Submission

Dear Commissioner Walker,

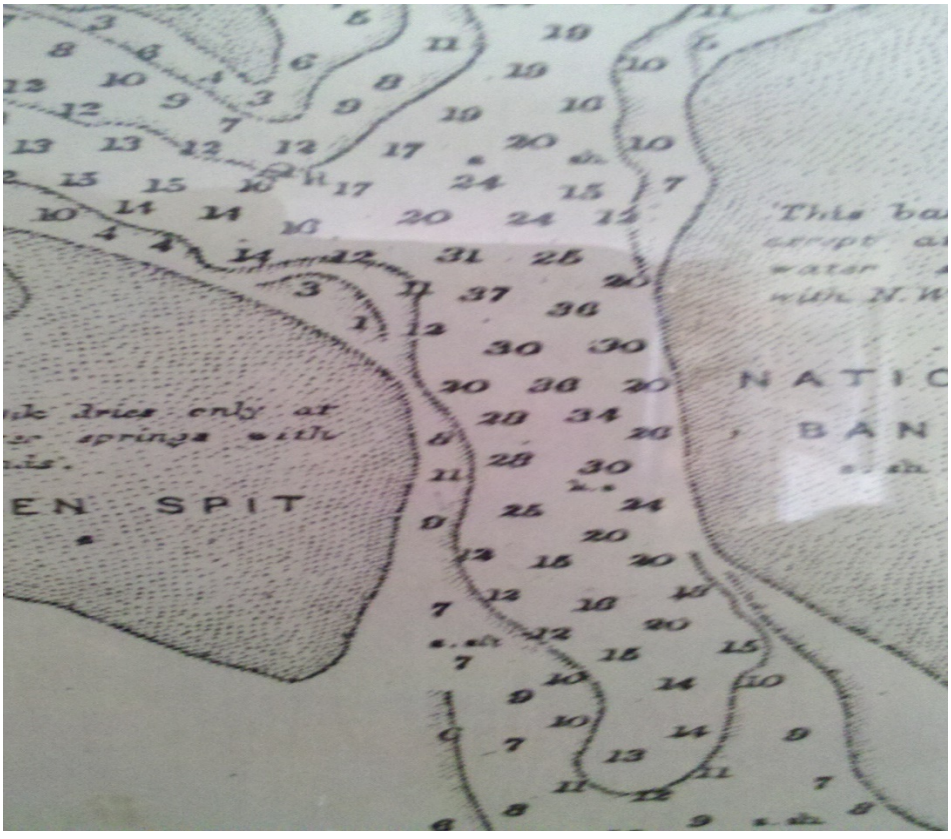
Thank you for giving me the opportunity to make a submission to your Royal Commission.

Given my experience and expertise, I will limit my submission to terms of reference 1, 5, 7 and 13. However before addressing these terms I would like to provide a background to my connection with the River Murray in SA.

Background

My family came from the Shetlands in 1854; there was seawater in our blood.

In the early 1970s, while finishing an economics degree at Adelaide University, I witnessed a freak haul of large mulloway in the Murray Mouth, at close hand. Next morning I went to the Victor Harbor police station and bought a commercial fishing licence. (It cost $4).



Murray Mouth in 1880s.

Soundings (depth of water) in ft. Today, even with the assistance of continuous dredging, maximum depths inside the Mouth are less than 12ft. (North is top of page. Southern Ocean, bottom of page) Courtesy - GJ Byrnes

I fished seasonally until 1997. My method was unusual – from a base at Barker's Knoll, I'd drive over the sandhills in a truck fitted with aircraft wheels, out onto the ocean beach. When I'd found a suitable rip current, I'd launch the net, dragging it folded beyond the shorebreak, deploying it and swimming the leading end into deeper water. The rip carried it offshore, where prevailing wind and currents drifted it down the beach. A line from one end of the net allowed me to control it from the truck.

