

Inland Fisheries Service

Native Fish Conservation



Annual Report 2022-23

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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 2022-23 period. Where available, it 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 12 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, being 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, Pedder galaxias, saddled galaxias and the Swan galaxias. However, no monitoring was undertaken during the 2022-23 period for the Great Lake paragalaxias and the Shannon paragalaxias. A range of other freshwater fishes are encountered during other work programs conducted by the IFS, these are generally 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.

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 and St Pauls 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 eleotroides</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 2022-23 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 (Figure 2). It appears the number of individuals has been insufficient to sustain the population. A review of management priorities and further monitoring is planned for 2023-24. By comparison to the Woods Lake population, the Arthurs Lake population has been relatively stable.

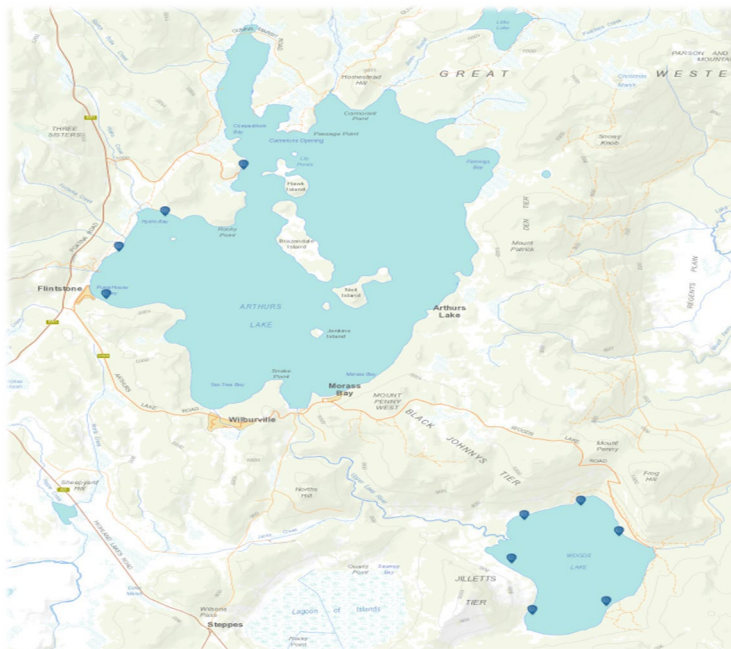


Figure 1: Arthurs Lake and Woods Lake showing annual monitoring sites

Arthurs paragalaxias - Arthurs Lake

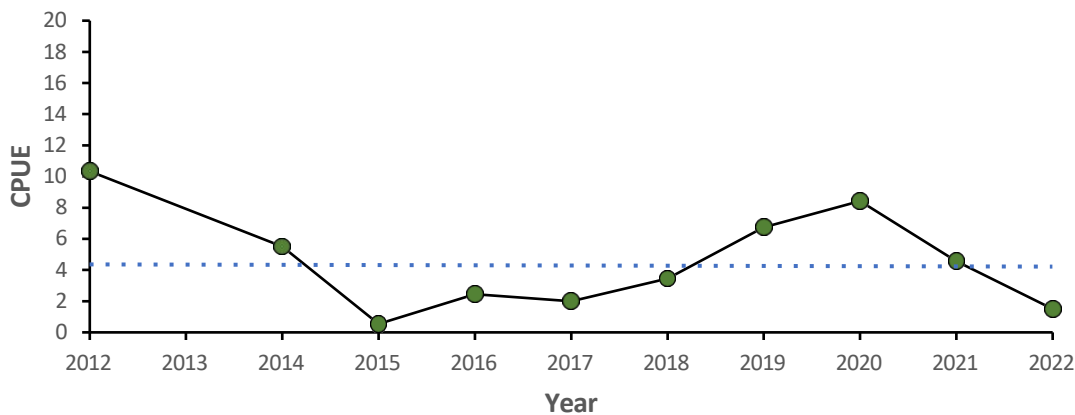


Figure 2: Catch per unit effort (CPUE) (fish per net) for *Arthurs paragalaxias* captured during annual fyke netting surveys, Arthurs Lake, 2012-22 (showing linear trendline)

Monitoring of the *Arthurs paragalaxias* within Arthurs Lake was undertaken 10-11 October 2022. 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 2.1 m below full supply level. A total of 36 individuals were captured resulting in a CPUE of 1.5 fish per net. This is below the ten-year average (2012-22) of 4.7 fish per net (Figure 2). In terms of relative abundance, this result is within the bounds of recent years catches. Monitoring is planned for October 2023.

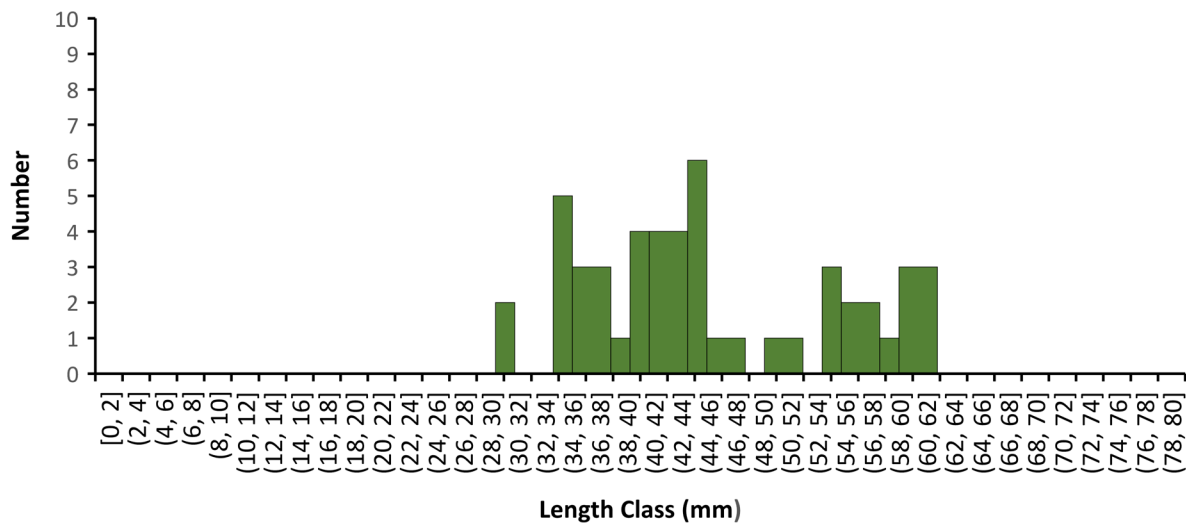


Figure 3: Length frequency for the *Arthurs paragalaxias* captures, Arthurs Lake, October 2022, (n=36)

Thirty-six fish were measured for length and plotted on a length frequency histogram (Figure 3). There were three small but distinct length cohorts evident. Natural recruitment of juvenile *Arthurs paragalaxias* during 2022 was low, with limited numbers in the 30–40 mm length range. The survival of larger adult fish was good, with a number of individuals in the 40–50 mm and 50–62 mm length classes.

