Inland Fisheries Service

Fisheries Performance Assessment Technical Report

Curries River Reservoir – September 2025

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FPA – Curries River Reservoir – September 2025

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Contents

Introduction

Curries River Reservoir is a moderately sized impoundment with a full supply capacity of 12,000 ML, covering 182 ha. The reservoir was constructed in 1979 and commissioned in 1981 as the primary water supply for the George Town area. The headwaters originate at Tippogoree Hills (350 m AHD), with annual rainfall of around 850 mm. Despite relatively high rainfall, catchment inflow is limited, and suitable spawning habitat is restricted, resulting in negligible natural trout recruitment.

The reservoir opened to fishing in 1990 and has historically produced above-average-sized brown trout, though long-term catch rates remain low. Domestic rainbow trout are stocked when available and wild adult brown trout transfers have occurred in recent years. Under the *Tasmanian Inland Recreational Fishery Management Plan 2018–28*, the reservoir is managed as an assisted fishery with set angling hours, a daily bag limit of five fish, a minimum size of 300 mm, and no more than two fish over 500 mm. Other species present include short-finned eels, common galaxias, spotted galaxias, and introduced yabbies, with records of introduced freshwater turtles.

FPA Survey Methodology

In-Lake Population Survey

Between May to July 2025, 1,580 adult brown trout sourced from the spawning traps at Liawenee, Yingina / Great Lake and Tumbledown Creek, Arthurs Lake, were released into Curries River Reservoir. Of these fish, 750 were adipose fin clipped, with 500 released into the larger eastern basin and 250 into the smaller western basin. These fish formed the basis of a capture-mark-recapture population estimate. The reminder of the transferred fish (830) were released into the eastern basin without being marked.

On average the brown trout transferred from Yingina / Great Lake weighed 795 g, with an average length of 411 mm, while Tumbledown Creek fish weighed an average of 426 g, with an average length of 338 mm.

Over three days (29 September to 1 October 2025), 35 box traps were used to capture trout from along the shoreline of the larger eastern basin (Figure 1). Most sets were located along the western shore due to the prevailing wind. The smaller western basin was not surveyed, as suitable sites for setting box traps were limited, therefore the results are applicable to the eastern basin only. All brown trout captured were weighed and measured (nearest 10 grams and fork length ±1 mm) and then released.

To account for the small sample size to estimate the population size, Chapmans estimator (N = [(M+1)(C+1)] / [R+1]) was used.

Figure 1: *Curries River Reservoir, location of box trap sets and number of traps per set, 2025.*

Annual Postal Survey

Since 1986, the IFS has conducted an annual postal survey seeking information about anglers' catches. The survey comprises a form sent to between 4,000 and 5,000 anglers across all licence categories, asking set questions about their trout catch for the previous season. This information is used to estimate catch per day, harvest, and angling effort, and provides a long-term overview of fishery performance as well as characterising fishing effort.

Beginning in 2024–25, survey distribution was transitioned from post to email, with participants submitting responses digitally. A comparison of postal and email returns for all waters has been examined in a separate report. In this report, records assessed are from 2000 to 2025.

Stocking Database

The IFS keeps electronic records of fish stocking within public waters dating back to 1980. These records set out information on location, date of stocking, species, age, origin, stock type and genotype, in addition to length/weight data and comments e.g. denoting tagged or marked fish. This information provides an historical record of supplementary recruitment into individual waters. In this report, records post 2010 are analysed.

Angler Creel Data

Each season IFS officers collect fishing effort information from anglers interviewed at a range of waters. This information is entered directly into a dedicated 'Angler Creel' data collection app. Information on location, date, species, number of fish caught and method etc. are entered and stored in an electronic database. This information is used to examine the catch of trout at individual waters. Once analysed, the summary information is reported as the number of fish caught per day, irrespective if an angler had fished for three or more hours or was continuing to fish. All fish, irrespective of being kept or released were used, including zero catches. In this report, only records from anglers that fished for three or more hours were examined. Additionally, for the purpose of calculating the number of fish captured per day, a full days fishing is deemed to be equal to six hours.

