

# Inland Fisheries Service

Native Fish Conservation



Annual Report 2023-24

# Inland Fisheries Service

## *Native Fish Conservation – Annual Report 2023-24*

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### **Contents**

<b>Introduction</b>	<b>1</b>
<b>Conservation Status</b>	<b>1</b>
<b>Survey results 2023-24 and summary information</b>	<b>3</b>
<b>Arthurs paragalaxias and Saddled galaxias</b>	<b>3</b>
Overview	3
Arthurs paragalaxias - Arthurs Lake	4
Arthurs paragalaxias - Woods Lake	5
Saddled galaxias - Arthurs Lake	5
Saddled galaxias – Woods Lake	6
<b>Pedder galaxias</b>	<b>8</b>
Overview	8
Strathgordon water supply dam	8
<b>Golden galaxias</b>	<b>9</b>
Overview	9
Golden galaxias - lakes Crescent and Sorell	10
<b>Swan galaxias</b>	<b>12</b>
Overview	12
Establishment of new translocated populations 2023	13
Swan galaxias monitoring	14
<b>Shannon paragalaxias and Great Lake paragalaxias</b>	<b>15</b>
Overview	15
Shannon paragalaxias - Shannon Lagoon	15
Shannon paragalaxias - Penstock Lagoon	16
Great Lake paragalaxias - Shannon Lagoon	16
Great Lake paragalaxias - Penstock Lagoon	17
Spotted galaxias – Shannon Lagoon	17
Spotted galaxias – Penstock Lagoon	18
<b>Dwarf galaxias monitoring NW Tasmania</b>	<b>19</b>
<b>Appendix</b>	<b>20</b>

# Introduction

This report has been prepared to review the work performed by the Inland Fisheries Service (IFS) under the Tasmanian Freshwater Fish - Threatened Species Program for the 2023-24 financial year. Where available, the report also summarises the results from annual monitoring over the past ten years, or where applicable, longer.

Tasmania has a total of twelve species of freshwater fish listed as threatened under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* and the Tasmanian *Threatened Species Protection Act 1995*. These twelve species are also listed under the International Union for the Conservation of Nature (IUCN) red list (Table 1). The IUCN listings are the most up to date, having been reviewed during 2019, whereas the Commonwealth and State listings have not been reviewed for a significant period, therefore the level of threat i.e. vulnerable through to critically endangered, varies between each entity.

Presently, there are eight species of freshwater fish that have active monitoring and management programs in place, these are: Arthurs paragalaxias, Clarence galaxias, golden galaxias, Great Lake paragalaxias, Shannon paragalaxias, Pedder galaxias, saddled galaxias and the Swan galaxias. Historical dwarf galaxias sites in the northwest and the Estuary perch population in the Arthur River were also surveyed. The Estuary perch survey is reported separately.

A range of freshwater fish encountered during other IFS work programs were documented in field notes and/or listed on the Natural Values Atlas.

The IFS also records the trapping and transfer of short-finned eels and pouched lamprey from the Meadowbank Dam and the River Tamar power station tailrace, Trevallyn. These records are published in the IFS Annual Report 2023-24.

## Conservation Status

Table 1 presents all Tasmanian freshwater fish that have been assessed under prescribed conservation criteria as specified by each entity. There are twelve species and their level of assessment is determined by a range of criteria relating to their population size, population decline, geographical range, probability of extinction in the wild and the existence of threatening processes.

Table 1: Conservation listings under the respective entities threatened species listing criteria (TTSP - Tasmanian Threatened Species Protection Act 1995; EPBC Act – Environmental Protection and Biological Conservation Act 1995; IUCN – International Union for the Conservation of Nature red list).  
\*Extinct in natural location, only extant in two translocated locations.

Location	Species	TTSP (Act)	EPBC (Act)	IUNC (red list)
Upper Swan, Macquarie, St Paul and South Esk River catchments (includes translocated populations)	Swan galaxias ( <i>Galaxias fontanus</i> )	Endangered	Endangered	Endangered
Lakes Crescent and Sorell (plus one small, translocated population)	Golden galaxias ( <i>Galaxias auratus</i> )	Rare	Endangered	Endangered
Upper River Derwent catchment, including the Nive, Clarence and Little River catchments	Clarence galaxias ( <i>Galaxias johnstoni</i> )	Endangered	Endangered	Endangered
*Lake Oberon and Strathgordon water supply dam	Pedder galaxias ( <i>Galaxias pedderensis</i> )	Endangered	* Extinct in the wild	Endangered
Small number of streams flowing into Lake Pedder, Lake Gordon and upper Huon River catchment	Swamp galaxias ( <i>Galaxias parvus</i> )	Vulnerable	Vulnerable	Vulnerable
yingina / Great Lake, Shannon and Penstock lagoons	Shannon paragalaxias ( <i>Paragalaxias dissimilis</i> )	Vulnerable	Vulnerable	Endangered
	Great Lake paragalaxias ( <i>Paragalaxias electroides</i> )	Vulnerable	Vulnerable	Endangered
Arthurs and Woods lakes	Saddled galaxias ( <i>Galaxias tanycephalus</i> )	Vulnerable	Vulnerable	Critically endangered
	Arthurs paragalaxias ( <i>Paragalaxias mesotes</i> )	Endangered	Endangered	Endangered
Upper Ouse, James and Little Pine River catchments	Western paragalaxias ( <i>Paragalaxias julianus</i> )	Rare	Endangered	Endangered
NE and NW Tasmania, Flinders Island	Dwarf galaxias ( <i>Galaxiella pusilla</i> )	Vulnerable	Vulnerable	Endangered
Coastal streams of Tasmania	Australian grayling ( <i>Prototroctes maraena</i> )	Vulnerable	Vulnerable	Vulnerable

# Survey results 2023-24 and summary information

## Arthurs paragalaxias and Saddled galaxias

### Overview

Arthurs and Woods lakes have endemic populations of the saddled galaxias (*Galaxias tanycephalus*) and the Arthurs paragalaxias (*Paragalaxias mesotes*). The saddled galaxias is common in both lakes while the Arthurs paragalaxias is abundant within Arthurs Lake but rare within Woods Lake. Until 2013, the Arthurs paragalaxias was thought to be absent within Woods Lake, as it was not found during annual monitoring between 1989 to 2013. A translocation program between 2007 to 2012 resulted in 2,470 individuals being transferred from Arthurs Lake to Woods Lake. This action resulted in the re-establishment of the species within Woods Lake with 84 Arthurs paragalaxias captured during monitoring between 2014 to 2018, with natural recruitment occurring and multiple age classes present. However, since 2019, only one individual has been found during monitoring in each of 2019, 2020 and 2021 and none in 2022 and 2023. It appears the number of individuals has been insufficient to sustain the population at a detectable levels. Further monitoring is planned for 2024-25. By comparison to the Woods Lake population, the Arthurs Lake population has remained relatively stable.

An intense and persistent algal bloom occurred within Woods Lake between February 2023 and into winter 2024, but no obvious impacts were detected on the abundance of the saddled galaxias.

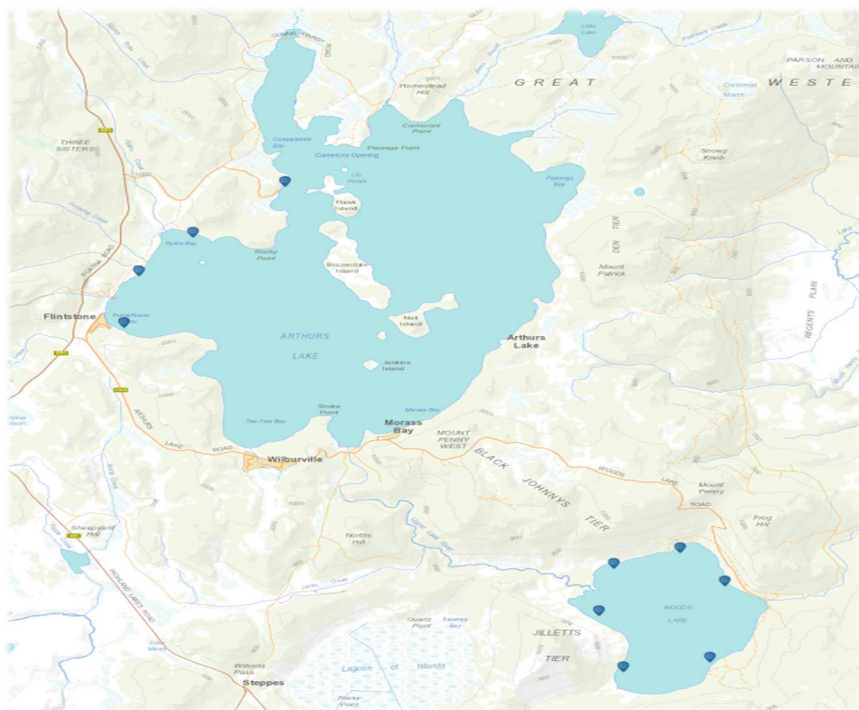


Figure 1: Arthurs Lake and Woods Lake showing annual monitoring sites.