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 four years, with none captured from monitoring during January 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. An intense algal bloom was present during the winter of 2023 and its impact on the galaxiid populations has not been assessed.

Monitoring as part of the 2022 program year was delayed until 24-25 January 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. To maximise the chance of future captures, monitoring is scheduled for the peak spawning period, October 2023.

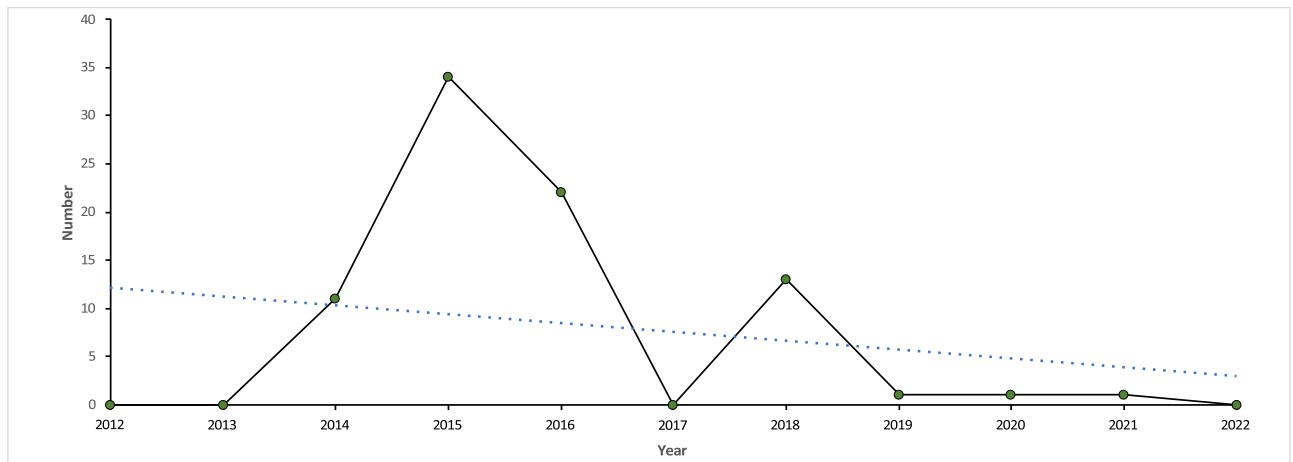


Figure 4: Total catches, Arthurs paragalaxias during annual fyke netting surveys, Woods Lake, 2012– 22 (showing linear trendline), (* the 10 individuals captured during 2014 were from Entura consultants fyke netting survey)

Saddled galaxias - Arthurs Lake

Monitoring of the saddled galaxias within Arthurs Lake was undertaken 10-11 October 2022. 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). A total of 71 individuals were captured resulting in a CPUE of 3.0 fish per net. This is within the bounds of the ten-year average (2012-22) of 3.9 fish per net (Figure 5).

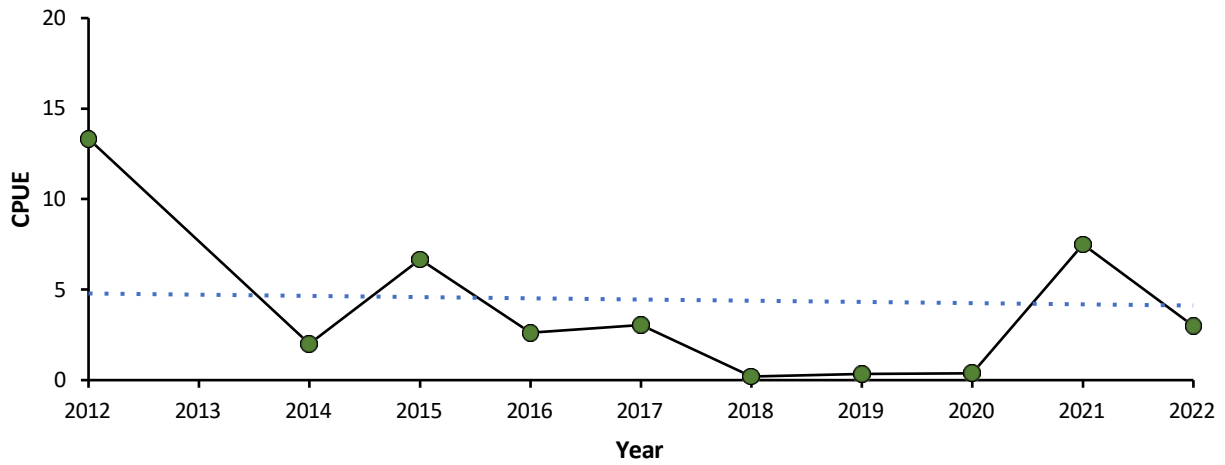


Figure 5: Catch per unit effort (CPUE) for saddled galaxias, captured during annual fyke netting surveys, Arthurs Lake, 2012–22 (showing linear trendline)

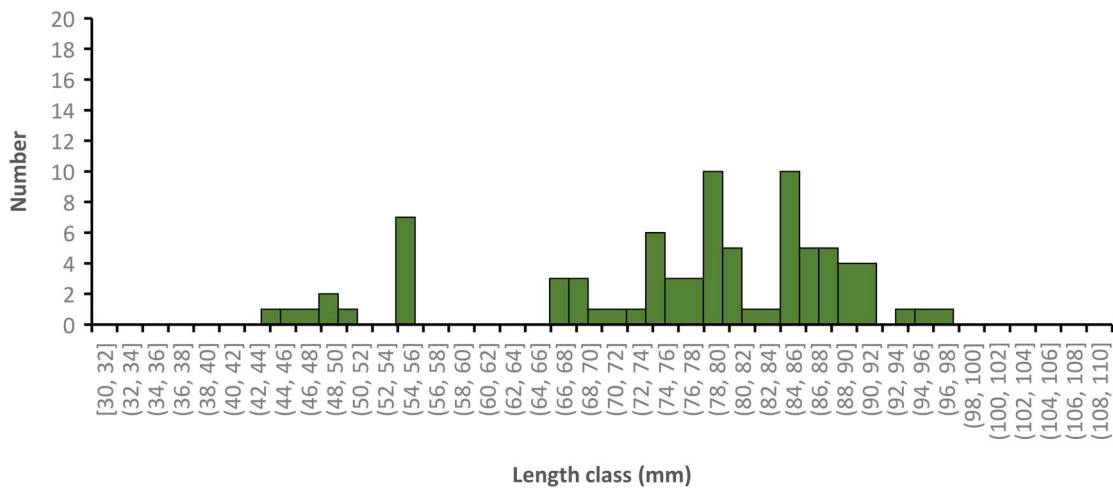


Figure 6: Length frequency for the saddled galaxias captures, Arthurs Lake, October 2022, (n=71)

The length frequency plot (Figure 6) shows three cohorts, with a modest number of young of the year fish in the 40 - 60 mm length range (17%) and a significant number of individuals over 80 mm. This result is in contrast to the 2021 result where a high number of juveniles and very few larger fish were captured.

