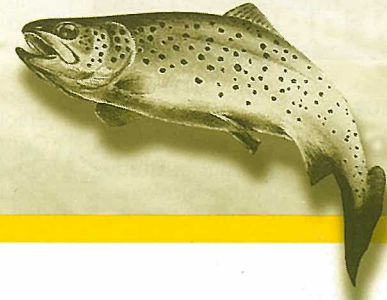


# On the Rise



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## Looking ahead for Inland Fisheries

*The Minister for Inland Fisheries David Llewellyn was interviewed for On The Rise.*

**"I have had a life-long interest in angling, an activity which gives a great deal of pleasure to a higher proportion of Tasmanians than people from any other State of Australia," Mr Llewellyn said.**

As a boy in the Fingal Valley, I used to go fishing with friends in the Break O'Day River. Also during my school years, I used to go up to Great Lake with friends and fish there using wattle grubs as bait.

Afterwards I took up fly fishing, and regret that in recent years my parliamentary duties have prevented me from doing as much fishing as I would have liked. However, I still cast a line reasonably regularly.

This life-long interest has seen me become Minister for Inland Fisheries both in the former Field Government and the current Bacon Government.

Back in 1990, I calculated that the inland fishery was worth some \$30 million to the State, and it would be worth more than that today. And that's not allowing anything for its social and recreational value.

I have watched with interest the review of the Inland Fisheries Commission implemented by my predecessor John Cleary. I have sought feedback from Tasmanian anglers, and support the re-structure of the Inland Fisheries Commission.

I am concerned that the re-structured body retain its identity and not be swallowed up by larger bureaucracy. Therefore, I am pleased to confirm the new body, which will be called Inland Fisheries Service, will retain its own identity.

One aspect of the review that I haven't supported is the establishment of an Overview Board. Instead there will be an

Inter-Agency Committee to maintain the existing synergies and provide support as required to the Service.

I share the concern of anglers about a decline in the fishery in such lakes as Sorell and Crescent where the low levels of water to combat the carp situation may have been part of the problem, as well as Shannon Lagoon and Penstock Lagoon. The rest of the system of lakes and waterways are as good as ever.

To set the wheels in motion, I have initiated the Lake Sorell Fishery Recovery Project to restore and maintain the ecological values of lakes Sorell and Crescent.

A Steering Committee supported by a Technical Committee has been established involving scientists, water quality experts from DPIWE, anglers, land owners, Parks and Wildlife, Forestry and the Tasmanian Aquaculture and Fisheries Institute.

Government and Natural Heritage Trust funding has been sought to get the restoration project underway and to follow

up on the preliminary work done by Inland Fisheries over the past few months.

Funds will later be earmarked for remediation work that may be identified as necessary. As you would realise, in the current tight budgetary situation, it will be part of my battle to improve the recurrent budget for Inland Fisheries.

We do seem to be at the doorstep of an exciting new glass eel industry in our waterways. The sustainability of volumes of glass eels in the Derwent and Tamar River systems are currently being investigated, and it could be an industry worth many millions of dollars to the State.

The positions of Director and Deputy Director of Inland Fisheries have both been advertised, and the appointments are pending.

The Recreational Fisheries Council (to be known as Inland Fisheries Advisory Council) has met twice under the chairmanship of Professor Nigel Forteach and legislation to formalise its role will be introduced into parliament shortly.

The three current Assistant commissioners Jim Ferrier, Les Monson and Bob Ward are on the Council along with representatives of commercial fisheries, trout guides, and conservation interests.

"I look forward to working with the Council and believe their input representative of all stakeholders will be invaluable," Mr Llewellyn said.



### Brushy Lagoon treatment unsuccessful

David Jarvis, Technical Officer, Inland Fisheries Commission

**During April 1998, Brushy Lagoon was poisoned with rotenone to remove redfin perch.**

A recent netting survey was conducted to assess the results of the treatment. Although initial indications were positive, it has now been confirmed that the treatment was unsuccessful as several redfin perch were captured during the recent survey. The Commission is trying to work out why the poisoning was unsuccessful and there are several possible reasons although most relate to the incomplete application of rotenone across the lagoon or incomplete mixing of rotenone with the water. Incomplete application or mixing would

have led to refuges for redfin to survive in until the rotenone de-toxified.

The survey also showed that trout reintroduced into the lagoon have grown well with some in excess of 1 000g. The condition of the trout were good to excellent which is promising for the coming season.

