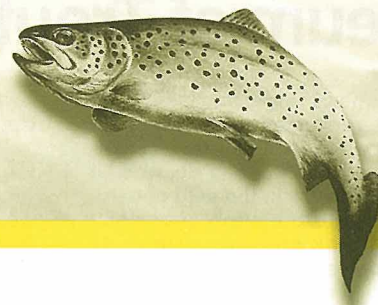


On the Rise



Volume 25 No. 1
June 1996

Lake Sorell trout

by Stuart Chilcott, John Diggle and Andrew Sanger, Inland Fisheries Commission

The problem

Anglers have reported catching a large number of poor conditioned brown trout at Lake Sorell late last season and early this season. This prompted many anglers to seek information from the Commission for the reasons for this. A small project was commenced to gather some basic information about the brown trout population in this lake.

The project

The project is based on a very limited sampling program (usually one day per month). The project was kept small due to the limited time available given commitments to other projects. The electrofishing boat and some staff have been "borrowed" from the carp program every month so that we can sample trout in Lake Sorell. A random sample of approximately 100 fish is collected each month. The fish are weighed, measured and sexed, a scale sample is taken and then the fish are returned unharmed to the lake.

At the time of writing we have monthly random samples of brown trout starting from September 1995 through to June 1996.

Apart from regular measurements made on a sample of fish from the spawning runs, there is only limited information about brown trout in Lake Sorell over the past 20 years. There has never been a systematic study of

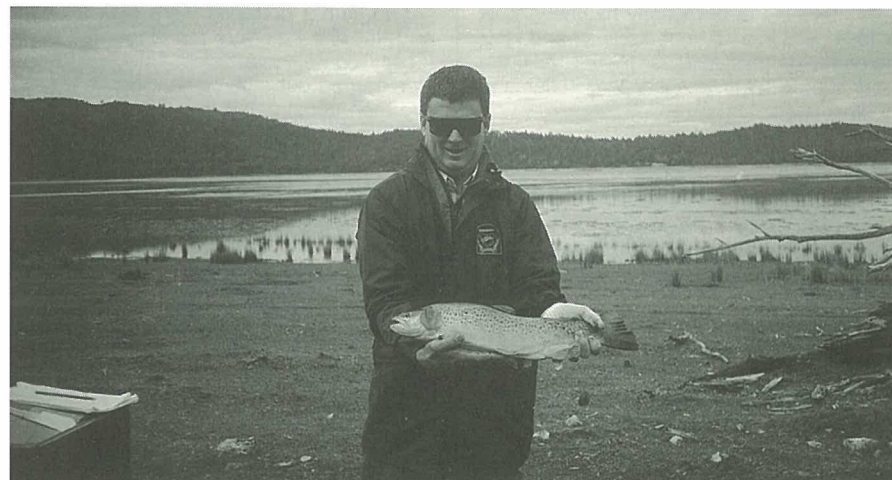
the condition of trout in the general population of fish in the lake, and the results from angler surveys are either lacking in detailed information (the postal questionnaire) or, in the case of creel surveys, biased because anglers tend not to keep all fish they catch, and often release the poor fish. This lack of

information makes it difficult to track trends in fishery characteristics such as condition factor and spawning success

The Commission now intends to extend this project to gain a much better understanding of the trout fishery in Lake Sorell as part of the reorganised carp management project.

Details of the project are further explained elsewhere in this newsletter whilst further information on the Lake Sorell study to date is continued on page 6.

Fish of this quality are what is expected from Lake Sorell



IN BRIEF

Longer season at Lake Burbury

At the end of the 1996-97 season, anglers will be able to spend an extra month fishing Lake Burbury. The season has been extended and will now be open throughout May 1997 in line with Lake Mackintosh and Lake Rosebery. It will still open on 3 August 1994.

A further \$20 000 from the State Government allocation of \$75 000 will be spent on facilities at the lake before the season opens. The funds will be used to complete the Thureau Hills site and then a toilet and shelter area will be built at the Darwin end.

Some rock fill has also been placed at the old highway ramp near Linda Creek to provide a better turning area and some additional parking.

Lake St Clair development

The Pumphouse Point development at Lake St Clair is to proceed in the near future.

Anglers will be pleased to know that, following advice from the IFC, the Development Permit issued by the Central Highlands Council includes the following condition:

That provisions be made to ensure traditional fishing people have continued access to all areas of the St Clair Lagoon and the Derwent Basin.

The Commission will monitor the effects of this development on access to the lake as well as on the shoreline areas themselves.

Angling licence fees to rise

Angling licence fees will rise by a small amount for the 1996-97 season.

It has been standard practice in the past to increase fees in line with CPI increases. However, the Commission has been able to keep fees at the same level for the past three seasons despite an increase of around 10% in the CPI.

Angling licence fees are the only source of revenue for the Commission's trout fishery management functions and a small increase in fees is now necessary to offset cost increases.

There will be an increase of \$2 in the full season fee for adults and eligible pensioners and in the fee for a 14 day licence. The 3 day and 1 day fees will rise by \$1 whilst the juvenile licences will not be increased.

continued on back page..

CONTENTS

In Brief

Museum of Trout Fishing

Corra Linn

Other than trout –

Zooplankton – Aquatic Sheep

What is happening with carp?

Trout stocking 1995

Inland Fisheries Commission

Promotions

Prosecutions

ARTICLE

Lake Sorell trout

STUART CHILCOTT, JOHN DIGGLE, ANDREW SANGER

Museum of Trout Fishing

The saddest news under this heading is the recent resignation of Museum Manager, Gabrielle Balon. This energetic and cheerful person has decided to pursue her interests in the field of natural resource interpretation after completing the task she was originally employed for – setting up the museum.

The quality of the museum is a credit to Gabrielle's professionalism – a quality that has seen the elevation of the standard of all the Commission's recent public dis-

plays due to her involvement. It is a standard that we do not intend to retreat from and the Commission is hopeful that the Government will be able to honour its election promises to fund a permanent public relations/promotions person to fill Gabrielle's shoes.

Whilst the Salmon Ponds has taken the limelight with recent developments, the Commission has another hatchery at Corra Linn that has played an important part in the development of our trout fisheries.

Corra Linn Trout Hatchery: 1945-present

by Noel Maroney, Fisheries Inspector

Stocking with hatchery reared trout was a central fisheries management activity in the early part of this century. A number of hatcheries were operating in various parts of the State.

