

# Inland Fisheries Service

## Recreational Fisheries



### Cascade Dam

### Technical Report

### Fisheries Performance Assessment

# Inland Fisheries Service

## *Cascade Dam Fisheries Performance Assessment*

### Contents

<b>1. INTRODUCTION</b>	<b>1</b>
<b>2. SURVEY METHODOLOGY</b>	<b>1</b>
<b>3. RESULTS</b>	<b>2</b>
<b>4. STOCKING HISTORY</b>	<b>3</b>
<b>5. DISCUSSION</b>	<b>3</b>
<b>6. RECOMMENDATIONS</b>	<b>4</b>
<b>7. APPENDIX</b>	<b>5</b>

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# Inland Fisheries Service

## Cascade Dam Fisheries Performance Assessment

### 1. Introduction

The Inland Fisheries Service is searching for a second self-sustaining wild population of brook trout. Brook trout have been rumored to exist in the Cascade Dam and Cascade River from various local sources.

The Cascade River runs off Bells and Rattler Hill and flows through the Cascade Dam before entering the Ringarooma River in the town of Derby. The river is tannin in colour, ten km long and predominantly lined with rainforest. Logging occurs in the headwaters around the East Cascade River (otherwise known as the Minnie Jessop Creek), no other types of farming are practiced close to the river or its headwaters. There have been no historic stockings of brook trout recorded in the Cascade River.

The Cascade Dam is 120 acres, 350 m above sea level and was built in 1934. In 1972, the Tasmanian Government made the water available for irrigation to the sixty properties around Derby and Winnaleah and it has been part of the Winnaleah Irrigation Scheme since 1987. The dam suffers from large drawdowns during the summer. There have been no recorded stockings of brook trout in the Cascade Dam, although the nearby Briseis Hole received brook trout stockings from 1966 to the mid 1970's. Brown trout are found below the Cascade Dam and recent findings show that large numbers of brown trout live in the Cascade Dam and River.

Both the Cascade Dam and river receive little angling pressure and is accessed via the Cascade Dam Road from the township of Derby. The Cascade Dam can also be accessed from the Mount Paris Dam Road.

### 2. Survey Methodology

During 11 – 13 May 2021, 20 box traps were set in Cascade Dam across all habitat types, including several deeper water sets. A total of 116 brown trout were caught and 33 were sexed and measured (fork length). Sixty-four brown trout were caught on the first day and no brook trout were seen or captured.

We electrofished two hundred meters upstream from the confluence of the Cascade River and 33 brown trout fingerlings and advanced fry were captured.

A further 100 metres was electrofished higher upstream where the 'Atlas' mountain bike track crosses the river. Nineteen brown trout were captured ranging from fingerlings to mature adults up to 240 mm. Many more brown trout were seen and one *Astacopsis franklinii* was captured.

The Cascade River was electrofished for 100 metres above the weir on the south side of its junction next to the Mount Paris Dam Road. Six mature brown trout were captured immediately above the weir. The river becomes steep, narrow and difficult to sample above this point.

The East Cascade River was electrofished for 15 metres below and above where it flows under the Mount Paris Road. Five adult brown trout were captured.

The final sample site was immediately above an unnamed dam, 1.4 km up the Minnie Jessop Road. This overgrown, sandy creek was 0.5 – 1 m wide and less than 30 cm deep. Four brown trout fingerlings were captured in less than 10 metres of electrofishing. A brown trout approximately 30 cm was seen in the nearby dam.

# Inland Fisheries Service

## Cascade Dam Fisheries Performance Assessment

### 3. Results

#### *In-Lake survey*

During 11 - 13 May 2021, the Inland Fisheries Service conducted an in-lake survey at Cascade Dam to examine the presence of brook trout. The water level was 80 cm from full supply level. The weather was light drizzle with patches of sunshine and wind under five knots. The water temperature was twelve degrees and brown trout were seen feeding in the shallows eating small mayflies.

A total of 116 brown trout were captured in the box traps. The largest fish was 452 mm with five others over 400 mm. All brown trout were in excellent condition and ready to spawn. No brook trout were found.

**Table 1:** Sex and length data for brown trout captured in box traps in Cascade Dam.

Sex	Length (mm)	Sex	Length (mm)
Male	452	Female	335
Male	432	Female	335
Male	364	Female	333
Male	342	Female	332
Male	322	Female	320
Male	308	Female	305
Male	277	Female	274
Male	275	Indeterminate	297
Male	238	Indeterminate	293
Male	218	Indeterminate	257
Female	416	Indeterminate	248
Female	387	Indeterminate	239
Female	366	Indeterminate	187
Female	363	Indeterminate	134
Female	360	Indeterminate	114
Female	338	Indeterminate	112
Female	336		

#### *CPUE information*

Over the three days (two nights) of the survey, 10 box traps (20 sets) were used to capture 116 brown trout. In respect of the CPUE, the box traps returned 5.8 brown trout per trap, with most of the traps caught multiple fish. By comparison to similar sized lake fisheries, the CPUE was high, although fewer traps were used.

# Inland Fisheries Service

## *Cascade Dam Fisheries Performance Assessment*

### **River electrofishing**

During 12 - 13 May 2021, we conducted electrofishing in the Cascade River. Water levels were slightly above average for this time of year after recent rainfall.

