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A Sustainable Water Future *without compromising the health of interdependent ecosystems*

Water Action Coalition

Parliamentary Inquiry - House Standing Committee on Regional Australia

WAC Submission - Creeping Water Privatisation

Inquiry into the Impact of MDB Plan in Regional Australia

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This submission will be published in three parts as individual PDFs; WAC Submission – Executive Summary (WAC-D-005), Appendix A – Detailed Review of Guide to the proposed Basin Plan (WAC-D-005-A) and Appendix B "The Great Water Privatisation Experiment" Presentation Notes and Slides (WAC-D-005-B).

1 EXECUTIVE SUMMARY

1.1 Context

Australia is still reeling from the devastation of the Queensland and New South Wales floods, which have been described as our nation's greatest natural disaster: a million square kilometres of land inundated thousands of homes damaged or destroyed and twenty-eight lives lost.

Within days the Queensland Government announced a Royal Commission and committed sufficient funds to rebuild entire communities. The cost of reconstruction is estimated to exceed \$20 billion.

In 2009, twenty-six communities in Victoria were ravaged by fire with thousands of homes destroyed. Reconstruction is underway and the recommendation of a Royal Commission adopted.

Australia responds well to natural disasters and yet the most urgent economic, ecological and human threat of our time is not being addressed with the same urgency and resolve.

Decades of mismanagement of the River Murray and Murray-Darling Basin continue to threaten the viability of towns throughout the Basin. Regional economies are collapsing. The social consequences have included bankruptcy, family break-up and suicide.

Poor policies have resulted in inappropriate initiatives. South Australians are now paying for massive investment in an unnecessary desalination plant that will add to the degradation of Gulf St Vincent and increase the price of urban water supplies tenfold within a decade.

The true extent of the crisis is well documented, but the real cost will not become apparent for many years. Much-needed flows resulting from the recent upstream floods will provide the River Murray, Lower Lakes and Coorong with only a temporary reprieve.

1.2 Introduction

The Water Action Coalition (WAC) is a broadly based movement of community groups and environmental organisations formed in response to growing public concern about the degradation of the River Murray and related water issues in South Australia.

WAC comprises twenty-five representative community organisations from across South Australia and takes its knowledge from an authoritative reference group of eminent scientists, environmentalist and water specialists. Its patron is [Maude Barlow](#) who served as Senior Advisor on Water to the 63rd President of the [United Nations](#) General Assembly during 2008/2009.

The mission of WAC is to ensure a sustainable water future for South Australia. A future that ensures an equitable use of all water resources for future generations in a manner that does not compromise interdependent ecosystems, both freshwater and marine.

What follows is a précis of evidence contained within WAC's submission to the MDBA, which debunks the myth that the crisis in water supply, which affected the city of Adelaide and other urban centres in South Australia, was primarily a consequence of drought. It was in fact a man-made problem, which also impacted on the rural sector, especially South Australian communities reliant upon the River Murray.

WAC's submission to the Authority asserts that the crisis in South Australia was entirely due to bad policy, over allocation upstream of the South Australian border and failure to conserve as the drought became more protracted. The following analysis of events questions the actions taken by both federal and state governments and provides evidence that the same governments are guilty of a substantial conflict of interest, in being required to act for the public common good whilst simultaneously assisting private interests to establish a water market.

1.3 Basin management – a historical perspective

For thousands of years, the Aboriginal nations of the Murray-Darling Basin learnt to live with and adapt to climate change and natural climate variability, ranging from extreme drought to major flood. Prior to development, the natural average flow through the Murray Mouth averaged 12,500 GLs per year and the Murray Mouth never closed.

The situation changed in the late 1800s with the first diversions of the waters of the Murray-Darling river system. Since then there has been a state-based tug-of-war over the use of those waters to sustain economic development as opposed to the environmental health of the Basin.

The Commonwealth of Australia was founded 1901; its Constitution endorsed by Australians via referendum. Of profound significance to the governance of the waters of the rivers of Australia, Section 100 of the Australian Constitution states:

“The Commonwealth shall not, by any law or regulation of trade or commerce, abridge the right of a State or of the residents therein to the reasonable use of the waters of rivers for conservation or irrigation.”

Sir Isaac Isaacs, the Victorian delegate to the Constitutional Convention, made clear the context in which the water of Australian rivers was regarded by delegates when section 100 was being debated:

"Isaacs stressed the need for a decision to be made on its merits from a national perspective, given that rivers "by their very existence and course, are the common property of Australia" (Water Politics in the Murray Darling Basin 2007)

Sir Isaac Isaacs rose to the position of Chief Justice of the High Court and was subsequently appointed Governor General of Australia.

Royal Commissions are the highest form of public inquiry into matters of substantial public importance. In 1902, an Interstate Royal Commission was established by the State Governments of New South Wales, Victoria and South Australia, to inquire into mismanagement of the Basin, which was having major impacts in South Australia ([A Fresh History of the Lakes: Wellington to the Murray Mouth, 1800s to 1935](#)).

The trigger for the Royal Commission was a conference held in Corowa in 1902, organised by a groups of agriculturalists known as the River Murray Main Canal League, who sought an assured water supply. The Premiers of New South Wales and Victoria, the Attorney-General of South Australia and the new Prime Minister, Edmund Barton, also attended this conference, to discuss regulation of the river.

[Who 'owns' the Murray? Corowa Water Conference and Interstate Royal Commission 1902](#)

"A prolonged drought from 1895 to 1902 drew attention to the fact that cooperation between the River Murray states and the Commonwealth government was needed to draw up regulations for Murray water use, particularly necessary in times of drought. The outcome of the community driven meeting at Corowa was the establishment of a Royal Commission to report on 'the conservation and distribution of the waters of the Murray and its tributaries for the purpose of irrigation, navigation and water supply'".

