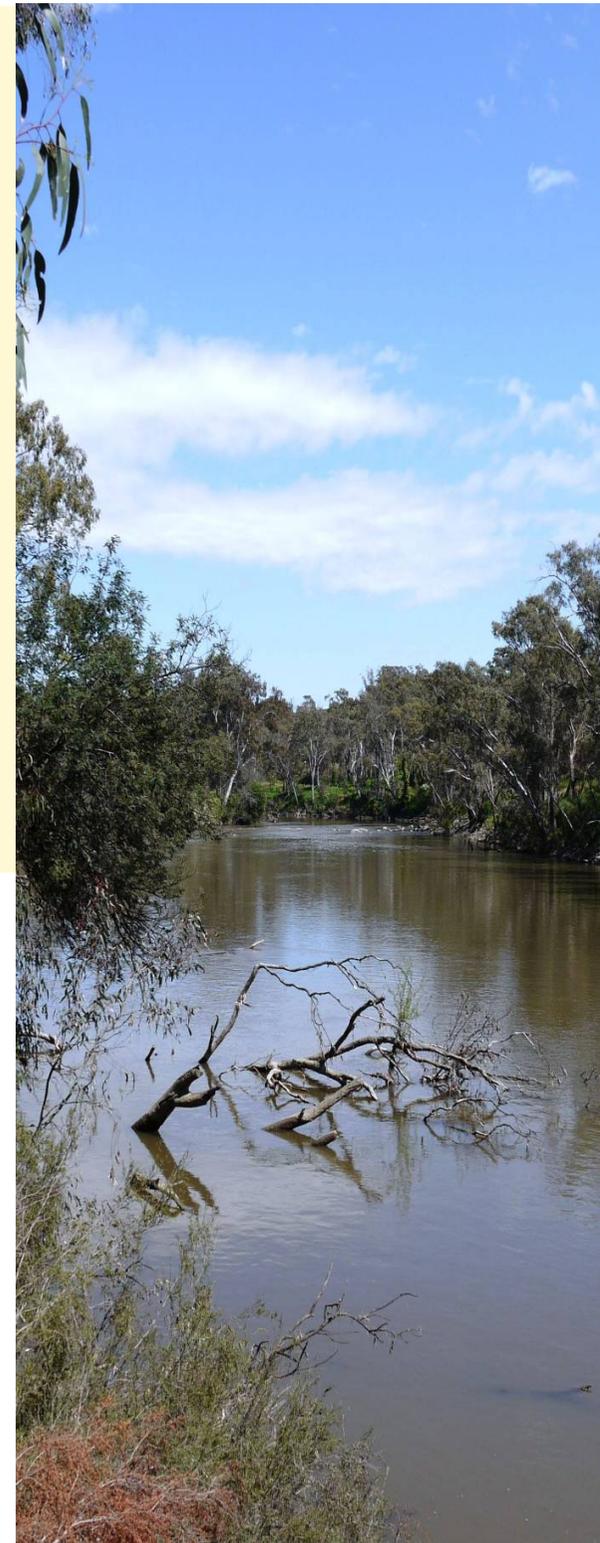


Goulburn



Talking fish

Making connections with the rivers of the Murray-Darling Basin



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Aboriginal readers are warned that this publication may contain the names and images of Aboriginal people who have since passed away.

The rivers of the Murray-Darling Basin

The rivers and creeks of the Murray-Darling Basin flow through Queensland, New South Wales, the Australian Capital Territory, Victoria and South Australia. The 77 000km of waterways that make up the Basin link 23 catchments over an area of 1 million km².

Each river has its own character yet these waters, the fish, the plants, and the people that rely on them are all different.

The booklets in this series are about how the rivers, fish and fishing have changed. The main stories are written from oral history interviews conducted with local fishers in 2010-11, and relate individuals' memories of how their local places have changed. They showcase three ways of knowing the Goulburn River: personal experience, scientific research and historical research. Just as individual fishers do not always agree with one another, so their understanding might not necessarily agree with current scientific information or historical records. Similarly, specific items and events might be remembered differently by different people. These varied perspectives show the range in views about fishing and the rivers, each important in its own way. There are many other great stories out there about fishing in the Murray-Darling Basin. These booklets are just the beginning.

Acknowledgements - Goulburn

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Source: Luke Pearce.

Source: Seymour Anglers.

Source: Seymour Anglers.

Source: Seymour Anglers.

Source: Jodi Frawley.

Back page fish images

All fish images: NSW DPI.

*... the water was **clear**; we could see the **fish** swimming about; the **banks** of the river were solid with **trees**. We used to **fish** beneath its shade.*

The Argus (Melbourne, Vic.), Friday 8 October 1937, page 12



The Goulburn River's cold, clear waters rush westward down from the steep hills and mountains of the Great Dividing Range toward Seymour. The river then turns northward and meanders through hills and plains until the river meets the Murray upstream of Echuca. These are the traditional lands of the Taungurung, Bangerang and Yorta Yorta peoples. However, the Goulburn River today is not the river the Taungurung, Bangerang and Yorta Yorta once knew and fished.

Since Europeans arrived the health of the river and its fish has been shaped by the people who came to live there and the industries that developed. The gold rushes and grazing, dryland farming and horticulture all needed different types of workers, bringing new people with new needs to the river and new ways to catch fish. Water is now stored in Lake Eildon and controlled by Goulburn Weir at Nagambie. Flows peak in summer to meet irrigation needs and drops off in winter/spring.

These changes mean there are a lot less fish than there were. Before the turn of the twentieth century, there are many stories of catching Macquarie perch, Murray cod, trout cod, blackfish and yellowbelly. There were no carp, no redfin and no trout. Now, there are very few Macquarie perch and no trout cod.

There are still those who love the river and who love to fish the river. Their stories are part of the bigger story of changes to the Goulburn and its fish. They help us remember that the river we see now is not what the river was and can be again. People want to talk about a future for the Goulburn and their visions for a healthy river that is, once again, full of fish.

Introducing the river and its people

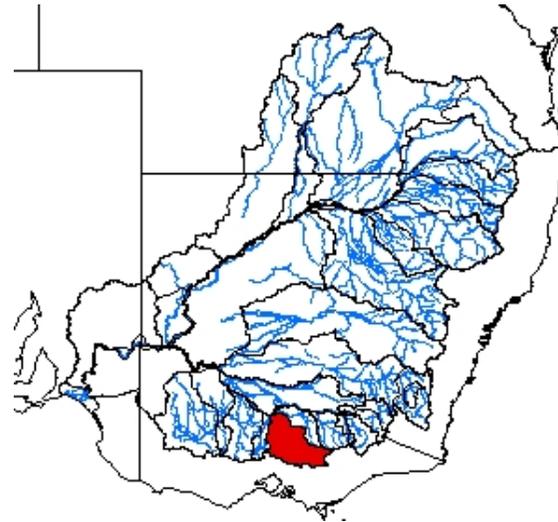
Beginnings

Dr Wayne Atkinson, a Yorta Yorta man, tells the creation story of the Goulburn and Murray Rivers:

Baiame created the river by sending his woman down from the high country with her yam stick to journey across the flat and waterless plain. Baiame then sent his giant snake along to watch over her. She walked for many weary miles, drawing a track in the sand with her stick, and behind her came the giant snake following in and out and all about, making the curves of the river bed with his body. Then Baiame spoke in a voice of thunder, from up high. Lightning flashed and rain fell, and water came flowing down the track made by the woman and the snake.¹⁴



Allowidgee, pictured fishing using a bark canoe and reed spear in a way common to Yorta Yorta men. He is shown here at Maloga on the nearby Murray River. Photo source: State Library of South Australia, PRG422.3.704.



