

Paroo



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 River 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 Paroo 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- Paroo

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Source: Colin Leigo.

Source: Ron Heinemann.

Source: Greg Ringwood.

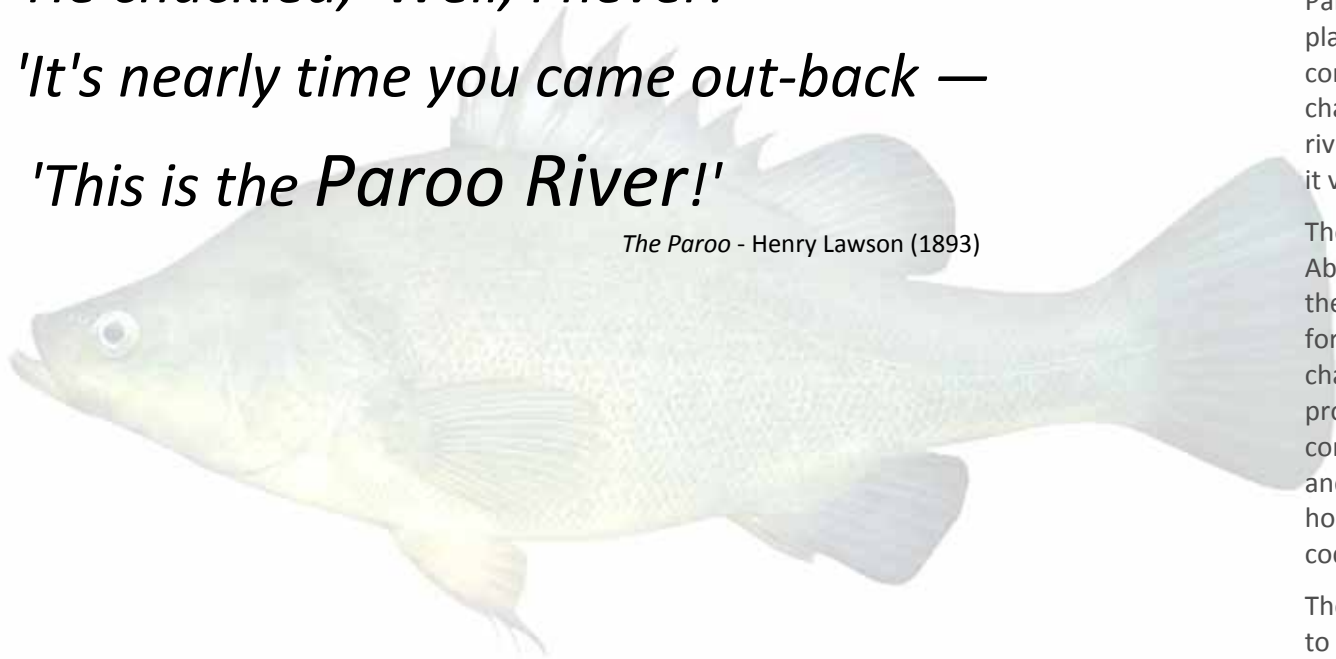
Source: Greg Ringwood.

Back page fish images:

Hyrtl's catfish and goldfish image: Gunther Schmider. All other fish images: NSW DPI.

'But where,' said I, ' 's the blooming stream?'
And he replied, 'We're at it!'
I stood awhile, as in a dream,
'Great Scott!' I cried, 'is that it?'
'Why, that is some old bridle-track!'
He chuckled, 'Well, I never!
'It's nearly time you came out-back —
'This is the Paroo River!'

The Paroo - Henry Lawson (1893)



The Paroo River is the last remaining free flowing tributary of the Murray-Darling Basin. Its 76 000 square kilometre catchment is located in the north-western corner of the Murray-Darling Basin, half in Queensland and half in New South Wales. Although the Paroo is one of the major tributaries of the Darling River, it rarely flows into it because the water dissipates before it reaches to the Darling River. The river starts in the gorges of the Warrego Range in western Queensland. After crossing the border into New South Wales it spreads over the vast floodplains near Wanaaring, helping to sustain many significant wetlands. About 600km later it reaches its overflow lakes between Tilpa and Wilcannia.

Over 20 000 years ago, the Maranganji, Kalali, Badjiri, Parundji and Kunggari people knew a very different Paroo River. A cooler climate, markedly different plants and animals and, probably, a river that flowed constantly.¹ Since then, a hotter climate and other changes meant the Paroo has become an ephemeral river. Although it floods its banks regularly, these days it very rarely flows in to the Darling River.

The river has always been very significant to the Aboriginal people. The region has a dry climate and the river is a lifeline. The river remains a water supply for the people living in the catchment, but it is also a channel that binds the communities together. It provides water, food and hope for the creation of a comfortable life. People gather along the river banks and water holes to relax in the shade, maybe going home with a meal obtained from the river: yellowbelly, cod or yabbies.

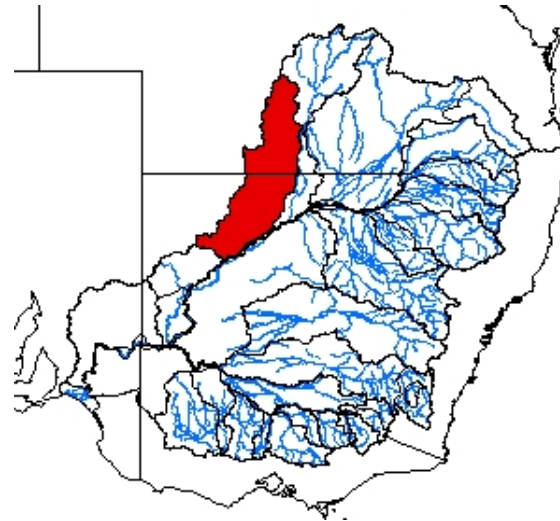
There are still those who love the river and who love to fish the river. Their stories are part of the bigger story of changes to the Paroo and its fish. People want to talk about a future for the Paroo and their visions for a healthy river that is, once again, full of native fish.

Introducing the river and its people

Created by a spirit

In the ancient dreaming, the Moonagutta was a water spirit with unknown shape and size. He lived deep in the waterholes along the river. In fact the river was made by the Moonagutta. The Moonagutta became the only spirit and soul left, wiggling in the silt left next to the receding water, after swallowing all the other Moonagutta. He started to shape the first rivers of life through the tracts he created when he tried to escape from the floodwaters. When he came to a sandy stretch, he was able to bury down deeper and created the waterholes.¹

The Aboriginal people established themselves in the Paroo and the surrounding catchments approximately 20 000 years ago. They were the Maranganji, Kalali, Badjiri, Parundji and Kunggari people. The Paroo River gets its name from a variation on the name of an Aboriginal Paakantji group, the Parundji.



