INLAND FISHERIES COMMISSION
NEWSLETTER

VOLUME 22 NUMBER 2 – JULY 1993

Trout on ice

People have often said they would love to have a field job with the Inland Fisheries Commission. But little do many of them realise that it does have its moments. The photos show Senior Inspector Viv Spencer in the Commission's fish trap at Liawenee. The fish were in danger of being frozen solid in the ice which had to be broken up to allow them to get out.

It is not abnormal for these conditions to occur at Liawenee; it usually happens each winter, and flooding or blockage of our fish traps often results as a consequence.

Hardly the weather to be out fishing!

IN BRIEF

Daiwa Sponsorship

It is very pleasing to announce that Daiwa (Australia) Pty Limited has agreed to provide financial support to the Commission for the 1993-94 season. Anglers will note the Daiwa logo on angling licences and codes as well as this newsletter.

Daiwa will of course benefit from this advertising, but it is a great boost to see companies prepared to assist directly in supporting management of our fisheries.

Daiwa
COMMITTED TO TOTAL QUALITY

Angling Licence Fees

The scale of angling licence fees for the 1993-94 season will be as follows:

Full season adult	$38
Eligible pensioner	$16
Juvenile - 14-17 years	$10
14 day	$20
3 day	$12
1 day	$ 7

The only changes to the fees are a $2 increase to the full season adult fee and a $1 increase to the pensioner fee. A further short term licence for one day has been introduced to try and encourage the casual angler.

The Commission has held licence fee increases to a minimum with only $3 being added to the adult fee over four seasons. It is hoped that this stability will encourage more people to participate this year.

Minor Regulation Changes

In addition to changes relating to the taking of freshwater crayfish which are described elsewhere, the Commission has made some other minor alterations to regulations for the coming season.

A regulation to prohibit fishing from a motorised boat in Curries River Dam has been introduced. This regulation was required by Rivers and Water Supply Commission before they would allow boats on the dam at all.

In the south of the State Lake Skinner has been declared a rainbow water in accordance with angler requests, whilst the boundary of bream waters in the Derwent has been re-defined as the Lyell Highway roadside monument just on the Granton side of where the old patrolman's cottage used to be. The cottage was formerly the boundary but it has recently been demolished.

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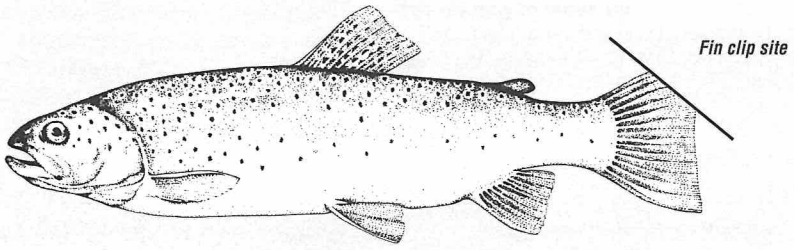
Marked Trout – Mersey River

Mersey River anglers should keep an eye out for trout with their tail fin clipped this season.

Half of the fish that were transferred to the spawning channel in the Mersey River were fin clipped after spawning and prior to their release into the river from the channel. This was undertaken by members of the Latrobe Branch to see where these fish ended up.

The Commission and/or the branch would appreciate hearing from anyone who catches one of these fish.



World Fly Fishing Championship

The most recent World Fly Fishing Championship was held over three days in June this year in Kamloops, British Columbia, Canada. Teams from 19 countries participated in the championship.

The competition was held on lakes Paul, Roche and Tunkwa and involved fishing from boats. The English team finished first with Poland second and Italy third. Owen Russell of Wales won the individual event.

It appears that local angler Jason Garrett was out of luck as he did not legally land a fish on the first day although a rainbow did jump into his boat.

The IFC has applied to again host the WFFC in Tasmania in about five to six years time. However, it is a bit of a worry that these brief results had to be taken from the VFFA Newsletter despite requests to Australian team organisers for information.

Australian Museum of Trout Fishing

This project is progressing steadily towards the February 1994 opening and arrangements should soon reach the stage where panic overtakes the present organised chaos.

Restoration works

The works undertaken by Jack Bobbi on the old buildings at Salmon Ponds have produced superb results.

The restoration of the verandahs of both houses has given these buildings a complete face lift assisted by a new coat of paint matching the original colours. New original style windows and renovation of the foundations along the northern wall of the Superintendant's Cottage has also been done. Stannards room has been completely restored externally, including replacement of the chimney with old hand moulded bricks.

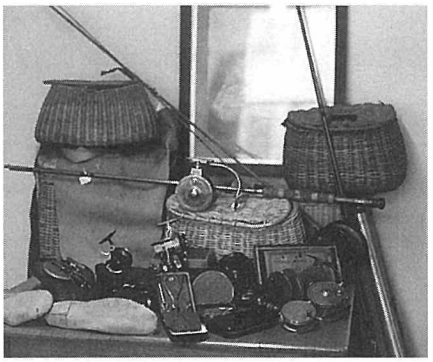
During removal of an annex at the rear of the Superintendant's Cottage, volunteers from the New Norfolk Anglers Club noted an original earlier porch structure within the framework. Demolition was then halted so that the original structure could be rebuilt. Further work will be undertaken inside this building in the next few months.

Interpretation

Plans to provide interpretive information in the existing hatchery are in course. The focus of this will include:

- interpretation of the hatchery process as it was and as it is now;
- interpretation of the introduction of trout;
- information on the evolution of Salmon Ponds.

As indicated previously, it is not likely that there will be any significant changes to the familiar grounds of the Salmon Ponds.



A collection of gear for the museum

Museum

Collection of material for the museum is proceeding very well especially with the recent acquisition of a major collection of tackle and memorabilia. The word is slowly spreading and it is becoming known that items don't have to be particularly expensive to be of interest. As far as the tackle goes we are interested in gear used for trout with special emphasis on Australian made equipment.

There is also a need for further items associated with angling, including photographs and diaries, to add the personal interest. Please let us know if you have anything that you think may be useful.

