Inland Fisheries Service

Bronte Lagoon Redfin Perch Report

April 2025

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Bronte Lagoon Redfin Perch Report

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Version number:
Final

Date:
September 2025

Contents

Timeline of Events

Table 1. Timeline of redfin perch investigations and surveys conducted in Bronte Lagoon

Date	Description
25/12/2024	A report was received regarding the suspected capture of five redfin perch in Bronte Lagoon. A small school of fish suspected to be redfin were also observed feeding on the surface. No photo or physical evidence was supplied.
14/1/2025	Electrofishing undertaken using the electroboat. One brown trout and one short finned eel caught. Redfin perch were not observed during the survey.
10-11/4/2025	Box traps and fine mesh fyke nets were set overnight. Brown trout, rainbow trout, tench, spotted galaxias, and short finned eels were caught. Redfin perch were not observed during the survey.

Introduction

On 25 December 2024, a second-hand report was received by the Inland Fisheries Service (IFS) regarding the suspected capture of five redfin perch (*Perca fluviatilis*) on the eastern shore of Bronte Lagoon. The angler who caught the fish also observed a school of fish feeding on the surface, which were also suspected to be redfin perch. No photos or physical evidence were supplied, however, this report was of concern given redfin perch are not known to inhabit Bronte Lagoon, but are established in the neighbouring Bradys chain of waters (Bradys Lake, Lake Binney, and Tungatinah Lagoon).

In 2005 two populations of redfin perch were found in dams in the Bronte area, approximately 10 km from Bronte Lagoon. Both of these populations were eradicated and the locations deemed to be free of redfin perch from two post treatment surveys undertaken in 2007 and 2008.

Bronte Lagoon is situated in the Central Highlands of Tasmania south of the Lyell Highway and is part of the Bradys chain of waters. These four waters were created between 1952-56 as storages to supply the near-by Tungatinah power station on the Nive River. The lagoon is known as a wild trout fishery with natural recruitment present for both brown and rainbow trout. Although the neighbouring waters of the Bradys chain have established populations of redfin perch, the fish are not able to access Bronte Lagoon due to the inflowing section of Woodwards Canal at Bradys Lake, known as the whitewater. This is a section of turbulent water generated by water flowing through radial gate structures which confines water flow and increases water velocity. These two features prohibit redfin perch from swimming into Bronte Lagoon.

Redfin perch have not been found to inhabit the lagoon, however, another invasive pest fish species, tench (*Tinca tinca*) are established in this water. Although tench are part of the *Cyprinid* (carp) family, they are generally regarded as being less invasive and pose a lower risk to the environment and other coexisting native fish species (Lintermans 2023). The presence of tench has not been found to negatively impact trout populations in Bronte Lagoon. In contrast, redfin perch are likely to have a negative impact given their aggressive predatory nature.

Redfin perch are regarded as a pest fish in Tasmania and were introduced from England by Morton Allport in 1862 (Mollison 2020). Given their ability to breed prolifically, they were able to overpopulate waters. They have spread throughout mainland Tasmania and are also established in New South Wales, Australian Capital Territory, South Australia, Victoria, and south-western Western Australia. The IFS has extensively highlighted the invasive nature of redfin perch in interpretation material, signage, and on the IFS website. Anglers are encouraged to humanely dispatch and appropriately dispose of any redfin perch caught. Legislation is also in place under the *Inland Fisheries Act 1995* which prohibits the translocation or transfer of any species of fish without the authority of the Director, where significant penalties can apply.

Redfin perch prefer to inhabit still and slow flowing waters, in particulars areas with aquatic vegetation and other structure (McDowall 1996). Bronte Lagoon would be an ideal habitat for establishment, with plentiful numbers of aquatic invertebrates and small fish which they could predate on.

The objectives of the survey were to:

- Confirm the possible presence of redfin perch in Bronte Lagoon
- Determine the population dynamics of redfin perch in Bronte Lagoon, if found.
- Determine whether it is possible to eradicate redfin perch from Bronte Lagoon, if found.