The arrival of the Europeans

Hamilton Hume¹ and William Hovell² passed through the Goulburn River area in 1824, seeking a passage from Sydney to Spencer Gulf. The team camped near the present site of Seymour for two days at Christmas 'in order that they might avail themselves of the fine fish which abound in its waters, as well as refresh the cattle.'³

Early British settlement followed the rivers. The first grazing properties were set up on the banks of the Goulburn in the early 1830s. Then gold rushes of the 1850s bought many

new people to northern Victoria. Chinese people joined diggers and Aboriginal people and, by the 1860s, new towns supported the smaller yeoman farms championed by the government.

Problems were emerging however from mining activities. The shaft mines that had been sunk in the Upper Goulburn caused heavy metals and silt to be washed into the river. One old-timer lamented in 1896:

When my husband and I came here first the water was clear; we could see the fish swimming about; the banks of the river were solid with trees. We used to fish beneath its shade. The goldmines did this, they cut the timber down for firewood and pit props, and bushfires killed the trees on the mountains, and then the floods came and tore the river banks to pieces; and you see what followed.⁴



Boating on the river at Echuca (date unknown). Image source: Wangaratta Library.

By the 1890s the lower reaches of the river were supporting production of wheat, fruits, wine grapes and a wide variety of fodder crops. Grazing, dairy farms, piggeries and butter factories continued to flourish in the upper reaches.⁵ However, the decades of land clearing increased siltation and the altered flow of the river changed the habitat for native fish.

In the twentieth century, the river was regularly stocked with non-native fish, such as trout, and carp arrived.

The Goulburn became a popular spot for people, including Aboriginal people, to fish for the introduced trout and redfin. It remains one of the most popular inland angling spots for native fish as well, including Murray cod, yellowbelly, Macquarie perch and blackfish.



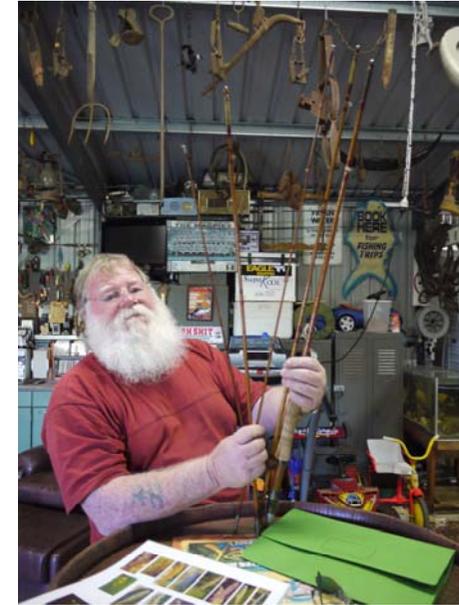
Catching a large Murray cod is a memorable moment for any fisher, and Jody Liversidge is proud of this beautiful 35kg fish she caught in the Goulburn River in 2006. Photo source: Jody Liversidge.



For nearly 90 years, **Ken Gilmore** has lived by and fished in the Goulburn River. Photo source: Ken Gilmore.



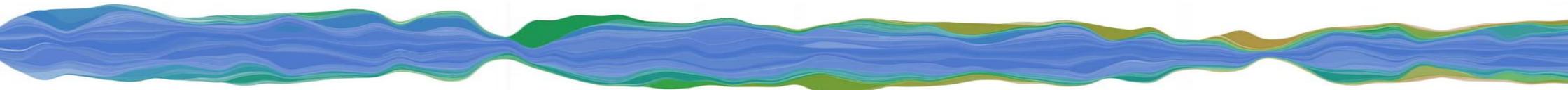
Mick Hall is a passionate and competitive fly fisher. Photo source: Mick Hall.



Donny Richter is teaching his grandson the art of fishing, not just how to fish. Photo: Jody Frawley.



Kaye and Gary Gibb are members of the Seymour Angling Club. Photo: Jody Frawley.



Ken Gilmore – *True story! I'm not telling you a lie!*



Photo source: Ken Gilmore

Ken Gilmore was born in 1922. He and his nine brothers and sisters were raised at *Hughendon*, a grazing and dairy farm and the only property left in the district that has a settler's title on it from the 1860s.

Catch all the fish you want

Both the Rubicon and Goulburn rivers border the farm and were close enough to the homestead that the family fished regularly along its banks.

We used to swim in the river every day during the summertime. And we'd all go fishing, especially if there was a thunder storm approaching. We used to go down armed with worms and so forth and we'd get onto a shoal of bream. We'd fill a sugar bag in about half an hour and what we couldn't eat we used to let go because we didn't have any refrigeration back in those days. Therefore we weren't greedy, but you could catch all the fish you wanted.

'Bream' were what Ken's family called Macquarie perch. Others knew them as black bream, Murray bream, white eye or blackfish. They were plentiful in the Goulburn River when Ken was growing up. They have since become very rare. Another local fisher, Jim Hanley, also remembers catching them.

The Macquarie perch have been gone for many years. I've never seen one come out of the river upstream from Nagambie Weir. But my father used to catch them and Macquarie perch are still locally living in the Hughes Creeks.

Kids going fishing

With a big family of cousins all living locally, the Gilmore kids would often hang out amongst the shady trees lining the rivers.

When they were sent to go rabbiting, they would take their rods along. And a game of cricket on the flat for some of the kids meant that others could throw a line in while they waited for their turn at the bat. Ken recalls the fish they caught:

There were all types: not many yellowbelly, compared with the cod and the bream. They were the main ones. But there were the odd

yellowbelly. Blackfish too. We used to like that then, little 'greasys' we used to call them. They were very sweet. Nice little fish to eat.

Ken remembers that other fish had to be hunted in the off-river areas.

They used to get catfish in the old days. In the lagoons mainly. They weren't in the river. We weren't very fond of them, though. Some people like them. I didn't like the look of them. They're horrible, horrible looking things.



Melbourne railway workers used to regularly come to Hughendon for week long spells of camping and fishing. Ken remembers: *We got a lot of people from Melbourne, year after year. Some came every year for 50 years. They used to pitch their tents on the Goulburn, and then they bought their caravans.*

Photo source: Ken Gilmore.

Macquarie perch

(*Macquaria australasica* - macca, Murray bream, black bream, mountain perch, white eye, blackfish)



Photo: Luke Pearce.