Travelling along offshore gutters, the net fished deep enough to gill up bottom dwellers, mulloway and sharks. 200mm monofilament meshes ensured that smaller fish (mullet, bream, salmon) are not caught. Fishing would last for 30mins - 5 hrs, depending on conditions, before the net was pulled ashore by hand and beached on the strand. (see photos)

Arriving at Barker's Knoll 1973, a collection of fishermen's shanties and a base where beach vehicles were kept.
Author

When I started I could catch lucrative (50kgs/day) quantities of mulloway eight or nine months a year. The 'Mouth' and surrounding channels were still deep and powerful, despite the completion of the barrages in 1940. The river flowed close to the tin shanties of Barker's Knoll and ran out hard into the lines of breakers around the corner. Tidal pulses were strong and regular, exchanging large volumes of aerated seawater with Coorong water, daily. They kept the Coorong healthy. The 'Mouth' was alive - teeming with water birds of all kinds. As I drove onto the beach in the early morning its banks were lined solid with waterbirds - cormorants, pelicans, gulls and terns. Many too full to fly. Way out beyond the breakers,

terns and gannets wheeled and plummeted. Along the beach flocks of tiny stints and dotterels darting up and down the strand, avoiding the shorebreak.

Deep sand-free channels at Murray Mouth, 1973. Barker's Knoll forms the eastern border of Murray Mouth, (bottom right) **Murray Darling Basin Commission**

Launching the net in 1973. The leadline and floatline are coiled and tied separately, leaving a 'tail' of 10m dragging behind. Beyond the shorebreak, ties are undone and net is deployed as I wade/swim seawards.

Bill Phillipson

Deployed net is drifting to the right, into a rip that will carry it to the outer break. **Bill Phillipson**

Sharks and mulloway, gilled in a net that is constantly moving, before being hauled from the surf and beached on the strand. Author

In those early days my operation – a man, a truck, a net and a rope could catch commercial quantities of mulloway eight months of the year. When I finished in 1997 my operation was more effective and I'd established markets in Sydney. But I could wade across the Mouth and my 'season' had shrunk to little more than a few weeks in late spring, (licence fees had increased to $5000).

To catch commercial quantities of mulloway, I had a lot to learn about the estuary, so I spent time talking to the old fishermen.

It didn't take me long to realise that the most important factor for successful fishing was fresh water flowing through the barrages and out to sea via the Murray Mouth. It was also the estuary's most important ingredient.

When the river was flooding and all barrages were open the resulting 'delta' could stretch kilometres out to sea and along the beaches on either side of the Mouth. It consisted of layer upon layer of water with different salinities and temperatures that fanned out beyond the Mouth as a delta. The delta carried all kinds of river species (fish, crustacea, molluscs, plants) and other waste and debris into the breakers where everything was churned and dumped into gutters. Ideal conditions and easy pickings for estuarine predators like mulloway.

1975 - 6 was a flood year. At Barker's Knoll the Mouth had been cut out and was over a 100 metres wide, and all the surrounding channels were deep. The outflow swept out to sea in great undulations cutting away chunks of sand from the banks and sending them crashing and booming into the flow. Strong flows from the Goolwa and Coorong channels crashed head on as they met in the middle of the Mouth, joined the outflow and swept out to sea.

Unpredictable, toppling waves reared up everywhere. Crossing over in a small boat demanded extreme care, a seaworthy boat and a reliable motor. Somewhere in the middle it would get a sharp wrench as it hit the outflow rushing out to sea.

Sadly, the abundant Mouth combined with big winds and a heavy sea to take their toll. In early January 1976 a flimsy wooden dinghy carrying five middle-aged people attempted to cross. Halfway over the outboard stalled; in a matter of seconds the dinghy was dragged under the waves. The only survivor was a woman who couldn't swim. Overcome with fear, she grabbed an esky and clung to it, to be carried nearly a kilometre offshore. Then, with enormous good fortune, she was washed ashore onto Younghusband Peninsula, half an hour later.

The flood passed. Future outflows dwindled. Sand began to accumulate inside the Mouth. Channels became shallower. Tidal pulses diminished, jeopardising the health of the Coorong. Upstream, irrigation diversions continued to escalate. Years went by when no water passed through the barrages. Each spring remnant mulloway (scouts) would arrive at the Mouth to find no delta, no food and no layers of warm tasty fresh water, so they swam away.