"The Royal Commission found that the navigability of the lower Murray would eventually be secured by the use of locks and weirs but until then South Australia must be ensured a certain volume of water and New South Wales and Victoria were restricted to taking a specific amount." (State Library – Government of South Australia).

Low Flows Sustainable Diversion Limit

This "certain volume of water", now known as the minimum entitlement, was last adjusted in 1984 and currently stands at 1850 GL; comprising a dilution flow of 696 GL and diversion entitlement of 1154 GL. South Australia has imposed a cap on its diversion entitlement since the late 60's. This cap currently stands at 805 GL, 5.2% of the current average total consumptive use throughout the Basin (15,400 GL) recently estimated by the Authority.

The cap was last increased, by 81 GL in 2008, by then Minister Maywald, to allow for water trade for irrigation. In that same year the Rann Government announced that a 50 GL per year desalination plant would be constructed at Port Stanvac in outer Adelaide. This was later doubled in 2009 to 100 GL. The following quote from [Securing the Future: Long-Term Plan for the Coorong, Lower Lakes and Murray](#) is insightful:

"Recent water allocation history in South Australia – In recognition of the stressed condition of the River Murray, South Australia ceased issuing any additional irrigation entitlements after the 1967-68 drought. However, other states did not follow the lead set by South Australia and continued to increase irrigation entitlements for over 30 years"

The placing of a cap on irrigation entitlements precluded the issuing of further water entitlement licences. South Australia now holds just 6% of total regulated water entitlements of 16,200 GL, 0.2% of unregulated water entitlements and 12% of groundwater entitlements in the Basin (PC 2009).

South Australia chose reliability of water supply during low flows and a guaranteed monthly flow that varied with the season. This decision was made to sustain irrigation, water supply to the cities and towns of South Australia, water levels and freshwater ecosystems to the barrages and the structural integrity of over 100 kilometres of public and private levee banks established below Lock 1. In today's language this should be recognised as a "Low Flows Sustainable Diversion Limit".

The reliability of water supply to South Australia was underpinned by the requirement for New South Wales and Victoria to hold a reserve of 2,500 GL in Murray-Darling Basin Commission (MDBC) reservoirs. However, in 1989, South Australia agreed to a reduction of the reserve to 835 GL and a series of other changes:

"Up until 1989 it was also required that a reserve of 2,500GL is available in the MDBC reservoirs at the end of each water year."

"Under the Murray-Darling Basin Agreement, that reserve has been reduced to a minimum reserve of 835GL. This is held equally by New South Wales and Victoria, effectively 417GL each."

Reference: [Background to water management: in the NSW Murray and Lower Murray-Darling River Systems](#) May 2006.

These new agreements disadvantaged South Australia from the moment that they were signed. When combined with the Council of Australian Governments (COAG) [Water Reform Agenda of 1994](#) and the [National Water Initiative of 2004](#), a social, economic and environmental disaster was precipitated in South Australia. These initiatives are clearly inconsistent with Section 100 of the Australian Constitution, which stipulates that a state is allowed only "reasonable use of the waters of rivers" and that all residents of a state have equal rights to that use. This latter aspect was ignored by the NWI as the following quote from clause 27 of the agreement demonstrates:

"Recognising that States and Territories retain the vested rights to the use, flow and control of water, they agree to modify their existing legislation and administrative regimes where necessary to ensure that their water access entitlement and planning frameworks incorporate the features identified in paragraphs 28-57 below."

CSIRO The Murray-Darling Basin Sustainable Yields Project

This project concluded in 2008. One of the most insightful graphs published by CSIRO was a time series at Wentworth (integrating the MDB) of total effective surface water use (including down-stream use), total without-development flow and relative level of surface water use under the historical climate. Some of the key observations are as follows:

- From 1895 to late 2005 the relative level of water use from the Basin has varied from less than 20% during big floods to 80% during severe droughts.
- The relative level of water use is largely independent of the growth in the capacity of major storages that began to dramatically increase from the mid-fifties to just under 35,000 GL by the late 80's.
- Annual inflows range from a few thousand GL during a severe drought to in excess of 40,000 GL during a big flood.

- Some parts of the southern parts of the MDB experienced a 1 in 300 year drought during the Millennium Drought.

Reference: [Water Availability in the Murray-Darling Basin](#) – CSIRO October 2008

Given South Australia's low flows Sustainable Diversion Limit, it is easy to understand the following statements made in the CSIRO's presentation on the Murray Region under current water sharing arrangements:

- "Adelaide and SA rural town water supply would be unaffected under this or any 2030 climate (change model) scenario"
- "The modelling indicates that levels in the Lower Lakes would not fall below mean sea level under any 2030 climate (change model) scenario, although minimal lake areas would be lower than under the historical climate in very dry years" (assuming full implementation of SA allocation practices)

Reference: [Presentation for the Murray Region](#) – CSIRO July 2008

Although intimately involved, both the South Australian Government and the Commonwealth chose to ignore the CSIRO findings and their environmental commitments to restoring flows under the water reform process.

Millennium Drought

From 1998 to 2008, Murray-Darling Basin annual inflows averaged 5,700 GL: a 49% reduction compared to the 1892 to 1997 average of 11,600 GL. Inflows began to trend down from the late 90's, but this was seemingly ignored. The prevailing mantra, in the face of declining inflows and storage volumes, was to maximise production rather than apply sound conservation measures.

"Typically, NSW makes as much water available to licensed water users in any year as is available to the State, within the limits of the Murray-Darling Basin cap. This maximises water use in any one year but means that NSW maintains minimum water reserves for the next year. This is a deliberate policy of NSW that ensures that it is the decision of the individual user whether to use water or not to use the water they are entitled to, trade the water or save some to carry-over into the following season."

Reference: [Background to water management: in the NSW Murray and Lower Murray-Darling River Systems](#) May 2006

From 1997/98 to 2008/09, watercourse diversions ranged from 12,124 (2000-01) to 4,119 (2008-09) GL and totalled 104,660 GL. The average was 8,722 GL. South Australia's share of these diversions was approximately 6%.

