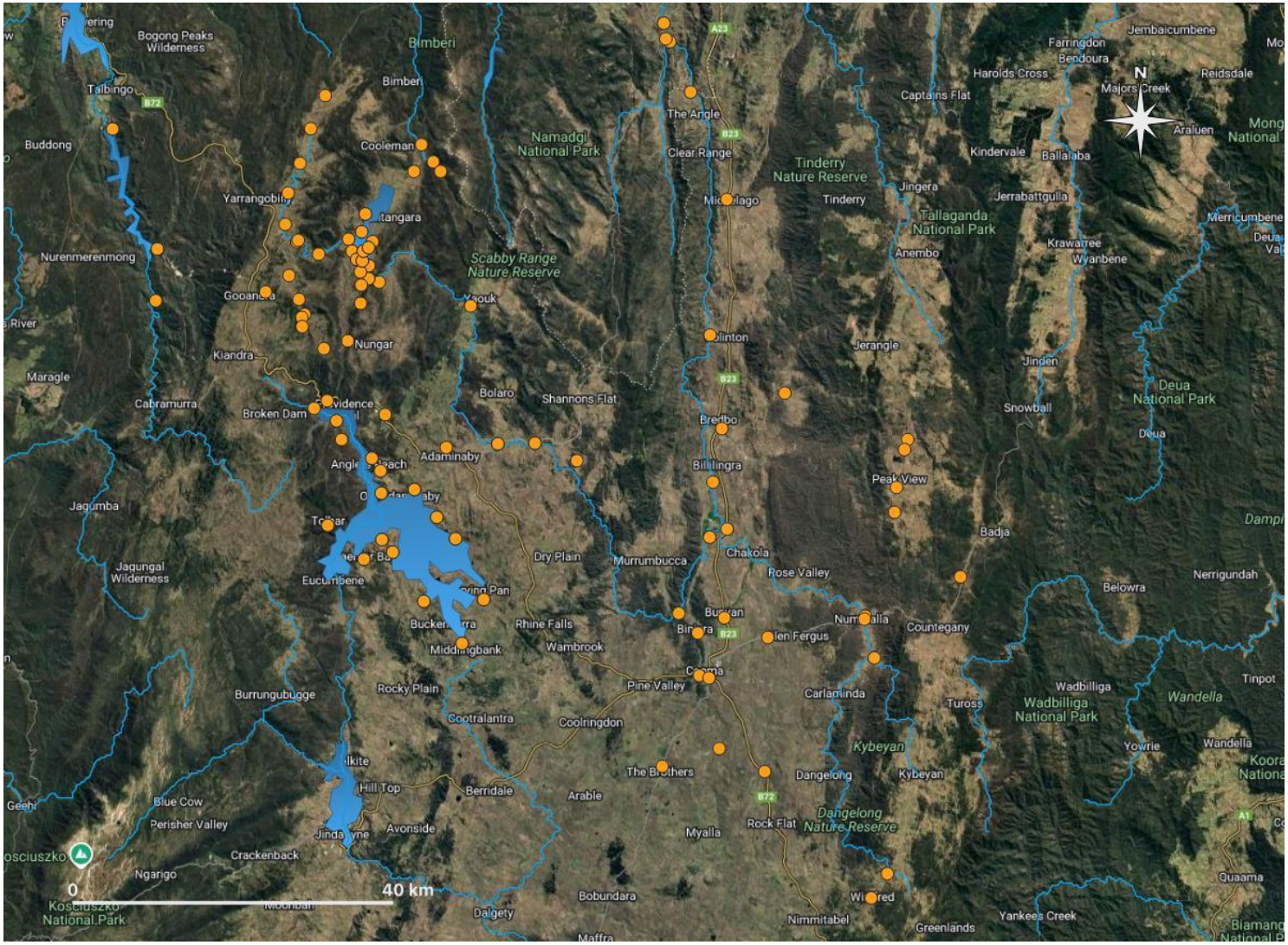


Figure 1. Location of 2025 sampling sites for eDNA surveillance of pest fish species throughout the Snowy Hydro surveillance catchments (see Appendix 1 for further details).

## Target species assays

DNA was extracted from the filters using a commercially available DNA extraction kit (Qiagen Power Soil Pro Kit) which minimises compounds that can inhibit PCR reactions. As part of the quality control process, a portion of the sample elution is retained after the cellular material has been lysed and DNA removed from the filter but prior to DNA extraction and qPCR steps. This allows independent testing of the original samples to determine whether initial results are consistent with repeat testing if required (see below). Species-specific markers and assays for the target species had already been developed and validated (Griffiths *et al.* 2017; Weeks *et al.* 2019; Furlan and Gleeson 2016). Additional species assays targeted brown trout (*Salmo trutta*)(Capo *et al.* 2020), rainbow trout (*Oncorhynchus mykiss*)(Piggott *et al.* 2021) and brook trout (*Salvelinus fontinalis*)(Wilcox *et al.* 2013).

Using a PrimeTime® probe assay (Integrated DNA Technologies), real-time quantitative polymerase chain reactions (qPCR) were carried out on samples to amplify the target DNA. Three laboratory technical replicates (qPCR's) were undertaken for all samples providing 6 to 12 qPCR assays for each site. Negative controls were included at both the DNA extraction and qPCR stages to help identify possible laboratory contamination. If any contamination is found throughout the DNA extraction or qPCR process, qPCR and/or DNA extractions (using the retained portion of the original elution) are repeated as part of the quality control process.

For this project we consider three possible outcomes for testing based on single species target assays using qPCR across samples at the site level; 'negative' for the target species DNA (no qPCR technical replicates positive out of all samples tested), 'positive' for the target species DNA (at least 3 of 12 or at least 2 of 6 qPCR positives per site) or an 'equivocal' result (less than 3 of 12 or less than 2 of 6 qPCR positives per site). Having an 'equivocal' category can be considered somewhat conservative (see Hyatt *et al.* 2007) but can minimise the chance of false positives. While trace amounts of DNA may indicate the target species is actually present in low abundance, it may also arise from sample contamination through the sampling or laboratory screening process which is minimised though careful field and laboratory protocols as described above. Facilitated movement of DNA between waterbodies can also occur *in situ* via water birds, recreational anglers, water transfers, predator scats, or natural dispersal of DNA from further upstream locations in lotic systems (considered site-level false positives). When 'equivocal' detections occur, further sampling is recommended to confirm the presence or absence of the target species if greater confidence is required. All samples from sites that returned an equivocal result from any replicate sample were re-analysed for confirmation. If the equivocal result could not be corroborated with the second analysis (i.e. all assays were negative), the sample was considered negative.

In recognition of the importance of this project for Snowy Hydro and consequences of both false negatives and false positives, EnviroDNA undertook additional research in 2023 and developed a new *P. fluviatilis* assay targeting a different mitochondrial gene region (ND5). Comparison with the original *P. fluviatilis* assay (Furlan and Gleeson 2016) that targets the 12S mitochondrial gene demonstrates similar performance with Limit of Detection (Thalinger *et al.* 2021) suggesting equivalent sensitivity between the two assays (Figure 2). To provide additional confidence in results, all samples analysed for *P. fluviatilis* used both assays in parallel. This approach was implemented during the Covid-19 pandemic surveillance and can be considered the 'gold standard' for biosecurity or health applications. Samples were only considered positive for *P. fluviatilis* if detections are recorded in both assays. Any

samples with equivocal results were still re-analysed with both assays. If a sample returns a negative result on the re-run, it is considered negative.

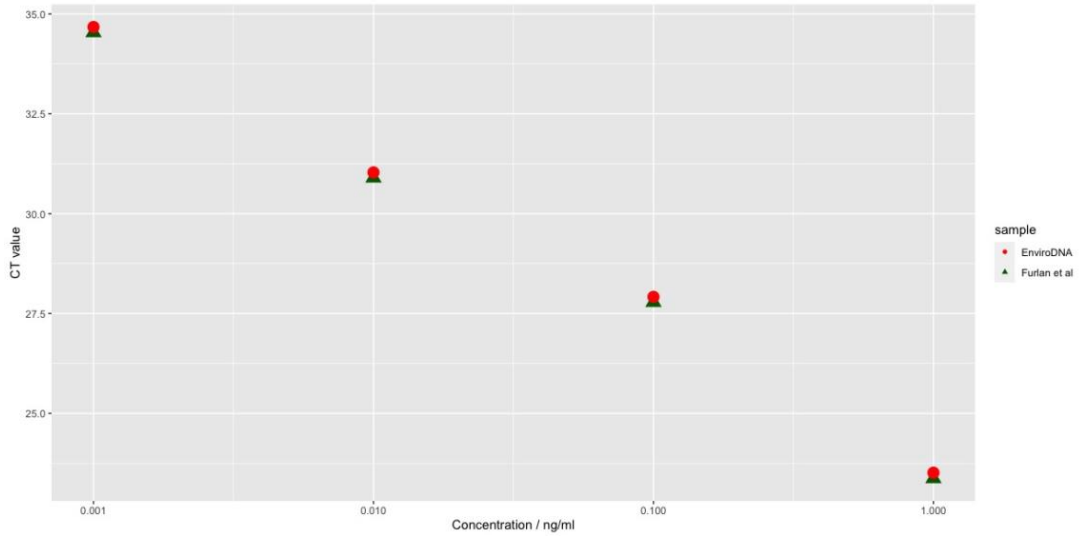


Figure 2. qPCR cycles values (Ct) for detection of redfin DNA at various concentrations using the original 12S probe (Furlan and Gleeson 2016) and the ND5 probe (EnviroDNA).

## Quality assurance

No contamination was detected in either lab (extraction and PCR) or field controls. Positive controls using serial dilutions of extracted tissue DNA for each species returned positive detections and high $R^2$ values indicating species probes performed as expected.

# Findings

## *Perca fluviatilis*

A total of 220 samples from 79 sites were analysed for *P. fluviatilis* eDNA using two assays. The target DNA was positively detected at 3 sites within Talbingo Reservoir and 1 site in the downstream end of the Middle Murrumbidgee (Figure 3, Appendix 1). These are sites where the species is known to occur (Weeks *et al.* 2019; Griffiths *et al.* 2020, 2021, 2022) and there was good agreement between the two assays. One site within the Tantangara Reservoir returned an equivocal result from the 16S assay only with the same result achieved on a re-analysis of the sample. To provide further confidence around this result, the site and surrounding areas were re-sampled in June 2025 (*n* = 14 samples). All samples returned negative results for both *P. fluviatilis* assays (Figure 4, Appendix 2). There was no evidence of *P. fluviatilis* presence Lake Eucumbene (*n* = 16), the Upper Murrumbidgee catchment (*n* = 9), or Middle Murrumbidgee catchment upstream of Angle Crossing (*n* = 34).

## *Gambusia holbrooki*

A total of 192 samples from 72 sites were analysed for *G. holbrooki* eDNA. Positive detections of *G. holbrooki* were recorded at 16 sites throughout the Middle Murrumbidgee catchment (Figure 5, Appendix 1) where the species has been consistently detected previously (Weeks *et al.* 2019; Griffiths *et al.* 2020, 2021, 2022). No evidence of *G. holbrooki* presence was detected in either Lake Eucumbene (*n* = 16), Tantangara Reservoir (*n* = 6), or Talbingo Reservoir (*n* = 3) subcatchments.

## *Galaxias brevipinnis*

A total of 198 samples from 80 sites were analysed for *G. brevipinnis* eDNA. One positive detection was recorded in Gang Gang Creek (GG01) in the Upper Eucumbene subcatchment where the species is endemic and known to occur (Figure 6, Appendix 1). No evidence of *G. brevipinnis* presence was detected in any of the Middle Murrumbidgee (*n* = 38), Tantangara Reservoir (*n* = 13), Talbingo Reservoir (*n* = 3), or Upper Murrumbidgee (*n* = 19) subcatchments.

## Trout species

Brown trout eDNA was positively detected at 7 of the 10 sites surveyed (Figure 6, Appendix 1). Rainbow trout eDNA was positively detected at 5 of the 10 sites surveyed with one further site returning an equivocal result (Figure 7, Appendix 1). No brook trout eDNA was detected at any of the sites (Figure 8, Appendix 1). The distributions of brown and rainbow trout appear very similar with detections in Lake Eucumbene, middle Murrumbidgee River, and lower Tantangara Creek. No trout species were detected at the 2 upstream sites in Tantangara Creek above the Tantangara Creek waterfall and within the habitat of *Galaxias tantangara*.

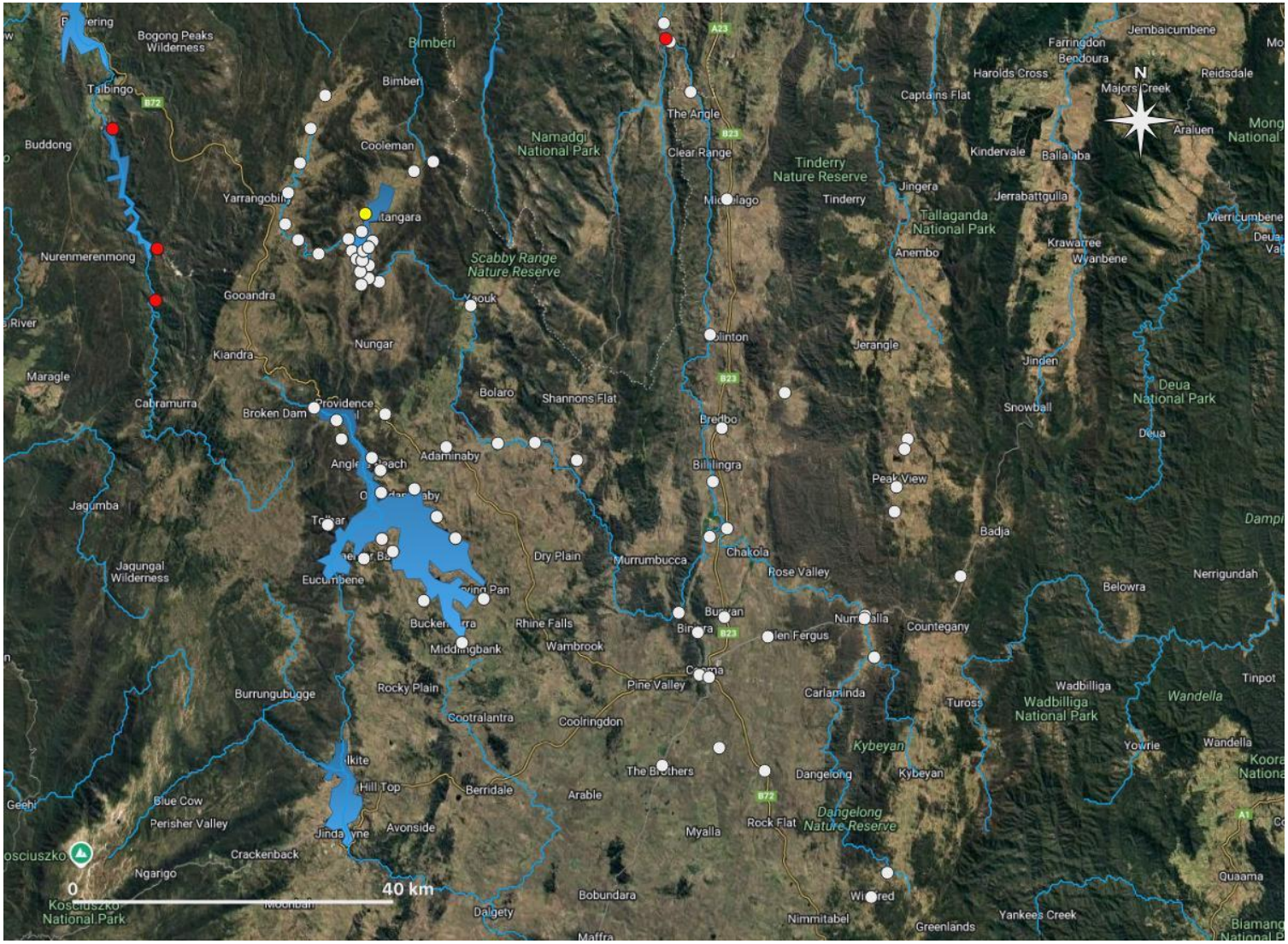


Figure 3. Results of 2025 eDNA surveys for *P. fluviatilis* (red = positive, yellow = equivocal (16S assay only), grey = negative).