Large scale irrigation turned aquatic life in the river, on its head. Instead of water temperatures warming through spring and summer, cold blasts of irrigation water at 5degC surged down the river from storages, stifling breeding and spawning and causing significant long term stress to many MDB aquatic species. Some are now facing extinction, eg. Yarra pygmy perch (*nannoperca obscure).*

[Scotte Wedderburn, freshwater scientist, University of Adelaide]

Whilst not a scientist, I became a continuous observer of the Murray Mouth and the surrounding estuary. I was also interested in policy and how it affected the region.

Early river traffic (paddlesteamers) cleared the riparian zones of large trees (eucalypts) and shrubs. Rains eroded the bare ground and ran into rivers that became muddy and opaque. Sunlight couldn't penetrate, so aquatic plants and habitat died. Without long rooted trees to suck it up, saline water rose, mixed with the rivers and dried on the banks. Human and animal wastes drained into the river, reducing it to little more than a muddy industrial drain.

Diversions for irrigation increased markedly around 1950 and continued to increase for many years after. In 1990 between 10,000 and 11,000GL were being diverted for irrigation, every year. This was nearly twice the annual average flow into SA, 6,000GL. Total MDB storage was 30,000GL. **[Andrew Close – The Impact of Man on the Natural Flow Regime. MDBC 1990].**

*** GL = gigalitre (1 billion litres). Sydney Harbour is 530GL.**

In 1975-6 big river flows and a surging Mouth were followed by years of drier weather and greatly reduced flows from upstream. … The Mouth started to move west and became shallower and narrower. Was this part of a thousand year or maybe a million year cycle? Or was it due to Europeans who had altered the Murray Darling Basin so comprehensively in the blink of an eye? In the 1970s, no one knew.

Murray Mouth, April 1981 – the first closure since its formation. Vehicles could drive from Goolwa to Salt Creek, 85kms away along an unbroken beach. MDB Commission

In 1981 the Mouth closed completely, the first time since the formation of the Lower Lakes, and Murray estuary, seven thousand years ago. **[Keith Walker, River Ecologist]**

A group of concerned regulars from Barker's Knoll wrote letters to Canberra. We never got even so much as an acknowledgement, let alone a reply.

When the Mouth was re-opened later in 1981, it returned to a 'normal' width of 80-100m quickly. But the channel stabilised at less than half its depth of the early 1970s.

Murray Mouth, August 1981 – opened by mechanical diggers and a rising river upstream
MDB Commission

By 1990 the first signs of environmental degradation were showing upstream, (dry wetlands, whitened salt pans, eucalypt skeletons and erosion). This was due to years of unsustainable irrigation diversions. While science had declared that the Murray estuary was the health barometer for the whole Basin, it commanded no votes in Canberra. So it's always been ignored.

The Murray Mouth problems can be described, as follows:-

An average annual rainfall in the Murray Darling Basin produces 530,000 GL of water.
[**Katherine Murphy – The Guardian 2017]**

Twenty one Basin rivers drain into the Murray, the only Basin river that has a mouth and drains to sea. Consequently, it is only through this mouth that water, water-borne debris and pollution can be expelled from the Basin. There are no alternatives or shortcuts.

Before Europeans, the River Murray ran free, from mountains to the sea. Without artificial blockages (weirs, barrages) or diversions (irrigation) the total Basin runoff drained into the Murray each year and eventually emptied into the sea, via the Lower Lakes. The river was a like a giant lung – full flowing in winter/spring, overtopping its banks and inundating the floodplain, then deflating to little more than a trickle by late autumn. River levels changed constantly throughout the year.

The Mouth and surrounding channels remained deep and wide, despite the tonnes of suspended sand that invaded it on each rising tide. The ebbing tide, reinforced by the river outflow, carried the sand back out to sea. The sea and the river were in balance, albeit a delicate one.

After Europeans, the River Murray was regulated by weirs and barrages and its flows were increasingly diverted for irrigation. Downstream flows through the barrages reduced catastrophically. At the Mouth, tidal outflows, lacking the strength of downstream flows, were unable to expel sand brought in by rising tides. But the sea remained strong and each tidal inflow remained full of sand, which accumulated throughout - the estuary, inside the Coorong, the surrounding channels and eventually the Murray Mouth . The sea overwhelmed a much depleted river; they were no longer in balance.