- Medium sized fish: can reach 46cm, but usually less than 35cm and 1kg
- Found in the cool water in the upper reaches of the Murray-Darling in Victoria, NSW and the ACT
- Spawn in October-December when adults move into tributaries and spawn at the foot of pools
- Eat shrimp and small, bottom dwelling aquatic insects
- Potential threats include interactions with trout and redfin, sedimentation, removal of riparian vegetation, barriers to migration and cold water pollution
- Listed as 'Threatened' in Victoria, and as 'Endangered' by the Commonwealth

Catching fish?

Like many people along the Goulburn River, Ken saw all sorts of ways to fish: rods and reels, handlines, gill nets, drum nets, wire netting and set lines.

My uncle used to have a property up here and he had a set line. He was pretty old and he used to like a fish and one day he left his line in with a worm on it, and he went back the next day and there was no sign of a line. He said 'Where the hell has that line got to?' Anyway, he had a look around, he found the line, he gave it a pull, the next thing a wild duck flew up, out of the blackberry and he'd caught a wild duck on the hook with a worm. True story! I'm not telling you a lie!

Ken remembers the fun he used to have with his friends when they would go fishing.

A Yugoslav friend gave me some lines and they had little bells on the top of them. I was a bit of a devil. I used to ring these bells myself and they used to come racing up to see what I had on my line. Next thing, they were all sitting beside me because I was getting all the bites and it was only me ringing the bells!

The coming of the cold water

The original weir on the Goulburn River, Sugarloaf Reservoir, was built between 1915 and 1929. During construction the weir had to be drained on at least two occasions, generating 'blackwater' events and leading to massive fish kills.

After being modified in 1935, it was enlarged in 1955 and renamed Lake Eildon. It filled in one year with the 1956 floods. This new dam serviced the Goulburn Valley irrigators. It also kept the river levels constant with water from the cold depths of the lake.

Ninety two year old Ron Bain remembers these changes.

Terrific changes! The biggest change was when they built the weir. See they had a small wall, and it operated for quite a few years and then when they built the bigger one, it lowered the flow of water down the river considerably. And then of course it lowered the temperature of the water; and the cod didn't like that. It used to be a beautiful river, you know. It used to get a bit of a flood every two or three years. And of course it left lagoons, so there would be nice fish in the lagoons as well. But all that's gone, there's none of that now.

A river of weirs

In 1884, MLA Alfred Deakin led a 'Royal Commission into Irrigation' and travelled to California and India to investigate infrastructure and schemes. Australia's first major structure was built on the Goulburn River in 1887. This weir formed Lake Nagambie, which became a famous fishing spot for introduced redfin as well as for native fish. By 1893 the weir's channel linked up 400 miles of gravity fed reticulation on the western side of the river.⁵

Sugarloaf Reservoir was built between 1915 and 1929, to increase the storage capacity for the area. Bigger changes were afoot in the 1950s when large dams were engineered to mitigate the impact of flooding and protect communities against drought. In 1955 the new dam - Lake Eildon - was opened, replacing the reservoir.

Unlike towns further downstream, the dam helped the Goulburn River district to escape the worst of the huge flood of 1956.



An old postcard of the Goulburn Weir (date unknown). Image source: Wangaratta Library.

Lake Eildon changed the river of Ken's youth. He was used to swimming in the river but once the weir went in, it was too cold. Ken also remembers how the weir changed the way the river flooded.

As soon as the weir was put in, the water went down to about 10 degrees. You couldn't swim in it. You'd freeze to death if you jumped in. You'd soon jump out again. In the old days, the floods would be up and gone in a couple of days but when they filled the weir up in '56, when we had floods here - they would last about a month. Well, it probably did affect a lot of fish. It happened after they built the weir.

Don Collihole agrees with Ken that the cold water changed the habitat for the native fish.

Pre '56, they used to catch heaps of cod down here. And then they finished Eildon, the water got that cold coming from down the bottom, the cod just couldn't breed.

Don's mate Geoff Vernon, born in 1950, represents a generation of fishers that has never known the Goulburn in its natural state. He caught the introduced trout, rather than the native cod, Macquarie perch or yellowbelly. He remembers:

Mostly trout, 'cause in those days, it was a pretty cold river and that's about all there was around.

Cold water pollution

- Lake Eildon is a large impoundment (3 334GL)
- In such large, deep impoundments the water column can form distinct layers ('thermal stratification') with a layer of cold water forming at the bottom of the dam
- The water is released from the deep parts of the dam, which means the water that flows downstream is colder than would occur naturally
- This is known as 'cold water pollution' (CWP). The impacts of the cold water extend at least 100km downstream¹¹ and this stretch of river is dominated by cold water species such as trout
- CWP can change the types of plants and animals that will live in the affected areas of the river. It can also reduce growth rates in fish and delay or prevent their successful spawning or recruitment. This can lead to increased vulnerability and reduced survival⁹



Lake Eildon. Photo: Fern Hames.

Mick Hall – *Fly flicker extraordinaire*



Photo source: Mick Hall.

Mick Hall was the first Australian to receive the prestigious Sportsmanship Award at the 'One Fly' event in Jackson's Hole, Wyoming, USA, in 1996.

That's a long journey from Relubbus on the River Hayle in England where he was born in 1941.

Fishing got hold of me

He got an early start with trout fishing by exploring the river that ran alongside the family cottage. He was four! He came to Australia in 1949 and as a teenager reacquainted himself with trout in the rivers near Melbourne. At fourteen, he says, he was hooked:

That's when it got hold of me. You know, that disease – it's lasted all my life. I've played around with other stuff but trout fishing's been my love.

As a young man Mick lived on the outskirts of Melbourne, so he and his mates could head up to the river at a moment's notice.

They even took mid-week jaunts by skipping out of work early some days and driving the hour and half to the Goulburn. They would fish for a few hours and be back on the road by 9.00pm. At the weekends they'd camp.

I first started coming up in the '50s as a teenager. I had a car and couple of mates and we'd do the typical thing. Camp on the river, drink too much, fish too much, stay up all night, drive back home the next day, go to a disco or something, then off to work on the Monday morning. But every weekend we used to come away fishing.

Fishing in the Goulburn River in the early days meant chasing whatever was in the water. But Mick decided early on that it was fly-fishing that was worth pursuing.

And I always wanted to learn to fly fish. I could see there was a lot of merit because there were so many challenges in it. We were at the Thornton Bridge and we'd had a big day fishing since very early in the morning. This guy came up the river and he's flicking a fly line around. I said 'there's some the other side. I've been watching them rising'. And he goes and he catches them. My jaw just went ba-boom; 'I gotta do this. I just gotta do this!' I've been a 'fly flicker' every since.



Bill Austin giving other would-be fly fishers a distance casting demonstration at Eildon in 1945. He is handling 30 yards of line with an Australian-made cane rod. Photo source: Mick Hall.

Reading the river

Trout fishing in the Goulburn River area and in Lake Eildon is mostly done off the banks, rather than from in boats. For Mick, finding the perfect little stream where trout lived was a matter of tramping around the upper reaches of the river and learning as much about trout habitat as he could.

Mick remembers that in the 1960s, as it is today, it was the colour of the water that was an important indicator.

