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

**Water Action Coalition**

**Submission Number: 596**  
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**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 18<sup>th</sup> 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)
<b>Agriculture</b>	\$24,344	12,191	3	73	\$2.00
<b>Forestry and Fishing</b>	\$2,347	51	0	0	\$46.02
<b>Mining</b>	\$64,223	413	8	2	\$155.50
<b>Manufacturing</b>	\$99,688	589	13	4	\$169.25
<b>Water Supply</b>	\$7,407	2,083	1	13	\$3.56
<b>Electricity and Gas</b>	\$14,444	271	2	2	\$53.30
<b>Other Industries</b>	\$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* 27<sup>th</sup> 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 25<sup>th</sup> 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	<a href="#">Water Action Coalition</a>

**A DETAILED REVIEW – GUIDE TO THE BASIN PLAN**

**Table 1. Detailed Review – Guide to the proposed Basin Plan**

Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
1.	Foreword Page ii	<p>"To the extent that there is a material inconsistency between this document and other volumes of the Guide to the proposed Basin Plan, then the policy intent in this document prevails."</p> <p>-----</p> <p>The Authority has failed to make use of the best available science to develop a range of effective policy options because of the constraints place on the Authority by the Water Act 2007.</p> <p>Critically the Authority has been required to design the Basin Plan using long-term averages and a free market in water.</p> <p>As a consequence the Basin Guide only serves the purpose of the Water Act 2007; lacks key information, fails to question the privatisation of water in Australia and fails to propose policy options to address the over-allocation of water license entitlements and the restoration of river systems to health with a high degree of confidence.</p> <p>A key process of water reform is to convert water from being a common good into a commodity for a new water industry whilst dispossessing Australians of their rights and of choice.</p> <p>There is considerable risk that free markets will endanger Australia's sovereignty over its most critical natural resource - water.</p> <p>Governments should not have to purchase what is the common property of Australia.</p> <p>The Federation Drought from 1895 to 1902 resulted in the establishment of an interstate Royal Commission to resolve management issues in the Basin.</p> <p>Not only has the water reform agenda failed South Australia but the implementation of that agenda as the Basin Plan will only compound management problems by allowing a free market in water and the environment will not be saved.</p>	<p>Critical: Establish an interstate Royal Commission to solve the problems of over-allocation without fear or favour from vested interests from agriculture and market economic reformers.</p>	<p><b>Who 'owns' the Murray?: Corowa Water Conference and Interstate Royal Commission 1902</b></p> <p>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. A community-organised conference of agriculturalists wanting an assured water supply, known as the River Murray Main Canal League, met at Corowa in 1902. The Premiers of New South Wales and Victoria, the Attorney-General of South Australia and the new Prime Minister, Edmund Barton, also attended the Conference to discuss regulation of the river.</p> <p>The outcome of the 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 (Eastburn, p. 23).</p> <p><a href="http://www.samemory.sa.gov.au/site/page.cfm?u=1380">http://www.samemory.sa.gov.au/site/page.cfm?u=1380</a></p>



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

Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
2.	Foreword Page ii	<p>"The Murray-Darling Basin Authority makes no warranty as to the accuracy or completeness of this information."</p> <p>-----</p> <p>This is unacceptable. Who can we trust to take responsibility for the accuracy and completeness of information that is going to be used to develop the Basin Plan and become a legislative instrument of the Commonwealth?</p>	<p>The Commonwealth to take responsibility for the accuracy, completeness and comprehensiveness of the information contained in the documents produced by the Authority.</p>	



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
3.	Foreword Page iii	<p>"The Guide sets out discussions on environmental water requirements, volumes of water that can be taken for consumptive use — known as long-term sustainable diversion limits (SDLs) — for surface water and groundwater"</p> <p>-----</p> <p>Establishing a single number for a SDL does not make statistical sense as this single number will have no likelihood or chance. In addition the use of long-term averages that are significantly biased from the norm over-magnifies water availability and the Authority has failed to define sustainability for the full range of water availability.</p> <p>The Authority fails to explain the rationale behind why this is a requirement of the Water Act 2007 or challenge its validity.</p> <p>This practice is setting up the Basin Plan and State Water Sharing Plans to be unmitigated disasters and unachievable in practice.</p> <p>Further the Guide fails to provide for the need to conserve water and better utilise the capacity of Basin storages in the public interest particularly during drought conditions.</p>	Refer Finding 1 Recommendation – Royal Commission	<p>As likelihood or probability can only be calculated for a continuous random variable by calculating the area under the probability density function curve. Accordingly a range must be defined and the probability of a single value is zero.</p> <p>Appendix B Slide 34 &amp; 35 – The Guide claims that 2001 was a typical example of a long-term average condition. It was for agriculture but water about the environment and the Lower Lakes, Coorong and Murray Mouth?</p> <p>Appendix B Slide 15 N notes:</p> <p>"Since 1996, average flows through the barrages have been 890 GL vs. an Authority claim in the Basin Guide of a long-term average of 5,100 GL"</p> <p>Appendix B Slide 18 – regulation has significantly increased the gap between mean and median.</p> <p>Appendix B Slide 19 &amp; 20 – inflows range from a few thousand gigalitres during severe droughts to over 40,000 GL but the big flows occur infrequently.</p> <p>Appendix B Slide 37 – "There are significant differences between the long-term averages used in the Basin Guide in Chapter 5 and CSIRO's report particularly in terms of inflows (32,800 GL vs. 28,711 GL), surface water use (10,075 GL vs. 15,400 GL) and environmental flows (14,000 GL vs. 9,868 GL (losses)). The Basin Guide does not disclose channel and pipe loss, evaporation from reservoirs and lakes."</p> <p>Appendix B Slide 39 – Basin storages were not used to conserve water but to maximise use by agriculture.</p> <p>Appendix B Slide 28 N notes - "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."</p>



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
4.	<p>Executive Summary</p> <p>Introduction – the purpose of the Guide</p> <p>Page ix</p>	<p>"These proposals are about the key decisions the Authority is required to make under the Water Act 2007 (Cwth), in particular the new limits on water that can be taken from the Basin, known as long-term average sustainable diversion limits (SDLs), which will apply to both surface water and groundwater."</p> <p>-----</p> <p>As above and in addition:</p> <ul style="list-style-type: none"> <li>• Use of long-term average from basin statistics will only create an excessively biased statistical average because of the influence of significant flood events. The likelihood of achievement of long-term averages will be very low as demonstrated by the last 15 years of the historical record.</li> <li>• The Guide does not provide any information as to what range of relative level of water use is sustainable or unsustainable.</li> <li>• The choice of long-term statistics about which to develop Sustainable Diversion Limits is misleading the public about the inherent natural variability in the Basin that occurs in practice.</li> </ul>	<p>Amend the Water Act 2007 to reflect the full range of variability of the basin to ensure the Authority also addresses the full range of variability in its plans and include the full set of statistical parameters such as location, dispersion and shape characteristics for; inflows, public and private storages, consumptive use, losses in storage and distribution systems, and flows through the Barrages and Murray Mouth.</p> <p>Include all statistical parameters that fully describe the distribution including the mode, median and standard deviation.</p> <p>Discard statistical outliers such as infrequent major flood events.</p> <p>The Authority to demonstrate how its plan would have worked in the public interest during the Millennium drought and the decade leading up to this period (1990 to 2010).</p>	<p><b>Changing Relative Level of Use Slide</b></p> <p>CSIRO Water Availability in the MDB MDB Sustainability Yields Project 24<sup>th</sup> November 2008</p> <p>An examination of this slide, which is a times series at Wentworth from 1895 to 2006, reveals that a relative level of water use of 40% occurs infrequently and only during significant flood events. Further the relative level of water use varies from as low as 20%, when water is plentiful to as high as 80% during droughts.</p> <p><b>The Impacts of Water Regulation and Storage on the Basin's Rivers</b></p> <p>Table 1: Mean and median annual flows during natural and current conditions since 1892 (source: Water Audit Study, Murray-Darling Basin Commission, Canberra)</p> <p>"For the River Murray, current flows for regulated conditions the average is 4,915 GL/yr vs. a median of 2,539 GL/yr."</p> <p><a href="http://www2.mdbc.gov.au/nrm/water_issues/impact_of_water_regulation_and_storage.html">http://www2.mdbc.gov.au/nrm/water_issues/impact_of_water_regulation_and_storage.html</a></p>

Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
5.	<p>Executive Summary</p> <p>How Volume 1 is structured</p> <p>Page ix</p>	<p>There are no chapters or volumes planned that address the following issues:</p> <ul style="list-style-type: none"> <li>• The operational failures by the Authority and Governments of the Basin to manage the Basin in the public interest and the common good. There was systemic failure to conserve water in the lead-up to the Millennium drought and during the drought. This was particularly evident during 2005-06 with devastating social, environmental and economic consequences for South Australia during the latter part of the decade.</li> <li>• The social and economic costs and losses caused by the mismanagement failures in South Australia need to include all costs associated with the reduction of flows below Lock 1, Lake Bonney, the building of the Adelaide Desalination Plant, towns and cities of Adelaide and by South Australian irrigators whose high reliability water allocations were savagely cut.</li> <li>• The quantification of the Australian public's investment past, present and future and how these costs are going to be recovered from water users in the Basin.</li> <li>• The proportion of water used to meet water supply, food and product needs of Australians vs. water used to achieve economic rent from exports.</li> <li>• There is no information about the history of the growth of water licenses and the configuration of the holders of those water licenses (individuals, family, corporate, government and overseas entities) and whether they were given for free by state governments or purchased on the new national water market.</li> </ul>	<p>Refer Finding 1 Recommendation – Royal Commission.</p> <p>A Royal Commission is required to determine whether Australian Governments put the creation of water markets before the public interest and common good.</p> <p>The Authority to look beyond the Basin to fully understand social and economic costs of its decisions.</p> <p>The Commonwealth to consider a water tax that will discourage inappropriate use and recover all costs associated with the public's considerable investment in the MDB.</p>	<p>Refer remarks for Finding 3</p>





Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
6.	Executive Summary The consultation process Page x	<p>"The Guide will be followed by the release of the proposed Basin Plan (the legislative instrument) by late 2010 to early 2011 for detailed and extensive consultation, then the Basin Plan (late 2011) and the state water resource plans (2012–19)."</p> <p>-----</p> <p>What steps are being taken to ensure all these plans comply with section 100 of the Australian Constitution particularly with respect to water conservation?</p> <p>The Guide fails to disclose that the Basin Plan is a legislative instrument that can be voted down by either house of the Commonwealth Parliament.</p>	<p>Update the Guide and make consultative process needs to become collaborative and democratic.</p> <p>The privatisation of the waters of the River Murray is not accepted.</p> <p>Water must be treated as a common good and the common property of Australia.</p>	
7.	Executive Summary The consultation process Page x	<p>"The Guide has been prepared for discussion purposes, but this should not preclude feedback on any proposals that meet the requirements of the Water Act 2007 (Cwth)."</p> <p>-----</p> <p>The impression I have from the MDBA Public Meeting held in Adelaide on the 25<sup>th</sup> October 2010 was that the Authority would direct feedback outside of its power to the appropriate Government Authority.</p>	<p>All feedback to be made public and submissions published on the Authority's website</p>	
8.	Executive Summary The history of reform Page xi	<p>"For more than a decade, the Australian Government and Basin states have been working together to restore the environmental health of the Basin and redress past decisions."</p> <p>-----</p> <p>Where is the evidence of this particularly for South Australia? No State of Emergency was invoked in the MDB during the Millennium Drought to prioritise and place water restrictions on what could be grown or on the operation of the new water market for the common good.</p> <p>There was a systemic failure of duty of care that extends over a number of decades.</p>	<p>Report into the failure of the Authority and the MDBC to ensure the eastern states conserve and prioritise water use to ensure South Australia receives its minimum low flows entitlement of 1850 GL.</p> <p>A public inquiry with the powers of a Royal Commission to identify the cause of the mismanagement of the drought that resulted in over \$3 billion being spent on water security projects in South Australia. These consequences have been prevented by the adoption of prudent management principles that put the national interest, common interest and public good before market experiments.</p>	<p><b>Land turns green as index flips into the wet position</b> Brendan O'Keefe The Australian 13-14 November 2010 <a href="http://www.theaustralian.com.au/national-affairs/land-turns-green-as-index-flips-into-the-wet-position/story-fn59nii-x-1225952586965">http://www.theaustralian.com.au/national-affairs/land-turns-green-as-index-flips-into-the-wet-position/story-fn59nii-x-1225952586965</a></p> <p>Note Water Storage Graph printed in hardcopy edition which demonstrates that water was failed to be conserved in the MDB to cope with the deepening of the drought.</p>

Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
9.	Executive Summary The history of reform Page xi	<p>"The National Water Initiative, which, among other things, establishes the principle of risk and cost-sharing for the recovery of additional water for the environment between the Australian Government, Basin states and individual entitlement holders. These principles are a critical consideration for the Authority's proposals on transitional arrangements and risk allocation."</p> <p>The rights of residents of the state as acknowledged in Section 100 of the Australian Constitution have been ignored. The Guide does not clarify the legal status of the National Water Initiative given that no Australian Parliament has debated and approved the contents of this document.</p>	<p>Refer Finding 1 Recommendation – Royal Commission</p> <p>Terms of Reference for Royal Commission need to include the National Water Initiative to ensure it is independently reviewed.</p>	<p><a href="#">National Water Initiative</a> (NWI)</p>
10.	Executive Summary The objects of the Water Act Page xii	<p>The objects of the water act are in conflict. You can not optimise economic, social and environmental outcomes whilst at the same time seeking to maximise net economic returns.</p> <p>Also the objects do not address the need to put Australian needs for water above using water for export purposes.</p> <p>There is a significant risk that Australia will lose control of its natural water resources, loss of competitive position and increased costs for all Australians.</p>	<p>Plan for the full range of climate variability from floods to droughts with an emphasis on managing for droughts (Ref "The Drought Years" time record published in The Weekend Australian on 13-14<sup>th</sup> November 2010 that Australia).</p> <p>As the cycle moves into drought, water must be prioritised and restrictions placed on water trading and what crops can be grown to ensure the needs of Australia come before using water for export.</p>	<p><a href="#">Water Legislation</a></p> <p><b>Coming to terms with the reality of a land burnt dry</b> Michael McKernan <i>The Australian</i> 13 November 2010</p> <p><a href="http://www.theaustralian.com.au/national-affairs/coming-to-terms-with-the-reality-of-a-land-burnt-dry/story-fn59nii-x-1225952595679">http://www.theaustralian.com.au/national-affairs/coming-to-terms-with-the-reality-of-a-land-burnt-dry/story-fn59nii-x-1225952595679</a></p> <p>The hardcopy article of this article contains a graphic sourced from the ABS depicting the drought years from 1864 to 2010. Only 56 years of this historical record are recognised as being drought free.</p>



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
11.	<p>Executive Summary</p> <p>The mandatory decisions required by the Water Act</p> <p>Page xii</p>	<p>"establish long-term average sustainable diversion limits (SDLs), which must not compromise key environmental assets (including water dependent ecosystems, ecosystem services and sites with ecological significance), key ecosystem functions, the productive base and key environmental outcomes for the water resource"</p> <p>-----</p> <p>The use of sustainable diversion limits (SDLs) based on long-term averages over-simplifies the reality that Australia is in drought more often that it is not and there is wide variability of total flows that range from a few thousand GL to over 40,000 GL per year.</p> <p>There is no recognition, identification or assessment of existing surface water SDLs that have already been established in the MDB that are sustainable as has been done for some groundwater regions. South Australia has operated a low flows SDL since the 1967/68 drought when it capped the issue of water licenses.</p>	<p>The Authority to validate its policy intentions by demonstrating how the management of the last two decades of water operations in the MDB would have been different particularly for South Australia if an accredited State Water Sharing Plan had been in existence.</p>	<p>South Australia capped its diversions within its minimum entitlement of 1850 GL as a result of the devastating 1967-68 drought. This low flows SDL not only sustained the environment, but sustained water supply to towns and cities of South Australia and for irrigation.</p>
12.	<p>The Imperative for change</p> <p>Page xv</p>	<p>"The amount of surface water diverted for consumptive use such as towns, industry and irrigation has increased from about 2,000 GL/y in 1920 to entitlements of approximately 11,000 GL/y in the 1990s. However, the impact of drought over the past decade has seen actual diversions drop significantly. The combination of drought and historic diversions means that there have been no significant flows through the Murray Mouth since 2002."</p> <p>-----</p> <p>Why has the Authority listed towns and industry before irrigation when irrigation uses 95% of the resource?</p> <p>Since SA agreed to a reduction in storage volume from 2,500 GL to 835 GL in 1989 to guarantee SA's minimum entitlement the trend of river flows into SA has only been down.</p> <p>In 2001 the MDBC commissioned a report to downsize the Lower Lakes. Successful South Australian governments have either been asleep at the wheel or complicit in water reform to privatise water and hand its appropriation to markets.</p> <p>This is an economic experiment without precedence. No other country in the world has privatised its national water resources as the COAG led water reform is in the processing of doing.</p>	<p>A Public Commission of Inquiry to determine whether South Australia has been fairly served under section 100 of the Australian Constitution.</p>	<p>Water reform is an economic reform without precedence in Australia. Water is a natural resource that is being privatised by Governments without a clear democratic mandate.</p> <p>No other country in the world has embarked on a reform to privatise all of its natural water resources.</p> <p>Appendix B Slide 28 Notes - "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.</p> <p>This maximises water use in any one year but means that NSW maintains minimum water reserves for the next year.</p> <p>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."</p>



