

Gaden Trout Hatchery - Tri Annual Report

Completion of production

May to September 2019

Climatic Conditions

Heavy frosts were experienced in July-August with the fish trap structure, all ponds and sections of the Thredbo River freezing over. In general the river level has been low for winter with only two occasions where flood waters were over the trap barrier. High winds, snow in addition to 254.5mm of rain have been received since May (30mm more than this time last year). The river stayed between 1-5 °C for the three months of winter, which kept ova development very slow.

During late winter and early spring, algal blooms were very noticeable in the Thredbo River, which resulted in additional and regular cleaning of ova trays, troughs and tank screens in the hatching room. Since the river has warmed up to above 7 degrees and a minor flood event, the algae has been nearly non-existent.

Infrastructure

Applications for regional growth funding and research site upgrade expenditure for improvements were submitted for consideration for an upgrade to hatchery infrastructure and tourist facility in August 2018. We are still waiting to hear back from these applications.

The Newly built RAS (recirculating aquaculture system) was put into work over the winter period with fantastic results. By warming the water to 14°C, some of last year's fingerlings doubled their size in just a few months. These fish were grown to a certain size set by our research team, tagged, and released into Khancoban pondage where they are being used in a trial to try and combat redfin predation. These trials are ongoing and results will be determined shortly.

The Thredbo Valley Trail bike bridge was completed in June, with the soft opening being on the October long weekend. Lots of people have been accessing the bridge from the hatchery grounds. The carpark area is being heavily utilized for riders, especially over the long weekend and school holidays.

During strong winds in June, several birch trees were blown over near the front Atlantic salmon pond. No major damage was caused and some of the trees has to be removed completely.

Gaden Hatchery was granted additional funding for the removal of the old hatching room building (which haven't been used since 2007). The demolition was started in early October, and should be completed within a few weeks.

Fish Production

Trap screens were installed on the 4 May 2019 targeting Brook Trout. Unfortunately none were caught but plenty of brown trout were moving through early in the spawning season (92 caught before the June long weekend). The brown trout run was very scattered this year, lasting the full closure period. Approx. 2000 brown trout were captured during this time, with ova requirements satisfied. The fish this season were in great condition and once stripped of their ova and milt, were released back into the Thredbo River. Data has been collected by hatchery staff for all fish relating to condition factor, tagging/stocking information and return spawn fin clip assessment. There were a few minor flood events which took place during this time, with water moving above the trap barrier. Plenty more brown trout were seen moving up river to spawn during the trapping period.

The Rainbow Trout first started appearing in early August, with a few scattered fish passing through the trap. Unfortunately due to reasons unknown, a total of only 174 Rainbow Trout were caught which was down on last years numbers (420). The river level was quite low over winter, with minimal water passing through the trap sometimes weeks on end. Due to limited number of wild rainbow trout captured, the allocation of ova was complimented by captive brood stock on hand at the hatchery. Ova is still incubating and full success rate yet known.

To further prevent possible future limitations on rainbow trout stocking numbers for MAS streams and NSW impoundments, Dutton Hatchery has provided fry for the CSDAC branches. Gaden hatchery will provide brown trout allocations for CSDAC in November in conjunction with MAS fry for both species.

Cormorants have been very active along the Thredbo River throughout the early spring period, with Pelicans being present during rainbow trout spawning, where they have been seen predating close in combined numbers of up to 8 in the waterway immediately prior to the permanent fish trap.

Stocking Information is regularly updated and can be viewed at <https://www.dpi.nsw.gov.au/fishing/recreational/resources/stocking>

- Egg picking has been completed for Atlantic Salmon and Brown trout
- Rainbow Trout will continue until November.