After the second world war had ended, men were coming home and thoughts were turning again to the peaceful recreation of angling.

By 1945 the old Waverley hatchery, built in 1901, was in a state of disrepair and near the end of its useful life. Distillery Creek, the water supply to the hatchery, was in demand for other uses.

The Salmon and Freshwater Fisheries Commission,

caused the shutdown of these ponds.

Soil from the excavation of the ponds was used for the lawns and trees were planted. At first, indigenous Australian native trees were used to contrast with Salmon Ponds, but later well meaning people donated trees from other parts of the world and these were planted there as well.

Two timber cottages were built for staff and the first hatchery manager was Allan (Scotty) Jones. His assistant, Rueben Hooper, also carried out enforcement duties. These two men constructed most of the

concrete troughs in the hatchery from a mould made by Mr C Gruber. Bernard Champion next followed Scotty Jones and he was in charge of hatchery and ground maintenance until his retirement in 1971.

I replaced Bernie Champion after he retired. I moved to Corra Linn from Salmon Ponds where I had been employed as hatchery assistant to Scotty Jones. I continued to run the hatchery with assistance from members of the Northern Tasmanian Fisheries Association.

Wild brown trout running to spawn at Liawenee Canal were stripped of ova and up to a million eggs were put down each year in the hatchery troughs. Some of the NTFA members who gave valuable assistance to pick out dead ova and bag up fry for liberation in the cool, damp hatchery were life members Len Copplestone, Jim Rushdon and Allan Cowley. Len made a number of chopsticks (tweezers) used for the picking out of dead ova from trays in the hatchery and also improved on the design of a syphon to remove dead ova. This was a lot faster and more efficient than the conventional method.

A considerable number of trout fry were distributed from the Corra Linn hatchery to farm dams along the north west coast and to Great Lake. Rainbow trout eggs collected from Mary Creek at Lagoon of Islands were also hatched out at Corra Linn and returned to the lagoon.

After a recent period of limited use, the hatchery building at Corra Linn is in the process of moving into a new phase of its existence. Extensive modification of troughs with fibreglass liners and the addition of PVC pipes will see its conversion to a holding and distribution facility for juvenile eels. This is a critical phase of the management of that fishery.

The hatchery will maintain its structural integrity and could still be used in the future to again hatch out and rear trout should that be required for any reason.

The long pond has a display of rainbow trout. These are protected from cormorant attack by the old resident white Peking duck.

The site is now popular for recreational pursuits such as picnics, swimming, rafting and canoeing as well as angling along the river.



● Fisheries officer stationed at Corra Linn, Noel Maroney (left) and life member of the Northern Tasmanian Fisheries Association, Jim Rushdon, netting fry from hatching troughs.

● Pouring the fry into plastic bags.

● Adding oxygen to keep the fry alive during transportation.

as the administration was then known, made the decision to find a new site for a more modern hatchery where a plentiful supply of good quality water existed.

The Corra Linn site was eventually identified at the lower end of the scenic gorge on the North Esk River approximately 9km south of the Waverley site. On the north bank of the river a disused gravity water race conveniently remained. This had previously supplied the water to the first water powered flour mill in northern Tasmania (Edward Yates' mill, 1822).

Approximately 100 metres downstream from the intake of this water race a small shack was first built to provide accommodation needs of the men who were to build the fish hatchery, cottages and ponds and to lay out the grounds.

The hatchery building was located a further 100 metres from the small shack site on a flat area below the water race. Water to the hatchery was redirected from the race through pipes into the troughs and via underground pipes back into the river.

Concrete rearing ponds were constructed at Corra Linn for on-growing trout to the fingerling/yearling stage. This was done for a number of years until problems with water supply and the aeration system

New Associate Commissioner for the north

Norm steps down – Jim steps up

After 12 years in the position as Associate Commissioner representing northern Tasmanian anglers, Norm Scott stepped down in February this year. Norm has

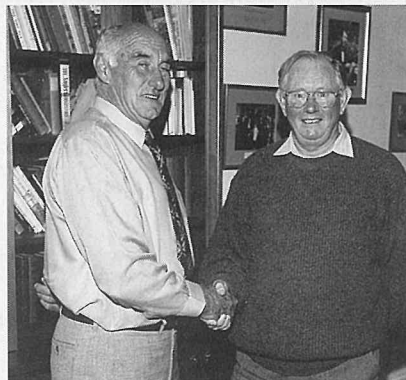
been a great advocate for anglers in general and for the northern part of the State in particular. He has undoubtedly made a significant contribution to angling administration in this State.

The new Associate Commission for the north is Mr William James Neilson Ferrier born at Penicuik in Scotland and migrated to Australia in 1963. He is better known of course as Jim.

A metallurgist by profession, Jim retired from Comalco in 1987. He has more than 50 years angling experience and a long history of involvement with various NTFA clubs as well as the Fly-Fishers' Club of Tasmania.

In recent years Jim has taken a most active role in the preparation of various angling and related land use submissions and has been a driving force in the recent revival of the Four Springs project.

Just as one strong advocate for the State's anglers has called it a day, another well qualified person has stepped up. All the best to both in their new roles.



Norm Scott (left) hands over to Jim Ferrier

OTHER THAN TROUT

A regular article on animals of interest to the angler

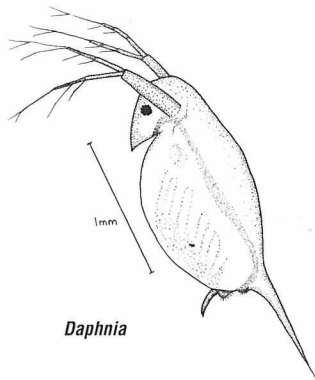
Zooplankton – Aquatic sheep?

by Stuart Chilcott, Scientific Officer

What lives in mid-water, are tiny, swim a lot, eat algae and are extremely important for many small fish – the answer is zooplankton.

Zooplankton are a group of microscopic animals which live in the water column and eat minute organisms such as non-filamentous algae, rotifers and planktonic eggs and animals. The primary invertebrate groups which are collectively known as zooplankton are some crustaceans and insects as well as the early life stages of some fish.

