

INLAND FISHERIES COMMISSION NEWSLETTER

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Items in Brief

Rainbow Yearlings Released

On 23 October, 3 600 yearling rainbow trout (average weight 35 g) raised at the Salmon Ponds were released at Lagoon of Islands. On the same day 2 000 yearling rainbows were liberated at Dee Lagoon. A further 70 two-year-old rainbow trout were liberated at Lagoon of Islands on 27 September.

Atlantic Salmon Project

A consignment of 20 litres of disinfected salmon ova was successfully introduced to the Tasmanian Fisheries Development Authority recirculatory quarantine facility at Tarooma in August. Subsequently, the fry hatched and the critical first feeding stage was surmounted with far lower losses and fewer problems than anticipated. The exceptionally high survival and fast growth of the young salmon has already tested the capacity of the recirculatory system and significant culling has already been necessary.

Stream Trout Behaviour

Results of a recent study of brown trout feeding behaviour in a Pennsylvania stream are of interest. Most trout were found to establish a home range in the first or second year of life - the average size of the home range was 15.6 sq.m. and such ranges were found to overlap. Hatchery brown trout introduced to the stream fed less, moved more and used energy cost minimising features of the substrate less than wild trout. The study concluded that excessive expenditure of energy is a major cause of mortality and reduced growth among hatchery-reared brown trout stocked in streams.

SPECIAL POLICE CONSTABLES

On 10 August 1984 the Commissioner of Police, Mr Robinson, conducted a ceremony to appoint six Inland Fisheries Inspectors as Special Police Constables. Recent amendments to the Police Regulations Act enable the Commissioner of Police, with the approval of the Minister, to appoint enforcement officers administering other Acts as Special Constables. A Special Constable so appointed has, and may exercise, the same powers and authorities as any Police Constable.

The Inland Fisheries Commission has sought Special Constable status for its enforcement officers for a number of reasons. Fisheries Inspectors are often called upon to work alone, at night, in remote areas of the State where police

assistance is not readily available, and need all the protection available by law. Often trout poaching offences involve the use of firearms and poachers are invariably affected by alcohol. The police identification card acts as a strong deterrent against assault of the officer and will often defuse a potentially dangerous situation.

As Special Constables, Inland Fisheries officers have the power to enforce other Acts if required. This is very important when offenders such as shack-breakers, trespassers and spotlighters are encountered in the lake country. Inland Fisheries vehicles are fitted with police radio crystals and Commission officers have always worked closely with the police in the past.



From left to right:- Special Constables Charles Thompson, Noel Wilson, (Police Commissioner Max Robinson), Viv Spencer, Brian Vanderteen, (Inland Fisheries Commissioner Rob Sloane), Vic Causby and Noel Maroney.

Macquarie Red Spinner

Prolific hatches of red spinner on the Macquarie have been reported by the Fly-Fishers' Club in their latest newsletter. The floods in recent months have put plenty of condition on the fish, and browns up to 4 lb have been taken by club members. Some experienced hands have described the hatches as the best they have seen for many years.

New Zealand Salmon Conference

Mr Ian Cameron, the Commission's hatchery manager, attended an aquaculture conference at the University of Canterbury in Christchurch on 4 and 5 August. The conference, hosted by the New Zealand Fisheries Research Division, examined in detail the current state of salmon farming in the South Island of New Zealand. Until recently salmonid farming in

New Zealand has been confined to ocean ranching quinnat salmon. Now, interest in salmon farming is increasing and the industry is expanding into freshwater production of sockeye salmon and sea-cage production of quinnat, Atlantic and sockeye salmon.

Fishing Competition

The fishing competition conducted by the North-Western Fisheries Association during the rainbow trout opening weekend was a great success. Eight hundred and eleven entrants weighed in 800 trout, representing a total weight of approximately one ton. Major prizes included a trip to Surfers Paradise (although there aren't many trout up there!), a 3 metre boat and outboard, an outboard motor and \$100 cash. Proceeds will be donated to the North-West Scouting Association which will conduct a major litter clean-up in the highlands.

Commission Responsibilities

The powers and duties of the Inland Fisheries Commission are outlined in Section 35 of the Fisheries Act 1959, and can be summarised as follows:

1. The management, control, protection and regulation of salmon and trout fisheries in fresh and tidal waters (both commercial and recreational).
2. The management, control, protection and regulation of all fisheries in inland waters (including recreational fisheries for bream, freshwater crayfish and native freshwater fish, e.g. blackfish; and commercial fisheries including the eel and whitebait fisheries).
3. Responsibility for securing and promoting –
 - (a) development, improvement and maintenance of those fisheries and the stocking of inland waters with fish.
 - (b) creation, improvement and maintenance of the means of access to inland waters and of associated facilities and conveniences.
 - (c) research and investigation into matters relating to those fisheries.
 - (d) collection, publication and dissemination of information regarding freshwater fish (the definition includes invertebrates also) and inland waters.