Angler Diary

An angler fishing diary feature of the Infish App was developed by the IFS for anglers' to record their catch of freshwater fish throughout the year. This feature records location, fishing from a boat or shore, fishing method, species and number caught, weight, length, sex, fish kept/released and fishing effort. In this report, only records from anglers that fished for three or more hours were examined. Additionally,

for the purpose of calculating the number of fish captured per day, a full days fishing is deemed to be equal to six hours. Records of the 2024-25 season and the commencement of the 2025-26 season until December 2025 were analysed.

Condition Factor

Condition factor for all fish was calculated using the basic formula of $K=10^5 \times \text{weight}/\text{length}^3$. This provides a basic generalised result that can be used to compare other fish and fisheries. In general, these results may not reflect the perception of anglers.

Survey Results

Between 29 September and 1 October 2025, a total of 24 brown trout were captured: nine females and 15 males, with no juveniles recorded. Fish ranged from 350 mm to 455 mm in length (Figure 2). Overall, the average fish measured 410 mm and weighed 639 g. Male trout averaged 417 mm and 660 g, while females averaged 399 mm and 605 g. No rainbow trout were captured during the survey.

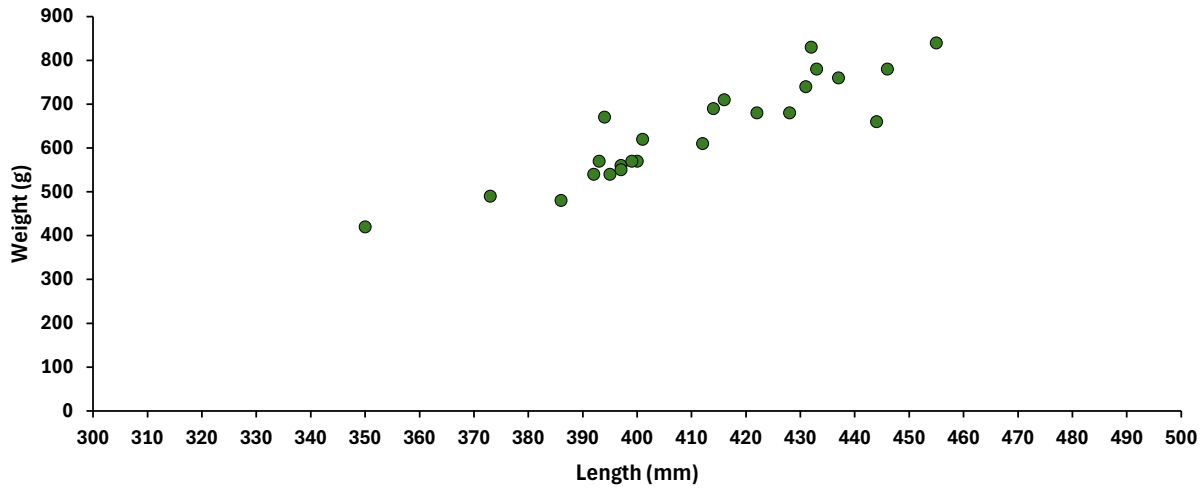

Figure 2: *Length and weight comparison for brown trout, Curries River Reservoir 2025.*

CPUE

Catch per unit effort (CPUE) from a total of 70 box trap sets was, 0.3 brown trout per trap (total 24 brown trout). This is contrasted to a CPUE of 0.64 brown trout per trap from a previous survey during 2019, where brown trout abundance was considered very low.