Zooplankton come in a wide variety of shapes and sizes but most are small ranging in length between 0.1 – 10mm. Generally, they are poor swimmers and can not maintain a position in a stream current. That is why lakes, pools and marshes are the preferred habitats for zooplankton. In these still-water habitats zooplankton generally drift around in the water and are swept around at the mercy of the wind, waves and currents. Wind can often concentrate zooplankton in wind lanes – just as it does for midges and other insects. However, there are some



Daphnia

types of zooplankton that are quite mobile. These types are either adept swimmers or possess buoyancy aids to allow them to migrate vertically in the water column.

Crustacean zooplankton

There are many crustaceans which form part of the zooplankton. Water fleas or Cladocera, as they are technically known, are crustaceans which are quite common in the still water habitats of Tasmania. The animal possesses a carapace, often with a slight tail, which covers most of the body and appendages. The head and antennae are the only obvious external features. Usually the body is only about 0.5 – 3.0mm in length and swims with the aid of the external antennae. Many species of water fleas live in open water and undertake vertical migrations. However, other species live in and amongst bottom substrates, aquatic plants and debris.

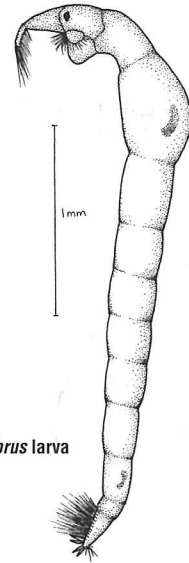
Copepods (Copepoda) are another zooplankton crustacean. The animals are more-or-less cylindrical, often with long trailing

antennae and a tail-like segment. The females carry one or two special egg sacs near the tail segment. The number, arrangement and attachment site of the egg sacs is an important feature which aids in identification of species.

Insect zooplankton

There are several insect groups which have zooplankton stages. Perhaps the most well known belong to the Genus *Chaobrus*, which have transparent larval stages giving rise to the name of 'phantom midges'.

The larvae live in mid-water and undertake large vertical migrations in large lakes and reservoirs. This migration is synchronous with the pattern of night and day, with larvae migrating to surface waters at night then sinking to the depths or sheltering in sediments during the day. In Lake Fiddler, a small lake in south-west Tasmania, phantom-midges undertake vertical migrations of 1.0 -1.5m. During the day near the centre of the lake the larvae were concentrated at densities of 11 000 larvae/m² in a 0.5m thick layer. In larger lakes vertical migrations of 15m have been observed. Often the distance migrated is dependant on size of the larvae (or age) with small young larvae showing weak migratory behaviour and larger older larvae undertaking significant migrations over several metres. These migrations are probably only possible because phantom-midges possess two-pairs of air sacs which are depth controlling hydro-static organs. These organs allow the animal to move up and down in the water column.



Chaobrus larva

The role of zooplankton

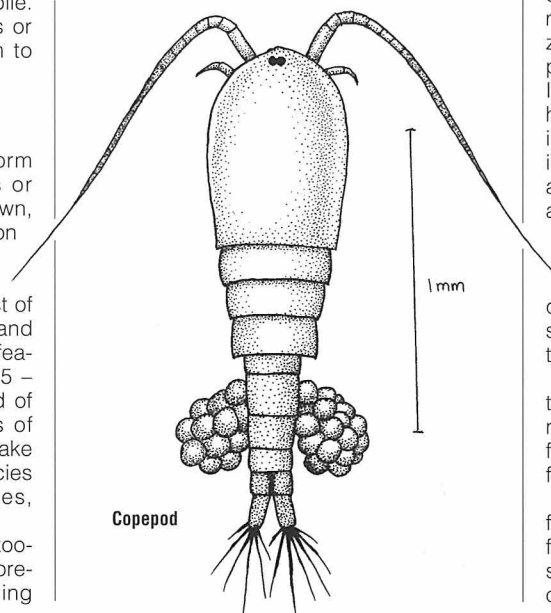
Sheep and zooplankton are similar in some respects because just as sheep graze on terrestrial plants, zooplankton graze on phytoplankton – microscopic floating aquatic plants. The zooplankton are often dependant on the abundance of phytoplankton and their numbers will fluctuate more or less in synchrony with the rises and falls of phytoplankton abundance. When the food – phytoplankton – is plentiful, zooplankton can rapidly breed and increase in numbers, however, when food is scarce numbers of zooplankton also decline.

The predator-prey relationships which exist within a community are often presented as a food web – a familiar concept with most anglers. Generally, in most food webs, zooplankton are near the bottom just above phytoplankton which form the lowest level. In aquatic communities found in still-water habitats, zooplankton play an extremely important role in the food web by controlling increases in phytoplankton. In fact, the absence of grazing zooplankton has been associated with the proliferation and increased frequency of algal blooms.

Without the continual cropping of algae by zooplankton, algal blooms can quickly develop and often, depending on the species, become either a nuisance or, in certain circumstances, harmful to human health.

Zooplankton in turn are extremely important as a food source for small fish such as native galaxias or the juvenile stages of other fish, such as trout. Some species of fish feed on zooplankton throughout their life.

Remember when you are having a refreshing cup of water after a satisfying days fishing examine the water closely. You may spot a few zooplankton swimming around – oblivious to the fate which awaits them.



Copepod

What is happening with carp?

Following the intense media and public interest that surrounded the initial discovery of carp in Tasmania, there has been a period of consolidation and adjustment. The Commission was under intense pressure to 'do something' when there was simply no short term solution. We have all welcomed the relaxation of pressure but perhaps it has given rise to the perception that nothing has been achieved to date. This perception has been compounded by the Commission's inability to find a suitably qualified person willing to head the project. There are a number of good reasons for this latter problem but they are irrelevant in reality.

In practical terms the Commission has been heavily occupied with the construction works necessary to contain carp. These are the essential precautionary steps prior to any assessment of future options. Some design deficiencies in the containment structures have involved high levels of staff times such that there has not been sufficient attention given to informing the public of what exactly is going on or what our plans

address all relevant ecological and associated problems over the next two years. This project is outlined in brief below. It should be appreciated that each one of the tasks listed involves a number of separate parts and this is only a summary of what will be a very complex and extensive project. Full project details will be available from the Commission for anyone interested.

Certain aspects of the project are already in progress and these are indicated with an asterisk*. Dr Andrew Sanger, the Commission's Senior Scientific Officer, will be responsible for overall supervision and co-ordination of the work.