The Paroo River. Photo: Greg Ringwood.

The arrival of the Europeans

The Paroo-Warrego catchments weren't explored by Europeans until 1845. Thomas Mitchell passed through the region in 1846. By 1862, there were already some established pastoral stations in the area.

One settlement arose beside a reliable waterhole at the intersection of two major stock routes. This settlement became Cunnumulla in the late 19th century.

Until the end of the Second World War, the area had a small number of large pastoral stations and a small population. After the war, with the increase in wool prices, the area experienced significant economic and population growth.

Beef cattle grazing and sheep for wool production are still the two predominant industries in the catchment. There are very few, small-scale irrigated crop operations. Due to the small irrigation industry and the sparse population, demand on freshwater has stayed low. As a result the Paroo River is the least regulated river in the Murray-Darling Basin.



Transporting sheep across the Paroo for shearing in Willara in 1935. Photo source: Colin Leigo.

Fishing has been very important activity for the local community. For the Aboriginal people and early settlers fishing was a daily activity providing a stable diet.

In later times, wetting a line has become a significant leisure activity. People living along the river have unforgettable and intimate memories of the river, the fish they caught and 'the ones that got away'.



Beryl and Colin Leigo. Colin has lived all his life along the Paroo River, as did his parents. He remembers the house he grew up in being right on the banks of the Paroo River for easy access to water and the fish. Photo: Greg Ringwood.



Douglas – Dougie - MacGregor has lived in Cunnamulla for 82 years. Being in the transportation business gave him the ability to go to the river and fish regularly. Photo: Greg Ringwood.



Ron Heinemann's first memories associated with Paroo include lots of large floods. They used to be cut off for a week or so at a time due to flood. Photo source: Ron Heinemann.



Ron Gardiner's (seated, right) first memory of the Paroo is being taught to swim by being thrown in by one of his teachers. Fortunately memories of being taught to fish by his grandmother are less traumatic and led to a life-long passion for fishing. Pictured here with his wife Bridget (standing), and Ron and Hazel Heinemann (both seated). Photo: Hamish Sewell.

Colin Leigo – *The Paroo River means life*



Colin Leigo is a 60 year old farmer who lives at Mooreland Downs, about halfway between Wanaaring and Hungerford on the Queensland-NSW

border. He's lived here all his life. The river has always had a significant influence on the way Colin and his family live and work on their property.

A river runs free

It seems the Paroo is a lucky river - most of its ecology and biodiversity are in good condition compared to other rivers.

You've got all your vertebrates, all your frogs in this ecosystem – everything is still all intact with this river, that's one thing with it. When you talk to people on other rivers and they just haven't got those things. I think it's tremendous.



A little fresh down the river – a vital feature for native fish. Photo: Greg Ringwood.

Colin sees the little rises in water level as being a good part of being on the Paroo.

The smaller floods are always terrific. It's always great to see the little rivers come down because it's terrific just to see the river run. When you've been here and you go through drought years and you see what doesn't happen with the river. When you've got no water at all or very little water, and you always look and say, 'Well, it's terrific just to see it running'. Even though it might only be a little run (and there are a lot of those come through, over the year), they're a terrific thing just to see and to have. I think a lot of the other rivers, now that they're all regulated rivers, probably get very little of those at all. They probably don't even see them whereas this river being a free flowing river, we get all those little rises that come down.

An unregulated river



The free-flowing Paroo River. Photo: Greg Ringwood.

The Paroo River is the last remaining free-flowing and unregulated river in the northern Murray-Darling Basin and is likely to stay that way. In 2001 the Queensland Government applied a moratorium on new structures that could capture overland flow. In 2003, the Queensland and NSW Governments signed an intergovernmental agreement to manage the Paroo's water resources in a sustainable and culturally sensitive manner, recognising the cross-border nature of the catchment and its links with the sub-artesian waters.⁵

Fish need to be able to move up and down rivers to access food and habitat suitable for spawning and to avoid poor water quality or other unfavourable conditions. Many of the fish species found in the Paroo migrate as part of their life cycle, including Murray cod, silver perch, spangled and golden perch. The Paroo and Ovens (in the southern Basin) are the only rivers in the Basin where fish are not faced with barriers, such as weirs and dams, when migrating.

Fishing – part of life on the river

When the river runs, Colin catches fish using a drum net – a technique he learnt from his father. When he was a child, Colin also used lines to catch fish.

Fishing? Oh, well, fishing, it's been part of my life on the river. Probably I would have done it ever since I was a kid. We've fished on the river and probably in all forms and all sorts of fishing. We are there just to catch ourselves a meal of fresh fish because we don't live on the coast, so we can't go and buy fresh fish every day or anything like that. So we just catch a few fish when the river runs.

There were plenty of good size fish back when Colin was a child, particularly yellowbelly, he remembers. Colin also remembers many catfish in the past, with some being three pounds in size.

There used to be catfish in the river, but I think since the carp have got in, they must have eaten all of the catfish eggs, because there's just no catfish in the river any more.

Colin also remembers catching moonfish for the first time during the 1980s. Initially they thought the freshwater catfish was back. Moonfish look like catfish, but they are four or five inches long and seem to die out regularly and came back again.

There are plenty of these moonfish in the river and another Paroo fisher, Ron Heinemann, reckons they're good bait for cod. Across the Basin, these fish are commonly known as Hyrtl's catfish, Hyrtl's tandan, yellow-finned catfish or moonfish.

They always caught a feed when they went to the river. These days it seems it is the luck of the draw whether you will catch a fish or not.

You could catch 8 to 10 in no time – good yellowbellies. Sometimes you'd catch small ones and you'd throw them back in. When I was a kid, you could nearly always catch your feed of fish.

The river is also full of shrimp and yabbies. There also used to be a lot of mussels.

There's mussels in the river, if you want to walk around or feel around in the mud with your hands. Mussels are about four or five centimetres. They are a blacky dark colour. And when you open them up they are white inside the shell. Very muddy but I've seen people eat them, but I've tried it, but they are just full of mud to me.

Moonfish

(*Neosilurus hyrtl* – Hyrtl's catfish, yellow-finned catfish)



Photo: Gunther Schmida.

