Inland Fisheries Service

Statewide river electrofishing surveys 2025 and 2026



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Tasmanian Government

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Executive Summary

Recent cormorant predation caused a significant statewide decline in trout stocks, with impacts strongest in river systems, particularly in the northwest. Rivers in the northeast and south were less affected, though variability exists within regions.

Survey data shows reduced abundance across all size classes, with no consistent distribution pattern among sites. While 0+ (young-of-year) trout remain the most common cohort, their numbers are still below typical historical levels. Encouragingly, 2026 surveys indicate a notable increase in 0+ and 1+ fish, suggesting early signs of improved recruitment and recovery.

Key nursery streams that historically supported high juvenile densities recorded severe declines in 2025, with only modest recovery in 2026. The absence or reduction of juvenile fish is likely due to both direct predation and a prior decline in spawning adults, linked to increased cormorant presence since late 2023.

Historical evidence shows that recovery from similar predation events is variable but achievable, largely driven by natural recruitment. Current management measures, including conservative bag limits, aim to reduce additional pressure from angling.

Although stocking may provide localised benefits, past studies indicate it plays a secondary role compared to natural recovery processes. Overall, while the current decline appears more severe than past events, early 2026 results suggest that population recovery is underway.

Introduction

River fisheries have traditionally supported a significant proportion of Tasmania's recreational angling activity. The productivity of these fisheries is influenced by a range of environmental, land-use and water management factors that affect habitat quality, recruitment, and overall fish population dynamics. In addition to these pressures, periodic increases in cormorant abundance can have substantial impacts on trout populations through intense predation.

From 2023 Tasmania experienced a marked increase in cormorant numbers, with large flocks heavily preying on trout populations, particularly river-dwelling brown trout. During the 2024-25 angling season, anglers and Inland Fisheries Service (IFS) staff reported widespread evidence of predation impacts, with reduced catch rates and lower fish abundance, across many of the State's popular trout rivers.

A similar predation event occurred in 2012-13 and prompted the IFS to undertake statewide electrofishing surveys to assess impacts on representative river fisheries. Surveys were conducted across a range of rivers, primarily in north-west Tasmania, with additional sites in the south and north-east. Subsequent monitoring was undertaken over several years to document trout population recovery and changes in fishery performance.

In response to the recent increase in cormorant predation, the IFS again conducted electrofishing surveys during 2025 and 2026. Survey sites were selected across north-west, north-east, and southern Tasmania, with field sampling undertaken during January-February 2025 and January 2026. The 2025 survey was designed to assess the status of brown trout populations relative to levels observed in 2015 following recovery from the 2012-13 predation event, and to determine the extent of impacts associated with elevated cormorant predation. The 2026 survey aimed to determine whether population recovery was underway and quantify any improvements in trout abundance, size structure, and overall fishery condition following the 2024-25 event.

Method

A total of 16 river sites were sampled in 2025 to establish baseline information on relative abundance and size structure (Table 1). Sites were selected from a list of locations that had previously been surveyed during statewide river monitoring programs conducted between 2012 and 2015, and other sites of interest. Eight of the sites surveyed were consistent between 2025 and 2015 surveys. Of the 16 sites sampled in 2025, four were not re-surveyed in 2026: Mersey River (Merseylea), Hogarth Rivulet, Tyenna River, and Russell River due to factors outside of the control of the IFS.

At each site, an approximately 100 m reach of river was delineated, with defined start and end points where possible (with some reaches extending to ~130 m).

Each site was fished using three consecutive electrofishing passes (using a Smith – Root LR20B backpack electrofisher) following a depletion method. Fish captured during each pass were retained and processed after completion of the third pass, with catches expected to decline across successive runs (highest in the first pass and lowest in the third). Following the final pass, fish were processed under sedation using AQUI S, then measured for length and weight, and sex was recorded prior to release.

Following the 2025 baseline surveys, a decision was made to stock selected rivers in north-west and north-east Tasmania after survey results indicated that trout abundances were lower than those recorded during surveys conducted in 2015. Approximately 350,000 brown trout fry were raised from eggs collected during the 2025 spawning run at Liawenee. These fry were subsequently released into tributaries of several river systems, including the Mersey River, River Leven and Meander River in the north-west, and the Great Forester River in the north-east (Table 2).

Table 1: Surveyed sites (Region), their grid coordinates, and the years in which surveys were conducted.