Items so far obtained or promised for loan have included tackle belonging to Morton Allport, Charles Harrison, the Cramp family, Dick Wigram, Max Christiansen and others; all well known names in the development of Tasmania's trout fisheries. A concept plan to organise the displays on these people and on other themes has also been drafted. It is hoped that these can provide the starting point for a permanent record of our angling heritage.

The Jones family on the verandah of the superintendants cottage – Salmon Ponds

Freshwater mussels

by Stuart Chilcott, Scientific Officer, Inland Fisheries Commission

Most anglers are unaware of the variety of animals which inhabit our freshwater environment. Some remain unknown because of the habitat they live in or the sedentary life they lead. The freshwater mussel is perhaps one such example of an animal that is rarely encountered by anglers, particularly those fishing outside the South Esk system. However, once seen they often create a great deal of interest due probably to their similarity to the familiar marine mussels.

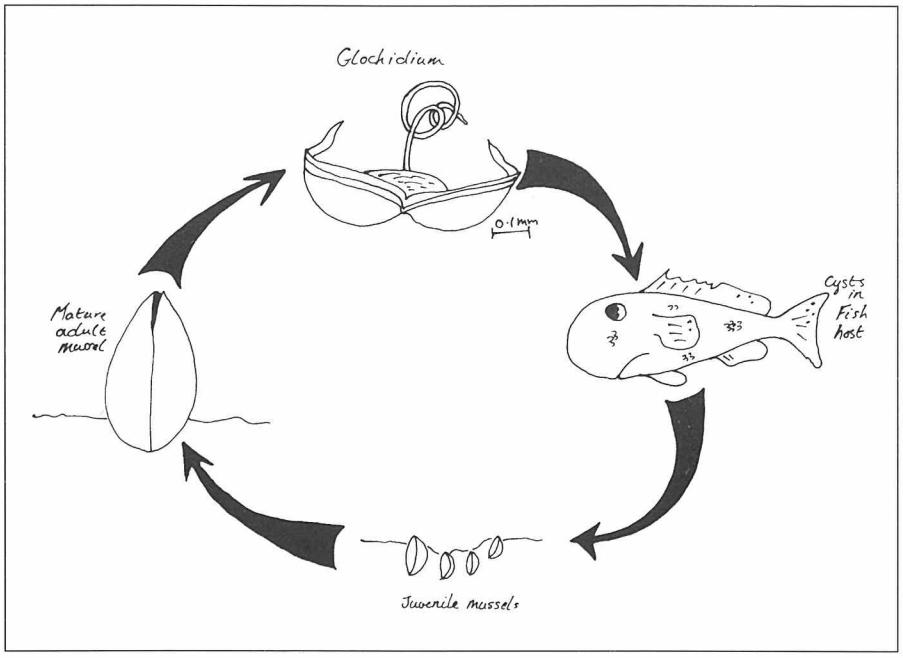
There are seventeen species of freshwater mussels in Australia, with two of these, *Velesunio moretonicus* and *Hyridella narracanensis* only found in Tasmania. These particular species are restricted rivers of the South Esk basin in northern Tasmania (Smith and Kershaw 1981).

The shells of the adult mussel can reach lengths of 60-95mm for *V. moretonicus* and 20-60mm for *H. narracanensis*. The shell is often strongly sculptured with *H. narracanensis* possessing V-shaped ridges. The shells are coloured dark brown to black, often with a strong purplish blue tinge and blotches of white and copper coloured markings.

The shells are quite thick – more so than saltwater mussels – and this provides more than adequate protection against most natural predators. On the mainland water rats and white ibis are known predators (Walker 1990) and catfish also have well adapted mouthparts to crush the shell and to extract the soft body. In Tasmania the major predator of mussels is the water rat (*Hydromys chrysogaster*) (Ron Mawbey, Uni of Tas pers. comm.).

Habitat

The mussels live in lowland rivers in Tasmania and inhabit a variety of habitats ranging from slow flowing broad waters to areas of runs and riffles. Although the mussels have a restricted geographic range they are fairly common in the South Esk and Macquarie river systems. However, their presence can often only be detected by diving or else the tell-tale deposits of broken shells and fragments along river banks, old river courses and back waters. They are well adapted for burrowing into river banks and sediments.



Life cycle of the freshwater mussel

The Inland Fisheries Commission is presently conducting a study of the stream flow requirements of a variety of freshwater animals including mussels in the South Esk system. This study is also examining their habitat preferences and relative abundances to increase our knowledge of the mussel's ecology and general environmental requirements.

Life cycle

The freshwater mussel has a very unusual life cycle in which the early larval stage is parasitic on fish and sometimes tadpoles. The adult releases thousands of larvae into the water where upon they only have a few days to find a host fish or perish. The larva is called the glochidium and further development of the larva is dependant on an association with a fish. In *Velesunio* the release of glochidia generally occurs in spring and summer whereupon they either clamp onto the fins or body of the fish with minute hooks, or else they attach themselves to the gills by a thread after being drawn into the gillchamber of the fish.

Development commences once the glochidium is fastened to the tissue of the host. The glochidium draws nourishment from the surrounding tissues as the host forms a cyst over the attachment site. Development continues over a period of 12-30 days depending upon water temperatures and the species of mussel. The species of fish involved in the parasitic stage remains unknown for the Tasmanian mussels but Murray Cod, catfish and golden perch are known hosts for mussels on the Australian mainland. The host fish is unharmed by the parasitic stage.

Once developed the juvenile mussel escapes from the cyst to search for a suitable location to settle. Usually a muddy, silty river bottom is preferred which affords protection from predators. The mussels are also able to close their shells very tightly and survive for long periods out of water.

They obtain nourishment by sucking small volumes of water into the shell via a siphon. The water is circulated through the gills situated inside the shell. The gills are essentially a respiratory organ but in freshwater mussels also act as a filtering mechanism to collect food. The microscopic food particles are trapped in a mucous secretion and transferred to the mouth by minute hairs. These hairs (known as cilia) force the food towards the mouth where it is ingested.