## Arthurs paragalaxias - Arthurs Lake

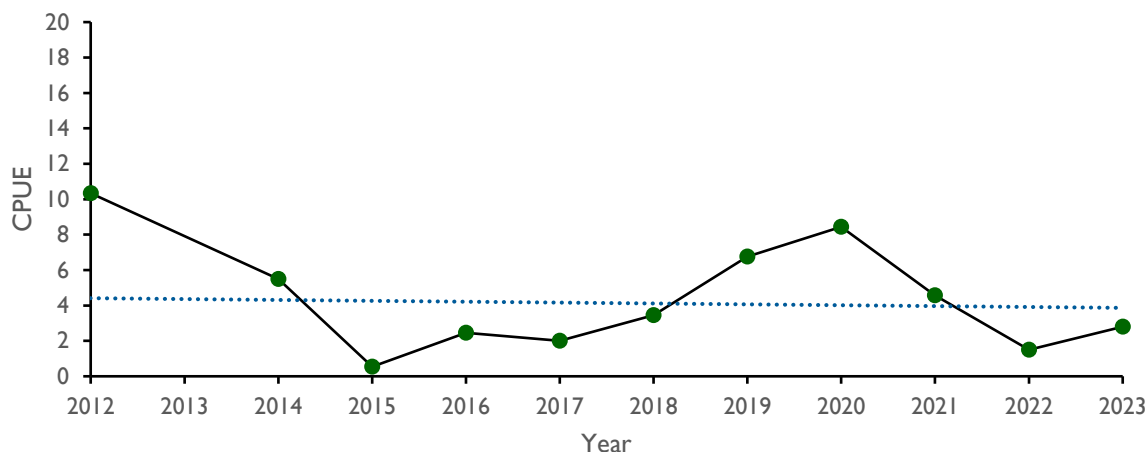


Figure 2: Catch per unit effort (CPUE) (fish per net) for *Arthurs paragalaxias* captured during annual fyke netting surveys, Arthurs Lake, 2012-23 (showing long term monitoring trend).

Monitoring of the *Arthurs paragalaxias* within Arthurs Lake was undertaken 5 - 6 October 2023. Twenty-four fine mesh fyke nets, consisting of six nets set at four sites: Flintstone Drive area, north Pumphouse Bay, Hydro Bay and Jonah Bay (Figure 1). At the time of the survey, Arthurs Lake was 1.67 m below full supply level. A total of 67 individuals were captured resulting in a CPUE of 2.8 fish per net. This is below the ten-year average (2013-23) of 4.2 fish per net (Figure 2). In terms of relative abundance, this is an increase compared to the 2022 result. Further monitoring is planned for October 2024.

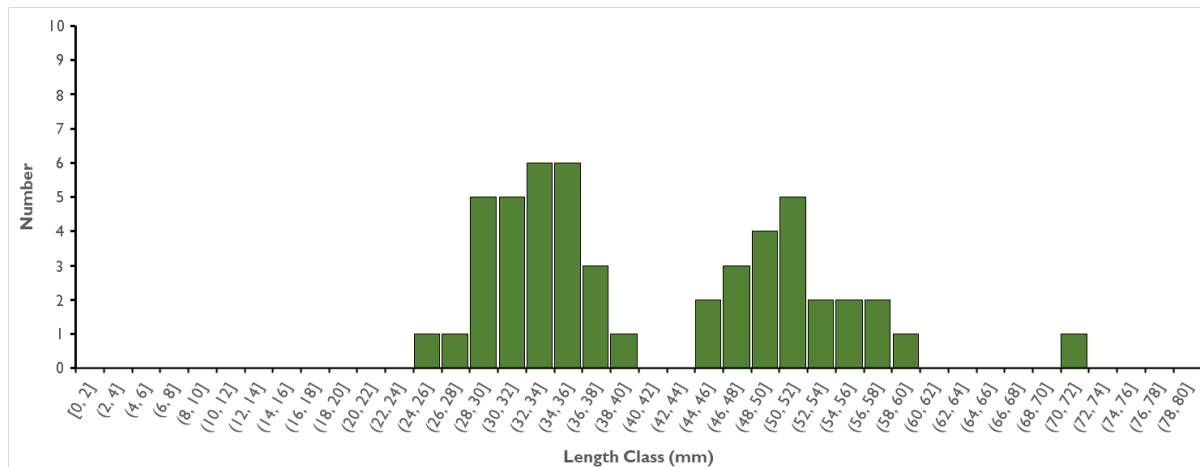


Figure 3: Length frequency for the *Arthurs paragalaxias* captures, Arthurs Lake, October 2023, (n=67).

Sixty-seven *Arthurs paragalaxias* were captured, measured for length and plotted on a length frequency histogram (Figure 3). There were two well defined length cohorts evident. Natural recruitment of juvenile *Arthurs paragalaxias* during 2023 was strong, with good numbers in the 24–40 mm length range. The survival of larger adult fish was good, with 36 per cent of individuals between 44–60 mm and one larger fish measuring 71 mm.

## Arthurs paragalaxias - Woods Lake

Following the transfer of 2,470 individuals from Arthurs Lake to Woods Lake between 2007 to 2012, total catches of Arthurs paragalaxias have been low, particularly the past five years, with none captured from monitoring during January 2023 and October 2023 (Figure 4). Captures during 2012-16 were encouraging but total numbers have since declined. The factors influencing this trend are unclear but lake level management during the spawning period, an abundance of brown trout and low population base are likely contributing factors. The impacts of an algal bloom that commenced during February 2023 and persisted into the winter of 2024 are unknown, but there were no obvious implications for the saddled galaxias population.

Monitoring as part of the 2023 program year was undertaken on 4 - 5 October 2023. Twenty-four fine mesh fyke nets were deployed, consisting of four nets set across six sites (Figure 1), with no Arthurs paragalaxias captured. Results are expressed as total numbers rather than CUPE.

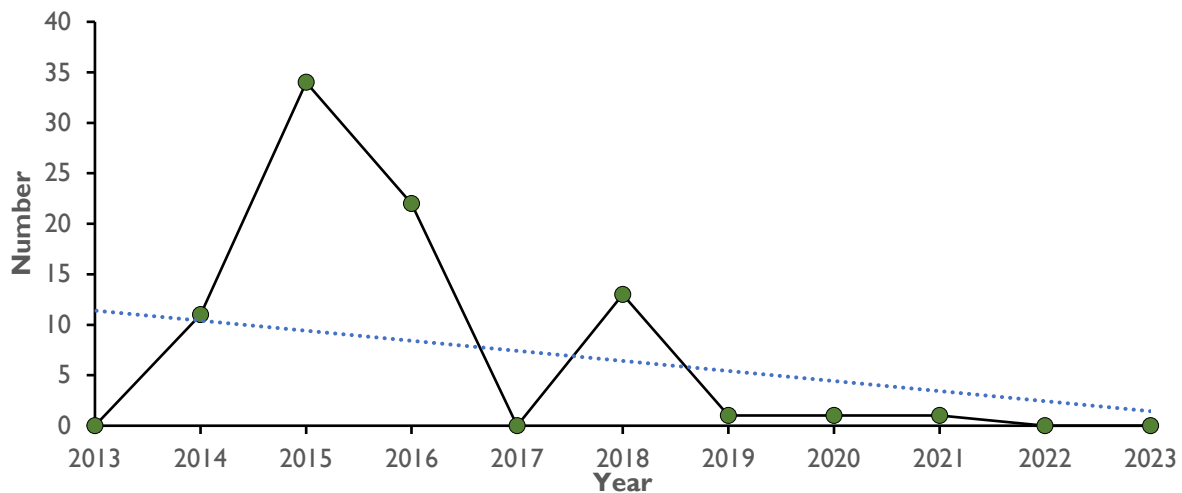


Figure 4: Total catches, Arthurs paragalaxias during annual fyke netting surveys, Woods Lake, 2013–23 (showing long term monitoring trend), (\* the 10 individuals captured during 2014 were from Entura consultants fyke netting survey).

## Saddled galaxias - Arthurs Lake

Monitoring of the saddled galaxias within Arthurs Lake was undertaken 5 - 6 October 2023. Twenty-four fine mesh fyke nets, consisting of six nets set at four sites: Flintstone Drive, north Pumphouse Bay, Hydro Bay and Jonah Bay (Figure 1). A total of 27 individuals were captured, resulting in a CPUE of 1.1 fish per net.

This figure is below the ten-year average (2013-23) of 2.4 fish per net (Figure 5). The reasons for this low result are unknown. Further monitoring will be undertaken in October 2024.