The treatment of Brushy Lagoon will be reviewed so that improvements can be incorporated into any similar activities in the future. In the meantime the trout fishery will exist together with redfin perch. The Commission will be reviewing stocking policy in an attempt to lift the performance of the fishery.

The Commission intends to re-open Brushy Lagoon for the coming season.

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## IN BRIEF

### Tagged trout

Mr Michael Caminada of St Leonards recently caught a tagged trout in Bradys Lake. The brown trout had been released into Lake Binney for the Eddie Wigston Memorial Competition on 20 March 1998.

### Lake Sorell news

The Commission recently submitted a proposal to the Natural Heritage Trust (NHT) seeking funds to assist in the rehabilitation of Lake Sorell. The NHT proposal would form part of an integrated project that would include activities on many ecological aspects of the lakes Sorell and Crescent system including the trout fishery, carp management, native fish and wetlands. The Commission is hopeful that the proposal will be successful although the final decision will not be known for several months.

### Liawenee event bigger than ever

#### OPEN WEEKEND – 15 & 16 MAY 1999

The Inland Fisheries Commission is pleased to announce that this year's Open Day has been extended to include an additional day and will be held over the weekend of Saturday 15 and Sunday 16 May 1999.

In addition, a large marquee will be hired and eleven businesses, involved with freshwater fishing, have been invited to display and sell their products. Trade displays so far confirmed include Tas Electronics and Communications, Fishing Connection Sport Store, Guys Marine, Mountain Designs Outdoor Gear, Hydro-Electric Corporation, Max Stratton Sports Store, Anchor Wetsuits, Lewis Marine and Charlton's Sports Power.

This year's displays will also feature several other Government agencies. Marine and Safety Tasmania (MAST), the marine resources and water management units of DPIWE and the HEC will mount displays. MAST has indicated that, should anyone attending the show be prepared, having studied the handbook, they could take their speed boat licence test during the weekend.

Once again the Longford Branch of the Northern Tasmanian Fisheries Association will arrange catering and their prices will, as usual, be extremely competitive. It should be added that one of the branch's projects last year was paid for by barbecue profits. This project was a large glass cabinet built and placed at the Longford Library which will shortly be stocked with old fishing gear on loan from the Museum of Trout Fishing at the Salmon Ponds, Plenty.

The Inland Fisheries Commission is presently arranging displays that will include native species, the commercial fishery, recreational fishing, carp, museum

shop and a competition for children. Fly-casting and fly-tying will also be demonstrated thanks to professional guides and club members.

One of the biggest attractions is the spawning brown trout from Great Lake. These will be stripped of their eggs and the Commission will encourage members of the public to become involved in this fascinating experience. Good photo opportunities are assured for the whole family. A few other surprises may be in store if the plan comes together.

The Minister for Inland Fisheries Mr David Llewellyn is planning to attend and Chris Wisbey of the Australian Broadcasting Corporation will be presenting his Sunday morning program from the Liawenee venue.

The Commission looks forward to seeing you at the open weekend.

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Any comments, suggestions, contributions or ideas for articles would be most welcome and should be addressed to:

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## Around the lakes – spawner summary 1998

### GREAT LAKE

#### Brown Trout • 12 & 19 May 1998

Combined male and female – 220 fished sampled  
Average length (mm) .....445  
Range of length (mm) .....285-631  
Average weight (g) .....950  
Range of weight (g) .....300-2 500  
Average condition factor .....1.07

#### Rainbow Trout • 17 September 1998

Combined male and female – 177 fished sampled  
Average length (mm) .....475  
Range of length (mm) .....404-584  
Average weight (g) .....1 185  
Range of weight (g) .....675-1 750  
Average condition factor .....1.10

### LAKE SORELL

#### Brown Trout • 19 June – 17 July 1998

Combined male and female – 361 fished sampled  
Average length (mm) .....387  
Range of length (mm) .....255-521  
Average weight (g) .....668  
Range of weight (g) .....200-1 375  
Average condition factor .....1.11

### ARTHURS LAKE

#### Brown Trout • 18 June 1998

Combined male and female – 214 fish sampled  
Average length (mm) .....443  
Range of length (mm) .....287-535  
Average weight (g) .....976  
Range of weight (g) .....275-1 700  
Average condition factor .....1.11

### LAGOON OF ISLANDS

#### Rainbow Trout • 20 August 1998

Combined male and female – 146 fished sampled  
Average length (mm) .....526  
Range of length (mm) .....361 – 685  
Average weight (g) .....1 859  
Range of weight (g) .....600-3 600  
Average condition factor .....1.24

### PENSTOCK LAGOON

#### Rainbow Trout • 28 September 1998

Combined male and female – 135 fish sampled  
Average length (mm) .....489  
Range of Length (mm) .....333-585  
Average Weight (g) .....1 400  
Range of Weight (g) .....575-2 475  
Average condition factor .....1.19

### Penstock Lagoon

Low flows in the spawning canal during the brown trout run resulted in fish being unable to spawn for a second consecutive year.