"Example of the drought in the MDB: Water extractions fell 70% but the Net Value of Irrigated Agricultural Production fell 1% (2000/01 to 2007/08)"

Reference: [Water Rights & Water Trading: Lessons from the Australian water market World Bank](#), 31st January 2011

During 2002-05 the New South Wales Government allowed 795 GL to be borrowed from Snowy Hydro by NSW irrigators, to be repaid from future allocations.

As at 18th January 2011 the total volume held in public storages is 18,052 GL, 81% of total capacity - a record amount, which would require 180 Adelaide desalination plants operating at full capacity for an entire year to produce; a volume which could provide South Australia's annual urban water supply cap (180 GL) for the next 100 years.

According to WaterFind (2011), the previous record for total storage volumes in MDB public storages was 13,900 GL in 2000, when 62.6% of total capacity of 22,216 GL was achieved.

Flows to South Australia began a steep path of decline from 1990 and by 2001-02 had fallen to South Australia's minimum entitlement of 1850 GL. Under current water sharing arrangements, environmental flows are supposed to average 5,100 GL per year through the Murray Mouth. These flows help to ensure that the Coorong receives the freshwater outflows vital to the sustainability of its unique ecology. River Murray discharge at the barrages averaged 6,023 GL from 1975 to 1997. Between 1997 and 2009, the average was 890 GL.

[At the End of the River – The Coorong and Lower Lakes](#) 2010 puts it all in context:

"Taking extractions into account, the estimated quantities of water reaching the Mouth during the 1980s were around 4,385GL per annum, 5,496GL per annum during the 1990s. For the nine years from 2000-2008, the average annual volume was just 1006GL."

"However for most of the last nine years, there has been very little water released over the Barrages, and none since 2006. Consequently, instead of relatively fresh water being drawn into the Coorong to offset evaporative losses, marine water has been drawn in. This marine water carries 35g of salt per litre or 35,000 tonnes/GL."

South Australia's predicament compounded when the arrangements, sanctioned by the MDB Ministerial Council in 1989, were applied from 2005-06. New South Wales and Victoria did not deliver South Australia's minimum entitlement of 1850 GL. From 2006-10, the deficit totalled 2,054 GL. The MDB Ministerial Council failed to act to prevent the 1989 special accounting provisions from being required:

"Public risk management – the MDB water sharing arrangements must share water in both wet and dry conditions. Currently Murray River water sharing arrangements are based on a formula which allocates minimum monthly flows to South Australia, with the balance shared between New South Wales and Victoria. These arrangements are a function of the South Australian objective to maintain river levels for navigation. Strict adherence to this water sharing protocol would have allocated the vast majority of 2006/08 inflows to South Australia. The MDB Ministerial Council has agreed to a special water sharing regime, based on the Agreement, during this period, to share available water equitably."

Reference: [Modern Agriculture Under Stress - Lessons from MDB](#) MDBC 2008

The Murray-Darling Ministerial Council was well aware of the environmental implications of South Australia not receiving its minimum entitlement of 1850 GL:

"South Australia has a current minimum inflow in 2008-09 of 900 GL. Modelling predicts that, under this scenario, the pH of Lake Alexandrina could drop to 7. At pH 7 freshwater ecosystems will continue to function. But if the current downward trend in water level continues, the acidity of the lake could fall below pH 6.5 in the summer of 2009-2010. If flows into SA increase to 1,850 GL/yr then the pH of Lake Alexandrina will remain steady at 9."

["Lake Alexandrina and Albert Ecological Condition Progress Report"](#) April 2008

These arrangements had devastating effects on South Australian irrigators, used to receiving 100% of their entitlement but not a drop more. During the drought, their entitlements ranged from 100% (2000-03) to just 2-18% (2008-09). Their counterparts in the Murray System in Victoria received between 200% (2000-02) and 35% (2008-09).

As a result of the significant reduction of inflows, MDB public storage volumes suffered significant declines from 2000 to 2003 and again from 2005 to 2007, when total active storage declined to a record low of 500 GL.

In the period 2003-08, the City of Adelaide and the towns of South Australia consumed an average of 128.3 GL per year. While restrictions were placed on urban users of MDB water, no such restrictions were placed on the irrigation sector, which uses 95% of all diversions. While no state government should have to purchase what it owns and controls, if a further 50 GL of temporary water was required for urban use it would have cost \$18.5 million in 2008-09 when average allocation prices peaked.

The Economics of Murray-Darling Water Use

In 2005-06, 18,634 businesses were involved in irrigation, using 7,369 GL of MDB water and responsible for a gross average value of irrigation agricultural production of 75 cents per kilolitre of water used. The gross value of irrigated agricultural production was \$5,522 million, 36.8% of the gross value of agriculture production (\$14,991 million). The gross productivity of irrigated water consumption ranged from 22 cents per kilolitre for rice production, which used 1,252 GL of water, to \$12.31 per kilolitre consumed by nurseries and in the production of cut flowers and turf.

The 2001 cotton crop was a record of 3.52 million bales. In 2005-06, 93% of the national cotton crop was produced in the Basin. Cultivation of this crop consumed 1,574 GL of water and earned gross income of 51 cents per kilolitre of water used. Almost the entire Australian cotton crop is exported, with little local value adding. In terms of virtual water, if the volume of Murray-Darling water consumed by the cotton industry in the production of this crop was exported, it would require a fleet of 3,148 supertankers to do so; an amount equivalent to almost twice South Australia's current total diversion cap of 805 GL.

Using the Gross Median Household Income from 2005-06, the Gross Household Income per household water consumption for 2005-06 ranged from \$189 per kilolitre for Queensland to \$298 per kilolitre in the Australian Capital Territory.