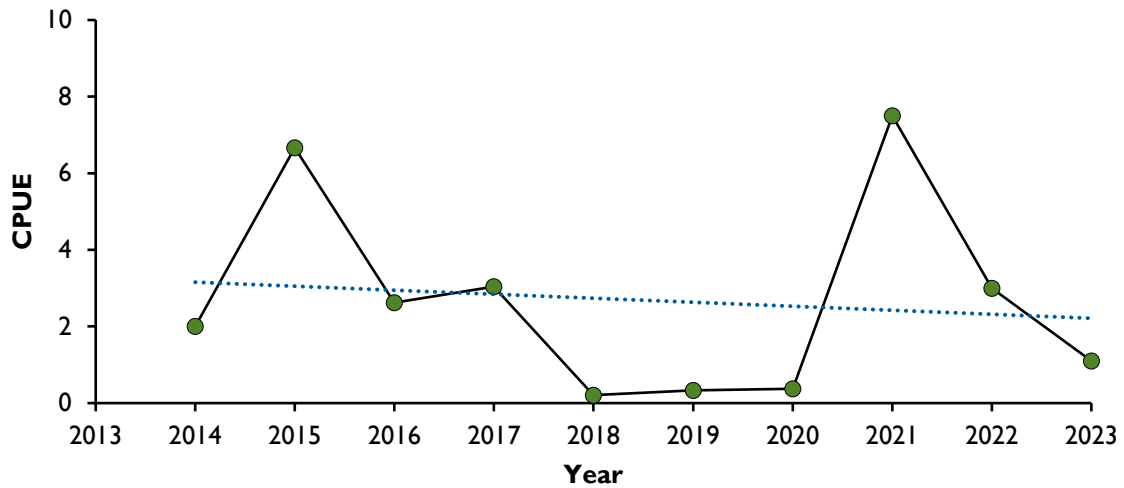


Figure 5: Catch per unit effort (CPUE) for saddled galaxias, captured during annual fyke netting surveys, Arthurs Lake, 2013–23 (showing long term monitoring trend).

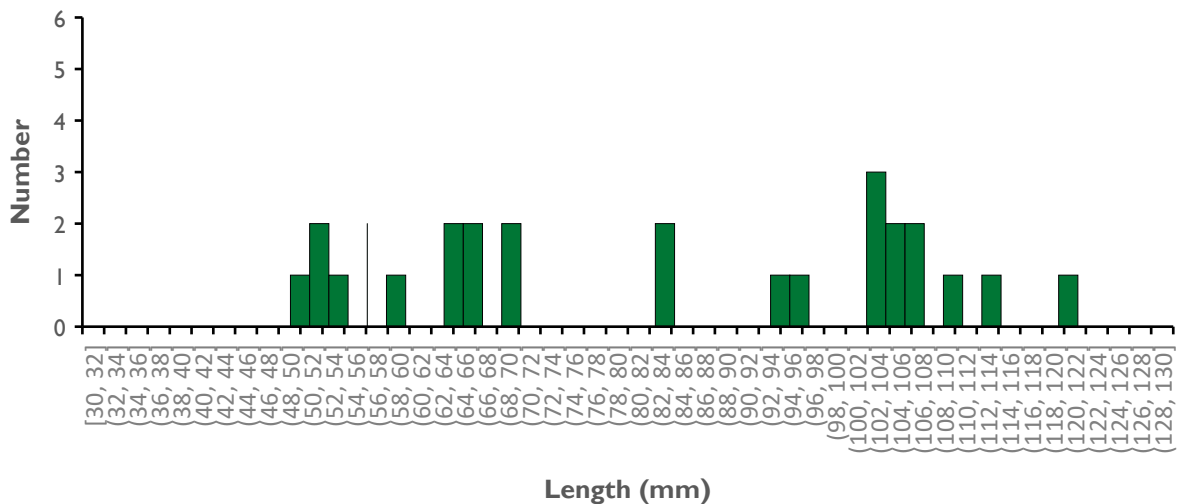


Figure 6: Length frequency for the saddled galaxias captures, Arthurs Lake, October 2022, (n=27).

The length frequency plot (Figure 6) does not show any well-defined cohorts. Recruitment appears to be weak, with only a modest number of juvenile fish in the 50-60 mm length range (26%). There is a high percentage of larger adults over 100 mm (37%), indicative of good survival.

## Saddled galaxias – Woods Lake

Monitoring as part of the 2023 program was undertaken on 4 - 5 October 2023. Twenty-four fine mesh fyke nets were deployed, consisting of four nets set across six sites (Figure 1). At the time of the survey, Woods Lake was 1.01 m below full supply level, which is low for this time of the year due to low inflows.

The average CPUE for catches of saddled galaxias from Woods Lake over the ten-year period 2013-23 was 2.4 fish per net, with the CPUE for October 2023 at 2.1 fish per net (50 fish captured) (Figure 7). In comparison to the 2022 result, this represents 51 per cent decline.

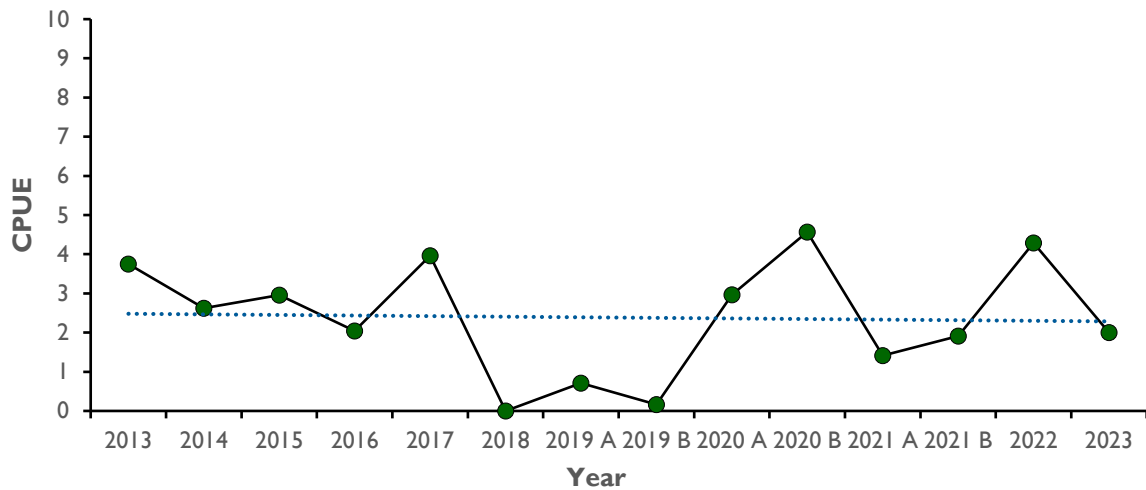


Figure 7: Catch per unit effort (CPUE) for saddled galaxias, captured during annual fyke netting surveys, Woods Lake, 2012 – October 2023 (showing long term monitoring trend).

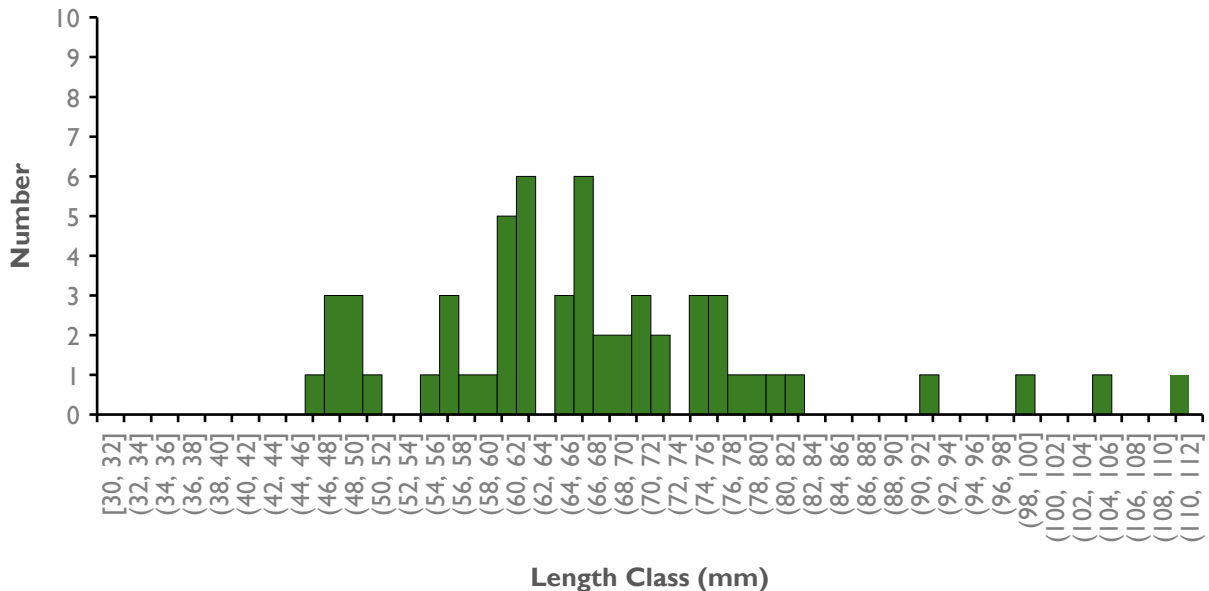


Figure 8: Length frequency for the saddled galaxias captures, Woods Lake, October 2023, (n=48).

The length frequency plot (Figure 8) shows there are very few young of-the-year saddled galaxias, with five per cent of fish under 52 mm. This is primarily due to the timing of the survey that was targeted at finding adult Arthurs paragalaxias, therefore very few juvenile saddled galaxias were present. There are multiple peaks in the 60 – 80 mm range, which may represent fish from the segregated autumn and spring spawning events. There are several fish in the upper length range i.e. 92 – 112 mm indicating survival into a third year.