A vicious circle was created. It has never been broken.

In 1992, while still fishing, I set up a project with the South Australian Research and Development Institute (SARDI) to acclimatise mulloway (*argyrosomus hololepidotus*) to life in captivity and to spawn them in captivity. The project ran until 2001 and provided first hand experience of the importance of science working with the environment.

In 1993 I completed a Graduate Diploma in Aquaculture at Deakin University, with a practical work experience course in tidal oyster cultivation (Denial Bay, SA), as well as my ongoing work in mulloway acclimatisation at SARDI.

In 2006-8 I wrote and self-published two books, *Poor Man River* and *Of Billabongs and Broken Dreams,* memoirs of life on the river.

I continued my connection with the Mouth when I joined the Adelaide University annual waterbird count in the Coorong, Lower Lakes and Murray Mouth In 2009. Of the 22 waterbird species regularly counted in the Coorong South Lagoon in the 1980s and 2000s, 15 had annual abundances in January that were lower (often substantially lower) in each of the ten years between 2000 and 2009, compared to January 1985.

[DC Paton - 'At the End of the River' 2010]

The Coorong South Lagoon is a unique, low nutrient, hypersaline lagoon. When healthy, its extensive, shallow mudflats are a perfect environment for *ruppia tuberosa,* an aquatic plant and a major food source for a wide variety of birds and aquatic life. When *ruppia* is abundant, this lagoon is the critical foodbowl in a terminal wetland that sustains large numbers of local birds, as well as migrants from as far away as Siberia and Alaska.

In recent years these mudflats, deprived of critical river flows through the barrages, have dried up before *ruppia* can make seed and reproduce. Consequently *ruppia* populations have fallen to less than 5% of their original levels and waterbirds, including migrants have starved.

[DC Paton - School of Biological Sciences, University of Adelaide]

A near closure of the Murray Mouth in 2003. Accumulated sands had become a permanent problem and dredging a permanent 'solution'. Seawater exchange with the Coorong is minimal. Dissolved oxygen levels drop, water temperatures rise, aquatic life suffers. **Murray Darling Basin Authority**

Murray Mouth in 2003. While defined by bureaucrats as being 'open', extensive dredging was required to keep sea and river connected. (Dredge is working inside the Mouth, having dug a channel to sea - foreground)

Murray Darling Basin Authority

The 2001 Millennium drought finally ended in 2010 with three of the wettest consecutive years ever recorded. These produced sustained periods of powerful outflows through the Mouth, an ideal time for dredges to scour the Mouth and surrounding channels clean of accumulated sands. The resulting significant increases in tidal exchanges would have been a great benefit for the Coorong. Unfortunately the South Australian Rann government shut down the dredges - a golden opportunity in my opinion was lost, a significant error.

January 2016 - Eastern shore mudflats of South Coorong (south of The Needles). The major foodbowl of the greater Murray estuary. By early October 2015 water levels were barely 50mm and dropping, when they should have been 500mm. Consequently the already decimated *ruppia* population died before it could reproduce. Author

2015 and early 2016 was another dry period, especially for the Coorong.

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This is my history at this point. I have seen things happen and witnessed many changes to the Murray estuary.

Murray Mouth in 2015 - Men, machinery and a dead environment. **Murray Darling Basin Authority**

I now turn to the particular Terms of Reference.
As noted above, my responses are grounded in decades of work and observations as a fisherman and later as a waterbird surveyor with Adelaide University.

Addressing the Terms of Reference

[The purpose of the Royal Commission is to investigate the operations and effectiveness of the Murray-Darling Basin system.]

Terms of Reference 1
Whether the Water Resource Plans defined by the Act and Basin Plan (which are to include the long-term average sustainable diversion limits for each Basin water resource) will be delivered in full and in a form compliant and consistent with the Basin Plan by 30 June 2019.

My response to this first Term of Reference is that it is unlikely that the Plan will realise this aim, particularly in the Northern Basin. In the case of Water Resource Plans that are required for each of the 16 Basin catchments and due to be completed by June 2019, science has been abandoned in favour of political expediency.