Methods

Electrofishing survey

The IFS Smith-Root electrofishing boat was launched at the boat ramp off Bronte Lagoon Road on 14 January 2025. With three staff on board, the electrofishing boat was driven around various shorelines around the lake (Figure 1). The boat was driven parallel and close to the shore and targeting areas of structure where redfin perch could be inhabiting. Additional time was spent covering the shoreline on the eastern side of Bronte Lagoon in the vicinity of Rowallan Bay, as this was where the alleged capture of five redfin perch occurred. The generator was activated intermittently when working around structure.

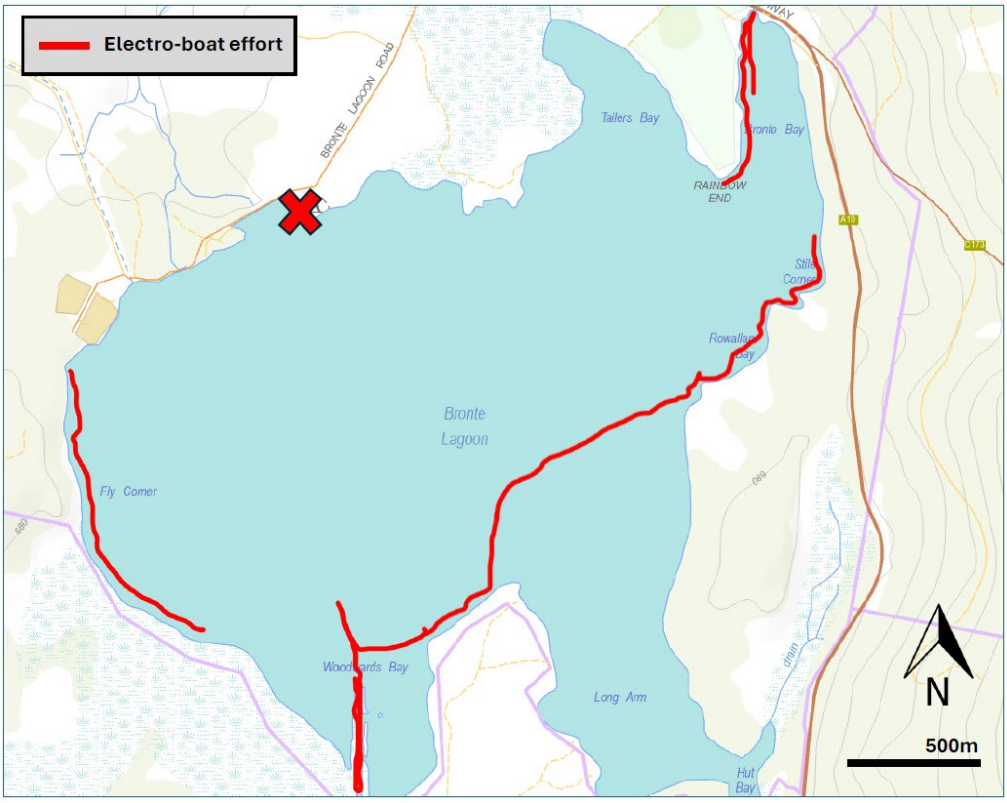

Figure 1. Map of Bronte Lagoon illustrating the areas electrofished using the electroboat. Note: X-location where boat was launched.

Box trap and fyke net survey

From 10-11 April 2025, 30 box traps and 12 fine mesh fyke nets were set over one night in Bronte Lagoon. A 5.7 m catamaran was launched from the main boat ramp and used to set gear around the lagoon (Figure 2). Box traps were set in strings of three at right angles to the shoreline, with a focus on macrophytes and structure where possible. Fine mesh fyke nets were also set in sets of two along the edges of the shoreline, targeting potential redfin habitat where possible. Box traps and fine mesh fyke nets were spread around the perimeter of the lagoon.