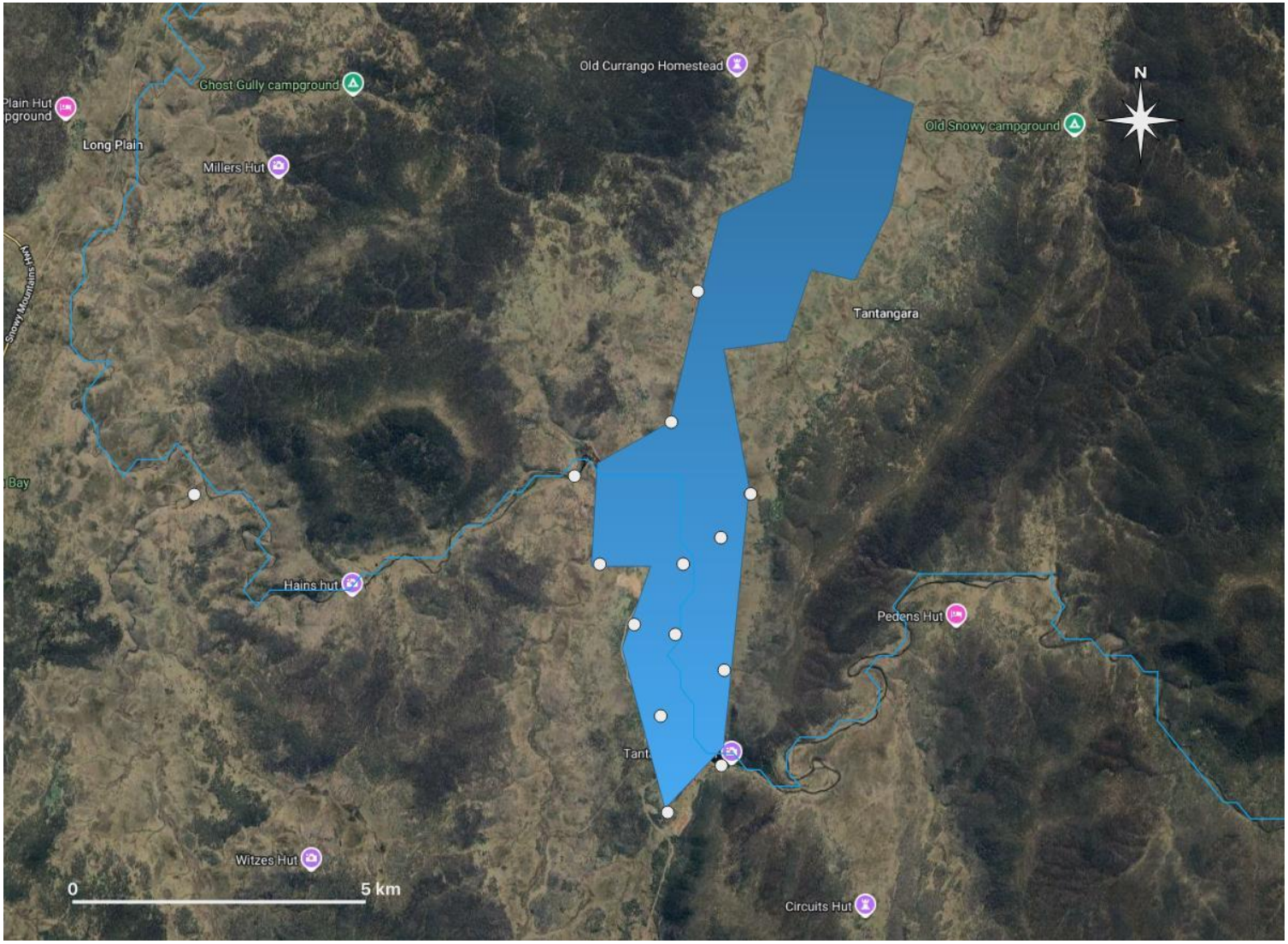


Figure 4. Results of follow-up eDNA surveys for *P. fluviatilis* in Tantangara Reservoir (grey = negative).

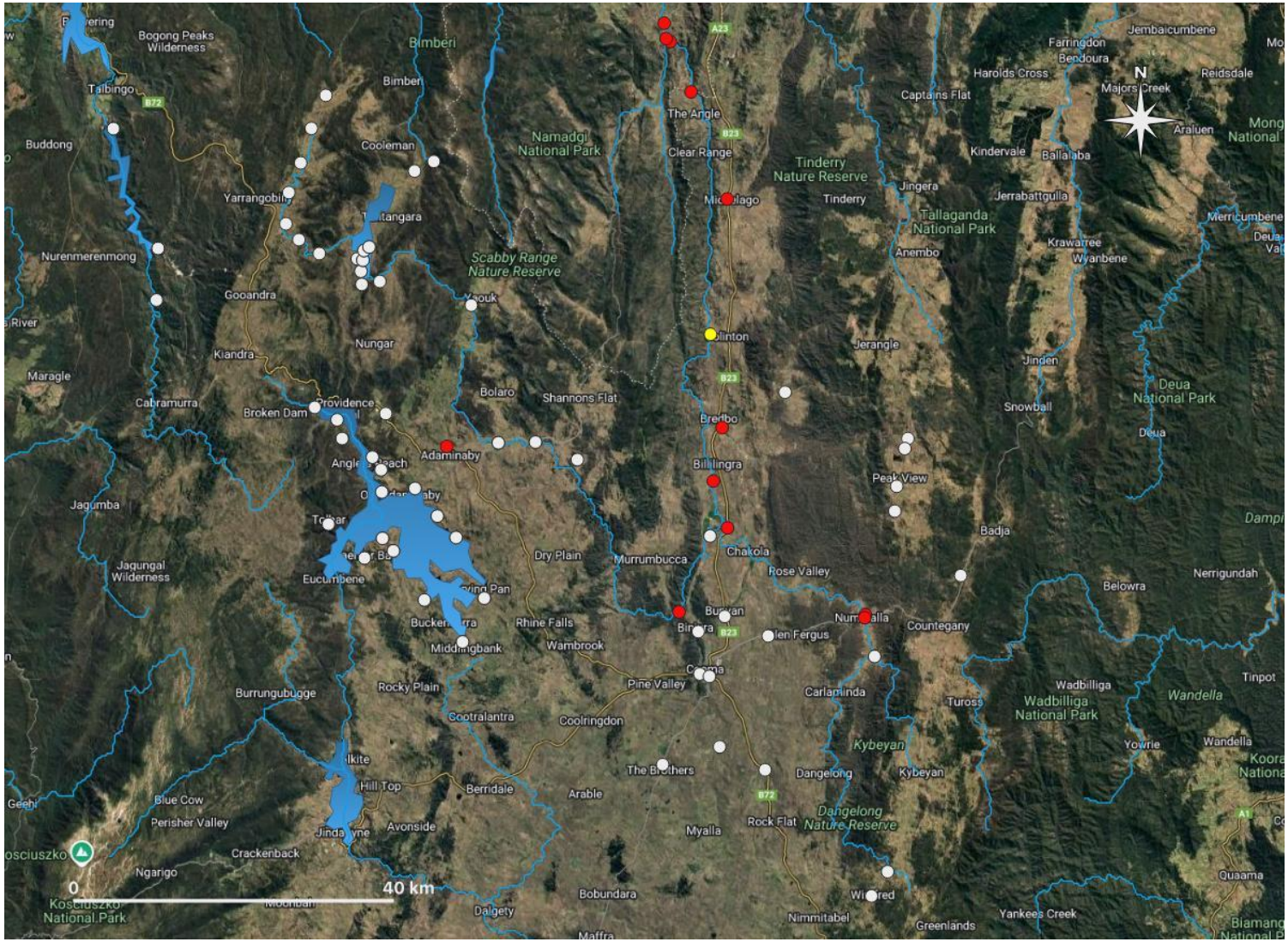


Figure 5. Results of 2025 eDNA surveys for *G. holbrooki* (red = positive, yellow = equivocal, grey = negative).

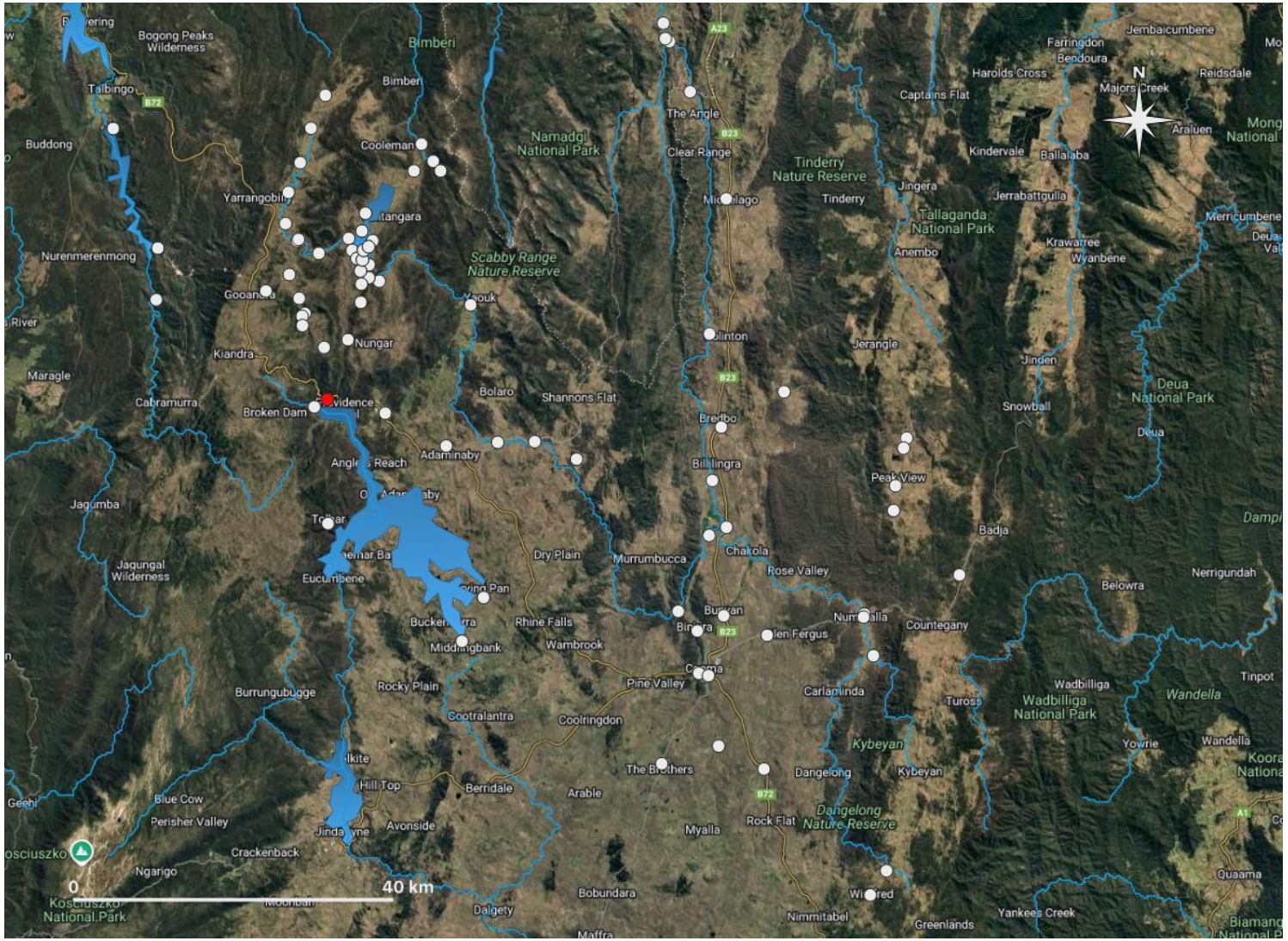


Figure 6. Results of 2025 eDNA surveys for *G. brevipinnis* (red = positive, yellow = equivocal, grey = negative).

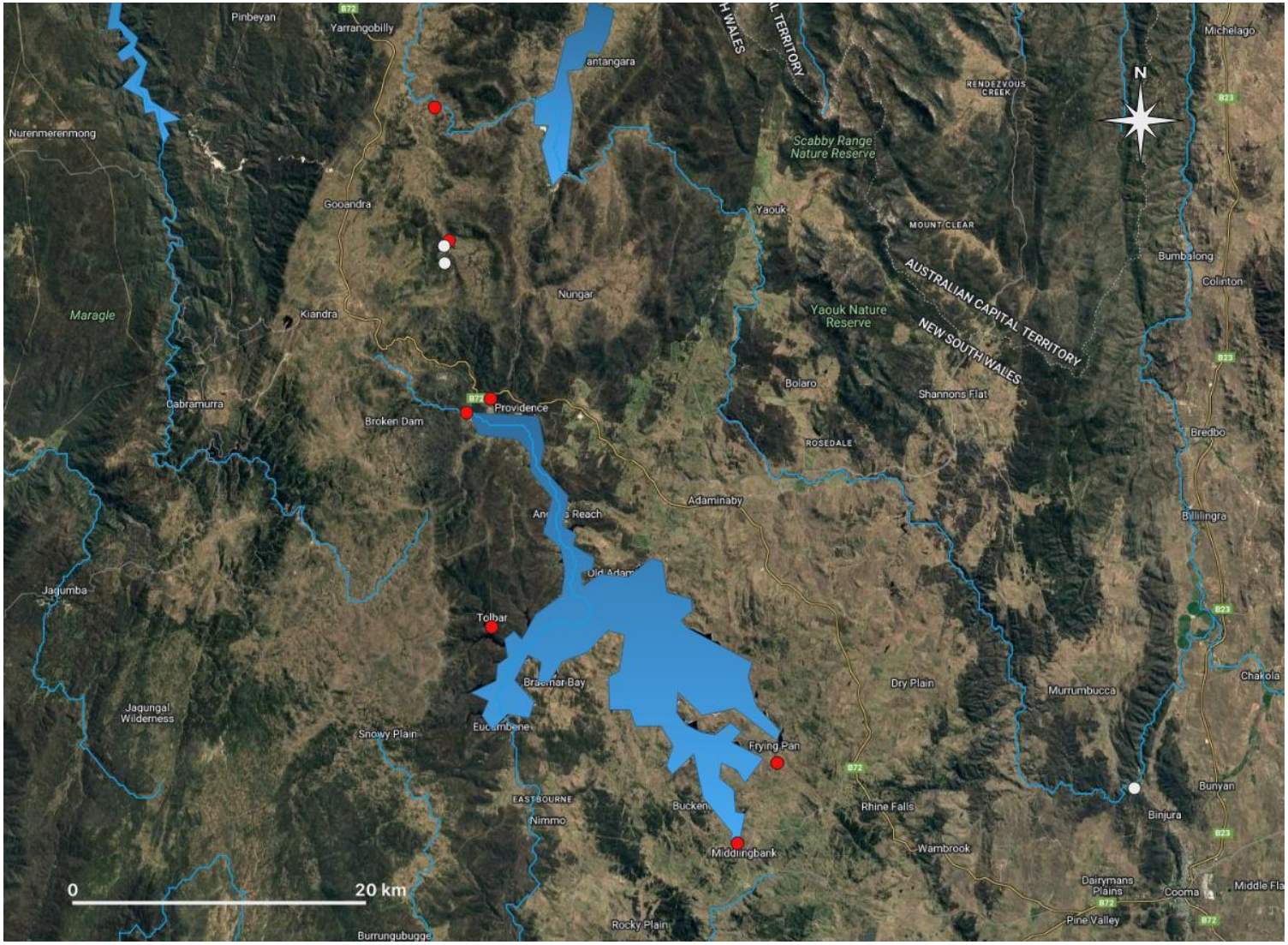


Figure 7. Results of 2025 eDNA surveys for brown trout (red = positive, yellow = equivocal, grey = negative).