Uses

From time to time the Commission receives inquiries regarding the suitability of mussels for commercial exploitation. These inquiries generally relate to the possibility of obtaining permission for field harvests of mussels to procure meat, pearls and shells. However, the Australian species are of little value for these features, as the mussel produces low quality pearls, unpalatable meat and the shells have no commercial use. There is also some interest in them as aquarium accessories.

References

Smith, B. J. and Kershaw, R. C. (1981). Tasmanian Land and Freshwater Molluscs. Fauna of Tasmania Handbook No. 5, Uni of Tas.

Walker, K. F. (1990). Mussels, In Mackay, N. and Eastburn, D. The Murray. Murray Darling Basin Commission, Canberra.

Lake Sorell developments

In early June the Minister for Inland Fisheries announced that Treasury would provide $100 000 to enable the commencement of work on camping facilities at Silver Plains. This news would be most welcome to the majority of anglers who have long been concerned at the *ad hoc* nature of camping in the area and the lack of basic toilet facilities.

The Minister has released the following details in relation to the proposal. (Bear in mind that some of the fine details may have altered slightly by the time this is printed.)

Access

- Access will be dealt with by declaring a reserve over the present road, which is to be fenced both sides.
- Maintenance of the road will be shared between Council and the Government.
- The road will be controlled by a boom gate at the Steppes Road and this will be closed outside the fishing season.

Land

- Gunns Timber have agreed to provide about 10 hectares of land on a long term lease at a peppercorn rental for a camping area, conditional on it being fenced and the agreed development being completed.
- The land will be fenced and drained and vehicle access beyond the fourth fence will not be permitted.

Camping development

- Government and Council officers have investigated the site and prepared a preliminary concept plan (see diagram) for the area taking into account a range of environmental constraints and catering for:
  - 50 caravan sites;
  - 20 tent/campervan sites;
  - two car parks;
  - two launching ramps;
  - toilets;
  - day use facilities;
- landscaping/screen planting.
- The proposal has been agreed to in principle by Council and the landowners, and preliminary work has commenced to plan, fence and provide hard standing and temporary facilities for next season.
- The full development will be formally considered by Council in the normal way including the determination of appropriate toilet facilities.
- Fees will be charged for both long and short term as funds have been provided on the basis that they be repaid over a number of years from revenue generated for use of the area.
- Fees will be common with those charged at Dago Point – in the order of $300 a season for caravans. Charges will be determined for short term camping at both Silver Plains and Dago Point.

Management

- The camping area and access plus vacant Crown Land including that on the Hatchery Shore and a block adjacent to Robinsons Marsh, will be made Lakeside Reserves and brought under the control of the Crown Lands Act Reserve Regulations.
- Resident supervision and fee collection will cover both Silver Plains and Dago Point.

General

- The ablutions block at Dago Point is to be finished as a matter of urgency.
- Increasing the long term caravan sites at Dago Point by 30 will be looked at.
- The allocation of sites at Silver Plains is under investigation along with the allocation of sites at Dago Point.

Whilst some anglers may object to paying to camp they must appreciate that the facilities have cost money to build. They should also remember that if some form of development had not been undertaken then the camping area would almost certainly have been closed by health inspectors this season.

Realistically, it is the best possible outcome in the time available and the Commission for one appreciates the efforts of all concerned.

Lake Sorell Spawning Run

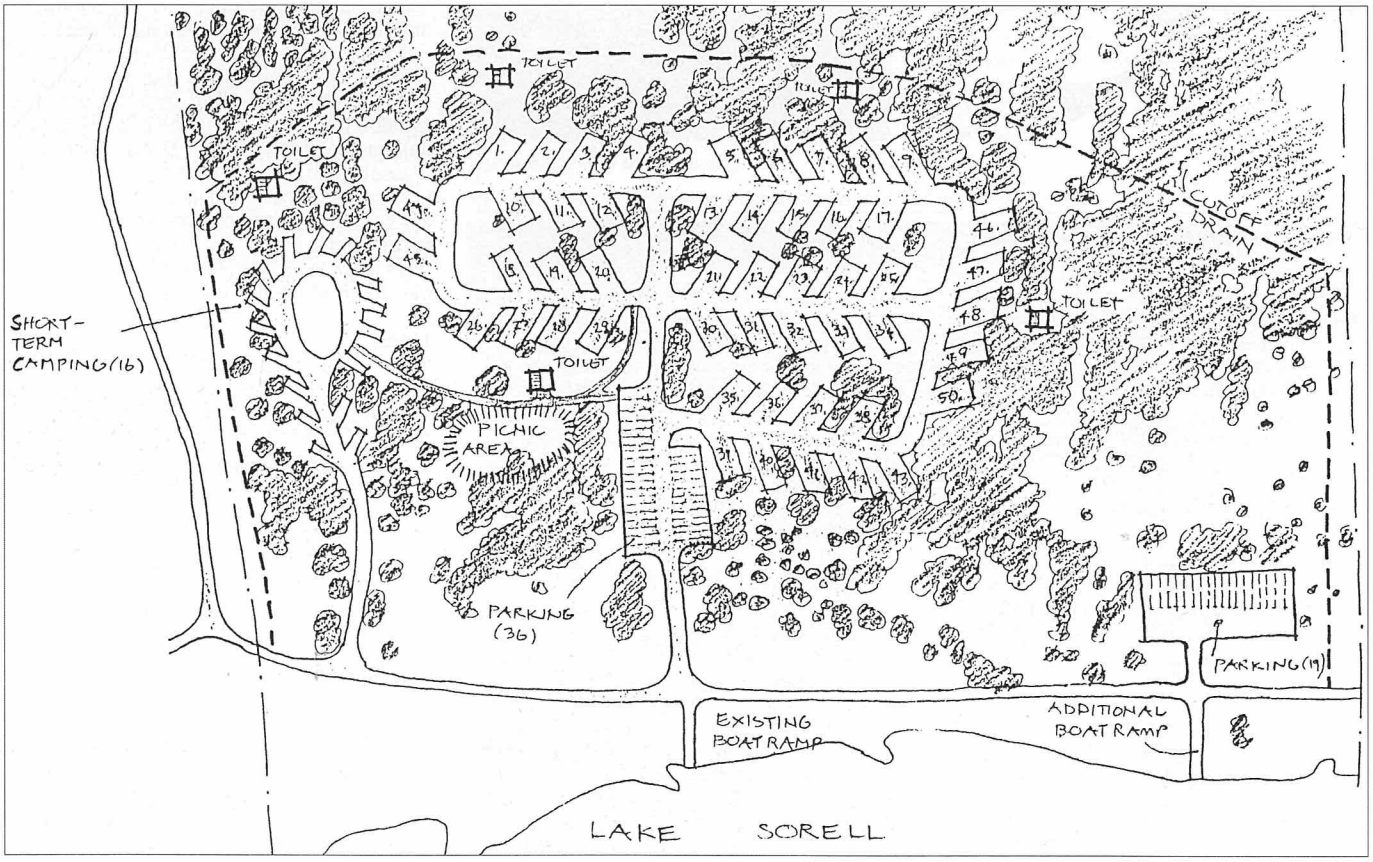
The lack of rain in the Lake Sorell catchment had prevented any significant run of spawning fish in Mountain Creek until 8 July.