Future Policy Recommendations

At the last Commission meeting a 20 point policy plan was unanimously adopted and forwarded to the Government for future consideration. In brief, the main recommendations were that the Government...

1. ... continue to support the existence of the Inland Fisheries Commission in its present form.
2. ... recognise the contribution which the Commission makes towards the management and protection of fisheries in inland waters.
3. ... support a detailed internal review of Commission staffing needs and give consideration to future staff requirements.
4. ... continue to support the construction and maintenance of Commission properties throughout the State as the need arises.
5. ... recognise the Salmon Ponds as an historic site and as a significant tourist attraction.
6. ... support the Commission's desire to develop Salmon Ponds as a viable hatchery and major tourist destination.
7. ... continue to support the establishment of a stream and lake survey team to monitor trout habitat.
8. ... continue the initiative of a \$30 000 per annum allocation on a dollar for dollar basis for Angling Association projects.
9. ... support investigations into the rehabilitation of Shannon Lagoon as a year-round trout fishery.
10. ... support a proposal to improve vehicular access to the James River (between Pillans and Augusta in the

Western Lakes) where a natural snowflake caddis rise occurs.

11. ... convene a joint Inland Fisheries Commission and Lands Department investigation into access, camping and boat launching requirements in the Central Highlands.
12. ... adopt a five year plan for capital expenditure on development projects in the Central Highlands.
13. ... support a review into the development of the commercial eel fishery in tidal and inland waters.
14. ... provide funding for an investigation into the future of the whitebait fishery if an external funding application fails.
15. ... support the development of a sea cage farming industry based on salmon and trout under joint Tasmanian Fisheries Development Authority and Inland Fisheries Commission control.
16. ... encourage continued co-operation between IFC and TFDA on aquaculture development in Tasmanian waters.
17. ... recognise that the IFC is not just a body responsible for stocking inland waters with trout, but has many and varied responsibilities as defined by the Fisheries Act 1959.
18. ... reduce the burden imposed on angling licence sales to support the Commission's budget.
19. ... recognise and support the Commission's responsibilities in future allocations from Consolidated Revenue and Loan Funds.
20. ... encourage the Commission to become more actively involved in the promotion of trout fishing in Tasmania.

New Biologist Appointed

On 17 September, Dr Peter E. Davies was appointed as Scientific Officer with the Commission, stationed at Liawenee.



Dr Davies completed a Bachelor of Science degree at the University of Tasmania in 1977, and Bachelor of Science with Honours in organic chemistry in 1978. He qualified as a Doctor of Philosophy in 1984, submitting a thesis entitled "Chlorothalonil – its Environmental Fate, Toxicology and Metabolism in Fish". Dr Davies was employed as a Post-doctoral Fellow with the Department of Pharmacy, Sydney University, until taking up his appointment with the Commission.

Research interests have included trout farm management and the effects of pesticides on Tasmanian fish. Dr Davies is also interested in fish health and stress, the use of hormones and genetic manipulation in fishery and fish farm management, aquatic pollution and toxicology, and freshwater habitat conservation.

LUNE RIVER NETTING TRIALS

Controversy has arisen over a Tasmanian Fisheries Development Authority/Inland Fisheries Commission agreement to ban netting in the Lune River estuary. Objections were received from local fishermen who felt that they had been deprived of a traditional means of fishing, and as a result, the Commission was asked to conduct netting trials in order to justify the ban.

Staff conducted a preliminary survey (under permit from TFDA) on 31 October and 1 November, after two earlier attempts were aborted due to bad weather. Eight graball nets were set overnight, at various points between the Southport Narrows and the Lune River seaward limits. The catch comprised 7 sea-run brown trout, 20 bream, 2 trumpeter, 2 Australian salmon, 5 cod, 1 flathead, 28 leather jackets and 1 globefish.

The only common table fish caught were trout and bream; the other fish taken are poorly regarded table fish or were not of edible size. The trout were taken from the lower reaches of the Lune River proper (below the seaward limits) and from Ida Bay. The bream came from the same areas as well as from the seaward entrance to Hastings Bay.

The preliminary survey has clearly demonstrated that bream and trout are prone to net capture in the area between Southport Narrows and the seaward limits of the Lune River. A thorough survey is definitely warranted in order to determine seasonal changes in net capture and to investigate the Hastings Bay area in more detail.

WHITEBAIT POACHING

A recent debate in the Legislative Council on the merits of re-opening the commercial fishery for whitebait has created considerable interest among prospective commercial fishermen and sport fishermen alike. No doubt the high price paid for illegal whitebait on the North-West Coast this season has lit up the dollar signs in the eyes of some commercial fishermen.