You could read the rivers by the colours. In the smaller mountain streams, you'd see various colours of khaki that reflected back off the bottom and the deeper the colour, the darker the water, the deeper the water and that's where you'd find the fish. Especially if it had surface movement on it like bubble lines or where the water was tumbling a little bit. Because that gave protection for the fish. They couldn't be seen from above by the birds. When you got good at it, you really did get the results. But it took time.

The lure of the fly

Fly fishing depends on the artificial fly looking tasty to a fish: the best ones look like the insects the fish eat. Mick has spent many hours with feathers, yarn, twine and hessian threads copying what he has seen in the river.

Through the spring and summer months we always get a lot of insect hatches, a lot of terrestrial stuff; from beetles through to grasshoppers, ants, this sort of thing that were on the water all the time, as well as our aquatic sources; be they stone flies, be they caddis, midge or mayfly. It's all there, and we've seen their major occurrences, and then the fish feeding on them. And from this we've learnt more about the bugs and their habits and what they needed. And just how vulnerable they are to changes in the system.

Aboriginal fishing gear

Over the nineteenth century Aboriginal people continued to live along the Goulburn River. Women carried fish hooks made from mussel shells and used kidney fat for attracting the fish. Hooks were attached to coil made from river reed and cast into the river or trolled behind boats around deeper holes in the river. Short spears were used for diving and longer spears were used from canoes.

Aboriginal men also used a spear set aside entirely for killing fish. At five feet long and an inch thick the spear was not thrown, but used as a lance. Peter Beveridge, observing fishing in Victoria and the Riverina in the 1880s, noted: ... *they select a stretch of shallow water, full of reeds and other aquatic plants, over which the wary fisherman propels his canoe Every now and then he thrusts the plain end of the stick sharply to the bottom, thereby disturbing the feeding fish. As a matter of course they rush away from the disturbance shaking the plants in their hurry, which at once tells the keen-eyed fisherman the position of his prey*.⁶

Different sorts of nets were used for different creatures from the river: some for Murray crays and others for catching birds, including ducks. Nets ninety metres long and one and a half metres wide were weighted on the bottom with clay and had floats made from reeds.

These nets were drawn through the water by the men, and the women and children sorted and picked the catch of cod, silver and golden perch, catfish, blackfish and turtles.



The 'red tag' (left) is a classic fly used to catch trout. Flies are designed to mimic the food that each fish species chases. Mayflies- like the Aussie March Brown (*Atalophlebia australis*), right, are favourites of both trout and native fish.

Photos: Luke Pearce.



Native fish, such as Murray cod, can also be caught on a fly. The flies that attract native fish are different to those that attract trout. Photo: Luke Pearce.

Cod visit when its warm enough

While he might have chased trout throughout his life, Mick was also on the lookout for native fish and how they interacted with the introduced species.

By the time Mick had started fishing here the cooling of the Goulburn River had already changed the habitat for native fish.

Little natives in mountain streams

Several species of smaller native fish occur in colder mountain streams, including recreational species such as blackfish (slipperies, muddies) and others, such as galaxias (several species of *Galaxias*, also known as jollytail).¹³



Barred galaxias. Photo: Gunther Schmida (Photo source: MDBA).

- Several species of *Galaxias*, with a maximum size of between 15 - 20cm but more likely around 8 - 10cm
- Barred galaxias (pictured) are only found in the headwaters of the Goulburn River. They were severely affected by the Victorian Black Saturday fires. Remaining populations were kept in aquaria until vegetation in the catchment grew back, then they were released back into the wild
- Barred galaxias are a relatively long lived fish – up to 13 years old!
- Barred galaxias are listed as 'Threatened' nationally
- Mountain galaxias lay eggs on the underside of stones in the head of pools and riffles. These fish are thought not to migrate, and have a small home range of about 19m
- Mountain galaxias are the only native fish found in the alpine zone above the snowline during winter

We don't get a lot of the cod and yellowbelly right up in the Upper Goulburn to Lake Eildon. They may come up and visit, during the summer months when the water's warm enough for them. As a matter of fact, the little blackfish that we've got around here are in absolute abundance. There's lots of them. And so, we found there's very little conflict there 'cause the high mountain streams are the ones that the trout really do prefer but sometimes they'll move down to where the cod are.

Mick points to the use of heavy machinery and farm chemicals as being a concern for fish. As well as removing snags, machinery is also being used to remove invasive weeds like willows from some areas along the river bank. Mick agrees that governments are now doing a better job than before, but thinks authorities still need to be vigilant about other animals that may be affected.

This is a little bit controversial, because up on the Rubicon where they're doing the removal of willows, I found two dead platypus. One was badly decayed and the other one wasn't; it was a young animal. I don't know if it was because they'd been dislodged, or if it was the poisons they were using, whether it was contractor doing it, I don't know. Maybe the deaths of platypus are not related to these works, but I mean, they just go in and blast away at everything.

Willows



Willows being removed – one control option.

Photo: Helen Shimitras.

- Willows were planted in south eastern Australia to control bank erosion, particularly in the 1950s – '70s. They are now widespread in permanently wet or seasonally waterlogged sites
- Willows are invasive and are spread both by seed and as fragments which travel downstream
- Although some fish will shelter under willows, willows can dominate riparian areas, displacing native species. They create dense shade and produce significant leaf fall in autumn, which depletes dissolved oxygen levels and changes the food supply within the aquatic ecosystem
- Willows can also modify channel shape and capacity, divert flow, accumulate fine silt and contribute to erosion
- If willows are being removed, it is important to ensure they are replaced progressively with native trees. The complete removal of all trees overhanging the river will result in water temperatures that are higher in summer and lower in winter and also increase native fish exposure to predators

Donny Richter – *Changing habits*



Donny was born in 1948 and raised in Melbourne. He was apprenticed as a painter and decorator and as a young man moved around northern Victoria. He lived in Boort in the Mallee and then at Barmah on the Murray River. After a stint in Geelong, he returned to Shepparton,

finally putting, as he says, 'a big taproot down' in 1983 at Murchison. His three acre block sits high on the bank of the Goulburn – plenty of room for a big shed that houses his boats, caravan, multiple fishing rods, hundreds of lures and half a dozen cod trophies.



Donny's workshop. Photo: Jodi Frawley.

A cod would live there

His love of fishing started out small, learning to fish with his family.

My father was a builder and he was always working, and only during holiday times would he take me and my younger brothers fishing. As life went on, I went out on my own - 16, 17, 20 - fishing, and bought my first boat. It cost me \$290. Little six horse power Chrysler motor, and from there it's just grown, mate. Bigger and better.

As a young man, Donny and his mates would head out on camping trips on the river. Finding the right spot was crucial to making it a good fishing weekend.

Well, first, we'd like plenty of shade. And we'd set the camp up there, but then, when we go down the river in the boat, we'd look for spots where we thought 'a cod would live there', like an old, dead tree in the water or a heap of branches laying around, or a bit of a swirl under a log and a big, hard clay bank – we'd always look them out.

