

On the Rise



Discovery of the pest fish, *Gambusia*

In July 2001, an introduced pest fish, the Eastern *Gambusia* (*Gambusia holbrooki*) was discovered in the Tamar River. The fish were discovered by Ms Ruth Mollison near the Tamar Island Wetland Information Centre during routine water quality monitoring for Launceston Waterwatch and were identified by Dr Francisco Niera at the Australian Maritime College. The IFS has investigated the discovery and is currently in the process of determining fish numbers and distribution.

The fish are likely to have escaped from a nearby farm dam where they were originally reported in 1993. Inland Fisheries poisoned the dam at that time and subsequent investigations suggested that this strategy was successful. However, it now appears that some fish had escaped prior to the poisoning and have since invaded brackish-water marshlands fringing the Tamar River.

The Eastern *Gambusia*, which originates from rivers flowing into the Gulf of Mexico, has established itself as a noxious pest in many mainland waters. It is a small fish –

the female grows to 60 mm while the male grows to a mere 35 mm. Eastern *Gambusia* were originally introduced to Australia to control mosquito populations by feeding on mosquito larvae. However, they have proven to be no more effective at controlling mosquitoes than native fishes.

Eastern *Gambusia* are considered pests due to their impacts on native fauna, particularly fish. In many mainland waters, Eastern *Gambusia* have greatly outnumbered native fish through direct predation of eggs and larvae, and competition for food

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Big salmon released for the State's anglers



Minister for Primary Industries, Water and Environment, David Llewellyn and Jody Wilson from Saltas, release one of the big salmon at Curries River Dam

The release of 400 trophy size Atlantic salmon into Lake Meadowbank, Pet River Dam and Curries River Dam by Saltas and the IFS during the opening weeks of the new season, drew hundreds of curious onlookers and eager anglers from around the State.

Television and newspaper journalists captured the action and the Minister for Primary Industries, Water and Environment, David Llewellyn attended the Curries River Dam event. The release has become an

annual event at Lake Meadowbank – this is the fifth consecutive year – but it was the first year that the Pet Dam and Curries River Dam have been stocked with the fish. The Meadowbank salmon were released on 17 July, a fortnight prior to the opening of the fishing season, while the Pet and Curries releases, which were eagerly welcomed by northern anglers, occurred on August 9.

Two hundred fish were released into Lake Meadowbank, and 100 each into the Pet and Curries River. They had an average

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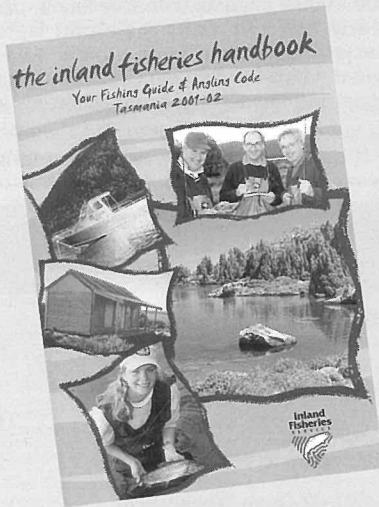
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Welcome to the new season

Welcome to the new season. Apart from some good fishing, this season promises some additional benefits to anglers. New regulations brought in at the end of last season mean that anglers can fish for trout – the year round. Waters now open all year are Craighourne Dam, Great Lake (except Canal Bay), and lakes Barrington, Burbury, Gordon, King William and Pedder.

The Service has produced a new Inland Fisheries Handbook for the 2001-02 season, which is available free of charge to anglers with the purchase of an Angling Licence. The Handbook has been designed for all anglers, from the novice to the experienced, as well as visitors and locals. It contains the Angling Code, which is a summary of the rules and regulations, a Fishing Guide which is aimed primarily at those new to fishing and visitors to the State, and a Management Supplement, containing fisheries management information and contact details for interested anglers to have a say on how the fishery is managed.



The Inland Fisheries handbook

The first project of the Fisheries Habitat Improvement Fund – the restoration of the Shannon Lagoon – has commenced with Hydro Tasmania altering its draw-down procedures, so as to reduce water fluctuations. Hydro has also agreed to maintain higher water levels subject to dam safety which is currently being addressed. The Service has written to landholders also seeking their approval for higher water levels. The sealing of the road adjacent to the lagoon is planned for this summer and ideally, these works will coincide with a strengthening of the dam wall.

Other possibilities for anglers this year include improved access to Lake Echo. Recently I visited Lake Echo with the Minister for Primary Industries, Water and Environment, Hon David Llewellyn, and representatives from Forestry Tasmania to investigate this proposal. The response by all concerned was very positive and the Service has agreed to prepare a project brief regarding access to the northern end of the lake, and including the provision of a boat ramp and camping facilities.

Fisheries management planning by the Service is on the increase with the decision to restructure the planning framework. This means a shortened time frame for producing plans for priority waters while still ensuring an appropriate level of consultation. The Western Lakes Management Plan, however, is continuing as planned and a final draft is due at the end of this year.