The rainbow run however was successful largely due to the Hydro-Electric Corporation agreeing to release water into the canal during the spawning run. An estimated 150 fish were observed in the canal of which 135 were stripped of eggs and milt. The fertilised eggs were hatched at the salmon ponds and the fry were later released into Penstock Lagoon.

### Lagoon of Islands

Low flows in Ripple Creek, in combination with low water levels in the lagoon, prevented any brown trout from spawning.

The rainbow run was very successful with an estimated 200-300 fish observed spawning during July and August. There was however a significant drop in the average weight of fish from the 1997 spawning run (2 550g). This decrease can be explained by

the presence of a large number of smaller males around 400mm length.

### Great Lake

Good runs of well conditioned brown and rainbow trout occurred in Liawenee Canal.

### Arthurs Lake

The spawning run at Arthurs Lake was very successful with good numbers of brown trout spawning in Hydro Creek. Although the average weight was marginally down on the 1997 run, fish were in very good condition.

### Lake Sorell

An estimated 3 500 brown trout spawned in Mountain Creek. In general fish were in fair condition with a significant percentage of young fish present in the run. One of the interesting results was the average condition factor (1.11) was the same as for Arthurs Lake fish. This similarity is largely due to the influx of smaller, better condition fish.

Only a very small number of rainbow trout spawned, therefore no weight or length data was collected.

### Rainbow trout from Lagoon of Islands spawning run, 1998.



## OTHER THAN TROUT

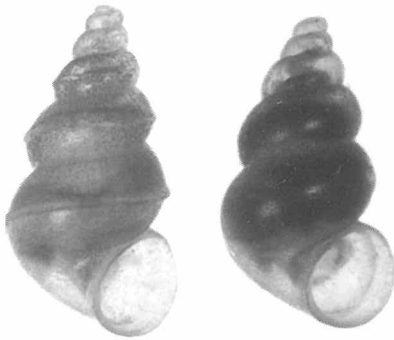
A regular article on animals of interest to the angler

# A tale about snails

by Chris Cleary, Technical Officer, Inland Fisheries Commission

### Snail fauna of lakes Sorell and Crescent

Lakes Sorell and Crescent contain five species of snail. Anglers are usually familiar with the largest of these species called *Glyptophysa*. These snails are found throughout Tasmania's central plateau lakes and are noted for their habit of floating on, or just under, the surface film. This species is large enough (10-20mm shell height) to provide an attractive and easily targeted prey for trout which feed heavily on snails when they disperse by being blown across the surface water. Trout fishermen in lakes such as Lagoon of Islands exploit dispersal events.



*Austropyrgus sp.* have two typical shell forms with either ridged shells (LHS), or smooth shells (RHS).

The other four species are less noted probably by virtue of their small size. They are all smaller than 5mm from the top of the coil to the bottom of the shell. Two of these species, *Potamopyrgus antipodarum* and *Austropyrgus sp.* belong to a family of aquatic snails called the hydrobiids. The other two species are less common, *Gyraulus scottianus* and *G. tasmanicus* (Smith and Kershaw 1981). These species have characteristically flat disc-shaped shells (like very small nautilus shells).

### Potamopyrgus antipodarum

Mature *P. antipodarum* range in size from 3-5mm and are the only introduced snail species in these lakes. This New Zealand native has colonised many major estuaries and freshwater habitats associated with major shipping ports around the world including the River Thames in London and most ports in Tasmania, South Australia and in New South Wales as far north as Botany Bay in Sydney (Ponder 1988). Their distribution suggests that this species was transported from its native environment in New Zealand on early sailing ships. It was first identified in the Derwent and Tamar rivers in Tasmania in the 1850's. It is speculated that they were carried between ports in drinking water vessels that were emptied and filled at each port. This species can live in saline environments as well as fresh water environments. It gives birth

to live young and does not need to reproduce sexually. Most of the population is comprised of female snails that produce eggs that hatch into more female snails and do not need fertilising by males. This means that new populations can be formed from the translocation of one single snail. *P. antipodarum* are known to disperse between lakes by hitching rides on the feet of wading water birds, and also by humans who can translocate the snails on boots, boating equipment and in water containers. The introduction of *P. antipodarum* to lakes Sorell and Crescent probably occurred through one or more of these processes. This particularly hardy species can tolerate desiccation and can even survive passing through the guts of fish unharmed!