People and towns along the river

Northern Victoria has always been one of the more heavily populated rural areas of Australia. Many of the townships along the river began with an inn and a punt, assisting travellers with livestock and providing services to the gold fields from the 1850s. Alexandra, Seymour, Nagambie, Mooroopna and Shepparton all grew in conjunction with the changes in surrounding industries: grazing, dairying, mining, forestry and agriculture. The river was vital for the growth of these places.

From the 1870s rail links to Melbourne brought many more people. In the 1920s, Shepparton Preserving Company and Ardmona Cannery capitalised on productive local fruit growing and as a result large numbers of seasonal workers came and went from the area.¹⁰



Trips to the river for picnics and fishing were common for Aboriginal peoples, townies, farmers and itinerant workers alike. Photo source: Jim Hanley.

We'd just catch them all

In these early days Donny and his mates would catch as many fish as they could.

But back in the old days we'd do everything wrong. We'd put in cross lines and springers and set lines that we would leave overnight. We could have up to 40 springers in and catch 10 fish. A couple of cross lines and you could get up to 20 cod at a time.

Big catches of fish meant big stories at the pub.

We'd just catch them and had to bring them home and get in the pub and brag. 'Oh, we caught this many fish'. What we did it for: I don't know. You'd give them away or they'd go rotten.

How to fish - properly

All this changed in 1977 when, at age 27, Donny met his mate Noel Anderson.

Noel taught me a lot about fishing and catching cod and lure fishing. And, yeah, I would like to say 'Thank you, Noel' 'cause he was the one who put me on the straight and narrow, instead of springers and cross lines. He knew all the tricks, he knew where to put lines in, where to fish and all that stuff. He was the one that really showed me how to fish – properly.

For twenty years, Donny and Noel went fishing once a month.

Donny intends to teach his six-year-old grandson, Charlie, everything that Noel taught him.

Well, at the moment, I'm taking my six-year-old grandson fishing. I'm not going to teach him the old ways. I want to teach Charlie what I've been taught for the future generation. What he learns from me, it'll help him and maybe he can help someone else later on.

Of crays and carp

Over the road from Donny's place is a steep clay bank that slides down into the waters of the Goulburn: a perfect spot for Murray crayfish. When he's up for a feed, Donny moseys over to the river and drops in a net with a punched tin of dog food for bait.

In front of my place you can put a net in to get the Murray crays. I'll pull that net up, and I'll say 'I'll have you and you', and the rest I tip back into the river. Why be greedy? They're always there. Why take 20, when you only want two.

Murray crays

(*Euastacus armatus* - Spiny cray)



Photo: NSW DPI.

- Reported to grow to 3kg and are the 2nd largest freshwater crayfish in the world
- Confined to River Murray and tributaries, and found only in the main channels
- Prefers cool, strong flowing water, with higher oxygen content
- Active through the coldest months from May to October
- Slow growing: 5-10g in 1st year, may reach 40g after 2-3 yrs
- Breeding weight is 200-250g, which takes about 6-9 years
- Breed late autumn and early winter, carrying eggs ('berried up') until October
- Steady decline in numbers since 1940s
- Continuing reduction in size in NSW since 1960s

Carp have been a big problem in the Goulburn River over the years. Donny remembers a time when the river was boiling with them.

I can remember at the Weir, you'd look over, at the bottom of the spillway there would be thousands and thousands of carp. The water was just bubbling with them. Years ago, you'd go up the river and there'd be carp on the river bank. People have caught them and throw 'em up there and they'd stink.

Donny thinks things have changed over the dry years of the drought. He hears different ideas from his fishing mates as to why the carp might not be as plentiful as before.

The carp seem to be gone. I don't know why. There are lots of theories; they reckon the cod are eating them, but then, I don't know if the water might be getting too cold for them and they're heading further north, I don't know.



Carp respond quickly to favourable conditions.
Photo: Nathan Reynoldson.

Carp - FAQs

(*Cyprinus carpio* - European carp, koi carp)



Photo: Gunther Schmida

When were carp introduced?

While various different genetic strains of Carp have been introduced into Australia, it wasn't until the 'Boolara' strain was released near Mildura in the early 1960s that Carp began to spread widely. By 1974 they had spread through much of the southern part of the Murray-Darling Basin, although weirs and impoundments were acting as barriers in some of the larger rivers.¹²

When did carp appear in the Goulburn?

In the Goulburn system, carp were recorded in the Sevens Creeks in the early 1970s, although Gooram Falls appeared to represent a barrier to limit upstream spread. By the mid 1970s, they were recorded mid way up the Goulburn system in areas such as Loch Garry, Lake Nagambie, the Waranga channel and Lake Cooper. By early 1980s, carp had been recorded as far upstream as Lake Eildon. They are now widespread within the catchment, although numbers have fluctuated at times.

Can carp survive in mud or salt water?

No, carp cannot live in mud. They can tolerate a wide range of environmental conditions, including very low dissolved oxygen levels and half seawater salinity.

Where do carp prefer to live?

Carp are commonly found in slow or still water, with a silty substrate and shallow vegetated habitats. These provide optimal spawning and recruitment conditions. Carp prefer floodplain habitats during floods and inundated backwaters appear to be zones of high recruitment.

How long does a carp live?

Carp are a long-lived species and they can be prolific spawners when conditions are suitable.

Are carp eggs carried by bird's feet and able to survive to be fertilised at any time?

No. Carp eggs only survive out of water for a short time and are usually attached to plants. Unfertilised eggs soon die.

Do carp undermine river banks and cause trees to fall into rivers?

Carp feed by sucking sediment into their mouth, removing food (eg, insect larvae, crustaceans and some plant material), and expelling sediment out through their gills. There is no evidence that they undermine banks.

Do carp eat native fish and eggs?

Carp may eat small numbers of eggs or larvae but these are likely to be taken incidentally. Carp are thought to increase turbidity and to compete with native fish for space and food.¹²

Kaye and Gary Gibb - *From the ocean to the river*



Kaye and Gary were both born in the early 1950s, but grew up fishing in completely different parts of Australia. Kaye learnt to fish doggy mackerel off

the Queensland coast near Townsville; while Gary took day trips to the Wakool River with his Dad and brothers.

Kaye came to Victoria in 1973, but left fishing aside for most of her life, taking it up again when she met Gary ten years ago.

I got tangled up with Gary. He was a keen fisherperson and said if I wanted to go out with him I could go. I said 'Oh, yeah, I used to fish quite a bit at home'. So, we started going out with the Seymour Angling Club once a month.

Fishing – you never forget how

It was a bit like riding a bike; a skill that Kaye had not forgotten – *It's just a refresher more so than anything else.* Kaye did have to adapt what she knew about ocean fishing, and Gary taught her what to look out for out on the river.

It's a different type of fishing to the sea fishing. There are different baits because up North you did mainly lure fishing for the fish we caught. We use different lures and baits down here for the different types of fish. I had to learn where to go, what snags look good.

