

# Inland Fisheries Service Carp Management Program

## *Quarterly Report*



**July to September 2017**



Australian Government

Inland Fisheries Service



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**This quarterly report details the Carp Management Program activities from July to September 2017.**

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 2017 (Total)	Adult / Juvenile*	Total 1995 to present
2	2 / 0	41,347

\*These fish are not part of the 2009 cohort

### Lake Crescent

July – September 2017 (Total)	Adult/Juvenile	Total 1995 to present
0	0 / 0	7797

## Overview

### Lake Sorell

Despite below average winter rainfall, the lake level of Lake Sorell remained high over this quarter. As a result, it was expected that the remaining carp population would begin to push inshore as temperatures rose. Throughout July-September, maintenance was done at Lake Sorell ready for the peak carp spawning season (October to February). The priority was to ensure all gears were in place to prevent spawning, before the environmental cues arrived which was typically in late September or early October. This involved checking and repairing the 14 kilometres of barrier netting 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, blocking gillnets to stop carp from accessing marshes, and gillnets installed behind barrier nets to capture any carp which may breach the barrier net. 4.5km of new trammel nets was also ordered and prepared for fishing by the end of September. These trammel nets were determined to be the most efficient net type in previous seasons, and will be used primarily to target carp in shallow water.



*Picture 1. Work experience 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 installed in strategic locations where carp are known to enter the marshes. They target maturing carp which are attempting to push into the shallows to seek warm water and spawning habitat. The big fyke nets can also be used as an indicator of when the carp move inshore, allowing gill nets to be moved into areas where the likelihood of catching fish is highest. A large amount of 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. Trammel nets in 92m lengths, were set perpendicular to the barrier nets (these nets are referred to as wing nets when set in this way) to target carp which are beginning to move around the margins of the lake looking for spawning habitat.

Despite cold water temperatures throughout this quarter (2.2°C – 7°C), fishing effort was maintained on a small scale. Transmitter fish remained spread across the deep sections of the lake, with most of the fish sitting in the same locations for weeks at a time. Gill nets were set in a range of spots, targeting both tracker fish as well as rocky reef structures in deep water (2m +). Two carp were caught during this period. By the end of the quarter, carp were beginning to show signs of pushing into the shallow areas of the lake. The movement of radio transmitter carp increased throughout September, and a small female carp was caught in a barrier fyke net.



*Picture 2. Installing a gill net in the marshes behind a barrier net, while battling with shards of ice!*

### *Lake Crescent*

Lake Crescent's water quality is also continuing to show signs of improvement (Figure 1). Since the extremely low water levels in 2008, the average total turbidity of Lake Crescent has improved considerably. This is the direct result of high water levels flushing the lake after large rainfall events. Currently, the water quality of Lake Crescent is the best it's been for the past 10 years. The annual carp survey in Lake Crescent conducted in March 2017 found no sign of carp recruitment but revealed a healthy population of golden galaxias thriving around the lake.



*Picture 3. With a fork length of 200mm, this golden galaxias is well above the average size class (50-70mm) usually encountered in surveys.*

## Work experience

Hugh McShane is a year 10 student from St Virgils College. Hugh has always had a keen interest in trout and flathead fishing, 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. While working with the CMP at Lake Sorell, Hugh was involved in a range of activities which included general boating activities, checking and setting of gill nets, repairing barrier nets, checking and installing fyke nets, and using telemetry receivers to pin point the locations of the radio transmitter carp. Not only did Hugh gain practical field experience but he also assisted staff with net repairs and construction back at the IFS Head office. Hugh plans to complete his secondary education at Guilford Young College, but is still unsure what path he will take after that. However, he mentioned that his experience with the CMP was interesting and fulfilling, and he will be considering a job working with fish in the not too distant future.

**Table 1. Work experience (July – September 2017)**

Name	Background	Timeline
Bradley Williams	St Virgil's College	14 <sup>th</sup> – 18 <sup>th</sup> August
Dylan Loh	Hobart College	4 <sup>th</sup> – 6 <sup>th</sup> September
Alex Christian	Hobart College	4 <sup>th</sup> – 6 <sup>th</sup> September
Ben Fasnacht	Deakin University	4 <sup>th</sup> – 6 <sup>th</sup> September
Hugh McShane	St Virgil's College	18 <sup>th</sup> – 22 <sup>nd</sup> September
Adam Norris	Sheffield School	25 <sup>th</sup> – 27 <sup>th</sup> September