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
13.	Establishing a baseline Page xvii	<p>Long-term averages have been used throughout this section and for practical purposes are meaningless as the following example demonstrates;</p> <p>"The average amount of that inflow that is used for consumption is 15,400 GL/y. This is made up of 13,700 GL/y surface water and 1,700 GL/y groundwater"</p> <p>-----</p> <p>On page xv, the Guide makes the following statement; "</p> <p>"The amount of surface water diverted for consumptive use such as towns, industry and irrigation has increased from about 2,000 GL/y in 1920 to entitlements of approximately 11,000 GL/y in the 1990s. However, the impact of drought over the past decade has seen actual diversions drop significantly."</p> <p>The average diversion figure of 13,700 GL has only ever produced a surface water diversion that is below this average, how can it be an average.</p> <p>"At present, with current levels of development, the long-term modelled average amount of water flowing out of the Murray Mouth is about 5,100 GL/y."</p> <p>-----</p> <p>Flows to the Murray Mouth last consistently averaged around 5,000 GL/y only before 1996. For the majority of this decade there have been no flows through the Murray Mouth.</p> <p>If the long-term averages used by the Authority are correct, what are the forecast trends and management actions the Authority will take to ensure these long-term averages hold true in coming decades?</p> <p>What have been the trends during recent decades?</p> <p>The Authorities of water availability are significantly larger than those determined by the CSIRO Water Availability project.</p>	<p>Amend the Basin Guide to show the probability density function and include the full statistical parameters upon which its statistics are based.</p> <p>Make available for independent analysis and comparison with the recent history of the past two decades the database used to arrive at the Authorities long-term averages.</p> <p>Explain the differences between its long-term inflows and the statistics that represent consumption and specify the accuracy of these figures.</p>	



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
14.	Establishing a baseline Page xi x	<p>"Considering the current average volume of water provided to the environment of about 19,100 GL/y, this range of additional water would mean that the long-term average volume of water provided to the environment would be between 22,100 GL/y and 26,700 GL/y."</p> <p>-----</p> <p>Increasing the environmental share from 58% to 67% or to 81% does not make sense if these figures were truly representative of the "norm". If the Murray Mouth received 5,100 GL more or less most of the time it is likely a significant part of the system would also be OK.</p> <p>The key issue is maintaining a fair share of available resources when the river system is below its long-term average, which is most of the time. This can be seen by examining the "Time series at Wentworth" chart published by CSIRO MDB Sustainable Yields Project on the 24<sup>th</sup> November 2008 which showed the relative level of use always varies from 20 to 80%.</p>	<p>Establish rules for water sharing and caps for water use during low flows just as South Australia has already done to prioritise water use, set water restrictions on agriculture and suspend the water market when water becomes scarce.</p> <p>Engage statisticians with an understanding of quality control to review the Authorities documents.</p> <p>Amend the Water Act to establish a cap on water diversion for each category of flows between floods and drought to ensure the sustainability of the MDB.</p> <p>Clarify what volume of flows is required through the Barrages and the Murray Mouth to sustain the Coorong.</p>	<p>CSIRO Water Availability in the Murray-Darling Basin Murray-Darling Basin Sustainable Yields Project 24<sup>th</sup> November 2010</p>
15.	Factors influencing the setting of surface-water SDLs Page xxii	<p>"The amount of water needed for the environment which the Authority has determined is between 3,000 GL/y and 7,600 GL/y."</p> <p>-----</p> <p>According to the long-term averages published in the Guide, the environment receives 58% of a long-term average inflow of 32,800 GL.</p> <p>The Authority has not determined the sustainability of this level of flow if it actually occurs or any other share between 20 to 80% relative level of water use are sustainable.</p> <p>It is pointless proposing to increase the share for environmental and Murray Mouth flows when above long-term average flows rarely occurs and provide no indication of the volume of water required at the Murray Mouth.</p>	<p>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.</p> <p>This would have meant that the Millennium Drought would have been managed significantly differently.</p> <ul style="list-style-type: none"> <li>• Greater degree of conservation,</li> <li>• Water restrictions on what can be grown,</li> <li>• Suspension of water trading as water needs to go to the greatest Australian need and not who has access to the most money.</li> </ul>	<p>Appendix B Slide 19, 20, 24, 39, 40 and Notes</p>



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
16.	Table of Diversions Page xxi v	<p>The range of reduction for current diversion limit (%) proposed for South Australia is grossly unfair and unconstitutional given the historic long-term cap faithfully operated by South Australia since the 1967-68 drought.</p> <p>In addition there is no distinction between the purpose the water is used for; between urban, industry and agriculture.</p> <p>Industry and agriculture water use is not further broken down into water use for purely domestic needs vs. using water to earn export income.</p>	<p>Detail the cumulative water used during the Millennium Drought by type of use.</p> <p>Increase South Australia's share of the MDB water (not decrease it given the long term conservative water management of the South Australian Government for most of the recent decades).</p>	
17.	Making an allowance for the impacts of climate change Page xxv	<p>The long-term climate record range of variability in the Basin exceeds what CSIRO's climate models predictions out to 2030.</p> <p>What needs to change is capping water diversion during low flows and droughts, a focus on conservation, guarantee water for Australian needs first and foremost together with preservation of our precious environment.</p>		



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
18.	Individual Entitlement Holders Page xxvii	<p>"For individual entitlement holders, the potential impacts will be highly dependent on decisions made by Basin states through the development of water resource plans."</p> <p>-----</p> <p>It is clear from the historical record that the key to water management will be water resource plans which are currently biased against the environment.</p> <p>The States also have the power to vary the volume of water attributed to a water license and set allocations to match current climate conditions. This means there is no role for the Commonwealth to purchase water entitlements from "willing sellers" as the states can simply reduce the volumes associated with a license entitlement and/or by reducing allocations.</p> <p>In addition it is clear from the Guide that there are no plans to reduce or extinguish water entitlements that are not viable or have no history of water use behind them such as sleeper licenses.</p> <p>The Authority continues the conflict of interest between acting for the common good of Australia and acting for economic reform. Economic reform is handing over the natural water resources of Australia over to private interests so that water can be traded as a commodity and creates a new water industry. This is privatisation which the Authority fails to acknowledge or question in the Guide.</p>	Recognise the privatisation by stealth of Australia's natural water resources.	Appendix B Slide 46 – Total number of tradeable water entitlements on issue is 16,200 GL for regulated systems, 622 GL for unregulated and 1,786 GL for Groundwater. The Basin Guide does not address over-allocation.
19.	Water for the Future Page xxi x	<p>The Guide provides no information as to exactly what the "equivalent of 655 GL/y of water" means in practice.</p> <p>-----</p> <p>For example during the last decade just how much of the Commonwealth current or planned holdings of environmental water would have flowed over the border into South Australia?</p>	<p>Demonstrate that the environmental water purchase by the Commonwealth's water buyback scheme has practical use during low flows, severe droughts and does not compromise South Australia's minimum entitlement.</p> <p>Present the expected frequency of water allocation as a probability density function for the full range of climate variability of the historical record.</p>	





Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
20.	Temporary diversion provisions Page xix	"The Authority is also concerned about the flow-on effects within communities" ----- The Authority makes no mention of the potential effects of the water market that allows the transfer of water outside of an irrigation district; such as stranding the considerable public and private investment in irrigation assets and efficiency improvement investments.	Investigate and report on the consequences of a free market in water on the environment, SDLs, social and economic impacts that have already occurred.	
21.	Putting the proposed Basin Plan into effect Page xxx	"New water trading rules, which are required under the Water Act 2007 (Cwth) and will establish the way water will be traded across the Basin" ----- The accreditation of state water resource plans will ensure that Basin states implement SDLs and other water resource management arrangements in accordance with the Basin Plan." It does not make sense to establish a SDL then allow those with the most money to circumvent a SDL and return to business as normal while leaving the region from whom the water was sourced worse-off than before.	Report on the likely unintended consequences of the proposed free market in water trading both positive and negative.	
22.	Environmental Watering Plan Page xxx	"The Environmental Watering Plan will build on an adaptive management framework to manage watering activities rather than prescribing a strict watering or flow regime. This adaptive approach means that the environmental watering arrangements will make allowances for improvements in knowledge and will provide a way to manage variations in climate conditions from year to year." ----- There is no guidance on how low the ratio of environmental water vs. consumptive use can be allowed to go particularly as flows reduce from long-term average flows to severe droughts. It is also inconsistent to apply an adaptive management approach for one significant component i.e. environment watering and not for consumptive use by agriculture. Failure to provide for adaptation will mean business as usual for the share used by agriculture and not result in a better deal for the environment.	Apply the policies proposed by the Authority for the Environmental Watering Plan need to the management of the natural resource as a whole.  Change the Water Act 2007 to 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.	



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
23.	Water Trading Rules Page xxxi	"The Basin Plan water trading rules will address general matters regarding the trade and tradability of water access rights, including removal of volumetric limits." ----- The Authority has not explained what it means by "removal of volumetric limits".		
24.	Accreditation of Basin state water resource plans Page xxxi	"Provide the mechanism for implementing SDLs for the Basin's water resources." ----- The States are in a no win situation to achieve SDL established using long-term averages and there is considerable risk that the practice of biasing water sharing plans against the environment will continue into the future.	Establish caps on the maximum share that consumptive use can take particularly for all flows below long-term averages.	
25.	The Outcomes of the proposed Basin Plan Page xxxi to xxxiii	While the Authority documents the "Signposts of success" it has not identified any "Signposts of failure" that would trigger corrective action process and pre-determined emergency measures.  The Authority failed to take emergency action during the Millennium Drought to safeguard water supply to South Australia which has consistently used the least amount of consumptive water over many decades.  What evidence does the Authority have that demonstrates that allowing water to reach its highest value use optimised economic, social and environmental outcomes for that part of the Murray-Darling Basin that is in South Australia?  The Authority has not explained or quantified a surface-water entitlement vs. a non-entitlement use of water. If the non-entitlement use of water refers to urban use of water then such a policy is questionable given section 100 of the Australian Constitution.	Perform a risk assessment to determine what can go wrong and define emergency response measures to declare a State of Emergency in the Basin to address a crisis.  Perform simulations of the impact of the new arrangements to learn how the past two decades should have been managed differently and prevent the crisis that occurred in South Australia during the Millennium Drought.	Appendix B Slide 37 Notes and table detailing "Average annual surface water balance for the MDB" produced by CSIRO Sustainable Yields Project:  "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" (assumes full implementation of SA allocation practices)



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
26.	Next Steps Page xxxiv	<p>"The Authority will then present the proposed Basin Plan to the Commonwealth Water Minister for review. The Basin Plan will become law when the Minister adopts it, which is expected to occur in 2011.</p> <p>-----</p> <p>Importantly, between the Basin Plan taking effect and the implementation of accredited Basin state water resource plans, the existing Cap process will continue under the authority of the Murray–Darling Basin Agreement."</p> <p>It is outrageous that a plan such as this can become a legislative instrument by virtue of the signature of a Minister without being debated and approved by Parliament.</p> <p>This is not consistent with section 100 of the Australian Constitution which forbids interference in the rights of the State and residents within the state to reasonable use of the waters.</p>		
27.	1.2 The Murray-Darling Basin reform process Page 4	<p>"Despite the new agreement, from 1988 to 1994, Basin governments allowed water diversions from the Basin to increase significantly— by nearly 8%."</p> <p>-----</p> <p>No mention is made that it South Australia capped its diversion as a result of the 1967-68 drought and further allowed a reduction in the minimum storage reserve that had to be held to guarantee SA's minimum entitlement from 2500 GL to 835 GL.</p> <p>What percentage of the increase from 1988 to 1994 was due to South Australia's generosity and what has been the increase in entitlements since South Australia capped its diversions for consumption?</p>		



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
28.	1.2 The Murray-Darling Basin reform process Page 4 & 5	<p>"In 1994, the Council of Australian Governments adopted a strategic water reform framework, which was incorporated into the National Competition Policy agreements. The main objectives of the strategic framework were to establish an efficient and sustainable water industry, and to arrest widespread natural resource degradation partly caused by consumptive water use."</p> <p>-----</p> <p>Where is the evidence that any significant action was taken since 1994 to arrest widespread natural resource degradation caused by the increasing share of water resources for consumptive use as flows reduced?</p> <p>The Commonwealth, Basin States, MDBC and MDBA have failed their collective duty of care to establish a State of Emergency, place water restrictions on agricultural use and ensure adequate conservation of decreasing inflows when the warning signs of reduced flows began in the late 90s.</p> <p>During the period 2005-2007 MDBC storages were drained to almost nothing, mostly producing crops and products for export when just 2,000 GL of reserves would have prevented SA's crisis.</p> <p>The Rann Government, supported by the Commonwealth used the crisis to justify draining Lake Bonney, cut flows below Lock 1 to downsize the Lower Lakes, use the crisis to justify building the Adelaide Desalination Plant and launch the new national water market.</p>	Refer Finding 1 Recommendation – Royal Commission	<p>The Weekend Australian 13-14th November 2010</p> <p>Inquirer Special The Drought Breaks, a special 5 page insert.</p> <p>Page 5 - "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)</p> <p>As the basin is in some form of drought more often than it is not 74% of the time, the Basin Plan and State Water Sharing Plans must plan for this reality.</p> <p>Page 2 - A graph of the Murray-Darling Basin Authority total active storage is published for the period 2000-2010. It shows an increasing storage trend for the period 2000 to mid-2005. From mid-2005 to late 2007 the storage volumes were allowed to decline from approximately 5,500 GL to just 500 GL.</p> <p>The draining of the Basin storages when there was no sign of the drought abating is a failure of management that requires the powers of a Royal Commission to investigate. That investigation needs to determine whether the Governments of the Basin acted in the public interest and put the common good before economic interests.</p>



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
29.	1.4 Objectives and outcomes for the proposed Basin Plan Page 7	<p>"Long-term average sustainable diversion limits and temporary diversion limits trading in water access rights"</p> <p>-----</p> <p>This does not make sense. What is the point of establishing an SDL for a water sharing region if those with the most money can circumvent a SDL by taking water from other regions?</p> <p>When there are plenty of flows, South Australia's share is only 6% because it established a Sustainable Diversion Limit as a result of the 1967/68 drought. As the supporting reference indicates despite South Australia's conservative approach to managing water over many decades, the crisis of 2006/08 exposed the failure of the Authority to conserve water.</p> <p>The consequences were profound as not only did South Australian irrigators have to re-purchase their water but the crisis was used by the South Australian Government to downsize the Lower Lakes and build the 100 GL Adelaide Desalination Plant incurring costs of over \$3 billion.</p> <p>As this article points out the total long-term average farm profit only amounts to \$3.473 billion across the entire Basin (Page 20).</p>	Cease free trade in water and the inclusion of foreign investors which will only compound the management complexities and costs to the Australian public of managing the Basin.	<p><a href="#">Modern Agriculture Under Stress Lessons from the Murray-Darling</a></p> <p>MDBC Publication Number: 46/08 - 2008</p> <p>"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 navigability. 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."</p>



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
30.	1.4 Objectives and outcomes for the proposed Basin Plan  Page 7	<p>"Improve the transparency and efficiency of water markets within the Basin."</p> <p>-----</p> <p>This statement is inconsistent with the requirement to optimise the social, cultural and economic well being of basin communities. Clearly as the basin is in some form of drought 74% of the time, there is likely to be time when water markets need to be suspended or water sharing is only allowed to take place between those irrigators growing crops for Australian food consumption.</p> <p>In addition why the towns and the city of Adelaide excluded when there are interdependency between basin communities and those Australians who live outside of the Basin?</p> <p>There is no difference in terms of water use as to whether water is used to produce products for consumption outside of the basin or whether water is used for water supply. Water diverted from the system is the same whether it is used within the Basin or not.</p>	<p>Make the Water Act and the Basin Plan needs to be inclusive of all Australians ultimately dependent upon the Murray-Darling Basin and not just those who are regarded as being members of the Basin Community.</p>	

Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
31.	1.6 Role of the Minister Page 9	<p>"The Commonwealth Water Minister is responsible for the final decision on adopting the Basin Plan and tabling it in Parliament. This process causes the Basin Plan to become a legislative instrument. After the plan commences, the Commonwealth Water Minister has a key role in implementing it. This role includes determining, on consideration of the Authority's recommendations, whether or not to 'accredit' a Basin state or territory water resource plan as being consistent with the Basin Plan (accreditation of water resource plans is dealt with in Chapter 12)."</p> <p>-----</p> <p>It is outrageous that a plan can become a legislative instrument without being debated by Parliament. This process is a circumvention of democracy and amounts to a dictatorship.</p> <p>This same process has been used by the States to unbundle water licenses from land and allow water license entitlements to be bought and sold to create a water market without a debate about water privatisation by Parliament.</p> <p>Water is the most precious natural resource of Australia. Governments are committing treason by allowing water to be privatised.</p> <p>No Australian Government, major political party or private or public media group has owned up to water privatisation or sort the permission of Australians to do so.</p>	Refer Finding 1 Recommendation – Royal Commission	
32.	1.7 Role of the Commonwealth & 1.8 Role of the Basin States Page 9	<p>Given the Basin Guide fails to quantify the extent of the over-allocation and the Commonwealth has purchased water license entitlements from willing sellers it is State Water Sharing plans that are going to define the actual allocation at any one time.</p> <p>As previously stated in the Guide the current long-term average volume of water provided to the environment is 19,000 GL which is managed by the States. To introduce a further third party in terms of the Commonwealth as holder of water licenses is ludicrous and adds to the complexity of management arrangements.</p>	Extinguish all water licenses purchased by the Commonwealth and make the States responsible for the totality of their share of the water otherwise nothing will change.	The danger is that the States will focus on maximising diversions to maximise economic returns and blame the Commonwealth for lack of environmental flows.

Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
33.	2. The Basin and its importance to Australia Pages 13 – 24	<p>This chapter of the guide fails to provide statistics on the following vital matters;</p> <ul style="list-style-type: none"> <li>• Dryland vs. irrigated agriculture</li> <li>• Irrigated agriculture in terms of domestic consumption vs. export for each type of product produced by irrigation.</li> <li>• Irrigation and drainage channels, their length, volume of water used to fill them and their losses.</li> <li>• Full statistical parameters for inflow, outflow, storages, losses and water use by; irrigation, industry and urban use.</li> <li>• Storage capacity must include private storages.</li> <li>• Efficiency and effectiveness of water use and economic return by type of crop grown by irrigation, industry, cities and towns.</li> <li>• Economic return of water sharing regions.</li> <li>• Contribution of salt and other pollutants into water ways.</li> </ul>	<p>Make the datasets for these statistics available for independent analysis.</p>	<p>Appendix B Slide 37, 39, 41, 42, 43 and notes.</p>
34.	2.4 The economy of the Basin Page 19 - 24	<p>This sections fails to provide statistics on the following vital matters:</p> <ul style="list-style-type: none"> <li>• Tourism and recreational use of the waterways of the MDB</li> <li>• There is no information as to the water losses associated with watercourse diversions and interceptions by type of use.</li> <li>• There is also no information about the actual crop type water productivity vs. total water used and losses in the water supply chain.</li> <li>• There is no information about who exactly holds a water entitlement, the extent of that holding, the type of license and whether the entitlement is held by Australian or foreign interests.</li> <li>• There is no information about the impact of Management Investment Schemes and the trends in family farms vs. corporate farms.</li> </ul>	<p>Refer Finding 1 Recommendation – Royal Commission to investigate gaps in knowledge not reported by the Authority.</p>	<p><a href="#">Water for Food – The Continuing Debate</a> Professor of Irrigation Wayne S. Meyer CSIRO Land and Water 1997</p>





Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
35.	3. The Context for decisions Key Points Page 25	<p>The Authority fails to identify failures in management and water reform over recent decades and in particular during the Millennium Drought. The water crisis in South Australia was preventable by conserving water and placing restrictions on what crops could be grown as the drought deepened.</p> <p>In addition during 2005 – 2007 the Authorities storages were allowed to be squandered on short-term economic gain while South Australia was hung out to dry. This was despite a long history of operating within a cap on water licenses while the eastern states significantly increased theirs.</p>	Refer Finding 1 Recommendation – Royal Commission to investigate operation of the basin and management failures.	Refer remarks for Finding 3
36.	3. The Context for decisions Definitions Page 25	<p>"Water access entitlement — a water entitlement is a perpetual or ongoing entitlement, issued under a law of a Basin state, to exclusive access to a share or volume of the water resources of a water resource plan area.</p> <p>Water allocation — a water allocation is the specific volume of water allocated to a water access entitlement by the relevant Basin state in given water accounting period. Depending on the rules established in the relevant water plan, in a given year the allocation may only be a small proportion of the full water entitlement."</p> <p>-----</p> <p>The Authority fails to question the requirements of the Water Act 2007 and offer alternative options. For example reductions in water allocations could be fully achieved by the States by permanently reducing water allocations to achieving the desired reduction in diversions without the Commonwealth needing to waste the public's money by purchasing water the States already own.</p>	Make it clear that a water access entitlement is not a property right.	Appendix B Slide 23 and notes of High Court Decision: Clause 55 "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 <b>common</b> property not especially amenable to private ownership and best vested in a sovereign state[55]."



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
37.	3.1 History of development Page 26	<p>"However, the physical harnessing of the water resources of the Basin has been complemented and sustained by other national reforms such as the introduction of legal entitlements over water and a water market to allow the trade of water to its highest value use."</p> <p>-----</p> <p>This statement is outrageous as what it means is that water reform has privatised what the founding fathers of the Australian Constitution understood to be the common property of Australia.</p> <p>The Authority needs to explain to the Australian people how this privatisation has taken place without the approval of the Australian people in a referendum.</p> <p>The Australian Constitution has not been changed to allow the privatisation of water and the conversion of a water license into a legal entitlement.</p>	Refer Finding 1 Recommendation – Royal Commission	<p>Appendix B Slide 22 Notes - and statements made at the Constitutional Convention when section 100 was being debated:</p> <p>"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"</p>
38.	Figure 3.1 Growth of public surface-water storage capacity across the Murray-Darling Basin  & Figure 3.2 Basin surface-water use: five-year rolling average Page 27	<p>Given the total public surface-water storage capacity is approximately 22,000 GL in the Murray-Darling Basin why has the surface-water diversion maximum only ever been approximately 12,000 GL?</p> <p>Why haven't private surface-water storages been included?</p>	Investigate whether the storage capacity in the Basin has been optimally used in the public interest to mitigate against the effects of climate change and climate variability.	Appendix B Slide 40 – Between 1997 and 2009, surface water actual watercourse diversions ranged from 12,124 GL in 2000-01 to 4,119 in 2008-09.

Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
39.	Figure 3.3 Modelled without- development streamflow at Wentworth on the River Murray. 1895 – 2009  Page 28	<p>Why the long-term annual average is also called a "medium" as this would mean the probability density function of streamflow at Wentworth is normally distributed where the mean, median and mode coincide.</p> <p>The significance of this chart is that for the last fifteen years i.e. since 1995 there has been a significant decline in streamflow that should have resulted in conservation and prioritising of water use by agriculture.</p>		
40.	3.1 History of the Drought  Page 29	<p>"Reduced water availability over the past decade has severely affected irrigated agriculture across the Basin. The decline has included the following impacts (selection):</p> <ul style="list-style-type: none"> <li>From 2000–01 to 2006–07 the gross value of irrigated agricultural production in the Basin dropped from \$5.1 billion to \$4.9 billion per year.</li> <li>Annual planting of crops such as rice and cotton has been particularly affected by reduced water allocations, with the gross value of irrigated agricultural production of rice dropping from \$349 million in 2000–01 to \$274 million in 2005–06 and cotton from \$1,184 million to \$861 million.</li> <li>From 2005–06 to 2007–08, irrigated land use in the Basin fell from 1,654,000 ha to 958,000 ha, a decline of 42%."</li> </ul> <p>-----</p> <p>From 2000–01 to 2006–07 Basin Wide Diversion varied between approximately 12,000 and 5,000 GL while the value of irrigated agricultural production only declined by \$200 million per year. This result needs to be investigated by the Authority to identify the root causes as it demonstrates that the Basin can cope with significantly reduced diversions.</p> <p>If the reported basin wide diversions are correct then there is a significant capability within irrigation industry to work with significantly reduced flows without a significant loss of income.</p>	<p>Refer Finding 1 Recommendation – Royal Commission:</p> <p>Report the gross value of income achieved per megalitre for various water uses by not only irrigation but by industry and households and the total amount of water used.</p> <p>Report the economic consequences of reduced flows into South Australia and the costs incurred by the failure of the Authority to ensure South Australia received its minimum entitlement.</p> <p>Billions of dollars have been spent on pipeline projects, building blocking dams in the Lower Lakes, addressing the threat of acid sulphate soils and building the Adelaide Desalination Plant. All of these measures did not need to happen and were entirely preventable.</p> <p>Report the economic consequences of its failure to act during the Millennium Drought on behalf of South Australia.</p>	<p>Appendix B Slide 40 – Between 1997 and 2009, surface water actual watercourse diversions ranged from 12,124 GL in 2000-01 to 4,119 in 2008-09.</p>



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
41.	3.1 History of the Drought Page 29	<p>"Figure 3.4 shows the net interstate allocation trade (temporary trade) for the years 2006–07 to 2008–09, with a clear trend towards increasing trade overall and a net sale of water downstream towards South Australia. Also, there is extensive trade within states."</p> <p>-----</p> <p>The Guide fails to disclose the volumes of water associated with trade within states even though basin wide diversions had reduced to around 4,000 GL per year in 2006/07 and 2007/08.</p> <p>The Authority also fails to disclose that the reason South Australian irrigators were forced to buy water on the new water market was because their allocations had been severely reduced to between 2 and 32% during 2006 and 2008 because apparently water was not available.</p> <p>The water market proved it was available and could have been provided under a state of emergency with irrigators paid just compensation for the use of their water allocation from water sharing regions outside of the Murray system.</p>	Fully disclose of allocation history during the Millennium Drought and investigate why there was systemic failure to conserve water as inflows reduced to prevent the economic, social and environmental disaster that took place in South Australia.	
42.	3.3 Management of the Basin Page 30	<p>The Authority fails to disclose to the Australian people that "the creation of perpetual share-based water access entitlements" is a privatisation process to transfer what was held in trust for the common good of Australia to be treated as a life-less commodity by global markets.</p> <p>There is also no evidence base for such a radical economic experiment. Australia is allowing its most important river Basin to be used as an economic experiment in market liberalism.</p> <p>Whilst all of the market based commitments are well advanced there has been no credible progress on restoring sustainability of the environment in South Australia except to rely upon unregulated flows.</p>	Clarify what the implications of Free Trade Agreements signed by Australia have on water resources of the Basin.	



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
43.	3.6 Climate variability and climate change Page 32 3.7 Approach to include climate change Page 33	<p>"This means the latest climate change modelling suggests that, under a median 2030 prediction, conditions are likely to be around 10% drier than past experience."</p> <p>-----</p> <p>The Authority fails to disclose that CSIRO's "median 2030 prediction" is not a median in a statistical sense in that it happens to just be the middle model of those used arranged from wettest to driest. There is no statistical probability associated with these models, they are all equally likely.</p> <p>In addition the Authority fails to disclose that the CSIRO climate modelling fits within the full historical record (1895 to 2010). None of the models predicted the severity of the Millennium drought. CSIRO have acknowledged that some parts of the southern basin experienced a once in 300 year drought.</p>	<p>Establish SDLs for each level of inflow in the Basin and water availability.</p> <p>If this is done there would be no need to build a 3% reduction into current surface-water diversions as discussed in section 3.7.</p> <p>As pointed out previously, a drought of some kind is the norm and not the exception.</p>	
44.	4. Developing the proposed Basin Plan Page 35	<p>"It is critical to emphasise that the role of the Authority is one of considering the best available science in respect of the water needed for the environment and the social and economic impacts on regions and communities, and exercising a significant degree of expert judgement to recommend measures that implement the requirements of the Water Act 2007 (Cwth) to manage Basin water resources."</p> <p>-----</p> <p>The Water Act 2007 prevents the Authority from being able to propose the best way of managing the Basin using the best available science.</p>	Strip the Water Act 2007 of any barriers that prevent the Authority to best manage the Basin in the public interest.	
45.	4.3 Hydrologic Modelling Page 41	<p>"This water balance reporting includes modelled long-term average inflows, diversions, outflows and losses for each valley."</p> <p>-----</p> <p>The mistake with using long-term average inflows is setting the Basin Plan up for failure as the full statistical characteristics are not being used to determine valley capability. Contribution from and to storages are not taken into account.</p>	Take the full statistical characteristics of the valleys into account to determine the water balance.	



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
46.	5. Hydrologic character of the Basin  Page 43	<p>"Figure 5.1 shows that of the total inflows, approximately 19,100 GL/y (about 58%) currently remains in the environment and includes losses such as evaporation, while about 13,700 GL/y (about 42%) is extracted for consumption; 10,940 GL/y is consumed by irrigation together with urban supplies from watercourse and floodplain diversions (collectively termed watercourse diversions), and 2,740 GL/y is accounted for by farm dams and forestry plantations that intercept run-off before it reaches watercourses (termed interception)".</p> <p>-----</p> <p>The Authority has failed to disclose the full set of statistical parameters associated with these statistics to enable any predictive analysis to be undertaken.</p> <p>In addition there is no information about:</p> <ul style="list-style-type: none"> <li>• Public and private water storage levels</li> <li>• Relative level of water use, and</li> <li>• Sustainability vs. a level of water use</li> <li>• The percentage of time that above long-term average results would occur.</li> <li>• Which category of water is used to sustain the proposed free trade market in water, the centrepiece of the Water Act 2007?</li> </ul>	Refer Finding 1 Recommendation – Royal Commission	Appendix B Slide 37 and notes which include a table sourced from the final report of the CSIRO Sustainable Yields Project that was published in October 2008 for whole of Basin.