I'd like to wish everyone a great season's fishing and encourage all anglers to support the Fisheries Habitat Improvement Fund by donating to worthy projects such as the restoration of the Shannon.

Greg McCrossen
Director of Inland Fisheries

Discovery of the pest fish, *Gambusia*

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and space. Their ability to out-compete native fish is largely due to their scope for prolific breeding and early maturation, extreme tolerance for temperature and salinity, and aggressive behaviour towards other fish. Worldwide, some 35 fish species are reported to have been reduced in abundance or range due to impacts from *Gambusia*.

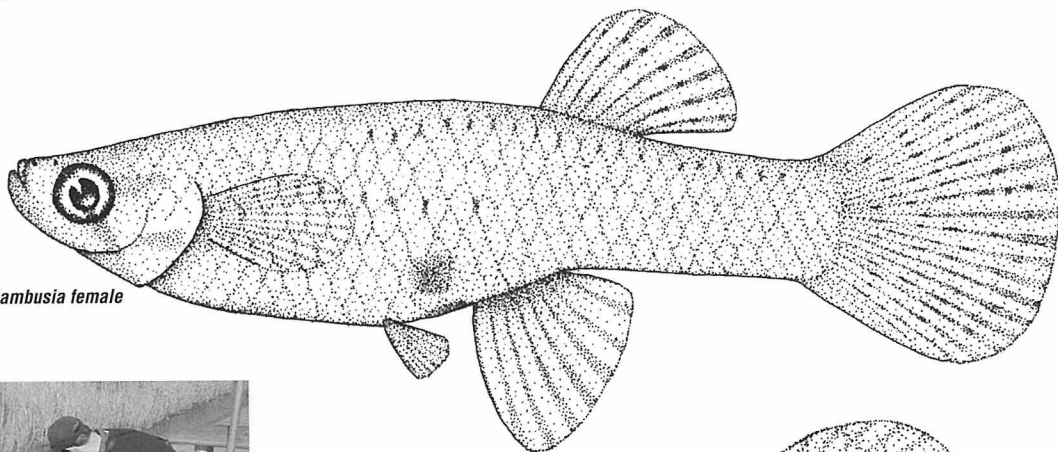
Eastern *Gambusia* have also had significant predatory impacts on invertebrate species and frogs. In fact, *Gambusia* has been implicated in severely reducing localised populations of the green and gold frog in New South Wales by predating on spawn and tadpoles. Indirectly, *Gambusia* can have significant impacts on zooplankton and phytoplankton communities by creating an imbalance through their effects on fish and invertebrates.

The IFS intends to continue surveys to determine the preferred habitat and distribution of *Gambusia* within the Tamar River system. Decisions regarding the control of feral populations will be guided by the findings of these surveys. All suspected sightings and captures of *Gambusia* should be reported to the IFS on 6233 4140. Any captures should be immediately frozen.

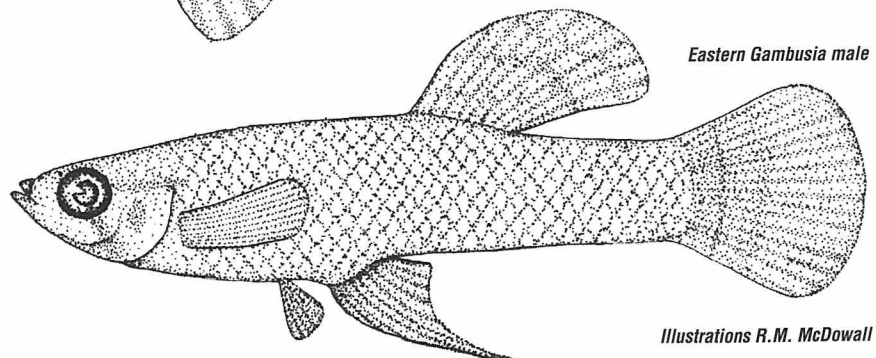


A sample of Eastern *Gambusia* (*Gambusia holbrooki*)

Eastern *Gambusia* female



Eastern *Gambusia* male



Illustrations R.M. McDowall



Ruth Mollison, Launceston Waterwatch and Scott Hardie, IFS, sampling for Eastern *Gambusia* near the Tamar Island Wetland reserve

2001- 02 Open Weekend at Liawenee – a great success

Liawenee Open Weekend, held on May 19 and 20, was yet again a huge success with a record attendance exceeding 8000 visitors. As in previous years, it was a well organised collaborative effort between the IFS, angling clubs, Government departments, commercial operators, volunteer groups and individuals. Fortunately, the weather was more cooperative than last year, which was a contributing factor in the success of the weekend.

The Open Weekend is one of the main promotional activities for the Service and is used to showcase a cross-section of Inland Fisheries projects and management. There were aquariums with native and introduced fish, poster displays, interactive displays and Service staff liaised with the public and answered questions about various projects.