Location of sampling sites	Easting	Northing	2015	2025	2026
Ration Tree Creek (NW)	432413E	5398290N	No	Yes	Yes
Redwater Creek at Native Plains Rd (NW)	452409E	5423177N	No	Yes	Yes
Mersey River at Liena (NW)	435812E	5399847N	No	Yes	Yes
Mersey River at Merseylea (NW)	450693E	5421185N	Yes	Yes	No
Mersey River at Dynans Bridge (NW)	455304E	5410549N	No	Yes	Yes
Sassafras Creek at Uggbrook (NW)	446698E	5399785N	No	Yes	Yes
Meander River at Barretts Bridge (NW)	467865E	5391797N	Yes	Yes	Yes
Gawler River at Isandula Rd (NW)	428004E	5436723N	Yes	Yes	Yes
River Leven at Gunns Plains (NW)	418790E	5430879N	Yes	Yes	Yes
St Patricks River at Nunamara (NE)	525133E	5417984N	Yes	Yes	Yes
Mackenzie Rivulet at Saltmarsh Rd (NE)	546149E	5435525N	No	Yes	Yes
Seven Time Creek at Targa (NE)	531471E	5426811N	Yes	Yes	Yes
Brid River at Golconda Rd (NE)	539087E	5444677N	No	Yes	Yes
Hogarth Rivulet at Falls Rd (NE)	549496E	5437178N	No	Yes	No
Tyenna River at Westerway (S)	482895E	5275516N	Yes	Yes	No
Russell River at Lonnavale (S)	488523E	5240972N	Yes	Yes	No

Table 2: Summary of brown trout fry stockings in rivers during 2025.

Date	Tributary	"Main" river	Number
3 Sep 2025	Dasher River	Mersey River	40,000
3 Sep 2025	Coilers Creek	Mersey River	20,000
3 Sep 2025	Redwater Creek	Mersey River	20,000
3 Sep 2025	Lobster Rivulet	Mersey River	20,000
3 Sep 2025	Mole Creek	Mersey River	20,000
3 Sep 2025	Minnow River	Mersey River	60,000
3 Sep 2025	Ration Tree Creek	Mersey River	20,000
8 Oct 2025	River Leven headwaters	River Leven	20,000
8 Oct 2025	Winter Brook	River Leven	10,000
8 Oct 2025	Dempster Creek	River Leven	20,000
8 Oct 2025	Lowana Creek	River Leven	10,000
8 Oct 2025	Gawler River headwaters	Gawler River	20,000
10 Oct 2025	Western Creek	Meander River	10,000
10 Oct 2025	Little Brid River	Great Forester	10,000
10 Oct 2025	Surveyors Creek	Great Forester	10,000
10 Oct 2025	Little Mackenzie Rivulet	Great Forester	10,000
10 Oct 2025	Hogarth Rivulet	Great Forester	15,000
10 Oct 2025	Mackenzie Rivulet	Great Forester	15,000

Results

Baseline 2025 comparison with historical surveys

The results of the 2025 baseline surveys indicate that brown trout abundance had declined substantially compared with the previous surveys conducted in 2015 (Figure 1). While not all rivers surveyed in 2015 were re-surveyed as part of this program, the data suggest a broad reduction in abundance across most rivers relative to 2015. The largest declines were observed in the northwest of the State, followed by the northeast, with more moderate reductions evident at sites in the south.

The River Leven, Mersey, Gawler and Meander rivers appeared to be the most heavily impacted, with no legal-sized brown trout captured in any of these systems. Only eight trout were recorded in the River Leven, while just a single fish was captured at two of the three Mersey River sites and at the Meander River site. No brown trout were captured in the Gawler River or at the Dynans Bridge site on the Mersey River.

The catch at Mersey River tributary sites in 2025 appeared to be substantially lower than that recorded in historic surveys. While no surveys were conducted on these tributaries during the 2015 statewide river survey, comparisons with monitoring undertaken at these sites in earlier years indicate that catches were historically much higher, and that trout abundance may have been considerably reduced by 2025.

At Sassafras Creek, 20 trout were captured, compared with catches of more than 100 fish recorded in previous surveys. Four fish were at or above the minimum legal size limit. At Ration Tree Creek, an important brown trout recruitment tributary of the Mersey River, only four trout were caught. Similarly, at Redwater Creek, just two trout were captured, one of which exceeded the minimum legal size (>220 mm). Collectively, these results suggest trout abundance in key Mersey River tributaries was likely lower in 2025 than observed during previous surveys.