### *Austropyrgus sp.*

*Austropyrgus sp.* is an endemic species found nowhere else in the world except lakes Sorell and Crescent. It is the most abundant snail species in Lake Sorell with densities as high as 1000 snails/m<sup>2</sup> (Cleary 1997) and contributes to a large proportion of the invertebrate biomass. *Austropyrgus sp.* have two shell forms, either smooth or ribbed shells but despite the different appearance both forms are the same species (see photo). *Austropyrgus sp.* is difficult to distinguish from *P. antipodarum* without close scrutiny; however, the size and shape of their shells is usually a good indication. The shells of *Austropyrgus sp.* are smaller (2-3mm) and the whorls (coils) of the shells are more convex than the larger (3-5mm) less convex whorls of *P. antipodarum*.

### What do snails eat?

Snails graze on algae and bacteria that cover the surfaces of rocks, plants and mud. They can affect the quantity and type of algae on these surfaces by selectively grazing certain types of algae. Some snail species form special relationships with aquatic plants by grazing algae from leaf surfaces which simultaneously anti-fouls the leaves causing faster plant growth (Broenmark 1985).

### Where are *Austropyrgus sp.* found?

*Austropyrgus sp.* graze on rocky shores and on aquatic weeds in marshes. Interestingly, on rocky shores 90% of snails have smooth shells opposed to the ridged shell form. However, in the populations in marsh habitats and on soft mud the ridged shell is most common and smooth shells are rare (Cleary 1997). It is not clear why this is but a possible explanation is that ridged shells may provide stability and anchorage in muddy substrates enabling snails to move through mud and fine silt which are common in marsh habitats. Textured shells are often found on other molluscs that live in soft mud for this reason (Trueman *et al.*

1966). On rocky, wave-swept shores ridges may cause greater drag forces on shells making them susceptible to being swept off rocks. Consequently, natural selection may favour smooth shell forms in rocky habitats and ridged shells forms in marsh habitats.

### What eats snails?

There is some evidence to suggest that small native snails are a significant food for the endemic golden galaxias (*Galaxias auratus*). Snails were found in the stomachs of 50% of a small sample of galaxiids (12 fish) that were collected along rocky shores in Lake Sorell (Cleary 1997). It is possible, that snails are an important link in the food chain of these lakes by grazing algae and providing prey for trout, native fish and invertebrates. Anglers frequently observe brown and rainbow trout that have gorged themselves on small snails. The ingested snails often appear like fine gravel in the stomachs of trout. The sheer abundance of these snails and their poor ability to escape predation probably make them easy prey for fish.

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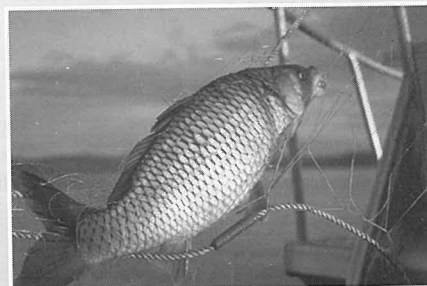
**Rocky shorelines near Mountain Creek in Lake Sorell have numerous shallow pools with algae covered rocks which provide perfect habitat for aquatic snails.**



# Carp Pictorial



A haul of carp taken with a seine net early in the carp program. Photo Chris Wisniewski



A Lake Crescent carp taken in a gill net." Photo Dave Jarvis



Taking regular samples to monitor water quality. Photo Chris Wisniewski



The field operating table, inserting a radio transmitter into a carp.



Backpack electrofishing in the Clyde River to check for carp. Photo Richard Morrison



A common catch of carp with the seine net in recent times.



Using a bio-telemetry receiver to locate transmitter carrying carp and hopefully his companions. Photo Dave Jarvis



Sealing stop logs at the outflow gates from Lake Crescent. Photo Brett Mawbey



Checking a fyke net. Photo Chris Wisniewski



Trout and gear seized from poachers apprehended at Lake Crescent. Photo Chris Wisniewski



Electrofishing boat checking Lake Meadowbank for carp. Photo Brett Mawbey



Electrofishing a farm dam after a report of carp from a concerned farmer.

