# Inland Fisheries Service

## *RECREATIONAL FISHERIES REPORT*

## Fisheries Performance Assessment

## Camden Dam – February 2022



Inland Fisheries Service

Tasmanian Government

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| **Title:** | Fisheries Performance Assessment, Technical Report, Camden Dam (February 2022) Inland Fisheries Service. |
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| **Version:** | Final 21 February 2022 |
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# 1. Introduction

Camden Dam is located approximately 35 km east of Launceston, on the Diddleum Road. It was first flooded during 2020-21, with a full supply level of 9,300 ML supplying the Scottsdale Irrigation Scheme managed by Tasmanian Irrigation. The dam captures inflows from the Camden Rivulet and several smaller streams, so the potential recruitment of brown trout is very good. Rainbow trout are also found in some of the connecting streams.

Under the *Tasmanian Inland Recreational Fishery Management Plan 2018-28*, Camden Dam is listed as an 'assisted fishery' with the fishing season managed for brown trout. All fishing methods (bait, lure and fly) are permitted. A daily bag limit of 5 fish exists with a minimum size limit of 300 mm that includes no more than two fish over 500 mm.

# 2. FPA Survey Methodology

## 2.1. In-Lake Population Survey

On 11 February 2022, the Service undertook a survey of the trout population of the Camden Dam using the Smith-Root electrofishing boat. The purpose of the survey was to gain information on catch per unit effort, the age structure of the brown trout population and examine fish condition and look for evidence of recruitment. The vast majority of electrofishing was done along the shoreline in depths of 1.0 – 2.5 metres depth (see Appendix 1). The lake was approximately 0.25 m from full, the weather was partly cloudy with light winds. This is the first assessment of this fishery. All trout captured were recorded as male, female or immature and were weighed and measured (fork length) before being released.

## 2.2. Analysis Methods

Condition factor was calculated using the basic formula of $K=10^5 \times \text{weight}/\text{length}^3$. This provides a generalised result that can be used to compare other fish and fisheries. The short comings of condition factor are acknowledged but are used for relative comparisons only. Categories are indicative and may not necessarily reflect the perception of anglers in general.

# 3. Results

## 3.1. In-Lake Population Survey

### *Catch effort*

The Smith Root electrofishing boat was used for a total shock time of 4.5 hours. During this time 26 brown trout were captured, resulting in a catch effort of 5.8 fish per hour. No rainbow trout or any other fish species were captured.

### *Weight and Length Information*

A total of 26 brown trout (13 females, 8 males and 5 indeterminate fish) with lengths ranging between 210 – 534 mm were captured (see Figure 1). The average weight and length were 964 g and 393 mm respectively. The maximum length recorded for an individual fish was male of 534 mm with a weight of 1,710 g. All lengths and weights are shown in Appendix 2.

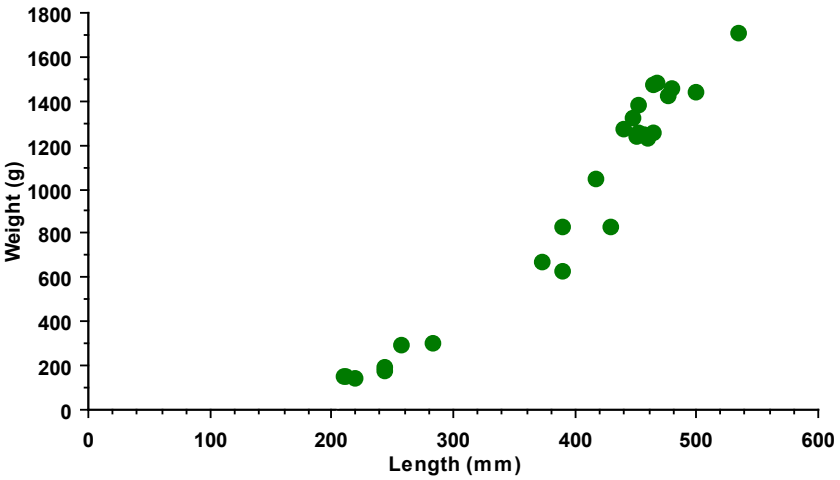



**Figure 1:** Length and weight of brown trout.

Owing to the mix of recruitment from 2020 and the presence of river fish that have dropped out from the adjacent streams, it was not possible to determine distinct length classes relating to annual recruitment. It can however, be concluded that brown trout in the 360 – 540 mm length range are former river fish that have taken up residence in the lake over the past two years. Some 2022 ex-resident river fish that had just moved into the lake were present, represented in the 200 – 260 mm range. There were also six young of the year brown trout (approximately 130 mm) observed but not captured.

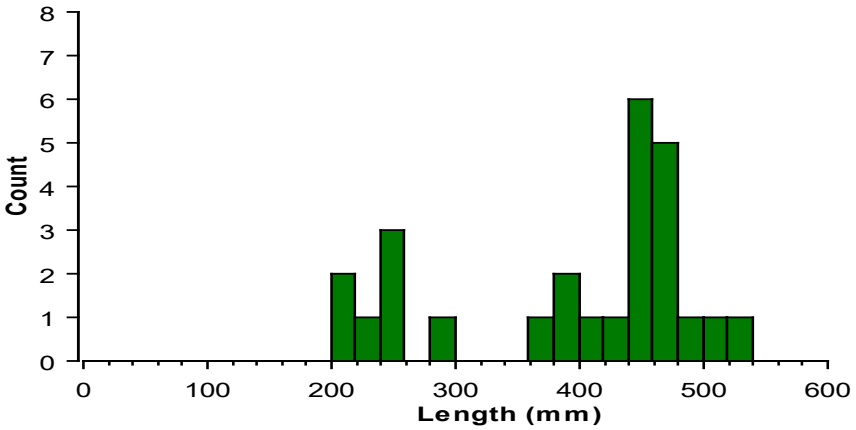



**Figure 2:** Number of brown trout in each length class.

***Condition Factor***

The average condition factor for all 26 brown trout weighed and measured was 1.35 k. No fish had a condition factor below 1.0 k, with 77% in the 1.2 – 1.6 k range (see Table 1). Two fish had a condition factor over 1.6 k.