The rivers in the northeast of the State appeared to be slightly less affected compared with those in the northwest, with fish recorded at all survey sites. However, catches were low at some locations, with only one trout captured in Brid Rivulet and two in Hogarth Rivulet. In contrast, catches at St Patricks River, Mackenzie Rivulet and Seven Times Creek were higher, with seven, 25 and 15 trout captured, respectively. St Patricks River was the only northeast site where fish at or above the minimum legal size (≥220 mm) were recorded, with four such fish captured. Overall, the results suggest that while trout populations in the northeast may have been impacted, the effects appeared less severe than those observed in many rivers of the northwest.

In the south of the State, catches from the two survey sites suggested trout populations were less affected than those in the northwest and northeast. Although fewer fish were captured than in previous surveys, both sites yielded 13 brown trout. The Tyenna River recorded the highest number of fish at or above the minimum legal

size (≥220 mm), with nine such trout captured. Overall, the results indicate that while trout abundance in the south may have declined relative to historical surveys, populations appeared to be in better condition than those observed in northern regions of the State.

Baseline 2025 comparison with 2026

Comparative analysis of the 2025 baseline survey and the 2026 re-survey indicate an increase in numbers of brown trout at most sites. Only Seven Time Creek, Ration Tree Creek and Sassafras Creek recorded lower numbers in 2026. The reductions at Seven Time Creek and Ration Tree Creek were minor, with catches declining by a single fish at each site, whereas counts at Sassafras Creek decreased from 27 individuals in 2025 to 20 individuals in 2026.

In contrast, brown trout numbers increased substantially across all other sites. The population at Mackenzie Rivulet was 49 per cent higher than recorded in 2025, while increases at the remaining sites ranged from 150 per cent to 2,700 per cent Figure 2.

Legal-sized trout abundance was higher in 2026 at four monitoring sites, including Mackenzie Rivulet, Seven Time Creek, St Patricks River and River Leven. Abundance remained relatively stable in Redwater Creek but was lower in the Brid River. No legal-sized trout were captured in either 2025 or 2026 in the Mersey River, Meander River, Gawler River or Ration Tree Creek.

Size composition

The size composition of trout populations provides some insight into potential environmental influences, including cormorant predation. In general, trout catches were too low across both survey periods to confidently distinguish the effects of environmental disturbances, including cormorant predation, from natural recruitment patterns and the influence of supplementary stocking at individual sites.

Nevertheless, some broad observations can be made from the available data. There were indications of improved recruitment of juvenile trout in 2026, particularly within the 50-120 mm size class, at Mackenzie Rivulet, Ration Tree Creek, Mersey River, Sassafras Creek and River Leven (Figure 3). However, it is difficult to determine the extent to which these increases reflect natural recruitment, or the effects of stocking undertaken following the 2025 surveys.

To better assess overall trends, data from all rivers were combined. When analysed collectively, there was a strong signal of increased juvenile abundance in 2026, with 0+ and 1+ fish representing 67 per cent of all trout captured. By comparison, fish in the 50-120 mm size class accounted for only 38per cent of the total catch in 2025 (Figure 4).

Overall, the length-frequency distributions suggested the presence of two distinct cohorts in the 2025 surveys, centred at approximately 98 mm and 220 mm (Figure 4). In contrast, the 2026 surveys indicated three distinct cohorts centred at approximately 98 mm, 220 mm and 280 mm. The emergence of the larger 280 mm cohort likely reflects the progression and survival of the oldest cohort observed at

around 220 mm in 2025, potentially resulting from reduced predation pressure from cormorants during 2026.