New attractions for this year included helicopter rides, an art presentation by the Bothwell District School, a kids competition, interviews over the public address system,

live boat flare displays and the 'Trout Lagoon'.

The Trout Lagoon proved to be a huge success. Many children enjoyed the experience of catching a 'virtual' fish and in the process learned about recognising fish species, size and bag limits and about the impacts of introduced fish.

The Liawenee Open Weekend is centred on the annual brown trout spawning migration when thousands of fish spawn in gravel beds in the canal. This year, the trout were in good numbers and in better size and condition than the previous year. Of these fish, the Service staff stripped approximately 1 million eggs for rearing at the Salmon Ponds to eventually stock Tasmania's waterways.

The Service staff would like to thank everyone for their participation and contribution in making this year's Open Weekend the most successful yet. Particular thanks to the sponsors of the Trout Lagoon – Spot On The Fishing Connection, Plano, Tassie Devil Lures and Jarvis Walker.

Big salmon released for anglers *...continued from page one*

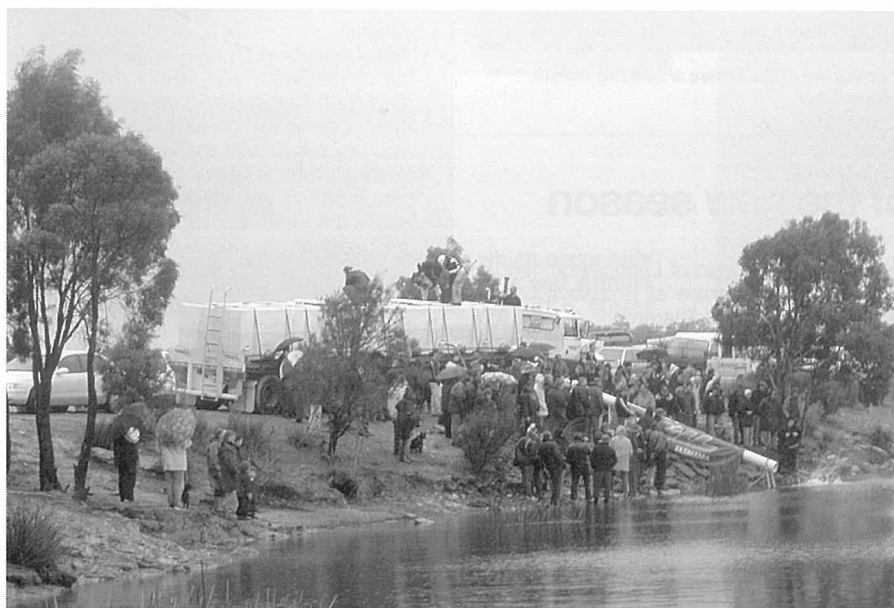
weight of 7 kg with the heaviest tipping the scales at just over 9 kg.

The salmon are ex-broodstock from Saltas Pty Ltd that have served their time in the hatchery and will spend their retirement in the relative comfort of Tasmania's lakes – or until they are caught by some lucky angler! Saltas provide the fish free of charge along with all transport costs to Lake Meadowbank. The IFS and Toll Tasmania contributed to the cost of transporting the extra fish to the northern lakes so that anglers in the north and north west would have an equal opportunity to catch one of the prize fish.

As in previous years, all fish were weighed and tagged prior to release so biological information regarding their adaptability to the lakes can be determined.

Anglers are urged to return tags to Saltas along with details of weight, length and gut contents. Collection points include Wigstons in New Norfolk, Spot On Fishing Tackle in Hobart, The Essential Fly Fisher in Launceston, Devonport Sports Centre, Max Stratton's Camping and Fishing in Ulverstone, Tassie Tackle and Outdoor in Burnie, George Town Outdoor & Entertainment Centre and George Town Sports Centre. Last year, nearly half of the tags were returned from Meadowbank. To encourage anglers to return their tags and information, prizes for lucky tags will be drawn at the end of the season.

The releases at Pet and Curries are largely experimental and feedback from anglers and availability of fish will probably determine whether this will become an annual event in these waters.



Saltas releasing salmon into Curries River Dam



Children and others exploring the IFS carp electro-fishing boat



Constable Steve Timmins displaying the use of boat safety equipment



Inspector Chris Wisniewski encouraging a future angler at the Trout Lagoon



Inside the main exhibition shed



IFS staff, Dave Andrews giving a lesson in 'waterbug' identification



Visitors checking-out spawning trout in the Zigzag Canal

Catch and release fishing – making it worthwhile.

By Tim Farrell - Fisheries Biologist, Recreational Fisheries

Over the last decade or so, 'catch and release' fishing has become increasingly popular in Tasmania reflecting a world-wide trend. Part of the reason for this is the emphasis on fishing for sport rather than for a 'feed'. Tasmanian anglers have been exposed to catch and release philosophy and practise by anglers visiting from overseas, the fishing media and guided fishing operations.