A good flow then enabled at least 8 000 to 10 000 fish to move up.

These fish had been waiting patiently for some weeks but with very little sign of the fungal problems that usually occur with such delays.

With such a late start to the spawning run it may be that the fish in this water could be a little later to regain peak condition.

Also, with such a late start to the run it was considered unwise to proceed with the planned fin clip as this could have further stressed the fish and resulted in unwarranted losses. Nevertheless, the Commission would still like to get an accurate estimate of fish population numbers in this water at some later date.



Plan of Silver Plains site development

Bronte Lagoon level control trial

Andrew Sanger, Scientific Officer, Inland Fisheries Commission

As outlined in the October 1992 newsletter, the Hydro-Electric Commission agreed to trial a new operating rule for Bronte Lagoon during the first five months of the 1992-93 angling season.

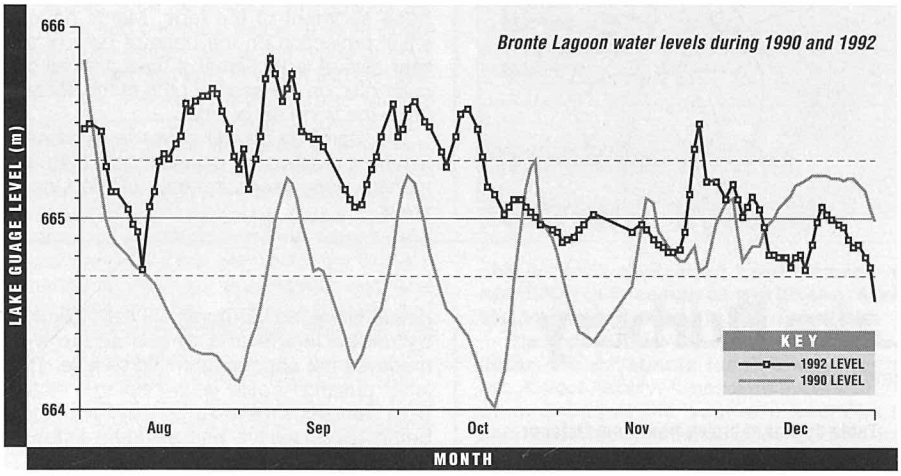
The lagoon was to be kept at SL 665.0 ± 0.3m during the trial period. The agreement was based on a recommendation from the Inland Fisheries Commission that a target stable level of SL 665.0m would promote good shore-based angling conditions, and following advice from the Water Resources Department of the HEC that losses due to spill could be minimised at that level if provision was made for the gates at Woodwards Canal to be operated on a daily basis if required.

As it turned out, for the majority of the trial period the lagoon was above 665.0m, although in November and December the level dropped slightly below this level. Levels higher than 665.3m were common early in the trial during periods of very high inflow. Overall the trial proved that a relatively high stable level can be maintained in Bronte Lagoon (see graph).

The success of the trial was assessed by an angler interview program conducted at the lagoon. The results of this survey are presented in Table 1.

Table 1: Results of the angler interview program performed at Bronte Lagoon during the 1992-93 angling season

	Yes (%)	No (%)
Were you aware of the level control trial?	50	50
Did this influence your decision to fish at Bronte on your current trip?	16	84
Did this influence your decision to fish at Bronte on previous trips?	8	92
Will it influence your decision to fish at Bronte on future trips?	65	35
What is your opinion of the trial level? (good - 89, bad - 1, undecided - 10)		
Would you prefer a higher level?	11	89
Would you prefer a lower level?	1	99
What is your opinion of the trial season? (good - 76, bad - 5, undecided - 18)		
Would you prefer a longer trial?	40	60
Would you prefer a later start?	8	92



Anglers were interviewed on six weekends between the beginning of October and the end of December. Interviews were targeted to coincide with the peak fishing times, i.e. early morning and late evening, and were also conducted on an opportunistic basis at other times of the day. Two interviewers patrolled separate areas of the lagoon in an attempt to gain a complete coverage of anglers present.

The questions asked in the survey included those related to where the anglers came from, as well as questions on their perceptions of the effect of the new water level agreement on fishing conditions at Bronte Lagoon. A summary of the survey responses is given in Table 1. A total of 146 individuals were interviewed during the trial period.