Gary and Kaye like to fish in the lakes around the Goulburn River. Fishing from the boat in the stiller waters gives them the opportunity to use berley to attract the fish to where they are. Gary explains:

Berley is used more in the lakes because, otherwise, if you're in the river system, it just flows away too quick and you're just feeding the fish or attracting fish further down the river. Unless you've got your own little berley bombs which hang over the side of your boat. We use berley pellets that are like chicken pellets – all ready made-up, ready to go. Sometimes we add our own little ingredients – fish oils or ground up baits. Just to give it that smell and to add as an attractant.

Kaye and Gary both like catching a big cod when they are out on the river.

The ultimate in fishing probably is to catch a cod. They're a very lazy fish to catch though. They're big, like a big log just pulling, or a big snag or something. Very good when you do get a nice one.



Jim Hanley, another local fisher, likes to fish for cod in Lake Mulwala. Photo source: Jim Hanley.

One of the changes that Kaye and Gary have seen is the ban on trout cod in Victoria. Since this ban was introduced, they, like many other fishers on the Goulburn and other nearby rivers, have seen a return of the trout cod to their regular catches.

We do sometimes catch a few trout cod but because they're a protected species we've got to let them go. You think you've got a lovely fish on, until you bring it up and say 'well, oh, I've got to let this one go'. Beautiful looking fish, but of course, I can understand why they have to let them go.

Fishing weekends away

The Gibbs rarely miss the Seymour Angling Clubs' monthly weekends away. They set out on Friday and set up camp, usually on the riverbank. The competition starts on Saturday morning and finishes on Sunday with a weigh-in for first, second and third prizes. They fish for six to eight hours each day and either use keeper nets or photograph the fish so they can release them.

Different places they visit mean different fish.

There's quite a few silver perch in the Goulburn but we're not allowed to keep them. You can go as far as Yarrawonga or Mulwala, Echuca and back down towards Cobram. When we go to Nagambie, there's quite a few cod. We've got one place, that's a good little Murray cod place, close to Seymour. We get permission off the owners and go down there. Some of our members have caught cod and most of them have been released because they want to keep them in the river here.

Trout cod

(*Maccullochella macquariensis* - blue nosed cod, blue cod)



Photo: Gunther Schmida.

- Large deep bodied fish, growing to 85cm and 16kg, but more mostly less than 5kg
- Associated with deeper water, pools with cover such as logs and boulders and faster flowing water
- They move less than 500m from their home snag, with occasional explorations of 20-60km before returning home
- Adhesive eggs probably laid on hard surfaces
- Eat other fish, yabbies, aquatic insect larvae, and shrimp
- Potential threats include interactions with trout and redfin and habitat modification such as desnagging, sedimentation, removal of riparian vegetation, barriers to migration and cold water discharges from large dams
- Listed as 'Endangered' in Victoria, NSW and by the Commonwealth



These cod, caught in 2006, were the first cod Jim Hanley and his fishing mates had caught from the Goulburn River in 30 years. Two weighed in at 8 pounds and two at 6 pounds. Photo source: Jim Hanley.

Fishing in the dry

Since Kaye started fishing again, drought and dryer rivers that have been the norm. Kaye has noticed that the fish can adapt to the wide swings in the water levels associated with droughts and floods.

She says:

They don't seem to breed as much in a drought because they know that there's not as much water, there's not as much feed. Since the 2010 floods, there's more feed around, so, of course, they're going to flourish more.

Timber in the river

Kaye has also noticed that the long dry spell followed by the rising waters of the last year has caused many more red gums than usual to topple over.

Just recently, there's been quite a few trees from the bank fallen into the river, and I know that's good for the fish, but, I think, you've still got to clean the rivers out a little bit to let the water flow.

Ken Gilmore is another fisher who thinks that the riverbanks are different than they once were:

Black wattle. They used to fall in a lot. One of the engineers in Alexandra, he had the idea he was going to clear the banks to stop the trees falling in the river, but no one agreed to that. There's gum trees whose root systems seem to be weakened and they seem to be falling in more than what they used to. About 15 acres of land went in up here, you could hear it falling in. The water got underneath the banks and, all of a sudden, you'd hear a great 'whoosh' and in the middle of the night about half an acre of soil would fall in the river and go down the river.

The irony is that more snags in this part of the river may have protected the banks and prevented the undermining of the tree roots.

Nonetheless Gary Gibb worries about desnagging – he can see both sides of the argument:

Not so long ago they were pulling all the trees out to clean the rivers and waterways up. It cost a fortune. Now, they're putting logs back in or letting the trees go in there. It may be a great thing for the fish habitat. It may not be in some ways. It does tend to silt up the rivers, and to stop a lot of flow. Now, depending on what you want: Do you want to clean the rivers out or keep them flowing? Or, do you want to block 'em up? It's good for the fish, perhaps, but it's still got to have a lot of flow. So, it's good and bad. And the other thing is, of course, a lot of snags. Well, it's good for the fishing, but not so good for the boater that wants to go out there and put his boat in there. You gotta try and get around them and all that but in a fast flowing river, like the Goulburn, it can be dangerous. But, fish do need habitats and they need breeding places – and it does slow – but ah, what can you say? That's it. That's the way I feel.

Snag FAQs



Natural snags. Photo: Fern Hames.

Why were snags removed?

Up until 1995 snags were removed to improve navigation and because they were thought to increase erosion and flooding.

Why are snags important?

Snags provide habitat for native fish like Murray cod and trout cod. Snags are used for shelter, territorial markers and as ambush sites. To these species, a snag is home – Murray cod have been recorded migrating 240km upstream and returning to the same snag¹⁶, and we now know that 80% of Murray cod are found within 1m of a snag!¹⁷

Do snags cause erosion?

In certain instances small-scale and short-term erosion may occur, but in many cases snags may reduce erosion and are important for bank stability.

Are snags just thrown in?

No. A great deal of scientific and engineering analysis goes into determining the right position, size, number and type of snag put back into the river. Permission from State agencies is also needed prior to works.

Making connections

Working for fish

Wally Cubbin has fished the Goulburn since 1958. He's the Secretary of the Nagambie Fishing Club and a representative on VRFish, a recreational fisher organisation in Victoria, whose motto is 'Fish for the Future'. Wally sees advocacy as an important way to work toward a healthy river and bring back the fish.

I'd been collecting a lot of data on the fish kills over the years from the different agencies. Dr Paul Sinclair, the Director of Environment Victoria, came to Nagambie and he had a look at it all, he had a look at the pictures and he said, 'Would you be interested in getting the Goulburn Valley Association of Angling Clubs to help with an audit on Goulburn-Murray Water? As to the way that they manage their waterways, ecologically and environmentally?' And I said, 'Yes, we would. We'd like to do that.'

Fly fisher Mick Hall understands the importance of habitat, for both native and introduced game fish. He campaigns for habitat care and is involved with the Native Fish Strategy people to improve the general health of the river for all fish.



John Douglas (centre) wants to share his childhood fishing experiences with his own sons. John is shown here with his brother Ray (front) and Uncle Ian.
Photo: Bruce Douglas.

Mick has been an advocate for the 'Adopt-a-Stream' program, a Victorian DPI Fisheries initiative.

