

Inland Fisheries Service Carp Management Program

Quarterly Report



July to September 2018



Australian Government

Inland Fisheries Service



Tasmanian
Government

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This quarterly report details the Carp Management Program activities from July to September 2018.

The objective of the program is: *To eradicate carp from Tasmanian waters and, in the meantime, to minimise the impact of carp on Tasmania from economic, recreational and ecological points of view.*

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Carp captures at a Glance

Lake Sorell

July – September 2018 (Total)	Adult / Juvenile*	Total 1995 to present
0	0 / 0	41452

*These fish are not part of the 2009 cohort

Lake Crescent

July – September 2018 (Total)	Adult/Juvenile	Total 1995 to present
0	0 / 0	7797

Overview

Lake Sorell

Over this quarter the level of Lake Sorell continued to rise steadily, resulting in the marshes becoming inundated with water. This is perfect for the lead up to the start of the carp season in October, when the increasing temperatures should create ideal environmental cues, encouraging any remaining carp to push inshore. Throughout July to September, the priority was to ensure all gears were in place to prevent spawning. This involved checking and repairing the 14 kilometres of barrier nets used to stop carp from getting into their wetland spawning sites. Several kilometres of gillnet was also repaired in anticipation of warming waters and rain events. This included gillnets used in active fishing operations, and gillnets installed behind barrier nets to capture any carp which may breach the barrier net.



Picture 1. Work experience students and IFS staff installing a big fyke net into a barrier net. These fyke nets target mature carp attempting to push into the shallow marshes behind the barrier nets, to gain access to spawning habitat.

In early September, the big fyke nets were stitched into the barrier nets around the lake. These fyke nets are placed in locations where carp are known to enter the marshes. They target maturing carp that are attempting to push into the shallows to seek warm water and spawning habitat. The big fyke nets are an indicator of when the carp move inshore, allowing gill nets to be moved into areas where the likelihood of catching fish is highest. Gill nets were also set across the perimeter of the marshes in order to capture any carp that are able to breach the barrier netting. These gill nets will be left in place behind the barrier nets, as a second line of defence throughout the spawning season.

Two active transmitter fish remained in Lake Sorell this quarter, with the aim being to catch and remove them from the lake before the start of the season. This is due to the low associated catch rates of wild carp with the transmitter fish last season, combined with the potential of accidental recruitment by these male transmitter fish. Using only advanced stage sterile JGC male carp would solve this issue,

however the techniques required to confidently confirm the status of the gonad before release has been difficult. In September both transmitter fish moved onto the shore on days with sunny, still weather, and were consequently caught and removed from the lake. No other wild carp were caught in the nets which further supports that the remaining population in the lake is very low (Figure 1). For the first time since 1997, transmitter fish will not be used this season to assist with the fish-down strategies, and there will be more of an emphasis on gill netting known areas of interest, assisted with the use of electrofishing and fyke nets.