The Barwon-Darling Water Sharing Plan was made under NSW law prior to the finalisation of the Basin Plan 2012.

But the final Water Sharing Plan (2012) was different. It removed the Total Daily Extraction Limits that were proposed in the draft plan, provided no ability for the Minister to impose restrictions on Class A Licence extractions for public interest purposes, provided unlimited carryover of account water at the end of each water year, provided power for the Minister to

grant pumping exemptions for A and B Class licences when flows are imminent, provided opportunity for extraction of up to 300% of access entitlements, provided no detailed requirement for the protection of environmental water, introduced water trading arrangements and defined the commence to pump rules (as per the rules previously in place).

The most contentious aspect of the Water Sharing Plan was that the changes to the extraction rules meant that there were increased opportunities to legally extract water at low flows. Other potential implications of the rules under the Water Sharing Plan that were raised included: while the Minister has the power to impose extraction restrictions this is a discretionary power; if unchecked, the provisions for unlimited carryover and 300% take in any year could lead to breaching of the Cap/SDL; and as a result of enabling trade in the region there has been a concentration of licences.

Beyond this example, it would appear that much of the Basin management has been crippled by systemic failure.
As noted above, I have witnessed the decline of the river in my lifetime. It mirrors the decline in flows:-

Total Barrage Flows

1970 - 79	96,445 GL	
1980 - 89	44,843 GL	
1990 - 99	57,258 GL	
2000 - 09	6,958 GL	
(including 0 flows from Oct 2006 - Dec 2009)		
2010 - June 2017	3,889 GL	(**source – MDBA)**

In recent times NSW has been in the spotlight - with the collaboration of powerful interests (ABC Four Corners and Lateline programs, 2017).

On the ground, enforcement and compliance has been minimal. Large operators have been able to avoid monitoring and metering; as a result a culture of lawlessness has become well established. Hard evidence indicates that massive water theft and the illegal construction of large scale water infrastructure has occurred, especially in the northern Basin. This view is supported by individuals who attended and gave evidence to the Senate Hearing of the Rural and Regional Affairs and Transport References Committee on the Integrity of the Water Market in the Murray Darling Basin, held in Broken Hill on Nov 1 2017. They are included, below.

> *…'I have lived in Brewarrina all my life.*
> *Lived on different rivers in the shire. Have seen the rivers dry up, some to a trickle, some to no flow at all for years. This is dry country but it is not the drought that has caused this problem. Over allocation and over extraction.*
> *There are certain people who control most of the irrigation in this shire and neighbouring shires, with no care for the river, just care for their wallet .*
> *All the other reports I have been involved in have a lot more info; Mathews and Senate reports'...*
> *Thanks*
> **Phill O'Connor - Mayor of Brewarrina Shire**

…'Before 2002, there was only one cease-to-flow event in history, but since then there have been 15 along the lower Darling that have had significant impacts on the economic, social, physiological and physical health of the communities that live along it. The most recent, in 2015-16, was the longest seen in white man's history and was not due to drought'...

Rob McBride – Tolarno station Lower Darling - south of Menindee Lakes

There is strong evidence that top water bureaucrats do not believe in the Basin Plan. From its beginning in 2012, they have worked actively to obstruct and oppose it, allowing enforcement and compliance in Qld and NSW to become grossly inadequate. There are six different sets of laws pertaining to Basin matters (four states, one territory and one federal), as well as dozens of bureaucracies. Each has a vested interest in Basin matters. Each has to be satisfied before any matter is resolved. Such a system makes it very easy for these bodies to avoid or decline responsibility and accountability. As a result, the MDB is subject to paralysis, at all times.

There is also strong evidence of a lack of leadership throughout water management bureaucracies.

…'There has been a loss of confidence in the ability of government regulatory authorities to do their job. The incidences we saw in Queensland in the Four Corners and Lateline programs have taken all our confidence away. There is no integrity left within the system or within government'…

Mr Leon Zanker, Member, Austalian Floodplain Association

…'the consequences of poor leadership of governments and bureaucracies, and also of the irrigation industry, which has seen an opportunity and taken a short-term view. There will be real consequences of the industry. It leads to lack of confidence in government and bureaucracies. The Ken Matthews report touches on that, that the actions of New South Wales DPI Water have cast a shadow over the entire New South Wales public service'...