Saddled galaxias – Woods Lake

Monitoring as part of the 2022 program was delayed until 24-25 January 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 0.36m below full supply level. Additional monitoring was carried out during 2019-21 to examine a significant decline in the CPUE during this time.

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 2023 at 4.3 fish per net (103 fish captured) (Figure 7). This result signals a significant recovery in abundance since 2018 when none were captured and during 2019 when the CPUE was less than one fish per net.

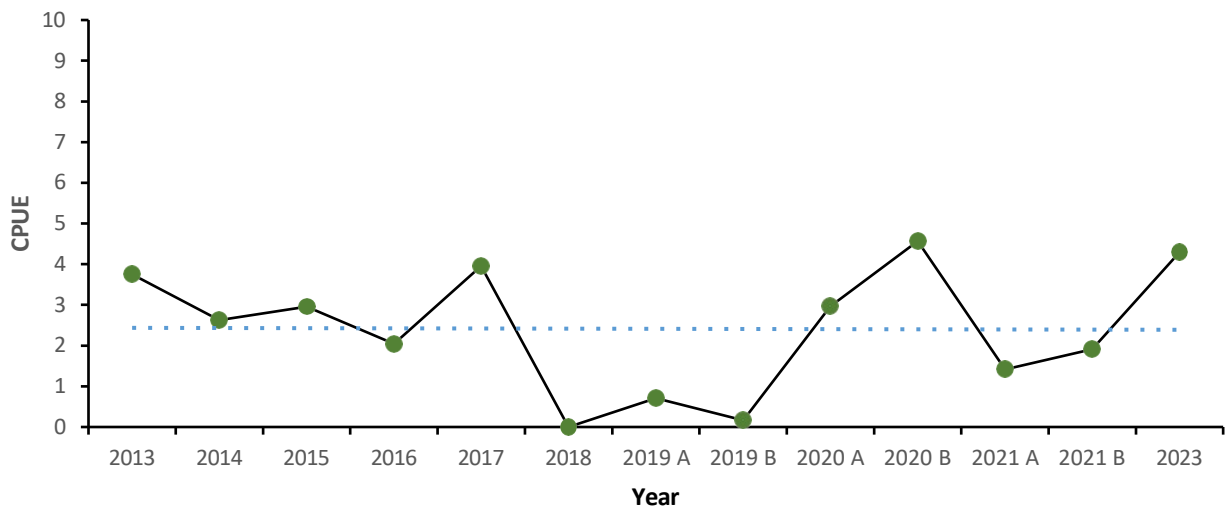


Figure 7: Catch per unit effort (CPUE) for saddled galaxias, captured during annual fyke netting surveys, Woods Lake, 2012 – January 2023 (showing linear trendline)

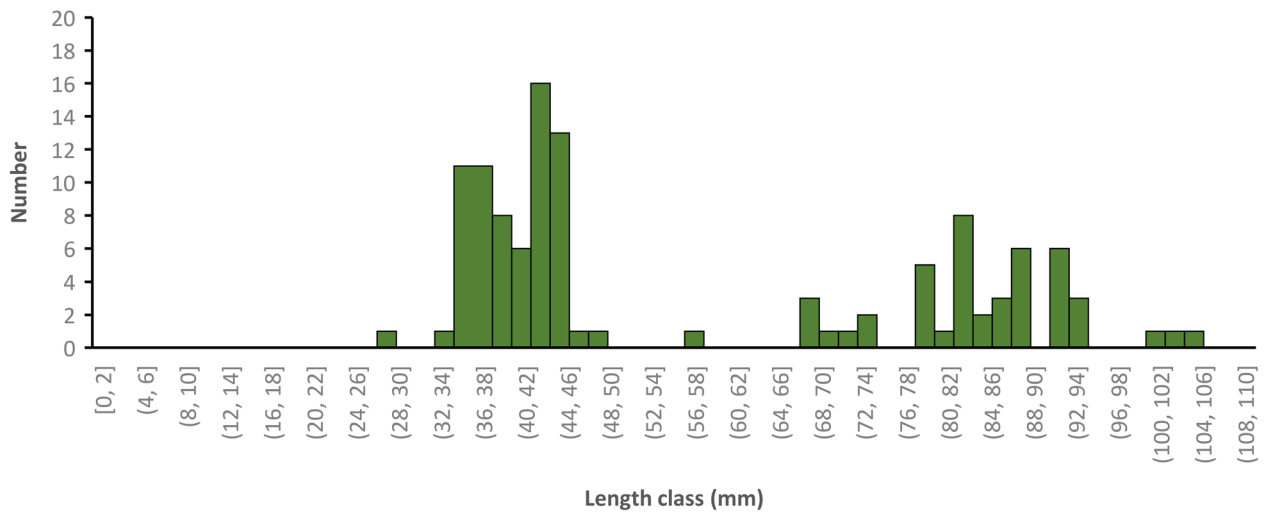


Figure 8: Length frequency for the saddled galaxias captures, Woods Lake, January 2023, (n=103)

The length frequency plot (Figure 8) provides evidence of significant recruitment of young-of-the-year fish, with 57 percent in the 30–50 mm length range. There are also possibly two recruitment events with peaks around 38 and 46 mm that may reflect autumn and spring spawning events. This is a very positive result as it follows good recruitment during 2021, although there are only low number of this cohort represented in the 60–80 mm length range, suggesting low survival into the second year. There are good numbers of larger fish greater than 80 mm.

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 indicates the population abundance has since 2013, 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.