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
47.	5.1 Surface water Page 45	<p>"Transfers out of the Basin include diversion of water from the South Australian River Murray to supply Adelaide and associated country areas. Channels and pipelines in the river systems of the southern Basin also allow water to be moved and traded from one catchment to another."</p> <p>-----</p> <p>The Authority has failed to disclosed the following:</p> <ul style="list-style-type: none"> <li>• Length, volume and losses that the system of channels and pipelines that are used by each valley as a percentage of consumptive use.</li> <li>• The actual volume of water allocated as a cap to the towns of South Australia and the city of Adelaide vs. the total current consumptive use.</li> <li>• The volume of virtual water effectively transferred from the Basin as an irrigation product within Australia and exported to overseas markets.</li> </ul>		<p>Appendix B Slide 25, 26 and 45 and notes</p> <p>The city of Adelaide has been allocated 650 GL over a rolling five year period of 130 GL per year. Country town water supplies have been allocated 50 GL. Combined they represent 180 GL of water, 1.2% of the total of current consumptive use in the Basin of 15,400 GL.</p>
48.	5.3 Current diversion limits for surface water Page 40	<p>"All environmental water purchased or saved through the Commonwealth Water for the Future program will be available to offset reductions in diversion limits resulting from the Basin Plan."</p> <p>-----</p> <p>What are the plans by the Commonwealth to recover the costs associated with these programs from the water users of the Basin?</p> <p>The Authority fails to disclose the water that these plans will provide to the environment during low flows and drought conditions.</p>		





Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
49.	6. Determining the environmental water requirements of the Basin  Page 57	<p>"The Water Act 2007 (CWth) requires that long-term average sustainable diversion limits (SDLs) must reflect an 'environmentally sustainable level of take'. This means that the amount diverted for human use leaves sufficient water for the Basin's key environmental assets, key ecosystem functions, the productive base and key environmental outcomes — the Basin's environmental water requirements.</p> <p>The Basin covers an area of around 1 million km<sup>2</sup> with extensive riverine and groundwater systems, accompanying wetlands, billabongs, floodplains and their forests, and the Lower Lakes, the Coorong and Murray Mouth. This complex network of rivers and adjacent assets requires frequent, irregular and variable flows, and flooding in order to sustain its health."</p> <p>-----</p> <p>By only specifying 'environmentally sustainable level of take' as a long-term average, the Authority has failed to determine the environmental sustainable level of take vs. the full range of relative level of water use for each valley and for the Basin as a whole.</p>	<p>Determine the range of sustainable diversion limits consistent with the known variability of the basin</p> <p>Going forward; the Authority will have to manage using sample statistics.</p>	



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
50.	<p>Water required to sustain the Basin's key ecosystem functions and key environmental assets Page 65</p> <p>6.3 Adequacy of current environmental flows, by region Page 67</p>	<p>"Owing to the highly variable climate and rainfall in the Basin, ecosystem functions must have frequent, but irregular and variable water flows. Environmental assets require a flow regime that provides flooding, and with it highly variable volumes of water at a frequency relevant to the particular ecosystem's needs. The assets also require dry periods, reflecting the unpredictable and highly variable nature of the Basin climate over time. The Authority found that the flow regimes required to sustain key ecosystem functions are typically the base and freshes flow components, while the overbank flows typically sustain key environmental assets."</p> <p>-----</p> <p>Whilst the Authority recognises the actual needs it continues to treat the Basin in a deterministic instead of probabilistic way as evidenced below and throughout the document through its use of long-term averages.</p> <p>"Current end-of-system flows are expressed as a percentage of a region's long-term, without-development flows. Where the value for current end-of-system flows for a region is &lt;60% of without-development flows, the adequacy of environmental flows in that region is considered 'poor'. A value of 60%–80% is considered 'moderate', and a value of &gt; 80% is considered 'good'."</p>	<p>Determine sustainability to match the full range of variability as illustrated by Figure 6.4 Typical flow hydrograph for a river in the southern Basin by water year (July-June) vs. Figure 6.5 Typical flow hydrograph for a river in the northern Basin by water year (July-June)</p>	
51.	<p>Figure 6.8 The base-flow regimes of rivers in the Southern Basin Page 71</p> <p>Figure 6.9 The base-flow regimes of rivers in the Northern Basin Page 72</p>	<p>"Note: stylised – actual flows may be more variable during both high and low periods"</p> <p>-----</p> <p>These Figures do not show the full range of variability, that the Authority clearly understands about the Basin –flow regimes, of without development and current arrangements that would demonstrate how often these long-term averages would actually achieve the environmental needs of the Basin.</p>		



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
52.	<p>Figure 6.10 Comparison of current distribution of water between interception, watercourse diversions, environmental water and outflows through the Murray Mouth on a long-term annual basis under a range of environmental water requirements Page 75</p>	<p>It is not unsurprising that the proposed long-term annual reductions created significant angst in irrigation communities when most of the increase flow is being attributed the increased flows through the Murray Mouth.</p> <p>In terms of the current diversion limits as long-term averages, the total diversion of 13,680 GL represents 41.7% of total flows. The proposed 3,000 GL reduction to an annual diversions of 10,680 GL is 32.6% of total flow and a 7,600 GL reduction to 6,080 GL is 18.6% of total flows.</p> <p>Given that flows through the Murray Mouth during the last two decades have been significantly less than the Authorities Long-term Average of 5,100 GL the Authority needs to disclose the probability of achieving flows above the long-term average of 32,780 GL vs. receiving less flows.</p> <p>The CSIRO Water Availability in the Murray-Darling Basin presented a slide show Relative Level of Water Use under the historical climate. Without-development flows above 30,000 GL have occurred in only six years between 1895 and 2008.</p>	<p>Fundamentally question where water reform as currently configured by the NWI and the Water Act 2007 is going, as it appears, to be a monumental failure.</p>	
53.	<p>Additional Groundwater to meet environmental needs Page 79</p>	<p>"The current diversion limits of 67 groundwater systems have been assessed as reflecting an environmentally sustainable level of take. No reduction is proposed."</p> <p>-----</p> <p>The Authority has demonstrated in this example that it is capable of acknowledging existing sustainable level of take.</p> <p>Why has the Authority failed to acknowledge South Australia's 1967/68 self-imposed sustainable level of take given that it is a cap of South Australia's minimum entitlement of 1850 GL which includes a dilution flow?</p> <p>Continuance of the cap and minimum entitlement would mean the new National Water Market would be of no relevance to South Australia except for transfer of licenses within the state.</p>	<p>Explain why it has not chosen to continue South Australia's low flows Sustainable Diversion Limit (South Australia's Minimum Entitlement of 1850 GL) or extended this approach for Basin wide use.</p>	



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
54.	7. Social and economic considerations in current diversion limits.  Page 81	<p>The Basin experienced a variability in surface water diversions that ranged from 12,124 GL to 4,119 GL (Table 2.10 Guide to the proposed Basin Plan, Technical Background Part 1). This is a difference of 8008 GL and far exceeds the upper limit of the proposed long-term average reductions of 7,600 GL/year.</p> <p>As some form of drought is the norm, the Basin historically has had to always accommodate a drought.</p> <p>The issue the Basin Plan must address are not improbable long-term average conditions but flows that are below this statistic.</p> <p>The point to be made is that the Basin Plan must be designed around the actual history of variability and not a long-term average that is a statistic of the past and can be likened to driving by always looking in the rear vision mirror.</p>	<p>Revisit the establishment of a low flows SDL for the Basin as a whole, as South Australia has done for many decades, supplemented by a higher flows SDL that trips in depending upon water availability and forecast conditions.</p> <p>Within this proposed low flows SDL, establish a cap that prioritises domestic needs vs. export use and provides for population growth.</p>	
55.	7.2 Dependence of irrigated agriculture on current water diversions.  Page 84	<p>"Figure 7.2 shows the gross value of irrigated agricultural product for 2005–06, a dry year with reduced water allocations, in 10 irrigation areas in the Murray–Darling Basin." ----- In 2005-06 Surface-water actual watercourse diversions was 9,228 GL (Table 2.10 Guide to the proposed Basin Plan, Technical Background Part 1) – although this was a dry year the diversion from Basin storages was significant and was a contributing cause to the crisis that occurred in South Australia from 2006 to 2009.</p> <p>The Authority fails to disclosed the earnings and profitability vs. the quantity of water used vs. each crop type.</p>		



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
56.	8. Setting long-term average sustainable diversion limits for surface water  Page 101	<p>"SDL proposals will apply to all forms of water extraction and include watercourse diversions such as for town and community water supplies, irrigation and industries, floodplain harvesting and interception activities such as farm dams and forestry plantations. The current limits on the volumes of water for these uses are referred to as the current diversion limits."</p> <p>-----</p> <p>The Authority plans to treat all water consumptive use as the same is outrageous and needs to be rejected.</p> <p>The Basin Plan must prioritise the human right to water above all other consumptive uses for food and water supply for Australians.</p> <p>As pointed out previously the Commonwealth and the Authority have chosen just one statistic to determine sustainable diversions which rarely happens in practice.</p> <p>The Authority has not determined the relative share of water for the environment vs. each increment of 500 GL of water availability from lowest to highest.</p> <p>The need to conserve water in storages has largely been ignored.</p>		
57.	8.4 How the SDLs will operate  Page 104	<p>"Allocations reflecting variable annual water availability will be determined under the arrangements in these water resource plans. That is, there will be some years where the actual allocation is lower than the SDL and some years where it will be higher.</p> <p>These arrangements, when tested under the relevant 114-year climate scenario, will need to limit long-term average diversions to no more than the SDL in order for the state plan to be accredited by the Commonwealth Water Minister, after receiving advice from the Authority."</p> <p>-----</p> <p>The Authority has failed to disclose the likelihood of above average vs. below average SDLs as flows are not normally distributed.</p> <p>The Authority needs to disclose exactly how it proposes to test water resource plans against the population statistic and how it plans to update the population statistic as the years roll by.</p>		



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
58.	8.4 How the SDLs will operate  Page 104 & 106	<p>"It is important to note that if an accredited water resource plan operates during a wetter-than-average decade, the actual average annual take for the years is likely to be more than the SDL and such levels of use would be consistent with the Basin Plan. The converse would also be the case for a drier-than-average decade."</p> <p>The Authority does not disclose exactly what defines a wetter-than-average decade and a drier-than average decade.</p>		
59.	8.4 How the SDLs will operate  Page 106	<p>"A principle of equitable sharing of any reductions in water availability between consumptive and environmental uses has been adopted by the Authority to address the current situation in which most water resource plans are biased significantly towards allocation for consumption under drier future climates. This approach will need to be applied in a manner that does not put at risk water requirements for meeting critical human water needs. As a further requirement, surface-water water resource plans will also be required to show how they would manage conditions which include a repeat of extremely dry periods such as the 2000–10 drought."</p> <p>-----</p> <p>While this is appropriate, the Authority also needs to demonstrate how it would manage the Basin differently to prevent the mistakes that were made during the Millennium Drought. Such management actions need to include being able to declare a State of Emergency, suspend the water market and place water restrictions on agricultural use.</p> <p>In addition the principle of equitable sharing of any reductions in water availability between consumptive and environmental uses needs to be defined by the Authority to enable the calibration of water resource plans.</p>		



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
60.	8.6 Defining Optimisation  Social and economic implications  Page 107	<p>"Against that backdrop, the Authority has set a third objective for optimisation to maximise the net economic returns to communities and key industries from the use and management of Basin water resources. The Authority recognises that there is no formula for determining the optimal result and will do this by applying its judgement in seeking to maximise the benefit to the environment while minimising the economic and social impacts."</p> <p>-----</p> <p>The Authority is not optimising by adopting a strategy to apply its judgement to maximising the benefit to the environment whilst minimising the economic and social impacts.</p>	<p>Optimise via the simulation of the variables to determine the optimum combination. Alternative crop types should also be investigated.</p>	
61.	8.8 The parameters for developing SDL proposals	<p>Use of long-term averages by the Authority are questionable for a system that is highly variable. The Authority claims the long-term average flow to the Murray Mouth based on current diversion limits is 5,100 GL.</p> <p>From 1997 to 2008, all flows through the Murray Mouth were significantly below the Authority's long-term average and ranged from zero to 4,522 GL. The average for this period of time has been estimated to be approximately 1,391 GL.</p> <p>From 1990 to 2008 the average flow is estimated to be 3,391 GL, again significantly below the Authority's long-term average of 5,100 GL.</p>	<p>This example demonstrates the criticality for the Authority to correct calibrate its statistics given the implications of its decisions.</p> <p>Focus on the full statistical richness of the MDB science in order to develop a Basin Plan that recovers and maintains the health of the river system for the long-term.</p>	<p><b>At the End of the River</b> <b>The Coorong and Lower Lakes</b></p> <p>David Cleland Paton 2010</p> <p>Fig 5.6 Predicted River flows reaching the Murray Mouth over the last 20 years page 92</p> <p>Page 93 "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."</p> <p>Page 95 "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."</p>





Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
62.	Figure 8.4  Proportions of the years the Murray Mouth could be expected to be open to water  Page 113	The Authority fails to indicate that its additional environmental flows of 3,000 GL to 4,000 GL are contingent upon the long-term average of the current arrangements although it is graphically explicit.	Determine the quantities of water required to sustain the Murray Mouth and the South Lagoon of the Coorong over time.	The reality has been significantly different as Appendix <b>Error! Reference source not found.</b> Slides 34 and 35 illustrate. The South Australian Government has been asleep at the wheel ever since it agreed to be part of the 1994 COAG water reform agenda.
63.	8.11  Overview of environmental flow outcomes  Page 114	"It should be noted that actual outcomes for waterbirds will be sensitive to future climate variability, potential climate change and water availability. These projections assume a return to long-term average climate conditions, combined with best estimates of climate change impacts at 2030. The projections are intended to show long term trends – actual numbers in each year will fluctuate around the long term trend lines in response to successful breeding events in wet periods, and decline in numbers during extended drought." ----- Given the recent history of the Millennium Drought it is outrageous that the Authority provides no guidance on the actual sustainability of the Basin from what is already known about the climate variability of the historical record.	Develop guidance centred around climate variability and water availability as a return to long-term average climate conditions has zero chance.	
64.	8.11  Overview of environmental flow outcomes  Page 115	"Figure 8.6 shows important flow thresholds and the spawning season, together with potential outcomes from each of the three scenarios. The figure shows how river regulation has changed the natural flow regime in the lower sections of the River Murray. Current flows are now lower on average, with a less defined seasonal peak that is on average below the level required to provide fish with access to wetland and floodplain habitats." ----- Here the Authority admits that current flows are now lower on average but this contradicts the Authority assumption of a return to long-term average climate conditions. <b>Ref Error! Reference source not found.</b>  Further Fig 8.6 is not calibrated to demonstrate the waterbird abundance representing long-term average conditions.		

Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
65.	8.11 Overview of environmental flow outcomes Salinity outcomes Page 118	<p>The Authority makes no distinction between without development salt load and that caused by development. It also provides no information as to what irrigation activities/regions contribute the most salt due to development and industrial activities.</p> <p>Figure 8.7 is perhaps one of the most significant as it demonstrates the criticality of flows through the Murray Mouth to discharge salt. It also raises questions about the viability of a free-trade approach to establishing a water market.</p>	<p>Disclose the irrigation regions and industrial activities that are contributing salt to the system that then requires flows to discharge the salt through the Murray Mouth. The volume of water required should be counted as part of their consumptive use.</p> <p>Disclose where in the system the deficit in salt accumulation is being stored and provide an estimate of the volumes of water that will be required to eliminate the salt.</p>	
66.	Table 8.1 Summary of economic impacts of reduced diversion limits on irrigated agricultural activity Page 121	<p>The Authority needs to include all water used by irrigation enterprises and not just that used on the crop to determine the economic performance of the irrigation industry.</p> <p>It also needs to clarify whether these volumes include that from interception as there is a significant difference between the Chapter 5 figure for the long-term average of consumptive use of 15,400 GL given that industry and urban use is relatively insignificant.</p> <p>The Authority has not quantified if significant water savings could be made by minimising transmission losses by de-commissioning, redesigning the irrigation channel system.</p> <p>Based on Baseline data presented in Table 8.1, the following conclusions can be drawn:</p> <p>1 The Gross Value of Irrigated Agricultural Product is 10.5% of Basin Gross Regional Product.</p> <p>2 Irrigation produces a profit \$0.19 per kilolitre of water used from a Gross Value of \$0.60 per kilolitre.</p>	<p>Include all water used to supply the irrigation industry with water including losses to enable a more accurate determination of the performance of the industry and crop types.</p> <p>Study the long-term performance of South Australian to determine the increase in productivity resulting from an irrigation industry forced to innovate to do more with less by the introduction of a cap in 1967/68.</p>	<p>Appendix B Slide 37 notes for an indication of losses for current development historical climate in the basin determined by the CSIRO Sustainable Yields Project:</p> <ul style="list-style-type: none"> <li>• Channel and pipe losses 1,233 GL</li> <li>• Streamflow loss due to groundwater use 181 GL</li> <li>• Evaporation from reservoirs and lakes 3,851 GL</li> <li>• Losses in the river (environmental flows) 9,868 GL</li> </ul>



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
67.	Figure 8.8 Estimated commodity implications	<p>The percentage proportions shown for each commodity do not add up to 100%, the scaling is incorrect.</p> <p>The Note states "2001 is taken as a typical or long-term average year for water availability" – if this was true then approximately 5,100 GL would have flowed through the Murray Mouth when in fact it is estimated that in 2000 the flow through the Murray Mouth was 4,170 GL and 2,500 GL in 2001. The average for the eleven years from 1997 to 2008 is estimated to be 1,303 GL.</p>	Validate that end of systems flows and claimed amounts of environmental water are actually achieved.	<p>Estimates for Murray Mouth flows determined from Figure 5.6 Predicted River flows reaching the Murray Mouth over the last 20 years (includes actual flows). Page 92 The End of the River – The Coorong and Lower Lakes.</p> <p><b>A long-term plan for the Coorong, Lower Lakes and Murray Mouth</b></p> <p>Government of SA June 2010</p> <p>Figure 6. River Murray discharge at the barrages from 1968 to 2009. In 2001 the flow through the barrages is estimated to be 1,750 GL. This is just 34% of the Authority's claimed flow for a long-term average year.</p>
68.	8.16 Scenario 1 – target an additional 3,000 GL/y for the environment  Page 126	<p>"The exact outcomes of this scenario will only be determined through implementation of the Environmental Watering Plan, and the associated prioritisation process that occurs in response to future climate conditions. However one potential example is described here, with reference to a number of indicator assets, to demonstrate the nature of potential trade-offs that may be required."</p> <p>-----</p> <p>The Authority does not apply the concept of prioritisation to consumptive use by agriculture.</p>		
69.	8.19 What this would mean at the Basin scale  Page 129	<p>"The range of SDL scenarios would produce an estimated long-term average flow of between 7,100 and 7,700 GL/y through the Murray Mouth. This would mean that the amount of water available for the environment will increase from a long-term average of 19,100 GL/y (58% of inflows) to between 22,100 and 23,100 GL/y (67 to 70% of inflows)."</p> <p>-----</p> <p>These long-term averages are significantly different from the CSIRO Sustainable Yields project.</p>		<p>Frequency of relative level of water use can be estimated from a CSIRO Sustainable Yields project report, Appendix B Slide 20.</p> <p>Appendix B Slide 37 – even without development, the CSIRO estimated that the average annual surface water availability for environmental flows was only 12,959 GL and which produced an outflow of 12,233 GL.</p>



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
70.	Figure 8.10 Watercourse diversions in the Murray-Darling Basin from 1983-84 to 2008-09 Page 130	This graph demonstrates that what the Authority is proposing as a scenario 3 SDL is on par with the average actual watercourse diversions, 2002-03 to 2008-09.	Include not only watercourse diversions but interceptions in proposed reduction of diversions.	
71.	8.20 What this would mean at a catchment scale Page 131	TBD		
72.	9.4 Mining interception of groundwater Page 146	<p>"However, the Basin Plan does not constrain the purpose for which the take will be used as long as the total take complies with the SDL. Any take of water, including for mining, will be required to comply with water resource plans, which will contain detailed arrangements. The Basin Plan will also incorporate a Water Quality and Salinity Management Plan, which will provide a framework for the maintenance of appropriate water quality, including salinity levels, for environmental, cultural and economic activity in the Basin."</p> <p>-----</p> <p>It is of considerable concern that the Authority does not care about the purpose to which groundwater is used. Groundwater has the potential to help sustain not only town and urban water supplies but food critical crops for Australian consumption particularly during droughts.</p> <p>This chapter does not provide any information about those groundwater systems that are interdependent with surface water systems, the volume and quality of water involved and whether agriculture activities have compromised the water quality of not only groundwater but surface water.</p> <p>The Authority does not identify the volumes of groundwater available that may be unsuitable for agriculture use but may be suitable for urban or industry use by using an industrial process to achieve the desired level of water quality such as desalination.</p>		Assuming that Adelaide required an additional source of water to provide a 100 GL of water, locating the plant to take advantage of saline groundwater in the Basin that could have piped to Adelaide using the existing pipeline infrastructure would have significant economic advantages particularly if the scale of desalination required to produce potable water was significantly less.