However, research conducted on the decline of the whitebait fishery in Tasmania has indicated that it was a classic case of commercial over-fishing (see the article in this issue for more information). Only now, after ten years closure, is there an indication of a recovery in the stocks, and this has been hindered by persistent illegal fishing.

During recent months Inland Fisheries Inspectors have apprehended a number of offenders taking whitebait, being in possession of whitebait and selling whitebait illegally. One serious case involved the confiscation of a boat and more than 60 kg of whitebait. In all, 15 persons will be charged for whitebait poaching offences; 110 kg of whitebait and 43 nets have been confiscated.

GRANT FOR TROUT SURVEY

The State Government will provide a special grant of \$100 000 over two years to the Commission to conduct a State-wide survey of trout habitat. The funding allocation will fulfill an election promise which has been strongly supported by Tasmanian anglers. The former Minister, Mr Robson, has long advocated the need

for a management group to obtain more information on Tasmania's river and lake systems.

The funds will be used to investigate changes in trout populations and trout habitat in accordance with modern management programmes for fisheries development. The survey will pay particular attention to trout populations in rivers and streams and will also provide information on the availability of invertebrate food species and on water quality.

Fish populations in rivers will be assessed by electrofishing, a technique which uses an electric current to stun fish so they can be sampled. The method provides an accurate estimate of trout numbers, which will be compared with past records and data from other countries. Lake populations will be studied by test netting, monitoring spawning runs, tagging experiments and checks of angler's catches.

The survey team will provide a valuable public relations platform and an important education tool, as well as providing essential scientific data for the Commission. Anglers will be encouraged to attend electrofishing and netting trials and results will be published in both scientific and layman's terms, with regular reports of findings to the public.

SEA-RUN TROUT, MACQUARIE HARBOUR

Several west coast Municipal Councils have written expressing their concern following the prosecution of a fisherman who had allegedly taken sea-run trout from a graball net set in Macquarie Harbour.

The following summary of the relevant Inland Fisheries Regulations is intended to clarify the responsibilities of fishermen, and the jurisdiction and responsibilities of the Commission, in relation to Macquarie Harbour and other tidal waters.

Regulation 4(1) – Provides that to take trout anywhere during the open season by means of a rod and line, an Angling Licence is required.

Regulation 4(3)(b) – Provides that no person shall take trout from any tidal waters by any means other than a rod and line.

Regulation 4(13) – Provides that a person who uses a net to take native fish shall exercise sufficiently close supervision over the use of the net to ensure that any trout taken accidentally in the net is returned to the water in which it was netted with as little delay as possible and with the least possible injury.

Regulation 22(1) – Provides that no person shall have in his possession any live or dead trout during the closed season (between the 30 April and the Saturday nearest the 1 August).

Regulation 21(5) – Provides that no person shall buy, sell or offer or expose for sale any trout other than trout produced at a licensed fish farm.

It is therefore illegal for anyone to be in possession of fresh trout (other than from a licensed fish farm) during the closed season. There is no point having a closed season if there are any exceptions to the rule. For example, if it were legal to take trout from Macquarie Harbour during the closed season, anyone found in possession of trout during the closed season could claim that the trout were taken from Macquarie Harbour.

It is also illegal to take trout by means other than a rod and line, anywhere at anytime. This protects the sea-run trout fishery from exploitation below the seaward limits of a river. Otherwise, netting at the mouth of a river could decimate the trout run.

The person setting a net is responsible for the proper supervision of the net and should avoid setting nets at times and in

areas frequented by sea-run trout. If a trout is accidentally caught it must be returned to the water. If sea-run trout are taken regularly, nets should not be set in the area, or should be checked frequently so that trout can be returned unharmed.

Also, it is important to point out that an Angling Licence is required in order to take trout on a rod and line and, it is illegal to buy or sell wild trout at any time.

RAINBOW TROUT SPAWNING RUN

The rainbow trout spawning run in Liawenee Canal was disappointing this year. Although the spawners were in excellent condition, only 1 200 were counted through the trap. During the run, 100 male and 100 female rainbows were measured, weighed and scale sampled. The fish ranged in weight from 550 to 2 300 g and averaged approximately 1 500 g (3½ lb).

At Lagoon of Islands, rainbow trout ran up Mary Creek and also entered the new Ripple Creek spawning channel to spawn. During the peak of spawning, 70 rainbows up to 4 000 g in weight entered Mary Creek and 43 rainbows were counted in the spawning channel when the flow was reduced for maintenance.

The number of spawning rainbow trout at Penstock Lagoon seems to be increasing each year. Rainbows were seen in No.1 and No.2 canals throughout most of August and September, and during the peak of spawning activity some 200 fish were counted. Many fish made use of the improved spawning beds in No.2 canal (thanks to the Fly-Fishers' Club) and certainly had no difficulty jumping the modified weir.

The rainbow trout spawning run in the Dee River and Mentmore Creek at Dee Lagoon was the best seen for several years. Rainbows also spawned successfully in Mountain Creek at Lake Sorell.