What I envisaged from 'Adopt-a-Stream' was maybe getting projects like those being done in the United States. So many of our scientists just think 'Fish' and nothing else. The bottom line is to consider all the life that's in the river. It's the in-stream habitat that is just so important of the survival of everything. The bird life and water-fowl disappears with willow removal. You don't see them back again 'til there's cover back again. You've got to plant so that you've got shaded areas, you've got what nature gives you in mountain streams. 'Cause that's the way it survives, if you don't, it just chokes itself and dies.

Fathers, brothers and sons

Fishing has been an important way for John Douglas to connect both with nature and with his two sons. John is both a fish scientist and a passionate recreational fisher. Born in 1960 and taught to fish on the Murray River, he has been living in the Alexandra area for most of his adult life. He says:

I always had this thing – I liked going fishing with the old man – so I thought it'd be nice to go fishing with my kids. If they wanted to go, they went. If they didn't, I don't think I forced them. My oldest one is not that keen on it at the minute, but the younger one's pretty keen. But then the older one will come back and he'd be looking at the weather, going, 'Oh, we should sneak down the river.' So it's a social thing, we can catch up and you can stand in the river and have a fish and chat. So it's pretty good.



The Goulburn River, with snags and overhanging riparian vegetation – ideal for fish. Photo: Jodi Frawley.

Ron Bain is 92 years old and remembers how, as a young man, he and his brother, father and brother-in-law would pack up the flat-bottomed punt and head off fishing.

We'd get the local carrier to put our boats on his truck and go up to Alexandra and then we would float all the way down the river. We'd spend over a week and that'd be our annual holidays. We'd sleep on the islands in the days when there were islands on the river. And we'd float our way down, spinning as we went. There were fast rapids in the river too, you know, and by golly, it was good fun. Coming down there.

Fishing from Dhungala

In 2004 the Yorta Yorta signed a joint land management agreement with the Victorian Government regarding the Barmah Millewa Forest areas. The Yorta Yorta connections to the Goulburn River are deeply felt and when celebrating this agreement Wolithiga Elder Henry Atkinson talked about the importance of fishing within connection to country. Like many landholders, Henry wants people to seek permission to come onto these river banks to fish.

I personally am looking forward to the day when I can sit on the bank of the mighty Dhungala (Murray River) and fish exclusively on my own land without the need for a piece of paper to say what I can and cannot do and

knowing that only my people walk here, sit here and fish here. I'm not saying that I want others excluded from the river system but I just want a little area where everyone who treads here has the same thought in their hearts.¹⁵

If we look after the river, the river will look after itself

In his social welfare work with the Salvation Army, 49-year-old Daryl Sloan has met many different people who camp along the Goulburn River. These days, the needy and homeless live in the bush around Shepparton. But Daryl points out that there is a long history of riverbank camps – including the 1939 camps of Aboriginal people at Mooroopna, Anglo-Australian seasonal workers and European backpackers of today.

New Australians and old Australians lived on the banks, where there was a promise of seasonal work dependent on irrigation. The bush offered privacy, warmth from a fire and a place for fishing and other food. But the lack of services mean that these camps still pollute the river. We need to use some common sense about the future. If we look after the river, the river will look after itself.

Mooroopna

After the strike against Government interference at Cumeragunja in 1939, a large group of Aboriginal people walked off the mission to settle in riverbank camps along the Goulburn River near Mooroopna.

They built makeshift tents of hessian and tin on 'The Flats', the low-lying land between the river and the highway and later groups moved over the road to Daish's paddock. They worked at the Ardmona factory, the McLennans' Flour Mill and at farms outside of town. Fishing and hunting along the river provided food for survival and a place for the mob to gather.

Beatrice Aitkinson remembers:

'We had no social services or anything. It was hard but happy times. Everyone shared, whether you were short of an onion or whatever, you could sit down and talk'.⁸

The 1974 flood was so high it washed away 324 houses in Mooroopna. The camp was also inundated and people had to move to higher ground; rebuilding once the water receded. This area is now known as Rumbalara.⁸



A postcard showing the Mooroopna Road in flood (no date). Photo source: Wangaratta Library.

Visions for the Goulburn

The fishing people who contributed to this project have all talked about their hopes for the future of the river. Many felt they had seen some improvements but most don't feel the river is as healthy yet as they would like to see it. Each of these fishers suggested ways to help the river and in turn help provide healthy habitats for fish.

Ecology and industry

At 26 years old Hayley Purbrick is the fifth generation of the Purbrick family to live at Tahbilk where they have a very successful winery and farming business. She grew up fishing in Lake Nagambie with her brother. In recent years, the family has turned their attention to the Tahbilk wetland that sits in the centre of the family's land. It was once a wet and dry anabranch of the Goulburn River, complete with horseshoe lagoons. The Goulburn Weir changed this. The weir pool kept the water level in the wetland high and the horseshoe lagoons filled permanently.

Hayley and her family are helping to rehabilitate this precious place. A healthy population of threatened freshwater catfish co-exist with the ecotourism ventures that the family have introduced.



A smoking ceremony at Tahbilk welcoming guests to a 2010 Native Fish Awareness Week event, overseen by Taungurung man, Roy Patterson. Photo: Jodi Frawley.

Hayley would like to see more recognition that there has been a generational shift in environmental attitudes, particularly, she says, in relation to river rehabilitation and management.

I'd like to see Nagambie people embrace their waterways and actually utilise them in a positive way. I think I really appreciate that with water, you have to have a balance between ecology and recreation. I would like to see the future of the waterways being shared properly amongst all parties. People underestimate how much water there actually is in Australia and how it can be shared quite easily.

Hayley disagrees with the way the media pits the environment against economic development. Instead she thinks that there is a bright future ahead for our waterways.

It shouldn't be a competition between environments and farming because I think people would find that a lot of young farmers are actually very environmentally aware. They just need to know how much water they're going to get and they'll work around it in an efficient way. I don't think that the government agencies are talking to the right people when it comes to sharing water. They're talking to the existing generation and I think the existing generation has done a great job but that the next generation is quite different in their way of thinking. They are environmentally aware, and they don't want to see the waterways lost because they use them for fishing and skiing and boating as well as for irrigation.



Tahbilk Lagoon. Photo: Fern Hames.

State of the river - 'extremely poor'

The Sustainable Rivers Audit (SRA) is an ongoing systematic assessment of river health of 23 major river valleys in the Murray-Darling Basin. Environmental indicators (themes) include hydrology, fish and macroinvertebrates, which are monitored and will highlight trends over time.⁷

The Goulburn Valley was surveyed in 2005. The Goulburn Valley fish community was rated as being in 'Extremely Poor Condition'.

Alien species were 63% of the total biomass and 58% of total abundance. The fish community had lost most of its native species richness and was dominated by alien species, mainly trout.



Ron Bain looking at the old Goulburn Bridge, now part of a local heritage walk. He has seen major changes to the river, the biggest came with the building of the weir. *It used to be a beautiful river, he says.* Photo: Jodi Frawley.

Trout FAQs

(*Salmo trutta* - brown trout, *Oncorhynchus mykiss* - rainbow trout)



Rainbow trout. Photo: Charlie Carruthers.

Are trout native anywhere in Australia?

