

Keynote presentations

The values of Murray cod: Learning invaluable lessons from King Midas

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Like King Midas of the ancient Greek legend, Australians have made the mistake of valuing gold more than anything else. Dreams of transforming water into gold is what the recent history of the Murray River has been all about. The skewed and distorted value Australians have given gold above everything else has decimated Murray cod populations and the health of the river system.

Australians must not repeat the mistakes of King Midas. According to legend, King Midas was obsessed with gold. He was granted one wish by a god and chose the capacity to change everything he touched to gold. As Midas roamed around his palace everything he touched turned to gold. After a while Midas grew hungry, but when he touched his food it turned to gold. When he bent down to smell the beautiful roses in his garden, they turned to gold and lost their scent. When his beloved daughter ran to him, he bent down to embrace her, and she too was turned into a lifeless gold statue. The King wept, and begged the god to free him from the power of the golden touch. Midas had mountains of gold but had sacrificed everything else he valued and needed to live. The god gave Midas the cure to his golden touch – bathing in the clear waters of a river.

King Midas learnt his lesson and was able to reverse his golden curse by taking a bottle of the pure, clean river water back to his palace and sprinkling drops on those things he loved but had destroyed with his golden touch. Taste returned to his food, scent to his rose bushes and life to his daughter. Midas was lucky, we don't have gods to help us, or a healthy river to bathe in and cure us of our golden obsession. No god

will help us restore the Murray cod and its home, but we can make better decisions about the values upon which decisions affecting the river and its native fish are made.

For most of the twentieth century Australians have been trying to turn 'water into gold' by controlling and extracting the flow of the Murray River System. The future of Murray cod, the Murray ecosystems and agriculture is bleak if only the gold accumulated by selling powdered milk, rice, grapes, oranges and tomatoes is counted and valued, while the ecological and economic costs of river regulation are ignored and discounted. Governments, anglers and irrigators must make the effort to understand the cultural and ecological values of cod, and take the full action needed to restore the Murray River System.

Murray cod are never going to be a billion dollar export industry, but they are immensely valuable. They are like a canary in the miners cage – they're an indicator of how healthy the life-support system of the Murray-Darling Basin is. Agriculture in the Murray-Darling Basin can't claim to be clean, green or sustainable until the Murray River is healthy enough to restore and naturally replenish its populations of native fish, including Murray cod.

Today, the Murray River System is so degraded that it can only breed a fraction of its once abundant native fish population. In New South Wales and South Australia catches of cod by commercial fishers dropped by 85% over the last 50 years. Between 1956-1964 the commercial catch of cod went from 140 tonnes each year to about 20 tonnes. When the NSW commercial



fishery closed for good in 2001 about 20 tonnes of cod were caught (TSSC undated). Native fish populations have been reduced to relying on restocking programs financed by angling club chook raffles and Government grants. Since 1997 2.283 million Murray cod fry have been released by New South Wales, ACT and Victorian agencies (TSSC undated). Australia's greatest river can't sustain wild populations of its most valued fish without restocking – it's just like an ordinary suburban fish pond.

Australians have valued the Murray cod and held it up as a national icon – but have done little to protect it or its home. Instead the welfare of Murray cod has been largely irrelevant to the value systems of decision-makers in Government and business.

There's no doubt Australians from Aboriginal and settler backgrounds have valued Murray cod highly. They are fish that have always been a symbol of the Murray-Darling River System and its abundance of natural riches. Murray cod have been valued in many different ways – people have fished for them, told stories about them and enjoyed knowing they were just in the river for as long as time has mattered. Murray cod were already in the Murray-Darling System 60 000 years ago, when Aboriginal travelers decided that Australia looked like a good place to stay.

Everyone has values that guide how they and their communities live and the decisions they make. Values can be things that reflect a community's ethical base, things that are important to people, or narrowly defined as the price paid for a good or service. While every one has values, the values that matter most are those that are acted upon, have money allocated to promote them, and laws passed to protect and strengthen them. Not all values influence the decision making of Government and business. Some values win – some lose.

Murray cod have not been valued by decision-makers in Government and private enterprise. If they were valued then more would have been done to protect them. Cod populations have declined dramatically since European settlement to the extent that they are no longer common in many parts of the Murray-Darling Basin. According to advice given to the Commonwealth Minister for the Environment and Heritage in 2003 from the Threatened Species Scientific Committee (TSSC). 'The high degree of

regulation of river flows caused by the dams, and particularly the reduced frequency of spring flooding, is a major factor in natural spawning and recruitment failure. The geographic distribution of the Murray cod is restricted and precarious for the survival of the species' (TSSC undated). By these measures it is obvious that, even though many Australians value cod highly this has not been enough to save them.