## Transmitter fish implants

In early September, six jelly gonad condition (JGC) carp were implanted with radio transmitters. Seven gram transmitters were used to suit the small average size of fish (750gm). Although these had a reduced battery life of 182 days, they were better suited for the smaller sized fish. These transmitters also have a function which is able to tell CMP staff whether a fish has died prematurely or has managed to shed the tag. The six transmitter carp were released back into Lake Sorell in preparation for the start of the carp spawning season. Research conducted by IMAS PHD student Raihan Mahmud has shown that carp with advanced stages of JGC have little viable gonad tissue present, and are completely sterile, therefore reducing the risk of accidental spawning with other wild female carp. However, despite being reproductively disadvantaged, they have still been observed to respond to environmental cues, and can lead us to spawning aggregations. These transmitter fish will allow us to gain a better understanding of the movements of the carp population, indicate when the carp begin to move close to shore to look for spawning habitat, and hopefully result in more opportunities to target shallow water aggregations.



*Picture 4. One of the recent JGC transmitter fish recaptured less than a month after release in early September. It was noted that the incision wound had healed well underneath the scab.*

## Employment

One casual worker was employed in August and September to assist with the repair of gillnets, maintenance, and preparation of equipment. Storm Eastley and Chris Boon were both successful in their applications for six and twelve month Technical Officer contracts, respectively. In mid-July Chris Bowen resigned from his position of Technical Officer.

**Table 2. Casual positions (July – September 2017)**

Name	Background	Timeline
Storm Eastley	Rosny College	14 <sup>th</sup> – 16 <sup>th</sup> August

## Water Management

**Table 3. Water Release data (July – September 2017)**

Month	Lake Sorell release (ML)*	Lake Crescent release (ML)
July	-	943.75
August	-	1520.81
September	-	5.07
<b>TOTAL</b>	-	<b>2469.63</b>