# Pedder galaxias

## Overview

Since the translocation of 353 Pedder galaxias (*Galaxias pedderensis*) from Lake Oberon to the Strathgordon water supply dam between 2001 and 2007, the abundance of fish within the dam has increased to consistently high levels. Results expressed as CPUE indicate the population abundance has, since 2012, increased to between 10 to 26 fish per net (Figure 9). This result indicates high levels of consistent natural recruitment and high survival occurring over most years. However, the last two years have seen a decline in CPUE to similar levels as seen during 2012.

## Strathgordon water supply dam

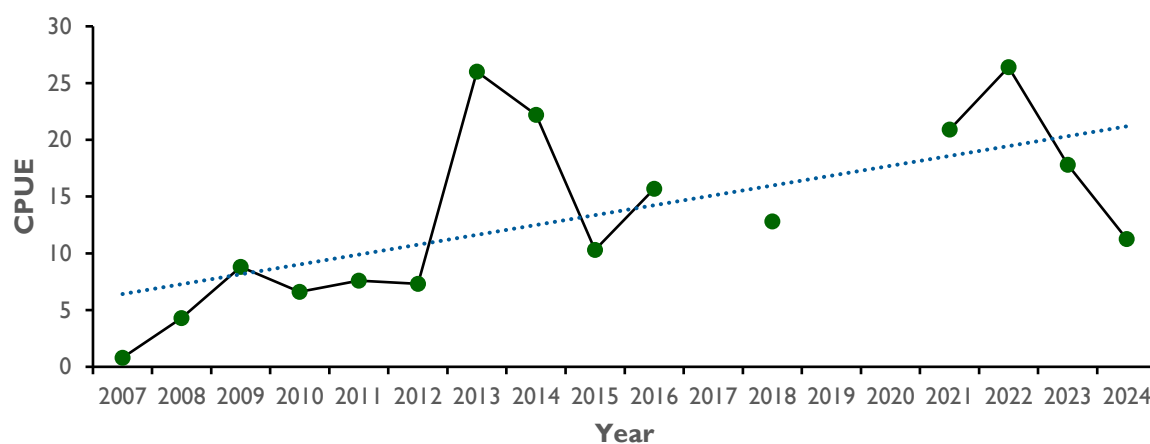


Figure 9: Catch per unit effort (CPUE) from annual fyke net monitoring for the Pedder galaxias at Strathgordon water supply dam 2007-24 (showing long term monitoring trend).

During 29 - 30 April 2024, the Pedder galaxias population at the Strathgordon water supply dam was monitored by setting 12 fine mesh fyke nets overnight along the shoreline. A total of 135 Pedder galaxias were captured, resulting in a CPUE of 11.3 fish per net. This result indicates the population abundance remains at moderate levels. However, the analysis of length frequency data suggests recruitment of young-of-the-year (YOY) fish were absent. This has now occurred for two years in a row (Figure 10). There is evidence to suggest that sample timing may be an issue, as one year old fish are present in the 2024 sample, these were not detected as YOY during the 2023 monitoring. This situation will need to be monitored further during 2025.

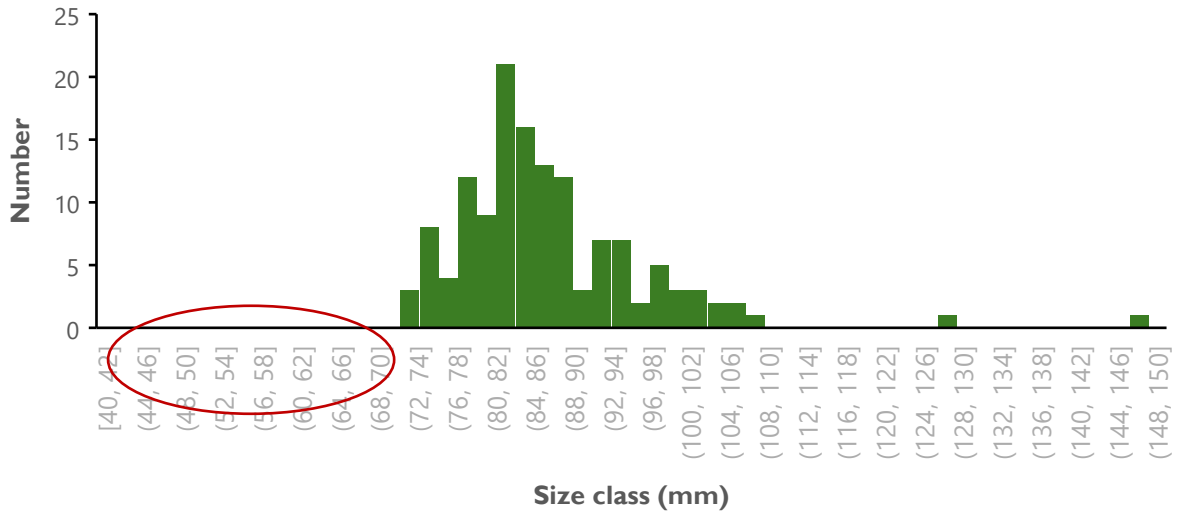


Figure 10: Length frequency for the Pedder galaxias captures, Strathgordon water supply dam, April 2024, (n=135,) red circle indicates no YOY fish.

## Golden galaxias

### Overview

The golden galaxias (*Galaxias auratus*) populations of lakes Crescent and Sorell have over the past 25 years been subject to significant changes. The two populations have been separated by the placement of fine mesh screens to prevent the movement of European carp between lakes. Carp have now been ‘functionally’ eradicated and the screens have been removed (September 2023), with movement between the two lakes restored.

Contrasting cycles of El Niño and La Niña combined with water releases, have caused major lake level fluctuations, which at times has placed the lake’s ecosystem, and galaxiids under stress. The trout population in both lakes has also influenced the galaxiid population, particularly as turbidity has decreased. The IFS has reviewed its stocking policy and will no longer stock this system with brown trout and very limited numbers of rainbow trout. A base line survey of the trout population at Lake Sorell was undertaken during December 2023.



Figure 11: Lakes Crescent and Sorell, showing annual monitoring sites.

## Golden galaxias - lakes Crescent and Sorell

The annual golden galaxias monitoring survey was conducted during 4 - 5 March 2024 at Lake Crescent and 19 - 20 March 2024 at Lake Sorell. This is the nineteenth consecutive year this action from the *Lakes Sorell and Crescent Water Management Plan 2005* has been completed.

The normal twelve fine-mesh fyke nets were set overnight at Lake Crescent, with four nets set across three locations (Figure 11), with the number of golden galaxias captured per fyke net recorded (Table 2). At Lake Sorell, only nine fine-mesh fyke nets were set across three sites, with one net dislodged by high winds, consequently the data for this net was excluded. The fork lengths of 176 golden galaxias from Lake Crescent and 113 from Lake Sorell were recorded. Lake levels at both waters were high, Lake Sorell 804.882 m ASL and Lake Crescent 802.922 m ASL, consequently large areas of marshland habitat were inundated at both lakes. This area was not surveyed at both lakes.

*Table 2: Captures of golden galaxias in fyke nets, set at three locations in lakes Crescent and Sorell (2024).*

Lake	Site	Number of. Fyke Nets	Number Captured
Crescent	Site 1 Agnews Creek Shore	4	189
	Site 2 Boathouse Shore	4	190
	Site 3 Jacks Point	4	193
	<b>Total</b>	<b>12</b>	<b>572 (48/net)</b>
Sorell	Site 1 East side of Island	3	486
	Site 2 Inside Grassy Point	2	203
	Site 3 Meaghers Bay	3	419
	<b>Total</b>	<b>8</b>	<b>1,108 (139/net)</b>

The total catch of golden galaxias from Lake Crescent was 572, for an average catch effort of 48 fish per net (Table 2). This result is down significantly on the long-term average CPUE of 229 fish per net (Figure 12). Low CPUE has occurred on other occasions i.e., 2013, 2018 and 2020, with the population displaying resilience to rebound to higher levels.

At Lake Sorell, 1,108 golden galaxias were captured (Table 2), for an average catch effort of 139 fish per net. This year the survey consisted of nine nets rather than the usual twelve sets across the three sites. The CPUE for golden galaxias increased marginally on the 2023 result but remains slightly below the long term average (Figure 12).