Using figures derived from a Minerals Council of Australia submission to the NWC 2011 Biennial Assessment. Industry Gross Value Added (IGVA) have been normalised to \$ per kilolitre are summarised in the following table:

Industry	IGVA (\$m)	Water Consumption (GL)	IGVA %	Water Use %	IGVA/Vol (\$/kilolitre)
Agriculture	\$24,344	12,191	3	73	\$2.00
Forestry and Fishing	\$2,347	51	0	0	\$46.02
Mining	\$64,223	413	8	2	\$155.50
Manufacturing	\$99,688	589	13	4	\$169.25
Water Supply	\$7,407	2,083	1	13	\$3.56
Electricity and Gas	\$14,444	271	2	2	\$53.30
Other Industries	\$577,333	1,059	73	6	\$545.17

References:

[Socio-Economic Context for the Murray-Darling Basin](#) MDBA September 2009

[Bonanza for some cotton producers as cotton prices rocket](#) *The Australian* 27th January 2011.

[Household Income and Income Distribution, Australia, 6523.0](#) – ABS 2005-06

[MCA response to National Water Initiative 2011 Biennial Assessment of Progress](#) – Minerals Council of Australia December 2010

The Weekend Australian Inquirer Special “The Drought Breaks”, 13-14th November 2010

"The Drought Years" uses ABS statistics to show the drought vs. non-drought years (56 years or 36% of the time) for the period 1864 to 2010. Droughts are categorised into 3 categories; Devastating Drought (37 years or 25% of the time), Major Drought (28 years or 19% of the time) and Less Severe Drought (26 years or 18% of the time)

Water Reform and the Millennium Drought

[The Intergovernmental Agreement on a National Water Initiative](#) was signed on 25th June 2004 by the then Prime Minister, Premiers of New South Wales, Victoria, Queensland and South Australia, and the Chief Ministers of the Australian Capital Territory and the Northern Territory. It is subject to Biennial Assessments by the [National Water Commission](#), established to oversee its implementation, detailed in schedules that are part of the main document. Never placed before Parliament, this document is being treated as if it was an Act of Parliament.

The Australian Government Department for Water, Environment, Heritage and the Arts neatly summarises the true intent of the NWI where it publishes the "[National Water Initiative Water Trading Study Final Report](#)" June 2006:

"The National Water Initiative (NWI) is Australia's blueprint for national water reform. Central to the initiative are water markets and trading. Trading is the main means through which available water resources are to be (re)allocated amongst users, representing a fundamental shift away from the historic administered allocation arrangements. Trading may involve a reallocation of water within a sector, between sectors, or between communities."

Implementation of the NWI was not reviewed or modified as the Millennium Drought worsened. Calls for a [State of Emergency by South Australians](#) were ignored. The patently false philosophy that water markets and trading would resolve the problem was never reviewed; nor was such an approach questioned during the Global Financial Crisis.

State governments used water sharing plans to allow the unbundling of water entitlement licences from land and their trade on the newly created water market. NWI documentation does not use the word "privatisation". State governments neither informed their electorates that they were privatising their natural water resources nor sought their permission to do so via referendum.

Water sharing plans are simply authorised by the responsible Minister for Water free from parliamentary and public scrutiny. Water licences can be mortgaged or sold to anybody in the world irrespective of the purpose.

The NWC published its first market report in December 2008. Allocated (temporary) water traded in the Basin from 2007-2010 totalled 5,421 GL.

Reference: [Australian Water Market Report 2009-10](#): NWC December 2010

An indication of how the Victorian state government reacted to managing the drought is illustrated in the following PowerPoint presentation slide - *"water trading reducing impacts of the drought"*

"2007/08 - 1 in 100 yr dry event, after 10 years of drought

- *storages emptied quickly*
- *lowest allocations on record - starting allocations at 0%*
- *<40% allocations in December*
- *100's of towns under water restrictions*
- *some would have run out*

Solution

Declare water shortages

Qualify rights to water and transferred ownership

- *reduce environmental flows*
- *provide for critical human needs (urban and rural)*
- *provide market starter*

- *enable trade to occur earlier in season to inform decisions*
- *risk not enough being in storage system to run the system for full season*
- *shortened season (end in March instead of May)"*

Reference: [Water Trading in Victoria – History, Policy and Future](#) World Bank Forum, 31st January 2011

Economic Consequences of Mismanagement during the Millennium Drought

A team from the University of NSW attempted to quantify the costs in a paper entitled "[Engineering a Crisis in a Ramsar Wetland: the Coorong, Lower Lakes and Murray Mouth Australia](#)" November 2009:

"Projected and real costs of dealing with the crisis in the Coorong, Lower Lakes and Murray Mouth and other rivers in the Murray-Darling Basin as a result of overextraction and regulation of rivers. See Fig. 1 for locations of some of the current or proposed structures."

"There are considerable costs in treating the symptoms of the current crisis, possibly up to \$2.2 billion (Table 2). The value of water for the CLLMM needs to be informed by the considerable externalities currently realised as real engineering costs and costs to community (Table 2). Governments will embark on a long-term Basin Plan (Table 2) but this is unlikely to deal with the underlying cause of the crisis."

1.4 MDBA operations and the Guide to the Proposed Basin Plan

The claimed range of increased long-term average outflows through the Murray Mouth of 1960 GL, as a result of the proposed 3,000 GL per year reduction to current diversion limits, is contingent upon continuing to receive the long term average outflow under current arrangements (5,100 GL). However, the average outflow between 1997 and 2009 was 890 GL. WAC does not have confidence that the Basin Plan will achieve its outflow target, given the history of declines in both environmental and entitlement flows to South Australia since 1989.

There is a significant lack of information about key Basin parameters such as inflows, storages, losses, diversions (legal and illegal), outflows and the characteristics of their variability. Critically, the Authority is silent about the operation of the River Murray and the changes made since 1989 that have significantly disadvantaged South Australia. This lack of information does not allow confidence that the long-term statistics used by the Authority will create a more viable River Murray.