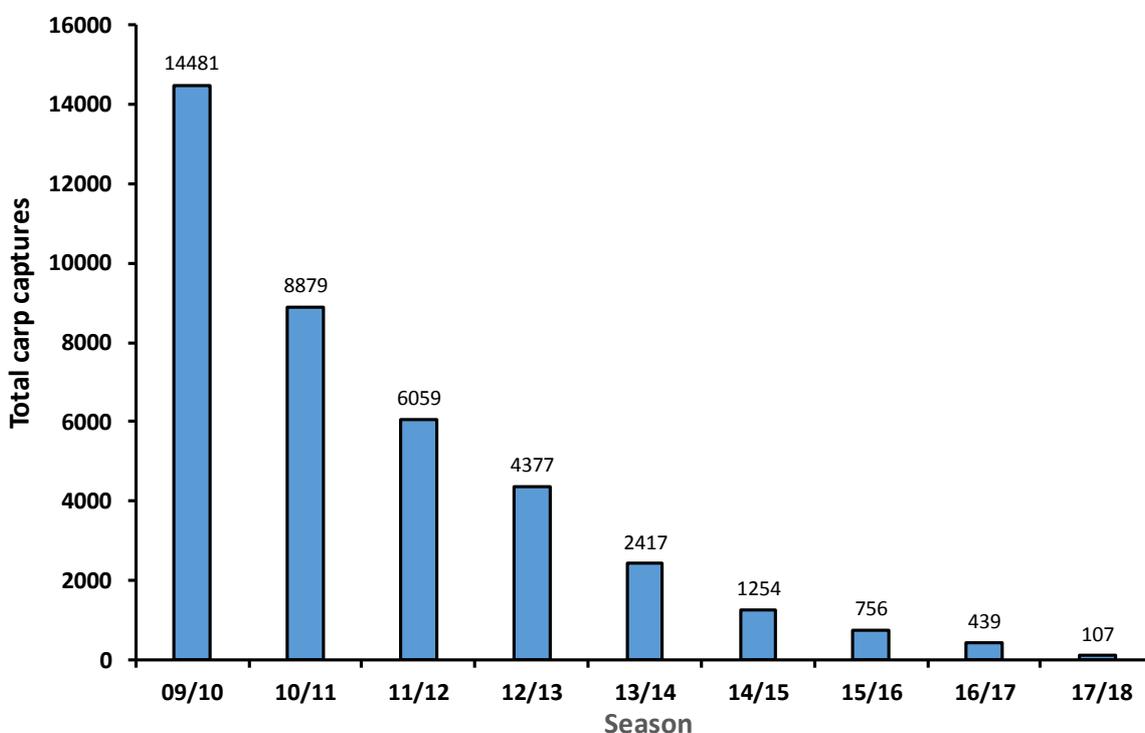


Figure 1. Total carp captures from Lake Sorell (2009-2018)

A small amount of gill netting occurred throughout this quarter, with some nets set around targeting transmitter fish, while others were set on known carp structures; e.g. rocky reefs in deep water (2m +). No carp were caught during this period which is the first time this has occurred since 2009. We are now in a very similar situation, where in 2009 (prior to the spawning event), it was estimated that there were approximately 50 carp left in Lake Sorell. Although our current estimates also indicate there is less than 50 carp in the lake, the difference is that the remaining carp in Lake Sorell are small (700gm average), stunted, and in very poor reproductive condition. 50% of male fish are currently affected by

the jelly gonad condition (JGC), where the advanced stage of the condition results in the fish being infertile. This is in contrast to the 50 remaining carp back in 2009, which were mainly large (2-3.5kg) healthy adult fish. The program is positioned to finish the job now, with the addition of improved spawning protection, more intensive fishing effort, and the Lake Crescent eradication completed.

Looking ahead to this season, the best case scenario is that the few remaining carp will be caught in spring and early summer. If all goes to plan a limited opening of Lake Sorell is being considered for March/April 2019. Anglers should not expect too much and really use this opportunity to reunite or introduce themselves to this water. The decision will be based on what unfolds in the coming months. Further work is expected to be required in spring 2019 to make sure all the carp are gone. A longer trout season might be possible that year and a full season might follow close after that. Ultimately with carp gone, the barriers that prevent the trout from roaming freely around the lake can be removed and allow them to follow the rising water levels into the food rich wetlands each spring. The removal of the containment screens at the outflow of Lake Sorell will see it supplying a steady stream of wild juvenile trout from its spawning streams, not only to itself but also downstream to Lake Crescent.



Picture 2. An example of the beautifully conditioned brown trout which are currently in Lake Sorell

Lake Crescent

Turbidity levels in Lake Crescent have been steadily decreasing since 2008, however from December 2017 to the present, there has been an increase in total turbidity in both Lake Sorell and Crescent (Figure 2). This can be attributed to a lower lake level, combined with windy periods during the time the water samples were taken. Wind fetch on the lakes causes a spike of natural silt re-suspending in the water column. Despite the increasing total turbidity, the colloidal component of the turbidity remains relatively stable, and is declining slowly. Increasing lake levels over the coming spring should see a reversal of this effect, and result in a decrease in the overall total turbidity. The annual carp survey in Lake Crescent conducted in March 2018 found no sign of carp recruitment, but revealed a healthy population of golden galaxias thriving around the lake.



Picture 3. A monster golden galaxias caught in a fyke net. Golden galaxias of this size are found in both lake Crescent and Sorell, but are not encountered often.