Aims

Broad aims of the project will include:

Carp

- Construct and maintain structures to contain carp within their present known range.*
- Determine the distribution and abundance of carp in the Clyde River catchment.*
- Assess the feasibility, costs and risks of a total eradication program.*



The fine screens on the Clyde River (photo: Tony Dell)

are. Much has in fact been achieved in this time and we certainly know a lot more about the problem.

In parallel with the carp problem in lakes Crescent and Sorell there has been an apparent decline in the quality of trout in Lake Sorell as reported elsewhere in this newsletter. Commission staff have spent some time collecting and analysing information on this issue. The cause is not considered to be related to the carp problem but nevertheless a specific cause cannot definitely be identified at this time.

As a result the Commission now has several problems that it needs to address:

- the carp and all things associated with it;
- the trout quality question in Lake Sorell;
- deficiencies in public relations and communications.

With future solutions to either the carp problem or the trout quality issue not being addressed at a satisfactory rate, the Commission has decided to divert all its resources onto the Sorell/Crescent issues. An integrated project will be put in place to

- Assess management options for containment and population control of carp in Sorell and Crescent.*
- Assess the long term implications of the "do nothing" option for carp in Tasmania with reference to trout, native fish and ecosystem impacts in Sorell and Crescent and also statewide impacts.

Trout

- Describe the characteristics of the Lake Sorell trout population (numbers, age distribution, condition for both species, spawning populations etc).*
- Describe habitat use by trout in the lake.
- Describe the population characteristics of trout the anglers catch.
- Determine the factors controlling spawning success, including the proportion of the population which spawns, the temperature and flow requirements for spawning, spawning site selection, hatching success etc.
- Determine the factors controlling recruitment success, including the part played by density independent factors. (weather, water quality, flows, juvenile habitat avail-

ability) and density dependent factors (size of spawning population, number of fry migrating into the lake etc, strength of previous year class or overall population size).

- Examine parasite and disease status of trout.
- Determine the factors controlling condition of trout in the lake and in angler catches.
- Do a similar but more descriptive and small scale study of the trout in Crescent.

This project in total could not be done in two years but certain aspects will be addressed.

Native Fauna

- Assess the risk to the native golden galaxias, *Galaxias auratus*, posed by the presence of carp and the potential for ecosystem change as a result of a carp population explosion.
- Assess sites for establishing refuge populations of *G. auratus* and implement translocations as soon as possible.*
- Describe habitat use by *G. auratus* in Lake Crescent.
- Assess the potential for competition for resources by eels, trout, carp and native fish.
- Assess the need for change in abundance of eels.
- Other native fauna and flora issues to be identified and addressed (possibly via involvement of relevant academics, PWS staff etc).

Water Quality

- Monitor relevant water quality parameters to assess the impact of carp or other sources on water quality in Sorell and Crescent.*

Water Management

- Develop a water management plan for the Sorell and Crescent system.*
- Assess the impact of water management on all native and introduced fauna/flora and recreational and commercial resources (part of the carp EIS process).

Outcomes

Carp

- Report to government on the options for control or eradication of carp in Tasmania and risks associated with all options, including the "do nothing" option.
- Seek support for implementation of the preferred option.
- Publish selected material from studies in newsletter, scientific journals and other outlets.

Trout

- Develop a model of the dynamics of the trout populations in Lake Sorell (and Crescent).
- Test possible management factors in the model (eg. controlling spawning success or recruitment levels).
- Develop and implement a management plan for the Lake Sorell fishery.
- Publish selected material from the study in IFC newsletter, scientific journals and other outlets.

Native Fauna

- Ensure the future protection of the golden galaxias.
- Develop and implement a management plan for the Sorell and Crescent eel fishery which seeks to optimise yield of eels but maintains acceptable quality in other fisheries.
- Highlight other significant fauna and flora issues.
- Publish selected material as above.

Water Management

Develop and implement a water management plan for the catchment designed to



New outlet structure at Lake Sorell (photo: Tony Dell)

contain carp in the lakes, to limit the success of carp, maintain irrigation supply, protect the natural environment of the lakes, maintain angler requirements and provide flexibility for future management of water levels.

Resources

IFC staff will be redirected towards this study to supplement existing and future carp project staff. It is anticipated that in total between six and eight IFC staff will be involved more or less full time. Dr Andrew Sanger will be responsible for the overall supervision and coordination.

Direction of research and management staff to a single focus will inevitably restrict the ability of the Commission to address other more routine tasks and to respond to unexpected issues. A redirection of staff from other areas (primarily inspectors) to management tasks will help alleviate this problem to some extent but it is inevitable that there may be some things that we will simply not be able to do.

Present issues

At this stage the Inland Fisheries Commission does not intend to open Lake Crescent for the coming season.

If it is to open at all, it is not likely to be open to natural bait fishing.

The reasons for keeping the lake closed are several:

- to avoid inconvenience to IFC staff carrying out survey work;
- to avoid conflict with anglers from such surveys;
- to limit access to carp by those who would deliberately try to catch them;
- to avoid accidental movement of carp from this water.

In taking this course of action the Commission is very conscious that some people are being denied access to their favourite water. For this we apologise but consider the best interests of all anglers and the ecology of our inland waters in general are best served by this action. The situation in Lake Sorell cannot be compared to Lake Crescent as there are far fewer carp in Lake Sorell and it is not open to bait fishing.

The Commission also recognises that businesses in the township of Bothwell are suffering to a degree as a result of the closure of Lake Crescent as well as the downturn in fishing in Lake Sorell.

The Commission proposes to take a number of actions to address these problems in the short and longer term.

- The Commission will transfer up to a total of 200 quality Lake Crescent fish into Lake Sorell and into the Clyde River in the Bothwell area.
- A number of Arthurs Lake fish will also be transferred into the Clyde River to supplement the low trout stocks in that stream.

What happened to the American carp expert?

The Commission has had difficulty securing a suitably qualified person to take up the carp position for several reasons:

- it is a short term job and well qualified persons do not wish to give up permanent jobs;
- there are few persons experienced in carp management available in Australia.

After the announcement that James Fajt would not be taking up the offer to direct the carp program, some sections of the media apparently decided that there was something sinister going on.