# NATIVE FISH NEWS

Jean Jackson, Scientific Officer, Native Fish Conservation

**Inland Fisheries staff working on native fish (Jean Jackson and Brett Mawbey) have been making some exciting discoveries during their investigations of threatened fish distributions. These discoveries are described below.**

## Rediscovery of McCubbin's caddis-fly

The endangered McCubbin's caddisfly (*Taskiria mccubbinii*) has recently been re-collected from the shore of the Lake Pedder impoundment. The rediscovery was made by Jean and Brett who have been conducting survey work for threatened caddisflies with funding from the Parks and Wildlife Service. The species was first found at the original Lake Pedder in 1965 and had not been collected since, despite targeted searches.

The two adult males of McCubbin's caddisfly were found in a sample taken in November 1998 using an automatic UV light trap set on the shore of Lake Pedder below Coronation Peak. Identifications were made by David Cartwright in Melbourne and confirmed by Dr Arturs Neboiss, who originally collected and described the species.

A further series of samples was taken in February and these await sorting and identification. They may contain McCubbin's

or other threatened caddisflies but will certainly increase our knowledge of the distribution of all the species they include.

## New Swan galaxias population discovered

On 7 January 1999 a previously unknown population of the endangered Swan galaxias (*Galaxias fontanus*) was found during surveys of a State Forest block. This takes the total number of known natural populations of this species to just four. In addition, there are nine translocated populations. The species survives only in streams which are free of brown trout and other introduced fish such as redfin perch. The new population was found in Tater Garden Creek, close to another population but separated from it by unsuitable habitat and the presence of brown trout. Many adult fish and small juveniles were sighted in the clear water of rocky pools in about 1.5 km of the stream. There is no obvious physical barrier, such as a waterfall,



**Brett Mawbey removing a trout from downstream of a natural Swan galaxias population. Photo: Brad Emmerton**

to stop trout moving upstream, rather it appears that the ephemeral flow of the stream has prevented further trout movement. This population will be monitored and habitat protection measures such as barrier improvement and controls on logging will be implemented as far as possible.

## Pedder galaxias doing well in Lake Oberon

Our annual trip to check on the Pedder galaxias in Lake Oberon was made in early March, with access by a small Hughes 300 helicopter. Two nights were spent camping near the lake. Equipped with dry suits and powerful underwater torches, Brett Mawbey and Sam Thalmann braved the cold and darkness of the lake to conduct night snorkel surveys of the fish. They counted 26 fish of four size classes, from juveniles hatched last spring to large adults of 120-150mm.

As well as the fish surveys, monitoring to determine any impact of the fish on other animals in the lake and stream was done. This includes plankton tows, counts of *Anaspides* and surber sampling for invertebrates.

Unfortunately no Pedder galaxias were found in their remaining natural habitat in Lake Pedder tributaries, despite intensive searches over summer.



**Chris Cleary at the Lake Pedder shore site where McCubbin's caddisfly was collected.**

**Photo: Jean Jackson**

**Gary Henderson (pilot, Coastal Helicopters), Brett Mawbey and Sam Thalmann load gear to be flown to Lake Oberon.**

**Photo: Jean Jackson**



# Carp – Now for the good news!

John Diggle, Fisheries Biologist, Carp Management

**The carp program is now in its fifth year and there has been significant success so far, the major findings are:**

- **That carp are contained to lakes Sorell and Crescent only**

Extensive distribution surveys, looking for the presence of carp and targeting the Clyde River and impoundments downstream of Lake Crescent, have failed to turn up any evidence of established carp populations. Given that it is now four years since carp were discovered in Lake Crescent, the probability is increasing that carp are in fact confined to lakes Sorell and Crescent only.

It is also encouraging that recent surveys at the sites poisoned previously by the Inland Fisheries Commission on the north west coast in the 1970's and 80's have failed to show any remnant carp infestations.

- **That carp spawning success may be limited by water level management**

Data collected this summer on the size of

carp present in Lake Crescent indicates that strategic water level management in Lake Crescent may have contributed to unsuccessful spawning by carp in summer 1997-98. Furthermore, there is no evidence of spawning from summer 1998-99 at this stage. This means that the carp management program may have resulted in successive years of limited or no recruitment of carp.

The strategy in Lake Crescent is to keep the lake out of the marsh over the summer with the level steady or falling.

In earlier years, ie 1995-96 and 1996-97, there were problems with water level control which resulted in some limited spawning success in Lake Crescent in particular. In these cases carp had access to the marshes during the summer months and large numbers were captured invading the marsh habitat.

- **The carp population in Lake Crescent has been lowered significantly**

A total of 6 355 carp have been removed

from Lake Crescent since the carp program commenced in 1995. Recently a carp population estimate was conducted for this lake and the results were very encouraging. At this stage it appears that, of the original population that was present in 1995, there are only 350 to 400 fish remaining this means that over 90% have been removed in four years.