Strathgordon Water Supply Dam

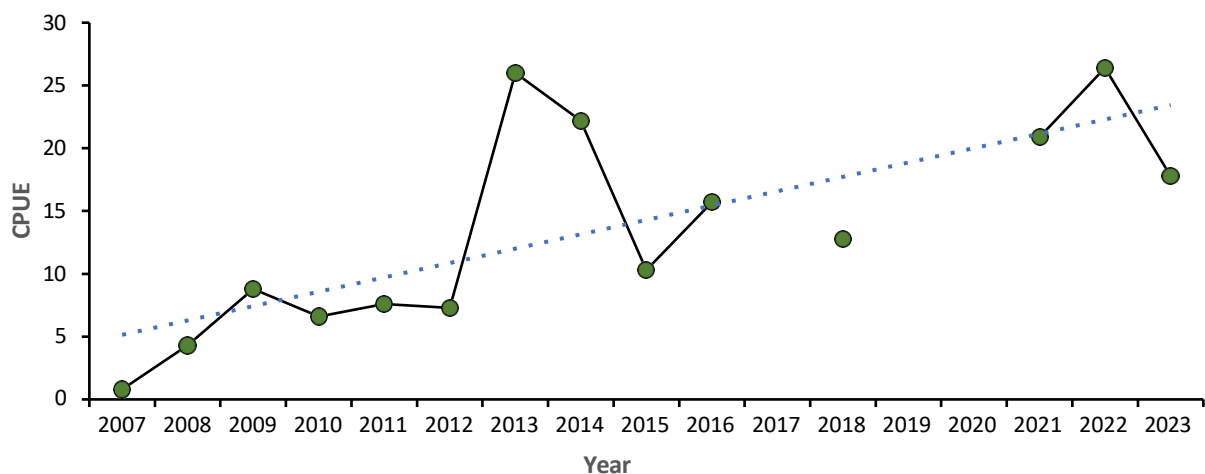


Figure 9: Catch per unit effort (CPUE) from annual fyke net monitoring for the Pedder galaxias at Strathgordon water supply dam 2007-23 (showing linear trendline)

During 26-27 April 2023, 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 214 Pedder galaxias were captured resulting in a CPUE of 17.8 fish per net. This result indicates the population abundance remains at high levels. However, the analysis of length frequency data suggests recruitment of young-of-the-year fish is absent (Figure 10). This situation will need to be monitored during 2024 to ensure this is not an ongoing occurrence.

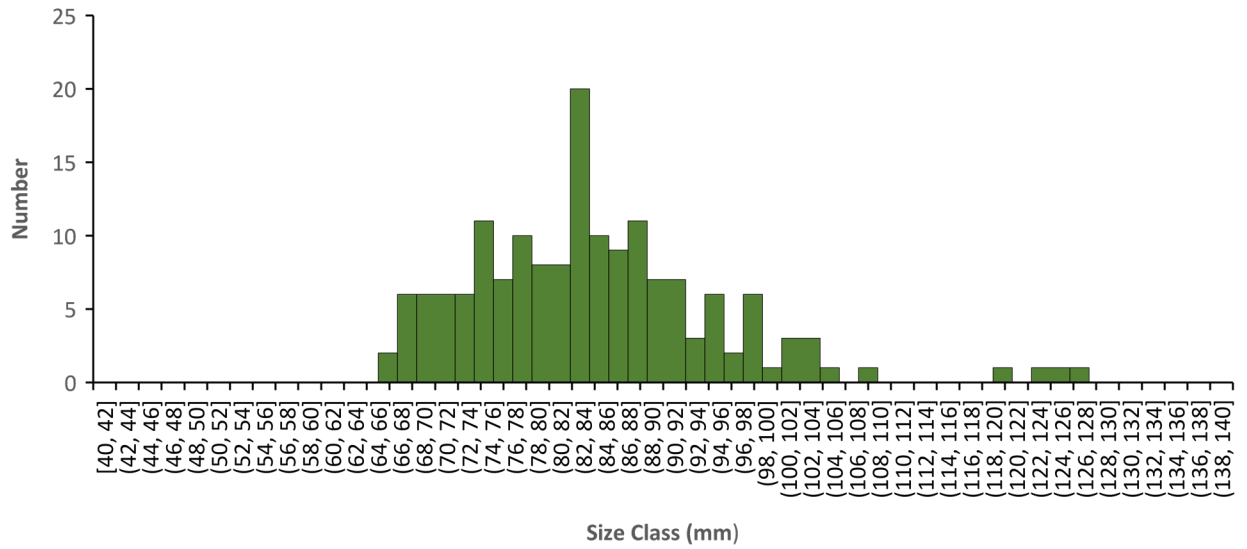


Figure 10: Length frequency for the Pedder galaxias captures, Strathgordon water supply dam, April 2023, (n=139)

Golden galaxias

Overview

The golden galaxias populations of lakes Crescent and Sorell have over the past 25 years been subject to several changes. The two populations have been separated with 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 and turbidity, placing stresses on the lake ecosystem and galaxiid populations. The trout population in both lakes has also influenced the galaxiid populations particularly as turbidity has decreased. The IFS has reviewed its stocking policy and will no longer stock this system.



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

Golden galaxias - lakes Crescent and Sorell

The annual golden galaxias (*Galaxias auratus*) monitoring survey was conducted during 29-31 March 2023. This is the 18th consecutive year this action from the *Lakes Sorell and Crescent Water Management Plan 2005* has been completed.

At each of lakes Crescent and Sorell, 12 fine-mesh fyke nets were set overnight, with four nets set across three locations (Figure 11), with the number of golden galaxias captured per fyke net recorded (Table 2). At Lake Crescent, one net was dislodged by high winds and the data was excluded. The fork lengths of 91 golden galaxias from Lake Crescent and 162 from Lake Sorell were recorded. Lake levels at both waters were high, Lake Sorell 804.26 m ASL and Lake Crescent 803.47m ASL, consequently a large area of marshland habitat was inundated. 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 (2023)

Lake	Site	Number of Fyke Nets	Number Captured
Crescent	Site 1 Agnews Creek Shore	3	48
	Site 2 Boathouse Shore	4	162
	Site 3 Lower Clyde Marsh	4	156
	Total	11	366 (33/net)
Sorell	Site 1 East side of Island	4	540
	Site 2 Inside Grassy Point	4	493
	Site 3 Dogshead Point	4	18
	Total	12	1,051 (88/net)

The total catch of golden galaxias from Lake Crescent was 366, for an average catch effort of 33 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, 1,051 golden galaxias were captured (Table 2), for an average catch effort of 88 fish per net. The total number of golden galaxias captured declined marginally on the 2022 result, down from 1,353 fish.

