

# Inland Fisheries Service

## *RECREATIONAL FISHERIES REPORT*



### **West Coast Brook Trout Assessment Report**

**Langdon River, Lake Langdon, Tyndall Creek  
and Conglomerate Creek – May 2022**

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### I. INTRODUCTION

#### **Clarence Lagoon Stocking**

A wild population of brook trout is known from the Langdon River, consequently a small number of these will be used to supplement the Clarence Lagoon fishery. The IFS has established a policy to no longer stock Clarence Lagoon with domestic fish. This is being done to enhance the fishery and strengthen fish stocking biosecurity procedures.

#### **Tyndall Creek Stocking**

Tyndall Creek runs off the Tyndall Range and flows into Lake Newton. The creek was electrofished by Entura and holds a high abundance of the climbing galaxias (*Galaxias brevipinnis*). A search of the Natural Values Atlas (NVA, March 2021) showed no threatened species were present and no significant conservation values identified. During May 2021, a decision was made to translocate brook trout from the Langdon River (only known self-supporting river population of brook trout in Tasmania) to Tyndall Creek. A total of 26 brook trout were electrofished from the Langdon River and transferred into Tyndall Creek. To establish if any recruitment had occurred, a follow up survey was conducted during May 2022.

#### **Conglomerate Creek Assessment**

Conglomerate Creek flows into the Queen River at Queenstown. This stream is relatively short with the catchment fed from the nearby hills to the east of Queenstown. The creek is believed not to hold any fish and consequently is a potential site to establish another population of wild brook trout. An electrofishing survey and water quality assessment was undertaken to establish its suitability for stocking brook trout.

#### **Lake Langdon**

Lake Langdon is located on the eastern side of the Anthony Road, south of Lake Plimsoll. The lake is shallow and holds water all year round. A box trapping survey by IFS staff during February 2020 suggested the lake is likely to be free of any fish. The lake drains to the west, under the Anthony Road and into the Henty River and is not connected to the Langdon River. Spawning is unlikely as inflows are limited to ground water and local runoff. A small creek flows out of Lake Langdon and this may provide a passage for brook trout to enter the Henty River. During summer, water levels are low and the tannic water heats up to high temperatures.

On 15 December 2021, 4,500 brook trout weighing 2 grams were stocked into Lake Langdon. This was done to establish an alternate source of brook trout for stocking lakes Plimsoll, Selina and Rolleston, as water temperatures at the Salmon Ponds hatchery are too high to on-grow brook trout to stock these waters that have a high abundance of climbing galaxias.

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### **2. FPA SURVEY METHODS AND RESULTS**

#### ***Lake Langdon***

During 24 – 26 May 2022, fifteen fyke nets were set in Lake Langdon, consisting of three sets of two, two sets of three and one set of four nets along the western and north-western shoreline. Water levels were high, with around ten centimetres of water flowing over the causeway. The traps were checked each morning. One fish was found in a trap on the morning of 25 May, but no other fish were caught over the next two days. The fish was in good condition, measuring 160mm and returned to the lake.

#### ***Tyndall Creek***

Tyndall Creek was electrofished for 840 seconds on-time upstream of the bridge used to access the Tyndall Canal. This was the release site for the brook trout stocking during 2021. Fifty climbing galaxias were captured and a sub-sample were measured (Appendix 1). The larger climbing galaxias has gut contents examined with several freshwater crayfish (*Astacopsis tricornis*) present. No brook trout were found.

The upper section of Tyndall Creek was electrofished for 1,089 seconds. Consisting of an 80 m section downstream of the first power pylon at the northern end of Tyndall Canal, including the first pool of the canal. No brook trout were found. Sixty climbing galaxias were captured, ranging from 49mm to 202mm. This section of the river was more open than the lower section and easier to electrofish. Compared to the lower section, this site held fewer galaxiids.

#### ***Langdon River***

On 27 May, the middle section of the Langdon River was electrofished. However, due to poor visibility and low conductivity, electrofishing was relatively inefficient, with many fish seen but escaping the 'electric field'. A total of 13 brook trout were captured, consisting of eight males and five females, ranging from 152 mm to 217 mm fork length. Another eight brook trout were observed but not captured.

On the same day, the lower section of the Langdon River 100 m below the causeway at Lake Langdon to 500 m above the causeway was electrofished (the same section as surveyed during May 2021). A total of seven brook trout were captured. No climbing galaxias were found.

All 20 brook trout collected from the Langdon River were transferred to Clarence Lagoon, most of these fish has already spawned. A similar survey of the Langdon River during the first week of May 2021 resulted in the capture of mostly 'ripe' brook trout.

#### ***Conglomerate Creek***

During 25 May 2022, Conglomerate Creek was electrofished for 600 seconds on-time from the Queenstown football ground to the bridge on Mary Street. No fish were found. Many rocks were turned over along this section, looking for invertebrates. The creek was lifeless and only contained discarded pebble caddis cases, no other invertebrates were found.