The averages used by the Authority are significantly greater than those determined by the CSIRO Sustainable Yields Project "Water Availability in the Murray-Darling Basin", the largest research project ever undertaken by the CSIRO. The Authority has stated that the long-term average surface water inflow from 1895 to 2009 was 32,800 GL vs. 11,600 GL stated in the Authority's Annual Report of 2007-08. Inflows in excess of 30,000 GL occur infrequently, the 1956 floods being an example.

The Guide fails to demonstrate how the Millennium Drought could have been managed differently to prevent the social, environmental and economic disasters which occurred in South Australia.

The Authority has neither defined the range of operating scenarios of unsustainable water availability, nor addressed the over-allocation of water licences in the Basin. The Productivity Commission has stated that the total number of tradeable water licences on issues in 2007-08 is as follows:

- Total regulated 16,200 GL
- Total unregulated 622 GL
- Total Groundwater 1,786 GL

The Guide gives no information about water licences, their history or licence holders.

1.5 The Plight of South Australia

The Authority has failed to take account of the long-term sustainable arrangements that South Australia made as a result of the 1967/68 drought. A cap on diversions has been in place for decades, creating what is a Low Flows Sustainable Diversion Limit within South Australia's minimum entitlement of 1850 GL.

In signing the 2005 NWI agreement, South Australian Premier Rann not only approved the privatisation of water and water services, but also exposed to market forces the most meagre water supply of any state in the Basin.

The combination of the cap and the minimum entitlement of 1850 GL represents a significant barrier to water reform and the creation of a water market.

South Australia may be the driest state, but its water policy guaranteed the reliability of water supply and the sustainability of the Murray system to the barrages. It also enables the river to discharge any excess flows from regional or interstate flood events into the Coorong and the Murray Mouth. All flows above the minimum entitlement of 1850 GL are unregulated and used as environmental water.

These arrangements are at significant risk from water reform and the Basin Plan, which does not guarantee South Australia's minimum entitlement and allows water licences to be traded to the highest bidder. South Australia's River Murray system is highly regulated. Allowing water to be traded out or purchased by the Commonwealth will significantly compromise the viability of the whole system for all stakeholders, particularly during times of low flow.

Agreements made in 1989 and specifically the reduction of reserves that were required to be held equally by New South Wales and Victoria from 2,500 GL to 835 GL has had disastrous effects. These arrangements and subsequent changes failed to guarantee the supply of South Australia's minimum entitlement of 1850 GL when it was critically required: during the depth of the Millennium Drought. There are insufficient incentives in place to encourage the upstream states to ensure that sufficient reserves are held to guarantee South Australia's minimum entitlement.

As previously stated, the Authority has failed to operate the Basin to ensure the Murray Mouth receives the long-term average outflow of 5,100 GL. Between 1996 and 2009, the average was just 890 GL, with many years of no flow through the Murray Mouth. Combined with the reduced flows through Lock 1, this has had devastating consequences for Lake Bonney, the Lower Lakes, Coorong and Murray Mouth and communities that depend on them.

Perhaps the most significant contributor to South Australia's problems has been the Authority's mismanagement of Basin storages, in failing to react to significant declines of inflows from the late 1990s until the floods of 2010. Public storages in the Basin were at a record peak of 13,900 GL in 2000 and were run down to minimal levels by June 2003 and again in 2007.

While water restrictions were placed on urban water consumers, no such restrictions were placed on the irrigation industry. The unbundling of water licences also led to the purchase of water licences to build golf courses and marinas. Effectively, there were no restrictions on water use; the only prerequisite being the ability to pay the market price.

The reduction of River Murray flows into South Australia that began in 1990 has had catastrophic effects, particularly between 2006/07 and 2009/10 when South Australia's minimum entitlement of 1850 GL was not delivered. The economies of many regional and country towns dependent upon the River Murray were at the point of collapse and many Basin communities suffered severe social stress.

A flow of 2,054 GL or 494 GL per year would have prevented the disaster. This volume of water was readily available: 5,421 GL of allocated water was traded between 2007 and 2010.

The declaration of a National State of Emergency in the Basin in 2006/07, requiring all water sharing regions to help address South Australia's crisis, would have averted the South Australian disaster. From 2004/05 to 2005/06, a total of 11,766 GL was diverted to grow cereals, cotton, rice and pasture.

In 2005/06 the gross value of irrigation industries growing cereals, cotton, rice and hay was \$1,413 million, consuming 4,099 GL and earning an average of 34.5 cents per kilolitre of water used. Paying compensation for the use of this water would have cost significantly less than both the water market alternative and the Commonwealth Government's buy-back.

Inflows began to trend down in the late 90's. Instead of conserving and restricting what could be grown, MDB storages were depleted. Over 100,000 GL was diverted between 1997 and 2009, South Australia's use of this water was just 6%; the crisis could have been prevented by holding reserves of 2,500 GL, as was the policy until 1989, when the reserve was decreased to just 835 GL.

As previously indicated, a "production at all costs" mentality seems to prevail in the Basin; with each state maximising water diversions to this end.

The Lower Lakes and the fragile environment of the Coorong continue to be endangered, as are Adelaide's coastal waters. The addition of over 100 GL of toxic hypersaline deoxygenated water from the Adelaide desalination plant could have significant consequences for Gulf St Vincent. Both South Australian Gulfs are inverse estuaries sheltered from the open ocean with a unique marine environment.

Adelaide is being increasingly compromised as a viable city, given the condition of its creeks, rivers and adjacent coastal waters. Efforts to address these problems have been severely compromised because of the billions of dollars of debt incurred from building and operating Adelaide's 100 GL desalination plant.