A change in some of the IFS regulations in December last year saw the introduction of Tasmania's first solely catch and release fishery at East Rocky Lagoon in the Nineteen Lagoons area of the Western Lakes. Other regulation changes include further reductions in bag limits in a number of the State's fisheries. There is an increased likelihood, therefore, that Tasmanian anglers, at some time during the season, will be faced with the choice of either ceasing to fish once they have caught their daily bag limit or practicing catch and release.

Whilst it is up to the individual to adopt the catch and release philosophy, it is

important that all anglers at least know effective catch and release techniques, since there is no point in releasing an undersized fish if it is unlikely to survive.

In general, there are two factors that lessen the chance of a trout surviving release after capture, injuries from capture and stress from capture and release.

The extent of injury inflicted from capture is determined by the severity and location of the hook wound, fish skin contact with rough, dry and/or warm surfaces, and mishandling with hands or hook removers causing gill damage.

High stress levels may lead to death from injuries which fish would normally recover from. The amount of stress a trout has undergone prior to its release is determined by temperature, how long the fish has been played for, whether and how it has been removed from the water, and how long it has spent out of the water.

The following tips should help minimise the occurrences of injury and stress to a fish when caught, and increase the chances of a successful release.

Good catch and release practises

- Use barbless hooks. Barbless hooks cause much less damage in their removal from the fish, or for that matter, your clothes. If you must use a barbed hook and the hook won't easily dislodge from the fish, consider cutting off the fly or hook and letting it fall out or rust. Removal of barbed hooks increases the gape of the puncture wound and the severity of the fish's injury. Lure fishers are advised that trebles probably cause the most damage of all and a single hook is far more suitable for catch and release.
- When bait fishing, try not to let the fish swallow your bait if you intend to release it. While it is often out of the angler's control, a fish will have an increased chance of survival if it is hooked in the mouth rather than its gullet or gut.
- Play the fish out as quickly as possible to reduce stress. This means using tackle that is more than capable of handling the fish you are likely to encounter and want to release.
- Bring the trout to an area that is clear of rough surfaces, such as rocky shores.
- Wet your hands before handling the fish and keep clear of its gills. Using a wet cloth or towel will protect the fish and allow more control for handling.
- Leave the fish in the water while removing the hook.
- If you have to remove the fish from the water, try not to use a net and if you do, use one with knotless soft mesh.
- Do not have the fish out of water for longer than 15 seconds. Studies have found that fish kept out of water longer than this have a much greater chance of dying after they are released.
- Release fish into cool water where possible as stress and fatigue are increased with warmer temperatures. This may mean leading the fish to deeper water before letting go of it. Also, try to release fish away from water disturbed by wading and fishing activity, as the suspended material in the water impedes fish respiration and makes recovery more difficult.
- When releasing the fish, hold it right side up in the water and gently rock it back and forth helping to pass water over its gills. Let the fish go as you feel it 'kick' or you feel it is capable of swimming off.
- Arrangements for photographing the catch should be made whilst the fish is still in the water and performed as quickly as possible, avoiding the placement of fish on dry, hard or warm surfaces.



Without use of a landing net or being removed from the water this fish has a good chance of surviving capture. Good preparation means you can photograph your catch and release it too!

Report on the opening of the new season

The first weekend of the season saw a mixed bag of conditions and success rates among anglers. Weather conditions in the highlands were only for the brave, though conditions were milder on lowland waters. As per usual, lowland waters were the most popular with Lake Meadowbank, Curries River Dam, Tooms Lake, Pet Dam and Brumbys Creek having their fair share of anglers. On the highlands, Arthurs Lake was by far the most popular and productive water.

Angler Gary Burling and his group of eleven from Launceston caught 110 fish at Arthurs Lake over the weekend on wet flies,

while Stan Butt, also of Launceston, landed a 3 kg rainbow trout at Brumbys Creek. Leigh McKenzie of Claremont caught four brown trout at Tooms Lake, all over 1.5 kg, and Lindsay Clarke of George Town took four rainbow trout whilst fly-fishing at Curries River Dam. Fourteen Atlantic salmon were taken at Lake Meadowbank. Two anglers arrived at 6 o'clock on Saturday morning and were on their way home only 2 hours later, each with a salmon of about 6 kg apiece. Both fish were caught trolling.

On the north-west coast, rivers were low and attracted few anglers – most preferred to fish stocked impoundments such as the

Pet Dam. Mid-northern rivers were also quiet with the exception of the South Esk. One local angler, Robert Dezoeto of Evandale had grassed five nice brown trout on worm by 8.30 on Saturday morning.

In my opinion, the opening weekend was very successful and all signs are pointing to an excellent season.

Viv Spencer
Senior Inspector

NATIVE FISH NEWS

by Jean Jackson, Native Fish Conservation

New aquarium facility for captive breeding trials

Trials to determine effective captive breeding methods for five threatened galaxias species are being undertaken as part of the Galaxias Recovery Plan.