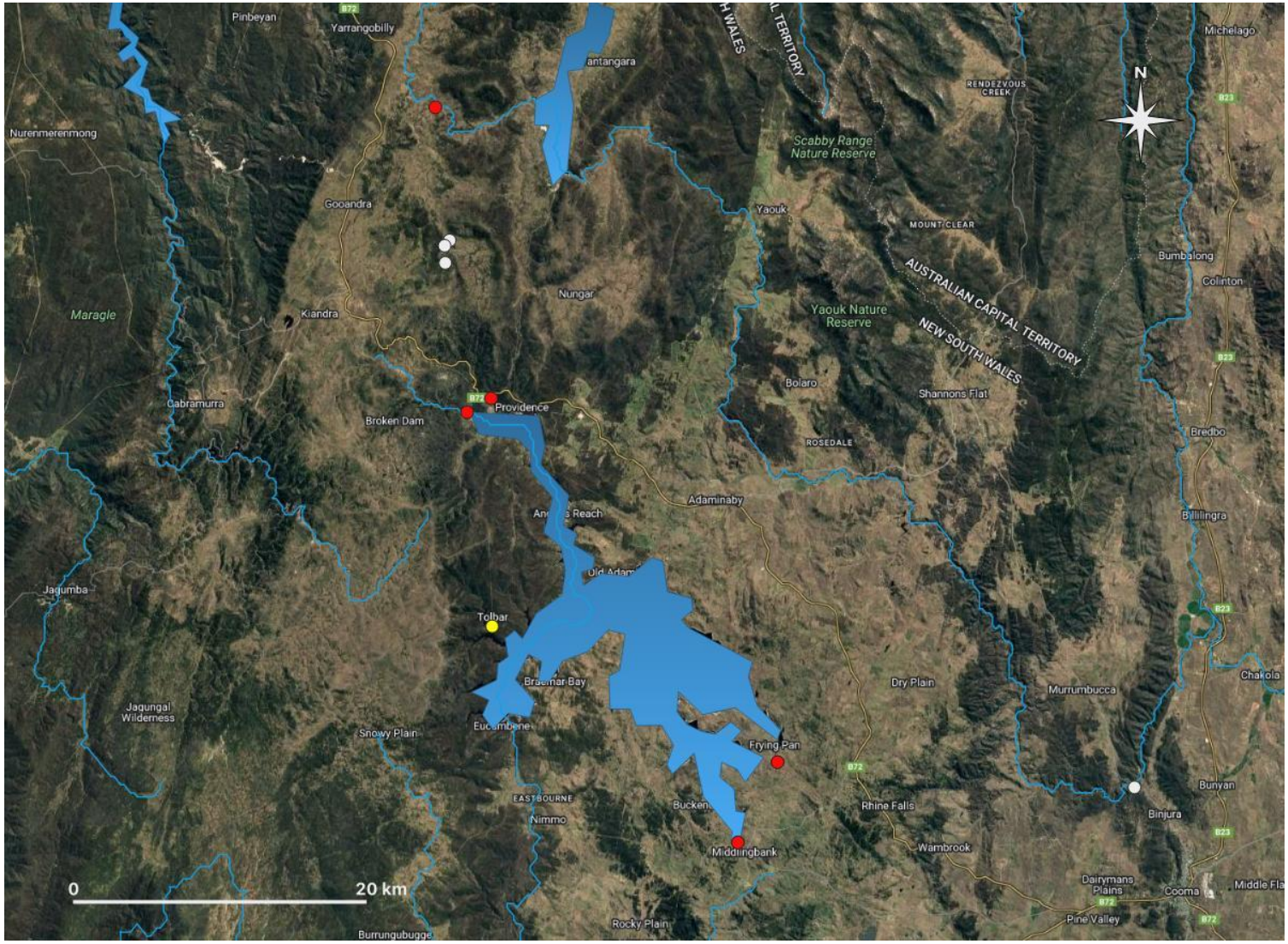


Figure 8. Results of 2025 eDNA surveys for rainbow trout (red = positive, yellow = equivocal, grey = negative).

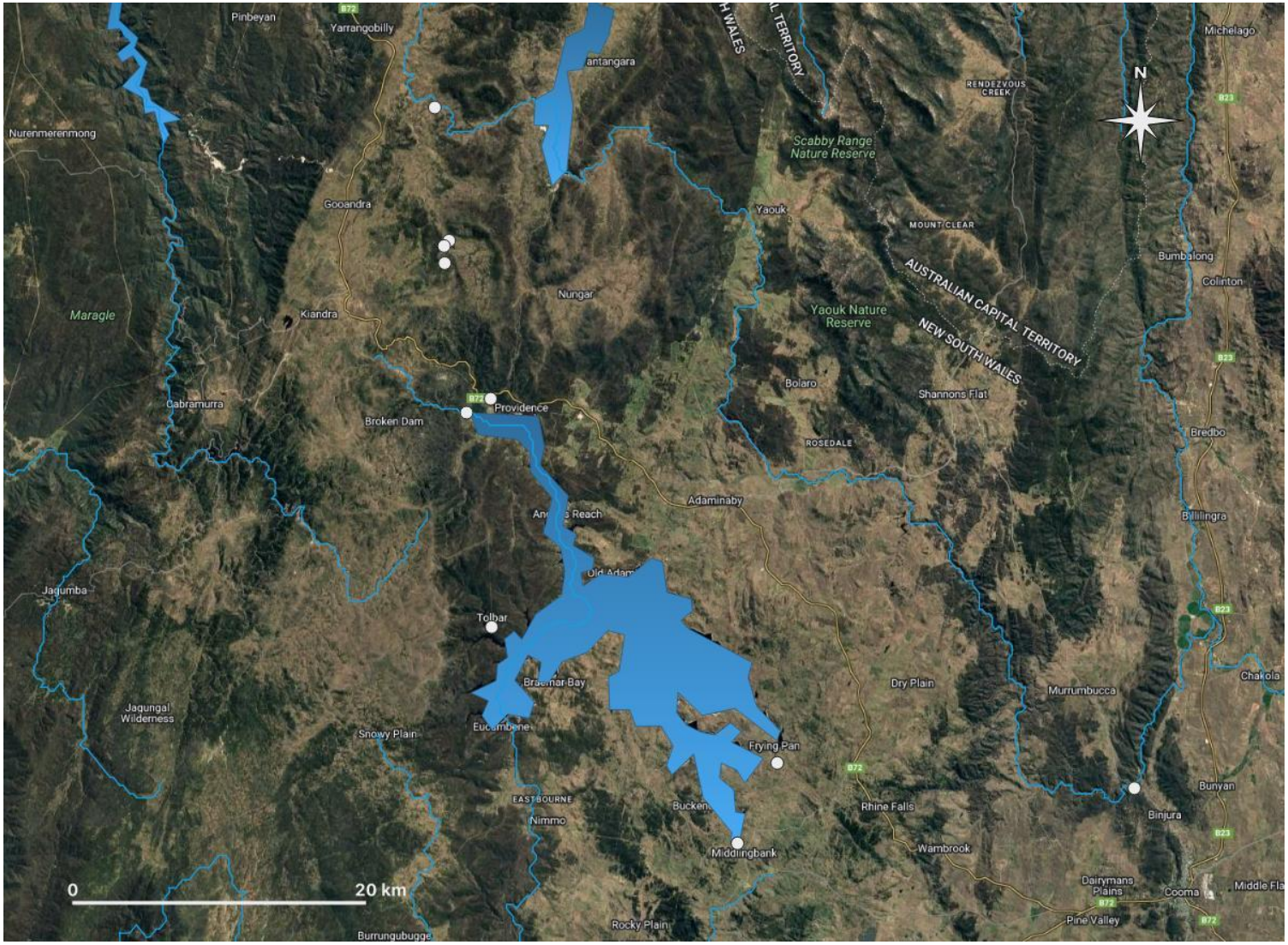


Figure 9. Results of 2025 eDNA surveys for brook trout (red = positive, yellow = equivocal, grey = negative).

## Conclusions

Results from the 2025 eDNA pest fish surveillance program recorded detections of target species where they are expected to occur and no evidence for their presence in subcatchments where they are expected to be absent. *Perca fluviatilis* was detected in Talbingo Reservoir and the most downstream surveyed reach of the Murrumbidgee River. An equivocal detection in one sample from Tantangara Reservoir was not supported by the second assay and could not be repeated with further sampling. Widespread detections of *Gambusia holbrooki* were recorded throughout waterways of the Middle Murrumbidgee. *Galaxias brevipinnis* was only detected at one site in the Upper Eucumbene catchment where the species is expected to occur. The current surveys found no evidence for incursions of the three target species outside of their expected distributions.

Results from the surveys for trout species at a limited subset of sites found no evidence of encroachment into critical *Galaxias tantangara* habitat.

## Acknowledgments

EnviroDNA thank Elizabeth Pope (Snowy Hydro) for project support and comments on this report and Mic Clayton (Snowy Hydro) for help with site access and water sampling field work. We also thank Austral Research and Consulting staff for collecting samples at sites throughout the Talbingo, Tantangara, and Upper Murrumbidgee regions.

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## Appendix 1. Site details and results of eDNA analysis for target species.

| Site | Catchment | Waterway | Latitude | Longitude | Collection date | Volume filtered (ml) | *Perca fluviatilis* 12S | *Perca fluviatilis* ND5 | *Gambusia holbrooki* | *Galaxias brevipinnis* |
|---|---|---|---|---|---|---|---|---|---|---|
| TL1C | Talbingo Reservoir | Tumut River | -35.7623 | 148.3688 | 13/2/2025 | 12000 | positive (12/12) | positive (12/12) | negative (0/12) | negative (0/12) |
| SUE1 | Talbingo Reservoir | Talbingo Reservoir | -35.8204 | 148.3665 | 13/2/2025 | 12000 | positive (11/12) | positive (11/12) | negative (0/12) | negative (0/12) |
| TAL1 | Talbingo Reservoir | Talbingo Reservoir | -35.6274 | 148.3068 | 13/2/2025 | 1400 | positive (6/12) | positive (7/12) | negative (0/12) | negative (0/12) |
| GG1C | Upper Eucumbene | Gang Gang Ck | -35.93246 | 148.60421 | 16/4/2024 | 5880 | | | | positive (6/6) |
| LE1 | Lake Eucumbene | Lake Eucumbene | -35.941 | 148.586 | 17/4/2024 | 5160 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| LE2 | Lake Eucumbene | Lake Eucumbene | -35.955 | 148.617 | 17/4/2024 | 3160 | negative (0/12) | negative (0/12) | negative (0/12) | |
| LE3 | Lake Eucumbene | Lake Eucumbene | -35.976 | 148.624 | 17/4/2024 | 6900 | negative (0/12) | negative (0/12) | negative (0/12) | |
| LE4 | Lake Eucumbene | Lake Eucumbene | -35.997 | 148.666 | 17/4/2024 | 9990 | negative (0/12) | negative (0/12) | negative (0/12) | |
| LE5 | Lake Eucumbene | Lake Eucumbene | -36.011 | 148.678 | 17/4/2024 | 10050 | negative (0/12) | negative (0/12) | negative (0/12) | |
| LE6 | Lake Eucumbene | Lake Eucumbene | -36.036 | 148.679 | 17/4/2024 | 10020 | negative (0/12) | negative (0/12) | negative (0/12) | |
| LE7 | Lake Eucumbene | Lake Eucumbene | -36.032 | 148.725 | 17/4/2024 | 6450 | negative (0/12) | negative (0/12) | negative (0/12) | |
| LE8 | Lake Eucumbene | Lake Eucumbene | -36.063 | 148.756 | 17/4/2024 | 9970 | negative (0/12) | negative (0/12) | negative (0/12) | |
| LE9 | Lake Eucumbene | Lake Eucumbene | -36.087 | 148.782 | 17/4/2024 | 9880 | negative (0/12) | negative (0/12) | negative (0/12) | |
| LE10 | Lake Eucumbene | Lake Eucumbene | -36.155 | 148.821 | 17/4/2024 | 10020 | negative (0/12) | negative (0/12) | negative (0/12) | negative (0/12) |
| LE11 | Lake Eucumbene | Lake Eucumbene | -36.204 | 148.791 | 17/4/2024 | 9930 | negative (0/12) | negative (0/12) | negative (0/12) | negative (0/12) |
| LE12 | Lake Eucumbene | Lake Eucumbene | -36.157 | 148.738 | 17/4/2024 | 10080 | negative (0/12) | negative (0/12) | negative (0/12) | |
| LE13 | Lake Eucumbene | Lake Eucumbene | -36.102 | 148.695 | 17/4/2024 | 10110 | negative (0/12) | negative (0/12) | negative (0/12) | |

| Site | Catchment | Waterway | Latitude | Longitude | Collection date | Volume filtered (ml) | *Perca fluviatilis* 12S | *Perca fluviatilis* ND5 | *Gambusia holbrooki* | *Galaxias brevipinnis* |
|---|---|---|---|---|---|---|---|---|---|---|
| LE14 | Lake Eucumbene | Lake Eucumbene | -36.088 | 148.68 | 17/4/2024 | 8330 | negative (0/12) | negative (0/12) | negative (0/12) | |
| LE15 | Lake Eucumbene | Lake Eucumbene | -36.11 | 148.655 | 17/4/2024 | 10010 | negative (0/12) | negative (0/12) | negative (0/12) | |
| LE16 | Lake Eucumbene | Lake Eucumbene | -36.072 | 148.605 | 17/4/2024 | 7530 | negative (0/12) | negative (0/12) | negative (0/12) | |
| BC1 | Upper Murrumbidgee | | -35.8741 | 148.5996 | 12/2/2025 | 2000 | | | | negative (0/6) |
| GR1 | Upper Murrumbidgee | | -35.645 | 148.7348 | 17/2/2025 | 2000 | | | | negative (0/6) |
| GR2 | Upper Murrumbidgee | | -35.6644 | 148.7511 | 17/2/2025 | 2000 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| GR3 | Upper Murrumbidgee | | -35.6752 | 148.7613 | 17/2/2025 | 2000 | | | | negative (0/6) |
| GU1 | Upper Murrumbidgee | | -35.6752 | 148.7244 | 17/2/2025 | 2000 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| TA1 | Upper Murrumbidgee | | -35.7541 | 148.562 | 10/2/2025 | 2000 | | | | negative (0/6) |
| TA2 | Upper Murrumbidgee | | -35.7921 | 148.5513 | 10/2/2025 | 2000 | | | | negative (0/6) |
| TA3 | Upper Murrumbidgee | | -35.8188 | 148.565 | 11/2/2025 | 2000 | | | | negative (0/6) |
| TA4 | Upper Murrumbidgee | Tantangara Creek | -35.8357 | 148.5728 | 12/2/2025 | 2000 | | | | negative (0/6) |
| TA5 | Upper Murrumbidgee | Tantangara Creek | -35.839 | 148.569 | 20/2/2025 | 2000 | | | | negative (0/6) |
| TA6 | Upper Murrumbidgee | Tantangara Creek | -35.8495 | 148.5695 | 20/2/2025 | 2000 | | | | negative (0/6) |
| Tat1 | Upper Murrumbidgee | | -35.8105 | 148.5188 | 10/2/2025 | 2000 | | | | negative (0/6) |
| UMU1 | Upper Murrumbidgee | | -35.7681 | 148.5923 | 10/2/2025 | 2000 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| UMU2 | Upper Murrumbidgee | | -35.7525 | 148.564 | 10/2/2025 | 2000 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| UMU3 | Upper Murrumbidgee | | -35.7346 | 148.546 | 11/2/2025 | 2000 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| UMU4 | Upper Murrumbidgee | | -35.6994 | 148.55 | 9/2/2025 | 2000 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |

| Site | Catchment | Waterway | Latitude | Longitude | Collection date | Volume filtered (ml) | *Perca fluviatilis* 12S | *Perca fluviatilis* ND5 | *Gambusia holbrooki* | *Galaxias brevipinnis* |
|---|---|---|---|---|---|---|---|---|---|---|
| UMU5 | Upper Murrumbidgee | | -35.666 | 148.5665 | 9/2/2025 | 2000 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| UMU6 | Upper Murrumbidgee | | -35.6271 | 148.5813 | 9/2/2025 | 2000 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| UMU7 | Upper Murrumbidgee | | -35.5899 | 148.6014 | 9/2/2025 | 2000 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| 16 | Upper Murrumbidgee | Nungar Creek | -35.865439 | 148.63270 | 14/2/2025 | 2000 | | | | negative (0/6) |
| 23 | Upper Murrumbidgee | Kelly's Plain Creek | -35.823311 | 148.65051 | 14/2/2025 | 2000 | | | | negative (0/6) |
| TRA1 | Tantangara Reservoir | Tantangara Reservoir | -35.7755 | 148.6528 | 21/2/2025 | 4000 | negative (0/12) | negative (0/12) | negative (0/12) | negative (0/12) |
| TRA2 | Tantangara Reservoir | Tantangara Reservoir | -35.7647 | 148.6543 | 21/2/2025 | 3600 | negative (0/12) | negative (0/12) | negative (0/12) | negative (0/12) |
| TRA3 | Tantangara Reservoir | Tantangara Reservoir | -35.7607 | 148.6614 | 21/2/2025 | 4000 | negative (0/12) | negative (0/12) | negative (0/12) | negative (0/12) |
| TR1 | Tantangara Reservoir | Tantangara Reservoir | -35.788 | 148.65 | 21/2/2025 | 4000 | negative (0/12) | negative (0/12) | negative (0/12) | negative (0/12) |
| TR2 | Tantangara Reservoir | Tantangara Reservoir | -35.774 | 148.645 | 21/2/2025 | 4000 | negative (0/12) | negative (0/12) | negative (0/12) | negative (0/12) |
| TR3 | Tantangara Reservoir | Tantangara Reservoir | -35.7648 | 148.6385 | 19/2/2025 | 12000 | negative (0/12) | negative (0/12) | | negative (0/12) |
| TR4 | Tantangara Reservoir | Tantangara Reservoir | -35.7513 | 148.6337 | 19/2/2025 | 12000 | negative (0/12) | negative (0/12) | | negative (0/12) |
| TR5 | Tantangara Reservoir | Tantangara Reservoir | -35.743 | 148.652 | 19/2/2025 | 4000 | negative (0/12) | negative (0/12) | | negative (0/12) |
| TR6 | Tantangara Reservoir | Tantangara Reservoir | -35.723 | 148.657 | 19/2/2025 | 3400 | equivocal (1/12) | negative (0/12) | | negative (0/12) |
| TR10 | Tantangara Reservoir | Tantangara Reservoir | -35.754 | 148.667 | 19/2/2025 | 3200 | negative (0/12) | negative (0/12) | | negative (0/12) |
| TR11 | Tantangara Reservoir | Tantangara Reservoir | -35.781 | 148.662 | 20/2/2025 | 4000 | negative (0/12) | negative (0/12) | | negative (0/12) |
| TR12 | Tantangara Reservoir | Tantangara Reservoir | -35.795577 | 148.66145 | 20/2/2025 | 4000 | negative (0/12) | negative (0/12) | | negative (0/12) |
| TR13 | Tantangara Reservoir | Tantangara Reservoir | -35.80275 | 148.65132 | 21/2/2025 | 4000 | negative (0/12) | negative (0/12) | negative (0/12) | negative (0/12) |
| ALUM1 | Middle Murrumbidgee | Alum Creek | -35.999664 | 148.95011 | 23/2/2025 | 2550 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |



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| Site | Catchment | Waterway | Latitude | Longitude | Collection date | Volume filtered (ml) | *Perca fluviatilis* 12S | *Perca fluviatilis* ND5 | *Gambusia holbrooki* | *Galaxias brevipinnis* |
|---|---|---|---|---|---|---|---|---|---|---|
| Badja1 | Middle Murrumbidgee | Big Badja River | -36.173513 | 149.34946 | 23/2/2025 | 5720 | negative (0/6) | negative (0/6) | positive (3/6) | negative (0/6) |
| Badja2 | Middle Murrumbidgee | Big Badja River | -36.12959 | 149.48159 | 23/2/2025 | 5690 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| Bred01 | Middle Murrumbidgee | Bredbo River | -35.963709 | 149.150911 | 24/2/2025 | 3120 | negative (0/6) | negative (0/6) | positive (6/6) | negative (0/6) |
| Bred03 | Middle Murrumbidgee | Bredbo River | -35.976 | 149.4083 | 23/2/2025 | 5470 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| CAM01 | Middle Murrumbidgee | Camerons Creek | -35.94797 | 148.68453 | 23/2/2025 | 800 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| CBC1 | Middle Murrumbidgee | Cooma Back Creek | -36.239848 | 149.119854 | 24/2/2025 | 2460 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| CBC2 | Middle Murrumbidgee | Cooma Back Creek | -36.34106 | 149.0683 | 24/2/2025 | 5330 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| Cele01 | Middle Murrumbidgee | Celeys Creek | -35.987278 | 149.40407 | 23/2/2025 | 5340 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| COOMA 1 | Middle Murrumbidgee | Cooma Creek | -36.192411 | 149.117679 | 25/2/2025 | 2260 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| Cooma2 | Middle Murrumbidgee | Cooma Creek | -36.24247 | 149.1332 | 24/2/2025 | 3600 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| Cooma3 | Middle Murrumbidgee | Cooma Creek | -36.321326 | 149.14729 | 24/2/2025 | 1620 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| Cooma4 | Middle Murrumbidgee | Cooma Creek | -36.17537 | 149.15443 | 25/2/2025 | 3310 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| Cowra2 | Middle Murrumbidgee | Cowra Creek | -36.05743 | 149.39019 | 23/2/2025 | 4340 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| GOOR01 | Middle Murrumbidgee | Goorudee River | -35.98488 | 148.7691 | 24/2/2025 | 2660 | negative (0/6) | negative (0/6) | positive (6/6) | negative (0/6) |
| Gudg01 | Middle Murrumbidgee | Gudgenby River | -35.525942 | 149.07333 | 24/2/2025 | 5000 | positive (2/6) | equivocal (1/6) | positive (6/6) | negative (0/6) |
| Kybeyan 1 | Middle Murrumbidgee | Kybeyan River | -36.36386 | 149.42213 | 24/2/2025 | 2540 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| Kybeyan 2 | Middle Murrumbidgee | Kybeyan River | -36.2202 | 149.36223 | 24/2/2025 | 4050 | negative (0/6) | negative (0/6) | positive (6/6) | negative (0/6) |
| Mich01 | Middle Murrumbidgee | Michelago Creek | -35.706686 | 149.15791 | 24/2/2025 | 3140 | negative (0/6) | negative (0/6) | positive (6/6) | negative (0/6) |
| MR01 | Middle Murrumbidgee | Murrumbidgee Rv | -35.7995 | 148.6762 | 14/2/2025 | 2000 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |

| Site | Catchment | Waterway | Latitude | Longitude | Collection date | Volume filtered (ml) | *Perca fluviatilis* 12S | *Perca fluviatilis* ND5 | *Gambusia holbrooki* | *Galaxias brevipinnis* |
|---|---|---|---|---|---|---|---|---|---|---|
| MR03 | Middle Murrumbidgee | Murrumbidgee Rv | -35.82624 | 148.80301 | 25/2/2025 | 4890 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| MR06 | Middle Murrumbidgee | Murrumbidgee Rv | -35.980784 | 148.84063 | 23/2/2025 | 5020 | negative (0/6) | negative (0/6) | positive (6/6) | negative (0/6) |
| MR06a | Middle Murrumbidgee | Murrumbidgee Rv | -35.979951 | 148.89195 | 23/2/2025 | 3330 | negative (0/6) | negative (0/6) | positive (6/6) | negative (0/6) |
| MR08 | Middle Murrumbidgee | Murrumbidgee Rv | -36.170377 | 149.091151 | 25/2/2025 | 5720 | negative (0/6) | negative (0/6) | positive (2/6) | negative (0/6) |
| MR09a | Middle Murrumbidgee | Murrumbidgee Rv | -36.02368 | 149.13857 | 24/2/2025 | 910 | negative (0/6) | negative (0/6) | positive (4/6) | negative (0/6) |
| MR09b | Middle Murrumbidgee | Murrumbidgee Rv | -36.08527 | 149.13405 | 25/2/2025 | 3740 | negative (0/6) | negative (0/6) | positive (6/6) | negative (0/6) |
| MR10 | Middle Murrumbidgee | Murrumbidgee Rv | -36.076175 | 149.158177 | 25/2/2025 | 3370 | negative (0/6) | negative (0/6) | positive (3/6) | negative (0/6) |
| MR11 | Middle Murrumbidgee | Murrumbidgee Rv | -35.883118 | 149.12699 | 24/2/2025 | 2520 | negative (0/6) | negative (0/6) | equivocal (1/6) | negative (0/6) |
| MR12.1 | Middle Murrumbidgee | Murrumbidgee Rv | -35.58589 | 149.10778 | 24/2/2025 | 1540 | negative (0/6) | negative (0/6) | positive (6/6) | negative (0/6) |
| MR15 | Middle Murrumbidgee | Murrumbidgee Rv | -35.52915 | 149.0789 | 24/2/2025 | 2200 | negative (0/6) | negative (0/6) | positive (4/6) | negative (0/6) |
| MR16 | Middle Murrumbidgee | Murrumbidgee Rv | -35.50839 | 149.0706 | 24/2/2025 | 2570 | negative (0/6) | negative (0/6) | positive (6/6) | negative (0/6) |
| NUM2 | Middle Murrumbidgee | Numeralla River | -36.176884 | 149.34853 | 23/2/2025 | 5380 | negative (0/6) | negative (0/6) | positive (6/6) | negative (0/6) |
| NumCk01 | Middle Murrumbidgee | Numeralla Creek | -36.4607 | 149.3803 | 23/2/2025 | 5510 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| RFC1 | Middle Murrumbidgee | Rock Flat Creek | -36.19728 | 149.21468 | 24/2/2025 | 5330 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| RFC2 | Middle Murrumbidgee | Rock Flat Creek | -36.34698 | 149.21026 | 24/2/2025 | 3060 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| SaL02 | Middle Murrumbidgee | Strike-a-light River | -35.92401 | 149.23806 | 24/2/2025 | 2490 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| Scott01 | Middle Murrumbidgee | Scotts Creek | -36.487742 | 149.35795 | 24/2/2025 | 1470 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |
| Yell01 | Middle Murrumbidgee | Yellow Creek | -36.029638 | 149.39286 | 24/2/2025 | 2930 | negative (0/6) | negative (0/6) | negative (0/6) | negative (0/6) |

| Site | Catchment | Waterway | Latitude | Longitude | Collection date | Volume filtered (L) | *Brown trout* | *Rainbow trout* | *Brook trout* |
|---|---|---|---|---|---|---|---|---|---|
| GG1C | Upper Eucumbene | Gang Gang Ck | -35.93246 | 148.60421 | 12/2/2025 | 2000 | positive (6/6) | positive (6/6) | negative (0/6) |
| LE1 | Lake Eucumbene | Lake Eucumbene | -35.941 | 148.586 | 24/2/2025 | 5160 | positive (6/6) | positive (6/6) | negative (0/6) |
| LE10 | Lake Eucumbene | Lake Eucumbene | -36.155 | 148.821 | 25/2/2025 | 1020 | positive (9/12) | positive (5/12) | negative (0/12) |
| LE11 | Lake Eucumbene | Lake Eucumbene | -36.204 | 148.791 | 25/2/2025 | 9930 | positive (8/12) | positive (5/12) | negative (0/12) |
| LE16 | Lake Eucumbene | Lake Eucumbene | -36.072 | 148.605 | 17/4/2024 | 7530 | equivocal (1/12) | equivocal (1/12) | negative (0/12) |
| TA1 | Upper Murrumbidgee | | -35.7541 | 148.562 | 10/2/2025 | 2000 | positive (6/6) | positive (6/6) | negative (0/6) |
| TA4 | Upper Murrumbidgee | Tantangara Creek | -35.8357 | 148.5728 | 12/2/2025 | 2000 | positive (6/6) | negative (0/6) | negative (0/6) |
| TA5 | Upper Murrumbidgee | Tantangara Creek | -35.839 | 148.569 | 20/2/2025 | 2000 | negative (0/6) | negative (0/6) | negative (0/6) |
| TA6 | Upper Murrumbidgee | Tantangara Creek | -35.8495 | 148.5695 | 20/2/2025 | 2000 | negative (0/6) | negative (0/6) | negative (0/6) |
| MR08 | Middle Murrumbidgee | Murrumbidgee Rv | -36.170377 | 149.091151 | 25/2/2025 | 5720 | negative (0/6) | negative (0/6) | negative (0/6) |

## Appendix 2. Site details and results of eDNA analysis for follow-up *P. fluviatilis* surveys in Tantangara Reservoir.

| Site | Catchment | Waterway | Latitude | Longitude | Collection date | Volume filtered (ml) | *Perca fluviatilis* 12S | *Perca fluviatilis* ND5 |
|---|---|---|---|---|---|---|---|---|
| TR-1 | Tantangara Reservoir | Tantangara Reservoir | -35.788 | 148.65 | 6/3/2025 | 2000 | negative (0/3) | negative (0/3) |
| TR-10 | Tantangara Reservoir | Tantangara Reservoir | -35.754 | 148.667 | 6/3/2025 | 600 | negative (0/3) | negative (0/3) |
| TR-10A | Tantangara Reservoir | Tantangara Reservoir | -35.754 | 148.667 | 6/3/2025 | 1200 | negative (0/3) | negative (0/3) |
| TR-11 | Tantangara Reservoir | Tantangara Reservoir | -35.781 | 148.662 | 6/3/2025 | 2000 | negative (0/3) | negative (0/3) |
| TR-12 | Tantangara Reservoir | Tantangara Reservoir | -35.79558 | 148.66145 | 6/3/2025 | 2000 | negative (0/3) | negative (0/3) |
| TR-13 | Tantangara Reservoir | Tantangara Reservoir | -35.80275 | 148.6513 | 6/3/2025 | 1200 | negative (0/3) | negative (0/3) |
| TR-2 | Tantangara Reservoir | Tantangara Reservoir | -35.774 | 148.645 | 6/3/2025 | 2000 | negative (0/3) | negative (0/3) |
| TR-3 | Tantangara Reservoir | Tantangara Reservoir | -35.76477 | 148.63851 | 6/3/2025 | 2000 | negative (0/3) | negative (0/3) |
| TR-4 | Tantangara Reservoir | Tantangara Reservoir | -35.75127 | 148.63374 | 6/3/2025 | 2000 | negative (0/3) | negative (0/3) |
| TR-5 | Tantangara Reservoir | Tantangara Reservoir | -35.743 | 148.652 | 6/3/2025 | 2000 | negative (0/3) | negative (0/3) |
| TR-6 | Tantangara Reservoir | Tantangara Reservoir | -35.723 | 148.657 | 6/3/2025 | 2000 | negative (0/3) | negative (0/3) |
| TR-A1 | Tantangara Reservoir | Tantangara Reservoir | -35.77552 | 148.65276 | 6/3/2025 | 1800 | negative (0/3) | negative (0/3) |
| TR-A2 | Tantangara Reservoir | Tantangara Reservoir | -35.76475 | 148.65425 | 6/3/2025 | 1700 | negative (0/3) | negative (0/3) |
| TR-A3 | Tantangara Reservoir | Tantangara Reservoir | -35.7607 | 148.661366 | 6/3/2025 | 2000 | negative (0/3) | negative (0/3) |

## Appendix 3. Negative controls collected to assess for field sampling contamination.

| Site | Catchment | Waterway | Latitude | Longitude | Collection date | Volume filtered (L) | *Perca fluviatilis* 12S | *Perca fluviatilis* ND5 | *Gambusia holbrooki* | *Galaxias brevipinnis* |
|---|---|---|---|---|---|---|---|---|---|---|
| EC-MR06 | Middle Murrumbidgee | Murrumbidgee Rv | -35.9808 | 148.8406 | 23/2/2025 | 590 | | | negative (0/6) | |
| EC-MR06a | Middle Murrumbidgee | Murrumbidgee Rv | -35.98 | 148.892 | 23/2/2025 | 570 | | | negative (0/6) | |
| EC-MR09b | Middle Murrumbidgee | Murrumbidgee Rv | -36.08527 | 149.13405 | 25/2/2025 | 580 | | | negative (0/6) | |
| EC-MR15 | Middle Murrumbidgee | Murrumbidgee Rv | -35.52915 | 149.0789 | 24/2/2025 | 540 | negative (0/6) | negative (0/6) | | |
| EC-MR16 | Middle Murrumbidgee | Murrumbidgee Rv | -35.50839 | 149.0706 | 24/2/2025 | 510 | negative (0/6) | negative (0/6) | | |

| Site | Catchment | Waterway | Latitude | Longitude | Collection date | Volume filtered (L) | *Brown trout* | *Rainbow trout* | *Brook trout* |
|---|---|---|---|---|---|---|---|---|---|
| EC-LE7 | Lake Eucumbene | Lake Eucumbene | -36.032 | 148.725 | 25/2/2024 | 650 | negative (0/6) | negative (0/6) | negative (0/6) |


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# Appendix C

# 2025 EHNV Sample Collection Protocol

# Appendix C – 2025 EHNV Sample Collection Protocol

This protocol outlines the sample collection process that was followed by the contractor in February 2025 to achieve compliance with the Disease Surveillance component of the Snowy 2.0 Biosecurity Risk Management Plan.