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

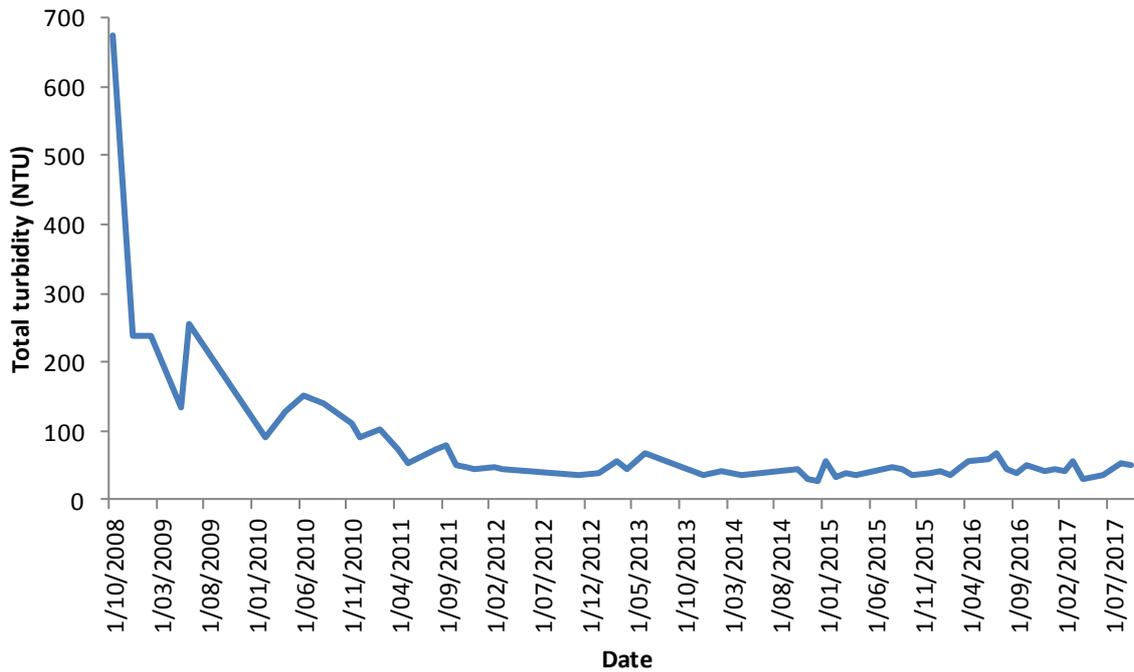


Figure 1. Turbidity levels in Lake Crescent from October 2008 to September 2017

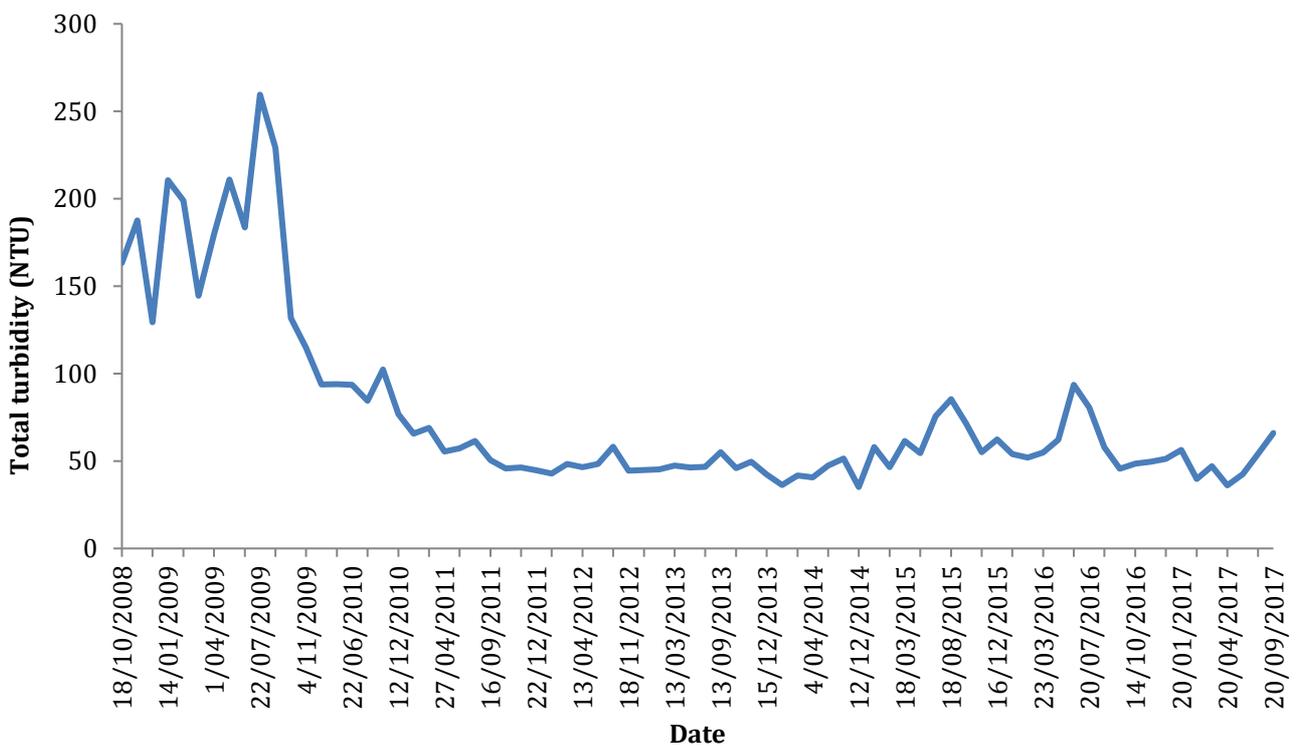
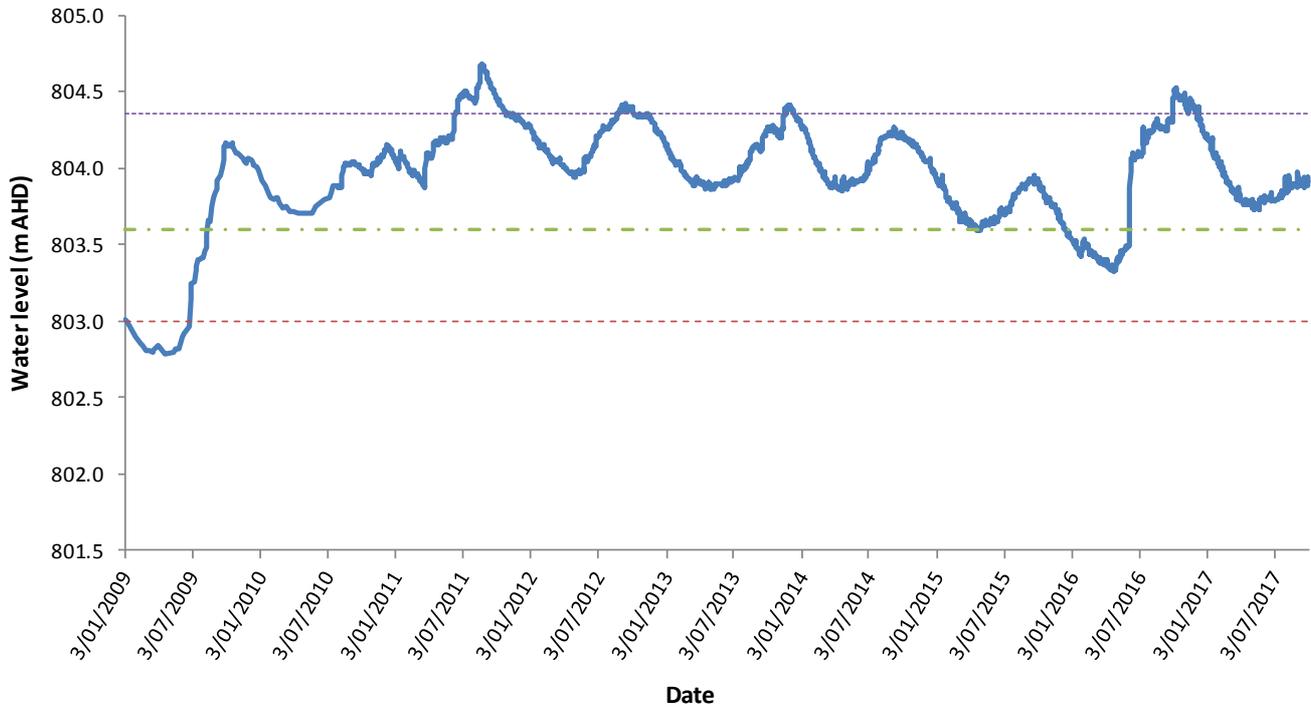