- Medium sized fish, usually less than 28cm, with smooth skin without scales
- Likes a variety of habitats from flowing water to still lagoons
- Eats aquatic insects, microcrustaceans, molluscs and detritus
- Spawning in north Australia occurs in Summer, possibly stimulated by rising water levels and temperature

Catfish

(*Tandanus tandanus* – eel-tailed catfish, jewie)



Photo: Gunther Schmida.

- Medium sized fish, usually 50cm or less
- Prefer slow moving waters of rivers or creeks
- Eat aquatic insects, yabbies, molluscs and small fish
- Eggs laid in a circular gravel nest which the male guards until the eggs hatch
- Now presumed extinct in the Paroo



Yabbies are a favourite across the Murray-Darling Basin. These two were caught in the Paroo River.
Photo: Greg Ringwood.

When the floods come

The Paroo rarely flows into the Darling River. It did in 1974 and Colin also remembers it also happening in 1976, 1990 and 2010.

Being flooded in was a regular thing for Colin and the family in the 1950s, '70s, '90s and, most recently, in 2010. Because the shearing shed and quarters are close to the river, they get cut off even during the medium floods. The farm trucks and motorbikes are left outside the flood line just in case. When the Paroo floods around Colin's place, it can spread a kilometre or a bit more. Further south it can spread over 30km according to Colin.

The river is the same

Colin doesn't think the river has changed very much. He collects data on the river and its flows, just like his father did all his life. From this he knows how far the river will rise and what he needs to do to safeguard his farm and stock.

When the river flows it fills the waterholes as it journeys downstream: if the waterholes are dry or low, the amount of flood downstream gets smaller. Colin saw this at his place during the 2010 flood. It normally takes about a week for flows from Eulo to reach Colin's property, but if the river is dry it may take 10 to 12 days.



Dougie MacGregor and his friends caught big cod in the hidey-holes of Caiwarro. The river at Caiwarro (pictured) has snags, reeds and overhanging trees - ideal fish habitat. Photo: Greg Ringwood.

The Paroo flood of December 1942



1942 flood - The Flat and Tanks. Photo source: Colin Leigo.

... We are all well and safe and I think most of our personal belongings are safe, but there won't be too much left of Willara On Sunday morning the river was just coming out of the channels and it was rising fast About 3 the bank broke.... It started as a gentle stream and in a few moments was a torrent I don't dare think any further ahead than a few weeks, all our garden that we have put so much work into and my heart just aches for poor old Ivan with his trees. He was so proud of them and they were growing so beautifully. I don't think more than 3 or 4 will survive, at the most and as the water will be right over the top of them. Oh well I suppose we are really lucky as we are safe and the menfolk seem to have saved all our personal belongings. They must have worked [hard] to get all the things out that they have done.

Extract from the Letter of Isobel Doyle

Dougie MacGregor – a lifetime on the Paroo



Dougie is 82 years old and throughout his life has seen many changes in Cunnamulla and in the Paroo River.

Driving, not droving

Dougie remembers the river as always having water and plenty of fish. He remembers the droughts as well. When the drought started in 1957, Dougie went into the livestock transportation business. Most drovers had gone to war and not come back. Dougie remembers most of the younger generation not being interested in droving. Livestock transportation filled the gap.

The floods had significant impact on the roads. After a big wet in 1950, one of two main roads were replaced with a new one on the western side of the Paroo to, as Dougie puts it, *get way back off the river*.

The road and a good vehicle were important ways to get access to the river for fishing. In the 1950s and '60s, not many people had cars, so people would car-pool to get to the river to fish and camp.



Flooded in. Photo source: Gordon Warner.

Dougie was too busy to go fishing during the early days of his business. But later, when the business was well established, he had more time to go fishing for a couple of days at a time.



An ant-bed floored house. During the Depression no one had much, so if fish were caught they were shared. Photo source: Gordon Warner.

The boom years

Towns around the Paroo have experienced cycles of boom and bust that mirror the cycles of flood and drought in the river itself.

The postwar years saw a conjunction of good seasons and high wool prices and the town experienced unprecedented prosperity. Dougie remembers the 1950s:

They were the boom years just after the war, and wool was big money. There was plenty of work around here.

The government had subdivided some of the big properties for soldier resettlement. They went up in a ballot in 1951 and many returned servicemen moved on to the newly subdivided land.

For Dougie and others, this meant work:

There were new homesteads to be built, and shearing sheds, and fencing, so there was plenty of work around and plenty of money. And the population of the town went up to 4 000.

By the late 1960s the pastoral boom had passed. These days Dougie sees a consolidation trend: large companies are buying small properties and joining them up. People are moving away and the population in the area is declining.

Sleepy cod and spotted cod

Dougie and his friends caught big cod in the hidey-holes of Caiwarro and Currawinya, as well as yellowbelly, jewfish and big black bream (silver perch). The cod Dougie and his friends caught were anything up to 110 pounds, but they averaged 15 to 30 pounds.

He thinks there were two distinct types of cod. One he says is a very short, stubby cod fish, and the other one is a long, leaner one. He and his friends called them sleepy cod and spotted cod. The big ones were always the stubby cod.

During the war, when food and petrol were rationed, the Aboriginal people living close by used to ask Dougie to take them out fishing. Dougie only had 40 gallons of petrol to do his town carrying job. But on a quiet day he used to take his Aboriginal friends out fishing.

In the afternoon of a quiet day, I'd pick them up and I'd say, 'Which hole do you want to go to?' and they'd say, 'Oh, the Eight Mile,' which is up the river. They'd only have a corn bag with them. When one of them got off and put his nose up in the air, and took a sniff around, and he'd say, 'Not today, mate.' We'll go up to the Ten Mile or up to the Fourteen Mile. We'd park up there, and they have another sniff around, 'Oh, yeah, this will do, mate.'

Two of them would just tip into the water, they would hardly make a splash or anything, they'd just go in, and they'd be under the water for that long you'd think they'd drowned. And the next thing, up they come and they'd have a cod fish each in their arms. Just like that.

When Dougie asked them how they did it, an old Aboriginal man told him that the fish is called sleepy cod - all you had to do is rub underneath the belly and they'd go back to sleep again.

The Aboriginal fishers took only enough fish for a meal then they would go back to town. And they always shared their catch with Dougie, for taking them to the waterhole.

It's all about the bait you use

Dougie and his friends used all sort of bait to catch fish in the waterholes.

You go out to some of those holes, and pick in them, and you can't get a fish out of them, but the fish are in there. It depends on what feed is in the rivers. We normally caught them on worms, shrimps, crayfish and mussels. We've caught them on bits of saveloy skin, we've caught them on grasshoppers, on centipedes, on frogs, and they tell me further down the Murray, they catch them on a grub.