Over last spring and summer, the trials were conducted at Liawenee, which meant that the fish could not be observed closely. However, since the purchase of a temperature-controlled shipping container from the CSIRO, the trials will now be conducted at the IFS headquarters in Hobart. The container, which is set up for aquariums, was intended for use by the CSIRO in rearing the threatened spotted handfish. The CSIRO has also assisted the recovery team by providing the IFS with equipment and expertise.

The trials in Hobart will commence with the saddled galaxias. Since eggs have never been found in the wild, searches will be conducted. This species, which is endemic to Woods and Arthurs lakes, is unique amongst the galaxiids, as it appears to have either two spawning seasons per year (autumn and spring) or an extended spawning period. It also produces a large number of small eggs relative to most other totally freshwater galaxiid species which spawn in spring and produce a small number of larger eggs. A priority is to determine preferred spawning habitat, which is essential for appropriate water level management.



Stripping Swan galaxias for captive breeding trials

Studies at Woods and Arthurs lakes

Studies on the threatened galaxiid species which occur only in Woods and Arthurs lakes (saddled galaxias and Arthurs paragalaxias) will be undertaken as part of a Water Management Plan for the South Esk-Great Lake catchment area being developed by Hydro Tasmania.

The IFS Biological Consultancy and native fish staff will be investigating habitat requirements of these species to determine appropriate water level management under the Plan. Surveys will be conducted using electrofishing and fine-mesh fyke nets. These fyke nets are specifically designed for galaxiids, with fine soft mesh and a rigid screen to exclude platypus and large trout, reducing predation on galaxiids trapped in the nets. The nets, which are set from the shore and are usually for one night only, will be clearly marked with IFS identification tags, and a

sign saying that an IFS Survey is underway. It would be appreciated, therefore, if curious passers by do not disturb the gear!

Surveys in March and July have failed to find Arthurs paragalaxias in Woods Lake. After further surveys are conducted, consideration will be given to the benefits of reintroducing the species from Arthurs Lake to Woods. The reason for its apparent disappearance from Woods is unclear, but it shows that lake-wide extinctions can occur without obvious cause and highlights the need to be vigilant in the management of our endemic galaxiids which have very limited distributions. All ten of these restricted species are now protected under State threatened species legislation.



Retrieving fine mesh fyke nets from Woods Lake

Native fish awareness

Native fish staff have been busy presenting talks and displays to land managers and the general public about the diversity, uniqueness and environmental requirements of our native fish to ensure their survival through appropriate management of land, water and introduced species.

These talks and displays include:

- a live fish display at the Open Weekend at Liawenee;
- a discussion of the possible effects of forestry operations on native fish and how to minimise impacts at two Forest Practices Board fauna courses;
- a presentation at the National Fenner Conference on the Conservation of Freshwater Biodiversity;
- an adult education course on wildlife awareness for tourism operators; and
- a presentation at the Pedder Anglers Club annual dinner.

Look out for further information on our threatened freshwater fish on Threatened Species Day (9th September 2001) and the Rivers and Water Expo in Burnie (12-13 October 2001).



Discussing native fish management with Hydro staff in the south-west

Promoting fish passage: removal of redundant weirs

In-stream barriers to fish passage (dams, weirs and culverts) are one of the most serious threats to our freshwater fish. This is particularly true for whitebait, the juvenile form of several native fish species, which may be seen massing at the base of weirs on their annual migration. During these occurrences the fish can suffer high mortality from predation, strandings or illegal fishing activities.

As reported in the December 2000 issue, the IFS received NHT funding for the Redundant Weirs Removal Project, which will see ten weirs removed in order to facilitate the passage of fish. The aim of the project is to provide long-term benefits for Tasmania's freshwater fish species. The specific result is an increase in available fish habitat, reflected in increased fish abundance. Changes in fish populations, therefore, above and below the structures, before and after removal, will be determined through surveys to test that these objectives have been met.

The ten weirs that have been targeted for removal extend throughout the State. Prior to the removal of each weir, IFS staff will consult relevant stakeholders including local councils, Government departments, local angling and community groups, and a public notice will be published in the local newspaper.

So far, weirs on Browns and Jordan rivers (south east) have been removed, and one weir has been modified on the Rubicon River (central north). Fish surveys have been, and are being, conducted above and below the weirs prior to their removal to determine which species are present and in what numbers.

As any heavy work within a watercourse normally creates a certain degree of sedimentation, all possible care is taken to minimise sediment input which is usually only short term. Damage to bankside environments is limited to one access point that will be cleaned and revegetated if required.



Ansons River Weir, north-east Tasmania

Inland Fisheries Service Biological Consultancy activities update

The Inland Fisheries Service Biological Consultancy, which consists of three full time staff, was established in 1991, primarily to provide Hydro Tasmania with an integrated approach towards examining biological and water quality issues related to power generation and water management activities. It ensures that a direct link is maintained between the IFS and the Hydro, and enables appropriate planning for the sustainable use and management of our freshwater resources.