Today, Murray cod, like many other species around the globe, have been listed as being vulnerable to extinction. On a global scale about 20% of the 9 000 known freshwater species are either extinct or threatened with extinction. In North America and Europe about 40% of all native fish species are extinct or imperiled. In East Africa's heavily stressed Lake Victoria, 40% of its unique 350 species of native fish are at risk with 60% already having been pushed into extinction (Abromovitz 1996) China has 50 000 kilometres of major rivers. According to the United Nations Food and Agriculture Organisation, 80% of these rivers no longer support fish (Wilson 2002).

We should start imagining a Murray River without wild populations of Murray cod. If we do this and decide that we would like our own and future generations to know this great fish, then we must put these values into action.

People give Murray cod values – the fish don't care

For most of their evolutionary history of Murray cod have had no value to people. Aboriginal people have lived in Australia for probably 60 000 years. Murray cod have been around in one form or another for about 60-65 million years. People give Murray cod many, but not all, of their values.

Murray cod have an intrinsic value not determined by people. They are but one small chapter in the Big Biodiversity Book of the Earth. The pages of this book are getting a bit ragged around their edges. Hundreds of pages have been torn out as species have become extinct. In 2001 the National Academy of Scientists of the United States of America agreed that there 'is consensus in the scientific community that the current massive degradation of habitat and extinction of

many of the Earth's biota is unprecedented and is taking place on a catastrophically short time-scale' (Novacek & Cleland 2001). Murray cod's recent listing as a species vulnerable to extinction is yet another contribution Australia has made to the global extinction crisis.

Murray cod are intrinsically valuable because they contribute to making life on Earth possible. When industry and Government say that protecting species like Murray cod is too hard, it's worth remembering just how big a deal biodiversity is. The Earth depends on a living shell to create the special conditions that make life sustainable. The soil, water, and atmosphere of the Earth's surface have evolved over hundreds of millions of years to their present condition by the activity of the biosphere, a stupendously complex layer of living creatures whose activities are locked together in precise but tenuous global cycles of energy and transformed organic matter (Wilson 2002). The biosphere creates the world anew each day and every minute. The human species is utterly dependent on these processes. When we destroy ecosystems and extinguish species, we alter and undermine the processes of the biosphere and thereby threaten our own existence (Wilson 2002).

Murray cod are valuable because they're part of the Big Book of Biodiversity. They are the top freshwater predator (forgetting people for a moment) in the Murray-Darling Basin and an indicator of how healthy the total river ecosystem is.

Lessons from the past

The problems faced today by Murray cod have been largely caused by the values of past generations. We need to understand those past values and how they continue to influence, or fail to influence, the decisions made in the present. We need to make choices about the values we want to discard, change or take into the future.

The human values of Murray cod

Murray cod have always been highly valued a source of food by Aboriginal and settler Australians. During the economic depression of the 1930s unemployed workers found sanctuary and food on the banks of the Murray and enjoyed the free feed provided by cod. The poor and dispossessed in the community have always fished the Murray out of necessity. It provided them with independence from the 'susso', mission rations or unemployment benefits.

Catching a big Murray cod could put food in your stomach and cash in your pocket. In 1952 Oscar Matson was living in a shack on the riverbank at Wentworth. He saw a 92 pound Murray cod floating in the river that had knocked itself out going over the weir and he grabbed it. Oscar sold the fish for £15 – more than he'd make in a week.

Fishing for Murray cod was also a great way to unwind from the pressures of life. Fishing has taught many Australians to love the bush and the river system, and connected people to the great power of the riverine landscape. In 1947, the journalist George Farwell wrote words that still ring true today.

To camp by its lonely reaches...to fish off the steep grey banks...to penetrate the the silent red gum forests, or fry sweet Murray cod over the foot of an ancient stout fibred river-gum: to have known these things is to have discovered the quiet strength of Australian earth. (Sinclair 2001)

A recent survey of the 3.36 million Australians who went recreational fishing between 2001-2 found that 37% went fishing to relax and unwind, 15% to spend time with their families, and 12.5% to get outdoors (AFFA & FRDC 2002).

Murray cod have great cultural value to Aboriginal and settler Australians. Aboriginal stories describe how a great hunter in the Dreamtime chased a giant Murray cod all the way down to the Coorong. The efforts of the Murray cod to escape the hunter created the path of the Murray River. When the hunter caught up with the Murray cod, he speared it – and the dismembered flesh of the giant cod created all the other native fish species of the



river system. The cod is a symbol of the river's creation and degradation. A few years ago a Doug Nichols, a relative of the great Aboriginal leader Pastor Doug Nichols, told me: 'If you stop the Murray cod from flowing and doing his business up and down the river...[bad] things are going happen. That's what's happening now' (Sinclair 2001).