Brown Trout Fry Liberations

Brown trout fry liberations for the current year have now been completed and the details are set out below.

Name of Water Stocked (or dam owner)	Locality	Number of Fry		
Central Highlands			Northern Tasmania	
Lake Crescent		100 000	Storage Dam	Beaconsfield 10 000
Penstock Lagoon		100 000	Bruins Dam	Beaconsfield 10 000
Lake Leake		100 000	Brandy Creek Dam	Beaconsfield 10 000
Tooms Lake		50 000	Blackmans Lagoon	Scottsdale Rearing 100 000
North Western Tasmania			A. Badcock	Glenore 5 000
Pet River Dam		15 000	J. Boevink	Legana 100
Guide River Dam		10 000	A. Butcher	Hagley 1 000
Lake No Where Else		5 000	Bishopsbourne Branch	Bishopsbourne 4 000
Lake Isandula		3 000	S. Clarke	Hoggs Lane 2 000
Yaxleys Juvenile Pond	Latrobe	2 000	A. Clayton	Black Hills 2 000
North Motton Rearing Unit	North Motton	50 000	T. Dobson	Bracknell 1 000
Penguin Rearing Pond	Penguin	5 000	Homevale Pond	Longford 10 000
Rearing Pond	Sassafras	4 000	R. Mitchelson	Westbury 5 000
Rearing Pond	Forest	5 000	M. McGee	Quamby Bend 1 000
S. Aitken	West Pine	1 000	P. McGee	Quamby Bend 1 000
A. Applebee (2)	Riana	2 000	L. Plunkett	Westbury 2 000
B. Bonney (2)	Moriarty	2 000	Ringarooma Branch (3)	Ringarooma 30 000
D. Briggs (2)	Forthside	2 000	S. Scott	Hagley 2 000
C. Evans	Burnie	1 000	B. Vasie (2)	Frankford Highway 1 000
B. Fielding	South Riana	1 000	Miami Forestry Reserve	Avoca 1 000
R. Gee	Penguin	2 000	Southern Tasmania	
L. Harris	Penguin	1 000	Big Lagoon	Bruny Island 20 000
G. Jones	Henrietta	5 000	Coal River	Richmond 30 000
G. Kelly	Natone	1 000	Derwent River	Bryn Estyn 20 000
E. Loane	Devonport	1 000	Lake Dulverton	Oatlands 45 000
G. Mundy (2)	Cuprona	2 000	Pawleena Dam	Sorell 20 000
L. Neal (5)	Yolla	5 000	Rileys Creek Dam	Geeveston 40 000
W. Owen (2)	Moltema	2 000	Rostrevor Dam	Triabunna 10 000
T. Smith	South Riana	1 000	G.M. Burbury	"Ratharney" 4 000
O. Wootten (5)	Devonport	5 000	E. Long	Nicholls Rivulet 1 000
			J.M. McEwan	"Trefusis" 5 000
			E. Smith	"Kullaroo" 7 000
				TOTAL 883 100

SOUTHERN SEA-RUNNERS

Joe Millen

Associate Commissioner, Southern Tasmania

At the invitation of a resident and keen fly-fisherman of Dover, I visited the area to inspect (and fish) two rivers, the Esperance and Lune. My observations are summarised in this article.

Esperance River

A very popular river, fished regularly by the locals during the whitebait runs, from August to October. Favoured methods are spinning, fly-fishing and the occasional use of 'live bait'. The majority of anglers fish from the bridge whilst the more experienced 'old hands' use dapping methods from the river bank. The anglers are constantly on the lookout for working trout and it would appear that very little blind fishing is done. Due to the thick growth of scrub on both sides of the river bank, access is severely limited and unfortunately completely restricts conventional fly-fishing apart from a few isolated clearings.

Heavy runs of whitebait were in evidence (I would say in the millions) with many sea-runners feeding, but unfortunately only spasmodically due to a heavy flow of fresh water after recent rains. Local anglers told me that run-off from heavy rains and snow will put the trout down, even though the river could be choked with whitebait.

My efforts with the fly would not induce a take. However, my eldest son had two charges at a fly floated off the bridge.

Many sea-runners have been caught to date ranging from 2 lb to 7 lb. Unfortunately the river is periodically netted illegally, which decimates the sea-runners, especially the larger fish.

Lune River

I was impressed with this river. A very heavy run of whitebait was in evidence with many fish feeding. Again, due to a strong flow of fresh water, the sea-runners charged about in only short and quick runs. Apparently, when the conditions are just right, the trout feed in a frenzy in quite regular cycles, lasting ten minutes or more. As with the Esperance, thick scrub prevents access and restricts fishing to a few clearings. Again, fishing from the wooden bridge is popular.