Murray cod

(*Maccullochella peelii* – Cod, Codfish, Guduu, Pondee, Pondi)



Photo: Gunther Schmida.

- Largest Australian native freshwater fish, growing to 1.8m and 113kg (average 40cm)
- Found around deep holes, woody debris ('snags') and overhanging vegetation or rocks
- Ambush predator eating other fish, crustaceans, molluscs and frogs
- Migrate in Spring – often 100s of kilometres upstream with water level rises
- Males guard the eggs which are laid on logs or rocks
- Last recorded in any numbers in the 1980s
- Cod may have moved back into the Paroo River from the Warrego and Darling Rivers during the 2011 floods while the waterways were connected
- Listed as 'Vulnerable' in Victoria and by the Commonwealth

Dougie and his friends also used to look in the fish stomachs to see what they'd been eating.

What we used to do when we got two or three catfish, we'd open them up to see what they were feeding on. It's a funny thing with the catfish I opened up at different times, sometimes their belly would be full of little mussels about the size of your thumbnail. And they were still whole.

So Dougie used to dig for mussels along the banks of the river, mainly in the areas with black dirt and silt. When he was a kid he used to get mussels about 10cm long. They used to throw them on hot coals and when the mussels were opened they were ready for eating.

But Dougie has not seen mussels that big in the Paroo since he was 15 years old.

I reckon down through the years it's come about that the poisons that they've used for dip for the sheep and the cattle, and the stuff they sprayed with. Especially after the war, they had all these new modern sheep dips and sprays and I reckon that's what's poisoned the river holes.

Mussels

(*Velesunio ambiguous* - river mussel,
Alathyria jacksoni - floodplain mussel)



Photo: www.environment.nsw.gov.au

- Definitely two species, potentially three
- Was a primary food source for Aboriginal people
- One species prefers wetland environments, the other, cooler riverine environments
- Floodplain mussel – grows to 10cm, and can live for 10 - 15 years
- Found in creeks, billabongs, backwaters, lakes and weir pools but not in fast-flowing water
- Probably extended its range with river regulation, and changes to water regimes
- Tolerant of drought, low dissolved oxygen
- River mussel – grows to 15cm and may live for more than 30 years
- Grows in main channel habitat, often below weirs with turbulent water
- Prefers high oxygen levels, and not tolerant of drought

Keeping the catch fresh

Some people Dougie knew were very good fishers and always used lines but never nets. Dougie mainly used bobbing rods and hand lines. And it was successful as there was plenty of fish in the river.

If you took a boat out and you put drop lines in, you were nearly always sure to get two or three cod. In those days you'd catch as many as 20 or 30 fish a day. We would only have to go out for a day. But when we went right out, we had to stay out two days to make it worthwhile.

If people were camping, they had to keep the fish until they went home. He remembers:

They used to make a big hole along the river and they'd catch their fish and turn them loose in this big hole to hold them there alive.

Dougie and his friends used to take plenty of coarse salt.

There was no esky, there was no ice, so you couldn't stay out too long, the fish would have gone off. We used to take plenty of coarse salt and we'd clean the fish and fillet them. We'd put a layer of coarse salt in a container or tucker box, then put a layer of fillets in, and then another layer of salt, and that would keep it pretty cool. It would preserve them. And in the cooler weather it would almost form ice.

Silting up

In the 1960s, Dougie started to notice that the holes were silting up.

Being a carrier and getting around the country I would see the way the soil was getting pounded up from the sheep and the cattle. The graziers were cutting scrub down – in the dry times trees were dead, the roots were gone, and the grass was gone, it was dusting up the soil. When it rained the soil would get washed down into the river. You could see where the silt was building up, out like a promontory, out into the river. The rivers had big still water holes - if it haven't run for 18 months or more, there were still deep holes. Then we started to notice that they were getting shallower and shallower after a shorter time without a flood.

Dougie reckons the graziers are overgrazing the land along the Paroo.

There used to be reserves all along the rivers. In the early days the drovers had to have somewhere to let their horses and their working bullocks go. And the reserve is where the seed grows. The country is not flogged out like the grazing properties. They weren't satisfied with the beautiful country they had. They wanted the stock route reserves too. But they won't let the grass come up and shed a head of seed. They are over-grazing.

Carp – it got out of hand

The river these days has a variety of weeds and animal pests. Dougie first noticed carp in the Paroo about 30 years ago.

Well, we were catching an odd one or two of these strange sort of fish, and they were nice looking fish, too. But you couldn't eat the bastards, they were full of bones. We tried. Then I found out that they were imported into Australia to clean the irrigation channels out. And the politicians that have allowed them to be brought into this country ought to be caught and shot. That was criminal. Exactly the same thing as the cane toad. And of course, any river or stream or creek that's connected to the Murray have got carp in it.

According to Ron Heinemann, there were goldfish in the river ever since he can remember. When the carp came they affected the native fish community and changed the river.

They came on very quickly. I think it's a rare curse. And naturally, it got out of hand. You hear of the odd catfish being caught now, because they nest in the bed of the river and they protect it. And naturally, the carp clean them out. And they eat their young as well. Also, the gold fish and the carp eat the cod fish eggs, which they lay inside big hollow logs of trees that have fallen in the river.

Carp - FAQs

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

In the 1960s the strain of carp, 'Boolarra', was introduced illegally to Victoria and spread rapidly to all waterways of the Basin.



Photo: Gunther Schmida.

Can carp survive in mud or salt water?

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

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

No. Carp eggs are unlikely to survive on a birds' feet as they 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 plant material), and expelling sediment out through their gills. There is no evidence that they undermine banks although they are thought to increase turbidity which could impact on native fish like catfish by smothering breeding sites and eggs.

Do carp eat native fish and eggs?

Carp may eat eggs or larvae incidentally as part of their normal feeding behaviour.²

Ron Heinemann - *what I know of the Paroo is what I've learnt myself*



Ron Heinemann is a grazier who has lived along the Paroo all his life. His parents came to live at the sheep station 'Springvale', about 10 kilometres west of Eulo, around 1920.

They lived in tents for several years until they built sheds with a cane grass roof. Ron was born in 1922.



The remains of Ron's parents' house. Photo source: Ron Heinemann.

Fishing: as simple as A, B, C

Ron was taught to fish by his mother, who came from a family of fisherwomen.

I've been fishing in the river since I could almost walk. Mostly my mother taught me how to fish.