Work experience

Laughlan Freeman is a year 10 student from St Virgils College who decided to undertake his work experience week with the Inland Fisheries Service (IFS). Laughlan is a mad keen angler who fishes in both salt and freshwater, and decided to organise a week of work experience with the IFS to get an insight into the career path he could potentially be taking. He has always wanted to work around water, and figured that this would be a good way to determine whether he would be suited to this type of work. The majority of his time was spent with the CMP at Lake Sorell, although he also assisted with some grounds keeping activities at the Salmon Ponds in Plenty.



Picture 4. Work experience student Lachlan Freeman operating the aerial and receiver to search for the remaining transmitter fish in Lake Sorell.

While working with the CMP at Lake Sorell, Lachlan was involved in a range of activities which included general boating activities, checking and setting of gill nets, checking fyke nets, and using telemetry receivers to pin point the location of the radio transmitter carp. He also accompanied fisheries officers while they undertook license checks and general compliance activities. Lachlan plans to complete his secondary education at Rosny College, then hopefully look for work in the fisheries or aquaculture industry. He is currently finalising assessment tasks for an AMSA Grade 2 Coxswains certificate, and next year he plans to upgrade to a Grade 1. Lachlan is definitely destined to a career working on the water, and he found that his experience with the CMP was interesting and useful, and has given him inspiration to complete his studies so he can start working in his dream job.

Table 1. Work experience (July – September 2018)

Name	Background	Timeline
Laurence Farr	Australian Maritime College	3 rd – 5 th September
Laurence Kenwaorthy-Neale	University of Tasmania	3 rd – 5 th September
Julian Butschek	Victoria University	10 th – 12 th September
Laughlan Freeman	St Virgil's College	17 th – 21 st September
Jack Brown	Institute for Marine and Antarctic Studies	25 th – 27 th September

Workshops

In mid-July, a workshop was held in Canberra as part of a larger project under the National Carp Control Plan (NCCP), to discuss how various levels of carp reduction from mainland waterways may impact the surrounding ecosystem. Small and large bodied fish researchers, plant scientists, waterbird scientists, amphibian researchers, and bug scientists from around the country were in attendance, including the Tasmanian Carp Management Program Leader Jonah Yick. There were also discussions based on watery quality, system modelling, risk analysis, and economics.

The outcome of the workshop will hopefully assist the NCCP in planning for an integrated approach to controlling carp in Australia's waterways, understanding and managing the risks involved associated with the removal of carp, quantifying the benefit/cost analysis of the project, as well as informing stakeholder engagement.

For more information about the National Carp Control Plan, see the link below:

<http://www.carp.gov.au/>



Picture 5. Carp Management Program Leader Jonah Yick (front left), at the National Carp Control Plan workshop 2018.

Water Management

Table 2. Water Release data (July – September 2018)

Month	Lake Sorell release (ML)*	Lake Crescent release (ML)
July	-	9.62
August	-	49.38
September	-	19.37
TOTAL	-	78.37

* Note: There is no continuous flow monitoring on the Lake Sorell release, only spot checks are done.