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
73.	10 Critical human water needs Page 147	<p>"Based on losses in recent times of very low water availability, the conveyance water volume has been estimated at 1,596 GL/y. This comprises 150 GL/y for losses from the major storages, 750 GL/y for losses upstream of the South Australian border, and 696 GL/y for dilution and losses in South Australia between the border and Wellington."</p> <p>-----</p> <p>Why has the Authority taken exception to critical human water needs in terms of defining losses and conveyance water requirements when critical human water needs uses the smallest proportion of the total water diverted from the Basin even during drought?</p> <p>The Authority has not defined such losses and conveyance water requirements to maintain the pool levels and channel systems for irrigation or given any indication of what the losses are for the range of climate variability normally experienced in the Basin.</p> <p>Further the Authority has not made clear that in terms of environmental water what allowance has been made for losses to determine the long-term average flow through the Murray Mouth of 5,100 GL under current arrangements</p>	<p>Apportion and define conveyance and losses in proportion to share of consumptive use and distinguish between those being supplied by channels vs. pipe and allow for population growth.</p> <p>Address the totality of critical water needs required for not only consumptive needs but critical food supply to meet local and Australian needs during droughts and security emergencies.</p>	<p><b>CSIRO Water Availability in the Murray-Darling Basin</b> October 2008 page 32</p> <p>For average surface water use the report apportions 1,238 GL for channel and pipe loss, 11% of the total average surface water diversion of 11,327 GL.</p> <p><b>Guide to the proposed Basin Plan</b> <b>Technical background Part 1</b> page 38 Table 2.10</p> <p>During the Millennium Drought from 1997/98 to 2008/09, Surface-water actual watercourse diversions ranged from 12,036 to 4,119 GL, totalled 104,660 GL and the yearly average was 8,722 GL.</p>



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
74.	10.1 The requirements of the Water Act  Page 148	<p>"The recent drought has highlighted the challenge of ensuring ongoing supply to meet the basic human water needs of individuals and communities reliant on the rivers of the Basin. While this is a state government responsibility, recent experience in the southern connected Basin has emphasised the need for cooperative arrangements between the states to ensure adequate supplies, as the water sharing rules in the Murray–Darling Basin Agreement (Schedule 1 to the Water Act) did not contemplate such low water availability.</p> <p>Circumstances in which enough water is available to meet only critical human needs are expected to be rare, having occurred only once in about 100 years, but thorough preparation for such a scenario is still vital."</p> <p>-----</p> <p>The Authority and former Murray-Darling Basin Commission failed in their duty of care to publicly demand Governments of the Basin call a State of Emergency to suspend any water market, share and prioritise all available water resources, surface and groundwater in the Basin to meet Australian needs first and foremost.</p> <p>Such a course of action would have prevented the majority of water security measures implemented by the Rann Labor Government from 2007 to 2010 which continue to have significant environmental and economic consequences.</p>	<p>Establish State of Emergency plans that may be implemented as required for whole or part of Basin.</p> <p>A State of Emergency would be used to address the needs of a State or region in crisis from severe droughts such as occurred during the recent Millennium Drought. Trigger points may be threats to consumptive use for Australian needs or irreversible threats to the environment.</p>	<p><b>Water (Crisis Powers and Floodwater Diversion) Bill 2010</b></p> <p>Senate Committee Report by Environment and Communications Legislation Committee Nov 2010</p> <p>Submission 15 Water Action Coalition</p>



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
75.	10.3 Conveyance Water Page 149	<p>"Currently there is no specific provision for a reserve to ensure sufficient conveyance water is available at the start of each year to deliver water for critical human needs. The Water Act 2007 (Cwth) (s. 86D) requires the Basin Plan to include a reserves policy."</p> <p>-----</p> <p>The Authority ignores South Australia's Minimum Entitlement of 1850 GL which was last increased in 1984 and the cap placed on consumptive use as a result of the 1967/68 Drought.</p> <p>Further the Authority's statement regarding there is no specific provision for a reserve policy is not true.</p> <p>To guarantee South Australia's minimum entitlement of 1850 GL, NSW and Victoria were required to hold in the Authorities storages 2,500 GL. This was reduced to 835 GL in 1989 at the request of NSW and Victoria so they could use more. Continuous and Special Accounting were introduced to provide greater flexibility in managing water resources particularly during dry times.</p> <p>The changes made in 1989 did not prevent the crisis in the River Murray that has had dramatic social, environmental and economic consequences on South Australia and must be changed.</p>	<p>Refer Finding 1 Recommendation – Royal Commission - needed to investigate the systemic failures in the management arrangements of the Basin particularly when inflows began trending down in 1997.</p> <p>One key area for the Royal Commission to answer is why the Authority allowed its storages to be run down in 2005/06 just before the introduction of a national water market while inflows continuing to worsen and the drought became more severe?</p> <p>In addition the Royal Commission needs to make recommendations on the establishment of alternative water management strategies that are underpinned by the establishment of caps and minimum water entitlements much like South Australia has used since the 60s.</p> <p>The South Australia Government needs to require the Murray-Darling Basin Agreement to be changed to re-establish the 2,500 GL reserve 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.</p>	<p><b>Background to water management in the NSW Murray and Lower Murray-Darling river systems</b></p> <p>NSW Department of Natural Resources May 2006</p> <p>Page 8 &amp; 9 "Up until 1989 it was also required that a reserve of 2,500GL be available in the MDBC reservoirs at the end of each water year. This was to ensure that NSW and Victoria had sufficient water to supply South Australia with its entitlement during the subsequent years.</p> <p>In 1989, changes to the water sharing arrangements were agreed by Murray-Darling Basin Ministerial Council, and new arrangements including continuous accounting and carry over of unused water from one year to the next were introduced. At that time the rules for maintaining a minimum reserve were also changed to provide far greater flexibility in managing water resources, particularly in dry times."</p> <p>Page 12 <b>"The minimum reserve</b> - Under the Murray-Darling Basin Agreement, it is now required that a minimum reserve of 835GL be maintained in storage. This is held equally by New South Wales and Victoria, effectively 417GL each."</p> <p><b>Securing the future – A long-term plan for the Coorong, Lower Lakes and Murray Mouth</b></p> <p>Government of SA June 2010</p> <p>Page 23 Section 2.2.5 "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 ....".</p> <p>Page 43 Figure 5 Murray-Darling Basin Inflows.</p> <p>"Average from 1892 to 1997 = 11,600 GL, Average from 1998 to 2008 = 5,700 GL" a reduction of 49% and from observation the trend was down during that time.</p>
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Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
76.	11. Supporting transition to sustainable diversion limits  Page 151	<p>"Under the existing Water for the Future program the Australian Government expects to recover in the order of 2,000 GL for the environment across the Basin, either through water purchasing or investments in more efficient irrigation infrastructure. The purchasing of water in this way will assist in offsetting impacts of SDLs on water entitlement holders."</p> <p>-----</p> <p>The Authority fails to question existing Government policies as continuing to be appropriate given what it has learnt from the science and operational experience of managing the Basin. The Commonwealth is only purchasing water from willing sellers. This has no strategic focus other than acquire SDL equivalent volumes, consummates the water market and privatise the waters of the River Murray with the Government's blessing.</p>	<p>Consider alternative approaches such as:</p> <p>Determine irrigation areas that should be downsized or decommissioned because of water inefficiencies or environmental risks from irrigation particularly in regard to salt.</p> <p>Compensate for compulsory acquiring water allocations during emergencies</p> <p>States using their powers to downsize irrigation entitlements and set lower allocations.</p>	
77.	11.1 Bridging the gap  Page 152	<p>"As at 30 June 2010, the Australian Government water buyback and state water recovery programs had secured some 705 gigalitres (GL) of surface water (long-term Cap equivalent) in the Basin. While the actual entitlement volumes purchased may be higher, these purchased entitlements have been converted to long term Cap equivalent volumes to permit direct comparison with long-term average SDLs and other Basin Plan volumes. The Authority considers the purchasing of water in this way to be the most effective way of ensuring environmental flows are increased."</p> <p>-----</p> <p>The issues surrounding the use of long-term averages for SDLs and extending them to every other statistic is a serious case of deception to the Australian people by the Authority and the Commonwealth.</p>	<p>Validate the long-term cap equivalent statistics in Table 11.1 vs. actual conditions that have occurred in the Basin during the Millennium Drought.</p>	



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
78.	11.2 Risk Page 154	<p>"Under the Water Act, the Australian Government is not responsible for any reduction in water availability that results from seasonal or long-term changes in climate or periodic natural events such as bushfire and drought. The Authority proposes the climate change component to be 3% of current diversion limits for individual surface water SDL areas (0% for groundwater). This portion of the change will be borne by water entitlement holders."</p> <p>-----</p> <p>This is preposterous given that long-term averages have been used by the Authority it has failed to determine sustainability for natural variation in water availability and define SDLs and operating conditions for the full range of inflows. While the average of inflows for 117 years of records is 11,600 GL, the range is from 2,000 GL to 40,000 GL.</p>	<p>Change the Water Act 2007 from requiring the Authority from using long-term averages to determining Sustainable Diversion Limits to using the full range of water availability statistics and to ensure the Basin is climate proof by optimising the use of Basin storage capacity.</p>	<p><b>Securing the future – A long-term plan for the Coorong, Lower Lakes and Murray Mouth</b></p> <p>Government of SA June 2010</p> <p>Page 43 Figure 5 Murray-Darling Basin Inflows.</p> <p>"Average 117 years of records is = 11,030 GL".</p>
79.	11.3 Temporary diversion provisions Page 157	<p>"The risk allocation provisions of the Water Act 2007 (C with), as described in the previous section, target the impact of reductions in current diversion limits on individual entitlement holders. However, the Authority is also very concerned about the flow-on impacts within local businesses and communities.</p> <p>Temporary diversion provisions are a mechanism available under the Water Act to provide a phase-in period for SDLs of up to five years. This will reduce the impact of SDLs, giving water access entitlement holders and communities more time to adjust to the reduction."</p> <p>-----</p> <p>The effect of this risk allocation provision is biased against the environment and as SDLs have effectively been set very high by the use of long-term averages.</p>	<p>Consider the risk to the environment particularly given the experience of the Millennium Drought.</p>	



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
80.	11.3 Temporary diversion provisions Page 158	<p>"It should be noted that where there is a residual SDL reduction, and the risk allocation provisions apply such that payments to water entitlement holders are made, the temporary diversion provisions will still apply. In effect, this means that although entitlement holders may have received payments for the residual, the five-year staged introduction of the SDL will still apply."</p> <p>-----</p> <p>The Commonwealth is setting a precedence by compensating irrigators for reductions in entitlements when allocations set by the states are not compensated. Water sourced from the Basin is a natural resource subject to natural variation. The risk of this variation should not be borne by the public.</p>	Quantify the impact of this policy on costs to the public purse for actual conditions.	
81.	12 Putting the Basin Plan into effect Key Points Page 161	<p>"The Environmental Watering Plan provides for the management of environmental water to protect and restore environmental assets and achieve other environmental outcomes for the Basin. It is the primary mechanism to ensure that the best use is made of the water that is being made available to the environment. The proposed plan uses a principles-based approach supported by a planning and reporting framework and an Environmental Watering Advisory Committee."</p> <p>-----</p> <p>A further reason why SDL need to be established for the full range of water availability is to also define the share of environmental flows and share of storage capacity to support those flows particularly in times of low flows and droughts which this Guide does not address.</p>	Change the Water Act 2007 to require the Authority to define SDLs for the range of water availability in steps of 500 GL. All SDLs need to specify the amount of water that will flow through the Barrages in the Lower Lakes to validate the SDL.	



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
82.	12 Putting the Basin Plan into effect Key Points Page 161	<p>"The water trading provisions of the proposed Basin Plan are based on the advice of the Australian Competition and Consumer Commission, with a number of minor changes. The Basin Plan water trading rules will address general matters regarding the trade and tradability of water access rights."</p> <p>-----</p> <p>The Authority fails to alert the public, as has been the 'norm' with water reform, that water trading means that the common property of Australia has been privatised and turned into a commodity for the benefit of financial markets.</p> <p>Water is the common property of Australia and such plans are not consistent with section 100 of the Australian Constitution.</p> <p>Further there is no point establishing a SDL for a region if that regions water can be traded out or water use can be increased by trading water in.</p> <p>All irrigation regions need a degree of certainty given the scale of the public and private investment to establish and sustain irrigation in a district.</p> <p>There is also the risk that irrigation will be expanded to unsustainable levels as a water access entitlement is not required to irrigate. There is a significant risk that the price of temporary water could be driven to unsustainable levels and put at risk the viability of irrigation districts.</p>	<p>Hold referendums as to whether Australians want water to be privatised or retained the waters of the Murray-Darling Basin as the common property of Australia.</p> <p>State Governments should be responsible for all restructuring involving the permanent transfer, reduction or cancellation of water access entitlements.</p> <p>The only water that should be allowed to be traded are temporary water allocations granted for a given water year and this should only be within a water district or adjacent water district.</p>	
83.	12.1 Environmental Watering Plan: how the water will be used	<p>"It is proposed that the Environmental Watering Plan will provide a framework for adaptive management of watering activities, rather than prescribing a strict watering or flow regime. The adaptive management approach will allow for advances in knowledge, provide a way to deal with variations in climate from year to year and manage risks associated with environmental watering (e.g. flooding). In addition it will incorporate strategies to deal with drought and climate variability."</p> <p>-----</p> <p>What is good for the goose is good for the gander. Watering the environment is no different to watering crops, the same approach must be used to ensure a fair sharing of water between consumptive use and the river at all times to ensure the river flows to the sea.</p>	Refer to Finding 81	