## Sample Collection

**Personal and public safety are the key priority at all times.** Sampling will only occur when it is safe to do so and will be in accordance with all safety documentation and legislation.

The target fish species is Redfin. Sampling will be biased towards young of year (YOY) and juvenile fish. Best efforts will be made to lethally sample the numbers of fish presented in Table 4 for EHNV analysis using qPCR testing and serology.

Fish collection will be undertaken using electrofishing, netting or other methods of capturing fish that aim to collect fish that may be elusive and/or are not necessarily feeding. The collection of unwell or injured fish or fish showing unusual external signs (including signs of disease) will be prioritised.

**Table 4: Surveillance design for detecting EHNV in Talbingo reservoir.**

| Location | Water Temperature | Time of Year | No. of samples and species targeted for lethal testing by qPCR and serology |
|---|---|---|---|
| Talbingo Reservoir | >19°C | Dec-Feb | Redfin YOY (n ≥ 156) (qPCR testing only) |
| Talbingo Reservoir | >19°C | Dec-Feb | Redfin juveniles or adults (n ≥ 156) |

Every fish collected will be visually examined for the presence of Lernaea. Non-lethal sampling of desirable species will involve brief, gentle handling of freshly captured fish including close visual observation of the entire body surface (including fins and under opercula) prior to their release at the site of capture.

In order to confirm a positive detection in an area where the parasite is not already confirmed to occur (which includes Talbingo), where appropriate, voucher specimens will be dissected from the infected fish, and fixed in 70% ethanol before being sent to an appropriate person/facility for official identification. If the affected fish species is uncommon or rare, photographs may be taken in lieu of a sample.

### Geographic Partitioning and effort

The reservoir will be partitioned into at least 10 units with fish in each unit to be collected and bagged separately (Figure 5). Fish from each unit will be analysed to account for disease clustering.

The level of sampling effort applied to each area will be at the discretion of the ecologist undertaking the works. As an indication, each area will be sampled for up to one full day or until at least 16-30 fish of each age class are collected.

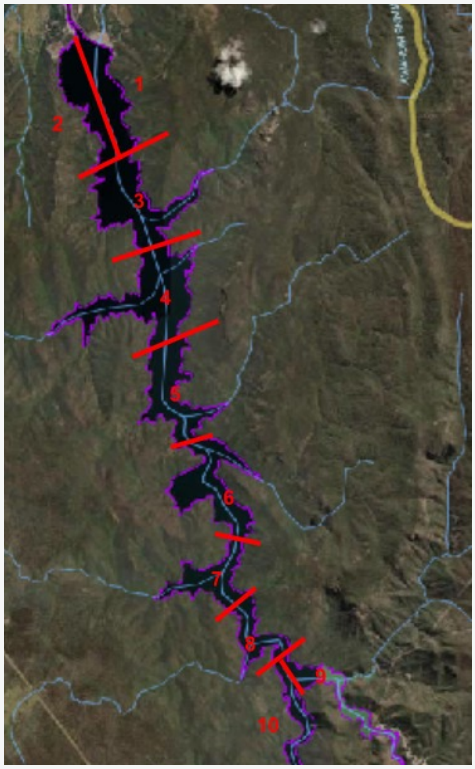
If more than the required number of Redfin are collected, additional fish will be analysed for qPCR using pooled sampling. If insufficient Redfin of each age class can be collected, other age classes will be substituted.

### Record keeping and reporting

Records of all Redfin are to be collected and provided in a table indicating their sample number, age class, analysis type, the geographic area they were collected from and whether Lernaea was present. Records of other fish species observed are also to be made.

The level of effort (hours in area, methods used, equipment settings, on time etc. are all to be recorded and provided to Snowy Hydro.

Each day, an email will be sent to Snowy Hydro detailing the activities and number of fish caught that day and the plan for the following day.




| | |
|---|---|
| Tal01 | Talbingo Dam Area |
| Tal02 | Talbingo Spillway Area |
| Tal03 | Landers Creek Arm |
| Tal04 | Honeysuckle Creek Arm |
| Tal05 | Lick Hole Creek Arm |
| Tal06 | Glendower Creek Arm |
| Tal07 | Long Creek Arm |
| Tal08 | Plain Creek Arm |
| Tal09 | Yarrangobilly River Arm |
| Tal010 | Tumut River Arm |

**Figure 5: Indicative geographic partitioning of Talbingo Reservoir**

## EHNV Sample Preparation

### qPCR

Fish will be euthanised and placed in household snaplock bags, or equivalent, with identifier labels both inside and outside of the sample bag and frozen.

Every fish will be given a unique identifier including the geographical area it was collected from.

Small Juvenile fish may be bagged together when collected from the same location

Frozen fish will be sent to the EMAI every Monday in an esky.

The COC will advise if individual fish are to be analysed individually, analysed in a pooled sample or retained for potential future analysis.

As a general rule, for qPCR sampling Fish 1-16 from each age class and each area will be analysed with any additional fish to be retained in storage by the EMAI until the completion of sampling. At this time, any additional fish will be analysed at random individually to make up a total of 156 individual samples with the remainder pooled into groups of 5 and analysed.

Similarly, for the blood sampling the first 16 samples of adult fish from each geographic area will be analysed, while the remainder will be held until the completion of sampling to determine if analysis is required to meet the target number of samples.

### Serology

Blood samples will be attempted to be collected from all adult fish captured prior to euthaniasia (these same fish will also be retained for qPCR testing)

1-2mL of blood will be attempted to be collected in each sample using 0.75" needles and stored in paediatric blood tubes. The samples do not need to be centrifuged. If more than 0.2mL can be collected, samples with will still be sent for analysis.

Samples will be refrigerated, not frozen, and sent to the EMAI in an esky with an ice brick (or frozen fish) (insulation e.g. bubble wrap between blood tubes and ice to prevent freezing)

Samples will be shipped on a Monday and Wednesday or Thursday using an overnight courier if available with a view to arriving at the EMAI chilled and within 5 days of collection.

# Appendix D

# EHNV and Lernaea Results

| Batch | Date Collected | Date Shipped | Collection Method | Site No | Site Name | Fish Type | Length | Weight | qPCR Sample No. | EHNV Real-time PCR Result | ELISA Sample No. | EHNV Antibody ELISA Result | Lernaea? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2/4/2025 | 2/5/2025 | Line Fishing | 4 | Honeysuckle Creek Arm | Adult | 214 | 160 | M25-01605/0013 | Negative | | --- | No Lernaea |
| 1 | 2/4/2025 | 2/5/2025 | Line Fishing | 4 | Honeysuckle Creek Arm | Adult | 264 | 313 | M25-01605/0014 | Positive | | --- | No Lernaea |
| 1 | 2/4/2025 | 2/5/2025 | Line Fishing | 4 | Honeysuckle Creek Arm | Adult | 251 | 251 | M25-01605/0015 | Negative | | --- | No Lernaea |
| 1 | 2/4/2025 | 2/5/2025 | Line Fishing | 4 | Honeysuckle Creek Arm | Adult | 243 | 224 | M25-01605/0016 | Negative | M25-01605/0001 | Negative | No Lernaea |
| 1 | 2/4/2025 | 2/5/2025 | Line Fishing | 4 | Honeysuckle Creek Arm | Adult | 190 | 94 | M25-01605/0017 | Positive | | --- | No Lernaea |
| 1 | 2/4/2025 | 2/5/2025 | Line Fishing | 4 | Honeysuckle Creek Arm | Adult | 199 | 123 | M25-01605/0018 | Negative | M25-01605/0002 | Negative | No Lernaea |
| 1 | 2/4/2025 | 2/5/2025 | Line Fishing | 4 | Honeysuckle Creek Arm | Adult | 223 | 179 | M25-01605/0019 | Negative | M25-01605/0003 | Unsuitable | No Lernaea |
| 1 | 2/4/2025 | 2/5/2025 | Line Fishing | 4 | Honeysuckle Creek Arm | Adult | 186 | 99 | M25-01605/0020 | Negative | M25-01605/0004 | Negative | No Lernaea |
| 1 | 2/4/2025 | 2/5/2025 | Line Fishing | 4 | Honeysuckle Creek Arm | Adult | 185 | 90 | M25-01605/0021 | Negative | M25-01605/0005 | Negative | No Lernaea |
| 1 | 2/4/2025 | 2/5/2025 | Line Fishing | 4 | Honeysuckle Creek Arm | Adult | 162 | 57 | M25-01605/0022 | Negative | M25-01605/0006 | Negative | No Lernaea |
| 1 | 2/4/2025 | 2/5/2025 | Line Fishing | 4 | Honeysuckle Creek Arm | Adult | 196 | 119 | M25-01605/0023 | Negative | M25-01605/0007 | Negative | No Lernaea |
| 1 | 2/4/2025 | 2/5/2025 | Line Fishing | 4 | Honeysuckle Creek Arm | Adult | 177 | 84 | M25-01605/0024 | Negative | | --- | No Lernaea |
| 1 | 2/4/2025 | 2/5/2025 | Line Fishing | 4 | Honeysuckle Creek Arm | Adult | 239 | 207 | M25-01605/0025 | Negative | M25-01605/0008 | Negative | No Lernaea |
| 1 | 2/4/2025 | 2/5/2025 | Line Fishing | 4 | Honeysuckle Creek Arm | Adult | 165 | 69 | M25-01605/0026 | Negative | M25-01605/0009 | Negative | No Lernaea |
| 1 | 2/4/2025 | 2/5/2025 | Line Fishing | 4 | Honeysuckle Creek Arm | Adult | 216 | 153 | M25-01605/0027 | Negative | M25-01605/0010 | Negative | No Lernaea |
| 1 | 2/4/2025 | 2/5/2025 | Line Fishing | 4 | Honeysuckle Creek Arm | Adult | 172 | 82 | M25-01605/0028 | Negative | M25-01605/0011 | Negative | No Lernaea |
| 1 | 2/4/2025 | 2/5/2025 | Line Fishing | 4 | Honeysuckle Creek Arm | Adult | 154 | 48 | M25-01605/0029 | Negative | M25-01605/0012 | Negative | No Lernaea |
| 1 | 2/4/2025 | 2/5/2025 | Line Fishing | 4 | Honeysuckle Creek Arm | Adult | 135 | 35 | M25-01605/0030 | Negative | | --- | No Lernaea |
| 2 | 2/5/2025 | 2/10/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 220 | 165 | M25-01806/0027 | Negative | | --- | No Lernaea |

| Batch | Date Collected | Date Shipped | Collection Method | Site No | Site Name | Fish Type | Length | Weight | qPCR Sample No. | EHNV Real-time PCR Result | ELISA Sample No. | EHNV Antibody ELISA Result | Lernaea? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 2/5/2025 | 2/10/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 181 | 84 | M25-01806/0028 | Negative | | --- | No Lernaea |
| 2 | 2/5/2025 | 2/10/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 190 | 110 | M25-01806/0029 | Negative | | --- | No Lernaea |
| 2 | 2/5/2025 | 2/10/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 198 | 115 | M25-01806/0030 | Negative | | --- | No Lernaea |
| 2 | 2/5/2025 | 2/10/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 184 | 83 | M25-01806/0031 | Negative | | --- | No Lernaea |
| 2 | 2/8/2025 | 2/10/2025 | Line Fishing | 5 | Lick Hole Creek Arm | Adult | 151 | 51 | M25-01806/0013 | Negative | M25-01806/0001 | Negative | No Lernaea |
| 2 | 2/8/2025 | 2/10/2025 | Line Fishing | 5 | Lick Hole Creek Arm | Adult | 160 | 60 | M25-01806/0014 | Negative | M25-01806/0002 | Negative | No Lernaea |
| 2 | 2/8/2025 | 2/10/2025 | Line Fishing | 5 | Lick Hole Creek Arm | Adult | 164 | 61 | M25-01806/0015 | Negative | | --- | No Lernaea |
| 2 | 2/8/2025 | 2/10/2025 | Line Fishing | 5 | Lick Hole Creek Arm | Adult | 183 | 104 | M25-01806/0016 | Negative | M25-01806/0003 | Negative | No Lernaea |
| 2 | 2/8/2025 | 2/10/2025 | Line Fishing | 5 | Lick Hole Creek Arm | Adult | 163 | 59 | M25-01806/0017 | Negative | M25-01806/0004 | Negative | No Lernaea |
| 2 | 2/8/2025 | 2/10/2025 | Line Fishing | 5 | Lick Hole Creek Arm | Adult | 184 | 84 | M25-01806/0018 | Negative | M25-01806/0005 | Negative | No Lernaea |
| 2 | 2/8/2025 | 2/10/2025 | Line Fishing | 5 | Lick Hole Creek Arm | Adult | 135 | 36 | M25-01806/0019 | Negative | M25-01806/0006 | Negative | No Lernaea |
| 2 | 2/8/2025 | 2/10/2025 | Line Fishing | 5 | Lick Hole Creek Arm | Adult | 164 | 58 | M25-01806/0020 | Negative | M25-01806/0007 | Negative | No Lernaea |
| 2 | 2/8/2025 | 2/10/2025 | Line Fishing | 5 | Lick Hole Creek Arm | Adult | 184 | 88 | M25-01806/0021 | Negative | M25-01806/0008 | Negative | No Lernaea |
| 2 | 2/8/2025 | 2/10/2025 | Line Fishing | 5 | Lick Hole Creek Arm | Adult | 184 | 99 | M25-01806/0022 | Negative | M25-01806/0009 | Negative | No Lernaea |
| 2 | 2/8/2025 | 2/10/2025 | Line Fishing | 5 | Lick Hole Creek Arm | Adult | 174 | 75 | M25-01806/0023 | Negative | M25-01806/0010 | Negative | No Lernaea |
| 2 | 2/8/2025 | 2/10/2025 | Line Fishing | 5 | Lick Hole Creek Arm | Adult | 182 | 92 | M25-01806/0024 | Negative | M25-01806/0011 | Negative | No Lernaea |
| 2 | 2/8/2025 | 2/10/2025 | Line Fishing | 5 | Lick Hole Creek Arm | Adult | 170 | 73 | M25-01806/0025 | Negative | | --- | No Lernaea |
| 2 | 2/8/2025 | 2/10/2025 | Line Fishing | 5 | Lick Hole Creek Arm | Adult | 166 | 68 | M25-01806/0026 | Negative | M25-01806/0012 | Negative | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 256 | 203 | M25-01806/0032 | Negative | M25-01806/0044 | Negative | No Lernaea |