Mr Bill Johnson, Private, ex NSW National Parks water manager in the Northern Basin, MDBA in 2009

In unregulated Northern Basin rivers, particularly but not exclusively, enforcement and compliance has been minimal. The 2012 Barwon Darling Water Sharing Plan has been widely criticised.

…..'Changes to the Barwon-Darling water sharing plan in 2012 have given upstream irrigators greatly increased access to water from the system. The plan has failed to meet its own objectives in terms of equitable resource sharing between all stakeholders. Several operating rules were introduced that resulted in significant windfalls for irrigators. The operating rules of particular concern were the removal of

pump-size limits, the approval to extract 300 per cent of an entitlement per annum and the failure to implement daily extraction limits. **15**
Notwithstanding the impact of alleged illegal extraction by upstream water users, it is excessive water extraction that has had a devastating impact on the reliability of the Darling River below Bourke'…...

Mr Lachlan Gall, President, Pastoralist's Association of West Darling

Large operators have been able to avoid monitoring and metering; as a result a culture of lawlessness has become well established. In 2012 the Commonwealth government gave NSW $31.5million for meters. NSW used this money to meter the lowest volume users, not the highest. When asked about this the MDBA simply said that…. 'this was a decision for NSW'.

Hard evidence indicates that massive water theft and illegal construction of large scale water infrastructure has occurred, especially in the northern Basin.

…'Licence holders in the unregulated areas of the Barwon-Darling can store hundreds of gigalitres on the flood plain behind banks to flood irrigate non-essential crops, while those in the regulated system are not allowed to put block banks in for any stock or domestic use preceding a no-flow event.
The government purchased the large (water) entitlement of Tandou at an inflated price and with no regard for local social consequences, as this was the last major entitlement in this region of the river'...

Mr Terry Smith, Councillor, Pastoralist's Association of West Darling

And the knock-on effects continue all the way down the river to the Murray Mouth. Everyone and everything downstream of these illegal operators are worse off as a result of their callous disregard for the law.

...'The further up the river you are, the less you're concerned about the lower river. There's a sense of entitlement. There is the phrase 'water under the bridge'—once it's gone past, it doesn't matter. People upstream don't care about anybody downstream. The most sensitive person I've heard said, 'I don't care about South Australia; I don't even care about the river below Menindee; I do care about the people between Bourke and Menindee,' and he was prepared to let some water through. It's a sense of entitlement. It's a sense that the water that flows to the sea is wasted, that the water that flows past your pump is wasted. It really is everyone for themselves. That's why, when it comes to water— everywhere, but particularly in an arid landscape—there needs to be very strong, very committed and very determined government management of the system'.

Mr. Bill Johnson

…'I've seen complete destruction and utter mismanagement of a system that must be looked after, whether it be for the integral role the (Menindee) lakes play in fish nurseries for the whole of the Murray-Darling Basin, the wildlife within the region, the **16**

communities that rely on the river and lakes or simply so we leave our environment in a better condition for future generations'...

Rob McBride – Tolarno station

From my own experience, reinforced by people with great long term knowledge of the upstream Basin, I do not think that the required Water Resource Plans will be delivered in full, compliant and consistent with the Basin Plan, nor on time.

Terms of Reference 5

If the Basin Plan is unlikely to achieve any of the objects and purposes of the Act and Basin Plan and/or the 'enhanced environmental outcomes' and the additional 450 GL referred to above, what amendments should be made to the Basin Plan or Act to achieve those objects and purposes, the 'enhanced environmental outcomes' and the additional 450 GL?

While the Murray Mouth is only a tiny part of the Basin, it is a crucial part. If its health deteriorates, so does everything upstream.

As water is diverted for consumption in the upper parts of river systems, rivers die from the bottom up. As less and less water reaches the lower reaches, there is insufficient water to wash away pollutants like salt, or rise out of the river channel to sustain floodplain wetlands.

Dr. Jamie Pittock, ANU, Wentworth Group of Concerned Scientists

The enhanced environmental outcomes and the additional 450GL of environmental flows are essential for the long term health of the Basin environment.