My father wasn't a fisherman, but my mother and her relatives, the Gardiner family, they were all fisher women. In those days, we used to have a rod with a short line on it, with a cork. Three foot off the bottom there was the hook, and you put a shrimp or a worm on it, and you just bobbed away, and the fish take it and you just pull them out on the bank – it's as simple as A, B, C.

Ron's passion for fishing continued as he grew older.

I was a mad fisherman all my life. I like fishing because you never know what you are going to pull out.

Remembering cod

Ron recalls his mother's memory of catching cod in the Paroo:

My mother remembers, when she was a little girl, catching cod up on the banks of the Paroo. As fast as they took one off the line there'd be another one on. They must have been there in plentiful supply in those days.

Ron remembers catching cod at Caiwarro waterhole and recalls the fishing exploits of a good friend:

He told me he caught two 20 pounders on the one line one day. He did not know what

was coming up because they were probably both pulling different ways. Another cod he caught was 73 pound. But I saw an 84 pound cod at the Station's butcher shop, it was a big fish. The biggest I heard caught there was up to 102 pounds.

But Ron recalls that cod were once more plentiful in this waterhole.

Down at Caiwarro there were so many cod fish. In 1950s they put a road across the bottom end of the river there, and so many cod fish died at the crossing, that they used to take them away in a truck to get rid of them. The station was only a few hundred yards away, and the smell was terrific. Every kind of fish. Cod fish, yellowbelly, catfish.



Although not common since the 1980s, the floods of 2011 allowed the Paroo to connect with the Darling and Warrego Rivers for a relatively long time, possibly allowing cod access back into the Paroo.

Photo: Luke Pearce.

The black flood

Ron remembers fish as plentiful, but reckons drought and rain have big impacts on the life of the river:

In those days there was any God's amount of fish. You could go down to the Five Mile water hole years ago, and you'd catch at least two meals in an hour without any trouble at all. But in 1935, the black flood came down and killed almost every fish in the waterholes.

When the river flows the first time after a drought it moves slowly; an almost black, ink-like water. Colin Leigo says the colour of the water changes: if there are storms in the upper part of the catchment, the colour of the water turns yellowish, then red.

Dougie has also seen the river flowing black after a big storm, particularly when the waterholes go black due to the fallen leaves. It does not last long, but can kill the fish. He has seen fish starving for oxygen during the black flood, dead and dying against the banks of the river. There would be, he says:

There were more there than what the bloody birds can eat.

Blackwater

- Blackwater events occur naturally
- They occur when there has been a build up of leaf litter and woody debris on the floodplain, followed by enough rain to submerge this material and high enough temperatures that it begins to rot. The water becomes discoloured and sometimes oxygen levels can drop significantly
- There are long term benefits. Carbon from the decomposing organic matter enters the food chain, increasing the population of aquatic invertebrates which then provide food for fish
- Blackwater events can harm aquatic animals such as fish. Some animals, such as crayfish, have been seen escaping the water during such events
- Although not an option in the Paroo, in regulated rivers the blackwater can sometimes be diluted with releases of water from dams to reduce its effect. However, this must be managed carefully or it can actually cause the blackwater to spread downstream as a pulse of deoxygenated water, affecting a greater area



A 'tide line' of dead fish is not a pretty sight, but blackwater events are part of the cycle of drought and flood in the floodplains of the Basin. Photo: David Ward.

But Ron has seen something odd happen after the black water has cleared:

Another thing I noticed in 1935, nature has it that those fish spawn before they die. And a few weeks after the flood, the waters tended to clear gradually, six or eight feet from the bank of the river you could see umpteen million of tiny fish moving – just a mass of fish. I have seen this only four or five times in my life.

They're beautiful to eat!

For Ron, fishing is not the end of the activity – eating the fish is definitely part of the enjoyment!

If you stayed overnight, you'd eat them on the spot. Cook them in a camp oven. A 20 pound cod fish – you wouldn't get much better to eat. Cut it into steaks, roughly an inch thick – and put it between two pieces of wire netting and cook over gidgee coals. You wouldn't get better anywhere. Because cooked that way, all the fat runs out, they get very fat. And they are beautiful to eat.

Colin Leigo often used to cook yellowbelly on charcoal along the banks of the river.

We used to use wet brown paper and wrap it up, you wrap the fish up whole like that, and just put it in some coals on the fire for about 20 minutes. Cover it on top as well with the coals, and when you pull the wet brown

paper off, the skin would peel off stuck to the paper. We didn't have to scale it or anything. Then you'd just eat it with a fork.

The disappearing water

The Paroo River is unusual in comparison to others in the Murray-Darling Basin. Most of its water disappears underground and it very seldom flows in to the Darling River.

The artesian is important for our survival here. I think trying to drill into the artesian basin to get gas is a problem. If they happen to destroy the artesian basin, it will be the end of Australia. I can tell you one thing. We had a big flood at Springvale once. I was out walking on an island there, and I thought I could hear horses trotting through the water in the distance. I got over a bit further, and I found that I could stand on top of this noise. It was water running over rocks. That flood had been up two foot six and fallen away two foot six in about a week, and it would have been a hell of a lot of water going down underneath. The water was disappearing into the earth. You could hear it running over the rocks. And yet it might have been 100 feet or so below me. So you could hear the water percolating down.

Great Artesian Basin

The Great Artesian Basin is the world's largest underground aquifer, storing 65 000 million megalitres of water. Although usually associated with central Australia, it stretches from 2 400km from Cape York to the Lake Eyre Basin, and east to Toowoomba and Dubbo. The basin's vast water supply is recharged from rainwater that penetrates from the surface. Natural artesian springs bubble to the surface as a result of the water being held under pressure.

These springs have always been vital sources of water for Aboriginal people and are also significant elements in stories associated with Ancestors, who often live in the deep pools of mound springs.

The artesian springs enabled the first pastoralists to move into the Queensland interior and provided important watering points. In 1886, JS Loughhead drilled the first bores in the area at Thurulgoonia Station near Cunnamulla. Drilling produced 80 000 gallons of water per day and although very expensive, it did attract more people and stock.

Once a bore was in place watering facilities included tanks, dams and bore drains. Artesian water was also used on stock routes, for woolscouring and as a supply for steam driven railway engines. Towns in the Paroo district use bore water for urban supply. Artesian baths and spas were once common.

The extraction of water from the Great Artesian Basin has changed the ecologies of many places in the basin area. Many natural and mound springs now have reduced flow or have stopped altogether. The Paroo River waterholes at Curriwinya and Caiwarro are fed by artesian water.³

Declaration of Ramsar sites⁴

Three major wetlands within the Paroo catchment have been protected under the International Ramsar convention, protecting the ecological integrity (flora and fauna diversity, including native fish populations).