| Batch | Date Collected | Date Shipped | Collection Method | Site No | Site Name | Fish Type | Length | Weight | qPCR Sample No. | EHNV Real-time PCR Result | ELISA Sample No. | EHNV Antibody ELISA Result | Lernaea? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 2/9/2025 | 2/10/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 197 | 114 | M25-01806/0033 | Negative | M25-01806/0045 | Negative | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 199 | 111 | M25-01806/0034 | Negative | M25-01806/0046 | Negative | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 218 | 133 | M25-01806/0035 | Negative | M25-01806/0047 | Negative | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 225 | 154 | M25-01806/0036 | Negative | M25-01806/0048 | Negative | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 250 | 247 | M25-01806/0037 | Negative | M25-01806/0049 | Negative | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 193 | 92 | M25-01806/0038 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 219 | 138 | M25-01806/0039 | Negative | M25-01806/0050 | Negative | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 195 | 100 | M25-01806/0040 | Negative | M25-01806/0051 | Negative | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 179 | 71 | M25-01806/0041 | Negative | M25-01806/0052 | Negative | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 203 | 119 | M25-01806/0042 | Negative | M25-01806/0053 | Negative | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 217 | 155 | M25-01806/0043 | Negative | M25-01806/0054 | Negative | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0055 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Line Fishing | 1 | Talbingo Dam Area | Adult | 158 | 60 | M25-01806/0056 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Line Fishing | 1 | Talbingo Dam Area | Adult | 183 | 65 | M25-01806/0057 | Negative | M25-01806/0061 | Negative | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Line Fishing | 1 | Talbingo Dam Area | Adult | 187 | 102 | M25-01806/0058 | Negative | M25-01806/0062 | Negative | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Line Fishing | 1 | Talbingo Dam Area | Adult | 111 | 21 | M25-01806/0059 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Line Fishing | 1 | Talbingo Dam Area | Adult | 165 | 67 | M25-01806/0060 | Negative | M25-01806/0063 | Negative | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0064 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0065 | Negative | | --- | No Lernaea |

| Batch | Date Collected | Date Shipped | Collection Method | Site No | Site Name | Fish Type | Length | Weight | qPCR Sample No. | EHNV Real-time PCR Result | ELISA Sample No. | EHNV Antibody ELISA Result | Lernaea? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0066 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0067 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0068 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0069 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0070 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0071 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0072 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0073 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0074 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0075 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0076 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0077 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0078 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0079 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0080 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0081 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0082 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0083 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0084 | Negative | | --- | No Lernaea |

| Batch | Date Collected | Date Shipped | Collection Method | Site No | Site Name | Fish Type | Length | Weight | qPCR Sample No. | EHNV Real-time PCR Result | ELISA Sample No. | EHNV Antibody ELISA Result | Lernaea? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0085 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0086 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0087 | Negative | | --- | No Lernaea |
| 2 | 2/9/2025 | 2/10/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-01806/0088 | Negative | | --- | No Lernaea |
| 3 | 2/10/2025 | 2/13/2025 | Line Fishing | 1 | Talbingo Dam Area | Adult | 200 | 130 | M25-02089/0001 | Negative | M25-02089/0011 | Negative | No Lernaea |
| 3 | 2/10/2025 | 2/13/2025 | Line Fishing | 1 | Talbingo Dam Area | Adult | 165 | 69 | M25-02089/0002 | Negative | | --- | No Lernaea |
| 3 | 2/10/2025 | 2/13/2025 | Line Fishing | 1 | Talbingo Dam Area | Adult | 172 | 77 | M25-02089/0003 | Negative | | --- | No Lernaea |
| 3 | 2/10/2025 | 2/13/2025 | Line Fishing | 1 | Talbingo Dam Area | Adult | 174 | 84 | M25-02089/0004 | Negative | M25-02089/0012 | Negative | No Lernaea |
| 3 | 2/10/2025 | 2/13/2025 | Line Fishing | 1 | Talbingo Dam Area | Adult | 205 | 97 | M25-02089/0005 | Negative | M25-02089/0013 | Negative | No Lernaea |
| 3 | 2/10/2025 | 2/13/2025 | Line Fishing | 1 | Talbingo Dam Area | Adult | 182 | 93 | M25-02089/0006 | Negative | M25-02089/0014 | Negative | No Lernaea |
| 3 | 2/10/2025 | 2/13/2025 | Line Fishing | 1 | Talbingo Dam Area | Adult | 189 | 99 | M25-02089/0007 | Negative | M25-02089/0015 | Negative | No Lernaea |
| 3 | 2/10/2025 | 2/13/2025 | Line Fishing | 1 | Talbingo Dam Area | Adult | 175 | 71 | M25-02089/0008 | Negative | M25-02089/0016 | Negative | No Lernaea |
| 3 | 2/10/2025 | 2/13/2025 | Line Fishing | 1 | Talbingo Dam Area | Adult | 174 | 69 | M25-02089/0009 | Negative | M25-02089/0017 | Negative | No Lernaea |
| 3 | 2/10/2025 | 2/13/2025 | Line Fishing | 1 | Talbingo Dam Area | Adult | 176 | 79 | M25-02089/0010 | Negative | M25-02089/0018 | Negative | No Lernaea |
| 3 | 2/10/2025 | 2/13/2025 | Gillnetting | 1 | Talbingo Dam Area | YOY | | | M25-02089/0019 | Negative | | --- | No Lernaea |
| 3 | 2/10/2025 | 2/13/2025 | Gillnetting | 1 | Talbingo Dam Area | YOY | | | M25-02089/0020 | Negative | | --- | No Lernaea |
| 3 | 2/11/2025 | 2/13/2025 | Line Fishing | 2 | Talbingo Spillway Area | Adult | 179 | 88 | M25-02089/0021 | Negative | M25-02089/0115 | Negative | No Lernaea |
| 3 | 2/11/2025 | 2/13/2025 | Gillnetting | 2 | Talbingo Spillway Area | Adult | 200 | 122 | M25-02089/0022 | Negative | | --- | No Lernaea |
| 3 | 2/11/2025 | 2/13/2025 | Gillnetting | 2 | Talbingo Spillway Area | Adult | 267 | 319 | M25-02089/0023 | Negative | | --- | No Lernaea |

| Batch | Date Collected | Date Shipped | Collection Method | Site No | Site Name | Fish Type | Length | Weight | qPCR Sample No. | EHNV Real-time PCR Result | ELISA Sample No. | EHNV Antibody ELISA Result | Lernaea? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 2/11/2025 | 2/13/2025 | Gillnetting | 2 | Talbingo Spillway Area | YOY | | | M25-02089/0024 | Negative | | --- | No Lernaea |
| 3 | 2/11/2025 | 2/13/2025 | Gillnetting | 2 | Talbingo Spillway Area | YOY | | | M25-02089/0025 | Negative | | --- | No Lernaea |
| 3 | 2/11/2025 | 2/13/2025 | Gillnetting | 2 | Talbingo Spillway Area | YOY | | | M25-02089/0026 | Negative | | --- | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 7 | Long Creek Arm | Adult | 253 | 226 | M25-02089/0027 | Negative | M25-02089/0047 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 7 | Long Creek Arm | Adult | 207 | 117 | M25-02089/0028 | Negative | M25-02089/0048 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 7 | Long Creek Arm | Adult | 225 | 159 | M25-02089/0029 | Negative | M25-02089/0049 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 7 | Long Creek Arm | Adult | 249 | 215 | M25-02089/0030 | Negative | M25-02089/0050 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 7 | Long Creek Arm | Adult | 235 | 169 | M25-02089/0031 | Negative | M25-02089/0051 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 7 | Long Creek Arm | Adult | 175 | 70 | M25-02089/0032 | Negative | M25-02089/0052 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 7 | Long Creek Arm | Adult | 180 | 73 | M25-02089/0033 | Negative | M25-02089/0053 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 7 | Long Creek Arm | Adult | 199 | 118 | M25-02089/0034 | Negative | M25-02089/0054 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 7 | Long Creek Arm | Adult | 184 | 85 | M25-02089/0035 | Negative | M25-02089/0055 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 7 | Long Creek Arm | Adult | 185 | 93 | M25-02089/0036 | Negative | M25-02089/0056 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 7 | Long Creek Arm | Adult | 206 | 122 | M25-02089/0037 | Negative | M25-02089/0057 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 7 | Long Creek Arm | Adult | 183 | 82 | M25-02089/0038 | Negative | M25-02089/0058 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 7 | Long Creek Arm | Adult | 205 | 119 | M25-02089/0039 | Negative | M25-02089/0059 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 7 | Long Creek Arm | Adult | 202 | 121 | M25-02089/0040 | Negative | M25-02089/0060 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 7 | Long Creek Arm | Adult | 194 | 90 | M25-02089/0041 | Negative | M25-02089/0061 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 7 | Long Creek Arm | Adult | 203 | 119 | M25-02089/0042 | Negative | M25-02089/0062 | Negative | No Lernaea |

| Batch | Date Collected | Date Shipped | Collection Method | Site No | Site Name | Fish Type | Length | Weight | qPCR Sample No. | EHNV Real-time PCR Result | ELISA Sample No. | EHNV Antibody ELISA Result | Lernaea? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 7 | Long Creek Arm | Adult | 204 | 108 | M25-02089/0043 | Negative | M25-02089/0063 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 7 | Long Creek Arm | Adult | 186 | 90 | M25-02089/0044 | Negative | M25-02089/0064 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 7 | Long Creek Arm | Adult | 182 | 77 | M25-02089/0045 | Negative | M25-02089/0065 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 7 | Long Creek Arm | Adult | 197 | 109 | M25-02089/0046 | Negative | M25-02089/0066 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-02089/0067 | Negative | | --- | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-02089/0068 | Negative | | --- | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-02089/0069 | Negative | | --- | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-02089/0070 | Negative | | --- | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-02089/0071 | Negative | | --- | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-02089/0072 | Negative | | --- | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-02089/0073 | Negative | | --- | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-02089/0074 | Negative | | --- | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 187 | 93 | M25-02089/0075 | Negative | M25-02089/0095 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 200 | 111 | M25-02089/0076 | Negative | M25-02089/0096 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 228 | 198 | M25-02089/0077 | Negative | M25-02089/0097 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 194 | 105 | M25-02089/0078 | Negative | M25-02089/0098 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 204 | 123 | M25-02089/0079 | Negative | M25-02089/0099 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 230 | 167 | M25-02089/0080 | Negative | M25-02089/0100 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 204 | 115 | M25-02089/0081 | Negative | M25-02089/0101 | Negative | No Lernaea |

| Batch | Date Collected | Date Shipped | Collection Method | Site No | Site Name | Fish Type | Length | Weight | qPCR Sample No. | EHNV Real-time PCR Result | ELISA Sample No. | EHNV Antibody ELISA Result | Lernaea? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 194 | 105 | M25-02089/0082 | Negative | M25-02089/0102 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 213 | 137 | M25-02089/0083 | Negative | M25-02089/0103 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 182 | 86 | M25-02089/0084 | Negative | M25-02089/0104 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 190 | 94 | M25-02089/0085 | Negative | M25-02089/0105 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 231 | 187 | M25-02089/0086 | Negative | M25-02089/0106 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 182 | 89 | M25-02089/0087 | Negative | M25-02089/0107 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 224 | 145 | M25-02089/0088 | Negative | M25-02089/0108 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 161 | 61 | M25-02089/0089 | Negative | M25-02089/0109 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 189 | 97 | M25-02089/0090 | Negative | M25-02089/0110 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 189 | 99 | M25-02089/0091 | Negative | M25-02089/0111 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 231 | 174 | M25-02089/0092 | Negative | M25-02089/0112 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 251 | 200 | M25-02089/0093 | Negative | M25-02089/0113 | Negative | No Lernaea |
| 3 | 2/12/2025 | 2/13/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 189 | 91 | M25-02089/0094 | Negative | M25-02089/0114 | Negative | No Lernaea |
| 4 | 2/10/2025 | 2/17/2025 | Line Fishing | 1 | Talbingo Dam Area | Adult | 165 | 61 | M25-02339/0003 | Negative | | --- | No Lernaea |
| 4 | 2/10/2025 | 2/17/2025 | Line Fishing | 1 | Talbingo Dam Area | Adult | 170 | 68 | M25-02339/0004 | Negative | | --- | No Lernaea |
| 4 | 2/10/2025 | 2/17/2025 | Line Fishing | 1 | Talbingo Dam Area | Adult | 178 | 86 | M25-02339/0005 | Negative | | --- | No Lernaea |
| 4 | 2/10/2025 | 2/17/2025 | Line Fishing | 1 | Talbingo Dam Area | Adult | 150 | 39 | M25-02339/0006 | Negative | | --- | No Lernaea |
| 4 | 2/10/2025 | 2/17/2025 | Line Fishing | 1 | Talbingo Dam Area | Adult | 168 | 68 | M25-02339/0007 | Negative | | --- | No Lernaea |
| 4 | 2/10/2025 | 2/17/2025 | Line Fishing | 1 | Talbingo Dam Area | Adult | 158 | 54 | M25-02339/0008 | Negative | | --- | No Lernaea |

| Batch | Date Collected | Date Shipped | Collection Method | Site No | Site Name | Fish Type | Length | Weight | qPCR Sample No. | EHNV Real-time PCR Result | ELISA Sample No. | EHNV Antibody ELISA Result | Lernaea? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 2/12/2025 | 2/17/2025 | Line Fishing | 7 | Long Creek Arm | Adult | 168 | 60 | M25-02339/0001 | Negative | | --- | No Lernaea |
| 4 | 2/12/2025 | 2/17/2025 | Line Fishing | 7 | Long Creek Arm | Adult | 168 | 69 | M25-02339/0002 | Negative | | --- | No Lernaea |
| 4 | 2/12/2025 | 2/17/2025 | Line Fishing | 5 | Lick Hole Creek Arm | Adult | 189 | 101 | M25-02339/0009 | Negative | | --- | No Lernaea |
| 4 | 2/12/2025 | 2/17/2025 | Line Fishing | 5 | Lick Hole Creek Arm | Adult | 165 | 59 | M25-02339/0010 | Negative | | --- | No Lernaea |
| 4 | 2/12/2025 | 2/17/2025 | Line Fishing | 5 | Lick Hole Creek Arm | Adult | 227 | 177 | M25-02339/0011 | Negative | | --- | No Lernaea |
| 4 | 2/12/2025 | 2/17/2025 | Line Fishing | 5 | Lick Hole Creek Arm | Adult | 176 | 72 | M25-02339/0012 | Negative | | --- | No Lernaea |
| 4 | 2/12/2025 | 2/17/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 154 | 45 | M25-02339/0013 | Negative | | --- | No Lernaea |
| 4 | 2/12/2025 | 2/17/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 182 | 88 | M25-02339/0014 | Negative | | --- | No Lernaea |
| 4 | 2/12/2025 | 2/17/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 183 | 79 | M25-02339/0015 | Negative | | --- | No Lernaea |
| 4 | 2/12/2025 | 2/17/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 211 | 143 | M25-02339/0016 | Negative | | --- | No Lernaea |
| 4 | 2/12/2025 | 2/17/2025 | Line Fishing | 6 | Glendower Creek Arm | Adult | 192 | 91 | M25-02339/0017 | Negative | | --- | No Lernaea |
| 4 | 2/13/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 206 | 115 | M25-02339/0044 | Negative | M25-02339/0073 | Negative | No Lernaea |
| 4 | 2/13/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 174 | 67 | M25-02339/0045 | Negative | M25-02339/0074 | Negative | No Lernaea |
| 4 | 2/13/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 161 | 59 | M25-02339/0046 | Negative | M25-02339/0075 | Negative | No Lernaea |
| 4 | 2/13/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 226 | 109 | M25-02339/0047 | Negative | M25-02339/0076 | Negative | No Lernaea |
| 4 | 2/13/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 168 | 66 | M25-02339/0048 | Negative | M25-02339/0077 | Negative | No Lernaea |
| 4 | 2/13/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 210 | 123 | M25-02339/0049 | Negative | M25-02339/0078 | Negative | No Lernaea |
| 4 | 2/13/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 210 | 116 | M25-02339/0050 | Negative | M25-02339/0079 | Negative | No Lernaea |
| 4 | 2/13/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 171 | 72 | M25-02339/0051 | Negative | M25-02339/0080 | Negative | No Lernaea |