Population Estimate

Of the 1,580 brown trout transferred into Curries River Reservoir between May and July 2025 (Appendix A), 750 were adipose-fin-clipped. Of these clipped fish, 500 were released into the eastern basin and 250 into the western basin. During the survey, 24 brown trout were captured from the eastern basin, nine of which were fin-clipped (38 per cent). Based on this ratio, the estimated population size was 1,253 brown trout, with a standard error of 290 (Table 1). This estimate incorporates the 830 unclipped brown trout released alongside the clipped fish, indicating that only a small residual population was present prior to the 2025 transfers. The bias level of the estimate was 2.25, reflecting the influence of the small sample size. Given the limited number of recaptures (24 fish), Chapman's estimator was applied.

Table 1: *Chapmans CMR population estimate for Curries River Reservoir, 2025.*

Parameter	Result
Total fin clipped fish released (M)	500
Total captures (C)	24
Total marked recaptures (R)	9
Population estimate: MC/R = N	1,253
Standard error	290
Lower and Upper 95% CI limits	685 – 1,820
Estimate bias level: MC/4N =	2.25 (>4 acceptable bias)

Condition Factor

Of the 24 brown trout captured, the average condition factor was 0.92 with 12 per cent classified in fair condition and the remainder in poor condition (Figure 3). This result contrasts with the 2019 survey result, where most brown trout were in fair to excellent condition with an average of 1.10.

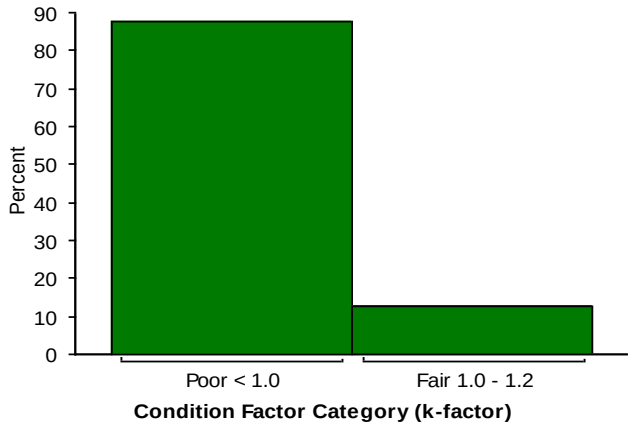

Figure 3: *Condition factor category for brown trout, Curries River Reservoir 2025.*

Length Frequency Data

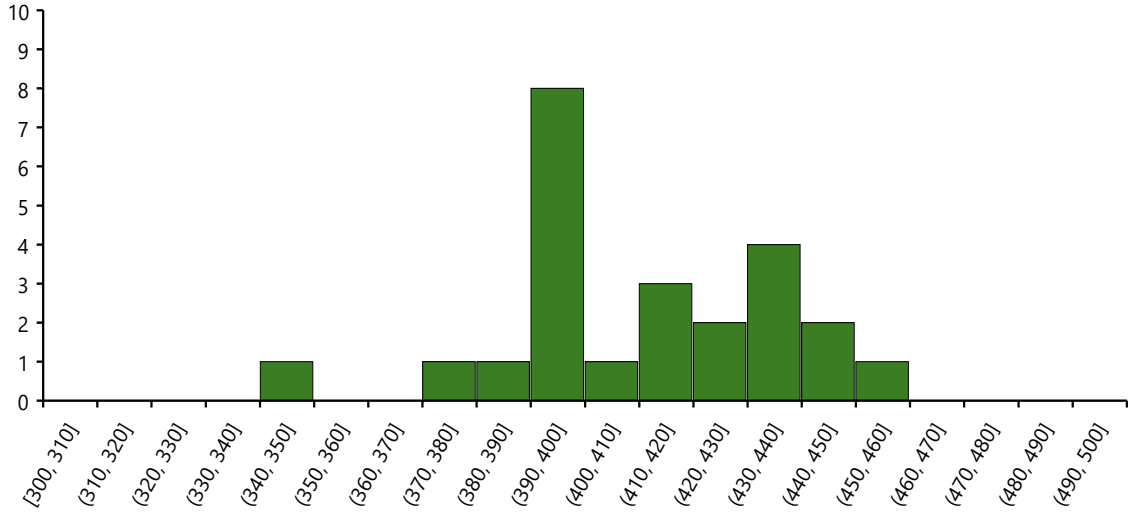

Figure 4: *Number of brown trout in each 10 mm length class (n = 24), inclusive of fin clipped fish, Curries River Reservoir 2025.*