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
84.	12.2 Water Quality and Salinity Management Plan Page 165	<p>"The Water Act 2007 (Cwth) requires the Basin Plan to include a Water Quality and Salinity Management Plan. That plan must identify the key causes of water quality degradation in the Murray-Darling Basin and include water quality and salinity objectives and targets for the Basin water resources. In doing this, the Authority must have regard to the National Water Quality Management Strategy."</p> <p>"The plan will outline the key causes of water quality degradation in the Murray-Darling Basin — such as salinity, algal blooms, water temperature, dissolved oxygen, suspended matter, toxicants, nutrients, pH and the release of acid and metals from acid sulphate soils — and promote a collaborative and integrated approach to managing them."</p> <p>-----</p> <p>It is clear the Authority does not understand corrective and preventive action which requires the root causes to be identified to take action to ensure nonconformities in these water quality characteristics are prevented from happening.</p> <p>The stated causes by the Authority are not key or root causes, they are water quality characteristics.</p> <p>Determination of root causes at the scale of the Basin can only be effectively achieved by holding a Public Inquiry with the powers of a Royal Commission. Until this is done there is not much point establishing SDLs as such an inquiry may have a significant impact on what crops can be grown in what regions and the volume of water required to achieve the required water quality.</p>	<p>Refer Finding 1 Recommendation – Royal Commission needed to investigate and determine the root causes of the water quality issues in the Basin and make recommendations to address the root causes.</p>	<p><b>ISO 9000 Quality Systems Handbook</b> David Hoyle 6<sup>th</sup> Edition 2009 <a href="http://www.elsevierdirect.com/product.jsp?isbn=9781856176842">http://www.elsevierdirect.com/product.jsp?isbn=9781856176842</a></p> <p><b>Update on Mid-Murray and Edward-Wakool system blackwater event</b> MDBA 9<sup>th</sup> December 2010 "The Murray-Darling Basin Authority today advised of the continuing impacts of the 'blackwater' in the waters of the River Murray downstream of Barham and in the Edward and Wakool River System." <a href="http://www.mdba.gov.au/media_centre/media_releases/update-on-mid-murray-and-edward-wakool-system-blackwater-event">http://www.mdba.gov.au/media_centre/media_releases/update-on-mid-murray-and-edward-wakool-system-blackwater-event</a></p>



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
85.	12.3 Water trading rules Page 167	<p>"A central tenet of water reform in Australia over recent years has been the use of water markets to facilitate the movement of water to its most productive use."</p> <p>----- The word "tenet" means "an opinion, doctrine, or principle held as being true by a person or especially by an organization".</p> <p>For the Authority not to question what is just an idea borrowed from the economic reform agenda of market liberalism is breathtaking. The Basin is over-allocated, water is not being fairly shared, the environment is in crisis and it is preposterous that Australian Governments are adding a further over-arching level of complexity to what is already a complex problem.</p> <p>As the analysis in the supporting remarks illustrates; in 2005-06 household gross median income ranged from \$189 per kilolitre in Queensland to \$298 per kilolitre in ACT. For irrigated agriculture gross income per kilolitre ranged from 22 cents for rice, 51 cents for cotton, \$1.07 for dairy products, \$1.40 for grapes, \$2.46 for fruit and nuts, \$3.65 for vegetables and \$12.31 for nurseries, cut flowers &amp; turf.</p> <p>COAG was created to implement the economic reform agenda of market liberalism whether Australians like it or not. A vast economic experiment is being implemented for a vast Basin that is connected through everything else through water and is extraordinarily complex. It is also clear from an analysis for GVIAP per kilolitre of water used that the irrigation industry is sensitive to the price of water. If the price of water were to significantly appreciate due to water markets the consequences for irrigation and regions reliant on an irrigation commodity could be devastating.</p> <p>Urban and industry use is far more productive from an economic point of view than irrigation but their share of consumptive use is the smallest.</p>	<p>The Global Financial Crisis should have resulted in a review of the considerable economic reform component of water reform – given this was never done it needs to be done by a Royal Commission.</p>	<p><i>The American Heritage® Dictionary of the English Language, Third Edition</i> copyright © 1992 by Houghton Mifflin Company. Electronic version licensed from INSO Corporation. All rights reserved.</p> <p><b>Zombie Economics – How Dead Ideas Still Walk Among Us</b></p> <p>John Quiggin Professor of Economics at University of Queensland 2010 <a href="http://press.princeton.edu/titles/9270.html">http://press.princeton.edu/titles/9270.html</a></p> <p><b>Socio-Economic Context for the Murray-Darling Basin</b></p> <p>Descriptive Report, MDBA Technical Report Series Basin Plan: BP02 Sept 2009</p> <p>A report from the ABS/ABARE/BRS to the MDBA <a href="http://www.mdba.gov.au/services/publications/more-information?publicationid=37">http://www.mdba.gov.au/services/publications/more-information?publicationid=37</a></p> <p>Table 52 defines the volume of water applied by enterprise type for 2005-06.</p> <p>Table 19 details the Gross value of production by agricultural commodity, Murray-Darling Basin and details the proportion of income derived from irrigation. In 2005/06 the gross value of irrigated agricultural production was \$5,522 million (36.8%) vs. the gross value of agriculture production of \$14,991 million.</p> <p>The Gross Value of Irrigated Agriculture Production per kilolitre of water used ranged from 22 cents per kilolitre for Rice which used 1,252 GL of water to \$12.31 per kilolitre for Nurseries, cut flowers and turf which used 12 GL of water.</p> <p><a href="#">Household Income and Income Distribution, Australia, 6523.0 – ABS 2005-06</a></p> <p>Using the Gross Median Household Income, the Gross Household Income per Household water consumption for 2005-06 (Table 10 Basin Plan: BP02) ranged from \$189 per kilolitre in Queensland to \$298 per kilolitre in the ACT.</p>



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
86.	12.3 Water trading rules Page 169 - 170	<p>"The water trading rules set out in the proposed Basin Plan are based on the advice of the Australian Competition and Consumer Commission, with a number of minor changes. They will:</p> <p>Apply to all Basin water resources from when the Basin Plan is adopted. Under the Water Act (s. 4), these are defined as all water within or beneath the Murray–Darling Basin, except for groundwater that forms part of the Great Artesian Basin, or other water resources excluded by regulations.</p> <p>Affect all entities wishing to buy or sell water within the Basin. All buyers, sellers and administrators of water (including Basin states and irrigation infrastructure operators) will be required to comply with the water trading rules as set out in the Basin Plan from the time that the plan commences (subject to the operation of transitional and interim water resource plans). This will ensure consistency and transparency within the water market"</p> <p>etc</p> <p>-----</p> <p>Water is the common property of Australia and such plans are not consistent with section 100 of the Australian Constitution.</p> <p>Further such market arrangements particularly with carry over provisions would put at risk the water supplies of the state of South Australia given its meager cap for total consumption and the relationship and criticality of South Australia's minimum entitlement of 1850 GL.</p> <p>Plans to include Groundwater of the Murray-Darling Basin is not consistent with recent decisions of the High Court of Australia.</p>	<p>Finding 36</p> <p>Report the total cost of the investment to create and maintain water markets and explain how these costs are going to be recovered from market participants.</p>	<p>Appendix B Slide 23 and notes of High Court Decision:</p> <p>Clause 55 "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 <b>common</b> property not especially amenable to private ownership and best vested in a sovereign state[55]."</p>



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
87.	13.3 Outcome 3 – Water management arrangements	<p>"The Basin Plan will clarify water management arrangements in the Murray – Darling Basin, providing improved certainty of access to the available resource for both consumptive and environmental purposes. This improved clarity starts with a Basin-wide approach to the management of the Basin, reducing the tension between states and competing interests upstream and downstream and instead managing the Basin's water resources as a whole and in the national interest and providing improved water security for all uses of the Basin water resources."</p> <p>-----</p> <p>The content of the following subsections; water security, reliability and water trading confirm the real focus of the Commonwealth and the Authority is business as usual.</p> <p>The environment will continue to suffer for water availability less than long-term average SD Ls.</p> <p>The economic reform agenda is being put before reducing water entitlements to a viable level.</p> <p>The rivers of the Basins should not have to purchase what is their right.</p>	<p>Change the Water Act 2007 to be consistent with section 100 of the Constitution and define water availability for all known scenarios of water availability</p> <p>Otherwise there is no reason for the urban populations to support the proposed Basin Plan.</p>	





Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
88.	Water Security Page 178	<p>"Improved water security for all uses of Basin water resources is an object of the Water Act 2007 (Cwth) and, similarly, a purpose of the Basin Plan. Improved water security is provided through the transparent, statutory, Basin wide arrangements for water management."</p> <p>"Water security is often interchangeably described as certainty, and a major benefit of its provision is the ability to invest in use of water access rights in the knowledge that their terms and conditions, and the management rules that affect these rights, will not alter over a defined period. Accordingly, the benefits of water security flow through to the individual entitlements and the holders of these entitlements, providing a secure property rights framework"</p> <p>-----</p> <p>It is clear from this that the Authority is only concerned with acting in the interests of the 18,634 businesses involved in irrigation vs. the 22 million Australians who have a stake in the common property rights of Australia, the security of the environment in which they live, water security and security of food supply.</p> <p>Water access entitlements are being unbundled from land and granted for free so that these license holders can benefit from notional private property rights of these water entitlements by buying and selling on a water market.</p>	Refer Finding 1 Recommendation – Royal Commission	<p><b>Socio-Economic Context for the Murray-Darling Basin</b></p> <p>Descriptive Report, MDBA Technical Report Series</p> <p>Basin Plan: BP02 Sept 2009</p> <p>A report from the ABS/ABARE/BRS to the MDBA</p> <p>In 2005-06 the number of businesses involved in irrigation was 18,634 who earned a gross value of irrigation agricultural production of 75 cents per kilolitre of water used.</p> <p><a href="http://www.mdba.gov.au/services/publications/more-information?publicationid=37">http://www.mdba.gov.au/services/publications/more-information?publicationid=37</a></p>
89.	14 Delivering outcomes Keypoints Page 183	<p>"The method for determining diversion limit compliance will involve an annual volume of 'permitted take' that will vary in response to variability in climate, flows and other factors. At the end of each water year, the Authority will audit whether the actual take for that year is in compliance with the permitted take and whether water resource plan rules have been correctly applied."</p> <p>-----</p> <p>This is no different to what is already carried out in terms of the overall cap that was set in the mid-90s. Unless the Authority validates its plans by demonstrating how the Basin Plan and exemplar State Water Plans would have prevented the crisis in South Australia's section of the River Murray during the Millennium Drought and guaranteed required flows through the Barrages then the South Australia Government and South Australians should walk away from water reform and demand a Royal Commission.</p>	Refer Finding 1 Recommendation – Royal Commission	



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
90.	14 Delivering outcomes Page 184	<p>"Adaptive management involves 'learning by doing': a feedback loop of monitoring, reviewing and where necessary changing approaches to respond to changing conditions in the Basin and new knowledge.</p> <p>The scale involved in implementing the Basin Plan is significant because it involves, for the first time, coordinating and managing water resources across the Basin in the national interest for current and future generations. This will require the Commonwealth, Basin states and all parties affected to better manage water resources so that this becomes part of an ongoing and active process of learning, review and action. This is central to an adaptive management approach."</p> <p>-----</p> <p>These are indeed parts of a proper process of management review and an integral part of establishing an appropriate quality assurance framework. However the Authority and the Commonwealth have failed to question a reform agenda dreamt up when market liberalism was in its hiatus in the 90s. Given the Global Financial Crisis it is critical for all Governments of the Basin states to question whether it is the long-term interests of the nation to conduct an economic experiment that has never been carried out before.</p>	Refer Finding 1 Recommendation – Royal Commission	
91.	The diversion limit compliance framework Page 187	<p>"The Basin's water resources will be managed within long-term average sustainable diversion limits (SDLs), which are the maximum volumes of water that can be taken over the long term from a water resource while reflecting an environmentally sustainable level of take."</p> <p>-----</p> <p>Diversion is a "take" whilst environmental flows are what belongs to the river system and should not be referred to as a "take".</p> <p>It is clear from this statement that the Commonwealth and the Authority have used long-term averages to set the upper limit of SDLs and also maximise the volumes requiring water buy-back by the Commonwealth.</p> <p>Australians continue to be left in the dark about how the Authority plans to actually operate the Basin as it has chosen not to define what is sustainable for all ranges of water availability, inflows and reserves.</p>	Refer Finding 1 Recommendation – Royal Commission	



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
92.	14.3 Transparent reporting and review Page 190	<p>"These specific commitments will transparently report on the rebalancing of water for the environment and water for economic benefit."</p> <p>This statement is of considerable concern as water for the environment also has economic benefit, and water for economic benefit is not just simply restricted to water for agriculture.</p> <p>The water reform movement is making a significant problem for Australians by peddling the idea that water is the property of water entitlement license holders.</p>	<p>Suspend trade in water entitlements until it secures the approval of the Australian people by seeking a change to the Australian Constitution to authorise water privatisation.</p>	
93.	15.1 Environmental works and measures Page 194	<p>"However, in highly regulated systems, the use of such infrastructure may have the potential to reduce the amount of water required to achieve particular environmental outcomes. The Australian and Basin state governments have indicated a willingness to explore opportunities for environmental works and measures to offset environmental water requirements, and thereby increase SDLs. For example, the Australian Government infrastructure scheme at the Menindee Lakes could enable an increase in the SDL through evaporative savings and better environmental management of the Menindee scheme."</p> <p>-----</p> <p>This is an amazing statement given the history of over-allocation by agriculture and failure to ensure adequate flows through to the barrages particularly during low flows and droughts.</p>	<p>Consider 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 improving the SDL of a downstream region which has greater productivity.</p>	



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
94.	15.2 Implications for River Operations Page 194	<p>"Operation of regulated rivers throughout the Basin involves making decisions about when and how water is released from storages in response to orders for the delivery of water to Basin states, irrigators, or holders of environmental water. The environmental water requirements of the Basin Plan will change the pattern of these orders — for example, by requiring higher flows in winter and autumn more akin to natural flow regimes. The net effect of these changes is difficult to generalise about. River operators across the Basin will need to assess the likely implications for their activities on a case-by-case basis. The Authority will work with river operators across the Basin to ensure that the settings in the proposed Basin Plan can be delivered effectively."</p> <p>-----</p> <p>It has been clear from reviewing this Guide that the Authority has made no consideration for river operations in terms of providing guidance on how much water should be stored and or released for different levels of water availability.</p>	Design from first principles a water reform that is truly in the national interest and the common good.	
95.	15.4 Critical human water needs Page 195	<p>"In comparing figures used in this exercise with international trends on water use efficiency, it is clear that there is a considerable scope for River Murray communities and Australians more broadly to implement further water conservation, efficiency and reuse schemes to lessen the volume required for critical human water needs of communities dependent on the River Murray system. This relates to household and industrial use as well as distribution losses to deliver water for these needs. In some cases two-thirds of the volume required to meet critical human water needs is in losses to deliver water through open channels to the end use."</p> <p>-----</p> <p>This is an amazing statement by the Authority that seems to completely ignore the rights of residents of a State under section 100 of the Australian Constitution and the fact that economic productivity of water use by urban communities and industries exceed that of agriculture.</p> <p>Water for consumptive use or environmental delivery all share the same water body, apportioning conveyance water and losses to critical human needs, the smallest user of water diverted from the Basin, during the recent drought is dishonest.</p>	Ensure that the common good is served and all Australians share in the right to water.	Appendix B Slide 42 and 43



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
96.	15.5 Water sharing and South Australia's historical allocation Page 195-196	<p>"With the construction of the Dartmouth Dam in the 1970s that entitlement increased to 1,850 GL/y, and this volume is provided for in s. 88 of the Murray-Darling Basin Agreement, with special arrangements for exceptional circumstances (for example, when water is scarce). This volume incorporates water for human consumption (including in Adelaide) as well as water for irrigation and other purposes (including evaporation and other losses from the River Murray in South Australia and Lower Lakes).</p> <p>The Basin Plan will create a significantly changed situation for South Australia, as it too will be required to operate within the new long-term average sustainable diversion limits (SDLs). Considerably altered flow regimes will travel through the system for the environment, including to the sea, as upstream states implement their parts of the Environmental Watering Plan and water held for the environment is delivered into South Australia."</p> <p>-----</p> <p>The Authority has failed to acknowledge that South Australia's diversion cap, first established as a result of the 1967/68 drought, established Australia's first true low flows SDL for surface water diversion. This needs to be of immense concern to all South Australians.</p> <p>The Authority has failed to acknowledge arrangements that if replicated throughout the Basin at the time would have prevented over-allocation.</p> <p>Of course low flows SDL considerable weakens the need for water markets, one of the key objectives of the Authority.</p> <p>The Authority has also confirmed that the Rann Labor Government has given away South Australia's water entitlement to be subject to the vagaries of the water market.</p>	<p>Refer Finding 1 Recommendation – Royal Commission</p> <p>The Authority and the Commonwealth should be increasing South Australia's share of consumptive use not decreasing it.</p> <p>Return all water purchases the Commonwealth has made in South Australia in recognition of South Australia's conservatism over many decades.</p> <p>Ensure South Australia's minimum entitlement of 1850 GL is not compromised by water trading out of South Australia and by the Basin Plan.</p>	<p>South Australia used to have the most reliable water supply and are the most meager users of water in the entire Basin. The minimum entitlement also sustained the River Murray environment to the Barrages. This has clearly changed with the passing of the 2007 Water Act and is not widely understood by South Australians.</p> <p>If the proposed Basin Guide and the Authority have any credibility one of the outcomes of the Basin Plan should be that there are increased flows to the Barrages. South Australia's arrangements mean that any extra flows above South Australia's minimum entitlement will flow through to the Barrages, supposedly one of the key environmental objectives of the Basin Plan.</p>



Finding	Reference	Reference Quote ---- Findings / Questions	Recommendations	Remark (s) / Supporting Reference
97.	15.7 The evidence base Page 197	"The Authority is committed to transparency in its decision making and remains concerned that much of the evidence required to meet requirements of the Water Act is difficult to find, is often subject to restrictions on access, and not easy to integrate. To address this, the Authority has committed to making the total evidence base available for public scrutiny, within the constraints of intellectual property, privacy and confidentiality." -----	<a href="#">The MDBA independent review of Drought Water Accounts</a> announced in early January 2009 by the MDBA CEO must be made public as a matter of urgency.	