One of the wetlands, Currawinya National Park, was included within the International Ramsar Convention in September 1995, and the Nocoleche Nature Reserve (approximately 180km west of Bourke) and part of the Paroo - Darling National Park (240km south west of Bourke) were included in September 2007. Their total area within the Paroo catchment covers over 280 000ha.

For more information go to <http://www.environment.gov.au/water/publications/environmental/wetlands/paroo-river-factsheet.html>.



Paroo wetlands artesian spring. Photo source: NSW DEC.

Ron Gardiner – *Riding the river*



Ron Gardiner was born in 1918 in Cunnamulla. He had to go to school in Eulo, initially boarding at the Eulo Queen Motel as there was no bridge across the Paroo River.

But after the bridge was built, Ron started to commute to the school on horseback. That was in 1928.

He remembers his first contact with the river as it was rather challenging:

The first year I went to school in Eulo, the teacher there was a Mr Skinner. He took us all down to the river, to a big water hole, which was a quarter of a mile away. He said, 'We are going over to the other side.' And I said, 'I can't swim, Sir.' And he said, 'Well, hop on my back.' We got half way over, and he pushed me off, and said, 'Now, swim.' So that was a good early lesson.

Fishing tricks

Fishing the Paroo was a common activity. Ron has fond memories of fishing with his grandmother who showed him a trick or two.

I used to go to the river when I probably would have been around about 10 or so with old grandmother Gardiner, my father's mother. And she used to go down to the Paroo with a bamboo rod, and do bobbing. Every now and again she'd get a handful of sand and she'd throw it across the cork, and she'd say to me, I'm just putting a bit of pepper and salt on whatever I catch later. And she always caught a fish or two.

Ron had his share of funny things happen when fishing too.

The Caiwarro hole, it was at least three miles long, never dry, 20 or 30 foot deep. At one stage when I was down there with a cousin of mine – when I was about 18 years of age – and we were fishing at night in the middle of the river. I said, 'Fred, I don't think we're moving.' And he was a good rower, and he said, 'Of course we are moving.' So after a while we had a lantern with us, and we found we weren't moving. Apparently a big old tree had washed into the river, and we were sitting on a limb, and there was great big heaps of grass growing, I'd say in about ten feet on either side, and I said to Fred, 'Oh, for goodness sake, don't have an accident here, I don't think I could get through that grass.' But I believe it's all gone since the carp came.

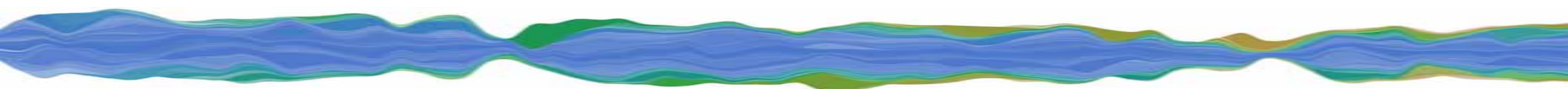


The Caiwarro hole. Photo: Greg Ringwood.

Yellowbelly is a favourite

Ron sometimes caught large numbers of fish. He'd keep them in the fridge and eat them over the following days. It was always the good old yellowbelly.

It was the easiest one to catch. We didn't catch many cod in those days. I think I only ever caught one cod fish. Once, when I was going to school, I went down to Five Mile. I caught a five pound cod. Then one day I went to Five Mile hole and there was a black flood. The fish was getting closer to the top until they started jumping out of the water. And I got enough yellowbelly to fill the back of a ute – the floor, just flat. And they were beautiful. And the biggest fish I know that was caught there that day was a 25 pound cod.



Golden perch

(*Macquaria ambigua* - yellowbelly, callop, Murray perch, white perch)



- Grows to 76cm and 23kg, but usually less than 40cm
- Likes warmer, slow moving waterways, floodplain lakes
- Found around fallen timber, undercut banks, rocky ledges
- Occupy a territory of about 100m for several months before moving to a new home range
- Known to migrate over 1 000km in spring and summer
- Migration cued by warmer water and rising water levels
- Eggs drift downstream on floodwaters
- Eat shrimp, yabbies, small fish, aquatic insect larvae.

When the fish weren't around, Ron would catch crayfish – or 'yabbies' as they're known in other parts of the Basin.

My son Andrew told me about ten years ago that the flood killed all the fish. The locals said, 'It's no good going fishing, because there aren't any fish in the river.' After that a fellow named Charlie Mackenzie and Andrew went out to the river, put a tin in, and came home with a bucketful of crayfish. It was much easier to catch crayfish, because there are no fish there to keep the crayfish down.

Riding the river

Eulo was and still is grazing country. Sheep often get access the river and regularly get caught in it during floods. The best way of finding sheep caught in the river is to wander up and down in the river on a back of a horse. Ron called this 'riding the river':

Well, whenever there is a flood in those days, you got on your horse and you rode the river, to make sure if there were any sheep caught, you'd swim across the river. As soon as there would be a river, we'd ride. We had two good horses that swam and they'd swim across any river. Marvellous. We'd get sheep and cattle out of the river by swimming them across.

Ron Heinemann had similar experiences. In 1964, he bought a boat and a motor so that during the flood he could look for stranded sheep.

We used to cruise the Paroo, looking for sheep on islands. If you found five sheep on an island, they'd go five different ways in the mid-stream, and you had to go and pull them out of the river onto the boat, which was hard work, I can tell you.



Moving sheep by boat. Photo source: Colin Leigo.

Making connections

Survival from the river

Early settlers and Aboriginal people relied on the River to supplement their protein intake. They caught yellowbelly, Murray cod, catfish, yabbies as well as freshwater mussels, all for eating.

They fished almost every day and took what they needed for the day. Those who lived far from the river took larger quantities of fish home.

Until the first half of the 20th Century, there were plenty of fish in the River, as Dougie MacGregor recalls:

Those days if you got on a boat and dropped a line, it was sure that you would get 2 or 3 cod. Most holes in Paroo were known for holding plenty of cod.

Over the years, overfishing, introduction of carp and pollution resulted in the decline in the number of fish. Colin Leigo sums up the situation:

Now it is very hard to catch a Murray cod. These days it seems it is the luck of the draw whether you will catch a fish or not.



It was important to catch your own fish as there were no fish shops. Photo source: Gordon Warner.