The previous week, one angler caught 15 sea-runners up to 6 lb and, at the time of my visit, the heaviest known to have been caught for the season was a 9 lb fish, landed a couple of days before my visit.

My companion showed me the method of fly-dapping used and we had turns in trying to catch a regular worker of about 5-6 lb - without success. The sea-runners appear to herd the whitebait from beneath in ever decreasing circles, culminating in a spectacular charge at the shoal. Immediately prior to the charge, the whitebait panic by darting about frantically and leaping out of the water. After the explosive charge, many whitebait are stunned or dead, leaving easy pickings for the trout. All this is happening no more than 2-3 metres away - quite heart stopping!

The shoals of whitebait were so thick that I actually caught a specimen on my fly; my companion hooked two individuals at the same time!

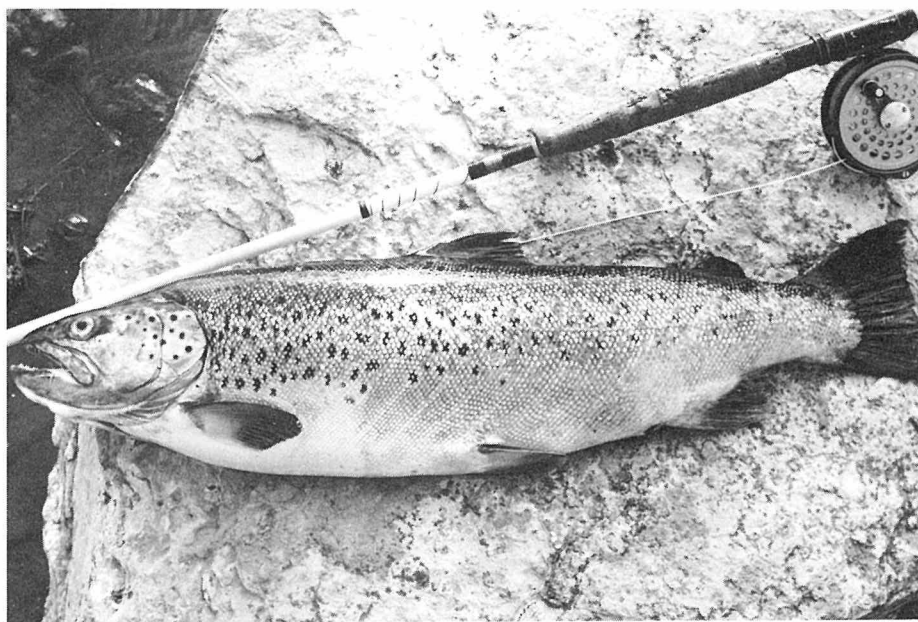
The Lune appears not as heavily fished as the Esperance which also has a run of larger sea-runners. Illegal netting is again a problem, especially a few kilometres down river.

Summary

Both rivers have excellent runs of whitebait, which have steadily increased over recent years culminating in this year's spectacular run. Marvellous fishing is provided, even though it is severely restricted by access. However, for the keen and persistent angler, magnificent sea-run trout are there to be caught. From all reports, many fish are caught each year, with occasional large specimens. The cutting of access tracks and some river bank clearing could vastly improve fishing in these areas.

Later

Subsequent to my visit I received news of an 8 lb sea-runner caught in the Esperance River the day after my visit, with a further specimen of 14 lb the following day. Both fish were in excellent condition.



Big sea-run trout, worth catching!

Rainbow Trout Opening Weekend

Fine weather greeted anglers for the opening of the 1984 rainbow trout season on Saturday 3 November.

At Lake Rowallan more than 40 vehicles and many boats attended the opening morning. Twenty-two fish were landed by the 29 anglers interviewed during the morning.

Dee Lagoon opened quietly with 33 anglers landing 20 fish for the morning. At both Rowallan and Dee, browns and rainbows were taken in almost equal numbers. Trolling with Cobra wobblers and Flatfish accounted for most fish.

Inspectors had a busy weekend at Lagoon of Islands; at one stage on Saturday morning 96 cars were counted. During the weekend 58 anglers were checked for 23 fish, 12 brown and 11 rainbow. The browns were in slightly better condition than the rainbows and it appeared that most fish had spawned successfully. The largest rainbow from Lagoon of Islands weighed 2 600 g uncleaned and the largest brown weighed 4 085 g. The best bag was taken by a Bellerive angler - 3 browns and 1 rainbow all over 2 000 g in weight. In general the best catches were taken on the fly.

Seventy-seven anglers interviewed at Great Lake on opening morning had landed 44 trout, the majority taken on

natural bait. Of the 30 rainbow trout taken, the largest weighed 1 500 g. In general, the condition of the brown trout landed was disappointing.

Licence Fees 1984/85

	\$
Full Season (male and female) ...	24.00
Full Season - Juveniles 16 years and 17 years	4.00
14 days duration	16.00
3 days duration	8.00

A person under 16 years does not require a licence nor does a person in possession of a Pensioner Health Benefit Card.