No. Trout were introduced into Australian waters in the late 1800s. Brown trout are native to Europe and western Asia. Rainbow trout are native to North America.

Where are trout found now?

Trout are now widely distributed across cooler upland streams within the Murray-Darling Basin, particularly in NSW, ACT and Victoria.

Do trout breed or are they all stocked fish?

Both. Trout breed very successfully in our waterways and have established self-sustaining populations in many rivers. They are also heavily stocked. There is significant level of investment in trout stocking in both NSW and Victoria.

Why are trout a problem?

Predation by trout is known to have had a negative effect on some native fish, for example galaxias, and has been implicated in the decline of other native species.

Bringing back the fish

A number of local projects aim to bring the fish back to the rivers of the Murray-Darling. These compliment large scale programs such as the MDBA's *Native Fish Strategy* and *The Basin Plan* that continue to work with a wide range of stakeholders to ensure positive outcomes for the environment and fish of the Murray-Darling Basin.

a) Holland's Creek Demonstration Reach

This project is supported by the MDBA's Native Fish Strategy and managed by the Goulburn Broken CMA and Arthur Rylah Institute (DSE). The project aims to display the positive benefits of river rehabilitation for native fish, particularly the threatened Macquarie perch (*Macquaria australasica*). The creek is also highly valued for passive recreation, water supply and family heritage values.

Many actions are being undertaken including monitoring of fish populations, water quality and streamside condition and mapping of snags. On ground works have included weed control, fencing, erosion control and revegetation. A Community Reference Committee, comprising landholders and representatives from a

range of organisations, meet regularly. Information sheets, fence signs and a webpage have also been developed and field days have been held.

To find out more about this project and how you can get involved, contact the Goulburn Broken CMA on (03) 5820 1100, or visit: www.gbcma.vic.gov.au/hollandscreek

b) The RiverConnect project

This project aims to establish a connection between the Greater Shepparton community and Broken and Goulburn Rivers. It aims to raise awareness of the environmental, cultural, recreational and economic value of the rivers. Many groups are involved in the project including the Greater Shepparton City Council, the Goulburn Broken CMA and other key natural resource management, Aboriginal and educational organisations. There are four working groups: Communications, Aboriginal Participation, Land Management and Education.

Regular RiverConnect newsletters provide information on current activities.

For more information on the RiverConnect projects and events contact Council's Culture and Community Strengthening

branch on (03) 5832 9714 or visit: www.greatershepparton.com.au/council/environment/watermanagement/riverconnect.html

A fly's life



The mighty 'Red Tag' fly. Photo source: Mick Hall.

The Red Tag above is a copy of the original as first published in the *1888 British Angling Files* by Michael Theakston and edited by Francis M Walbran.

First known as the Worcester Gem, it was actually Walbran who added this pattern to this book. It was used as a fly for grayling rather than trout.

It appeared in Australia very early and by the 1920s had developed a strong reputation in Victoria.

When writing of the Goulburn River at Eildon for *The Hardy's Anglers Guide 1937*, the famous Victorian fly fisherman G. Reg Lyne states:

In early morning and evening, about a mile downstream from the outlet there is an excellent dry fly rise, the best killing patterns being Wickham's Fancy, Coachman, Royal Coachman, Whirling Dun, Cocky-Bondhu and Red Tag.

Text courtesy of Mick Hall.

River resources

- Native Fish Strategy Coordinator, Victoria Fern Hames: (03) 5772 0273
- Goulburn Broken CMA, Shepparton: (03) 5820 1100
- Seymour Angling Club: PO Box 898 Seymour 3660 or (03) 5792 3260
- Alexandra Angling Club: PO Box 26 Alexandra 3714 or (03) 5772 1773
- Yorta Yorta Nation Aboriginal Corporation, Barmah: (03) 5869 3353 or reception@yynac.com.au
- Bangarang Goulburn Murray Tribe Aboriginal Corporation, Shepparton: marlenea@mcmmedia.com.au
- Taungurung Clans Aboriginal Corporation, Tarneit: taungurung@gmail.com
- Murray Lower Darling Rivers Indigenous Nations: (02) 6051 9948
- Nagambie Landcare, Peter Robinson: (03) 5794 2274
- Seymour and District Historical Society, Seymour: (03) 5792 2311
- Shepparton Heritage Centre, Shepparton: (03) 5821 7717 (after hours)

Abbreviations

CMA	Catchment Management Authority
DPI	Department of Primary Industries (NSW)
DSE	Department of Sustainability and Environment (Vic)
MDBA	Murray-Darling Basin Authority

About the Talking Fish project

The *Talking Fish* project arose from an increasing realisation that many different groups of people, including fishers, Indigenous communities, tourists and landholders have developed unique relationships with the rivers of the Murray-Darling Basin. There is also the growing recognition that the health of the Murray-Darling Basin is at risk. By accessing and recording different people's stories about their experiences of a river, its fish and how both have changed will contribute to our collective knowledge and help shape future management decisions. These stories also have the potential to give people a sense of just what these magnificent rivers and their fish were once like - and could be again with ongoing rehabilitation efforts.

The *Talking Fish* project focussed on 12 reaches within the following Basin rivers: Namoi River (NSW), Upper Condamine River (Qld), Katarapko Creek (SA), Upper Murrumbidgee River (NSW / ACT), Culgoa - Balonne Rivers (Qld / NSW), Paroo River (Qld), Goulburn River (Vic), Darling and the Great Anabranche (NSW), Ovens River (Vic), Mainstem Murray River (NSW / Victoria), Darling River (NSW) and The Coorong and Lower Lakes (SA).

The *Talking Fish* project is a starting point to share local knowledge and learned experience with others to improve the health of the Murray – Darling Basin. Project information is available at: www.mdba.gov.au.

Note: The term *Talking Fish* is also being used by the Australian River Restoration Centre as a way of sharing knowledge about people's connection to fish and waterways.

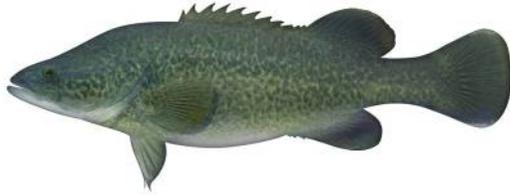
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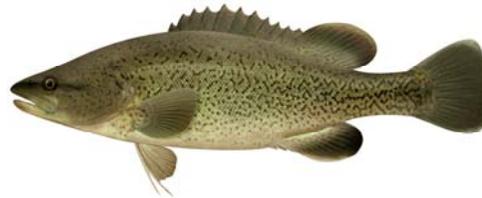
Some fish of the Goulburn River

Native
(Not to scale)

Murray cod / Cod



Trout cod / Bluenose cod



Blackfish / Slippery / Muddy



Golden perch / Yellowbelly / Callop



Catfish / Eeltail catfish / Jewie



Yabby / Craybob



Silver perch / Murray bream / Grunter



Macquarie perch / Black bream / White eye



Murray cray / Spiny cray



Introduced
(Not to scale)

Rainbow trout / Brown trout



European carp / Common carp



Redfin / English perch