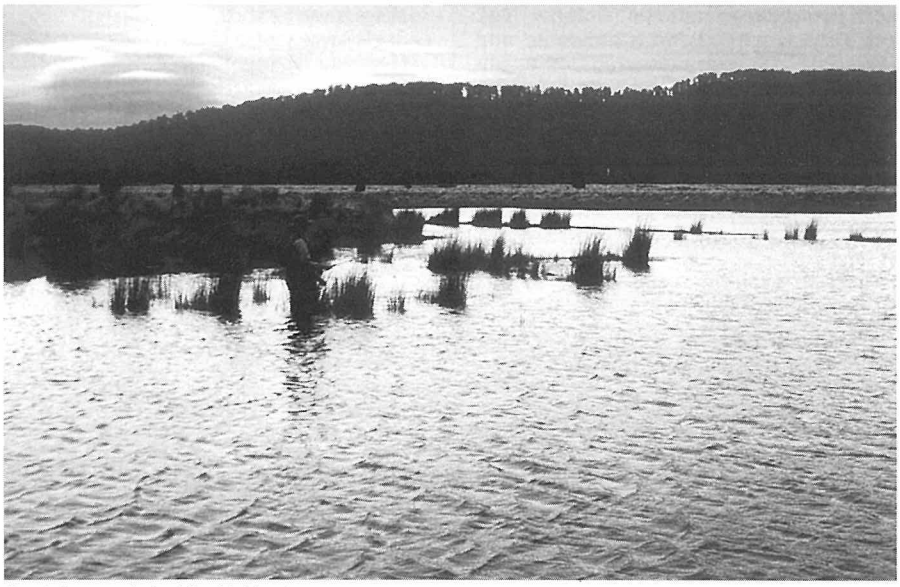
Most anglers (89%) were satisfied with the level chosen for the trial, although several of these people also would have preferred it to be higher still. Only one angler objected to the trial level. About 10% of the people interviewed were undecided on the merits of the level chosen.

A little over half of the anglers were satisfied with the season chosen for the trial, although 40% thought that the period should be extended. Very few anglers were completely dissatisfied with the trial period. Quite a few anglers were aware of the trial and said that it had influenced their decisions to give Bronte Lagoon a try. After being made aware of the reasons behind the trial and seeing the level at first hand, many anglers said they would be influenced by the stable level in making future decisions on fishing at Bronte.

Overall, the results of this survey indicate that the trial was a success. Anglers definitely appreciated that something was being done on their behalf, and most considered that the fishing at the lagoon would benefit from the change. The level chosen for the trial was well received. Although the trial was aimed at benefiting shore based anglers, several boat based anglers also said that the higher level provided better conditions for them, because it allowed for safer and less troublesome boating.

One point that emerged during the interviews and in subsequent contact with Bronte anglers was that most people thought that the trial was a success despite their catch rates for the season being quite low. The condition of fish caught by shore based anglers was excellent during the 1992-93 season, and the quality of the fish seemed to make up for lack of numbers. Hopefully a trend towards greater numbers of good quality fish will develop in future seasons.

Given the success of the trial from the viewpoint of both anglers and the HEC operations, its continuation will be taken up with the HEC. Anglers will probably make greater use of Bronte Lagoon in coming years if they have a reasonable expectation of suitable water levels. An extension of the period of the trial beyond Christmas will also be requested. Large numbers of anglers use Bronte Lagoon in the January and February periods, and the message received during the angler survey program was that higher water levels at this time were desirable.



Bronte Lagoon at about the trial level

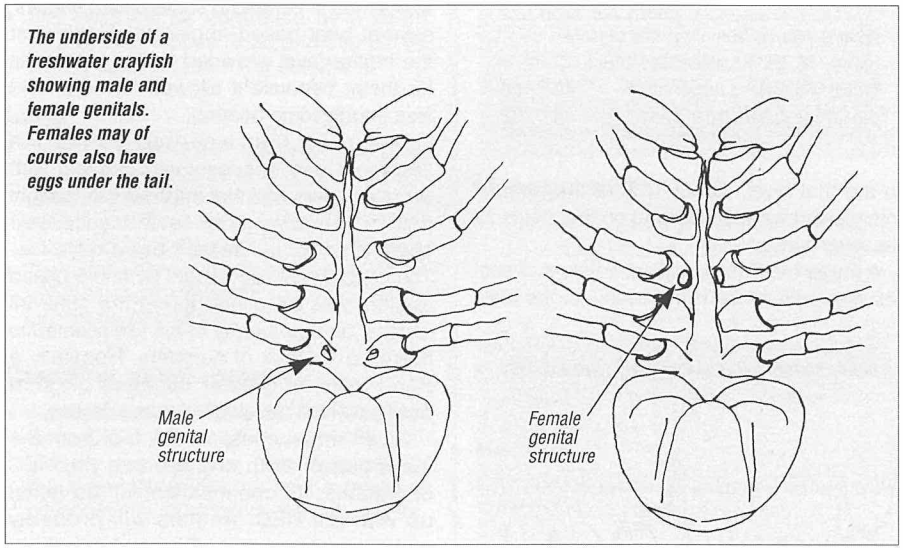
Changes to freshwater crayfish regulations

In the Inland Fisheries Commission newsletter of March 1991 the need for a review of regulations relating to freshwater crayfish was first raised. This process has now reached the stage where new regulations will shortly be in place.

It is important to appreciate and recognise that these changes do not constitute a statement that the species is endangered as reported in various media. The facts of the status of the species are clearly stated in our April 1993 newsletter but to reiterate, the Commission considers it to be secure. Put simply, if the species was in any way threatened with extinction or even serious population depletion then the Commission would close the fishery completely. There is no doubt that there have been some small regional declines, but it is unrealistic to expect that everything can maintain its pristine condition.

What the changes do recognise is that, due to the ever increasing maze of roads throughout the habitat of this species, there are now few streams where the crayfish is naturally protected through inaccessibility. When coupled with their slow growth rate it is now necessary to provide far greater reserve areas than the former small and ineffective area in Caroline Creek. The more extensive reserve areas may not necessarily be permanent but may be opened on a long term rotation should stocks be sufficient to warrant it. By spacing these reserves across the range of the species rather than closing one large area people may still fish locally. Also, any geographic variation in the species will be preserved.