WHITEBAIT WIPEOUT

Wayne Fulton
Inland Fisheries Commission Biologist, Hobart

History of the Fishery

The commercial fishery for whitebait dates back at least until the early 1930's, when this delicacy sold for 200 to 300 fish per penny. Significant commercial fisheries began in the south in 1941 and in the north in 1943, and licensing of fishermen by the Tasmanian Fisheries Division was introduced in 1944. Production was always greater in the northern rivers because these rivers have shorter, shallower tidal reaches which make fishing much easier.

The peak whitebait catch of 483 076 kg was taken in 1947 (Fig. 1); however, there were more licences issued in this year and the catch per licence was down on previous years. A closed season was imposed in 1949 and future annual quotas were suggested. The season was again opened in 1950 but in this and subsequent years catches did not even approach the quotas set.

In 1957 further deregulation of the fishery occurred despite the fact that the catches for 1956 and 1957 were the lowest since the fishery began. The ban on weekend fishing was removed and an earlier opening to the season was allowed. The decline in production continued without any attempts to rectify the situation.

Control of the fishery was transferred to the Inland Fisheries Commission in 1965. This change made no difference as there was still no attempt made to arrest the decline in stocks which continued until closure of the fishery by regulation in 1974. This was to have been for a three year period only, but trials by commercial fishermen in 1976 resulted in poor catches and the season has therefore remained closed. At its peak, whitebaiting provided direct, part, or full-time seasonal employment for about 230 persons. Numbers declined to about 65 by 1960 whilst only 21 fishermen participated in 1973.

In recent seasons some encouraging runs have occurred in certain rivers but poaching has been a serious problem. At the present time the populations are not considered to have recovered significantly to be stable enough to justify a hasty decision to re-open the fishery. The graph (Fig. 1) records the catch data for the fishery up until its closure after the 1973 season.

Species Composition

In the whitebait runs, five species of fish are commonly found.

Tasmanian whitebait	<i>Lovettia sealii</i>
Jollytail	<i>Galaxias maculatus</i>
Spotted galaxias	<i>Galaxias truttaceus</i>
Climbing galaxias	<i>Galaxias brevipinnis</i>
Smelt	<i>Retropinna tasmanica</i>

The three galaxias also occur outside Tasmania with the jollytail being the predominant fish in the New Zealand whitebait fishery. The Tasmanian whitebait and the smelt are only found in this State.

Whitebait runs generally occur from August to December with some annual and local variation in the timing of the peak. The major run has usually finished by November. The composition of the run

varies through the season with *Lovettia* tending to arrive earlier than the galaxias.

The most noticeable change to the whitebait runs over the years has been in the percentage contribution of each species. In a study carried out during the late 1940's the runs consisted of about 95% *Lovettia*. However, by 1965 a change in the nature of the fishery was suggested by the composition of runs in the northern rivers, where the percentage of *Lovettia* had fallen to only 25% of the catch.

From samples of whitebait collected by the Inland Fisheries Commission over the past three seasons, it is evident that there has been little change to this position in the northern rivers. However, the Derwent River samples have contained about 40% *Lovettia*, whilst this was the only species collected in the Huon River samples.

The changes in percentage composition of the runs in northern rivers are undoubtedly due to reduction in the overall numbers of *Lovettia* rather than an increase in the abundance of the other

species. The overall decline in abundance of the total whitebait run is evidence of this.

Before the reasons for this decline can be examined, some details of the life history of the species require explanation.

Life History

When captured in the whitebait runs, the three galaxias are all about 6 months of age. They are immature juvenile stages migrating into freshwater where they grow to maturity in upstream areas. Spawning in these species takes place in autumn. The jollytail adults migrate downstream to the estuaries to spawn whilst the other two galaxias species apparently spawn at or near their habitat in the streams. After hatching, the young are washed to sea to return the following spring.

The life cycle of the smelt is not fully known. Both juvenile and adult fish of this species may be caught in the whitebait runs.

In contrast to the galaxias, *Lovettia* is returning to the estuaries in spring as a