The Biological Consultancy is involved in a variety of collaborative projects with the Hydro's Environmental Services section. This year, the section will continue its long-term monitoring of Hydro lakes, focussing on lakes in the Derwent system. It will also be conducting macroinvertebrate monitoring at various locations around the State as part of the river monitoring component of the Hydro's Waterway Health Monitoring Program and Hydro's water licence compliance requirements. The section will also continue monitoring of algal levels in the Mersey River, as part of the Mersey River Environmental Flow Study.

As mentioned in this issue's Native Fish News, the Biological Consultancy will be assisting in several intensive galaxiid survey programs in Great Lake, Arthurs Lake and Woods Lake. These investigations will be included in the Hydro's environmental studies as part of the catchment plan for the Great Lake-South Esk catchment. The Consultancy may also conduct several native fish distribution and fish migration barrier assessments around the State, but the details of these studies are yet to be determined.

The Consultancy has been heavily involved in Basslink environmental impact assessments over the past year. This will continue with regular water quality assessments in Lake Pedder and Lake Gordon this year. The section will again be involved in fish surveys in the Gordon River and King River catchments and studies on the unique salinity stratification in lakes found adjacent to the Gordon River.

If you have any questions about the Inland Fisheries Biological Consultancy activities, the Hydro's aquatic environmental program, or have comments or questions about water quality in Hydro lakes, please contact David Andrews on 6233 6188.



The Bioconsultancy team at a remote fish sampling site on the Gordon River

Request for Information

If you know of any weirs in your area that no longer appear to serve any useful purpose, the Inland Fisheries Service would greatly appreciate hearing from you – particularly if they are known barriers to the movement of fish. Any information you provide will be held in the strictest confidence.

This will help in our long-term objective to reduce the impact of dams and weirs on Tasmania's freshwater native and recreational fish species.

Further information about the project, or if you wish to forward any details on known redundant weirs, please contact Mark Nelson, Fisheries Habitat Officer on 6233 3651 or email: mark.nelson@ifs.tas.gov.au.

Award for Environmental Excellence to Todd Walsh, IFS



At the Award presentation were the Minister for Primary Industries, Water and Environment, David Llewellyn, Director of Inland Fisheries, Greg McCrossen, Award winner, Todd Walsh and Ron Ward, Group General Manager of Collex Pty Ltd.

On July 30, Inland Fisheries Project Officer, Todd Walsh, was presented with the Professor Harry Bloom Memorial Award for Environmental Excellence for his work in helping to save the Giant Tasmanian Freshwater Lobster. The purpose of the award, which is sponsored by Collex, is to recognise individuals that have made an outstanding contribution to protecting and enhancing the natural environment.

Todd – who was once a lobster fisher himself – began his campaign to protect the remaining lobster populations in 1997 on a voluntary basis, conducting surveys of the lobster's habitat, numbers, size, sex and other characteristics. Since 1999, Todd has been employed by the Service through Natural Heritage Trust funding to implement an education and awareness program in the north of the State in addition to his survey work. To date, Todd has captured, tagged and released over 400 animals and conducted 70 surveys.

Due largely to Todd's education program, public awareness of the lobster and the need to conserve its habitat has flourished. The lobster has been embraced by local communities as a symbol of healthy rivers and river rehabilitation.

Lakes Sorell and Crescent, and Clyde River management planning update

The recent questionnaire survey, designed to ascertain community concerns regarding the Lakes Sorell and Crescent and Clyde River management plans, was well received by a wide range of community groups and individuals. There were 127 replies out of approximately 550 survey forms mailed out (23% response rate).

Thanks to all those who took the time to fill out the questionnaire form.

The groups that were specifically targeted with the survey included the Clyde Trust irrigators, landholders in the catchment area, Bothwell and Hamilton residents, shack owners at the lakes, the Central Highlands Council, locally-based environment groups (eg Bushcare, Landcare, Waterwatch and Greening Australia), angling clubs, associations and specialist angling shops, hunting and shooting clubs and associations, government departments (eg DPIWE, Tasmania Police and Hydro Tasmania), forestry companies (eg Forestry Tasmania and Gunn's), and statewide organisations and peak bodies (eg Tasmanian Farmers and Graziers Association, Tasmanian Conservation Trust, Tasmanian Aboriginal Land Council).

Although sixty-two percent of respondents responded as anglers, many indicated that they also belonged to another interest group such as town residents or hunter/shooters. The most popular issues of concern were the low water levels, the general health of the ecosystems, water quality, and the presence of carp.

Of most interest however, were the unprompted comments which related to the factors contributing to the decline of the lakes and river, and ideas on how to improve the situation. Many people noted that it was important to get the lakes' ecosystems back in balance, then the trout population would be likely to re-establish itself. Increasing the water levels was seen to be a pivotal factor in improving water quality.