Like most Australian cities, there are no comprehensive plans in place for Adelaide to recycle stormwater and wastewater and protect impacted marine ecology. Such plans necessitate the quarantining of land suitable for stormwater management and harvesting from unsuitable development. Significant opportunities such as Cheltenham Park in Adelaide are being lost to housing development.

Public policy making is a debacle in South Australia. If BHP Billiton's proposed Olympic Dam Mine Expansion is approved, requiring additional water supply, there are far more sensible alternatives than to build a large-scale desalination plant in Upper Spencer Gulf. Such a development would present a major threat to the unique marine ecology of the Gulf.

1.6 Conclusions

The River Murray is an integral part of South Australia's environment, society and economy. The failure to supply South Australia's minimum entitlement of 1850 GL from 2006 to 2009 has had significant environmental, social and economic impacts that will persist for decades. The decision to build and operate a 100 GL desalination plant in Adelaide will result in costs to the taxpayer in excess of \$4 billion at current prices.

Reference: [Will desal be worth its salt?](#) 22 January 2011

The current cap for South Australian towns and the city of Adelaide is a meagre 180 GL, just 1.2% of the average total current consumptive use from the basin (15,400 GL) quoted by the Murray-Darling Basin Authority and a paltry 3.5% of the current average of flow out of the Murray Mouth (5,100 GL). South Australia's consumptive share of surface water diversions, totalling 104,660 GL between 1997 and 2009, was approximately 6%. A mere 2,000 GL would have prevented South Australia's environmental, social and economic crisis.

South Australia effectively established a Low Flow Sustainable Diversion Limit in 1967/68. Since 1989 the behaviour of upstream governments has been un-Australian; successive South Australian governments have been asleep at the wheel.

State and federal governments are fixated on the establishment of a water market; an agenda at odds with the intent of Section 100 of the Constitution and which directly threatens public rights and the environmental health of the Basin.

These concerns are supported by the December 2009 decision of the High Court. In finding against ICM Agriculture, which had claimed compensation for significant reductions to groundwater entitlements made by the NSW Government, the High Court identified the problem as privatisation. Clause 55 of the its judgment states; "The second point of interest is that the language of the 1896 Act and the 1912 Act does not disturb the common law notion that water, like light and air, is common property not especially amenable to private ownership and best vested in a sovereign state[55]."

Those driving the process of water reform maintain that they seek a better deal for the environment and for irrigators: these are empty promises. Their true agenda is the privatisation of water for the benefit of financial markets; undertaken in a manner that brings into question the integrity and accountability of successive state and federal governments.

Privatisation will also further complicate Basin management, drive up costs and reduce the competitiveness of the economy, with serious consequences for households and industries alike.

Australian water is increasingly owned by foreign interests and, if this process continues unchecked, we risk losing control of our water resources.

Any prospect of co-operation between States and their communities remains at risk from a one-size-fits-all water reform agenda, ill-conceived litigation to further develop water markets and a belief that we can trade our way out of the problems of over-allocation by treating water as a commodity.

The actions of governments during the Millennium Drought were unacceptable. Further engineering intervention by building more dams and weirs will only reduce the amount of water available for the environment. Only careful balancing of demand vs. water availability for the common good can achieve good environmental outcomes.

The Millennium Drought exposed water reform for what it is: a fraud. If there was genuine concern for the long-term future of the communities, economy and environment of the Basin, a National State of Emergency in the Basin would have been established to ensure the state of South Australia received its minimum entitlement of 1850 GL and the NWI agenda to establish a national water market put on hold. The failure to act cost South Australia billions of dollars.

The draining of the Basin storages during prolonged and ongoing drought was mismanagement on a scale which requires investigation by a fully empowered Royal Commission. Such an inquiry must also determine whether the Basin governments have acted in the public interest in promoting the reform agenda of water privatisation and the national water market.

The costs to South Australians, as a result of the operation of this new market, are considerable. Its minimum entitlement of 1850 GL was sacrificed to support the introduction of the national water market in 2007, with no consideration of compensation.

Upstream states have seemingly forgotten that South Australia capped its diversions in the late 60s, while they increased their diversions by over 300% in the same period. These states owe a considerable part of their prosperity to the sustainable approach to water management adopted by previous South Australian governments.

There are grave concerns that, under the new arrangements, Basin states will focus on maximising diversions to maximise economic returns and blame the Commonwealth for lack of environmental flows.

South Australia's reasonable entitlement, as implied in Section 100 of the Constitution, is no longer guaranteed and there is clearly no commitment by the up-stream states to meet that requirement during periods of low flow. This state of affairs is unreasonable and therefore unconstitutional.

Section 100 of the Australian Constitution also enshrines the fundamental principle that water should not be traded as a privately owned commodity; and yet this is precisely what has been happening in recent decades - in a clandestine manner. The waters of the Murray-Darling system have become a valuable commodity, to be traded on global financial markets. Water trading is portrayed as the means to achieve fairer redistribution of entitlements and allocations. In fact, water trading is water privatisation in action.

The creation of the new water market, by unbundling water licences from land and allowing them to be traded, has serious implications. Irrigators now look at their water entitlements with two sets of eyes. One set looks at the potential of earning income from traditional irrigation to grow crops for income whilst the other sees the value the water is worth on the open water market. This is a significant impediment to the determination of reasonable SDLs under the Basin Plan.

Water reform is a radical economic venture without precedent in Australia. A natural resource is being privatised by governments which have neither sought nor been given an electoral mandate to do so. No other democracy has embarked on such reform without the approval of the electorate.