Knowing the fish

People who fish the Paroo know their fish well. Ron Heinemann gives some examples:

No eels out here. But tonnes of yabbies. There is another small fish out there we call the moon fish. ... Oh, there are also tiny fish – oh, grunters and bony bream – that sort of thing which are used for cod bait too. Also, black bream, which you get a lot of them out in the Currawinya Lake, and they come up into the Paroo, and they grow to three and four pounds and are good eating, too.

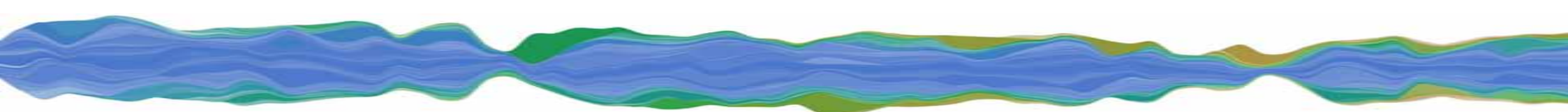
The river provided plenty of fish: but you do have to catch them! Understanding the river and the fish is important. As far as Tud Murphy is concerned, the local aboriginal people do it the best way.

One bloke put his hand into the log and he'd come up with a big yellowbelly in his hand, every bloomin' time. He used to tell us, all you had to do was rub them on the belly and suddenly they'd just lay there, and you just slip your fingers over the gills and bring them up.

Dealing with 'dry floods'

Sometimes living along the river brought unwelcome surprises – like floods. The coming of the telephone helped locals deal with some of the difficulties of living near the Paroo. Donald Cooney remembers how the coming of the telephone lines to the Eulo area changed the way that people were warned about the floods.

You get what you call dry floods – it'd rain heavily up the river and you'd have nothing, you'd have dust blowing. You wouldn't see a cloud in the sky, and you didn't know the water was coming because it was raining 200 miles up the river, then down she'd



come. They decided that this was no good. So when they first got the telephone down there everybody got busy and built the party lines. Four or five properties would get attached to just one wire that ran into Eulo. It was the start of the modern era.

The children of the river

According to Colin Leigo, during his childhood life, was a lot easier for the people along Paroo. The lives of his parents and grandparents revolved around the river. They'd fish the river and socialised by organising picnics and other events on the banks of the river.

My father always enjoyed the river, enjoyed the fishing and the social days on the river bank. Everything seemed to revolve around the river; they had their picnics and what have you, they were always held on the river.

Kids spent the summer days cooling off in the river. The river closest to the house was about 1.8 metres deep allowing kids to dive and jump into the water. Colin and his brother learnt to swim by tying a gallon-tin around their back and dog-paddling. The brothers spent most of their spare time swimming, catching fish and yabbing in the river. They created games, built swing ropes and diving platforms.

His childhood relationship with the river continued into the next generation with Colin's daughters.

Even though our house has since shifted about a kilometre off the river, they've done the same thing as I did over the years, swam and fished and yabbied and everything in the river. They've both had their twenty-firsts on the river.

It's a big (fishing) adventure

Fishing can be exciting but Ron Heinemann believes before, during and after catching fish is all part of a big adventure.

It is all a big adventure I used to swim in the river as well. Sometimes four or five of us used to go fishing together. We sometimes spent the night out there. Just a swag and gidgee coals. The fishing was just the thrill of catching a cod on a line. I've seen them get on a line at times and you'd think a bullock had fallen into the water. They really go to town when they hit. One of the first 25 pounders I ever caught was down below Springvale. I looked over the bank, and it came right over the water, a 25 pounder. I can tell you, it's a nasty job trying to carry them back on a motorbike – on your lap!

Picnics along the river

The river also created a good atmosphere for socialising. Gatherings of families and friends along the river banks for fishing and having picnics were a common event as Ron's daughter Bridget remembers:

Mum used to invite the nuns out quite often for picnics along the river. They'd come out and they must have stayed overnight. It was quite amusing, because our governess took her clothes off in front of the nuns to go and get the bull out of the river. We thought that was very naughty. We used to go on these picnics along the river and go fishing and swimming. I remember us going fishing quite a lot. Dad would take us. We'd get into trouble, because you weren't allowed to make noise while you fished.



Fishing was often a family, as well as a social, event.
Photo source: Gordon Warner.

Visions for the Paroo

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.

Stock management

Donald Cooney was born in the 1930s and grew up on 'Turn Turn' with his eight brothers and sisters. He and his wife Faye lived in the Paroo River district most of their lives, raising their three children, Alan, Donna and Stacy and running sheep at Wittenburra, an hour west of Eulo. They fished the Paroo and the Warrego rivers and saw how it changed over their lifetimes. Donald remembers:

We lived on it for a long time. And it was in the early days – it was useful mainly from a stock point of view, for the water. You had to have water during drought. The stock route ran along the river. In those days we had no trucks to move the stock away from the drought. Mobs of drovers took mobs of stock along the river, they walked along the river.

They just absolutely devastated along the edge of the river. That was one negative – the fact that the stock route was right on the water. It was detrimental to the river's health because of the huge movement of stock up and down the stock route. The best thing that ever happened to the river, of course, was the fact that trucks finally took over and there was no need to travel stock along the route.

Ron Heinemann lived not far from the Cooneys on his family property, Springvale. He remembers the impact of stock on the river differently:

The banks of the river have not changed either. I wouldn't say so, no. A lot of people say that stock watering is damaging in the water holes, but I think the floods clean that out and take care of that.

Colin Leigo has seen how the riparian vegetation has changed with changes in agriculture. He noted that after dairy farming declined, lignum vegetation along the riverbanks increased because it was not being eaten by the cows.

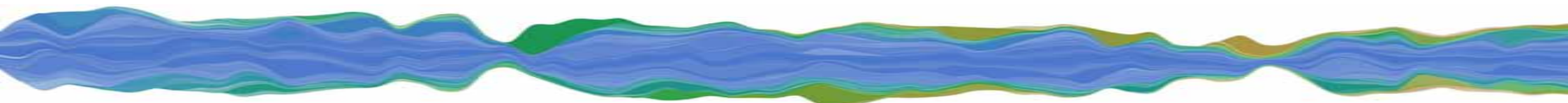
In order to protect the river bank vegetation Colin has worked with the Western Catchment Management Authority to fence about 12km of the river on one bank on his property.

He uses the fence line to manage the herd for grazing rotation rather than preventing access to the river and riparian vegetation.

Dry times

For Colin, managing stock in the arid zone meant keeping a close eye on their water and observing its permanency in the river.