It's also likely that giant Murray cod – they have been recorded to grow 1.8 metres in length and weight up to 113 kilograms – might have been the source of stories about bunyips who lived in deep river holes and devoured Aboriginal children silly enough to swim alone in the river. In 1920 and 1921 children of Mildura were told that a 'crocodile' was living in Lake Hawthorn, more than likely a giant Murray cod. Settler Australians have also taken the cod to heart. Settler Australian fishers have always thought of cod as the 'wise old man' of the Murray and poached stories about the cod from Aboriginal culture.

In the past fishers have hunted Murray cod with a reckless passion because before the population collapsed in the 1950s the fish seemed unlimited. Murray cod were valued as the ultimate symbol of the rivers natural abundance. When Charles Sturt was travelling the Murray in 1829-30 his convict rowers ate so many that they hated the sight of them. Trainloads of native fish including cod were regularly sent to the Melbourne Fish Market before the Second World War. Today it's hard to imagine just how many cod there were in the river. In 1953 for example, 6 tonnes of Murray cod were caught in first three days of open season by professional fishers and sent from Mildura to Melbourne (Sinclair 2001). It's not known how many recreational fishers caught. All this fishing boosted the local economies of Echuca, Swan Hill and Mildura, and also contributed to decline of the great fish.

Murray cod were valued as a symbol of the Murray's natural abundance. But in the years before scientists started taking an interest in the ecology of the river system, many Australians ignored the signs that the cods habitat was being destroyed, and recklessly over-fished the Murray System. The river was thought of as something like the Magic Pudding – it'd give fishers cod no matter what punishments were inflicted on it. The catch records of professional fishers and reports in local newspapers make it clear that cod

populations have declined dramatically. It's been hard for some Australians to grasp this fact. For the last 50 years local tourism boosters keen to encourage fishers to spend money on bait, beer and fuel in their towns have used the capture of one big old cod, or a good bag as evidence that the Murray cod were stronger than ever. These people rarely took the long view and compared their diminished catches with the massive hauls in 1883, 1900, 1918, 1934 or 1957. Many people were quick to forget what the Murray had been and came to think of the degrading river as the only one that had ever or could ever exist.

The loss of intergenerational understanding of what constitutes healthy cod populations is a major threat to the future of the great fish. People can grow accustomed to degradation, or move away and forget or grieve for what has been done to the rivers. The eminent scientist E. O. Wilson has argued that the rapid loss of biodiversity on Earth has been caused by a fundamental conflict between short-term and long-term values.

Wilson argues that people have been hot-wired by evolution to act in short-sighted ways. People, says Wilson, have evolved to commit themselves emotionally to a small piece of geography, a limited band of kinsmen, and to think two or three generations into the future. For hundreds of millenia those who worked for short-term gain within a small circle of relatives and friends lived longer and left more off-spring – even when their self-interest caused chiefdoms and empires to collapse around them. The long view that might have saved distant descendents, required vision, and extended altruism was difficult to marshal.

But there have always been people with long-memories, who have fostered an acute sense of the ecological and cultural value of cod. You can hear the echo of current debates about the health of the Murray in the words written in 1937 by the ironically named M. A. Weir:

When man in his wisdom first set out to control and use the waters of our rivers, he made no provision for the fish. 'Hang the fish', said the wise ones... So that, since the conservation [of water in dams and behind weirs] began, we have been living on the principal and not the interest of our fish heritage.(Sinclair 2001)

But people like Weir had little power to influence the decisions that resulted in the degradation of the cods habitat, starved it of flows and polluted its waters. Their values never entered the decision-making processes of Government or irrigation enterprises.

Values into action: Poor old cod

Settler Australians and Aboriginal communities have a long history of cultural and connection with Murray cod. But on the whole, these values have not played any significant role in the big decisions taken by Governments and irrigators on how to manage the Murray and exploit its waters. The decline of Murray cod have either been ignored or considered an inevitable cost of irrigation development by decision-makers.

There have been three key sets of values that have impacted on the health of Murray cod populations.

Firstly, Murray cod have not been valued because no-one knew how to measure how much money they were worth. The fish's economic value have been considered to be far less than the returns generated by growing pasture, fruit, rice, meat and vegetables. The River Murray Commission, the precursor to today's Murray-Darling Basin Commission, summed up the attitude of Government clearly by stating in 1946 that: 'The real wealth of any country can be measured only by its production' (Sinclair 2001). In the past Government and irrigators talked about 'production' they did not generally consider the ecosystem services provided by a health river system, or the recreational and cultural importance of the Murray cod. Rarely did decision-makers consider what the future financial costs of replacing wild native fish populations might be – if it were possible to do so.