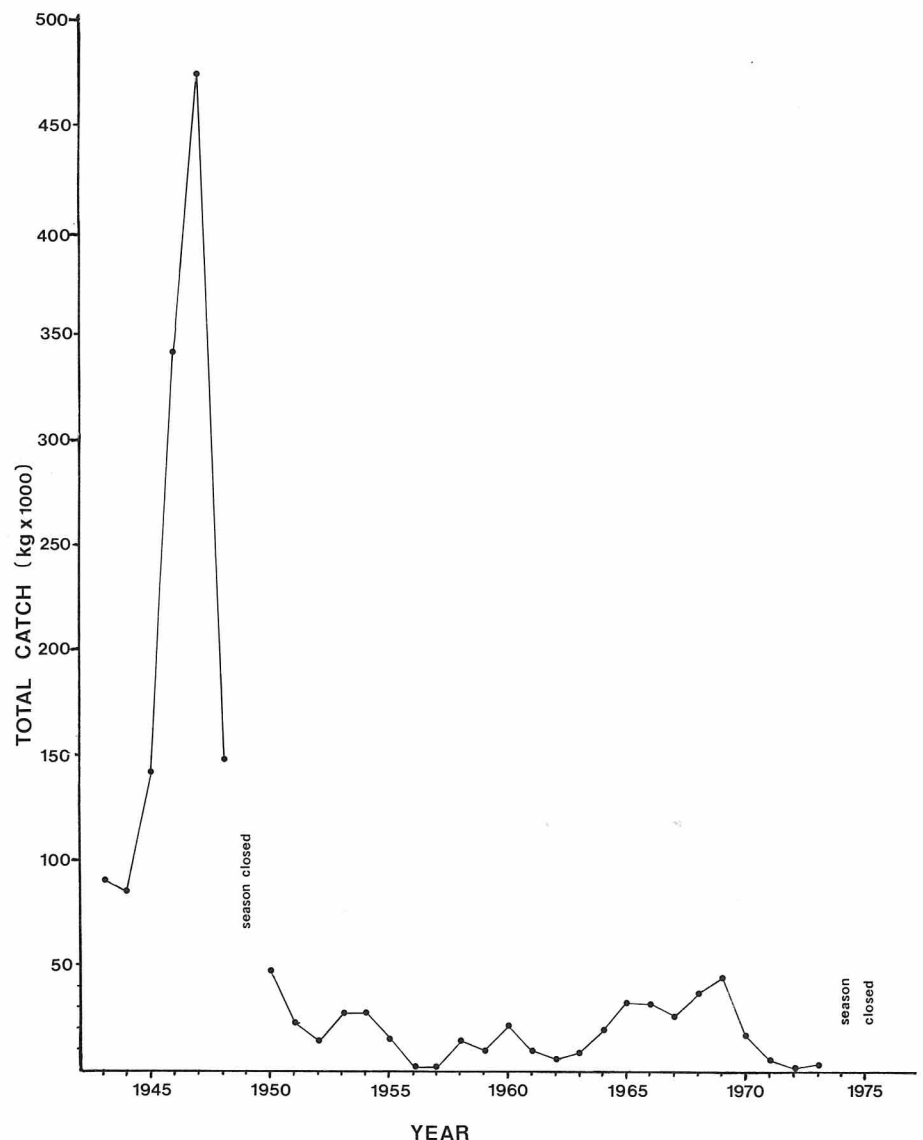


FIG.1: Seasonal catch data for the Tasmanian whitebait fishery.

mature adult. It is 12 months old at this stage. Spawning takes place in the estuaries, the fish do not enter flowing freshwater. The eggs are adhesive and are attached to submerged logs, stones, branches etc. *Lovettia* does not survive to spawn a second time although it does not die immediately after spawning.

The length of life and the estuarine spawning site of *Lovettia* are the two most important factors in the decline of this species. Its one year life cycle means that any catastrophe such as overfishing, pollution, heavy floods, or drought could wipe out much of the subsequent years run. The estuarine spawning sites are subject to considerable pollution which may have affected survival.

On the other hand, the survival of the galaxias species is firstly dependent on their ability to migrate upstream. Many coastal streams are blocked by weirs which retard their migration, whilst further upstream, larger dams halt the movements of these species. Draining and reclamation of tidal marshes may also have limited the spawning areas available to the jollytail.

Whitebait and Trout

The introduction of trout may have had some effect on whitebait populations, but it cannot have been significant as their ranges had overlapped for nearly 80 years before the peak of the whitebait fishery in the 1940's.

A more important facet of this relationship is the frequently observed concentration of trout in the margins of the estuaries where they feed amongst the whitebait schools. This has the effect of increasing the catch return of sea-run trout to the angler. In years of poor whitebait runs, trout catches in estuaries have been correspondingly poor, presumably because the trout are feeding on the bottom and are generally out of reach to the shore-based angler.

The effect on the trout fishery is very significant when some figures are considered. In 1961 the whitebait fishery in the northern rivers was the part-time interest of 65 persons, whilst trout fishing in the same rivers was the part-time interest of over 6 500 local north-west coast residents.

The Future

Due to the changes that have occurred in the river and estuary systems and the low level to which the whitebait stocks have declined, it is unlikely that the populations could ever again support an extensive commercial fishery. Whilst the stocks are at such low levels the effects of poaching are much more serious and will certainly prevent any recovery in some areas – a recovery that could see the possibility of limited access in the future.