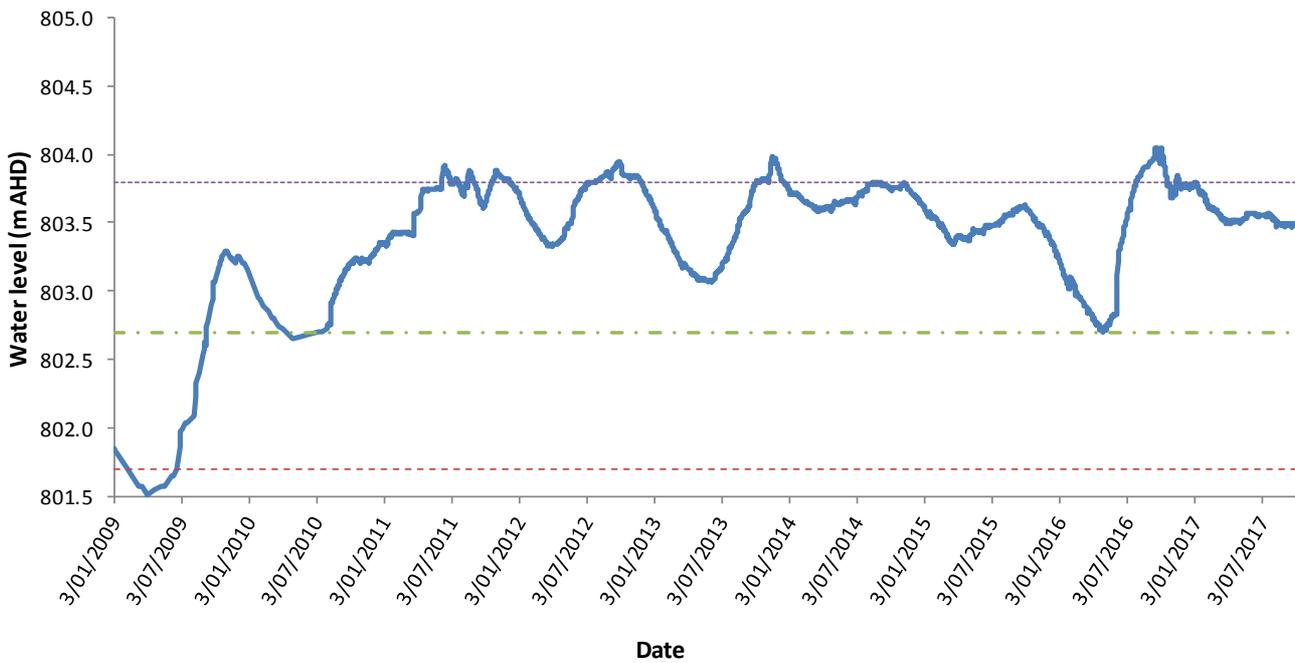


Figure 2. Turbidity levels in Lake Sorell from October 2008 to September 2017

### Lake Sorell



### Lake Crescent



— Water level (m AHD)    - - - Sill    - - - Wetlands    - - - Full supply