Commission enforcement staff will increase surveillance of these areas, but, as always, will be reliant on the public to assist in this regard. The Commission has a great deal of respect for the integrity of the vast majority of keen crayfishers, many of whom have already been observing some of the new rules for many years, for instance, not taking females. However, to think that policing can be increased to a level that would significantly alter the present level of poaching is simply naive. The area is too great and the resources are too small.



The underside of a freshwater crayfish showing male and female genitals. Females may of course also have eggs under the tail.

Regulation changes

The new regulations are summarised as follows:

- no female crayfish may be taken at any time;
- no more than three male crayfish may be taken on any one day;
- crayfish may not be taken from any of the following rivers or any of their tributaries –
  - Hellyer River above its junction with the Arthur River;
  - Duck River;
  - Inglis River;
  - Emu River;
  - Mersey River;
  - Great Forester River.

Please note that you **do** need an angling licence to take freshwater crayfish by methods other than a bush pole.

In order to identify female crayfish, the diagrams below should be referred to. Turn the crayfish upside down and look at the base segment of the legs. Males have a small projection on the base of both of the **rear** sets of legs. Females have a small circular disc on the base of both of the second (from the front) set of legs.

The Commission will continue to monitor fishing pressure on crayfish and also will monitor populations in some of the closed areas.

Food of trout in Lake Burbury

Laurie Cook, Scientific Officer, Inland Fisheries Commission.

As part of the Lake Burbury monitoring program some test nettings of trout have been conducted in the lake. Gut samples from two of these nettings (October 1992 and February 1993) were collected and preserved and later dissected and examined. On both occasions all the fish were caught along the shore of small islands near the main picnic ground.

Estimates of the percentage volume (the relative volume of each food item to the total food in the gut), the frequency of occurrence (the proportion of guts containing a particular item) and the relative abundance (the number of a particular food item compared to the total number) of food items were assessed. The two tables below present these results.

Table 1: Diet of brown trout from October 1992 test netting. Data from 33 fish

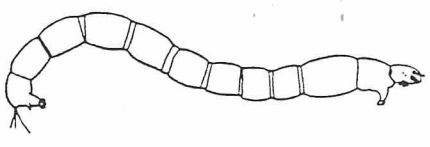
FOOD ITEM	% VOLUME	% OCCURRENCE	% ABUNDANCE
Midge larvae	62	97	96
Beetle larvae	17	88	4
Mudeyes	15	52	<1
Dobsonfly larvae	2	45	<1
Beetle adults	1	30	<1
Water boatman	1	21	<1
Caddis larvae	<1	3	<1
Unidentified	2	15	-

Table 2: Diet of brown trout from February 1993 test netting. Data from 45 fish

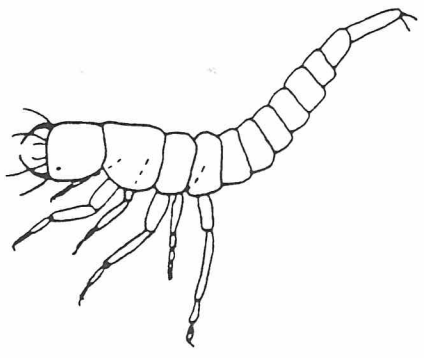
FOOD ITEM	% VOLUME	% OCCURRENCE	% ABUNDANCE
Midge larvae	21	70	36
Beetle larvae	33	83	56
Beetle adults	11	62	5
Water boatman	3	30	2
Caddis larvae	1	11	<1
Crayfish	2	2	<1
Unidentified	29	72	-

The October netting shows that midge larvae, beetle larvae and mudeyes form the predominant part of the diet of these fish with midge larvae making up the bulk of this. The February sample shows a shift to beetle larvae as the dominant item followed by midge larvae and beetle adults with mudeyes not appearing in this sample. This latter absence could be a seasonal factor. Both samples show that the majority of food being taken by the fish at these times is from below the surface.

These results only represent what fish were eating at one area of the lake on two occasions and so are not necessarily representative of the whole lake. However, they may give the angler an idea of what fish are feeding on at those times of year. Further samples will be taken as the monitoring proceeds to cover a broader seasonal scale.



Midge larvae



Beetle larvae

Fish habitat and diet

Paul Humphries, Scientific Officer, Inland Fisheries Commission

A good angler will often know the best places to fish in a favourite river or lake. He/she might know for instance, that in a particular reach of a river, fish will sit in a relatively calm section, just below fast water. There is often good reason for fish to be found where they are, and considering the huge expanses of water that could be fished in most situations, it makes sense for the angler to have some idea of what types of habitats a fish prefers and why, as this may enable more efficient use of time and effort.

Fish have certain physiological tolerances that have evolved over thousands if not millions of years. For example, many marine fish cannot live in fresh water and in turn many freshwater fish cannot tolerate sea water. Other species, such as eels, can tolerate wide ranges of salinities and can be found during different stages of their life cycle either in rivers, estuaries or the sea. Physiological tolerances limit the distributions of fish to favourable environments, since to move into areas to which a fish is not adapted is very costly if not fatal. But within an environment such as a river, other factors come into play in determining where a fish will choose to locate itself. A muscular, streamlined fish will be able to sit in fast flowing water for hours at a time and not get exhausted, whereas a short, squat fish may have to locate itself in slow-flowing sections of a river or in backwaters or pools and can only maintain itself in fast-flowing water for brief periods.

Factors such as current and salinity are physical and chemical factors that no doubt have major influences on the types of environments and habitats in which fish can live. But there are many more subtle factors which influence the habitat use of fish. Factors such as the presence of other fish, whether they be the same or a different species, the presence of predators, the availability of spawning areas, and of course the availability of food. Under ideal circumstances a fish will tend to be found in a habitat where there is a plentiful supply of food, there is a low risk of being eaten and where there are not too many other fish with which to compete.