There has also been some limited carp spawnings since the carp program started, the estimate of the remaining small fish that resulted from these is about 1 500.

If the estimates are correct and there has not been a spawning in the 1998-99 summer, the total of all carp still left in Lake Crescent is between 1 800 and 1 900 individuals. Furthermore, one more season of removal should result in the population falling to below 750 by the end of next summer.

- **The carp population in Lake Sorell is very small**

This season, a handful of carp were captured from Lake Sorell bringing the total captured from this water to 40 in four years. Recent captures resulted from aggregations given away by radio tracked carp. In these aggregations all tracker fish were re-captured but very few Sorell fish were present and although no accurate population estimate is possible from this data it is expected that there are fewer than 100 carp in this lake.

It is also encouraging that all other fishing efforts in this water, including extensive fyke netting, electrofishing and netting have failed to locate any carp, it seems that carp are not rapidly spreading in this water, at this stage.

- **Methods have been refined to target carp more efficiently**

Methods for efficiently capturing carp have been developed to a high level. This is mainly due to radio tracking technology and the scaling up of netting operations to include two boats capable of deploying 3km of nets per day.

Radio tracking has enabled information to be collected on carp habitat preference at different times of the year as well as enabling the detection of aggregations that occur infrequently and would otherwise go undetected. These methods will continue to be employed for the coming season and should result in removing more than 50% of the carp remaining in Lake Crescent.

### **Where the program goes from here**

Given the progress that has been made in removing carp, it seems that this strategy in combination with water level control, can result in effective control of the carp populations in lakes Sorell and Crescent. The other strategy of containment is also successful and will be continued.

The next steps involve the assessment of measures to better protect the other values of the two lakes, these include the trout fishery, native fish, commercial fish and water supply. It is hoped that some of these issues will be addressed in the proposed Lake Sorell Rehabilitation Project.

In relation to the closure of Lake Crescent, the encouraging results in terms of carp control mean that steps to assess the feasibility of the opening of Lake Crescent to anglers can be progressed. The re-opening of this lake will be based on an assessment of the risk to our containment strategy. Unfortunately, if a carp spawning is detected or if fish down is unsuccessful in the coming year, then this process may be delayed.

*Tagging a carp for a population estimate at Lake Crescent.*



## Brumbys Creek bonanza

Viv Spencer, Senior Inspector

**Whilst on patrol duty recently at Brumbys Creek near Cressy I can across a group of divers. Being an inquisitive fisheries inspector I approached them and said, "Hello, hello, hello, what's going on here?"**

The person in charge, Mr Andrew McGifford, said, "We're searching for lures lost by anglers".

Thinking to myself, what a waste of time, I said, "Did you find many?" He said, "Not today but we found 460 last year plus two spears, one 50m graball net, a 22 rifle, a Sigma car and several kilograms of lead". I then closed my mouth and thought, "how about that".

While I was there he also found a flathead rig, complete with large star sinker.

Mr McGifford said that he and members of his family regularly check the area and they know where most lures are lost.

The moral of this story is, if you are fishing at Brumbys Creek and lose a lure, don't expect to come back when the water is low to find it because most likely the "Brumbys Bunyips" will have beaten you to it.



# New fish migration barrier

David Andrews, Professional Officer, HEC Biological Consultancy

**A new fish barrier weir has recently been constructed on Liawenee Canal, adjacent to the Inland Fisheries Commission field station at Great Lake. The function of the barrier is to block the movement of fish, primarily undesirable species, from migrating further upstream.**

The construction of the barrier was a reaction to the discovery of a small population of redfin perch in a dam in the Great Lake catchment. The dam at Mienna was treated with rotenone in February 1996 to eradicate the population of redfin perch. It was apparent that the dam had been infested by redfin for several years, and it is possible that some fish may have dispersed into Great Lake via the dam's unscreened outflow. Fish surveys in Great Lake have not discovered any redfin to date, but the possibility that these undesirable species may have gone undetected raises several concerns. As redfin perch are piscivorous (have a diet that includes fish) and have been implicated in a local extinction of the

endangered Swan galaxias in eastern Tasmania, it is likely that they would have a negative impact on the galaxiid populations found in the area. They also eat trout smolt, and have the potential to compete with brown trout and rainbow trout for food and habitat.

Water levels in Great Lake have been at historically high levels for the last few years, and have submerged the fish weir that the Commission used for the management of spawning brown and rainbow trout. This barrier was designed solely for trout management and, as such, was not an effective barrier against upstream movement of all fish species.