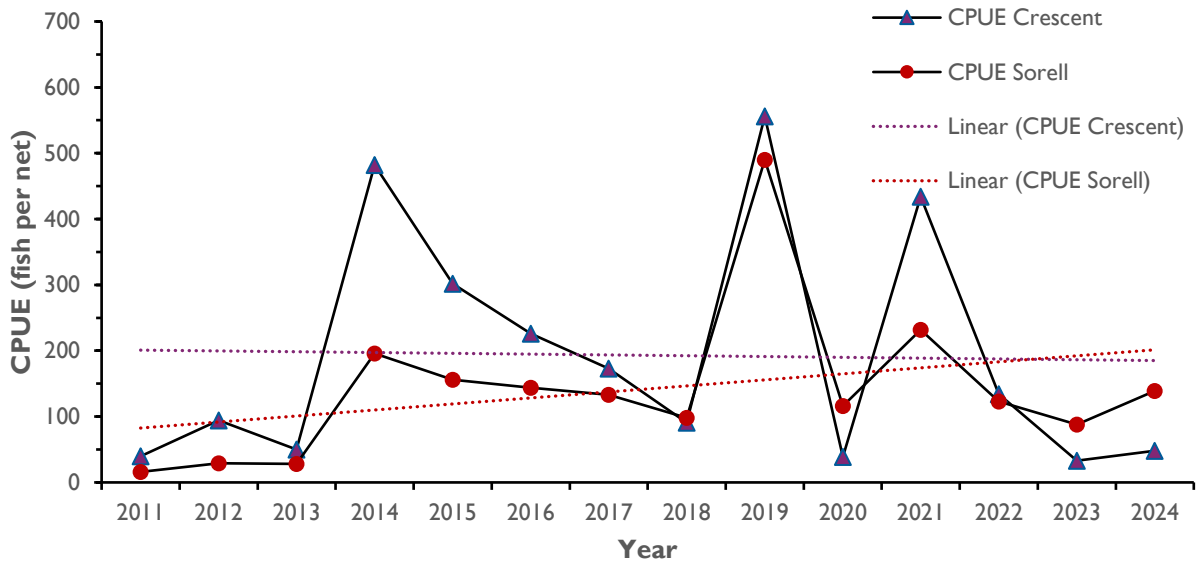


Figure 12: Average catch per unit effort (CPUE) of golden galaxias for lakes Crescent and Sorell (2011-24), with associated long term trend lines.

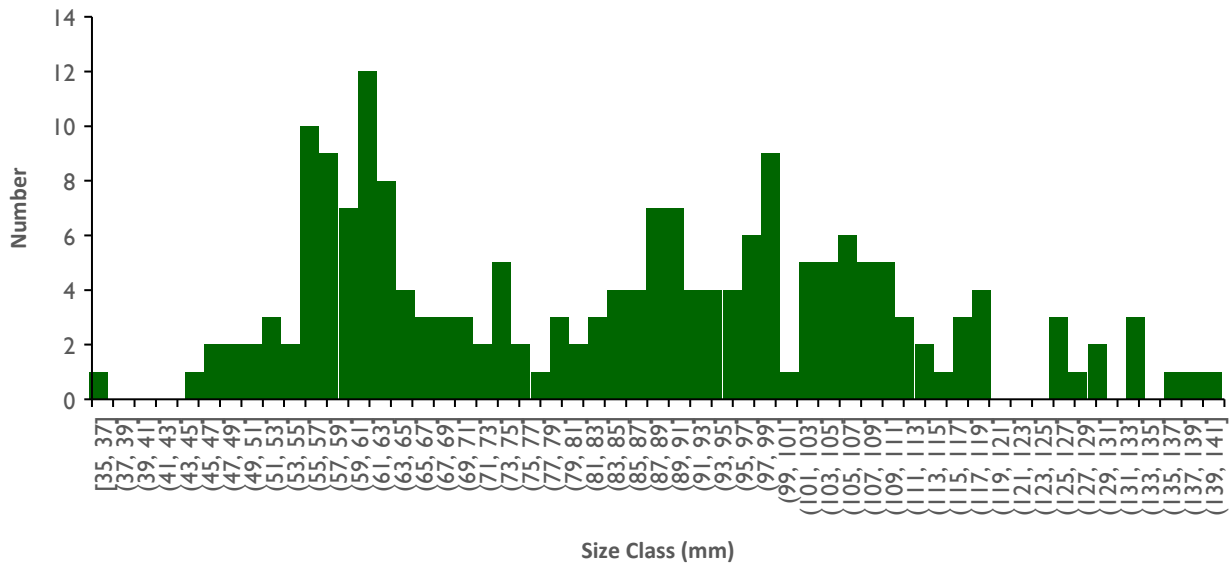


Figure 13. Length frequency for the golden galaxias captures, Lake Crescent March 2024 (n=176).

While the abundance of golden galaxias at Lake Crescent was low, there were signs of good recruitment occurring, with 37 per cent of fish in the 35-70 mm length range (Figure 13). The total number of fish over 70 mm was 63 per cent with multiple cohorts present. This low abundance is likely related to the availability of significant marshland habitat that is not surveyed during routine monitoring. Additionally, brown trout abundance has previously been high (Lake Crescent, Fishery Performance Assessment, June 2021) and presents additional predation pressure on the population, although Lake Crescent has not received a stocking of trout since April 2021.

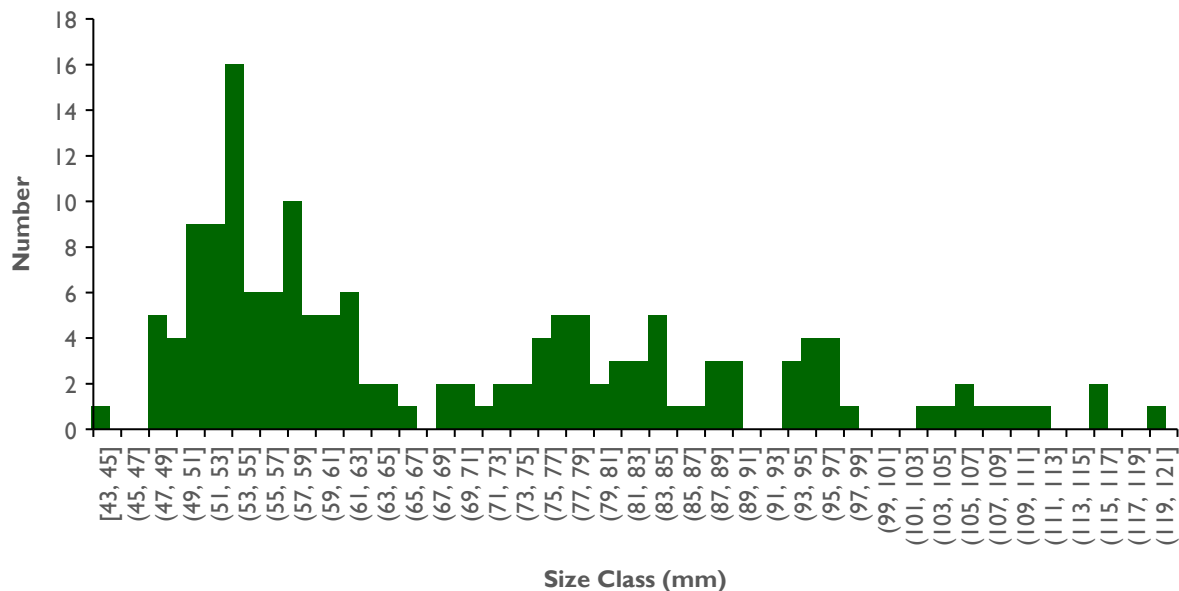


Figure 14. Length frequency for the golden galaxias captures, Lake Sorell March 2024 (n=113).

Recruitment of golden galaxias at Lake Sorell was very high with 58 per cent of fish in the 40-70 mm length range (Figure 14). The number of fish over 70 mm was 42 per cent, with no obvious length cohorts identified. Similar to Lake Crescent, the availability of marshland habitat was high, but it was not surveyed. Presently, the abundance of trout within Lake Sorell remains low (refer IFS Lake Sorell, FPA survey, Dec 2023), available at [www.ifs.tas.gov.au](http://www.ifs.tas.gov.au)).

## Swan galaxias

### Overview

The Swan galaxias (*Galaxias fontanus*) is endemic to Tasmania, occurring naturally only in the extreme headwaters of the Swan River above Hardings Falls, isolated headwater tributaries of the Tinamirakuna / Macquarie River and four small creeks at the foot of the Western Tiers within the western Tinamirakuna / Macquarie River catchment (Figure 15). In addition, under the recovery plan for the species, nine translocated insurance populations were established between 1989-95 within isolated headwater streams. The ongoing viability of several natural and translocated populations is uncertain, with many sub-populations having vastly reduced numbers (Appendix 1 and 2) or are restricted to a small length of stream. Some populations have become locally extinct while others are under severe stress due to cycling drought and extreme flood events, and the presence of brown trout.

Monitoring is conducted annually, with around half of the populations checked each year.

During March 2023, two new translocated populations were established. These were both checked during December 2023, with one of the streams scheduled for survey in August 2024.

## Establishment of new translocated populations 2023

Under the Commonwealth Government's, Environment Restoration Fund for Priority Threatened Species, NRM South in partnership with the University of Tasmania, CSIRO and the IFS, undertook a project to improve the long-term conservation trajectory of the Swan galaxias by establishing two translocated insurance populations within trout free streams. During March 2023, 60 individuals (20 juveniles and 10 adults from Blue Tier Creek and 20 adults and 10 juveniles from Dukes River) were released into Delvin Creek. In addition, 60 individuals (10 juveniles and 10 adults from Dukes River, 20 adults and 10 juveniles from St Pauls River and four juveniles and six adults from Cygnet River) were released into the upper section of Evercreech Rivulet.