**Table 1:** Number and percentage of fish in each condition factor range and category.

| Condition factor range (k-factor) | Number | Percentage | Condition category |
|---|---|---|---|
| 1.0 – 1.1 | 2 | 8 | Fair |
| 1.1 – 1.2 | 2 | 8 | |
| 1.2 – 1.3 | 4 | 15 | Good |
| 1.3 – 1.4 | 9 | 35 | |
| 1.4 – 1.5 | 6 | 23 | |
| 1.5 – 1.6 | 1 | 4 | |
| 1.6 – 1.7 | 1 | 4 | Excellent |
| 1.7 – 1.8 | 1 | 4 | |
| *Totals* | *26* | *100* | |

## 4. Discussion

At present, based on the catch per unit effort result, the size of the brown trout population within Camden Dam is low. The lake filled in 2020-21 and consequently only one spawning period would have occurred. There were some young of the year fish observed, indicating a successful spawning. The numbers of brown trout are likely to increase in the future, with exponential increases expected in the next 5 – 7 years. There were also several 'river fish' captured during the survey (i.e. < 300 mm). These fish were visually very distinctive in comparison to the larger resident lake fish. In terms of numbers, the dispersal of 'river fish' into the lake will contribute significantly to the population.

No brown trout were in poor condition. Most were in the good to excellent category, as expected within a newly formed water with an abundance of available food. The condition of fish is likely to continue to increase as the aquatic ecosystem develops. However, over the next 5 - 7 years as the population increases exponentially, the condition of fish will reduce, with larger/older fish expected to lose condition.

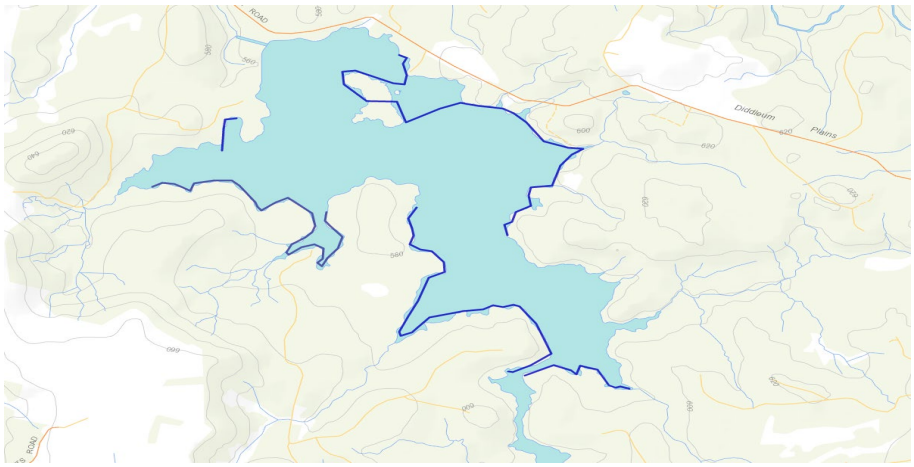
Until the lake and the trout population begin to reach some level of ecosystem stability, it is reasonable not to consider any long term goals for this fishery. Future monitoring will be required to establish objectives and goals for the trout population and the fishery in general.

## 5. RECOMMENDATIONS

- Once the fishery shows signs of settling into a more natural system, long term objectives and goals are established. At this point, a review of bag limits and size limits may be required.
- No stocking is required as high natural recruitment of brown trout and some rainbow trout will occur.
- Camden Dam is included in a northeast regional Anglers Access Program.
- Monitoring of future angling effort and harvest is achieved by angler feedback, collection of angler creel data and angler surveys.
- Monitoring of the trout population is undertaken in 2025-26.

## 6. Appendix

**Appendix 1:** Area electrofished at Camden Dam 11 February 2022.



**Appendix 2:** Length, weight, condition and sex data for the 26 brown trout captured from Camden Dam, 11 February 2022.

| Sex | Length (mm) | Weight (g) | Condition Factor (k) |
|---|---|---|---|
| F | 452 | 1380 | 1.49 |
| M | 464 | 1470 | 1.47 |
| M | 480 | 1460 | 1.32 |
| F | 283 | 300 | 1.32 |
| F | 257 | 290 | 1.71 |
| F | 390 | 830 | 1.40 |
| I | 211 | 150 | 1.60 |
| F | 373 | 670 | 1.29 |
| F | 464 | 1260 | 1.26 |
| F | 440 | 1270 | 1.49 |
| M | 467 | 1480 | 1.45 |
| M | 457 | 1250 | 1.31 |
| F | 447 | 1320 | 1.48 |
| F | 418 | 1050 | 1.44 |
| F | 477 | 1420 | 1.31 |
| M | 460 | 1230 | 1.26 |
| M | 534 | 1710 | 1.12 |
| F | 450 | 1240 | 1.36 |
| M | 500 | 1440 | 1.15 |
| F | 390 | 630 | 1.06 |
| M | 430 | 830 | 1.04 |
| F | 452 | 1260 | 1.36 |
| I | 210 | 150 | 1.62 |
| I | 243 | 180 | 1.25 |
| I | 243 | 190 | 1.32 |
| I | 220 | 140 | 1.31 |