On 26 May, a section of Conglomerate Creek accessed off Park Street was extensively electrofished. While the creek was cold and clear, no fish were observed. The river appeared to be void of any life.

### **3. DISCUSSION**

#### ***Langdon River***

There appears to be a small but robust self-supporting population of wild brook trout within the Langdon River. The number of fish seen at the middle site was fewer than the previous years survey and could be due to the removal of fish from this site last year. In comparison to the 2021 result, the lower site had a higher abundance of brook trout. This is possibly due to the fish having already spawned in the upper section and had dropped down into the lower reaches.

The number of climbing galaxias found in the Langdon River was lower than the two previous electrofishing surveys conducted during 2020 and 2021. It is likely the abundance of climbing galaxias and the presence of larger brook trout is an ecological controlling influence.

Consequently, moving too many large brook trout from the Langdon River may lower predation rates and alter species interaction. Therefore, caution is advised in relocating larger numbers of brook trout from this area.

Timing of future translocations to Clarence Lagoon and Tyndall Creek (or possibly Conglomerate Creek), should take place during late April to early May to optimise their spawning potential.

If Clarence Lagoon and/or Tyndall Creek is to receive wild brook trout stockings, a second self-sustaining population, in addition to the Langdon River should be established. In using fish from the Langdon River, caution is advised, as the balance between brook trout and climbing galaxias abundance is uncertain. If a transfer is planned, more than twenty fish need to be captured, else all fish should be returned until there are high enough numbers.

#### ***Tyndall Creek***

The number of fish transferred into Tyndall Creek during 2021 was low. Consequently, the abundance of brook trout had not reach detectable limits. In addition, this section of river is very overgrown and difficult to electrofish. Furthermore, there is a significant abundance of climbing galaxias in this stream and establishment of the brook trout population is likely to be challenging.

#### ***Lake Langdon***

It is likely the previously stocked brook trout into Lake Langdon were unable to survive the high water temperatures occurring during summer, or they may have moved out of the lake and into the cooler waters of the Henty River system. The use of Lake Langdon to grow fish is unlikely to be a viable option.

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### **Conglomerate Creek**

The lack of any fish species and the limited aquatic invertebrates observed indicates poor river health in Conglomerate creek. It is not recommended or a preferred site for brook trout.

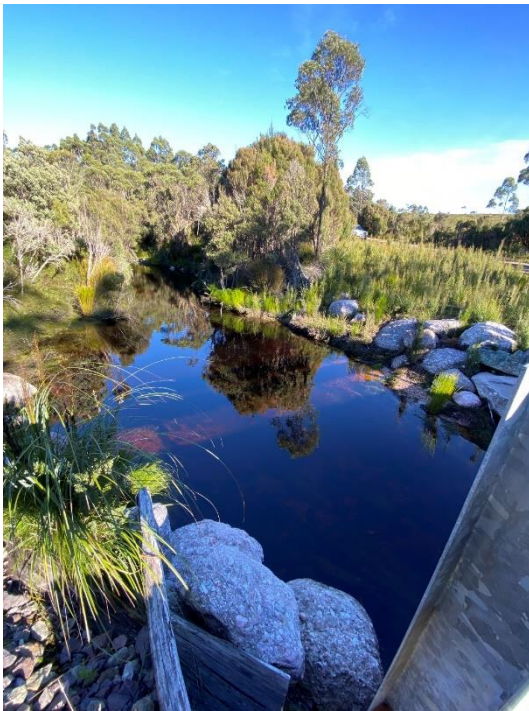
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### 4. APPENDIX

**Appendix 1:** Lengths for climbing galaxias Tyndall Creek (227, 223, 198, 197, 192, 190, 188, 174, 138, 135, 120, 77, 48).

**Appendix 2:** Photos and species captured, as from survey sites.



The bridge and starting point for electrofishing Tyndall Creek.



Tyndall Creek canal, the source of Tyndall Creek.

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Tyndall Creek brook trout stocking release point 2021, 50m above the bridge at the ford.



Tyndall Creek, fifty climbing galaxias electrofished from the road bridge to the Tyndall Canal.



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Climbing galaxia (*Galaxias brevipinnis*), Tyndall Creek.



A freshwater crayfish (*Astacopsis tricornis*) that was regurgitated by a climbing galaxias, Tyndall Creek.

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Brook trout caught in a box trap in Lake Langdon, May 2022. This was the only brook trout caught in three nights of trapping. The fish was from a release of fry during December 2021.



The outflow, Lake Langdon that flows into the Henty River (May 2021).

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Upper reaches of the 'Middle site' on the Langdon River, May 2022



Electrofishing Conglomerate Creek in Queenstown, May 2022.

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Electrofishing Conglomerate Creek, May 2022.



Upper reaches of Conglomerate Creek, Queenstown, May 2022.

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Releasing wild brook trout from the Langdon River into Clarence Lagoon, May 2022.