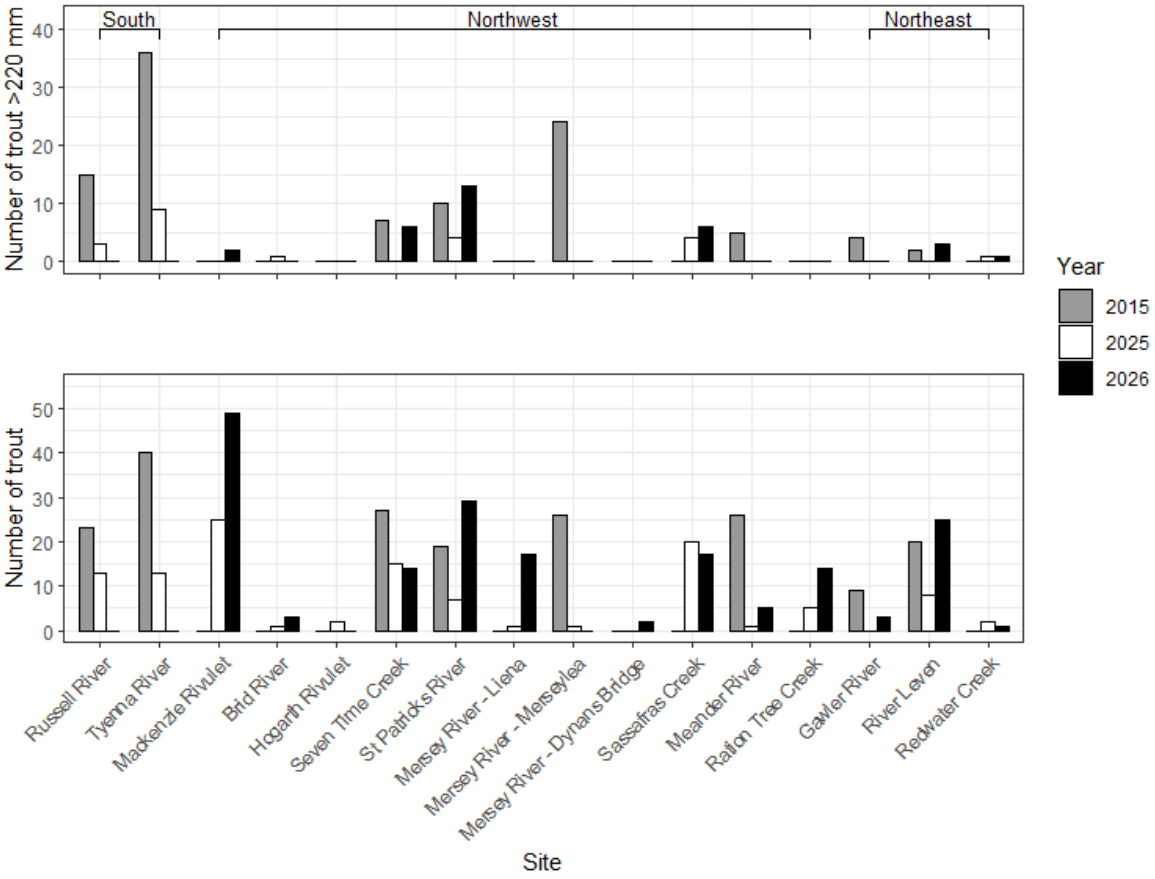

Figure1: Comparison of brown trout counts at sites in southern, north-eastern and north-western Tasmania during the 2015 and 2025 baseline surveys and the 2026 re-survey. The top panel shows the count of trout of legal harvestable size (>220 mm), while the bottom panel shows the count of all trout captured.