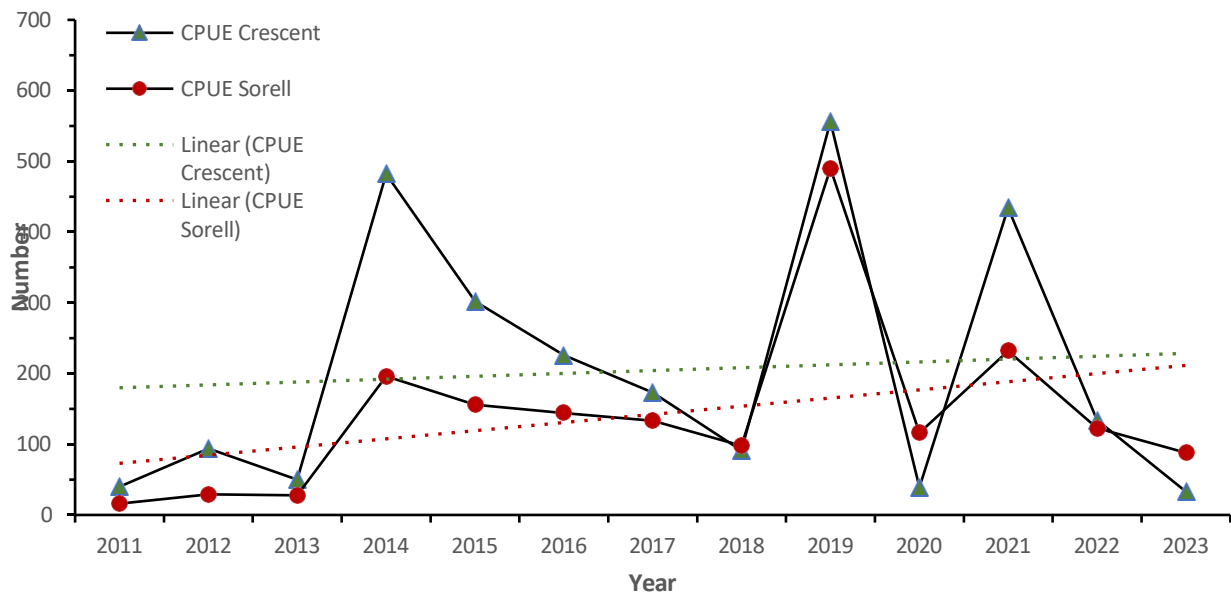


Figure 12. Average catch per unit effort (CPUE) of golden galaxias for lakes Crescent and Sorell (2011-23), with associated linear trend lines

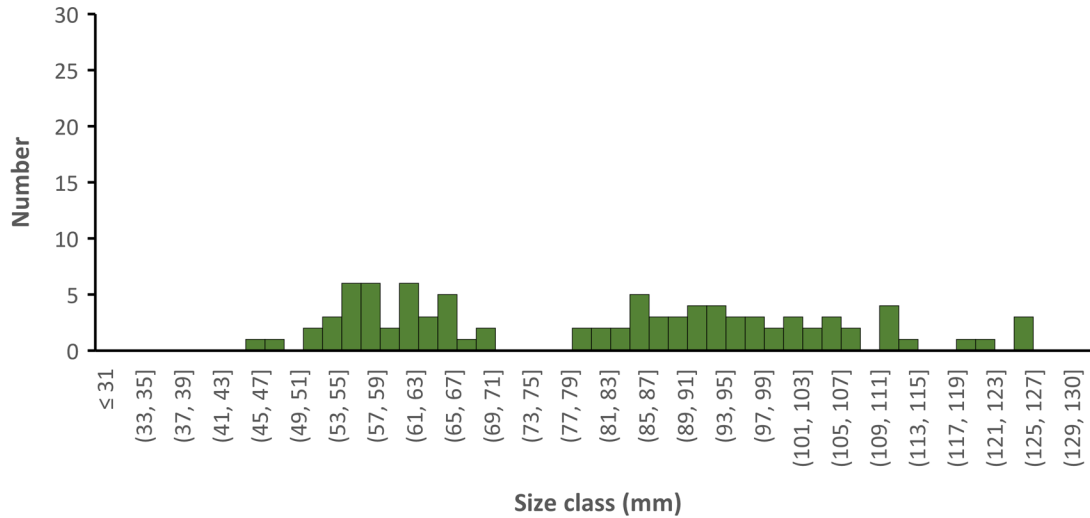


Figure 13. Length frequency for the golden galaxias captures, Lake Crescent March 2023 (n=91)

While the total numbers of golden galaxias captured at Lake Crescent was low, there were signs of modest recruitment occurring, with 40 per cent of fish in the 40-70 mm length range (Figure 13). The total number of fish over 70 mm was low and there were no defined cohorts. This pattern is likely related to higher lake levels and the availability of additional 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.

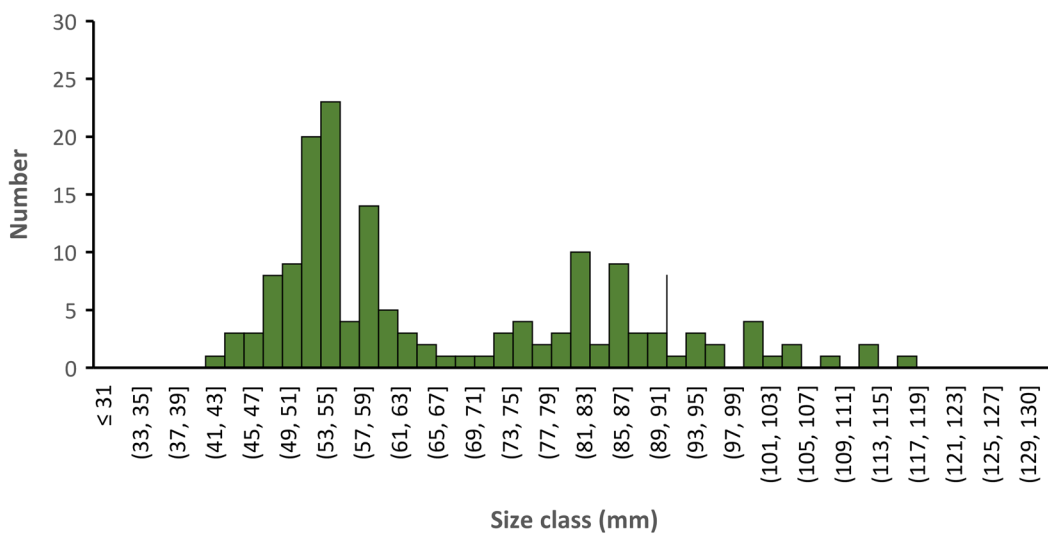


Figure 14. Length frequency for the golden galaxias captures, Lake Sorell March 2023 (n=162)

Recruitment of golden galaxias at Lake Sorell was high with 59 per cent of fish in the 40-70 mm length range (Figure 14). While the total number of fish over 70 mm was greater than Lake Crescent, there were no defined cohorts evident. This is a similar pattern to Lake Crescent and likely to be related to the availability of additional marshland habitat that was not surveyed. Presently, the abundance of trout within Lake Sorell is low due to the impact from past carp eradication actions.

Swan galaxias

Overview

The Swan galaxias (*Galaxias fontanus*) is endemic to Tasmania, occurring naturally only in the 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 all populations checked each year.

During March 2023, two new translocated populations were established, the success of these is yet to be determined.