The truth is James was to begin work in August. He came out briefly to design a program of work in April. This was submitted to the Commission for discussion. Senior Scientific Officer, Andrew Sanger, and Commissioner, Wayne Fulton, were concerned that the focus of this program was too narrow and that some assumptions may not be correct.

It was a major decision for him as he has a business in the US, the position was for two years only, and his wife is a veterinarian.

Jim subsequently decided not to take up the position but offered to assist in any way he could. The Commission will most likely use his specific expertise in some aspects of the assessment.

Trout Stocking 1995

Following is a list of fish released throughout 1995.

BROWN TROUT OVA

South Australian Fly Fishers Association 140 000

BROWN TROUT

DATE	WATER STOCKED	ORIGIN	AGE	NUMBER
05.10.95	Tooms Lake.....	Salmon Ponds	Fry	30 000
05.10.95	Lake Leake.....	Salmon Ponds	Fry	20 000
				50 000
05.11.95	Little Wickham, King Island.....	Salmon Ponds	Adv Fry	10 000
29.11.95	Lake Ashwood.....	Salmon Ponds	Adv Fry	2 000
29.11.95	Little Bellinger Lagoon.....	Salmon Ponds	Adv Fry	1 000
29.11.95	Forestry Tasmania, Strahan.....	Salmon Ponds	Adv Fry	2 000
29.11.95	Lake Garcia.....	Salmon Ponds	Adv Fry	2 000
01.12.95	Rostrevor Dam.....	Salmon Ponds	Adv Fry	5 000
01.12.95	Old St Helens Water Supply.....	Salmon Ponds	Adv Fry	1 000
01.12.95	Stieglitz Lagoon.....	Salmon Ponds	Adv Fry	1 000
07.12.95	Beaconsfield Water Supply.....	Salmon Ponds	Adv Fry	1 600
07.12.95	Beaconsfield Farm.....	Salmon Ponds	Adv Fry	400
07.12.95	Blackmans Lagoon.....	Salmon Ponds	Adv Fry	10 000
07.12.95	Curries River Dam.....	Salmon Ponds	Adv Fry	10 000
07.12.95	Little Waterhouse Lake.....	Salmon Ponds	Adv Fry	4 000
10.12.95	Pennys Lagoon, King Island.....	Salmon Ponds	Adv Fry	20 000
				120 000
03.05.95	Bruisers Lagoon.....	Liawenee	Adults	40
03.05.95	Camerons Lagoon.....	Liawenee	Adults	20
03.05.95	Carters Lake.....	Liawenee	Adults	100
03.05.95	Lake Duncan.....	Liawenee	Adults	20
03.05.95	Lake Lynch.....	Liawenee	Adults	20
03.05.95	Rocky Lagoon.....	Liawenee	Adults	50
04.05.95	Lake Botsford.....	Liawenee	Adults	300
25.08.95	Brushy Lagoon.....	Hydro Creek	Adults	62
				612

BROOK TROUT

DATE	WATER STOCKED	ORIGIN	AGE	NUMBER
09.11.95	Clarence Lagoon.....	Salmon Ponds	Fingerlings	10 000
29.11.95	Lake Plimsoll.....	Salmon Ponds	Fingerlings	13 000
12.12.95	Lake Plimsoll.....	Salmon Ponds	Fingerlings	8 000
13.12.95	Clarence Lagoon.....	Salmon Ponds	Fingerlings	7 000
				38 000

RAINBOW TROUT

DATE	WATER STOCKED	ORIGIN	AGE	NUMBER
28.01.95	Tooms Lake.....	Salmon Ponds	Fingerlings	5 000
28.01.95	Lake Leake.....	Salmon Ponds	Fingerlings	4 000
04.03.95	Penstock Lagoon.....	Salmon Ponds	Fingerlings	2 500
23.03.95	Waverley Dam.....	Salmon Ponds	Fingerlings	1 000
15.12.95	Lake Leake.....	Salmon Ponds	Fingerlings	3 000
15.12.95	Tooms Lake.....	Salmon Ponds	Fingerlings	3 000
18.12.95	Dee Lagoon.....	Salmon Ponds	Fingerlings	4 000
18.12.95	Guide Dam.....	Salmon Ponds	Fingerlings	5 000
18.12.95	Lagoon of Islands.....	Salmon Ponds	Fingerlings	4 000
18.12.95	Talbots Lagoon.....	Salmon Ponds	Fingerlings	5 000
18.12.95	Lake Kara.....	Salmon Ponds	Fingerlings	1 000
18.12.95	Waratah-Bischoff.....	Salmon Ponds	Fingerlings	1 000
18.12.95	Waratah-Magnet.....	Salmon Ponds	Fingerlings	1 000
18.12.95	Lake Rosebery.....	Salmon Ponds	Fingerlings	10 000
21.12.95	Lake Rowallan.....	Salmon Ponds	Fingerlings	10 000
				59 500
27.10.95	Hayes Prison Farm.....	Salmon Ponds	Adults	70
				70

REARING UNITS

Ulverstone

10.08.95	Brown Trout.....	Salmon Ponds	Fry	88 000
12.09.95	Rainbow Trout.....	Salmon Ponds	Fry	12 000

Devonport

10.08.95	Brown Trout.....	Salmon Ponds	Fry	48 000
12.09.95	Rainbow Trout.....	Salmon Ponds	Fry	12 000

Details of trout releases from rearing units are available from the Commission on request.

The Lake Sorell Fishery

...continued from Page 1

Condition factor

The "condition factor" provides a yard stick for anglers and biologists to compare and make sound judgements about the condition of fish. It takes away the guess work from these judgements. For trout the condition factor has been divided up into five arbitrary categories; **excellent, good, fair, poor** and **very poor**. By measuring length and weight we can calculate the condition factor. This number usually lies between 0.8 (very poor) and 2.0 (excellent).

Below are the condition factor categories together with the values and a description of the condition of fish.

younger shorter fish. There are very few fish classified as good in the catchable portion of the population (ie above 300 mm in length), and the majority of large fish (> 500 mm in length) are in poor or very poor condition. This is pretty much as has been reported by anglers this season, although some parties have reported good bags of fish in fair to good condition from some areas.

An analysis of the seasonal trends in condition for several length classes is also presented. We would normally expect the condition of larger trout to improve after the winter spawning season because of greater food availability, warmer temperatures and the development of reproductive organs prior to spawning in the following winter.