Notwithstanding the low number of brown trout captured, there were no indications of natural recruitment (Figure 4). It is likely that many of the fish captured were the transferred brown trout sourced from Yingina / Great Lake and Arthurs Lake, that included both marked and unmarked fish.

Angler Postal Survey 2000-2025

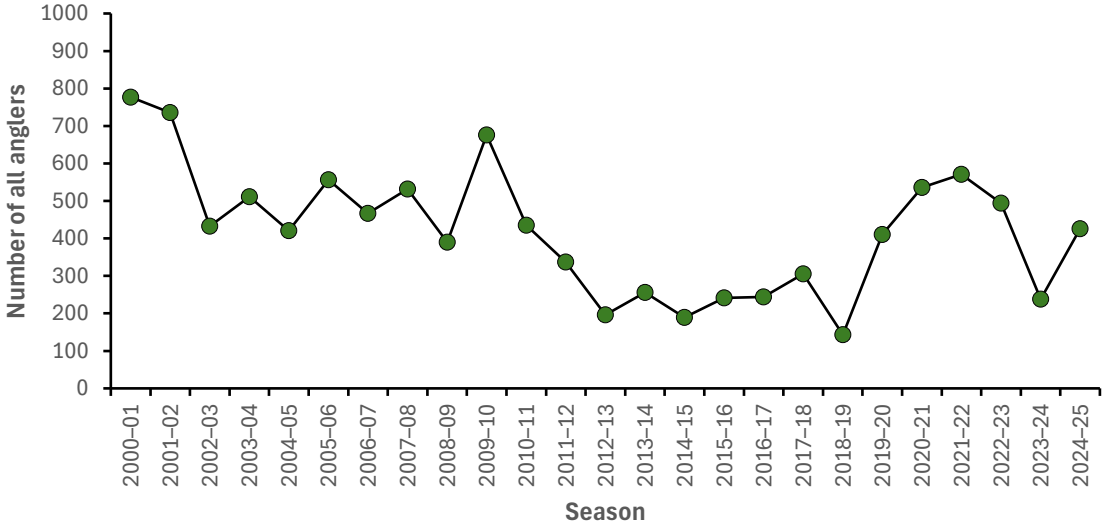

Figure 5: *Estimated number of all anglers fishing at Curries River Reservoir, 2000 - 2025.*

Since the 2000-01 season, on average less than two per cent of all licensed anglers (420 anglers) fished at Curries River Reservoir each season. Participation varied from a high of 752 anglers during 2000-01 to a low of 143 anglers during 2018-19 (Figure 5).

The average number of days collectively fished by all anglers per season (fishing effort), was 3,155. The maximum effort occurred during 2008-09 with 7,477 days fished, while in 2016-17 this was a low of 453 days (Figure 6).