1.7 Key Recommendations

1.7.1 Authority / Basin Plan

- a. The Authority must develop a range of flow-specific SDL's for the Basin as a whole, similar to the low flow SDL successfully operated by South Australia for many decades.
 - i. Integral to the low flow SDL is a cap that prioritises domestic needs over export use and provides for population growth.
 - ii. As the cycle moves into drought, water must be prioritised and restrictions placed on water trading and what crops can be grown with the available water, to ensure that the needs of Australia are placed ahead of the use of water by export focussed enterprises.
- b. The Authority must demonstrate how the management of Basin water over the last two decades would have been different, particularly for South Australia, if an accredited State Water Sharing Plan had been in existence.
 - i. Modelling of the impact of the new arrangements should be undertaken, to ascertain how the past two decades could have been managed differently to prevent the crisis that occurred in South Australia during the Millennium Drought.
- c. All statistical parameters that fully describe the distribution, including the mode, median and standard deviation, must be published.
 - i. The Authority must make available the database used to determine its long-term averages for independent analysis and comparison with the recent history of the past two decades. The Authority must explain the reason for the differences between its long-term inflows and the statistics that represent consumption.
 - ii. Statisticians with an understanding of quality control and quality assurance must be engaged to review documentation used by the Authority to compile the Basin Plan.
- d. The Authority must clarify what flows are required through the Lower Lakes, Barrages and the Murray Mouth to sustain the Coorong and Lake Albert for the full range of water availability. All water sharing regions in the Basin must fairly contribute to meet these downstream needs.

- e. The Authority must define sustainability for the full range of inflows and diversions that are an integral part of the historical record and the water required for conservation.
 - i. The Authority must determine SDLs for each category of climate variability experienced in the basin; Floods, Normal, Low Flows, Droughts and Emergencies.
 - ii. Emergencies must necessitate suspension of water allocation plans and allocation of all resources of the Basin to address the crisis, prioritising Australian needs first.
 - iii. The Basin Plan must be focused on managing droughts rather than floods.
- f. The Authority must detail consumptive water use during the Millennium Drought by category of use.
- g. South Australia's share of MDB water should be increased, given the long-term conservative water management of South Australian governments.
- h. The Authority must apply the policies it proposed for the Environmental Watering Plan to the management of the natural resource as a whole.
- i. The Authority must consider alternative approaches such as:
 - i. Determination of irrigation areas that should be downsized or decommissioned because of water inefficiencies or environmental degradation related to irrigation activity, especially salinity and pollution.
 - ii. Provision of compensation for compulsory acquisition of water allocations during emergencies.
 - iii. Requiring states to use their powers to downsize irrigation entitlements and set lower allocations.
- j. All water diverted from the original natural conditions must be counted towards SDLs and include groundwater extraction, flood plain harvesting, water used to fill the 23,000 km of irrigation channels and farm dams.
- k. During droughts and emergencies, the total share that can be used for consumptive use by irrigation must be capped to ensure the survivability of Australia's unique ecological assets and not allowed to rise to the extent it did during the recent drought, when around 75% of river flows was used for consumption.
- l. The Basin Plan and the Murray-Darling Basin Agreement must protect South Australia's minimum entitlement by requiring any shortfalls to be made up in subsequent years by NSW, Victoria and Queensland. South Australia's minimum entitlement of 1850 GL must not be compromised by water trading out of South Australia or by the Basin Plan.
- m. Water should only be traded within irrigation districts on a collaborative basis and any change to an irrigation region's entitlement should only be made with the agreement of the MDBA and state governments affected by such amendment.
- n. Consideration of all potential regional savings of water, not in the context of increasing an SDL, but in terms of being able to improve the environmental watering of the system as a whole or increasing the SDL of a downstream region with greater productivity.

- o. Inclusion of surface water interceptions in the proposed reduction of diversions.
- p. Conveyance losses must be defined in proportion to share of consumptive use and distinction made between losses related to channel as opposed to pipeline supply.

1.7.2 National Public Inquiry

- a. A National Public Inquiry with the powers of a Royal Commission is required to determine whether Australian governments have prioritised the creation of water markets over the common good. Fair Water Use (Australia) has developed draft terms of references for consideration by the Commonwealth for such a [National Public Inquiry](#)
 - i. The purpose of this Inquiry is to determine the systemic causes of the environmental, social and economic damage and problems created by the current plans and system of management of the Murray-Darling Basin.
 - ii. The Inquiry should define the changes that need to be made by all levels of government, including by their departments and corporations, to safeguard the public's interest in water as the common property of all Australians and the utility and amenity of the Murray-Darling's water courses to the sea under the "public trust doctrine".
 - iii. The Inquiry should determine what changes should be made by the Commonwealth, the States of Queensland, New South Wales, Victoria and South Australia and The Australian Capital Territory with respect to governance and management of the Murray-Darling Basin.
- b. Water reform has compounded the mismanagement of the Basin and there is a need to fully understand the considerable complexities involved, as water is a natural resource and interdependent not only in terms of ecology but with society and the economy.
- c. There is ample time for such an Inquiry to be held, as the Basin Plan is not due to come into full effect until 2020. Australians deserve and need to know the truth.
- d. Additional matters to be considered:
 - i. The implications of Free Trade Agreements signed by Australia with respect to the Australian water resources, especially those of the Basin.
 - ii. The total cost of the investment to create and maintain water markets and how these costs are going to be recovered from water users.
 - iii. The Global Financial Crisis should have necessitated review of the considerable economic reform component of water reform – as this review was not undertaken, it should form part of the brief of the Commission.
 - iv. Full disclosure of allocation history during the Millennium Drought and investigation as to why there was systemic failure to conserve water as inflows reduced; an action which would have prevented the economic, social and environmental disaster that took place in South Australia.
 - v. The social and economic costs of water reform.
 - vi. Gross economic returns per kilolitre for various water uses, not only irrigation but also industrial and household activity, and the total amount of water used in each category.