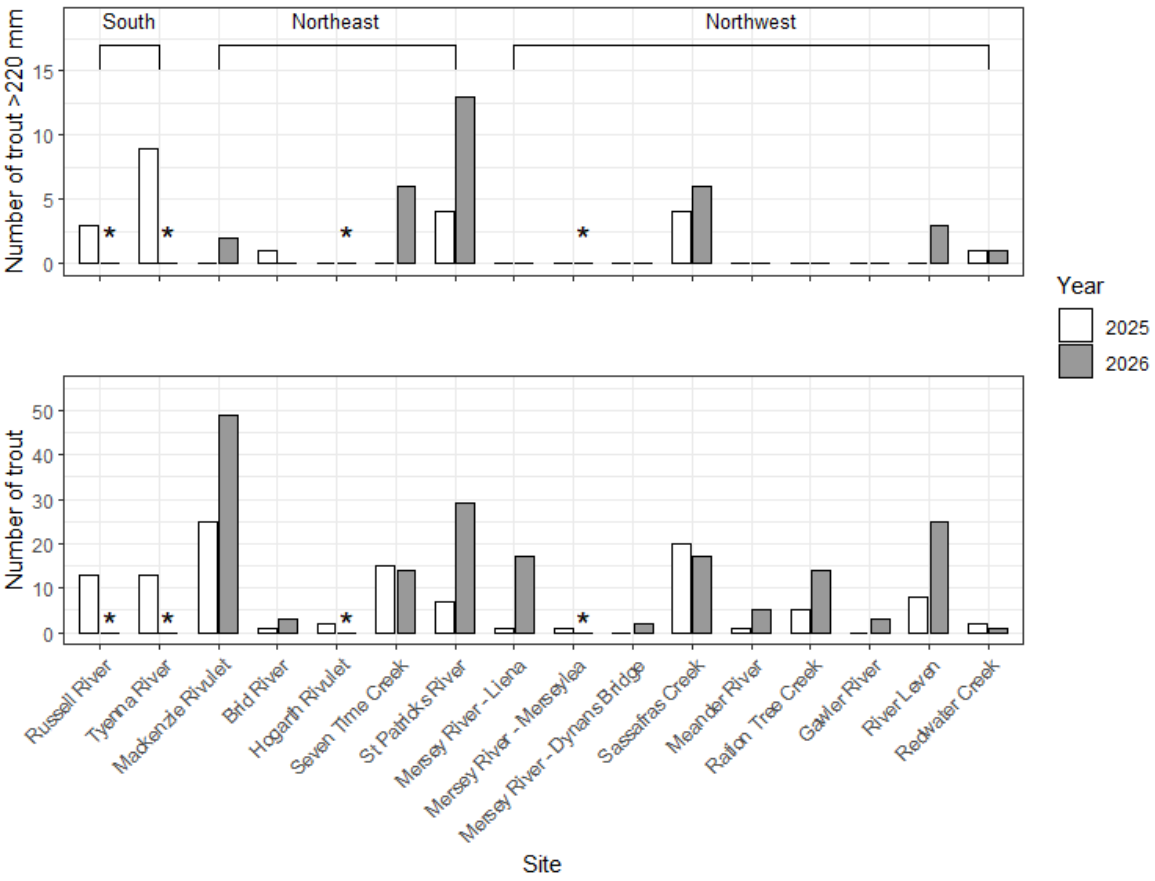

Figure 2: Total brown trout catches and catches of legal-sized brown trout (>220mm) from survey sites in each survey region during 2025 and 2026. An asterisk (*) denotes sites that were not surveyed in 2026.