| Batch | Date Collected | Date Shipped | Collection Method | Site No | Site Name | Fish Type | Length | Weight | qPCR Sample No. | EHNV Real-time PCR Result | ELISA Sample No. | EHNV Antibody ELISA Result | Lernaea? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 2/13/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 242 | 193 | M25-02339/0052 | Negative | M25-02339/0081 | Negative | No Lernaea |
| 4 | 2/13/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 253 | 217 | M25-02339/0053 | Negative | | --- | No Lernaea |
| 4 | 2/13/2025 | 2/17/2025 | Gillnetting | 10 | Tumut River Arm | YOY | | | M25-02339/0054 | Negative | | --- | No Lernaea |
| 4 | 2/13/2025 | 2/17/2025 | Gillnetting | 10 | Tumut River Arm | YOY | | | M25-02339/0055 | Negative | | --- | No Lernaea |
| 4 | 2/13/2025 | 2/17/2025 | Gillnetting | 10 | Tumut River Arm | YOY | | | M25-02339/0056 | Negative | | --- | No Lernaea |
| 4 | 2/13/2025 | 2/17/2025 | Gillnetting | 10 | Tumut River Arm | YOY | | | M25-02339/0057 | Negative | | --- | No Lernaea |
| 4 | 2/14/2025 | 2/17/2025 | Line Fishing | 9 | Yarrangobilly River Arm | Adult | 186 | 83 | M25-02339/0018 | Negative | | --- | No Lernaea |
| 4 | 2/14/2025 | 2/17/2025 | Line Fishing | 9 | Yarrangobilly River Arm | Adult | 213 | 127 | M25-02339/0019 | Negative | M25-02339/0024 | Negative | No Lernaea |
| 4 | 2/14/2025 | 2/17/2025 | Line Fishing | 9 | Yarrangobilly River Arm | Adult | 203 | 107 | M25-02339/0020 | Negative | M25-02339/0025 | Negative | No Lernaea |
| 4 | 2/14/2025 | 2/17/2025 | Line Fishing | 9 | Yarrangobilly River Arm | Adult | 180 | 87 | M25-02339/0021 | Negative | M25-02339/0026 | Negative | No Lernaea |
| 4 | 2/14/2025 | 2/17/2025 | Line Fishing | 9 | Yarrangobilly River Arm | Adult | 235 | 169 | M25-02339/0022 | Negative | M25-02339/0027 | Negative | No Lernaea |
| 4 | 2/14/2025 | 2/17/2025 | Line Fishing | 9 | Yarrangobilly River Arm | Adult | 148 | 41 | M25-02339/0023 | Negative | | --- | No Lernaea |
| 4 | 2/15/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 198 | 103 | M25-02339/0028 | Negative | M25-02339/0058 | Negative | No Lernaea |
| 4 | 2/15/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 205 | 110 | M25-02339/0029 | Negative | M25-02339/0059 | Negative | No Lernaea |
| 4 | 2/15/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 174 | 63 | M25-02339/0030 | Negative | M25-02339/0060 | Negative | No Lernaea |
| 4 | 2/15/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 269 | 290 | M25-02339/0031 | Negative | M25-02339/0061 | Negative | No Lernaea |
| 4 | 2/15/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 208 | 119 | M25-02339/0032 | Negative | M25-02339/0062 | Negative | No Lernaea |
| 4 | 2/15/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 182 | 89 | M25-02339/0033 | Negative | M25-02339/0063 | Negative | No Lernaea |
| 4 | 2/15/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 196 | 86 | M25-02339/0034 | Negative | M25-02339/0064 | Negative | No Lernaea |

| Batch | Date Collected | Date Shipped | Collection Method | Site No | Site Name | Fish Type | Length | Weight | qPCR Sample No. | EHNV Real-time PCR Result | ELISA Sample No. | EHNV Antibody ELISA Result | Lernaea? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 2/15/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 194 | 91 | M25-02339/0035 | Negative | M25-02339/0065 | Negative | No Lernaea |
| 4 | 2/15/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 238 | 174 | M25-02339/0036 | Negative | M25-02339/0066 | Negative | No Lernaea |
| 4 | 2/15/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 237 | 186 | M25-02339/0037 | Negative | M25-02339/0067 | Negative | No Lernaea |
| 4 | 2/15/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 220 | 135 | M25-02339/0038 | Negative | M25-02339/0068 | Negative | No Lernaea |
| 4 | 2/15/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 279 | 315 | M25-02339/0039 | Negative | M25-02339/0069 | Negative | No Lernaea |
| 4 | 2/15/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 170 | 58 | M25-02339/0040 | Negative | | --- | No Lernaea |
| 4 | 2/15/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 179 | 72 | M25-02339/0041 | Negative | M25-02339/0070 | Negative | No Lernaea |
| 4 | 2/15/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 194 | 109 | M25-02339/0042 | Negative | M25-02339/0071 | Negative | No Lernaea |
| 4 | 2/15/2025 | 2/17/2025 | Line Fishing | 10 | Tumut River Arm | Adult | 194 | 133 | M25-02339/0043 | Negative | M25-02339/0072 | Negative | No Lernaea |
| 5 | 2/15/2025 | 2/18/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 193 | 97 | M25-02333/0001 | Negative | | --- | No Lernaea |
| 5 | 2/15/2025 | 2/18/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 216 | 166 | M25-02333/0002 | Negative | | --- | No Lernaea |
| 5 | 2/15/2025 | 2/18/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 185 | 94 | M25-02333/0003 | Negative | | --- | No Lernaea |
| 5 | 2/15/2025 | 2/18/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 164 | 69 | M25-02333/0004 | Negative | | --- | No Lernaea |
| 5 | 2/15/2025 | 2/18/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 185 | 92 | M25-02333/0005 | Negative | | --- | No Lernaea |
| 5 | 2/15/2025 | 2/18/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 166 | 77 | M25-02333/0006 | Negative | | --- | No Lernaea |
| 5 | 2/15/2025 | 2/18/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 154 | 55 | M25-02333/0007 | Negative | | --- | No Lernaea |
| 5 | 2/15/2025 | 2/18/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 194 | 112 | M25-02333/0008 | Negative | | --- | No Lernaea |
| 5 | 2/15/2025 | 2/18/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 179 | 90 | M25-02333/0009 | Negative | | --- | No Lernaea |
| 5 | 2/15/2025 | 2/18/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 173 | 77 | M25-02333/0010 | Negative | | --- | No Lernaea |

| Batch | Date Collected | Date Shipped | Collection Method | Site No | Site Name | Fish Type | Length | Weight | qPCR Sample No. | EHNV Real-time PCR Result | ELISA Sample No. | EHNV Antibody ELISA Result | Lernaea? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 2/15/2025 | 2/18/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 196 | 123 | M25-02333/0011 | Negative | | --- | No Lernaea |
| 5 | 2/15/2025 | 2/18/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 168 | 75 | M25-02333/0012 | Negative | | --- | No Lernaea |
| 5 | 2/15/2025 | 2/18/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 199 | 117 | M25-02333/0013 | Negative | | --- | No Lernaea |
| 5 | 2/15/2025 | 2/18/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 164 | 72 | M25-02333/0014 | Negative | | --- | No Lernaea |
| 5 | 2/15/2025 | 2/18/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-02333/0015 | Negative | | --- | No Lernaea |
| 5 | 2/15/2025 | 2/18/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-02333/0016 | Negative | | --- | No Lernaea |
| 5 | 2/15/2025 | 2/18/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-02333/0017 | Negative | | --- | No Lernaea |
| 5 | 2/15/2025 | 2/18/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-02333/0018 | Negative | | --- | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-02333/0019 | Negative | | --- | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-02333/0020 | Negative | | --- | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-02333/0021 | Negative | | --- | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Boat electrofishing | 3 | Landers Creek Arm | YOY | | | M25-02333/0022 | Negative | | --- | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 170 | 63 | M25-02333/0023 | Negative | M25-02333/0026 | Negative | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 168 | 35 | M25-02333/0024 | Negative | M25-02333/0027 | Negative | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Line Fishing | 3 | Landers Creek Arm | Adult | 220 | 156 | M25-02333/0025 | Negative | M25-02333/0028 | Negative | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 176 | 73 | M25-02333/0029 | Negative | M25-02333/0060 | Negative | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 173 | 80 | M25-02333/0030 | Negative | | --- | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 169 | 78 | M25-02333/0031 | Negative | M25-02333/0061 | Negative | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 203 | 131 | M25-02333/0032 | Negative | | --- | No Lernaea |

| Batch | Date Collected | Date Shipped | Collection Method | Site No | Site Name | Fish Type | Length | Weight | qPCR Sample No. | EHNV Real-time PCR Result | ELISA Sample No. | EHNV Antibody ELISA Result | Lernaea? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 228 | 174 | M25-02333/0033 | Negative | | --- | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 183 | 90 | M25-02333/0034 | Negative | | --- | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 192 | 114 | M25-02333/0035 | Negative | M25-02333/0062 | Negative | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 191 | 115 | M25-02333/0036 | Negative | | --- | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 181 | 91 | M25-02333/0037 | Negative | M25-02333/0063 | Negative | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 195 | 107 | M25-02333/0038 | Negative | | --- | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 193 | 111 | M25-02333/0039 | Negative | M25-02333/0064 | Negative | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 211 | 152 | M25-02333/0040 | Negative | M25-02333/0065 | Negative | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 262 | 254 | M25-02333/0041 | Negative | M25-02333/0066 | Negative | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 221 | 174 | M25-02333/0042 | Negative | | --- | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 194 | 115 | M25-02333/0043 | Negative | M25-02333/0067 | Negative | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 154 | 53 | M25-02333/0044 | Negative | | --- | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 170 | 65 | M25-02333/0045 | Negative | | --- | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 196 | 127 | M25-02333/0046 | Negative | | --- | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 173 | 72 | M25-02333/0047 | Negative | | --- | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 170 | 71 | M25-02333/0048 | Negative | M25-02333/0068 | Negative | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 159 | 57 | M25-02333/0049 | Negative | | --- | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 181 | 91 | M25-02333/0050 | Negative | M25-02333/0069 | Negative | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 174 | 84 | M25-02333/0051 | Negative | | --- | No Lernaea |

| Batch | Date Collected | Date Shipped | Collection Method | Site No | Site Name | Fish Type | Length | Weight | qPCR Sample No. | EHNV Real-time PCR Result | ELISA Sample No. | EHNV Antibody ELISA Result | Lernaea? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 180 | 90 | M25-02333/0052 | Negative | M25-02333/0070 | Negative | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 187 | 107 | M25-02333/0053 | Negative | | --- | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Gillnetting | 4 | Honeysuckle Creek Arm | Adult | 208 | 151 | M25-02333/0054 | Negative | M25-02333/0071 | Negative | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Line Fishing | 4 | Honeysuckle Creek Arm | Adult | 206 | 111 | M25-02333/0055 | Negative | | --- | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Line Fishing | 4 | Honeysuckle Creek Arm | Adult | 167 | 58 | M25-02333/0056 | Negative | | --- | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Line Fishing | 4 | Honeysuckle Creek Arm | Adult | 196 | 109 | M25-02333/0057 | Negative | M25-02333/0072 | Negative | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Line Fishing | 4 | Honeysuckle Creek Arm | Adult | 166 | 77 | M25-02333/0058 | Negative | | --- | No Lernaea |
| 5 | 2/17/2025 | 2/18/2025 | Line Fishing | 4 | Honeysuckle Creek Arm | Adult | 181 | 87 | M25-02333/0059 | Negative | M25-02333/0073 | Negative | No Lernaea |

# Appendix E

# CSIRO Positive Detection Verification Report

CSIRO
***Australian Centre for Disease Preparedness (ACDP)***

5 Portarlington Road, Geelong VIC 3220
Postal Address: Private Bag 24
Geelong, VIC 3220 Australia
acdp.csiro.au
ABN 41 687 119 230

Tel: +61 3 5227 5000

# Diagnostic Testing Report

**Final Report**

Department of Regional NSW (PO 4500000314)
Attn: Nicholas Yuen
Primary Industries State Diagnostic Vet Lab
Private Bag 4008
NARELLAN NSW 2567 AUSTRALIA

**SAN:** 25-00878
**Collection Date:** 05-FEB-2025
**Received at AAHL:** 05-Mar-2025
**Report Date:** 07-Mar-2025
**Report Version:** 25-00878-F-V1
**No. Pages:** 2

**Sender:** Nicholas Yuen
Department of Regional NSW (PO 4500000314)

**Ref:** M25-01605_CV25-0783

**Owner:** Elizabeth Pope
NA
NA NSW NA AUSTRALIA

**Examination Requested:** EHNV confirmation

**Submission Information:** fish 2x tissue homogenate (supernatant)

## Molecular Diagnostics

Test: 18S Ribosomal RNA Control - Standard TaqMan PCR

| No. | Specimen ID | Species | Specimen Type | Test Result |
|---|---|---|---|---|
| 1 | M25-01605/0014 | Redfin Perch | Tissue homogenate | POSITIVE |
| 2 | M25-01605/0017 | Redfin Perch | Tissue homogenate | POSITIVE |

*Date Test(s) Completed:* *06-Mar-2025*

Comment: NATA accreditation does not cover the performance of this service. Positive results demonstrate that nucleic acid was extracted successfully and there were no PCR inhibitors present thus validating negative results by the pathogen-specific test(s).

Test: Ranavirus - PCR (Hyatt et al. 2000)

| No. | Specimen ID | Species | Specimen Type | Test Result |
|---|---|---|---|---|
| 1 | M25-01605/0014 | Redfin Perch | Tissue homogenate | POSITIVE |
| 2 | M25-01605/0017 | Redfin Perch | Tissue homogenate | POSITIVE |

*Date Test(s) Completed:* *07-Mar-2025*

Comment: NATA accreditation does not cover the performance of this service.
The amplicon from sample 1 was sequenced. The nucleotide sequence shared 100% identity with EHNV reference sequences.

Test: Ranavirus - TaqMan PCR (WOAH, Pallister et al. 2007)

| No. | Specimen ID | Species | Specimen Type | Test Result |
|---|---|---|---|---|
| 1 | M25-01605/0014 | Redfin Perch | Tissue homogenate | POSITIVE |
| 2 | M25-01605/0017 | Redfin Perch | Tissue homogenate | POSITIVE |

*Date Test(s) Completed:* *06-Mar-2025*

Comment: NATA accreditation does not cover the performance of this service.

## *Summary*

Two tissue homogenate samples were processed and tested with a Ranavirus-specific real-time PCR assay. All samples tested POSITIVE with mean Ct values from 21.96 to 26.02. ADDITIONAL TESTING: All samples also tested POSITIVE with a Ranavirus-specific conventional PCR. The amplicon from 1 sample was sequenced. The nucleotide sequence shared 100% nucleotide identity with EHNV reference sequences. All positive and negative controls performed as expected.

*Yours Faithfully*

Nick Moody - Authorised Signatory

# Appendix F

# Revised BRMP Disease Surveillance Program

# Appendix F – Revised BRMP Disease Surveillance Program

*Revision 2. August 2025*

This disease surveillance program is based on advice provided by Diggles (2022b), Dr Paul Hick from the Elizabeth Macarthur Agricultural Institute (EMAI) and Dr Jeffrey Go from NSW DPIRD, Aquatic Biosecurity.

Surveillance will include both active and passive components.

Following a positive detection of EHNV in Talbingo Reservoir in February 2025 the disease surveillance program has been reviewed. As EHNV has been confirmed present in the Talbingo Reservoir Redfin population, the focus for the program has shifted to determining the potential presence of EHNV in Tantangara Reservoir which is currently considered Redfin and EHNV free.

## Active Surveillance

Targeted active sampling for EHNV will be undertaken in Tantangara Reservoir targeting the summer months between December and February once water temperatures exceed 19°C. Annual surveillance surveys will occur for two consecutive years, to meet the international requirements for declaration of freedom from disease (OIE, 2015).

As Redfin is considered absent from Tantangara Reservoir, the target fish species is Rainbow trout although any non-native species collected during sampling will be sent for laboratory testing for EHNV. Each sampling season, best efforts will be made to lethally sample the numbers of fish presented in Table 5 for EHNV analysis using qPCR testing and if available, serology. Fish collection will be undertaken using electrofishing, netting, lures, baited hooks or other suitable approved methods of capturing fish.