1.7.3 Commonwealth /State Governments

- a. The Commonwealth must consider a water tax that will discourage inappropriate use and recover all costs associated with the public's considerable investment in the MDB.
- b. Proposed amendments to the Water Act 2007:
 - i. Empower the Authority to address the full variability of the Basin and not just a one-size-fits-all solution that requires the Basin Plan to be designed around long-term averages, ignoring South Australia's Low Flows Sustainable Diversion Limit.
 - ii. Ensure the Basin is climate-proofed by optimising the use of Basin storage capacity, both public and private.
 - iii. Ensure the Basin Plan is consistent with section 100 of the Australian Constitution and define water availability for all known scenarios of water availability.
 1. Require the Murray-Darling Basin Authority to compile and release the full set of statistical parameters such as location, dispersion and shape characteristics for inflows, public and private storages, consumptive use, and losses in storage and distribution systems, and flows through the Barrages and Murray Mouth.
 - iv. Require the establishment of caps on water diversion for each category of flows between floods and drought, to ensure the sustainability of the MDB with emphasis on:
 1. Greater degree of conservation,
 2. Prioritising food production for Australians.
 - v. Require the suspension of water trading during emergency periods, to ensure that water is allocated where the need is greatest, rather than to those who pay the highest price.
 - vi. Demonstrate that the environmental water purchased by the Commonwealth's water buyback scheme has practical use during low flows and severe droughts and does not compromise South Australia's minimum entitlement.
 - vii. Remove any impediments that prevent the Authority from managing the Basin in the public interest and for the common good.
 - viii. Require the Authority to define SDLs for the range of water availability in steps of 500 GL. All SDLs must specify the amount of water that will flow through the Barrages in the Lower Lakes.
- b. Australian governments must pass laws that recognise the Public Trust Doctrine and commit Australia to water conservation and water security for all Australians,
- c. Australians must be given the opportunity to decide whether water is considered a common good, the common property of all Australians, or converted into a commodity to serve private interests and those who can pay the most.

- i. Just as the Australian Constitution was approved by referendum, so must Australians have the opportunity to indicate whether they wish their water resources privatised or retained as the common property of Australia.
- ii. All trade in water entitlements must be suspended until governments secure the approval of the Australian people to change the Australian Constitution to allow water privatisation.
- d. It is essential that legislation and funding for comprehensive stormwater harvesting and wastewater recycling is put in place without further delay, to save impacted marine environments. Laws and regulations are required to ensure sustainable and non-wasteful use of water by businesses and irrigators.
- e. Funding is required for education to encourage community actions towards rainwater collection, conservation and to gain a greater knowledge of their natural water resources.
- f. MDBA forecasts of water entitlement must be made public at the same time as the information is released to state governments.
- g. [The MDBA independent review of Drought Water Accounts](#), announced in early January 2009 by the CEO of the MDBA, must also be made public as a matter of urgency.
- h. Free trade in water entitlements should be terminated, specifically excluding foreign investors, to avoid compounding management complexities and to minimise the costs to the Australian public of managing the Basin and the natural water resources of Australia.
- i. The Water Act and the Basin Plan should give greater consideration to the needs of all Australians ultimately dependent upon the Murray-Darling Basin for food, water and products and not just those who are regarded as being members of the Basin Community. Water is not for the exclusive use of the irrigation sector.
- j. Establish National State of Emergency plans that may be implemented as required for whole or part of Basin. Fair Water Use (Australia) has developed draft terms of references for consideration by the Commonwealth for a [National State of Emergency Commission](#). A State of Emergency would be proclaimed to enable appropriate actions to be taken to address the needs of a state or region in crisis from severe drought. Trigger points may be threats to consumptive use for Australian needs or irreversible threats to the environment.
- k. The South Australian Government must seek amendment of the Murray-Darling Basin Agreement, re-establishing the 2,500 GL reserves, to guarantee South Australia's minimum entitlement of 1850 GL. Further, these arrangements should not be allowed to be compromised by the introduction of the Basin plan.
- l. All water licences purchased by the Commonwealth should be extinguished and the states made responsible for the management of their reasonable share of water.
- m. State governments should be responsible for all restructuring involving the permanent transfer, reduction or cancellation of water access entitlements.
- n. Only water allocations granted for a given water year should be considered tradeable and only be within a water district or adjacent water district.

- o. The waters of the Murray-Darling Basin should not be exposed to private ownership, especially by overseas companies. Water shares, the new term for water licences, should not be able to be owned and controlled by foreign interests.
- p. As custodians, we have a lot to learn from Aboriginal culture that respects water and interdependent ecology as part of our place.
- q. The fundamental human right to clean, affordable water as a common good must be codified by Parliament and by laws that do not automatically sanction weirs, pipelines, diversion and desalination as short-term solutions.

2 DEFINITIONS AND ACRONYMS

2.1 Definitions

Term	Description
Authority	Murray-Darling Basin Authority and the Murray-Darling Basin Commission before that.
CLLMM	Coorong Lower Lakes Murray Mouth
Basin	Murray-Darling Basin
Gigalitre (GL)	<p>One Gigalitre is 1,000 ML or 1 billion litres and represents a volume of water one square kilometre by one metre deep.</p> <p>Current supertankers are able to transport 500 million litres of crude oil or 0.5 GL.</p> <p>Sydney Harbour holds approximately 500 GL</p> <p>The Adelaide Desalination Plant has been designed to produce 100 GL of water per year.</p> <p>In 2004/05 South Australian households used an average of 253 kilolitres per household.</p> <p>Using ABS 2005/06 Median Household Income, the income per kilolitre was \$196.</p>
SDL	Sustainable Diversion Limit. Term used in the 2007 Water Act defined in terms of long-term averages.

2.2 Acronyms

Acronym	Description
COAG	Council of Australian Governments
CSIRO	Commonwealth Scientific and Industrial Research Organisation
MDB	Murray-Darling Basin
MDBA	Murray-Darling Basin Authority
MDBC	Murray-Darling Basin Commission (Superseded by the MDBA in 2008).
NWC	National Water Commission
NWI	Intergovernmental Agreement on a National Water Initiative
WAC	Water Action Coalition