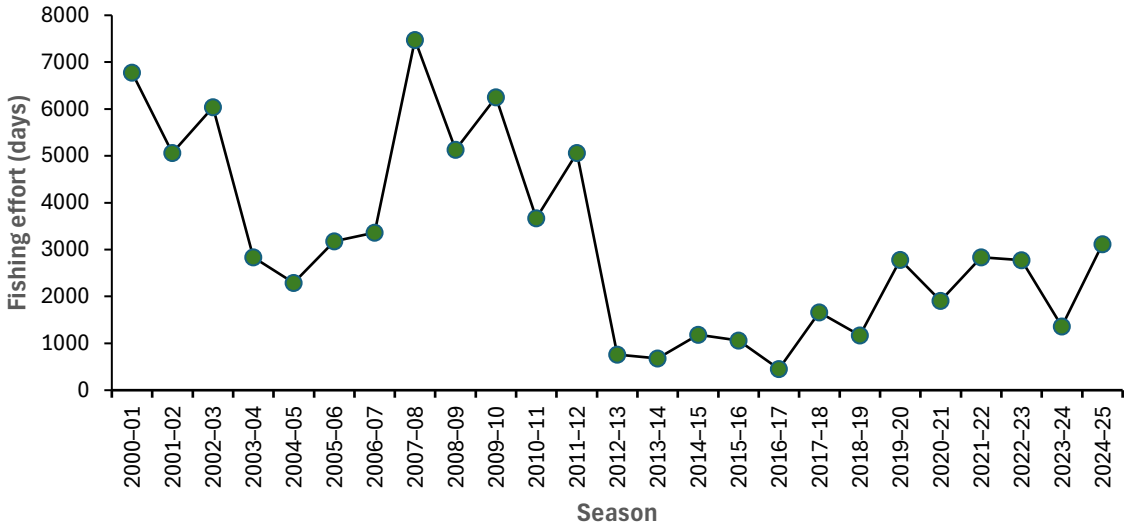

Figure 6: *Total fishing effort for each season, Curries River Reservoir 2000 - 2025.*

The average daily catch rate for brown trout 2000 to 2025 was 0.3, with a high of 1.3 during 2019-20, with no catches reported during 2016-17 (Figure 7). The average daily catch rate for rainbow was 0.3 with a high of 1.8 during 2006-07, with no catches recorded during 2013-14.

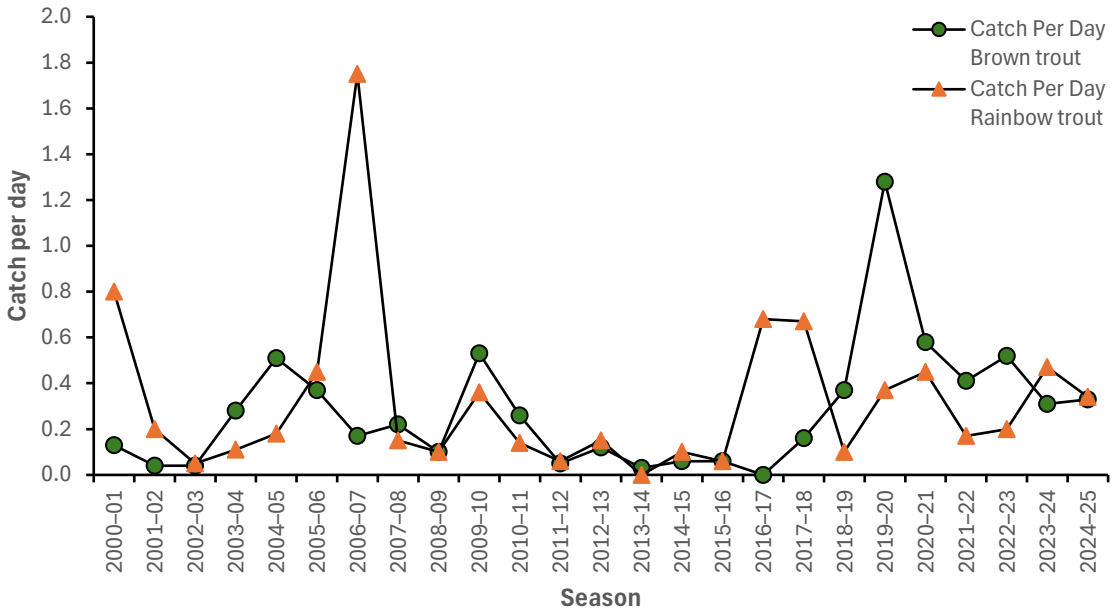

Figure 7: *Catch per day of brown and rainbow trout, Curries River Reservoir 2000 - 2025.*

The estimated average seasonal harvest of brown trout was 856, with a high of 3,565 during 2019-20, with no brown trout harvest recorded during 2016-17 (Figure 8). The estimated average seasonal harvest of rainbow trout was 1,042, with a high of 5,875 during 2006-07, with no rainbow trout harvest recorded during 2013-14.