Generally, there appears to have been little improvement in the condition of trout during the spring/summer months of 1995-96. The sex of the trout appears to have had little influence on trout condition during this period other than what could be attributed to breeding conditions.

then fundamental problems could be affecting the fishery. At present there is certainly a problem with the condition of the larger fish. At this stage we are not sure what is causing the problem, but possibilities include:

- **Overpopulation:** Too many young trout in the lake may lead to competition for scarce resources such as food. It is usually the older fish that show the effects of this first. This problem is routinely experienced in Great Lake for example and was evident in Lake Leake before reduction in stocking levels rectified the problem. The impact of changes to the Mountain Creek spawning area requires further study in this regard.
- **Decreased post spawning mortality:** In the past, large numbers of spawners used to perish in Mountain Creek as a result of stress induced fungal infections. These mortalities may have been removing the larger, unthrifty fish from the population. Now that the problem of Mountain Creek mortalities has been overcome, we may simply have shifted the problem of less competitive old fish from the spawning creek back into the lake.
- **Spawning failures:** The 1993 and 1994 years were particularly dry in the Lake Sorell area, and a relatively small number of brown trout succeeded in spawning in Mountain Creek. Many fish could not spawn due to low flow and may have suffered from the physiological stress of resorbing or shedding their eggs and milt, and from the social stresses of milling around for some three months waiting for the chance to spawn. These fish may dominate the poor and very poor proportion of the population.
- **Problems with the lake ecosystem:** At this stage the IFC has not detected any significant problem with the water quality or other components of the lake ecosystem. Nevertheless, anglers have been very concerned about turbidity problems, lake level management, carp colonisation, and catchment related issues (land clearing, forestry, farming practices etc). All of these issues are worthy of further study to see if a lake wide ecosystem problem is affecting the ability of Lake Sorell to support the type of trout population anglers desire.

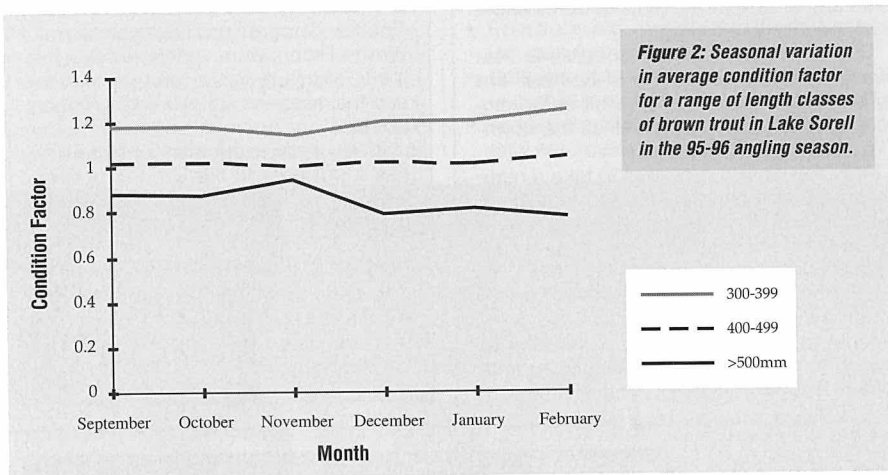


Figure 2: Seasonal variation in average condition factor for a range of length classes of brown trout in Lake Sorell in the 95-96 angling season.

CATEGORY	CONDITION FACTOR	DESCRIPTION
Excellent	1.5 and above	Trophy class fish
Good	1.3 – 1.5	A well proportioned fish
Fair	1.1 – 1.3	An acceptably proportioned fish
Poor	0.9 – 1.1	A long slabby fish
Very poor	0.9 and below	A fish with a big head and a very narrow thin body

You should refer to the Inland Fisheries Newsletter Volume 23(1) May 1994 for more detailed information about the condition factor.

What have we found?

A preliminary analysis of the data from Lake Sorell this season is summarised below. The analysis is incomplete at this stage. No aging of fish has been undertaken yet, and the influence of age on the results of this study may be significant. Also, because the samples collected by electrofishing are essentially random, there is no bias towards any particular portion of the population. On the other hand, anglers tend to catch large adult fish, and actively avoid smaller (ie. shorter) fish if possible. Therefore, there may be different proportions of fish from each condition class in the anglers' overall catch when compared to that captured by electrofishing. Nevertheless, some clear trends are evident in the data.

The data show that there is a general decrease in condition as trout length increases (Figure 1). In other words, older, longer fish are in poorer condition than

The smaller, younger fish groups (<300mm, 300-399mm and 400-499mm) show either some small or no improvement in condition during September to February. The condition of larger and older fish (>500mm) appears to deteriorate over this period.

The ages of these fish need to be examined, as does the influence of sex on this data. However, it appears that larger (presumably older) fish are not competing well for whatever resources are limiting condition in Lake Sorell.

What causes the problem?

When poor conditioned fish are found in large numbers throughout different size groups

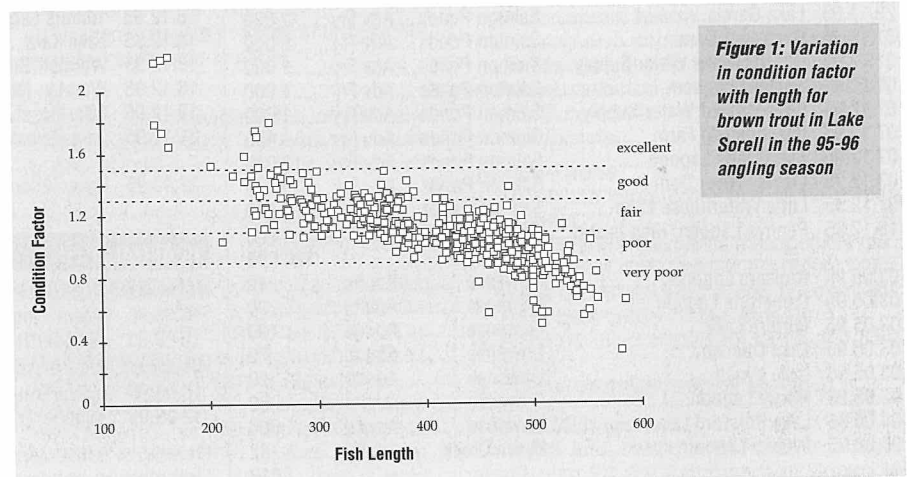


Figure 1: Variation in condition factor with length for brown trout in Lake Sorell in the 95-96 angling season

Where to from here?