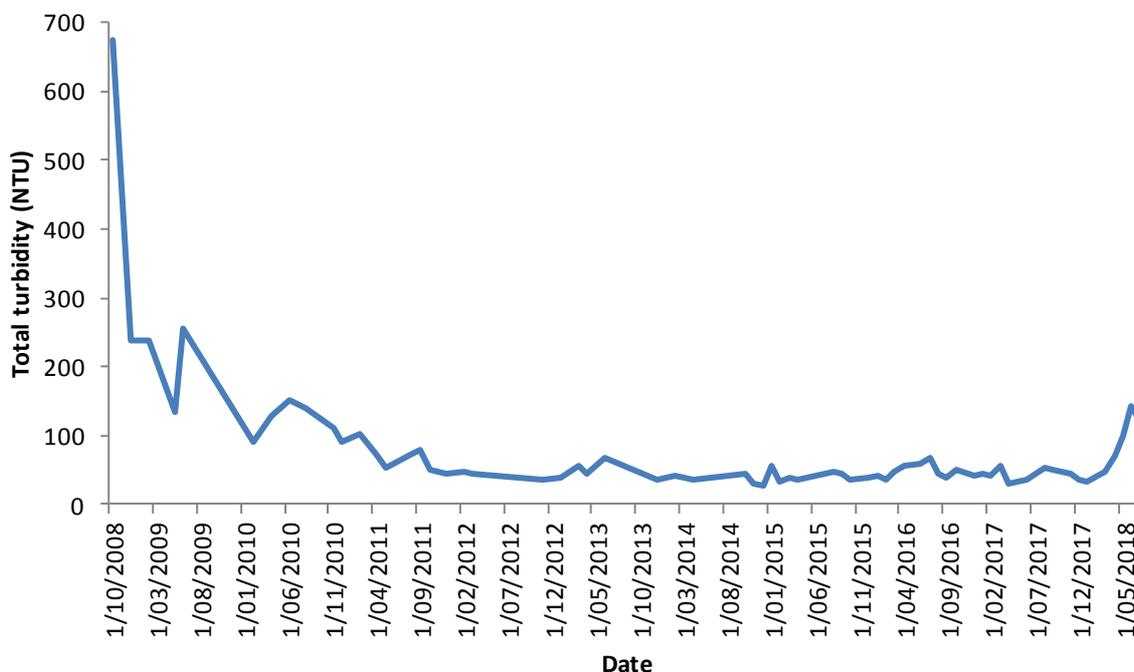


Figure 2. Turbidity levels in Lake Crescent from October 2008 to September 2018

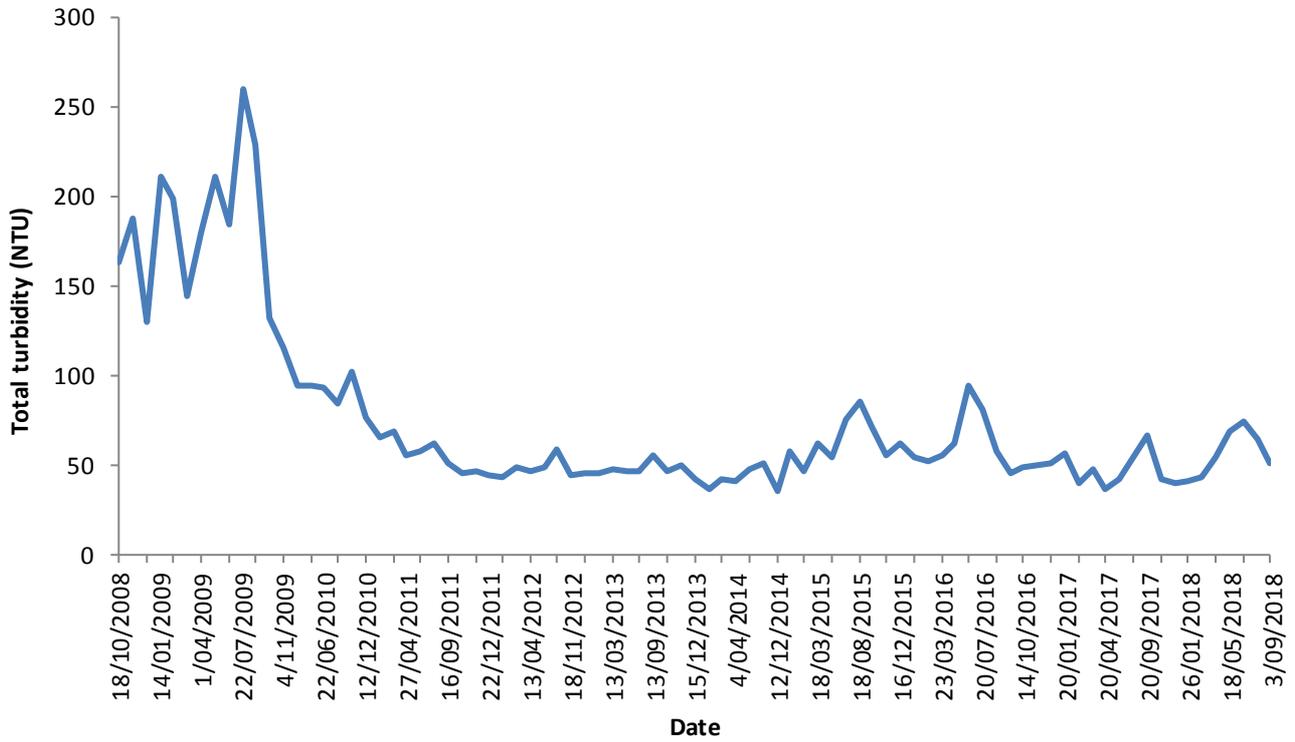
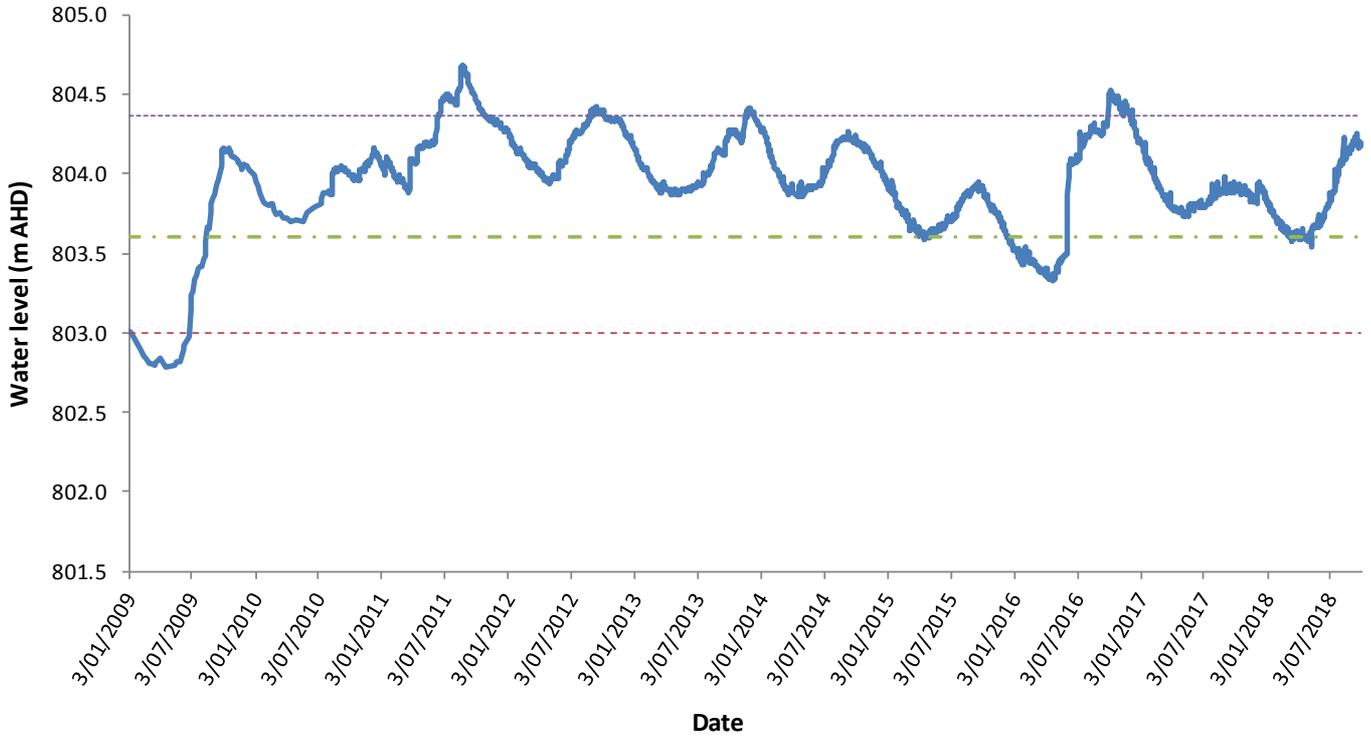


Figure 3. Turbidity levels in Lake Sorell from October 2008 to September 2018



Picture 6. A chrome-silver brown trout from the dark waters of Lake Sorell

Lake Sorell



Lake Crescent