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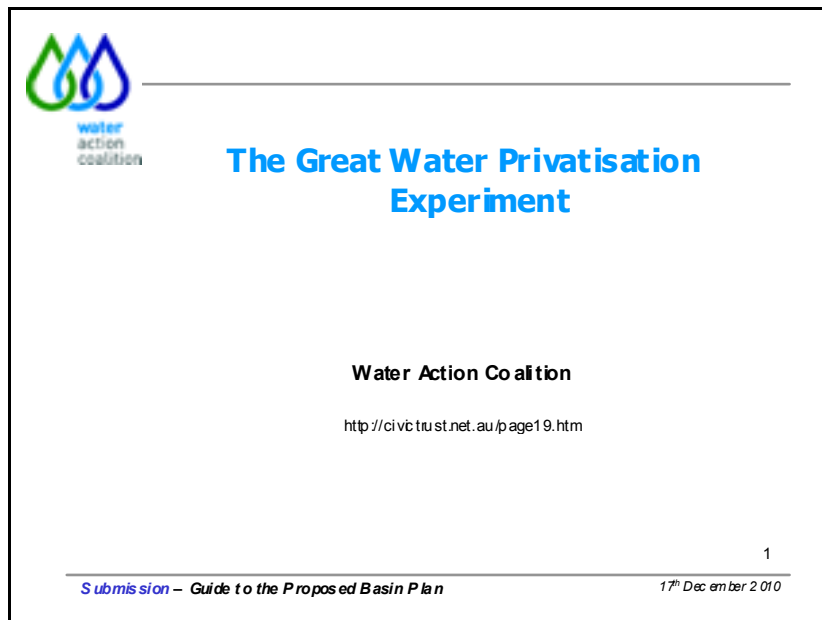
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**A Sustainable Water Future** *without compromising the health of interdependent ecosystems*

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**B THE GREAT WATER PRIVATISATION EXPERIMENT – PRESENTATION NOTES**



There continues to be quite a community-driven political storm brewing in South Australia. With the March 2010 re-election of the Rann Labor Government who now governs with less than 50% of the popular vote, a reduced majority and many more marginal seats. Water and environmental issues are but one of the areas continuing to cause considerable community concern and angst. South Australia has been temporarily saved by unregulated flows from the 2010 floods in the Murray-Darling Basin which have ended the Millennium Drought. What we haven't been saved from is the ramifications of water reform which so miserably failed South Australia during the latter stages of the drought.

**Grieger's Sandbar Rally 19<sup>th</sup> August 2009 (Slide 2)**





The reduction of flows below Lock 1 created a social and environmental disaster with billions of the public's money being spent to address the consequences of the crisis. This presentation will demonstrate that the crisis was entirely preventable through better management of storages and diversions to agriculture in the eastern states. A State of Emergency should have been declared instead of launching the new water market to ensure the sharing of all waters of the Basin to address the crisis in South Australia. Water reform failed South Australia in its hour of need. Such a failure requires an interstate Royal Commission to be established which is fully scoped and resourced to independently investigate the mismanagement and water reform.

**WAC Our Water Our Rights Rally 10<sup>th</sup> October 2009 – Lower Lakes (Slide 3)**



While the Murray has been suffering from a severe drought it is by no means broke. The CSIRO have described that some areas of the southern basin experienced a once in a 300 year drought. The crisis in the Murray was caused because actions of Federal and State politicians have not been the right ones. They have forgotten who they represent and have put market-driven "Water Reform" before the public interest of South Australia. A climate of political fear has been created around "Climate Change" during the last decade, to provide a smoke screen whilst a natural resource is converted into a commodity and privatised for the benefit of global financial markets. "Climate Change" is another problem that needs to be solved by holding a Royal Commission to get to the bottom of the root causes that created this problem. Market solutions are only going to add to economic growth without creating much real value. "Climate Change" problem has been created by the inherent waste of the unbridled growth and global free markets. Economies and societies need to become significantly leaner for the common good of all by removing the waste of resources in the economy.

"Weaning Adelaide off the Murray" is about politically weaning South Australians off their fair share of the River Murray as a public benefit and transferring it to the private sector. South Australians need to stand together; demand governments act in the public interest and uphold the "Public Trust Doctrine" implicit in section 100 of the Australian Constitution. "Weaning Adelaide off the Murray" makes no sense if the result adds to the death sentence that already hangs over Lake Bonney, the Murray below Lock 1; Lower Lakes, Coorong, Murray Mouth, Gulf St Vincent and Upper Spencers Gulf. Privatisation of water will only result in increased costs for the economy and society, and result in a reduction to both competitiveness and resilience to imports.

**WAC "Our water Our Rights Rally" 10th October 2009 – YouTube Videos (20)**

Steps of Parliament House, Adelaide, SA.

[http://www.youtube.com/view\\_play\\_list?p=08C532A0F72824DA](http://www.youtube.com/view_play_list?p=08C532A0F72824DA)

**WAC Our Water Our Rights Rally 10<sup>th</sup> October 2009 – Save Point Lowly (Slide 4)**



### Save Point Lowly

WAC Rally 10<sup>th</sup> October 2009



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**WAC Our Water Our Rights Rally 10<sup>th</sup> October 2009 – Save Our Gulf Coalition (Slide 5)**



### Save Our Gulf Coalition

WAC Rally 10<sup>th</sup> October 2009



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100,000 Megalitres or 100 Gigalitres is in reality a drop in the bucket in terms of the Murray-Darling Basin. Adding to the environmental crisis of Adelaide Coastal Waters by building a Desalination Plant is public policy gone mad. The addition of a further 110 GL of toxic brine makes no environmental, economic or social sense to an

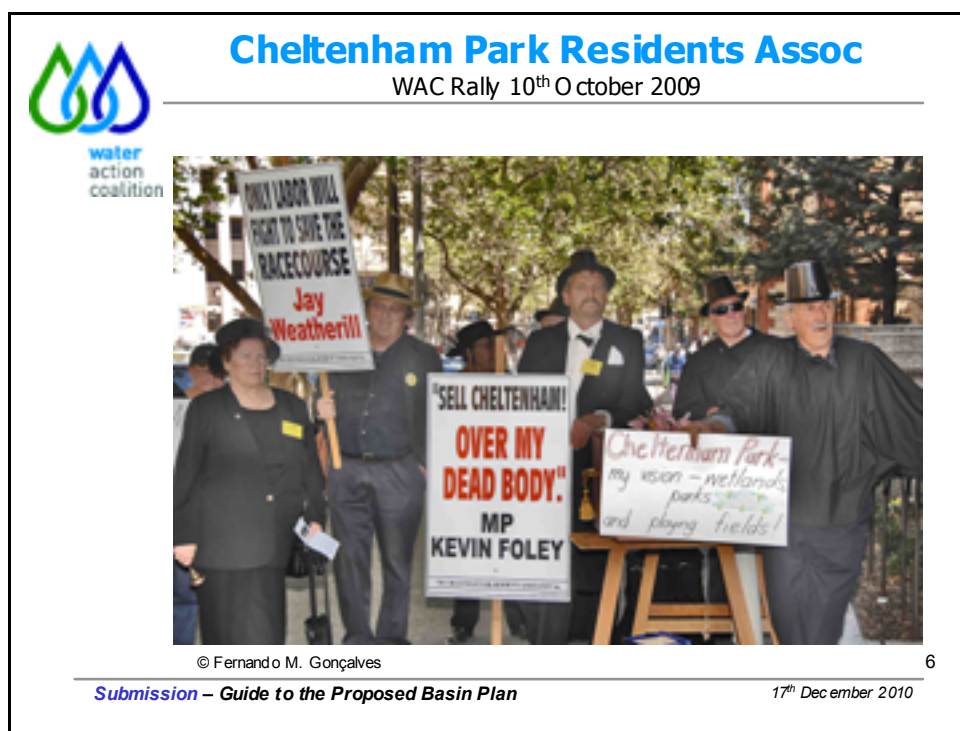
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environment already polluted by up to 200 GL of wastewater and stormwater with vast areas of old-growth seagrass forests destroyed which just happen to be [very important absorbers of CO<sub>2</sub>](#).

According to a late 2009 report published by United Nations Environment Programme (UNEP) "[Blue Carbon: The Role of Healthy Oceans in Binding Carbon](#)" page 6 "Oceans play a significant role in the global carbon cycle. Not only do they represent the largest long-term sink for carbon but they also store and redistribute CO<sub>2</sub>. Some 93% of the earth's CO<sub>2</sub> (40 Tt) is stored and cycled through the oceans. The ocean's vegetated habitats, in particular mangroves, salt marshes and seagrasses, cover <0.5% of the sea bed. These form earth's blue carbon sinks and account for more than 50%, perhaps as much as 71%, of all carbon storage in ocean sediments. They comprise only 0.05% of the plant biomass on land, but store a comparable amount of carbon per year, and thus rank among the most intense carbon sinks on the planet."


Clearly the money being spent on the Adelaide Desalination Plant could have been better spent on water and environmental conservation projects not only in metropolitan Adelaide but all around the state. Communities throughout the length and breadth of the state are saying enough is enough. This is not only about listening to communities but building trust and integrity with communities by acting in their public interest in the first place.

**WAC Our Water Our Rights Rally 10<sup>th</sup> October 2009 – CPRA (Slide 6)**



Cheltenham Park residents are campaigning for the retention of public space for stormwater harvesting and recycling. The capability of Cheltenham Park to harvest stormwater is in the region of 20 to 30 GL if all the land was used and you could get stormwater water to the site according to Colin Pitman, Director of City Projects at Salisbury City Council. Needless to say one of the local problems with this region is flooding. The future consequences of not keeping Cheltenham Park for stormwater harvesting and open space is that future Governments will have to use any suitable space in the western suburbs of Adelaide such as golf courses, race courses and consider moving the Adelaide Airport.

**A Sustainable Water Future (Slide 7)**



### A Sustainable Water Future

Without compromising the health of interdependent ecosystems


- ◆ About the Water Action Coalition
- ◆ The Problem
- ◆ About the Murray
- ◆ State in Water & Environmental Crisis
- ◆ Recommendations

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The environment needs to be made better not worst for future generations. This presentation will give you insight into the real issues about the River Murray and propose steps that need to be taken.

**The Mission of the Water Action Coalition (Slide 8)**



### Mission

Sustainable Water Future ensures Equitable Use of all Water Resources

- ◆ Secure all water in its rivers, streams and groundwater as the common property of Australia, to be managed as a common good and not traded as a profitable commodity.
- ◆ Deliver viable supply and reuse systems to all communities, city and country, without harm to interdependent ecosystems and the community.
- ◆ Ensure that water is managed efficiently and effectively for community use today and conserved for future generations.
- ◆ Respect Aboriginal knowledge of water conservation and healthy water systems, its importance to Australia's oldest culture and to modern water management.

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As you will see later, we have had protracted droughts before, but never before has the Murray-Darling Basin been allowed to run down so badly with devastating environmental, social and economic consequences. Replacing Murray water with Desalinated water is not a solution for either Gulf St Vincent or Spencer Gulf when it is these Gulfs that also need to be saved. It is this crisis that has significantly contributed to the formation of the [Water Action Coalition](#) by concerned South Australian community groups and individual citizens. The catalyst for the formation of WAC was the Community Water Summit held on 14<sup>th</sup> March 2009.

The above slide contains extracts from WAC's Mission Statement that form the foundation of our actions and public message. WAC's Charter, "A Call to Action" discussion paper and Brochure can all be downloaded by using a web search engine to search for "[Water Action Coalition](#)".

The brochure details the members of the foundation committee and supporting organisations, which together total over 25 organisations. International Patron is [Maude Barlow](#) and an Honorary Reference Group has been established.

I would like to take the opportunity to thank all those who have helped and supported the activities of the Water Action Coalition thus far and into the future. It is critical that all Australians take to writing letters to the editor, to our politicians, take part in the public discussions on talk-back radio and on the web, and importantly support the organisations that are campaigning for our water and environmental rights. These rights are simply the retention of water as a common good, a fair share of the River Murray and to ensure the sustainability of our environmental heritage crucial to sustaining the quality of life of future generations and our economic well-being.

### **What's Been Happening since the launch of the Water Action Coalition 19<sup>th</sup> July 2009 (Slide 9)**



## What's Been Happening -2009

Communities Groups Coming Together

- ◆ **Community Water Summit 14 March 2009**
  - Community Committee formed, 150 People attended
- ◆ **Maude Barlow's Adelaide Visit 1 April 2009**
  - Grainger Studio 250 people attended, water hot-spots tour
- ◆ **WAC Launch Watershed 19 July 2009**
  - Branding, Charter, "A United Call to Action" Paper, Brochure produced and Honorary Reference Group established
- ◆ **WAC Our Water Our Rights Rally 10 October 2009**
  - Steps of Parliament House - 22 speakers; Community Organisations, Peak Councils & Politicians; Open Letter to Premier from Hon Ref Group, Rally Proclamation formalised and read out in SA Parliament
- ◆ **WAC Rally Call for Public Inquiry 3 December 2009**
  - Voted & debated in Legislative Council – Lost 6 to 12 on major party grounds
  - Public Inquiry Terms of Reference produced; every MP & MLC in SA Parliament lobbied


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The catalyst for the formation of WAC was the Community Water Summit held on 14<sup>th</sup> March 2009. A key part of this event was a community workshop which generated a lot of the ideas that have been carried forward to be implemented by WAC. This list of WAC events is also a tale of progress; the Community Water Summit held at the Alan Scott Auditorium of the University of SA was attended by around 150 people and one politician, David Winderlich. WAC's [Big Water Debate](#) held in co-partnership with The Bob Hawke Prime Ministerial Centre at the same venue, attracted a full-house of around 400 people, many politicians and the event was reported in The Advertiser.

## What's Been Happening 2010 (Slide 10)



### What's Been Happening 2010

Communities Groups Coming Together

- ◆ **WAC Big Water Debate 11 February 2010**
  - 400 people, 7 politicians, Professor Ian Lowe President ACF, co-partnered with The Bob Hawke Prime Ministerial Centre of the University of South Australia
- ◆ **Gulf Troubled Waters Forum – Hallett Cove 7th March 2010**
  - Partnered with Save Our Gulf Coalition and focussed on the South Coast of Metropolitan Adelaide. Attended by approximately 80 people.
  - Resulted in a number of public speaking engagements
- ◆ **WAC Submission to Senate Inquiry – 16th June 2010**
  - Water (Crisis Powers & Floodwater Diversion) Bill 2010
  - Invited to appear at a Public Hearing held in Canberra on 30th June 2010. Speech Notes prepared and tabled.
    - Senate Inquiry report published November 2010.
- ◆ **WAC Meeting with Minister Caiica 28 July 2010**
  - Key Issues of Concern of our Members:
    - River Murray, Lakes Alexandrina and Albert, Coorong and Murray Mouth.
    - Comprehensive Stormwater and Waste Water Recycling Plan for Greater Metropolitan Adelaide, and
    - Environmental Risks to Gulf St Vincent and Spencers Gulf

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WAC's Rally Proclamation which called for a [Public Inquiry](#) was read out in Parliament by Mark Parnell of the South Australian Greens and Mitch Williams of the Liberal Party of South Australia in late October 2009. Mark went on to move a motion on the 3<sup>rd</sup> December 2009, the last sitting day of the Legislative Council of the current Parliament to move a motion calling for a vote for a Public Inquiry into Water and Environmental Management. Although the Liberal Party did not vote for it, their support allowed the bill to be debated and recorded in Hansard for future generations.

A significant opportunity to take on the Government on the River Murray was missed and it could have made the difference between winning and losing not only the recent South Australian election but the Federal election.