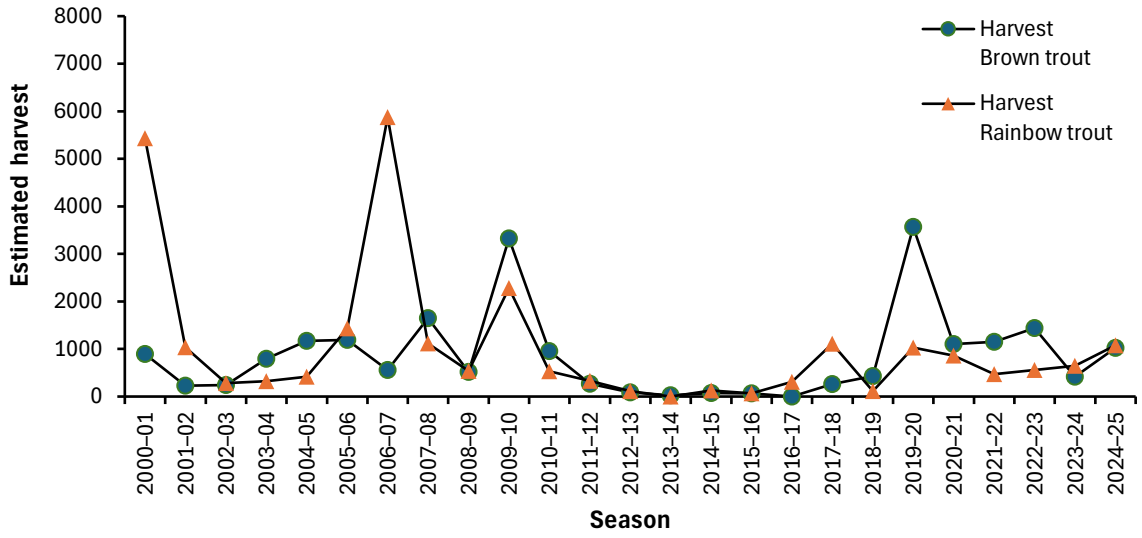

Figure 8: *Estimated annual harvest of brown and rainbow trout, Curries River Reservoir 2000 - 2025.*

Creel Interview Summary 2024-25

During the 2024–25 season, 93 anglers were interviewed about their fishing activity at Curries River Reservoir. Only those who fished for three or more hours were included in the analysis, resulting in 26 valid angling records. These anglers fished a combined total of 86 hours, catching 13 brown trout and 24 rainbow trout. Assuming a full day of fishing equals six hours, the daily catch rate for brown trout was 0.9 and 1.7 for rainbow trout. Of the 26 valid records, eight indicted they fish from a boat and 17 from the shore. There were 13 records indicating they used bait fishing as their primary method, 12 using artificial lure and one fly fishing. The catch and release rate was 38 per cent for brown trout and 42 per cent for rainbow trout, with no undersized fish within the catch.

Angler Diary Summary 2024-25

During the period 3 August 2024 to 22 December 2025, there were 59 valid records entered by anglers into the Angler Diary (including both nil and multiple fish captures), for fishing at Curries River Reservoir. Of these records, 37 met the criteria of fishing for three or more hours. These 37 records were attributed to 29 individual trips, with an average trip being five hours. Sixteen trout were captured consisting of five rainbow trout and 11 brown trout, with all fish kept. Total fishing effort was 147 hours. Based on the assumption a full days fishing is six hours, this is equal to 24.5 days. The average daily catch of brown trout reported from the Angler Diary, for anglers fishing three or more hours was, 0.45 brown trout per day and 0.20 rainbow trout per day. Fourteen anglers fished from the shore and 18 from a boat. Fifteen anglers fished using a lure, 14 with bait and three fly fishing, with five records showing no method.