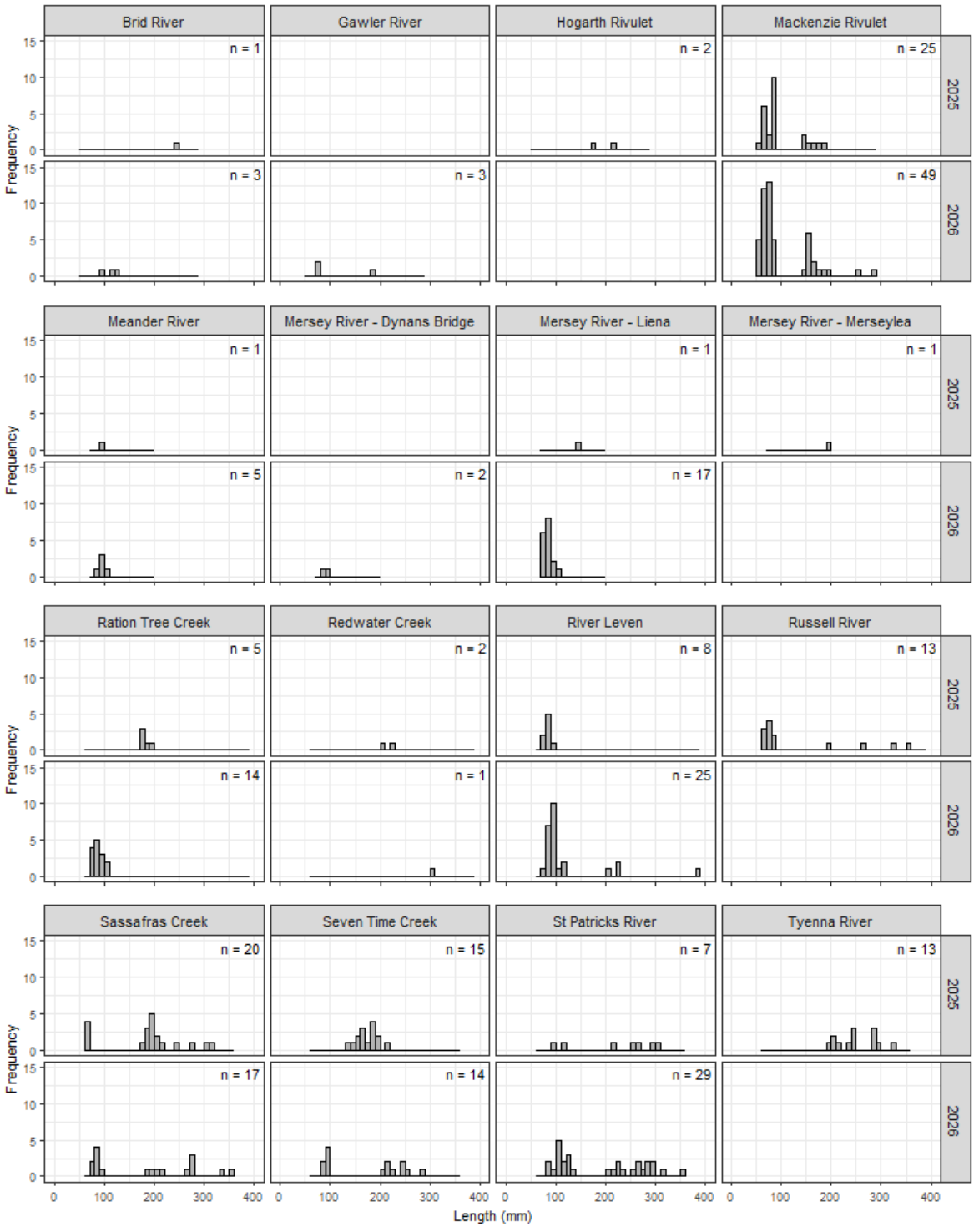

Figure 3: Length-frequency distributions of brown trout captured at individual survey sites during the 2025 and 2026 surveys.

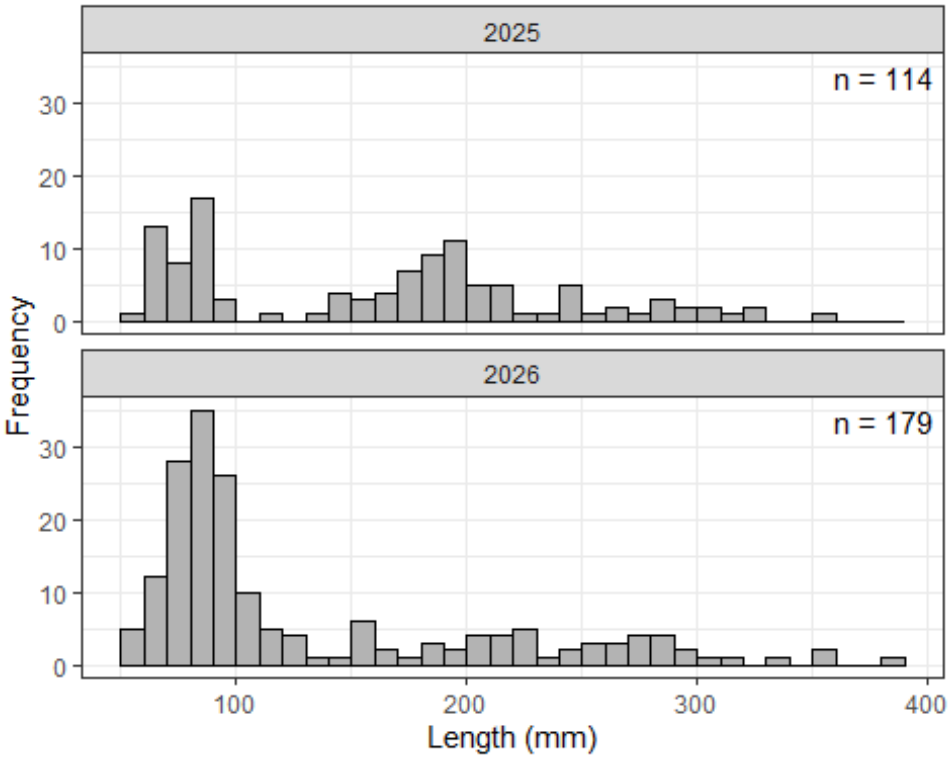

Figure 4: Length-frequency distribution of brown trout captured across all survey sites during the 2025 and 2026 surveys.