No redfin perch were caught in either the electrofishing or box trap survey, therefore processing methodology is not applicable.

Any trout caught were opportunistically processed as supplementary information to existing fisheries performance assessment surveys conducted in Bronte Lagoon. All trout were counted, measured to fork length (mm), weighed (g), and their sex determined by external observation (male, female or indeterminate). A fish is classed as indeterminate if it is unable to be identified as either a male or female (usually due to early development). Condition factor of the fish was calculated using the formula: $k= (10^5 \times \text{weight})/\text{length}^3$. The categories of k are poor ≤0.9, fair >0.9 and ≤1.2, good >1.2 and ≤1.6, excellent >1.6. All trout were processed alive and released soon after.

All other native or pest species (tench) were counted. All native species were released, while tench were euthanised by blunt force trauma and disposed of.

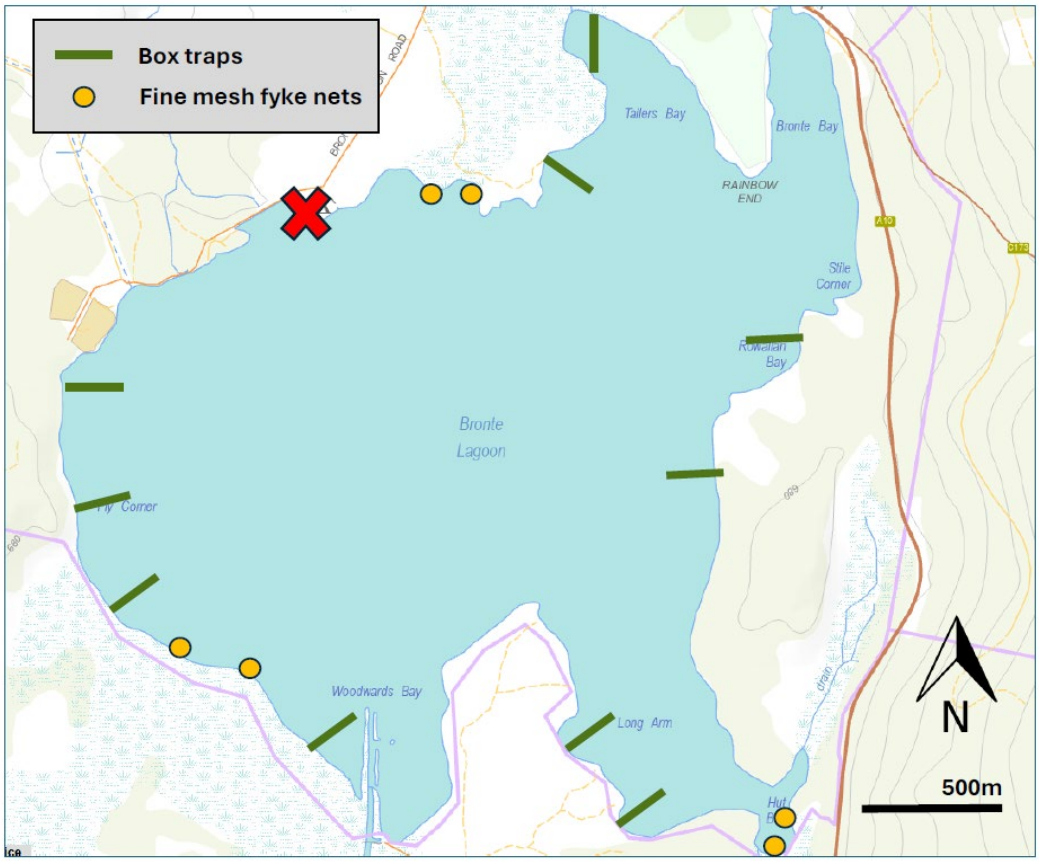

Figure 2. Map of Bronte Lagoon illustrating box trap and fyke net effort. Note: Box traps set in strings of three, fine mesh fyke nets set in sets of two.