The value placed on The Big Book of Biodiversity of which cod are an important page, is changing for the better. Ecosystem services is a term that has been coined to describe the natural processes and conditions that sustain and fulfil human life. Today our understanding of economic value of healthy ecosystems is growing. Many economists now understand that river systems deliver nutrients to the seas and nourish marine food webs. They sustain native fish populations, dilute waste products, create habitat for a rich diversity

of aquatic life, maintain soil fertility and offer inspirational natural beauty. But for most of the last century these functions were taken for granted because they were provided free by the Earth and required no investment on our behalf to maintain them. We no longer get a free ride because the degradation of the river system means the survival of Murray cod depends on Governments and industry paying money into programs to protect them and making laws and institutions who understand their broader contribution to the well-being of the community and ecosystem (Postal 1992).

Secondly, the decline of Murray cod was seen as an inevitable cost of progress. Many people throughout the twentieth century knew that the Murray-Darling River System was being harmed by the alienation of the river from its floodplain, and the operation of weirs and dams. The loss of a few fish seemed to be an acceptable trade-off when measured against the great wealth created by regulating the river and developing irrigated agriculture. T. C Roughly in his *Fish and Fisheries of Australia* (1951) captures the view well:

It cannot be denied that...controlling of flow of water by locking it up in dams seriously interferes with the spawning of the principal species [of native fish]...[but dams and agriculture] are increasing the wealth of the country to a degree far beyond the value of the fishery.

Unfortunately in the late 1950s the number of Murray cod in the river fell dramatically and has never recovered.

Australians have managed the rivers that are the Murray cod's with the ill-founded expectation that unpleasant environmental consequences would be small, happen gradually and be insignificant in larger scheme of irrigation development. Australians should not feel too badly that they got the management of the river system so wrong. In the United States the iconic salmon have suffered a similar fate to Murray cod. Catches of salmon have fallen from over 20 000 tonnes in 1895 to 533 tonnes in 1995 (Abrmovitz 1996). According to Jim Lichatowich in his book *Salmon without Rivers*: 'We assumed we could control the biological productivity of salmon and "improve" upon natural processes that we didn't even try to understand' (Lichatowich 2000). The same is true for the rivers and cod populations of the Murray-Darling Basin.



Finally, the protection of Murray cod has always been considered to be somebody else's job that would get done sometime in the future. Intelligent observers of the Murray's history knew that extracting vast amounts of water and turning the natural flow regime on its head would have serious consequences. Journalist George Farwell hoped that the same effort that had gone into controlling the river's flow for the benefit of irrigators and improvement of riverboat navigation would be spent on restoring the Murray. 'Man cannot overturn the balance of nature', wrote Farwell, 'without paying the costs of large scale readjustment. If he tackles it with the same energy as irrigation, the equilibrium may one day be restored' (Sinclair 2001). It's yet to be seen if this current generation will be the one that finally takes up Farwell's 57 year old plea – but there are promising signs emerging from Government and many irrigators that it now time to begin restoring the Murray River System.

The most recent scientific assessment of the Murray River's health has clearly documented the threats to the Murray's health. Habitat destruction, increasing salt and sediment loads, the alienation of the river from the floodplain, and exotic pests are playing their part in destroying the Murray's natural and cultural heritage. The scientific assessment concludes that

[of] these threats, changes to the flow regime are critical and require immediate attention if the River Murray is to be returned to a 'healthy working river' condition, and maintained that way for future generations (Scientific Reference Panel 2003).

The challenge is clear and the stakes are high. Taking a business as usual approach to the management of the Murray and its cod will not be good news for the future of Australia's greatest freshwater fish. A Murray River without cod just would not be the same river, and it would need a new name – The Great Golden Pond might be more appropriate.

Australians value Murray cod highly as an integral part of the riverine ecosystem and their cultural heritage. In the past these values have been shoved off to one side, while short-sighted and self-interested decision-making have dominated and degraded the cod's home. If future generations are going to have the chance to know, taste and understand Murray

cod then the full benefits of a healthy working river and the real costs of river regulation have to start being counted by decision-makers and the public.

King Midas was almost destroyed by the dead, golden world created by his obsession, but he chose to restore the things that he finally understood were the foundations of his life. Australians face a similar test. The ecological and cultural values of Murray cod will only be protected by people taking action to protect them.

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