There is no doubt that to find all the answers to these and other relevant questions a large study project would be required. The Commission intends to address the above issues in the revised carp program outlined elsewhere in this newsletter.

Inland Fisheries Commission promotions

The Commission has been particularly active with promotion activities in the first half of this year. A brief round-up is given below.

Free fishing day

The weather forecast for Australia Day 1996 (Friday 26 January) included minor flash flooding and thunderstorms – not exactly ideal conditions for IFC's inaugural Free Fishing Day!

The aim of the day was to encourage people to try angling for the first time, or try it again after a break. Overseas experience has shown that these days are very popular, especially with family groups and 'lapsed' anglers.

At the organised locations of Lake Sorell, River Derwent, Lake Kara, Leven River and Brumbys Creek, novice anglers were able to wet a line and seek advice from local angling club members. The efforts of the area coordinators plus the assistance given on the day by members of the Bridgewater, Claremont, Burnie, Ulverstone, Penguin, Gunns Plains and Longford clubs, contributed to the success of the day and was greatly appreciated.

IFC inspectors encountered approximately 70 people independently taking advantage of the free day whilst at least 160 attended the organised venues.

It is expected that a similar day will run again next year, so keep Australia Day 1997 in mind. We aim to improve the day with increased promotion activities. So perhaps you could assist at your favourite fishing spot and introduce someone to the joys of trout fishing. Who knows, they might get hooked!

Native fish display

During March, the Commission held a Tasmanian native freshwater fish display in the Tasmapi shop at the Department of Environment and Land Management (DELM). The display provided an overview of freshwater fish with a focus on two endangered species – the Swan galaxias and Clarence galaxias.

The main objective of the display was to raise the profile of native fish and to increase the public's awareness of some of our endangered fish species.



Taking advantage of the free fishing day (photo: Charles Thompson)

A feature of the display was a small aquarium holding several of the more common species of fish encountered in our coastal rivers.

Carp information day

An information day about European carp, their impacts on our freshwater ecosystems and what is being done about them was held at Dago Point, Lake Sorell on Sunday 4 February 1996.

A large marquee was erected beside the camping ground which contained equipment used and displayed methods of carp eradication including several videos. There was also a food tent run by the STLAA.

The Minister for Inland Fisheries, John Cleary, the Commissioner, Wayne Fulton, and Commission staff involved in the carp project were present to answer questions from the public. Approximately 500 people attended and from comments received, the event was extremely successful.

Agfest

The theme of this year's Agfest field days "Quarantine – protecting our State", provided the perfect opportunity for the IFC to explain the dangers for our recreational, commercial and native fisheries posed by illegal imports.

It is illegal to bring live bait and aquarium fish or plants into Tasmania because of

the risk of disease and the introduction of undesirable species to our ecosystems. European carp are a timely example of such an introduction.

The Commission's display formed part of the larger Department of Primary Industry and Fisheries exhibit, which focused on the risks of importing other plant and animal products into the State.

At the Commission's stand, the live carp specimens created much interest while many visitors commented that they were unaware that it was illegal to bring certain aquarium fish and plants into the State.

The Commission's participation at events such as Agfest is important in protecting our fisheries through education.

IFC Open Day – Liawenee

On 19 May 1996 the IFC held its most successful Open Day yet. Our estimate of the crowd was around 3000+ with facilities extended to present limits.

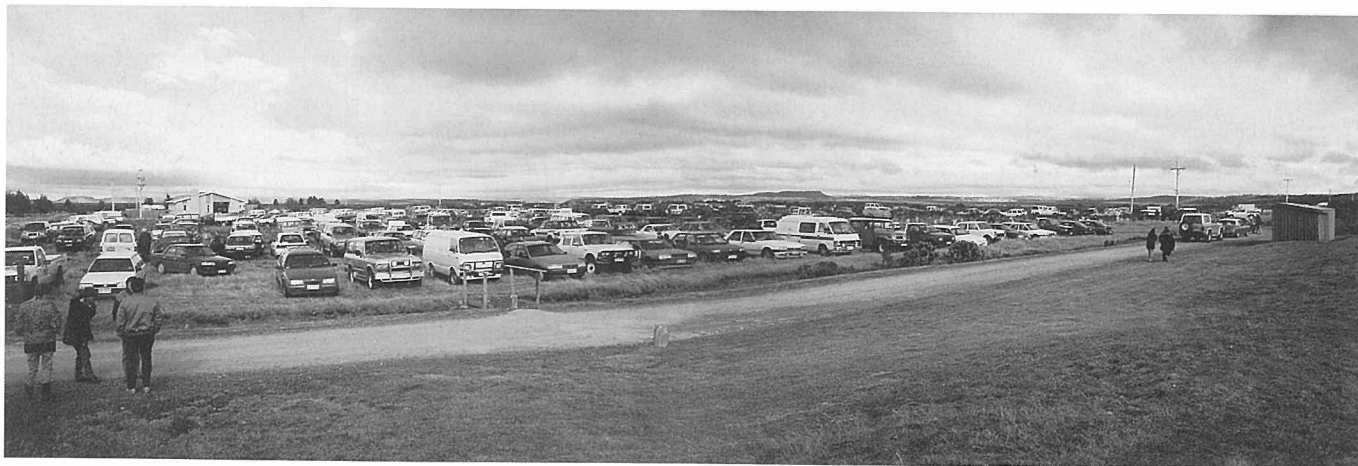
A raffle organised by staff and sponsored by Stormy Seas raised over \$700 for the Port Arthur Appeal. The assistance of a number of anglers to sell the tickets is gratefully acknowledged.

A "guess the number of eggs" competition was popular and thanks to Burnie Bait and Tackle for the prize. Freshwater Fishing also donated magazines which were eagerly snapped up as were hot dogs, hamburgers, etc, served up by the Longford Club. This club also assisted with parking and their long time support of our Open Day has contributed greatly to its success.

After those words for our sponsors, the Commission is already planning for next year. The Open Day will be on 18 May 1997. We are aware that we need to extend viewing areas for all displays and this is being assessed, so watch this space for future news.