Results

Electrofishing survey

On 14 January, the boat covered approximately 6.1 km with four hours of shock time (the time the electrofishing unit is active) for one brown trout and one short finned eel (*Anguilla australis*) (Figure 1). No redfin perch were observed, with clear water and still conditions favourable for seeing fish even if they weren't in the electric field of the electrodes.

Box trap and fyke net survey

Nineteen brown trout, two rainbow trout (*Oncorhynchus mykiss*), eight tench, 28 spotted galaxias (*Galaxias truttaceus*) and one short finned eel were caught from 30 box traps set over one night, with a soak time 20 – 24 hours. Four tench, 55 spotted galaxias and one short finned eel were caught from 12 fine mesh fyke nets set over one night, with a soak time 20 – 24 hours. No redfin perch of any size were captured in any of the nets/traps.

The catch of 19 brown trout resulted in a catch per unit effort (CPUE) of 0.4 brown trout per box trap. The processed catch consisted of seven females, seven males and five indeterminate fish. The mean weight and length were 812 g and 399 mm respectively (Table 2). On average, male fish were slightly larger in weight and length than females but were similar in condition factor (Table 2). However, given the small sample size this should be interpreted with caution. The brown trout captured ranged in size from a minimum and maximum length of 227 mm and 500 mm respectively, and a minimum and maximum weight of 220 g to 1400 g (Table 2; Figures 3, 4). Only two rainbow trout were caught during the survey (Table 2, Figures 3. 4).

Table 2. Descriptive statistics for all trout caught during the survey for redfin perch in Bronte Lagoon - length, weight and condition factor separated by sex.

Grouping	Measurement	Mean	Minimum	Maximum
All brown trout (n=19)	Length (mm)	399	227	500
	Weight (g)	812	220	1,400
	Condition Factor (k)	1.21	0.99	1.88
Female (n=7)	Length (mm)	421	373	455
	Weight (g)	894	560	1,200
	Condition Factor (k)	1.18	1.08	1.27
Male (n=7)	Length (mm)	448	390	500
	Weight (g)	1,056	760	1,400
	Condition Factor (k)	0.99	0.99	1.28
Rainbow trout (n=2)	Length (mm)	263	250	275
	Weight (g)	225	190	260
	Condition Factor (k)	1.23	1.22	1.25

Note: Indeterminate brown trout not included here (n=5)