Discussion

The results of these surveys indicate that trout populations in many rivers were lower in 2025 than those recorded during previous historical surveys. These declines are likely the result of multiple environmental pressures, including the compounding effects of increased cormorant predation in recent years. Impacts varied across Tasmania. The greatest reductions were observed in north-western rivers, more moderate impacts evident in north-eastern rivers, and comparatively lower impacts recorded in southern river systems.

These findings are consistent with widespread reports from anglers and fishery managers of increased cormorant predation across the Tasmanian trout fishery. While the present study focused on river systems, anecdotal observations suggest that predation impacts may also extend to lake fisheries. Within rivers, the effects of cormorant predation may be amplified by the confined nature of these habitats. In some catchments there has been a loss of streamside vegetation that would otherwise provide cover and refuge for trout.

Length-frequency distributions at individual sites provides limited insight into the specific effects of predation pressure, due to the relatively low numbers of trout captured. However, when data from all sites were pooled, the resulting length-frequency distribution showed no consistent absence of any size class. Instead, the overall population structure resembled that of a typical riverine trout population, albeit at reduced abundance, with a pronounced peak in young-of-year (0+) fish. While this cohort remained below levels typically observed in healthy populations, the 2026 surveys indicated improved recruitment compared with 2025. This is reflected by an increase in the proportion of both 0+ and 1+ trout within the population. Supplementary stocking undertaken in 2025, may also have contributed to the increased abundance of juvenile trout observed in some rivers and tributaries; however, the relative contribution of stocking compared with natural recruitment could not be reliably determined from the available data.

Some historically productive nursery streams experienced substantial declines in trout abundance. For example, Ration Tree Creek, which typically supports catches of more than 100 young-of-year trout during recruitment surveys, yielded only five older fish in 2025. Although numbers improved to 14 fish in 2026, the catch was still dominated by juvenile trout and remained well below historical levels. The reduced abundance of young-of-year trout is likely the result of a combination of poor spawning success, reduced spawning stock abundance, and increased predation pressure. Elevated cormorant numbers observed since late 2023 may have contributed to declines in spawning adult trout prior to the 2024 winter spawning period, reducing subsequent recruitment into these nursery streams.

Historical evidence suggests that recovery of river trout populations following periods of elevated cormorant predation is often uneven and influenced by a range of factors, including habitat quality, recruitment success, fish survival rates, and angling pressure. Following elevated cormorant numbers in 2012, rivers exhibited variable recovery trajectories, with some populations recovering relatively quickly while others remained depressed for extended periods (Farrell 2015). Management actions, including the introduction of a reduced daily bag limit of five fish in 2018, were

implemented to minimise additional fishing pressure on depleted stocks and support population recovery.

While the current decline appears more severe and widespread than that observed in 2012, results from the 2026 surveys provide encouraging evidence that recovery is already underway. History shows that river trout populations in Tasmania are generally resilient and recover primarily through natural recruitment rather than stocking. Previous cormorant-related declines, including those documented in 1976-77 (Davies 1985), were followed by population recovery as predation pressure eased and recruitment improved. Consistent with these historical patterns, the increased abundance of juvenile trout observed in 2026 suggests that many river populations retain the capacity to recover. The rate and extent of recovery will likely vary among systems depending on local environmental conditions and ongoing recruitment success.

Recommendations

- Repeat the electrofishing survey at the same sites in 2027. This will assess population recovery and changes in trout abundance, recruitment and population structure. Continue surveys in subsequent years to monitor longer-term recovery and population resilience.
- Review the 2026 and 2027 survey results to determine whether further supplementary stocking is warranted. Stocking should target priority rivers where natural recruitment remains low or recovery is slower than expected. Decisions should be guided by ongoing monitoring.
- Consider batch-marking stocked fry in future stocking events. This would distinguish stocked fish from natural recruits and help assess the effectiveness of supplementary stocking. Results could inform future stock enhancement decisions.
- Continue to investigate the merits of alternative stocking strategies such as the trialling of floating or bio-degradable egg boxes to support river trout populations.

References

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