Atlantic Salmon

Excess broodstock (80 total released into lake Jindabyne in May)

50 tagged 1+ to Khancoban pondage

| Atlantic Salmon | |
|-----------------|--|
| Age | Number |
| ova | 200,000 (green ova laid down) 64% fertility |
| 1+ | 400 |
| 2+ | 230 |
| 3+ | 90 |
| 4+ | 45 |
| 5+ | 11 |

Brook Trout

There was a 100% mortality event on all hatchery Brook Trout in January 2019 (heat stress). We have received around 100 fish from Denison College in Bathurst (Gaden Hatchery stock). These fish which are being kept in the bridge pond on site have been heavily preyed upon by native water rats. Staff are trying to manage natural losses and fish will most likely be moved inside the hatching room once all larvae and fry are big enough to be moved outside.

| Brook Trout | |
|-------------|--------|
| Age | Number |
| ova | 0 |
| 1+ | 80 |
| 2+ | 0 |

Rainbow Trout

In September, Gaden staff assisted NFC researches to conduct monitoring on numerous Lake Eucumbene tributaries. A small sample of ova was obtained for genetic diversity in future Gaden captive Rainbow Trout brood stock.

Gaden staff assisted research staff in tagging approximately 600 large rainbow trout fingerlings destined for redfin waters. These fish may help indicate a size range which can compete with redfin, and improve the trout fishing in these areas.

Ex broodstock Rainbow Trout were released into several different dams (Eucumbene, Williams, Jindabyne, Googong) with eye tags inserted behind their left eye. These eye tags are used to differentiate a wild caught fish with a hatchery bred fish. Thee tagged fish will not be counted in the upcoming Snowy Lakes Trout Festival competition.

Approximately 750,000 rainbow Trout eggs have been laid down in our hatchery upwellers. Depending on mortalities during development, we should be able to fulfil stocking requirements for the 2019/20 stocking season.

| Rainbow Trout | |
|--|--|
| Age | Number |
| Ova laid down Fertility estimated 80% | (green ova) 750,000 Gaden/Thredbo river 30,000 Eucumbene |
| 0+ | 4000 |
| 1+ | 650 |
| 2+ | 200 |
| 3+ female | 135 |

Brown Trout

500,000 brown larvae in hatching room. 150 fingerlings in RAS System (may be tagged for redfin research)

| Brown Trout | |
|--|---------------------|
| Age | Number |
| Ova laid down Fertility estimated 86% | 500,000 (green ova) |
| Green ova to dutton | 200,000 |
| fingerlings | 150 |

Tourist Centre – Events – Revenue

Guided tours weren't available on a number of occasions due to WHS, public risks and potential for injury due to high winds and extreme inclement weather. However, 'self-guides' were offered as an alternative help mitigate these risks.

Over the October long weekend, Gaden held a kids fishing workshop. We had a great turnout for both days with positive feedback. A big thankyou to all the volunteers involved.

The bridge opened over the October long weekend and prior to opening, there have been numerous meetings with National Parks to discuss full operation and resolve any issues we and the landholders around the hatchery have. Over the opening weekend the TVT has been really popular, seeing our carpark full most days.

Lake Jindabyne Hotel, Life of Riley Tours provide large tour groups weekly. With a break over winter, L.O.R.T started up early September and will continue through to June 2020.

| Gaden Visitation Records | | | | | |
|--------------------------|-----|------|------|-----|------|
| | May | June | July | Aug | Sept |
| Adults | 42 | 42 | 46 | 47 | 38 |
| Kids | 4 | 7 | 16 | 4 | 13 |
| Families | 2 | 2 | 26 | 10 | 13 |
| Concession | 27 | 9 | 8 | 12 | 18 |
| Self-Guide | 50 | 55 | 95 | 75 | 64 |
| Tour groups | 203 | 45 | 0 | 0 | 250 |
| Fish Food | 45 | 91 | 214 | 159 | 131 |
| Smoked Trout | 19 | 19 | 55 | 46 | 40 |

Gaden Revenue Records

| | |
|------|--------|
| May | \$2333 |
| June | \$1555 |
| July | \$3084 |
| Aug | \$2245 |
| Sept | \$3393 |

Hatchery Manager Garry Green has ended his time here at Gaden as of early September. Garry was a part of the Gaden team for over 20 years and we wish him well in his future endeavours.

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