But fish are not the only ones to be selective in the habitats they choose. The food that the fish eat, the insects, crustaceans and molluscs etc, all have their own tolerances and preferences. So it goes without saying that a fish may choose a habitat because it supports an abundance of a type of food that it likes to eat or, to turn the argument around, the type of habitat a fish chooses may in turn influence the food that it eats. In short, fish will probably be eating different things in different habitats. Similarly, if the types of food available to fish in different habitats are known, then looking at the food in the stomachs of these fish will give an insight into the habitats used.

Present research

As part of the instream flow project being conducted by the Inland Fisheries Commission (see IFC Newsletter 22(1)), we have simultaneously sampled fish and invertebrates from three habitats in the Macquarie River to gain some understanding of fish habitat use and food availability. We sampled a riffle, a run and a pool from each of two reaches in each of three months over the summer of 1991/92. Brown trout, redfin perch and eels were caught in sufficient numbers to be able to make a comparison of the diets from different habitats.

Below are some of the results of the sampling. The results are simply those types of food occurring in the stomachs of fish from different habitats, together with the number of species within each food type

Brown Trout

	NO. OF SPECIES IN GUT		
Food type	**Pool**	**Run**	**Riffle**
Snails	1	0	2
Free-living caddis	2	3	7
Stick caddis	3	2	11
Purse caddis	0	0	1
Mayflies	1	2	2
Dragonflies	2	2	1

Redfin Perch

	NO. OF SPECIES IN GUT		
Food type	**Pool**	**Run**	**Riffle**
Shrimp	1	1	1
Snails	1	1	1
Free-living caddis	1	3	4
Stick caddis	4	0	2
Mayflies	2	3	3
Dragonflies	3	0	0

Eels

	NO. OF SPECIES IN GUT	
Food type	**Run**	**Riffle**
Shrimp	1	1
Snails	2	1
Free-living caddis	5	8
Stick caddis	3	3
Mayflies	1	4
Dragonflies	2	1
Beetles	1	2

As can be seen, each of the three species of fish in general eat a greater number of species of caddis in riffles than in the other habitats, whereas the opposite is the case for dragonflies. This makes sense, since in our Macquarie River samples there are more species of caddis associated with riffle than with either runs or pools and more species of dragonfly in pools and runs than in riffles.

By comparing the contents of the stomachs of fish caught in different habitats with the invertebrate samples taken at the same time, we can gain some insight into the habitats from where the food originates. When this was done for the trout, redfin perch and eels, it was clear that fish caught in pools and runs obtained a considerable proportion of their food from these habitats. A substantial proportion of the food of these pool and run fish, however, also originated from riffles. On the other hand, the stomach contents of riffle-caught fish mainly consisted of invertebrates coming from riffles, with only a small proportion of the food originating outside of this habitat. Thus, while all fish had foraged in more than one habitat, those caught in pools and runs appeared to have obtained more of their food in riffles than vice versa.

The angler message

The stomach contents of the trout, redfin perch and eels in the Macquarie River varied depending on in which habitat they were caught. The implication of this to the angler is clear: he/she needs to be aware that different types of gear may be more successful when fishing in different habitat types, even though the habitats may only be a matter of metres apart. Our results suggest that, at least for trout, the angler may have more success fishing in a riffle if he/she can imitate a caddis, while in a pool or run it may be better to imitate a dragonfly.

Brookies in the Anthony system

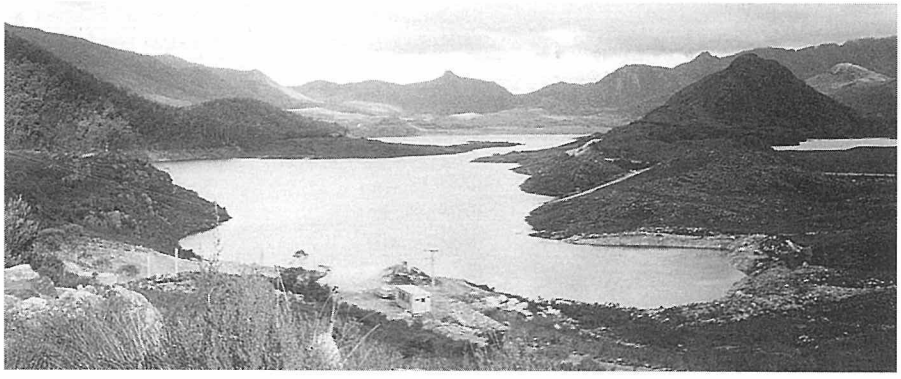
The recently completed Lake Plimsoll is now filling quite rapidly as can be seen from the photograph taken in late June 1993.

The Commission is quite enthusiastic about the prospects for this water as a brook trout fishery. It has extensive shallow clear areas at the southern end which should certainly provide good access for fishing. Some good early growth is expected from brook trout in this water.

The Commission intends to give the brook trout a good chance to establish in this area as this could constitute a most unique fishery if successful. Brookies have been released in Lake Rolleston and Lake Selina and are now firmly established (see IFC Newsletter 21(1)). Both of these lakes drain into Lake Plimsoll and should therefore help stock it. In addition the Commission has had better than normal success with brook trout eggs at Salmon Ponds this year and should be in a position to supplement these stocks.

It is not expected that there will be sufficient catchable fish in the lake in the 1993-94 season but it should be worth putting on the list for the future. On the other hand, Lake Rolleston has yielded fish up to 3kg to the patient angler. As has been the pattern with this species in Clarence Lagoon, there can be some fruitless trips with no apparent sign of life and then one day you will strike it right.

This pattern does create a danger as it can appear to the casual visitor that there are no fish present. The Commission is concerned that this could lead to illegal stocking with brown trout which would ruin any chance the brookies may have. We would at least like to give them a chance and review the situation in a few years if the brookies fail to establish good populations.



The new Lake Plimsoll (only part full) with Lake Selina to the right and Lake Rolleston below the peak at centre.

Newsletter subscriptions

If you have had trouble getting a copy of the newsletter from time to time, why not have it mailed direct to you?

For $10 per year you can now receive three newsletters of at least eight pages each *plus* an annual report – a new version of the familiar old 'blue book'.