To achieve this, the Basin environment (floodplains) needs regular nourishment that comes from regular (every 3-5 years) overbank floods. These convey essential benefits to the floodplains, while removing pollution (salt) as they subside back into the river. Such floods can be man-made from the major storages (Hume, Dartmouth). To get this water over the banks and into the floodplains requires a river flow of 80GL per day at Wentworth. As the Barmah Choke, downstream of Albury, can only handle 10GL per day, there is a need to run the majority of these flows through a number of properties along the river.

However, several strategic properties refuse to allow such flows to pass through their country. So environmental flows are contained within river banks; floodplains miss out and are denied essential nourishment.

Governments have plans for a 'constraints relaxation,' to achieve overbank flows, but Victoria is backsliding on this. **[Dr Jamie Pittock, Wentworth Group of Concerned Scientists]**

Therefore, ***amend Basin legislation to allow/require critical overbank environmental flows to pass downstream, without restriction*.**

[Overall, amend Basin legislation to allow for the creation of a single independent body that would manage the Basin as a single entity by concerned scientists.]

> *Floodplain harvesting policies and laws in NSW and Qld must be revised and amended to ensure river health is improved.*
>
> **[Terry Korn, President, Australian Floodplain Association]**

Terms of Reference 7 & 8.

The likely impact of alleged illegal take or other forms of non-compliance on achieving any of the objects and purposes of the Act and Basin Plan, and the 'enhanced environmental outcomes' and the additional 450 GL, referred to above.
In relation to any found instances of illegal take or work, whether appropriate enforcement proceedings have been taken in respect of such matters and if not, why.

Large scale water theft has had many bad effects downstream – communities, farmers, and the environment. In recent years NSW prosecutions have been minimal, despite NSW water inspectors reporting widespread illegal activities.

Re: prosecutions for the construction of illegal levee banks –

> *…'There has been none in our shire that I'm aware of, but later on I'll show you plenty of structures that are illegal.*
> *We've got the evidence of rivers—they mightn't be big rivers, but they're still rivers and people live on them—being totally blocked altogether. They're stopped. It's a big impact on the people downstream, because, in the lower half of our shire, we're not above the Great Artesian Basin'…*
>
> **Phill O'Connor, Mayor, Brewarrina Shire**

My experiences indicate that any further illegal take will compromise all Basin users, and further erode Basin community confidence and trust.

There is widespread agreement amongst Basin people that a major cause of the current Basin dysfunction is the chronic over-allocation that has built up, over decades. Unless sustainable diversion limits can be brought back to sustainable levels by improving all round water use efficiency (communities, industry, irrigation and the environment) this problem will remain a millstone around the Basin's neck, indefinitely. And there will be no real progress in restoring the Basin to long term health.

> *…'Macquarie valley people, for example, have always been unhappy because the system is almost 100% over-allocated as an artefact of a succession of governments of all persuasions over the last 40 plus years'...*
>
> **Mr Terry Korn President, Australian Floodplain Association (email communication)**

There are communities all over the Basin that would think exactly the same as the Macquarie Valley people.

In 1994 the cap on water extractions was introduced. The northern Basin, under-policed, was always overcapped.
In 2007, as a result of the National Water Initiative water trading commenced. Over-allocated water entitlements were converted to a property right. By this time total MDB allocations (entitlements) by a succession of governments were two or three times greater that the river's total flow. Trading gave water value. Many of the water entitlements, especially in the Northern Basin, were acquired at little or no cost which meant entitlement holders had a huge financial windfall when trading commenced. To recoup its cost the buyer worked his water to the maximum. But many irrigation practices were inefficient (flood irrigation of pastures, non-essential crops) so a lot of water was wasted.

Appropriate enforcement has not been taken, to date, due to the reasons stated in 1.

Terms of Reference 13.
Any other related matters.

Perhaps this is the most relevant matter -

If there's one thing that I'd like to come out of this Royal Commission is that future South Australians need to know that we were aware of the Basin's problems, but were unable to get upstream users to take meaningful action. There has, however been those who been actively and continuously trying to bring them to the attention of politicians and bureaucrats, for decades. To date, billions of dollars of taxpayer's money has been spent via the Basin Plan, to little effect.