Establishment of new translocated populations 2023

During 2022-23, 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. Around 1,200 potential sites were initially identified from modelling Swan galaxias habitat. An extensive desktop assessment resulted in this number being reduced to 84 sites. These sites were visited and assessed, with four streams identified as candidate sites for establishing translocated populations: Upper section of the Coal Rivulet (St Pauls catchment), Newitts Creek, Evercreech Rivulet and Delvins Creek (all upper South Esk catchment). Evercreech Rivulet and Delvins Creek were finally selected as the two streams best suited for successful establishment. 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 4 juveniles and 6 adults from Cygnet River) were released into the upper section of Evercreech Rivulet. A five-year monitoring program is planned, commencing late 2023. Funding also included revegetation and fencing works at Dairy Creek, managed by NRM North. Fish conservation work was conducted under Natural Resources and Environment Tasmania (NRE Tas) Threatened Fauna, permit 23042 and NRE Tas Animal Ethics permit, 3/2022-23.

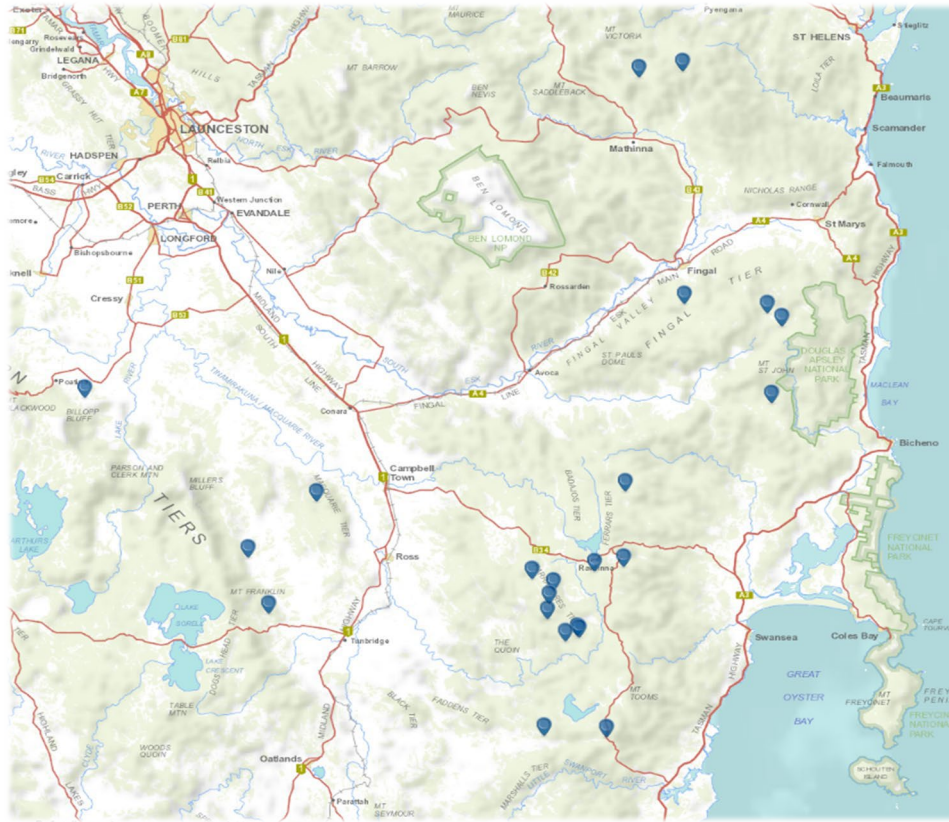


Figure 15: Swan galaxias locations, showing natural and translocated populations, current at March 2023

Swan galaxias monitoring

During November 2022 to March 2023, ten Swan galaxias populations were checked by backpack electrofishing, a summary of each location is presented below.

Cygnnet River (March 2023) was checked at the normal monitoring site immediately downstream of McKays Road, with 15 Swan galaxias ranging in length 65–100 mm and two large climbing galaxias 165 and 145 mm length captured. Ten Swan galaxias were used in the translocation program.

Dukes River (March 2023) was checked at the monitoring site at the old bridge on McKays Road, with 50 Swan galaxias captured and used in the translocation program. Many (20-30) Swan galaxias were also observed at this site.

St Pauls River (March 2023) was checked upstream of the monitoring site at the Valley Road floodway. Two Swan galaxias were captured approximately 500 metres upstream. Further electrofishing approximately four kilometres downstream resulted in the capture of 30 Swan galaxias that were used in the translocation program.

Blue Tier Creek – lower (March 2023) was checked for a distance of approximately 350 metres downstream of the routine monitoring site. There were a large number of (> 40) young-of-the-year Swan galaxias present in addition to 25 adult fish ranging in 60–90 mm length. Twenty juveniles and ten adults were used in the translocation program.

Blue Tier Creek – upper (November 2022) was checked at the normal monitoring site, with no Swan galaxias found. No Swan galaxias have been found at this site since 2015.

Tater Garden Creek (November 2022) was checked at the eastern branch, with no Swan galaxias found. The last recorded sighting was 2016.

Rocka Rivulet (November 2022) was checked at the normal monitoring site at McKays Road with twelve adult Swan galaxias present (60–90 mm length).

Lost Falls Creek (November 2022) was checked at the normal monitoring site at the old bridge 1.4 km upstream of Lost Falls. No Swan galaxias have been found at this site since 2015.

Floods Creek (December 2022) was checked at the anti-jump weir and upstream from the hut to the track crossing at Stumpys Bottom. No Swan galaxias have been found at Floods Creek since 2010, despite being surveyed most years, implying this population is probably extinct.

Dairy Creek (November 2022) was checked on the Billopp property, with eight adult Swan galaxias captured (60–90 mm length).

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 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.

Monitoring of Shannon and Penstock lagoons is typically undertaken annually. No monitoring was undertaken during 2022-23, consequently, only the summary CPUE data for 2013-22 has been included. Monitoring of the yingina / Great Lake native fish fauna is largely done by Hydro Tasmania as part of their environmental program and is not reported here.