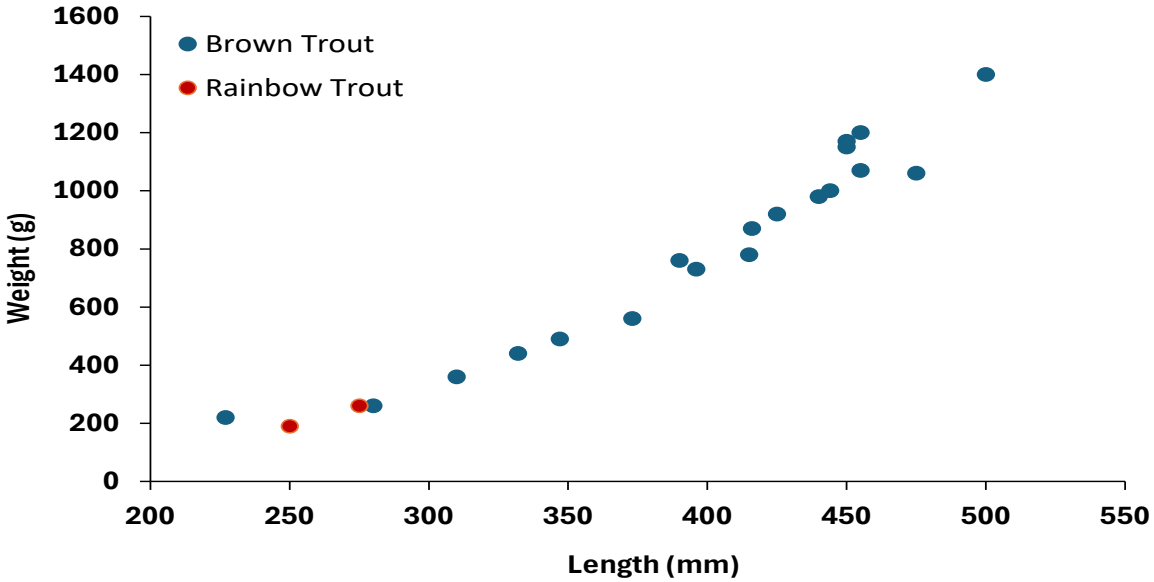

Figure 3. Length-weight relationship for brown trout caught during the survey for redfin perch in Bronte Lagoon (n=21)

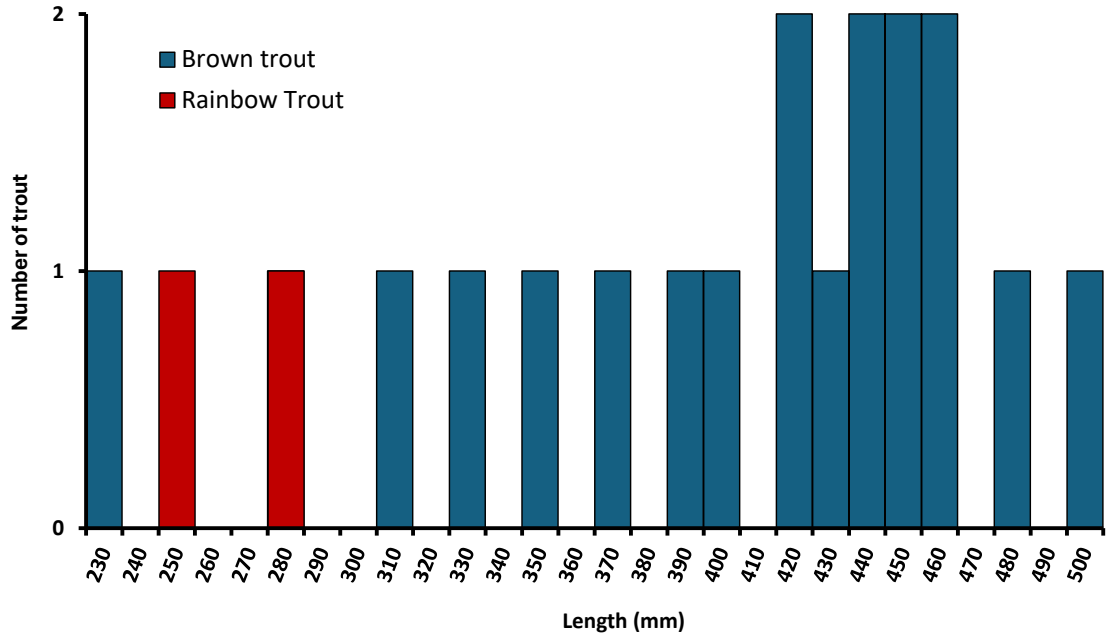

Figure 4. Length frequency plot for all trout caught during the survey for redfin perch in Bronte Lagoon (n= 21).

The average condition of brown trout encountered during this survey was 1.21 k (fair) (Table 2). Thirty per cent of brown trout were categorised in fair condition, nine per cent in good condition, and two per cent in excellent condition (Figure 5).