> …'*The Basin Plan was created to restore equity back through the system. This argument has been going on for nearly 30 years and we've lost confidence in the plan. We believe that the plan is failing for a number of reasons. Fundamentally, that has to do with the Murray-Darling Basin Authority not showing their authority and not having the constitutional power to actually force the states to implement an equitable balance through the system*'…
>
> **Mr Justin McClure, Member, Australian Floodplain Association**

Northern Basin cotton farming - not a living thing in sight Farm Corp

Impact on soils - *The key to healthy soils is a diverse and rich biology. Such biology, in self-organizing fashion, is capable of combating diseases, balancing nutrients, maintaining healthy states, but Massive earth-moving/inversion/mechanical disturbance, chemicals, fertilizer, water soakage etc. is totally destructive of soil biology and hence healthy soils. In time all sorts of unforeseen things will happen, depending on the initial nature of the soils: from shifts to undesirable anaerobic bacteria, to nitrate leakage, to possible dryland salinity. The key is that healthy living soils die.*

Dr. Charles Massy OAM, BSc, PhD, Fenner School ANU

***New legislation should be created to require cotton farmers to take active steps to maintain and enhance their natural environments (soils, trees, shrubs, grasslands, etc.) and to have this legislation strongly enforced*.**

Accordingly, my overall recommendation is: -

Create a new body with Reserve bank-level of independence. Let this body use science to manage the Murray Darling Basin as a single entity.

A new body can only be created by the Federal Parliament. To succeed, it would need widespread popular approval. To obtain this a partnership of leading relevant bodies should be formed. When this is successful, appropriate legislation can be approved, and the body created.

Conclusion

I sold my fishing licence in 1997. My life as a fisherman at the Murray Mouth has seen tremendous changes in the Mouth, the surrounding estuary and the Coorong.

Since that time I have held no vested interests at all within the Murray Darling Basin.
My only interest now is to work to achieve a solution that will restore the Basin to long term sustainable health.

We Australians are a very lucky people; the sole occupants of a single continent and the envy of most of the world.
But our continent is like no other. It is old, unique and fragile, as are the jewels in its crown – the Murray Darling Basin amongst them.

The Basin is a subtle environment balanced precariously between drought and flooding rains. Europeans knew nothing of these subtleties as their early arrivals cleared red gums from river banks, introduced hard-footed animals and grew European crops. Over the ensuing decades the Basin suffered accumulated damage.

Today we know better; we have the knowledge, technology and resources to solve this problem once and for all. Yet things are getting worse, not better and we're in mortal danger of handing down a basket-case Basin to our children and grandchildren…. As a nation, we should hang our heads in shame.

The aim of any solution to current Basin problems should be the restoration of the entire Basin to long term sustainable health. The 2012 Basin Plan, costing $13.7billion of taxpayer's money, was designed to do this.

The fundamental problem within the Murray Darling Basin is the excessive over-allocation of water. (see p17-18). Only when total water diversions are reduced to a level the Basin environment can afford, will this problem be solved. Until this occurs, it is of limited value to pursue any other option. When this occurs, it must be decided whether cotton is a suitable crop for the Murray Darling Basin.

State and federal bureaucracies responsible for water management, enforcement and compliance have been rendered dysfunctional by what appears to be systemic corruption. As reported in the press, there have been allegations of water theft and use of taxpayer's money to build illegal water structures that have caused great damage to downstream farmers, growers and communities. Large scale corporate cotton has a total focus on short term profits. It has no long term view for the care of the Basin environment.

Consequently, the Basin Plan, to date, has been an utter failure and a colossal waste of taxpayer's money.

Given my experience and background, I would suggest that the only practical and workable way to restore long term sustainable health to the MDB would be to create a single body with Reserve Bank of Australia levels of independence. There would be no intervening vested interests. Such a body would then use science to operate and manage the Murray Darling Basin, <u>as a single entity</u>.

Over time such management will return the Basin to long term sustainable health. This would be in the long term best interests of all its stakeholders – communities, irrigators and the Basin environment itself.

I thank the Commissioner for the opportunity to make this submission. I would be pleased to appear in person to expand on it.

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