The Commission is aware that recent whitebait runs have been encouraging, but it is necessary for these runs to be sustained over several years before exploitation of the fish could be contemplated. Management of the whitebait resource cannot be based merely on subjective personal assessments, but must be based on thorough biological research. For this reason an application is being submitted for Commonwealth funding from the Fishing Industry Research Trust Account (FIRTA) for a study of whitebait stocks. If this application is not successful, State Government or alternative funding will be sought.

Prosecutions

Successful prosecutions since the last Newsletter are listed below.

Court Date	Offender and Address	Nature of Offence	Fine	Costs	Penalty
19.6.84	Graham Lewis BURNS RSD 877 Kelso	Unattended set rod.	40.00	15.10	
19.6.84	Steven Thomas ATKINSON	Take freshwater crayfish.	25.00	46.00	
19.6.84	Bradley John QUILLAM	Take freshwater crayfish.	25.00	46.00	
12.7.84	Aubrey David STEERS 164 David Street East Devonport	Unattended set rod.	30.00	15.10	
12.7.84	John Edwin SHAW 123 Nicholls Street Devonport	Unattended set rod.	30.00	15.10	
12.7.84	Maxwell Alexander LEARY 2A Symbister Street Devonport	Unattended set rod.	30.00	15.10	
12.7.84	Peter Christopher SHAW 123 Nicholls Street Devonport	Unattended set rod.	30.00	15.10	
12.7.84	Stephen Clifton SHAW 123 Nicholls Street Devonport	Unattended set rod.	30.00	15.10	
19.7.84	Wayne Maxwell SMITH Main Road Bagdad	Threaten an officer. Use a light to take fish. Take fish other than rod. Take acclimatised fish. Possession of net.	50.00 60.00 20.00 50.00 20.00	23.10 15.10 15.10	
6.8.84	Michael William ATKINS 3 Margaret Street Devonport	Take whitebait.	50.00	15.10	
14.8.84	Stephen GLEESON 4 Lockhart Street Launceston	Use natural bait. Possession natural bait.	20.00 20.00	15.10	
21.8.84	Lester John TOMLIN Main Road Hamilton	More than 1 rod and line.	20.00	15.10	
24.8.84	Peter Judd FISKE Moss Road Heyfield, NSW	Take fish from closed water.	20.00	15.10	15.00
24.8.84	Francis James HODGE P.O. Box 80 Heyfield, NSW	Take fish from closed water.	20.00	15.10	21.00
22.8.84	Gerald David PURTON Gawler	Use artificial lure.	50.00	15.10	
22.8.84	Terry Brett ROOTES RSD 326 Ulverstone	Take fish from closed water. Other than rod and line. Disturb spawning fish.	50.00 50.00	15.10	10.00
20.8.84	Wayne Rodney BARRY 135 Pellissier Street Somerset	Fishing without licence. Representing to be licensed. Use licence of another person. Give false name. Give false address.	100.00 50.00 75.00	15.10	
22.8.84	Shane MARTIN 147 Main Street Sheffield	Disturb spawning fish. Other than rod and line. Take fish from closed water.	40.00 40.00 50.00	7.55	30.00
22.8.84	Brett Lee WOODBERRY Barrington Road Sheffield	Disturb spawning fish. Other than rod and line Take fish from closed water	40.00 40.00 50.00	7.55	30.00
24.8.84	Lindon John WASTON 11 Temple Street Heyfield, NSW	Take fish from closed water.	20.00	15.10	10.00
24.8.84	Raymond Peter LONERGAN 14 Woodlands Drive Blackmans Bay	Representing to be licensed. Use licence of another person. Give false name.	50.00	15.10	Adjourned sine die Adjourned sine die
20.8.84	David CLARK Agnes Street Rosebery	Offer brown trout for sale.	20.00	30.10	30.00
10.10.84	Robert Michael FEE 57 Hunter Street Queenstown	Possession of trout during closed season. Other than rod and line.			Probation of Offenders Probation of Offenders
3.10.84	Charles Allen JOHNSON 13 Lukin Street Turners Beach	Disturb spawning fish. Other than rod and line. Take trout from waters flowing into Great Lake.	15.00 25.00 50.00	15.10	105.00
3.10.84	Kevin Gordon CORBETT 151 Main Street Ulverstone	Obstruct an officer. Disturb spawning fish. Other than rod and line. Take trout from waters flowing into Great Lake.	50.00 15.00 25.00 50.00	15.10	105.00
3.10.84	John Kenneth STEVENSON 14 Hilltop Avenue Devonport	More than 1 rod and line.	25.00	15.10	
5.10.84	Victor Vincent TUBB Elizabeth Street Bracknell	Disturb spawning fish. Other than rod and line. Take fish from closed water.	20.00 20.00	15.10	90.00
5.10.84	Rudolph Edwin TUBB Blackwood Creek	Disturb spawning fish. Fishing without licence. Other than rod and line. Take fish from closed water.	20.00 20.00	15.10	130.00