Over the next few weeks the responses from the questionnaires will be summarised and sent out to those who wished to remain on the 'interested stakeholders' list. A brief progress report on the project will be included with a status report on the condition of the lakes.

A series of short articles will also be prepared and mailed out during the remainder of the project to provide more background information on some of the questions and issues raised through the questionnaire survey. Some of these include the management option of poisoning the carp in the lakes, the use of water by irrigators, removal of cumbungi, willows and weeds, construction of downstream storages or alternative water sources and the 1996 release of water for carp management.

If anyone else would like to fill in a questionnaire or register for inclusion on the stakeholder list for more information, the forms can be downloaded from the Internet at www.ifs.tas.gov.au, or alternatively contact Jenny Deakin on 6233 3960 or by email jenny.deakin@ifs.tas.gov.au.

Carp Program update August 2001

The fish-down effort has continued over the winter months with moderate success. Typically, there is little carp activity over the cooler months, but good numbers were caught in Lake Crescent considering the relatively small population remaining. At Lake Sorell, all indications still suggest that the adult carp population is very small.

From a recent population estimate, approximately 170 untagged fish remain in Lake Crescent. With no new recruitment over the last few years, numbers are continually being reduced through constant fishing efforts. It is hoped that, based on fish activity in previous years, a substantial proportion of this number will be removed in spawning aggregations in late spring.

In Lake Sorell, consistent aggregation activity has been identified in a well-defined area of marsh during the past spawning seasons. As such, the IFS has constructed an exclusion fence around the area equipped with two fish traps to capture fish entering the area to spawn.

A radiotracking program and a tagging program for the juvenile year-class at Lake Sorell will begin in late spring. The radiotracking program is modelled on the one operating at present for adult fish, whereby some fish are caught for

transmitter implant and then released. These fish are then used as indicators of other fish activity, enabling fish to be targeted more effectively with fishing gear. The only difference will be the size of the transmitters, which for the juvenile program, are much smaller. For the juvenile tagging program, some fish will be marked with identification tags. Subsequent captures will enable an approximation of the juvenile population size based on the ratio of tagged to untagged fish.

The carp team recently spent a week investigating carp sightings in the north of the State. Fortunately, no carp were discovered and most sightings were feral goldfish populations in farm dams. Though it was relieving that reports of carp were not verified, it is disappointing to discover numerous goldfish populations. Goldfish are an undesirable species and people are reminded not to release goldfish into any outdoor waters. While the Service has little control over reducing goldfish populations, preventing their introduction is a high priority.

If anybody sees what appear to be European carp or any other unusual fish, please do not hesitate to call the Service on 6233 8939.

Question and Answer Column

This is a new feature in which your questions about trout and native fish are answered by Inland Fisheries staff or other experts.

For this first instalment, Mike Fifield from the Devonport branch of the North Western Fisheries Association, has posed the following two questions:

“1. Do trout eat vegetative matter and if so, under what conditions and what nutritional benefits does this confer?”

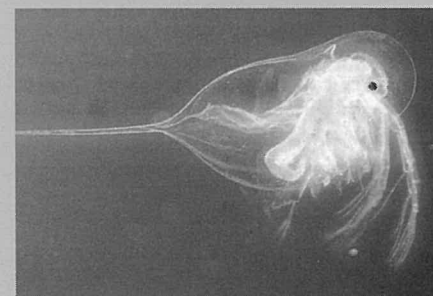
Trout are often reported with plant material in their gut. Whether it has been targeted as the primary food item or has been eaten incidentally whilst targeting something else is difficult to answer. It is very likely that trout may ingest plant material whilst feeding on prey items (ie snails, shrimps, nymphs) around weedbeds.

Trout are primarily carnivores with a short gut compared to herbivorous or omnivorous fish which have a much longer gut. Plants require a longer digestion time consistent with a longer gut passage. Therefore, it is difficult to perceive any benefit from directly consuming plant matter as trout would probably be unable to process such material before it is excreted. This is supported by Mike Fifield who reported catching a trout with weeds trailing from its vent.

“2. Are *Daphnia* sp prevalent in Tasmanian waters and if so, are they an important dietary item for trout?”

Daphnia sp are very small crustaceans that represent an important component of the zooplankton fauna of many freshwater bodies, including some Tasmanian waters. It is not common to find *Daphnia* sp in the gut samples of trout as they are too small and often in insufficient densities for brown trout to visually detect and/or target them as a prey item. There is evidence that rainbow trout will feed on *Daphnia* sp as they are more prone to feeding on zooplankton. However, from gut samples examined, brown trout from Lake Sorell have been feeding on *Daphnia* sp almost exclusively over the warmer months coinciding with extremely high densities of *Daphnia* sp in this lake over the past few seasons. This may be due to the inability of trout to detect more commonly eaten prey items because of the elevated turbidity in Lake Sorell in recent years. The high densities of *Daphnia* sp may enable trout to swim around gathering mouthfuls of these crustaceans in a virtual 'filter feeding' manner.