During December 2023, Delvin Creek was electrofished for 1,410 seconds on-time (approximately 750 m), resulting in the capture of one adult Swan galaxias. Evercreech Rivulet was electrofished for 450 seconds on-time (approximately 130 m), resulting in the capture of five adult Swan galaxias. All were presumed to be from the original translocation.

Revegetation and fencing works were completed late 2023 at Dairy Creek, managed by NRM North and undertaken by a contractor.

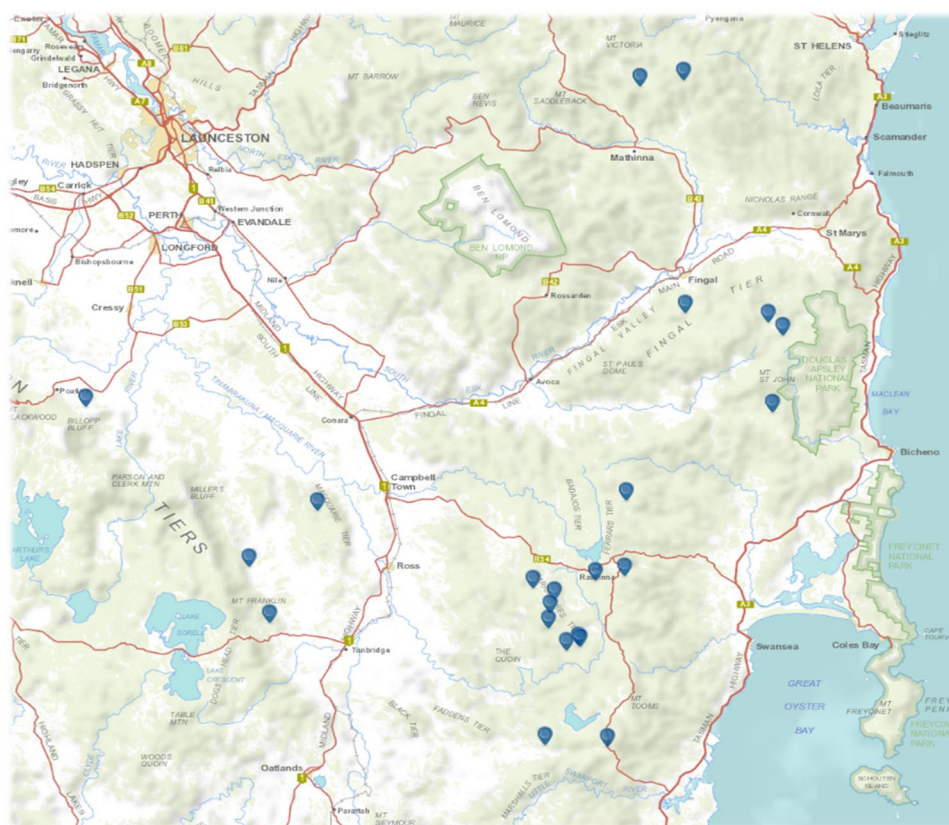


Figure 15: Swan galaxias locations, showing natural and translocated populations, current at June 2024.



## Swan galaxias monitoring

### **Dukes River** (January 2024)

The monitoring site at the old bridge pool on McKays Road was checked. The pool was electrofished for 350 seconds on-time for five Swan galaxias, with two size classes present 60 mm and 90 mm. The abundance of fish was lower than expected, but river conditions were poor with low flow, high water temperature and significant algal growth.

### **St Pauls River – upstream Meadstone Falls** (January 2024)

A section of river approximately 100 m downstream of the confluence of the St Pauls and Dukes rivers was electrofished for 1,350 seconds on-time. This section has a moderate grade and the stream is a combination of plunge pools, short runs and boulder substrate. Five Swan galaxias from three size classes were present, with two fish at 90 mm, two at 60 mm and one at 25 mm captured.

### **St Pauls River – Floodway Site** (January 2024)

The area below the floodway culverts and upstream was electrofished for 750 m, for 850 seconds on-time. The stream was incredibly slippery with large amounts of algal growth, making it extremely difficult to electrofish. Consequently, the efficiency of electrofishing was poor with only limited areas fished. One adult Swan galaxias (90 mm) was captured 650 m upstream of the floodway.

### **Tater Garden Creek** (January 2024)

There was no flow in the stream from Honeysuckle Road upstream to the boundary fence at Currawong Lakes. A few remnant pools remained, with a high density of filamentous algae present. Available pools were electrofished with no Swan galaxias found. Swan galaxias have not been found at Tater Garden Creek during monitoring since 2016. However, during February and March 2023, Bruce Deagle (CSIRO) while e-DNA sampling, observed both adult and juvenile galaxias downstream of the normal monitoring site and at Honeysuckle Road. The results of the e-DNA samples confirmed their presence.

During May 2024, a field day was conducted by Rob Freeman (IFS) and attended by staff from Sustainable Timber Tasmania and Forest Practices Authority, looking at the ecology and management of the Swan galaxias. Two sites were visited and checked:

- Blue Tier Creek (Upper): Pool at old bridge, no Swan galaxias found. (not found since 2015).
- Cygnet River: Two Swan galaxias captured by electrofishing for 183 seconds on-time.

# Shannon paragalaxias and Great Lake paragalaxias

## Overview

The Shannon paragalaxias (*Paragalaxias dissimilis*) and Great Lake paragalaxias (*Paragalaxias electroides*) are endemic to yingina / Great Lake, Shannon Lagoon and Penstock Lagoon (and connecting Shannon River). Both species are relatively abundant within yingina / Great Lake, however, at Shannon and Penstock lagoons, the Great Lake paragalaxias is less common. The spotted galaxias (*Galaxias truttaceus*) is abundant within Shannon and Penstock lagoons but less common within yingina / Great Lake. While this species is widespread and abundant throughout the state and is not listed as threatened, it has been included in this section for context in relation to the fish fauna of Shannon and Penstock lagoons.

During 8 - 9 April 2024, the native fish populations at Penstock Lagoon and Shannon Lagoon were monitored by setting 16 fine mesh fyke nets overnight along the shoreline at each lagoon. At Penstock Lagoon, 166 Shannon paragalaxias, 480 spotted galaxias and zero Great Lake paragalaxias were captured. At Shannon Lagoon, 374 Shannon paragalaxias, 273 spotted galaxias and one Great Lake paragalaxias were captured.

## Shannon paragalaxias - Shannon Lagoon

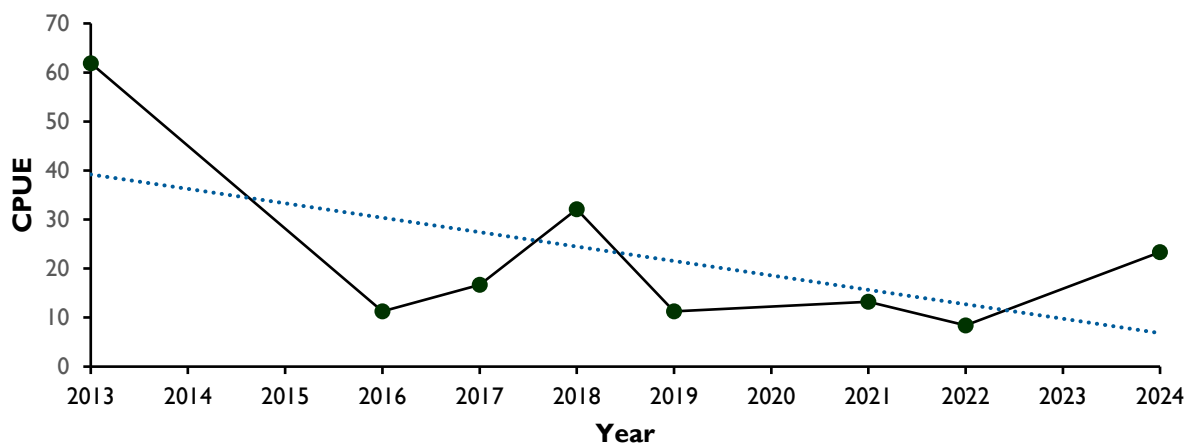


Figure 16: Catch per unit effort (CPUE) from annual fyke net monitoring for the Shannon paragalaxias at Shannon Lagoon, 2013-24 (showing long term monitoring trend).

Between 2013 and 2016, the CPUE results for the Shannon paragalaxias within Shannon Lagoon declined significantly. Since 2016 the CPUE has generally remained stable, with a increase recorded between 2022 and 2023. (Figure 16). No monitoring was undertaken during 2023.