Five separate sample sites were selected from the confluence of the Cascade River with Cascade Dam, to the uppermost reaches of the Cascade and East Cascade rivers. In total, 67 brown trout were captured, ranging from fingerlings and adults, up to 240 mm length. More adults were found in the mid sections and headwater of the Cascade River compared to the head waters of the East Cascade and the lower reaches of the Cascade River. No brook trout were captured.

## **4. Stocking History**

Brook trout have never been stocked into the Cascade Dam or the Cascade River. Brown trout were first stocked into the Cascade Dam in the late 1930's and further stockings occurring in 1955 and 1966. There are no other records for these waters.

## **5. Discussion**

Large numbers of brown trout inhabit the Cascade Dam and the Cascade River. No brook trout were found during the survey. It is unlikely that brook trout would have established in the main waterbody and its tributaries due to numerous brown trout present. Brook and brown trout do not co-exist well and the extent to which brown trout have moved into the upper reaches of the main tributaries of the Cascade River, suggests that brook trout would not have established in this system.

There are no records of any brook trout being released into this system, but records show brown trout were released as far back as the 1930's.

Cascade Dam has many well-conditioned brown trout as shown by the CPUE of 5.8. This lake is underfished and could form part of an angler access program, being promoted as a productive fishery in the north east region. The Cascade Dam is easily accessed from the Cascade Dam Road and anglers can launch boats at the dam wall. The track also extends around the south western side of the lake, giving anglers foot access to the lake.

The brown trout from the Cascade Dam may also be used for stocking nearby waters.

The Cascade River is underfished and could be the subject of an angler access program. Derby is currently experiencing a boom in visitation with mountain biking bringing thousands of people into the area. An opportunity exists to promote fishing on the river as it is easily accessed off mountain biking tracks and dirt roads.

Presently, the only fully self-sustaining population of brook trout known to the Inland Fisheries Service is in the Langdon River.

# Inland Fisheries Service

## *Cascade Dam Fisheries Performance Assessment*

### **6. Recommendations**

- As there are no brook trout in the Cascade catchment, other sources of brook trout will need to be found to meet breeding and stocking requirements.
- The Cascade Dam and Cascade River to be promoted by the Service to increase fishing participation in the area.
- An Angler Access Program be developed for the area, including a boat ramp upgrade.
- Trapping and relocating of brown trout from the Cascade Dam to nearby waters such as Blackmans Lagoon, Curries River Reservoir and Pioneer Dam has potential, if spawning runs in the highlands do not produce enough brown trout meet stocking requirements.
- Discuss with the Dorset Council and local mountain biking companies before any promotion takes place, due to the nature of the Cascade Dam Road, as there are a number of bike riders and small buses that currently use the narrow road.

# Inland Fisheries Service

## *Cascade Dam Fisheries Performance Assessment*

### 7. Appendix



Cascade Dam brown trout measuring 416mm.

# Inland Fisheries Service *Cascade Dam Fisheries Performance Assessment*



Box traps set in Cascade Dam



Measuring a typical Cascade Dam brown trout



Cascade River brown trout electrofished from just above Cascade Dam

# Inland Fisheries Service

## *Cascade Dam Fisheries Performance Assessment*



Cascade River brown trout electrofished from the middle reaches.

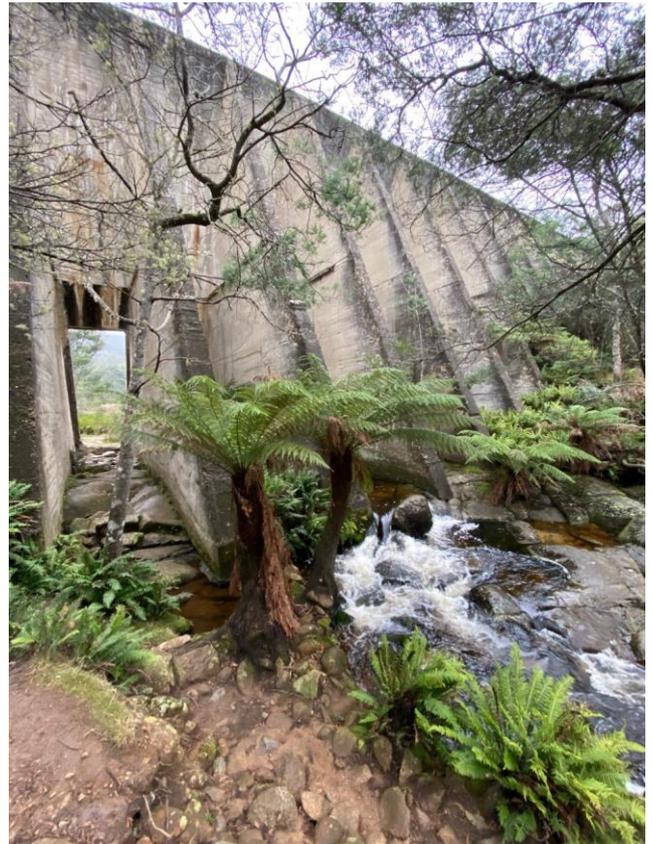


Box traps across the mouth of the Cascade River where it enters the Cascade Dam. This was particularly successful on 12 May with larger fish moving into the river to spawn

# Inland Fisheries Service *Cascade Dam Fisheries Performance Assessment*



Cascade River, 100m upstream from where the 'Atlas' mountain biking track crosses the river.



Cascade River as it leaves Mount Paris Dam



Electrofishing the middle reaches of the Cascade River



A typical haul of Cascade River brown trout, caught while electrofishing