Phone, fax or email your questions to the Editor, Sarah Burton – Ph (03) 6233 8930, Fax 6233 3811 or sarahb@ifs.tas.gov.au.



Daphnia sp

(Courtesy of J.H. Hawking)

Around the lakes – brown trout spawner summary 2001

Location Lake	Great Lake		Lake Sorell		Arthurs	
Sampling date	30/4/2001		24/4/2001-29/6/2001		21/6/2001	
Sex	Male	Female	Male	Female	Male	Female
Sample Number	101	100	1298	1028	51	149
Ave Length (mm)	438	417	428	416	438	425
Range of Length (mm)	355-512	354-480	242-568	312-530	326-524	236-509
Ave Weight (g)	913	877	873	799	886	856
Range of Weight (g)	500-1600	600-1200	200-2000	240-1500	400-1300	375-1350
Ave Condition Factor	1.080	1.207	1.073	1.091	1.035	1.113

Lagoon of Islands

Whilst there were some observations of brown trout spawning there were insufficient numbers for a significant sample to be taken.

Great Lake

This year saw a large run of good conditioned fish enter the Liawenee canal for spawning. The average length, weight and condition were up on last year's run. The 2000 year run comprised a large year class of younger fish. The improvement in average size and condition indicates that fish in this year class have again dominated the run and are showing good growth rates.

Arthurs Lake

The spawning run at Arthurs Lake was quite extended this year, as flows down Hydro Creek tended to fluctuate from high to low between late April and early July. Fish were of a similar length and weight as last season with a slight drop in average condition.

Lake Sorell

An estimated 4000 brown trout spawned in Mountain Creek. In general, the condition of fish is slightly down on last year with some increase in length and weight. The loss in condition of the fish may in part be attributed to the sporadic nature of the flows

in Mountain Creek. Whilst good autumn rains attracted many fish to the mouth of Mountain Creek, flows were only moderate until late June–early July which has meant many fish have waited for months for a chance to spawn and have consequently lost a lot of condition.

This year a further 2500 Lake Sorell brown trout were tagged. Anglers catching fish sporting a distinctive yellow or orange IFS tag, just below the dorsal fin are asked to note the tag number, the date captured and the length and weight of the fish. Please forward details to Tim Farrell at the Service.

In May and June this year the following waters were stocked with adult brown trout collected from Liawenee, Great Lake:

Water stocked	Numbers
Lake Lynch	30
Lake Duncan	30
Lake Botsford	250
Rocky Lagoon	80
Carter Lakes	250
Lake Paget	20
Second Lagoon	30
Lodge Dam Miena	20
Penstock Lagoon	500
Bruisers Lagoon	40
Camerons Lagoon	30

Fisheries team tackles 'Winter Challenge'

During August the Inland Fisheries Service entered a team in the 80 km Forestry Tasmania Winter Challenge. The Challenge is a multi-discipline adventure sports event commencing at the Lake Dobson car park in Mt Field National Park and finishing in New Norfolk. The event included cross-country skiing, running, mountain biking, whitewater canoeing and road cycling. The team which lived up to its name of 'Fisheries Fiasco', eventually completed the event in 22nd place out of 30 teams and individuals, with an overall time of 4 hrs 33 mins.



Fisheries Fiasco team members enjoying a well-earned refreshment after completing the course in record time

Illegal fishing in farm dams

During the last few months, four anglers have been apprehended for fishing in farm dams without an angling licence. Please note that farm dams are recognised as 'inland waters' under the Inland Fisheries Act 1995 and as such anglers are required to possess a licence to fish these waters regardless of whether the dams have natural trout recruitment or are artificially stocked. This includes farm dams stocked with trout by the IFS.

Prosecutions

Court proceedings

Offences that were proceeded with by summons since May 2001 are listed below.

Offender	Location	Offences Summary	Total fine + costs (\$)
Adam Troy HILL, Midway Point	Arthurs Lake	Unlicensed	200-00
Jamie Dennis SAGGERS, Devonport	Forth River	Possess whitebait	200-00
Jan HAPKA, Moonah	Derwent River	Unlicensed	235-00
Daryl Ian BALDOCK, Latrobe	Mersey River	Unlicensed	285-00
Corey Scott CLARK, New Norfolk	Derwent River	Unlicensed	235-66
Jarrad Charles MANN, New Norfolk	Derwent River	Fail to produce licence	135-66
Brandon Leigh WILTON, New Norfolk	Derwent River	Fail to produce licence	135-66
Dean John TALBOT, Ulverstone	Leven River	Take whitebait	475-65
Terrence Alfred HARRIS, Devonport	Lake Echo	Unattended set rod	136-65
Bradley Rex, LAMBERT	Welcome River	Take whitebait without a licence, possess a net, refuse to supply name, refuse to allow an officer to search	2000-00