Shannon paragalaxias - Shannon Lagoon

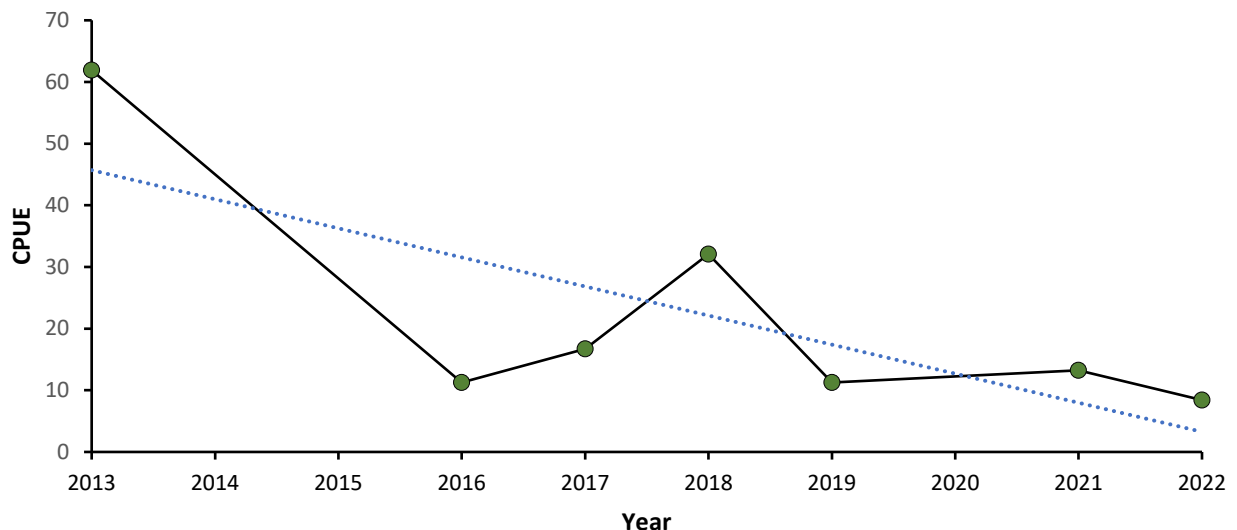


Figure 16: Catch per unit effort (CPUE) from annual fyke net monitoring for the Shannon paragalaxias at Shannon Lagoon, 2013-23 (showing linear trendline)

Between 2013 and 2016, the CPUE results for the Shannon paragalaxias within Shannon Lagoon declined significantly. Since 2016 the CPUE has generally remained stable (Figure 16).

Shannon paragalaxias - Penstock Lagoon

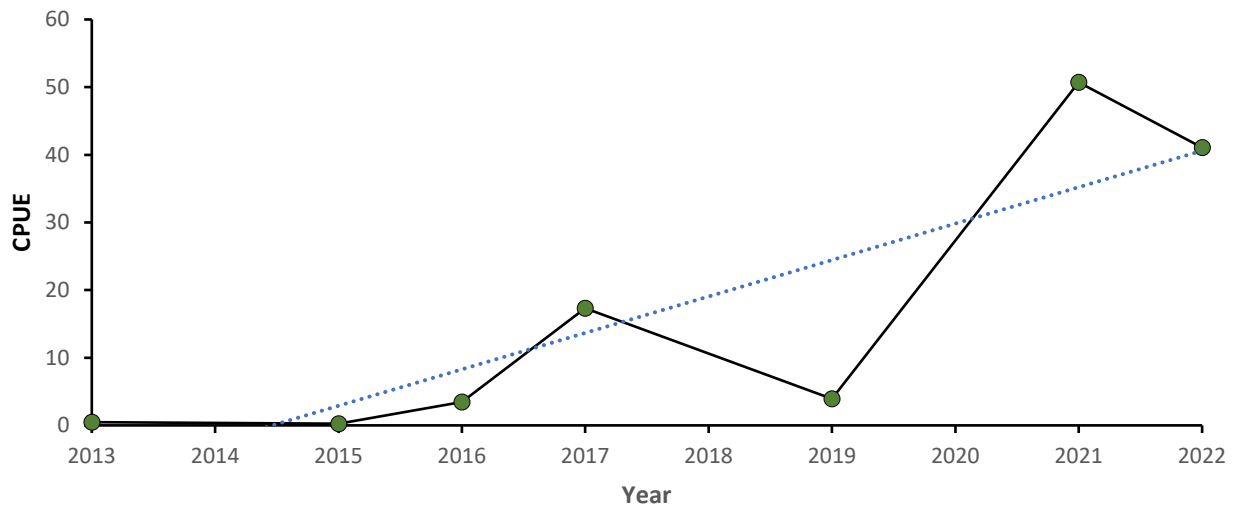


Figure 17: Catch per unit effort (CPUE) from annual fyke net monitoring for the Shannon paragalaxias at Penstock Lagoon, 2013-22 (showing linear trendline)

The CPUE for the Shannon paragalaxias within Penstock Lagoon has since 2013 increased to relatively high levels (Figure 17).

Great Lake paragalaxias - Shannon Lagoon

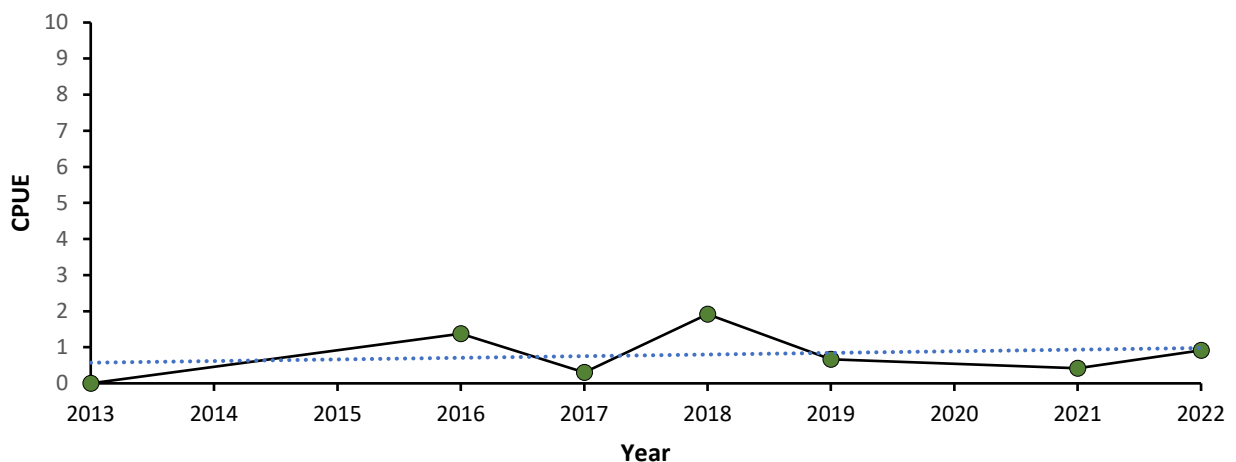


Figure 18: Catch per unit effort (CPUE) from annual fyke net monitoring for the Great Lake paragalaxias at Shannon Lagoon, 2013 – 2023 (showing linear trendline)

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.