The Commission and Hydro-Electric Corporation recognised the risk that redfin pose to galaxiid and trout populations associated with the potential of redfin perch to enter Liawenee Canal. If redfin manage to disperse to the upper reaches of the canal, they would then be inside the World Heritage Area and occur immediately adjacent to Lake Augusta and the western lakes, an area containing ecologically significant galaxiid populations. As a result the Hydro, in consultation with the Commission,

Pre-construction works at Liawenee Canal



The Fish Barrier in Action



provided the design and funding for a new, impenetrable fish barrier on the lower end of the canal.

The fish barrier was constructed several hundred metres downstream of the Inland Fisheries Commission's field station workshop complex. The concrete weir, built on an existing rock bar, has a downstream jump height of 1.6 metres. It is fitted with self-cleaning anti-jump screens and has a flow capacity of 24 cumecs ( $m^3s^{-1}$ ). The environmental impact management plan for the project ensured that construction of the barrier had minimal impact on the water quality and vegetation in and around the area. To avoid any disruption to trout spawning runs, construction of the barrier was initiated in late January and completed in mid March 1998.

## Boat ramp improvements

by Colin Finch, Chief Executive Officer, Marine and Safety Tasmania

**As part of the 1999 Recreational Boating Grants, Marine and Safety Tasmania (MAST) has agreed to upgrade six inland boat ramp facilities.**

MAST received 80 inland and coastal water submissions after calling for proposals through advertisements in newspapers and registration renewals during November 1998. The selection of 1999 inland water projects followed a series of meetings around the State with anglers, boat users, the Inland Fisheries Commission and other interested parties.

At the newly developed Four Springs Lake, the roads and car parks for the eastern shore ramp and disabled jetty will be gravelled to provide all weather access to the facilities.

At Arthurs Lake, gravel will be placed on both sides of the Jonah Bay ramp to effectively widen the ramp. The car parking

area at Arthurs Dam will be improved.

In the Great Lake area, a concrete ramp will be constructed in Brandum Bay to enable easier access and reduce long-term maintenance, and the lower section of the Cramps Bay ramp will be resurfaced.

In addition, the access road and boat ramp turning circle at Lake Echo will be improved.

MAST received a large number of submissions for worthwhile projects and, unfortunately, not all can be funded. The recreational boating fund is an annual initiative and MAST will be calling for submissions for projects in 2000 in November this year.

MAST wishes to thank everyone who forwarded submissions, attended meetings or in any way contributed to the proposals. We also wish to thank the Inland Fisheries Commission for assistance given by staff and management.

## Cabomba: aquarium environmental time bomb

by Stephen Welsh, Dept of Primary Industries, Water and Environment

**Dumping of unwanted plants into local waterways and deliberate "seeding" of areas to allow wild cultivation for aquarium trade has resulted in the wide establishment in Australia of the threatening weed Cabomba, or fanwort, Cabomba caroliniana.**

Cabomba is an aquatic perennial plant considered to be native to both the south-eastern United States of America and South America. "Cabomba" is an aboriginal American name for an aquatic plant and "fanwort" describes the fan-like leaf. It was introduced into Australia as an aquarium plant and was

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## Obituary GEORGE ROGERS

North Western Fisheries Association  
By Les Monson

**From early in life George had a passion for fishing, be it with a lantern and bush rod for a humble blackfish, spinning for a cocky salmon or casting a fly in a remote mountain tarn. George was passionate that this angling lifestyle would forever be available to his children and grandchildren for generations to come.**

To see that his visions were realised, George worked with absolute dedication for many organisations throughout Tasmania. He was the north west delegate to the Four Springs dam project, which comes to fruition in 1999, from 1974 until 1996. He was President of the Ulverstone Branch of the North Western Fisheries Association for 23 years.

He was a founding member of the Tasmanian Traditional and Recreational Land Users Federation.

He was also the angler representative on the Central Highlands Advisory Council, a founding member of the Central Highlands Shack Owners Association, the Tasmanian representative at a national level of the Australian Freshwater Fisherman's Assembly and Vice President in 1996. He was also a founding member of the Freshwater Anglers Council of Tasmania which made him an Associate Member in 1997.

Is it any wonder George was awarded with Life Membership of the North Western Fisheries Association in 1979 for services rendered?

No job was too large or small to be undertaken, travelling hundreds of kilometres to deliver posters, to coffee making, on many and varied projects for the angling community's benefit throughout the State.

George was always proud of his involvement in the protection of the whitebait runs in the State.