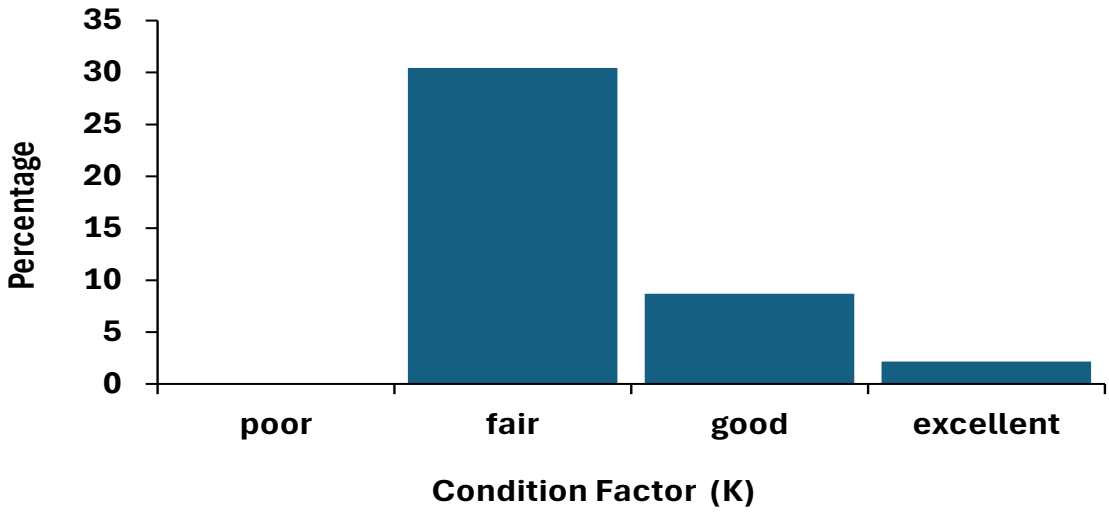

Figure 5. Condition factor category for all brown trout caught during the survey for redfin perch in Bronte Lagoon (n=19)

Discussion

Despite extensive box trap, fine mesh fyke net, and electrofishing effort undertaken in Bronte Lagoon, no redfin perch were captured. Both surveys were undertaken at times of the year where water temperature was optimal for increased redfin perch movement around the lake. Bronte Lagoon has extensive aquatic plants and structure which is ideal habitat for redfin perch. In addition, it supports large populations of aquatic invertebrates, spotted galaxias, and juvenile trout, all of which would be ideal prey items. Therefore, the absence of redfin perch caught during these surveys suggests that they are either not present in the lagoon or are in small numbers and have not established a significant population. This was further supported during the electroboat survey where the calm, bright conditions combined with clear water would have been ideal for seeing schools of juvenile redfin perch.

Bronte Lagoon is one of the most popular trout fishing waters in the Central Highlands, with consistent angler visitation throughout the season, as well as numerous club competitions held there. Consequently, the absence of redfin perch reports from other anglers also suggests that they are not established.

Although redfin perch are established in the neighbouring Bradys chain of waters, they are physically unable to access Bronte Lagoon due to the section of turbulent water generated by radial gate structures at the inflowing section of Woodwards Canal at Bradys Lake. Unauthorised translocation of redfin perch into the lagoon would be the likely method for potential introduction.

Summary

No redfin perch were encountered in Bronte Lagoon despite extensive box trap, fine mesh fyke net, and boat electrofishing surveys, and no further reports of potential redfin sightings have been received by the IFS.

The absence of reports from other anglers and lack of redfin perch seen during visual inspections during electrofishing all suggests that they are not established or present in this water, however, given the initial report of suspect redfin perch received in December 2025, the IFS will still stay vigilant and will respond to any potential redfin perch reports from anglers and the general public.

Recommendations

- Seek assistance (via ongoing communication and engagement efforts) from the public/anglers to report any redfin perch sightings in Bronte Lagoon to the IFS.
- An educational campaign to be undertaken to educate the public/fishers of the negative effects of translocating redfin perch to new locations.

References

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2. McDowall, R.M. (1996). Freshwater fishes of south-eastern Australia. Reed Books.
3. Mollison, R. Morton Allport and the Acclimatisation of Fish in Tasmania. Pap. Proc. Tasman. Hist. Res. Assoc. 2020, 67 (3), 45-58.

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