Stocking

Brown Trout

Since 2010, brown trout stocking at Curries River Reservoir has consisted of a mix of mostly fry and adult fish (Appendix A). There was a period 2015-2017 where no stocking of brown trout occurred. However, since 2018, adult fish transfers have been the mainstay, with the exclusive transfer of adults occurring between 2022-25.

Rainbow Trout

Rainbow trout stocking at Curries River Reservoir has largely been dependent on the availability of suitable fish from commercial fish farms. The number and size of fish stocked are aligned with farm production cycles. However, in-line with the annual stocking plan, over the past five years around 1,000 adult rainbow trout were stocked annually (Appendix B).

Discussion

Results from the in-lake survey indicate that brown trout abundance in Curries River Reservoir is low, with the population largely comprising of the most recent transfers of adult fish. The absence of rainbow trout in the catch is likely due to a combination of low stock numbers and the reduced effectiveness of box traps in capturing this species.

A likely key contributor to the reduced trout abundance during the survey was the widespread influx of Great Cormorants across the state during 2024–25. Significant declines in trout numbers have been recorded in several lake and river fisheries during this period, suggesting elevated predation pressure has played a substantial role.

Although brown trout abundance was low, angler reported catch rates were broadly consistent with long-term trends. This suggests that recent stocking efforts have been adequate to maintain an historically modest level of catch. However, whether this level is sufficient to sustain angler satisfaction is uncertain. Increasing the daily catch rate may require additional transfers of adult brown trout and additional releases of adult and yearling rainbow trout.

Curries River Reservoir has traditionally been valued as a catch-and-keep fishery, primarily supporting anglers seeking fish for consumption. While a small proportion of anglers practice catch-and-release, participation is limited and should be considered in future management decisions for the fishery.

The overall condition of brown trout ranged from poor to fair. Most individuals captured during the survey were likely from recent transfers from Yingina / Great Lake and Arthurs Lake and were still in post-spawning condition. However, previous surveys indicate that this level of condition is not typically observed in newly transferred fish at this water.

Recommendations

- Monitor the ratio of fin-clipped to non-fin-clipped brown trout in angler catches over the next one to two seasons using data collected through the Compliance Creel app.
- Review the stocking priorities for Curries River Reservoir as part of the annual stocking plan, with consideration given to the desired catch rates for brown and rainbow trout.
- Refine management objectives for the Curries River Reservoir fishery in consideration with the overall status of the fishery and its role within the broader statewide fishery context.
- Consider a future survey of the smaller western basin or the lake using the electrofishing boat to provide a better coverage and more complete assessment of the trout population.

Appendix

Appendix A: Brown trout stockings and estimated nominal minimum age at 2025, Curries River Reservoir 2010 – 2025.

Year	Number	Minimum age at 2025
2010	21,000 (fingerlings)	15
2011	5,000 (fry)	14
2012	-	-
2013	10,000 (fry)	12
2014	400 (adult)	14
2015	-	-
2016	-	-
2017	-	-
2018	600 (adult)	10
2019	1,175	9
2020	60,000 (fry)	5
2020	960 (adult)	8
2021	2,016 (adult)	7
2021	60,000 (fry)	4
2022	1,142 (adult)	6
2023	1,922 (adult)	5
2024	1,356 (adult)	4
2025	1,580 (adult)	3

Appendix B: Rainbow trout stockings, Curries River Reservoir 2010 – 2025.

Year	Adult	Fingerling	Fry	Yearling
2010				
2011		10,000		
2012				2,000
2013			12,000	3,000
2014		10,000		3,400
2015		10,000		
2017				3,300
2018	200			
2019	400			
2020				1,120
2021	1,200			
2022	1,000			
2023	1,000			
2024	1,000			
2025	801	3,800		

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