## Shannon paragalaxias - Penstock Lagoon

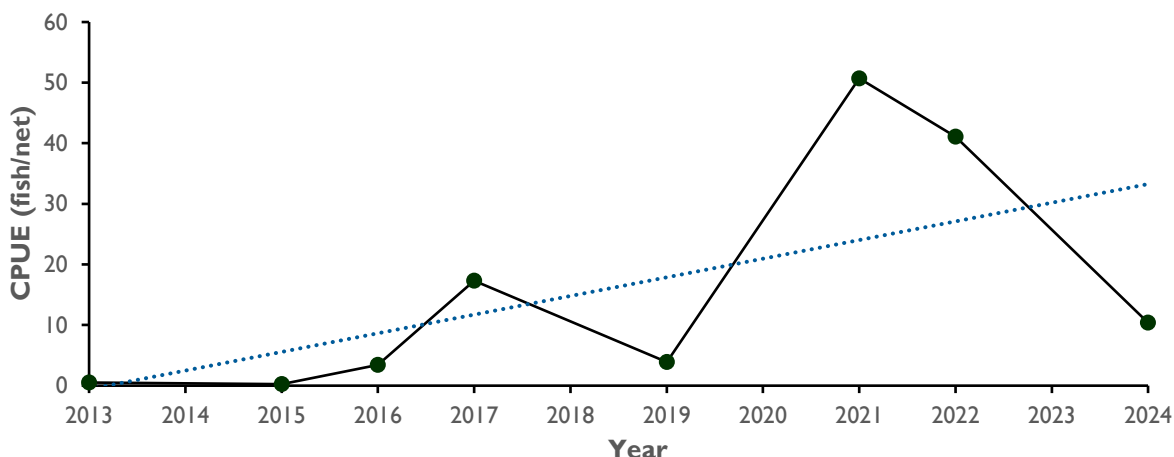


Figure 17: Catch per unit effort (CPUE) from annual fyke net monitoring for the Shannon paragalaxias at Penstock Lagoon, 2013-24 (showing long term monitoring trend).

The CPUE for the Shannon paragalaxias within Penstock Lagoon has since 2013 trended to relatively high levels (Figure 17). However, a significant decrease occurred between 2022 and 2024. No monitoring was undertaken during 2023.

## Great Lake paragalaxias - Shannon Lagoon

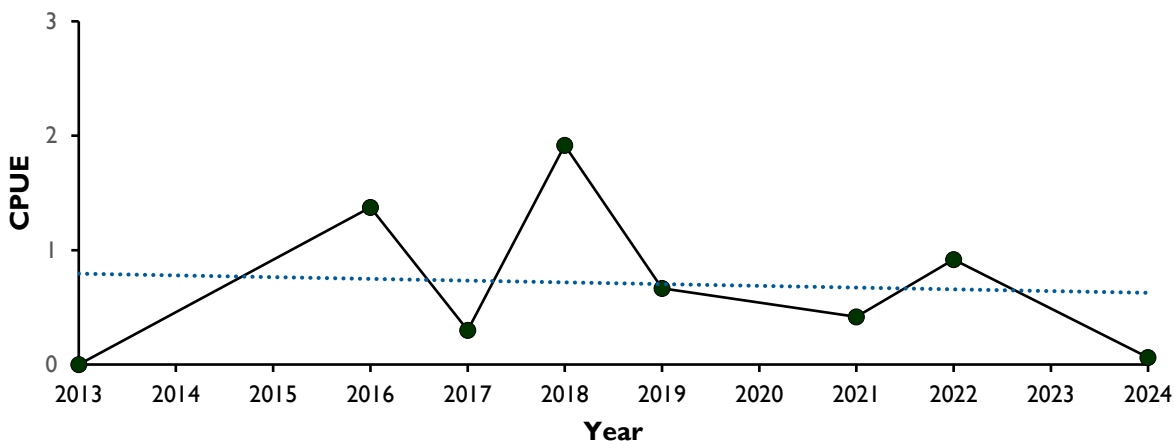


Figure 18: Catch per unit effort (CPUE) from annual fyke net monitoring for the Great Lake paragalaxias at Shannon Lagoon, 2013 – 2024 (showing long term monitoring trend).

The Great Lake paragalaxias is present in Shannon Lagoon at low numbers, with CPUE typically very low at 1–2 fish per net for most surveys (Figure 18). The habitat within Shannon Lagoon and Penstock Lagoon is by comparison to yingina / Great Lake, not preferred, with spawning and feeding areas limited. No Great Lake paragalaxias were captured during 2024. No monitoring was undertaken during 2023.

## Great Lake paragalaxias - Penstock Lagoon

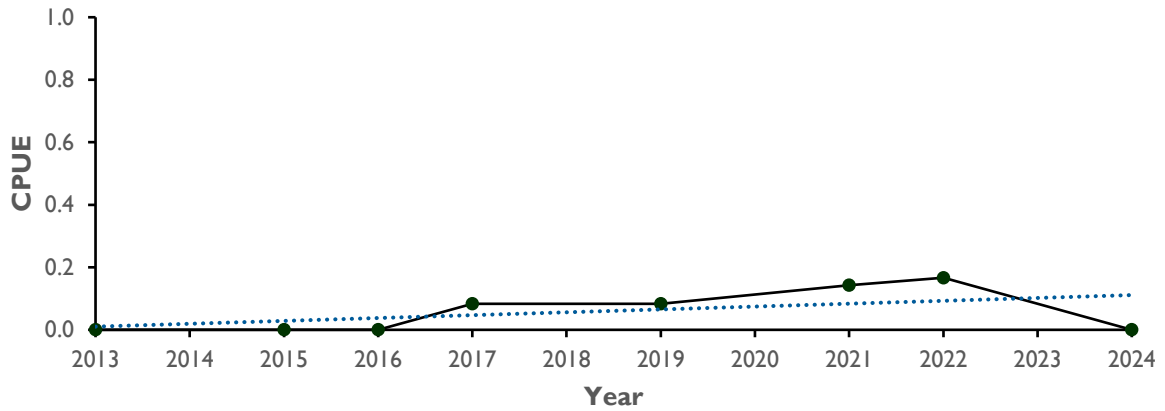


Figure 19: Catch per unit effort (CPUE) from annual fyke net monitoring for the Great Lake paragalaxias at Penstock Lagoon, 2013-23 (showing long term monitoring trend).

The Great Lake paragalaxias is rare within Penstock Lagoon, with CPUE extremely low at less than one fish per net (Figure 19). The lack of rocky habitat within the lagoon is limiting in terms of feeding and spawning. No Great Lake paragalaxias were captured during 2024. No monitoring was undertaken during 2023.

## Spotted galaxias – Shannon Lagoon

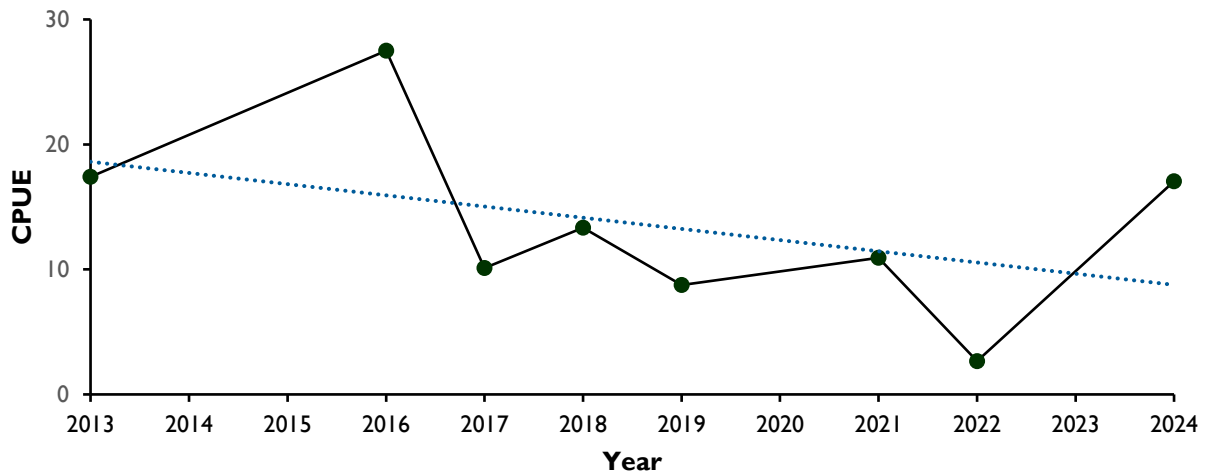
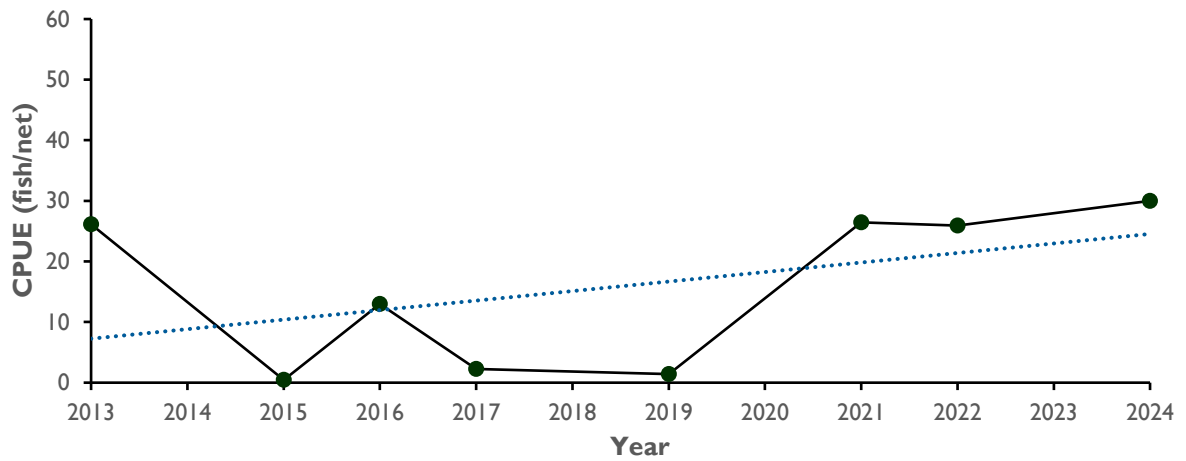


Figure 20: Catch per unit effort (CPUE) from annual fyke net monitoring for the spotted galaxias at Shannon Lagoon, 2013-24 (showing long term monitoring trend).