There would be few among us who have not heard an anecdote or short story by George, all in good faith and humour that, in



the end, encouraged many to fulfil the task at hand. A cup of coffee at his Great Lake shack was always there for the passer by.

There was no greater ambassador for angling in Tasmania when George travelled to Canberra to represent the Ulverstone Branch of the NWFA as winners of Tasmania's Volunteer Involvement Program for work in recreation and sport in Tasmania.

Typical of George's dedication to his recreation and life could be summed up by his actions a few short months ago, a voluntary construction project at the Inland Fisheries Commission's facility at Liawenee. It was late in the day, rain pouring down and a howling gale, George trudging between the site and shed with a length of timber over his shoulder.

"It's a bit short mate, but you had the figure end of the tape." There was always that touch of humour.

Once a commitment had been made, nothing would prevent George from meeting it.

In conclusion, on the Sunday morning of his passing, from dawn until 10.30am Great Lake was at its most peaceful. I can say I have never seen it with only fish rising all over and barely a tree moving for so long. Somehow it seemed that nature recognised the passing of a very special friend.

## Cabomba: aquarium environmental time bomb

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first recognised here in 1986. Cabomba has since become widely established in Queensland, New South Wales, the Northern Territory and Victoria as a result of the activities of aquarium owners.

Cabomba grows under water except for a few floating leaves and flowers in season. The roots grow in mud but parts of the plant can survive free-floating for six to eight weeks in deep water. The stems grow up to 10 metres long. Shoots are grass green to olive green or sometimes reddish-brown. The green floating feathery leaves are alternate and repeatedly branched into a fan shape of 5cm across. The leaves are on a short stalk. The flowers, which are white or cream with six petals with yellow bases, appear in summer above water level.

The plant grows prolifically and soon dominates ponds and lakes, reducing water quality and displacing native flora and fauna. It has the ability to clog up waterways and nutrient rich lakes. This leads to fouling of irrigation and aquaculture systems. Cabomba has little value to wildlife and no known predators.

Bioclimatic modelling for Cabomba indicates this weed could successfully establish and survive in Tasmania's waterways. Due to this threat, Cabomba is declared a *Secondary Prohibited* plant in Tasmania under the *Noxious Weeds Act 1964*. This means it is illegal to propagate, sell or distribute the plant. Appropriate and safe destruction (burial, desiccation, incineration) of any plants currently in home aquariums is strongly recommended. Plants must never be dumped in or near waterways.

If you locate any infestations of Cabomba or other threatening aquatic weeds, please report the incident to DPIWE's Regional Weed Management Officers or Statewide Freecall 1300 368 550.

## Prosecutions

### Infringement notices

During the six months from 1 July 1998 to 31 December 1998 the following on-the-spot fines were issued.

### Court proceedings

Offences that were proceeded with by summons are listed below.

Offence	Number
Fish without a licence.....	4
Fish with more than one rod & line.....	3
Fish without a licence.....	5
Fish with unattended set rod.....	4
Possession of net other than a landing net.....	4

Offence	Number
Take whitebait without permit.....	3
Possession of whitebait.....	2
Use natural bait in artificial water.....	2
Take fish from closed waters.....	1
Take fish from juvenile angling water...1	

Offender	Location	Offences Summary	Total fine + costs (\$)
Glenn Stuart PARKER, Tarraleah	NO 1 POND, TARRALEAH	Unlicensed	235
Haydyn Paul BAUER, West Launceston	SANDBANKS CREEK, GREAT LAKE	Take fish other than rod & line, take fish from closed waters, disturb spawning fish	774
Richard VOLMER, Summerhill	SANDBANKS CREEK, GREAT LAKE	Disturb spawning fish, take fish other than rod & line	574
Jason Stewart NICOLSON, South Launceston	SANDBANKS CREEK, GREAT LAKE	Take fish other than rod & line, take fish from closed waters, disturb spawning fish	774
Raymond Francis CORDWELL, Perth	SANDBANKS CREEK, GREAT LAKE	Disturb spawning fish, take fish other than rod & line, take fish from closed waters	2 024
Giovanni BOSCHETTO, King Island	GRASSY, KING ISLAND	Deal in applicable fish when unregistered	335
Rodney David DALE, Huonville	HUON RIVER	Take fish other than rod & line, use graball net in inland water	735
Timothy James BINGLEY, Bridport	GREAT FORESTER RIVER	Fail to produce angling licence	110
Ricky Paule MADDOX, New Norfolk	DERWENT RIVER	Unlicensed, falsely represent to be licensed	335