Great Lake paragalaxias - Penstock Lagoon

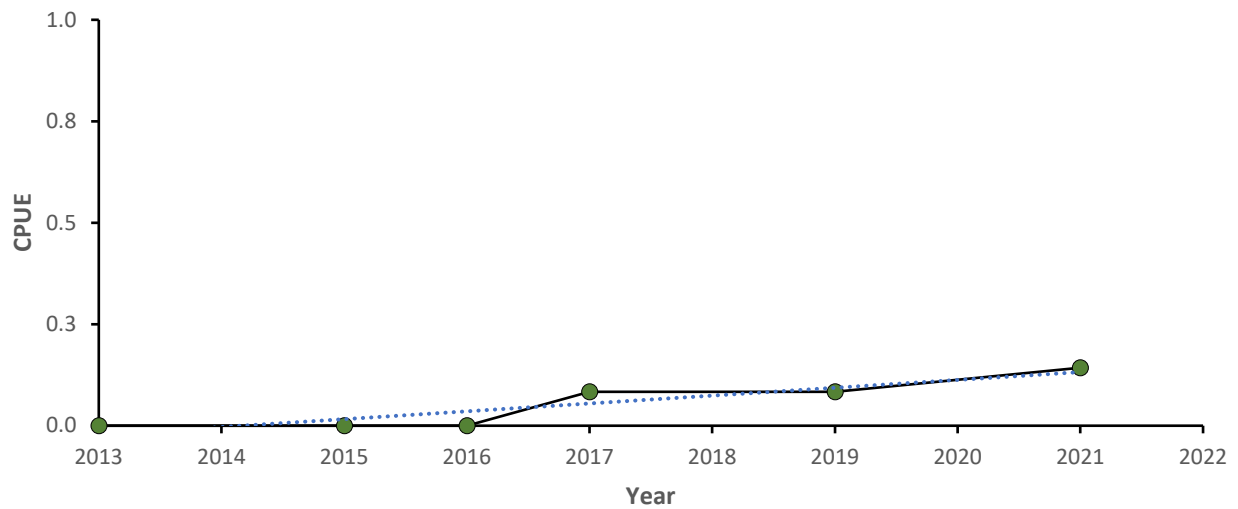


Figure 19: Catch per unit effort (CPUE) from annual fyke net monitoring for the Great Lake paragalaxias at Penstock Lagoon, 2013-23 (showing linear trendline)

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 highly limiting in terms of feeding and spawning.

Spotted galaxias (Shannon and Penstock lagoons)

Spotted galaxias – Shannon Lagoon

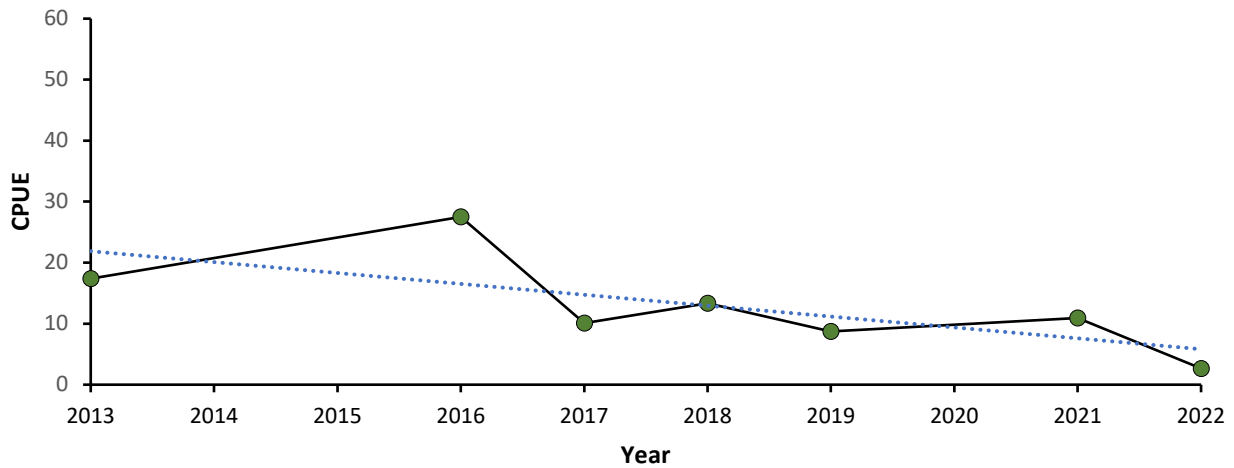


Figure 20: Catch per unit effort (CPUE) from annual fyke net monitoring for the spotted galaxias at Shannon Lagoon, 2013-23 (showing linear trendline)

The spotted galaxias is relatively common within Shannon Lagoon, however, the CPUE has declined overtime. 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

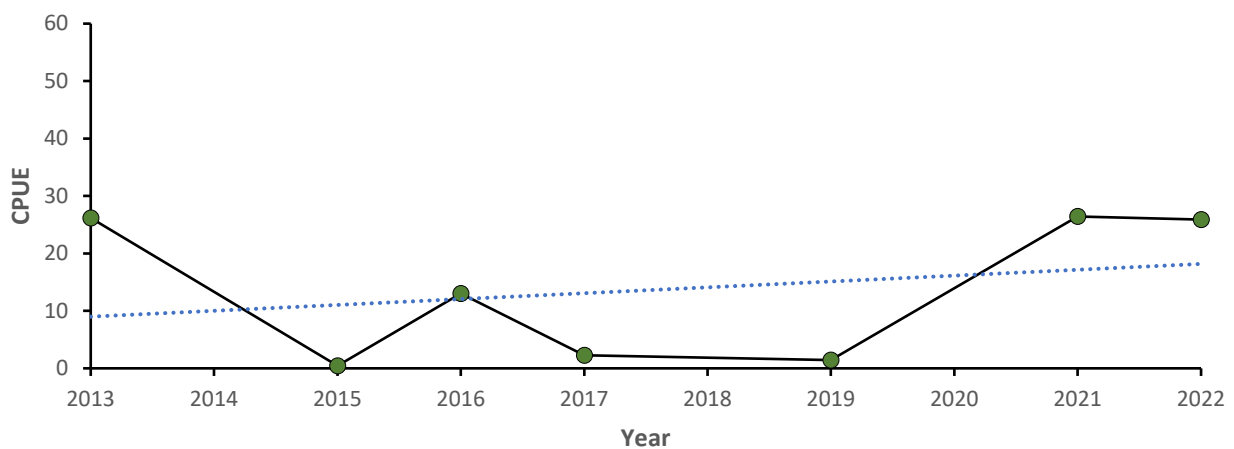


Figure 21: Catch per unit effort (CPUE) from annual fyke net monitoring for the spotted galaxias at Penstock Lagoon, 2013-23 (showing linear trendline)

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 during 2021 and 2022 (Figure 21).

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	
Natural Populations													
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 known extent of subpopulation (km of river)	Change in extent (km of river)	Previous abundance	Current abundance	
Translocated Populations													
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	60 (36 adults & 24 juveniles)	To be checked Nov 2023						Initial monitoring November 2023
12	Delvin Creek	State Forest	North	Saddleback	2023	60 (30 adults & 30 juveniles)	To be checked Nov 2023						Initial monitoring November 2023



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