Colin noted some water holes would go dry after 20 years or so for a short period but then fill up again. The longest he recalls the water holes going dry was during the 2003-2004 drought when he had to cart water for about three months. Prior to this Colin carted water for the stock for about six weeks in 1965 and remembers helping his parents to cart water for a while in 1958 – illustrating the long dry periods that can be experienced in the Paroo.



Benefits of floods

Ron Heinemann remembers how crucial the floods were to maintaining the lakes and off channel areas of the Paroo:

Lake Wyara is a fairly big fresh water lake which the Paroo will run into it during any big flood. It's five miles across. The river will go up to the other lake on the western side, which is a salt lake. I have camped there. And the birdlife that comes in after dark, the noise, the swish of their wings coming in from the salt lake to the freshwater lake to feed - that's something to hear. We're talking about a very wide range of birds. Pelicans, swans, ibis, you name it. I've flown over twice and the bird life there is colossal. They are obviously coming in to feed on the fish and other things. There'd be a lot of fingerlings.

Floods changed the whole landscape and as the water subsided, Ron knew where to find the fish:

Well, you go along a certain distance and it would be quite a fair water hole. Then there's nothing for miles, only just channels and small water holes that dry up fairly quickly. Right along the Paroo there's a series of larger water holes that are permanent. And it's in those holes that you go fishing that the fish congregate in.

Being a keen fisherman, Ron joined the local fishing club. He recalls restocking native fish into the Warrego River:

In 1985 I joined the fishing association in Cunnamulla. We did put 2 000 Murray cod fingerlings, about three to four inches long in the Warrego River below Cunnamulla. When we let them go, they just dispersed in a flash into the water, out of their plastic bags. And some ten years or so later you'd hear of a 20 to 30 pound cod being caught.

State of river: 'moderate - good'

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.⁴

The Paroo Valley was surveyed in 2006. The Paroo Valley fish community was considered in Moderate Condition, and Ecosystem Health in Good Condition. 58% of predicted native species were caught, comprising most of the total catch (97%), and 78% of the total biomass.

Catch was dominated by bony herring, with golden perch, Murray-Darling rainbowfish and Spangled perch also common. Carp dominated the alien species captured, with goldfish also

Goldfish

(*Carassius auratus* – golden carp, carp, common carp, crucian carp)



Photo: Gunther Schmida.

- Small deep bodied fish up to 40cm but more commonly 20cm
- A native to eastern Asia, first introduced in 1860s as an ornamental fish, now present in all waterways of the Basin
- Although ornamental fish have various bright colours, wild goldfish quickly revert to a bronze colour
- Usually associated with warm, slow-flowing waters, weedbeds and is known from slower flowing areas of upland rivers
- Spawn when water temps are 17-23°C, eggs are laid amongst submerged vegetation
- Feeds on small crustaceans, insect larvae, plant material and detritus
- Generally considered benign (not harmful, low impact on 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) Interstate agreement on water extraction

The New South Wales and Queensland Governments signed a historic Interstate Agreement on the 18th of July 2003 to protect the Paroo River, its wetlands and flood plains. The agreement stops the issue of additional water licences other than those for minor irrigation and urban water uses. In addition the Queensland Government issued a moratorium on the construction of new water infrastructures on 9 June 2001. The same moratorium is also applicable to all other Queensland rivers within the Murray-Darling Basin.

The agreement is titled *Intergovernment Agreement for the Paroo River between New South Wales and Queensland* and a copy of the agreement could be obtained at

<http://www.water.nsw.gov.au/Water-management/Law-and-policy/Intergovernmental-agreements/default.aspx#paroo>

b) South West Natural Resource Management Group

South West Natural Resource Management is the designated regional body for natural resource management in South West Queensland. It works with the community and the community based groups, traditional owners, government organisations and industry groups to achieve sustainable natural resource management and fosters landcare and catchment management ethics.

It is responsible for regional delivery of natural resource management program in the Bulloo, Nebine-Mungallala-Wallam, Paroo and Warrego catchments.

The main office of South West NRM is located in Charleville. For more information, phone (07) 4656 8500 or email swnrm@southwestnrm.org.au

c) Western Catchment Management Authority

The Western Catchment Management Authority has been established to ensure the local community has a significant say in the management of natural resources including land, vegetation, rivers, groundwater and biodiversity. It assists the local community in being actively involved in natural resources management initiatives.

For more information, go to www.western.cma.nsw.gov.au



Paroo River at Willara in 1935. Photo source: Colin Leigo.

River resources

- Native Fish Strategy Coordinator
Greg Ringwood (Qld): (07) 3224 2164
Anthony Townsend (NSW): (02) 6763 1440
- South West Natural Resource Management Group
Julie Frousheger: (07) 4656 8520
E-mail: biodiversity@swnrm.org.au or
www.southwestnrm.org.au
- Western Catchment Management Authority
Maree Barnes: (02) 6841 2749 or
www.western.cma.nsw.gov.au
- ABC Rural: www.abc.net.au/rural
- Charleville Fishing and Restocking Club
Judey Aiken: (07) 4654 1777
- Queensland Parks and Wildlife Service (Charleville):
(07) 4654 4712
- NSW Parks and Wildlife Service: (02) 9995 5550
- Paroo Shire Council: (07) 4655 8440
- National Library Australia: www.nla.gov.au

Abbreviations

DEEDI	Department of Employment Economic Development and Innovation (Qld)
DPI	Department of Primary Industries (NSW)
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 rivers: Namoi (NSW), Upper Condamine River (Qld), Katarapko Creek (SA), Upper Murrumbidgee River (NSW / ACT), Culgoa - Balonne Rivers (Qld / NSW), Paroo River (Qld), Goulburn River (Vic), Lower Darling and Great Anabranch (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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4. PE Davies, JH Harris, TJ Hillman and KF Walker. 2008 *SRA Report 1: A Report on the Ecological Health of Rivers in the Murray–Darling Basin, 2004–2007*. Murray–Darling Basin Ministerial Council.
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All fish fact boxes: Lintermans, M. 2007 *Fishes of the Murray-Darling Basin: An introductory guide*, Canberra: Murray-Darling Basin Commission.

Some fish of the Paroo River

Native
(Not to scale)

Golden perch / Yellowbelly / Callop



Hyrtl's catfish / Moonfish /
Yellow finned catfish



Silver perch / Murray bream / Grunter



Murray cod / Cod



Yabby / Craybob



Spangled perch / Bobby cod



Catfish / Eeltail catfish / Jewfish



Introduced
(Not to scale)

European Carp / Common carp



Goldfish / Golden carp