Just send the $10 with your name and address to the Inland Fisheries Commission at 127 Davey Street Hobart, Tasmania and they will put you on the new mailing list.

If you wish, you can continue to take your chance of getting a free copy from your usual source, but it would be a pity to miss out!

1993 brown trout spawning runs

Whilst the lack of rain tended to delay the start of spawning runs in the highlands the fish were still in good shape when they did move. This was especially pleasing for Lake Sorell where such delays in the past have had disastrous effects on fish waiting to move up.

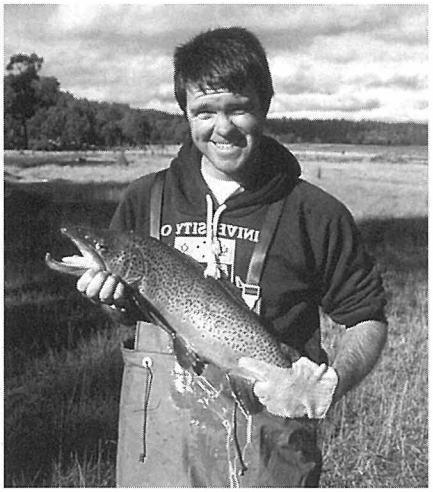
This year there were no significant mortalities at all at Lake Sorell and the recent improvements to Mountain Creek are believed to have been most beneficial.

Details of the weights of a sample of fish checked from several routine routine sites were as follows:

	WEIGHT RANGE (G)	AV. WEIGHT (G)
Lake Sorell	250 - 1 950	715
Arthurs Lake	150 - 1 650	851
Great Lake	700 - 1 725	1 136
Lagoon of Islands		
– male	950 - 4 150	3 030
– female	1 650 - 3 750	2 920

The angler should bear in mind that we rarely see the really big fish in the spawning runs, but those in Lagoon of Islands should please anyone.

The average for the Lake Sorell fish was probably depressed by a large number of two year old male fish in the run whilst the average size for Arthurs Lake fish (851g) is very pleasing for that water.



PROSECUTIONS

Infringement Notices

During the six months from 1 January 1993 to 30 June 1993 the twenty-one 'on the spot' fines were issued *(see right)*.

Court proceedings

Offences that were proceeded with by summons are listed below.

Offence	No.
Fish without a licence	6
Fish with unattended set rod	2
Fish with more than one rod and line	8
Take fish from closed waters	2
Possess or use a net other than a landing net	2
Possess whitebait without a licence or permit	1

Offender	Location	Offences Summary	Total fine + costs ($)
Rodney Neil GREY, Smithton	(DUCK RIVER)	Take whitebait/Possess whitebait/Possess net	1 532
Dale Lester LAMBERT, Smithton	(DEEP CREEK)	Take whitebait/Possess whitebait/Possess net/ Obstruct an officer	2 032
Michael Joseph TAYLOR, Windermere	(WINDERMERE BAY, DERWENT RIVER)	Take trout from excepted water other than rod & line/ Use graball net	282 spec. pen: 56
Lawrence William PETERS, Bradys Lake	(MACQUARIE HARBOUR)	Take whitebait/Possess whitebait	532
Wayne Lester GREY, Smithton	(DUCK RIVER)	Take whitebait/Possess whitebait/Possess & use net	932
Michael Darren GRICE, Smithton	(DUCK RIVER)	Take whitebait/Possess whitebait/Possess & use net	1 532
Roger James LAMBERT, Smithton	(DUCK RIVER)	Take whitebait/Possess whitebait/Possess & use net	2 132
Grant Anthony BRAUER, Devonport	(BRADYS LAKE)	Unattended set rod/Unlicensed/Falsely represent to be licensed/False name and address	632
Craig Edward BARKER, Wynyard	(CAM RIVER)	Take whitebait/Possess whitebait	432
David McGeorge Boyd BANNER, Latrobe	(MERSEY RIVER)	Take whitebait/Possess whitebait	1 032
Wayne Lester GREY, Smithton	(DUCK RIVER)	Possess & use net	232
Rodney Neil GREY, Smithton	(DUCK RIVER)	Take whitebait/Possess whitebait/Possess & use net	962
Dale Lester LAMBERT, Smithton	(DUCK RIVER)	Take whitebait/Possess whitebait/Possess & use net	1 862
Jacqueline Mary HANSON, Smithton	(DUCK RIVER)	More than 1kg whitebait per day	132
Mark Anthony FRAME, Bridgewater	(TYENNA RIVER)	Unlicensed	132
Jamie Alan FENTON, Gagebrook	(BRADYS LAKE)	Unattended set rod	132
Roger James LAMBERT, Smithton	(DUCK RIVER)	Take whitebait/Possess & use net/Improper language	1 532
Steven Gregory TATNELL, Risdon Vale	(WOODS LAKE)	More than 1 rod/Unattended set rod	264
Percy Clyde TATNELL, Risdon Vale	(WOODS LAKE)	More than 1 rod/Unattended set rod	264
Leslie Trevor SIMS, Latrobe	(LAKE MIKANY)	Use oversized fyke net/Use fyke nets with no identification/ Take eels other than by rod & line/Obstruct an officer	782 spec. pen: 50
Andrea Astrid DANDY, Victoria	(FALLS & TYENNA RIVERS)	Unlicensed	232
Craig Henry JACKSON, Smithton	(DUCK RIVER)	Possess net/Possess whitebait	432
Peter Warren LAMBERT, Smithton	(DEEP CREEK)	Take whitebait/Possess net/Possess whitebait	2 132
Peter Leslie COVENTRY, Ulverstone	(MERSEY RIVER)	Possess & use net	332
Mathew Ronald BEAN, Latrobe	(SASSAFRAS)	Unlicensed	322
Neil Reginald HICKEY, Lindisfarne	(RISDON COVE)	Use graball net in prohibited area of Derwent River	62
David Stephen SALTER, Montagu Bay	(RISDON COVE)	Use graball net in prohibited area of Derwent River	62