**Table 5: Surveillance design for detecting EHNV in Tantangara reservoir.**

| Location | Water Temperature | Time of Year | No. of samples and species targeted for lethal testing by qPCR and serology |
|---|---|---|---|
| **Tantangara Reservoir** | >19°C | Dec-Feb | Rainbow Trout (n ≥ 156) |

The reservoir will be partitioned into 5-10 units, depending on water levels, with fish in each unit to be collected and bagged separately. Fish from each unit will be analysed to account for disease clustering. The collection of unwell or injured fish or fish showing unusual external signs (including signs of disease) will be prioritised. Sampling effort will occur for up to 10 days. If more than the required number of fish are collected, additional fish will be analysed for qPCR using pooled sampling. In the event that insufficient numbers of fish can be collected, Snowy Hydro will consult with NSW DPIRD on the appropriate course of action.

Chilled samples of whole fish will be maintained at 2-4°C and sent to the laboratory within three days. Alternatively, the samples will be frozen at -20°C prior to transport to the laboratory as soon as practicable. The preferred laboratory to conduct the testing is the OIE Reference Laboratory for infection with EHNV, namely, EMAI. Any non-normal results from qPCR analysis will be tested by conventional PCR and sequence analysis to increase sensitivity and specificity.

If analysis capability is available at the EMAI, blood samples will also be collected from the caudal vein of up to 156 adult fish and placed in labelled tubes and placed on ice or in a portable fridge. The same fish can be tested using qPCR and serology.

Notification of suspected emergency disease and positive test results for EHNV will be undertaken according to legislative requirements.

During pest fish and EHNV surveillance activities, opportunistic visual examination of captured fish for the presence of Lernaea will occur. This will be done by visually examining all relevant fish species, including juvenile and adult Redfin, native species such as Trout Cod, Golden Perch, Mountain Galaxias, as well as exotic Rainbow and Brown Trout and Goldfish that are collected during sampling for EHNV or pest fish. Non-lethal sampling of desirable species will aim to minimise

handling time and stress, and involve brief, gentle handling of freshly captured fish including close visual observation of the entire body surface (including fins and under opercula) prior to their release at the site of capture.

Specific diagnostic tests are not required for Lernaea, however in order to confirm a positive detection in an area where the parasite is not already confirmed to occur, where appropriate, voucher specimens will be dissected from the infected fish and fixed in 70% ethanol before being sent to an appropriate person/ facility for official identification.

This surveillance program will be reviewed following a positive detection of EHNV within the surveillance catchments or following two consecutive years of negative samples within the target area.

## Passive Surveillance

Passive surveillance for EHNV will occur across all surveillance catchments for the duration of the BRMP.

Reports of fish kill[3] events or fish disease in any of the surveillance catchments will trigger a notification to NSW DPIRD in accordance with legislative requirements and the deployment of a sample collection team as soon as reasonably practicable who will seek to collect dead or moribund fish from the relevant location and submit them for EHNV testing. Any affected fish species will be collected and will include a minimum of five and up to 30 moribund or freshly dead fish per location where possible. Visual examination of any affected fish species for Lernaea will also occur.

[3]See: https://www.dpi.nsw.gov.au/fishing/habitat/threats/fish-kills

# Appendix G

# Tantangara Barrier Pre-clearance Report

a u s t r a l

research and consulting

# Stocky Galaxias Pre-disturbance Salvage
# Tantangara Creek Barrier Construction

- Final
- October 2025

Austral Research and Consulting
ABN 73 007 840 779
23 Buntings Rd
Kirkstall Vic 3283 Australia
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# 1. Introduction

Austral Research and Consulting (Austral) were contracted by Snowy Hydro to undertake the salvage of Stocky galaxias (*Galaxias tantangara*) within the dewatering zone of the Tantangara Creek Barrier Project, the construction of which, is a requirement of the Snowy 2.0 Project Consent.

The Project required the diversion of a section of Tantangara Creek upstream of Tantangara Creek waterfall (Figure 1), to facilitate the construction of a concrete barrier to prevent the potential upstream migration of Climbing galaxias (*Galaxias brevipinnis*) into critical habitat for Stocky galaxias, which are listed nationally as critically endangered.

The objective of the salvage was to collect any Stocky galaxias located within the planned dewatering zone and translocate them to an upstream area of Tantangara Creek (Figure 1).

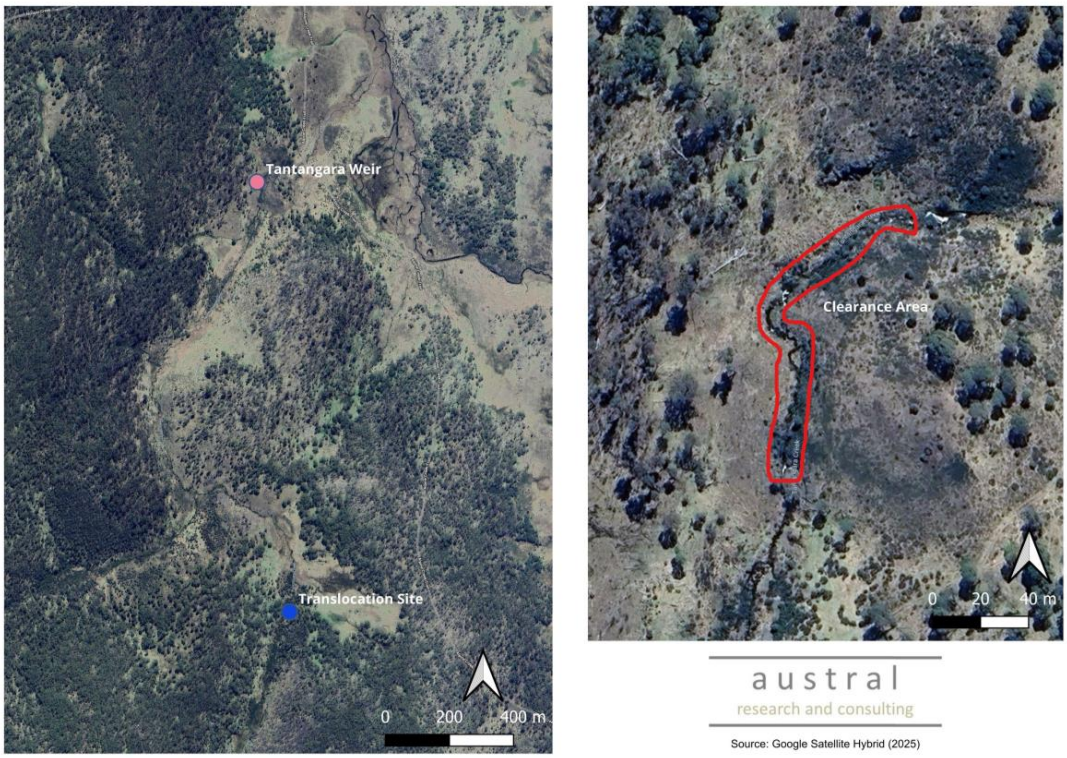


**Figure 1: Tantangara barrier/weir site, fish clearance/salvage area and translocation site.**

This report details the methods used to undertake the salvage and translocation efforts; and details of the results of the surveys including basic biometric information of translocated individuals.

All surveys and activities were conducted under NSW Animal Research Authority – RVF21/3375 (Animal Ethics) (Austral), NSW DPIRD Scientific Collection Permit No. FP 23/108 (Dr Mark Lintermans) and NSW Department of Planning and Environment Scientific Licence No. SL101755 (Dr Mark Lintermans).

# 2. Methods

The Stocky galaxias salvage was completed using a range of techniques including backpack electrofishing, netting (bait nets with light sticks), and dip netting in consultation with Dr Mark Lintermans. Mark Lintermans and Hugh Allen were present on site and assisted with fish collection and translocation on the 5th and 6th of February 2025.

Provided below are details of the two stages of the salvage operation and the methods used over the period of the salvage operation.

### 2.1. Pre-Diversion Clearance

The area of fish clearance was located on Tantangara Creek, downstream of the area known as 'Chinese cut' and upstream of the existing waterfall as shown in Figure 1. Three consecutive barriers (haybales and gravel filled sandbags) were established immediately upstream of the clearance area to prevent any new fish from entering the area after clearance works were complete.

Pre-diversion fish clearance works initially occurred on the 5th and 13th of February 2025.

Following high rainfall on the 14th of February, there was evidence that the barriers upstream of the site had been temporarily overtopped. As such, diversion works were delayed, and a further day of survey and pre-clearance occurred on the 15th of February.

Any Stocky galaxias captured were translocated to the release site located immediately upstream of the Tantangara Creek fenced area (Figure 1). All fish had lengths recorded and those of an appropriate length (greater than 40mm) were fin clipped from the dorsal tip of the caudal fin for tissue samples and marked recapture. Additionally, any Riek's crayfish (*Euastacus rieki*) captured were released approximately 30m upstream of the established barriers.

### 2.2. Post-diversion Clearance

Post-diversion clearance work was undertaken on the 16th of February 2025. The dewatering process began with a 30% bypass that reduced flow down the creek and was maintained for an hour to allow fish within riffle habitat to move into the deeper pools. The bypass was then increased to 100% and completed the dewatering of the creek clearance area. Backpack electrofishing was then used to target the remnant pools for fish once flow had ceased.

### 2.3. Fish Survey Methods

A summary of the fish survey techniques used to capture and identify numbers of Stocky galaxias is provided below.

#### 2.3.1. Spotlighting

Torches were used at night to identify numbers of fish remaining in pools and riffles.

#### 2.3.2. Bait traps

Bait traps consisted of 2mm mesh and approximate dimensions of 250mm x 250mm x 450mm. A light stick was included in each trap as an attractant device. The traps were set around pools with rock and snag habitat overnight and retrieved the next morning.

#### 2.3.3. Backpack electrofishing

Backpack electrofishing was performed in the clearance area using a Smith-Root LR-24 electrofisher. The sampling procedure involved electrofishing all wadable areas of the creek targeting available habitat such as rock, snags and riffles. The survey effort was recorded at each site. Settings used were 990v, 25% duty cycle and 90Hz frequency.

### 2.4. Clearance Effort

A morning and afternoon effort of backpack electrofishing was completed on each of the three days of pre-diversion clearance work. Bait traps with light sticks and spotlighting were only used once overnight (Table 1).

**Table 1: Effort for each session of pre-clearance work.**

| Date | Morning EF on-time (sec) | Afternoon EF on-time (sec) | Bait trap with light stick (No. traps) | Spotlighting |
|---|---|---|---|---|
| **05/02/2025** | 3,076 | 2,336 | - | No |
| **06/02/2025** | | | 15 | Yes |
| **13/02/2025** | 750 | 700 | - | No |
| **15/02/2025** | 650 | 650 | - | No |
| **16/02/2025** | | 400 | - | No |

Note: EF = electrofishing.

### 2.5. Translocation

All individuals were translocated in aerated buckets to the translocation site (Figure 1).

### 2.6. Fin Clipping and Data Collection

All captured fish were measured and adult fish were fin clipped on the top of the tail. The clips will be retained for genetic analysis and this will enable these fish to be identified during further surveys later this year (marked recapture).

### 2.7. Biosecurity

Aquatic biosecurity was identified as a particular concern for the site and species based on the conservation status of the species. New equipment (buckets, waders, etc) was used where possible, and all equipment was treated with Virkon-S as directed by the Department of Primary Industries and Regional Development (DPIRD) NSW. Disinfection was completed using a contact time of 1 to 5 minutes of Virkon-S at a concentration of 1% (in accordance with manufacturer's instructions).

### 2.8. Clearance Limitations

Every effort was made to ensure as many Stocky galaxias and Riek's crayfish were captured and translocated from the clearance area. However, capturing all individuals was unlikely due to the species' cryptic nature and habitat preferences.

# 3. Results

Total numbers of translocated fish and crayfish for the pre-diversion clearance work are presented in Table 2. A total of 87 Stocky galaxias and 16 Riek's crayfish were translocated across the three days of pre-diversion clearance work.

The majority of fish were captured via backpack electrofishing, with bait traps yielding no fish and spotlighting assisting in the capture of just six fish on one occasion.

Sixty-nine of the Stocky galaxias were fin clipped for genetic analysis and to assist with the ongoing population study at the translocation site where it was necessary to be able to identify translocated individuals via marked recapture.

**Table 2: Total numbers of translocated Stocky galaxias and Riek's crayfish.**

| Date | Stocky galaxias | | Riek's crayfish | |
|---|---|---|---|---|
| | Morning | Afternoon | Morning | Afternoon |
| **5/02/2025** | 55 (47) | 16 (12) | 4 | 7 |
| **13/02/2025** | 5 (3) | 6 (3) | 1 | 2 |
| **15/02/2025** | 1 (1) | 2 (1) | 0 | 2 |
| **16/02/2025** | | 3 (2) | | |

Note: Value in brackets is number of individuals fin clipped.

### 3.1. Population Structure

Two distinct cohorts of Stocky galaxias were captured and translocated (Figure 2). The first cohort of 25 – 50mm were considered to be juvenile and may have included young of year and 1+ year individuals. And the second cohort of 60mm and larger were considered to be mature, reproductive individuals.

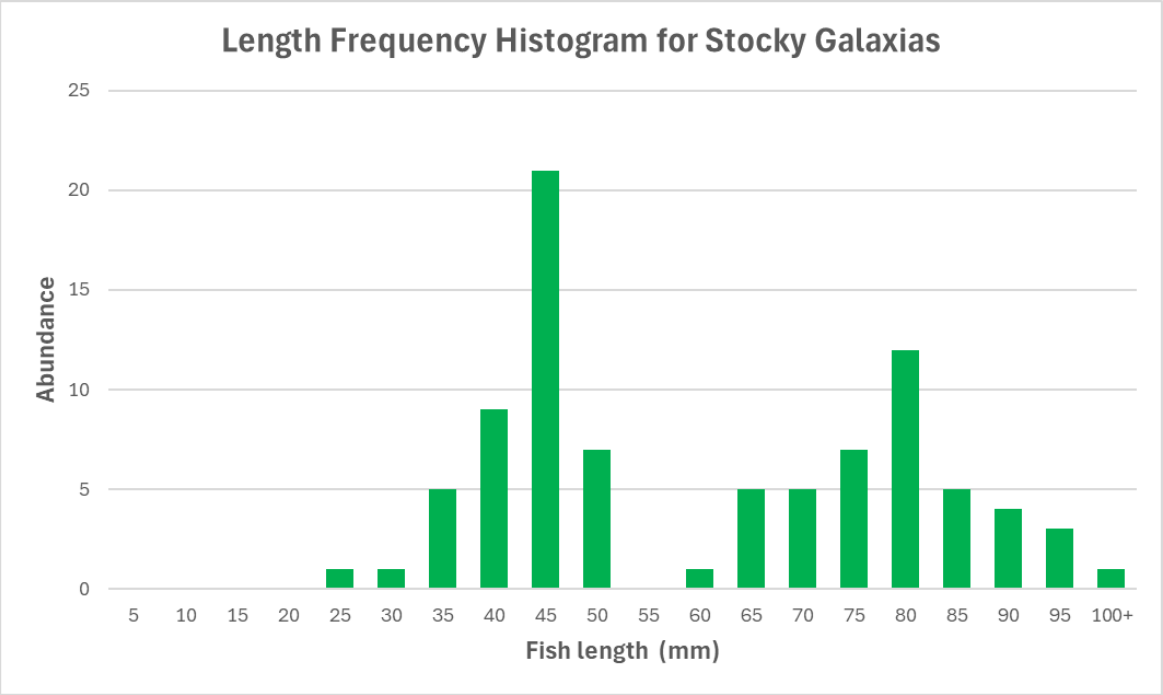


**Figure 2: Length frequency histogram of Stocky galaxias captured and translocated in Tantangara Creek.**

# 4. Ongoing Monitoring

It is recommended that the integrity of the temporary fish barriers and the water diversion continue to be monitored daily.

In the event of the barriers or diversion being overtopped or breached, further survey and salvage operations for Stocky galaxias will need to be undertaken.


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