Future displays

As the Commission is transferring all its resources to the lakes Sorell/Crescent area, extensive participation in other promotional activities is under review for the rest of 1996. However, some resources will go into the development of stand-alone display panels that could be made available for certain purposes such as libraries or small exhibitions.



The crowd at Liawenee Open Day (photo: Viv Spencer)

In Brief from front page

(Angling licence fees to rise, continued...)

The scale of fees for the 1996-97 season will be as follows:

Full season adult	\$40
Full season eligible pensioner	\$18
Full season juvenile (14-17 years)	\$10
14 day	\$22
3 day	\$13
1 day	\$ 8

The Commission will maintain its extensive system of agents so that licences are readily available at more than 130 outlets around the State. Most tackle stores are licence selling agents and the new licences should be available by mid July.

STLAA casting competition

The annual plug and fly casting competition was conducted in ideal conditions on Sunday 10 March 1996 at the Salmon Ponds, Plenty.

Approximately 35 competitors, including both seniors and juniors participated in the various events.

Peter Quin demonstrated fine skills in the fly events, with a first place in the dry fly accuracy, second in the fly distance and third place in the wet fly accuracy.

PROSECUTIONS

Infringement notices

During the six months from 1 January 1996 to 30 June 1996 the following 'on the spot fines' were issued.

Offence	Number
Fish without a licence	3
Fish with more than one rod and line	9
Use strike indicator	6
Fish with unattended set rod	3
Total	21

Court proceedings

Offences that were proceeded with by summons are listed below.

Ken Russell, Ian Wigston and Rob Bradshaw all performed well in the plug accuracy events, sharing places amongst themselves.

In the juniors, Amanda Bradshaw won all three plug events, while the two Quin brothers, Adrian and Matthew, performed consistently in the fly competitions.

A visit from the Easter Bilby

The IFC recently received a donation of \$1000 from the South Australian Bilby Action Group on behalf of the Threatened Species Foundation to help raise awareness of Tasmania's threatened native freshwater fish species.

The donated money was raised through sales of Quality Bakers 'Bilby Preferred' Easter Buns.

The money will be used in the production of a poster and brochure featuring Tasmania's threatened native freshwater fish species.

People are often surprised to learn that Tasmania has 25 species of native freshwater fish. Of these, three species are considered endangered and several others are considered at risk due to habitat destruction, competition with introduced species and other factors. These are the same types of threats that the bilby is contending within it's environment.



Andrew Sanger (he's the one on the left) receiving a donation for endangered species work

Plenty fish trap operational again

The completion of four years of hard work by the Bridgewater Anglers Association was celebrated on Sunday 10 March with the re-opening of the Plenty River fish trap.

The trap was originally constructed around the turn of the century by the then Salmon and Freshwater Fisheries Commission. The purpose of the trap was to catch sea runner and resident spawning trout from the Derwent and Plenty rivers. Eggs were stripped from the fish and hatched at the Salmon Ponds.

The trap was destroyed by a flash flood in 1974.



P Wood, W Fulton, B Sherriff, R Bradshaw at the trap

The Bridgewater club undertook the design and complete reconstruction of the trap - a task which has involved many hours of voluntary work and \$3300 of materials and plant.

As well as re-establishing an historic structure, the work allows the Inland Fisheries Commission to monitor spawning runs in the Plenty River once again.

The trap has been dedicated to the late Mr Hector Jones, who had a very long association with the Salmon Ponds, being the third generation of his family to live and work at the Ponds. He was also a member of the Bridgewater Anglers Association.

The opening was performed by club president, Mr Peter Wood, who unveiled the plaque appropriately by using a fishing rod!

Offender	Location	Offences Summary	Total fine + costs (\$)
Peter Warren BARNES, St Leonards	NORTH ESK RIVER	Unlicensed	235
David Leonard PHILLIPS, Beaconsfield	SANDBANKS CREEK, GREAT LAKE	Disturb spawners/Use light/Take fish/from closed waters/Obstruct officer	635
Colin Vivian FROST, Beaconsfield	SANDBANKS CREEK, GREAT LAKE	Disturb spawners/Use light/Other than rod & line/ Take fish from closed waters/Obstruct officer	735
Elvin Arthur GLEESON, Tarraleah	LAKE CRESCENT	Take fish from closed waters/Unattended set rod/Use net	1 235
Christopher John PEARCE, Tarraleah	LAKE CRESCENT	Take fish from closed waters/Unattended set rod/Use net	635
Simon Paul SMITH, Devonport	FORTH RIVER	Possess net/Take whitebait	435
Nathan John SMITH, Devonport	FORTH RIVER	Take whitebait/Possess net	1 235
Nathan John SMITH, Devonport	MERSEY RIVER	Possess net/Take whitebait	1 235
Nathan John SMITH, Devonport	FORTH RIVER	Take whitebait	635
Quinton Andrew GREY, Smithton	DUCK RIVER	Take whitebait/Possess whitebait	1 068 Suspended 400
Trudy Anne SWAN, Smithton	SMITHTON	Possess whitebait	285
Amanda Rose HAMPTON, Sulphur Creek	FORTH RIVER	Possess whitebait/Take whitebait/Use abusive language	510
Sydney Ralph LUCKMAN, Latrobe	MERSEY RIVER	Take whitebait/Possess net	435
Roxley Peter WISE, Wynyard	INGLIS RIVER	Take freshwater crayfish	185
David Raymond BRYAN, Wynyard	INGLIS RIVER	Take freshwater crayfish	185
Michael Jason BRYAN, Wynyard	INGLIS RIVER	Take freshwater crayfish	185
Charles Athol JONES, Ranelagh	HUON RIVER	Use more than 1 rod & line	100
Dale Anthony LAPHAM, Wynyard	INGLIS RIVER	Possess net	785
Simon Paul SMITH, Devonport	FORTH RIVER	Possess net/Possess whitebait	1 035
Veronica CONWAY, Latrobe	MERSEY RIVER/DEVONPORT	Assault officer/Threaten officer/Abusive language/ Refuse to allow search/Aid and abet/Possess whitebait	324
Shane Allan DICKINSON, Forth	FORTH RIVER	Possess whitebait	235
Adam Troy FURLEY, Devonport	FORTH RIVER	Possess whitebait/Possess net	435