The spotted galaxias is relatively common within Shannon Lagoon, however, the CPUE has declined over time (Figure 20). This decline is similar to that seen for the Shannon paragalaxias (Figure 16). Both species are generally more pelagic and therefore exposed to predation, especially with improving turbidity levels within Shannon Lagoon.

## Spotted galaxias – Penstock Lagoon



*Figure 21: Catch per unit effort (CPUE) from annual fyke net monitoring for the spotted galaxias at Penstock Lagoon, 2013-23 (showing long term monitoring trend).*

The spotted galaxias is present within Penstock Lagoon at low to moderate abundance. Declines in CPUE were evident during 2015-19 but returned to higher levels since 2021 (Figure 21).

## Dwarf galaxias monitoring NW Tasmania

During June 2024, several historical locations, Northwest of Tasmania, were checked for the presence of the Dwarf galaxias (Fig 22). The conditions were unfavourable, with most sites dry or with very low water levels. Consequently, no Dwarf galaxias were found.

The only sites to yield any fish were:

- Marcus Plain, the two drainage ditches, adjacent to the made road at GDA94 MGA55 : 316608E, 5478930N, draining bushland on both sides of the road, 968 seconds of electrofishing on-time, catching four Pygmy perch (*Nannoperca australis*) and three Sandies (*Pseudaphritis urvillii*).
- The artificial drainage on the road at GDA94 MGA55 : 317545E, 5480462N was electrofished for 150 seconds, catching one burrowing freshwater crayfish (*Engaeus*).
- Woolnorth (Woolnorth Road) at the drainage ditch at GDA94 MGA55 : 307239E, 5493406N, electrofishing upstream for 1,022 seconds on-time, catching one short finned eel, one Sandy and one common galaxias (*Galaxias maculatus*).

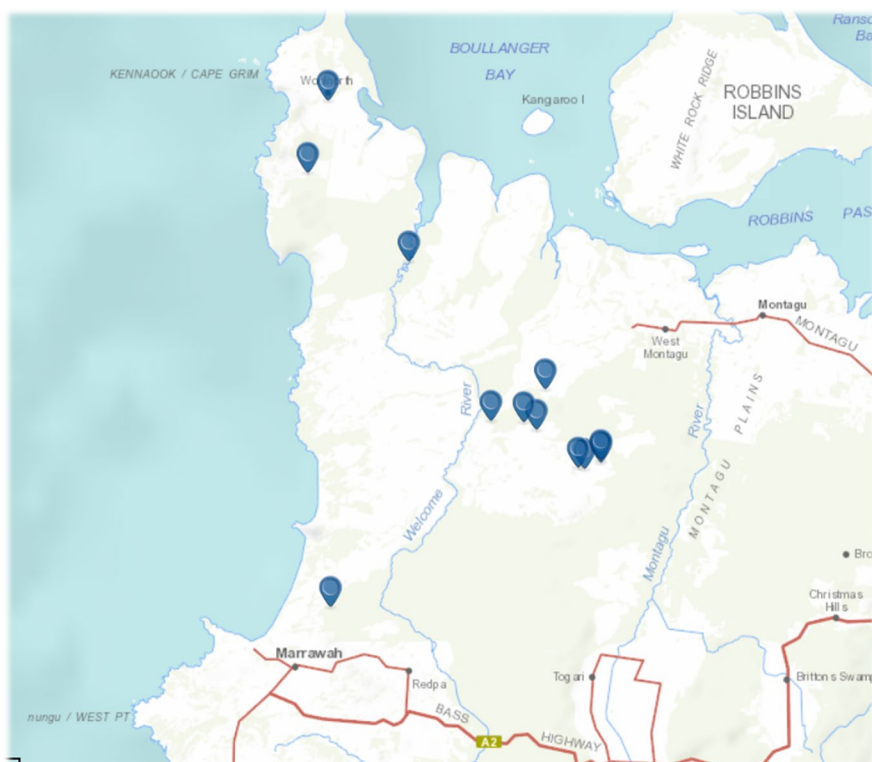


Figure 22: Sites checked for Dwarf galaxias, June 2024.

# Appendix

Appendix 1: Swan galaxias natural populations, with associated monitoring data and extent of occurrence information.

Location	Land Tenure	NRM region	1:25 000 map sheet	Year discovered or translocated	No. translocated	Year last monitored	Year last observed	Previous known extent of subpopulation (km of river) 2002	Present know extent of subpopulation (km of river)	Change in extent (km of river)	Previous abundance	Current abundance	
<b>Natural Populations</b>													
1	Swan River tributary	State Forest	North	Henry	1978	NA	2020	2020	2	1.5	0.5	Low numbers	Low numbers
2	Blue Tier Creek (lower)	State Forest	North	Colonels		NA	2023	2023	2.5	2.5	0	Low numbers	High numbers, incl. juveniles
3	Parramores Creek	Private	North	Leake		NA	2018	2006	1.5	0	1.5	Low numbers	Extinct
4A	Tater Garden Creek east	Private	North	Colonels		NA	2022	2016	1	0	1	Low numbers	Very low numbers
4B	Tater Garden Creek west	Private	North	Colonels		NA	2019	2008	1.5	0	1.5	Low numbers	Possibly extinct
5	Snaky Creek	State Forest	North	Colonels		NA	2018	2008	1	0	1	Low numbers	Possibly extinct
6	Brodribb Creek	Private	North	Leake		NA	2019	2012	1.5	0	1.5	Low numbers	Very low numbers
7	Macquarie Tier creek	Private	North	Jacobs	2004	NA	2007	2007	1.5	1.5	0	Low numbers	unknown
8	Dairy Creek	Private	North	Delmont	2003	NA	2022	2022	0.5	1	-0.5	Low numbers	Moderate numbers
9	Joes Creek	Private	North	Ellinthorpe	2004	NA	2016	2016	1	1	0	Low numbers	Low numbers
10	Floods Creek	State Forest	North	Tunbridge	2004	NA	2022	2011	0.5	0	0.5	Low numbers	Possibly extinct

Appendix 2: Swan galaxias translocated populations, with associated monitoring data and extent of occurrence information.

Location	Land Tenure	NRM region	1:25 000 map sheet	Year discovered or translocated	No. translocated	Year last monitored	Year last observed	Previous known extent of subpopulation (km of river) 2002	Present know extent of subpopulation (km of river)	Change in extent (km of river)	Previous abundance	Current abundance	
<b>Translocated Populations</b>													
1	Blue Tier Creek (Upper)	State Forest	North	Colonels	1989	60 adults	2022	2015	2.5	0	2.5	Low numbers	Possibly extinct
2	Lost Falls Creek	State Forest	North	Leake	1991	50	2022	2015	1.5	0	1.5	Low numbers	Very low numbers
3	Dukes River	State Forest	North	St John	1991	50	2023	2023	10.5	10.5	0	Low numbers	High numbers
4	Cygnets River	State Forest	North	Snow	1993	50	2023	2023	1.3	1.3	0	Low numbers	Moderate numbers
5	St Pauls River	State Forest	North	Leake	1993	50	2023	2023	6	6	0	Low numbers	Low numbers
6	Rocka Rivulet	State Forest	South	Royalty	1993	50	2019	2016	5	5	0	Low numbers	Low numbers
7	Green Tier Creek	Private	South	Tooms	1995	87 (20 adults)	2019	2019	2	0.5	1.5	Low numbers	Very low numbers
8	Tullochgorum Creek	Private	North	Fingal	1995	64 (14 adults)	2012	2012	2	0.5	1.5	Low numbers	Very low numbers
9	Coghlan's Creek	State Forest	North	Leake	1995	56 (30 adults)	2018	2007	1.2	0	1.2	Low numbers	Extinct
10	Wye River (never established)	State Forest	North	Leake	1995	50 (42 adults)	never established	never established					Never established
11	Evercreech Rivulet	State Forest	North	Brilliant	2023 (Mar)	60 (36 adults & 24 juveniles)	2023 (Dec)	2023	NA	TBD	TBD	NA	TBD
12	Delvin Creek	State Forest	North	Saddleback	2023 (Mar)	60 (30 adults & 30 juveniles)	2024 (Aug)	2024	NA	TBD	TBD	NA	TBD





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