**The Problem - Described (Slide 11)**



## The Problem - Described

South Australia's Governments have been asleep at the wheel

- > The Drought has been exploited to implement undemocratic COAG water reform agenda initiated by Federal Government in 1994:
  - Create Water Market, Turn Water into a Tradeable Commodity i.e. privatise what is the common property of Australia.
  - Take Advantage of Drought to Downsize below Lock 1, Lower Lakes, Lake Bonney - water now too valuable - needed for the new National Water Market and to Justify 100 GL Adelaide Desalination Plant
  - Ignore Urgency to Save Adelaide Coastal Waters from Stormwater & Wastewater Pollution – 9,000 hectares of old-growth seagrass beds lost!
  - Creation of & Faith in Water Market Came First – Significant Conflict of Interest
  - Crisis exceeds the State Bank disaster (Economic, Environmental, Social Implications)
- > Government failed to demand a National State of Emergency in the MDB
  - Trigger – Any Risk to South Australia's Minimum Entitlement of 1850 GL
  - New Water Market Should Have Been Suspended or Limited
  - Water Restrictions on Agriculture Use During Emergency with Compensation
  - Collective / Community Effort by Basin to address Emergency – Did Not Happen
  - Royal Commission Required - To Identify the Root Causes
- > Forgotten About – SA Long-term Sustainability Diversion Limit
  - Since 1967/68 Drought SA Voluntarily Capped its Diversions
  - 1989 SA Agreed to MDBC Storage Reserve reduction from 2500 GL to 850 GL with New South Wales and Victoria so they could use more water, and they did.
  - Current Diversion Limit 724 GL raised 76 GL by former Minister Maywald in 2008 to 805 GL.

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South Australian Governments since the 50's have been asleep at the wheel while total diversions from the MDB were dramatically increased from around 3,500 GL in the 1950s to around 11,600 GL by 2000, a 331% increase. The natural median flow to the sea in pre-colonial times was around 13,900 GL. For most of this decade it has been zero as Governments have steadfastly refused to uphold their public trust responsibilities and take the necessary steps to address the problem. It is outrageous that it took until this year for a bill to be put to the Australian Parliament by two South Australia's Senators Nick Xenophon and Sarah-Hanson Young on the 18<sup>th</sup> March 2010 "[Water \(Crisis Powers and Floodwater Diversion\) Bill 2010](#)". The Senate has initiated an inquiry into the proposed Bill but this is a Bill that should have been addressed by the major parties when the crisis first started by allowing the draining of Basin storages when the basin inflows began to significantly decline.

For decades South Australia has worked within a total self-imposed diversion cap of 650 to 729 GL of high reliability water to cover town & urban water supplies, industry and irrigation use whilst the eastern states, particularly NSW and Victoria continued to dramatically increase their diversions. South Australia's minimum entitlement of 1850 GL was supposed to be sacrosanct during low flows. Not only were water supply guaranteed the flow sustained the river environment to the barrages. The Basin Plan needs to recognise South Australia's minimum entitlement and diversion cap as a low flows "Sustainable Diversion Limit". South Australia's diversion limits need to be revised up and not down.

The last two terms of the Rann Labor Government have failed to stand up for our rights, failed to listen to communities and has put growth at any cost and development, ahead of all else. No where is this more evident than its lack of real leadership on the River Murray, ensuring a sustainable water future for South Australia without compromising interdependent ecosystems. The mantra of the Government has been that if you want water for further economic development, no problem, as there are no limits for those who have the money to buy on the new water market.


The government and its agencies have gone along with the water reform agenda of COAG to the detriment of SA without a murmur of protest. Successive Governments have failed to inform Parliament and the people of Australia

of the real intention of water reform; to privatise the water resources of Australia that are supposed to be held in Public Trust for the common good of Australia.

The greater good is being sacrificed in the interests of establishing the new water market, the turning of water into a commodity to become another toy for global financial markets and a tax on all Australians – this is the real consequence of "water reform" – privatisation of the waters of the Murray-Darling Basin.

Make no mistake this is a radical market experiment with Governments stepping back to let markets decide who can use what is the common property of Australia. Water licenses were originally granted for free for irrigators to grow crops and develop regional areas of Australia. State Governments decide how much water can be allocated to a license entitlement at any one time. Governments have allowed the unbundling of water licenses from land and have allowed the adoption of the language of the market by using the term "water share". It can be leased (called temporary water), borrowed, saved (called carryover) mortgaged and anybody can buy it providing they can pay for it. This includes overseas investors and overseas government owned corporations. It is time Australians knew what proportion of water licenses are controlled by overseas interests and how much water was allowed to be borrowed whilst South Australia was in crisis and our minimum entitlement of 1850 GL was not being supplied by NSW and Victoria.

#### National Water Initiative (Slide 12)



### The National Water Initiative

- ◆ "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."

Australian Government Department for Water, Environment, Heritage and the Arts  
National Water Initiative Water Trading Study Final Report  
Published June 2006 by Department of Prime Minister and Cabinet

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*Submission – Guide to the Proposed Basin Plan* 17<sup>th</sup> December 2010

The crisis we are having is due to a significant conflict of interest between the public interest for the common good vs. private markets. For too long Australian Governments have been overly focussed on privatisation of public assets and adopting what is known as the "[Washington Consensus](#)" when is never originally intended for developed countries.

COAG is an undemocratic institution that has been allowed to turn South Australia into a business unit of the Federal Government using financial incentives or bribes to achieve its economic reform goals. Since 1994 Governments have misled Australians about the true intent of water reform. They have created a Trojan horse around the environment and continuing to promise water reform will be the new way of the future to save the environment.



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

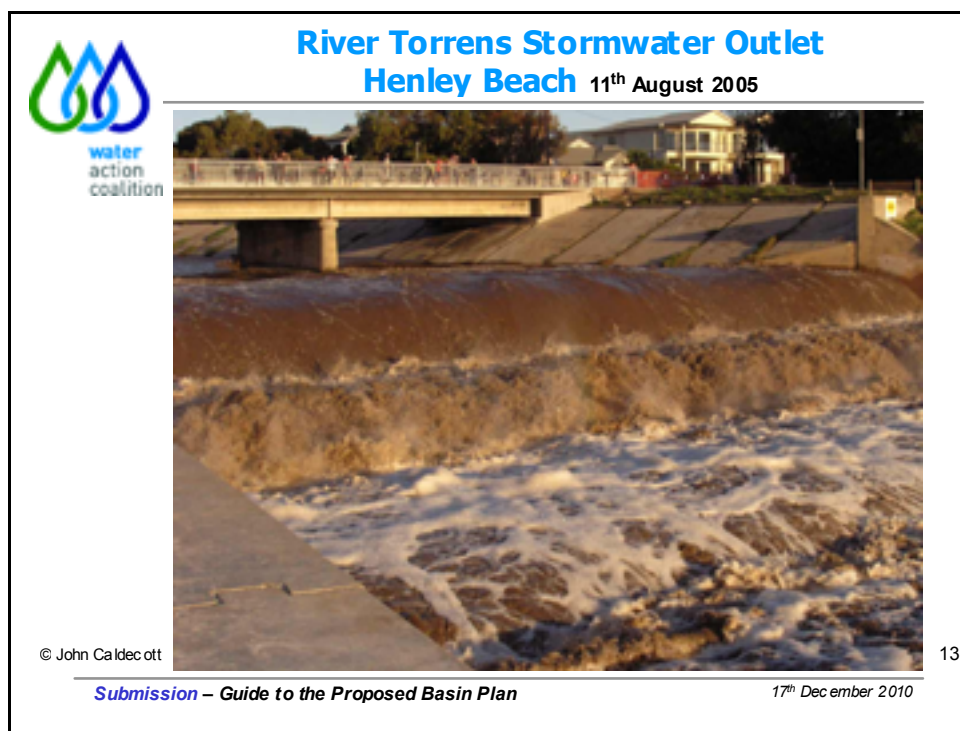
Water reform is about and has always been about creating a national water market for global financial markets. Irrigators are a convenient go between these eventualities and will lose control of their water allocations. Water should have been prioritised and conserved during this protracted drought for the common good of Australians.

For those who believe in a national solution be very wary, the Australian Constitution needs to be strengthened before we can trust the Federal Government with Australia's water, the principles of the "[Public Trust Doctrine](#)" needs to be imbedded in the Australian Constitution. There must be a referendum on whether Australians agree with water reform and allow the privatisation of one of the most critical natural resources we have, the surface and groundwater of the Murray-Darling River systems for the benefit of a few.

An excellent background to the issue of Water as a common good can be found in the Victorian Women's Trust publication "Our Water Mark – Australians making a difference in water reform" published in 2007

<http://www.watermark.org.au/>


### Stormwater Discharge River Torrens (Slide 13)



If the people of Adelaide were able to visual the devastation caused by the discharge of wastewater and stormwater into Adelaide Coastal Waters they would be horrified. Over 9,000 hectares of old-growth seagrass forests have disappeared and have been replaced by deserts open to erosion. The building of ill-conceived boat launching harbours and marinas, developments that have ignored the vital role of sand dunes along our coast, the use of inappropriate dredging practices that pays little attention to the coastal utility of our beaches, and contributes to water turbidity, illustrate many of the problems that exist in Adelaide Coastal Waters of Gulf St Vincent and elsewhere in the state.

Comprehensive stormwater and wastewater recycling is fundamentally required to save Adelaide Coastal Waters of Gulf St Vincent and not to wean Adelaide off the Murray. All land required to maximise stormwater recycling need to be quarantined from unsuitable development such as housing

### Clayton Blocking Dam (Slide 14)



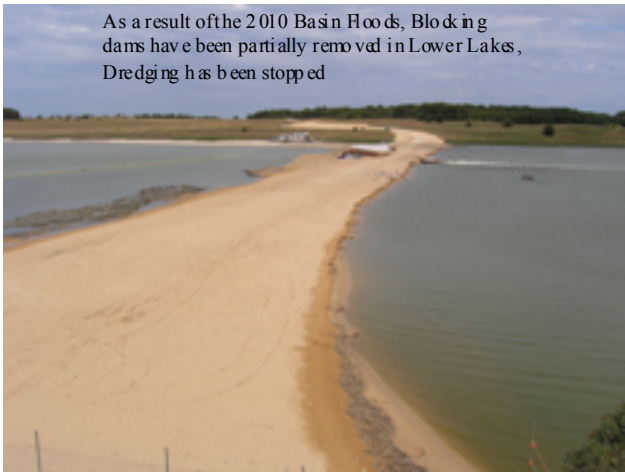
## Clayton Blocking Dam

1<sup>st</sup> Nov 2009

MDBA 13 Oct 10

**Lake Alexandrina**  
1,863 GL  
(100% full)

**Lake Albert**  
269 GL  
(100% full)



As a result of the 2010 Basin Floods, Blocking dams have been partially removed in Lower Lakes, Dredging has been stopped

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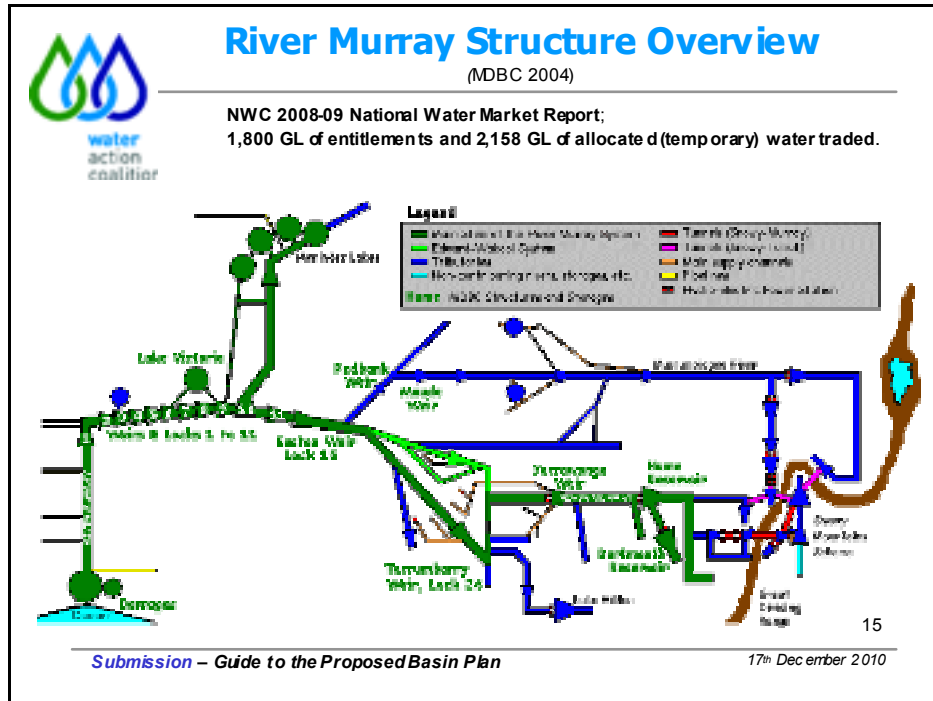
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17<sup>th</sup> December 2010

For the Murray to continue to flow to the Murray Mouth all South Australians need to demand South Australia's fair share. It is the biggest users and the eastern states that have dramatically increased consumption. This is where the changes need to be made under the new basin plan particularly when in flows result in low flows, drought and emergency situations. The basin plan needs to respect South Australia's long term prudence in capping its division to ensure the sustainability of the river system under its total minimum entitlement of 1850 GL flow into South Australia. The minimum entitlement is critical to South Australia, needs to be reviewed up and not down and must not be affected by water market trade out of the state.

For too long the new Basin Plan has been used as an excuse by the Federal Government for not taking action, and of course this is very convenient while it is going flat-out to establish the new national water market whilst it claims it is buying water for the environment. Nearly all of this water is low security water and is being purchased to give irrigators a soft landing when the new Basin Plan is issued, fool the public into thinking that Governments are saving the environment and critically helping to consummate the new water market and strengthen Commonwealth powers under the Constitution associated with interstate trade.

River Murray Structure Overview (Slide 15)



National Water Commission (NWC) 2008-09 National Water Market Report (No. 2):

1,800 GL of entitlements and 2,158 GL of temporary water traded

The dependency of Adelaide's water supply on the River Murray varies like the climate, and ranges from as little as 40 GL in a wet year to 200 GL in a drought. The average is 80 GL which represents just 1% of average diversions from the River Murray. Since 1996, average flows through the barrages have been 890 GL vs. an Authority claim in the Basin Guide of a long-term average of 5,100 GL.

One of the significant problems with the Murray-Darling Basin Agreement is that the water sharing arrangements have been largely unchanged since 1915 except for the changes made in 1989 and by COAG. South Australia's minimum entitlement of 1850 GL does not apply when either NSW or Victoria is predicted to hold a reserve of less than 1250 GL in MDBA storages at the end of May. When this happens, the Special Accounting provisions of the Murray-Darling Basin Agreement apply. During periods of water shortage, River Murray water resources, controlled by the MDBA, must be shared equally between the NSW, Victoria and South Australia.

During special accounting, South Australia is entitled to one third of the total MDBA resource either as a flow or as minimum reserve, limited to a maximum of its entitlement flow. Special accounting **excludes** inflows from state tributaries which are marked in "purple". South Australia's dilution flow to maintain water quality of 58 GL per month is assured under Special Accounting. Excluding flows from other tributaries is nonsense given South Australia's share of water diversion and history of conservation. All basin resources must be used to either prevent or help to mitigate any emergencies in the Basin.


I would like to suggest that Special Accounting was never designed to cope with what CSIRO have defined as a once in a 300 year drought in some areas of the Southern Basin. The Southern Basin is normally the most productive area for water in the whole of the MDB. It was also never designed to cope with the new water market which essentially is intended to allow free trade in water, and transform a water license into a commodity, a fixed property right which it is not. The High Court of Australia has over the last 12 months rejected a claim for compensation by irrigators in the MDB seeking compensation for significant reductions in allocations to underground water. Not

unsurprisingly Governments and the media have largely ignored the findings of the High Court and have continued their water privatisation agenda.

The South Australian government under the guise of "special drought arrangements" has allowed the basic principles of the "Special Accounting" provisions to go on and on, for far too long, they have let the State down. It is public policy of the NSW government to drive the system hard instead of conserving water and this is clearly evident from inflows, storage and diversion records despite the significant reduction of in-flows that started to take place in the late 90's. This has been compounded by the false hope of the new national water market which has allowed the transfer of water from the tributaries to those with the deepest pockets for use by private sector whilst those very same tributaries have been excluded from being shared with South Australia to ensure NSW and Victoria meet their obligation to supply SA's minimum entitlement of 1850 GL.

This is why there should have been a National State of Emergency in the MDB to address South Australia's minimum entitlement shortfall. At the present time there is no incentive for the NSW or Victorian governments to address South Australia's low flows except by market mechanisms which basically mean more money for these states as they have the most water and higher costs for all South Australians. South Australia is being made to purchase water on the new water market when it should have been supplied as part of the common good as provided for by section 100 of the Australian Constitution.

### Menindee Lakes Storages (Slide 16)



## Menindee Lakes

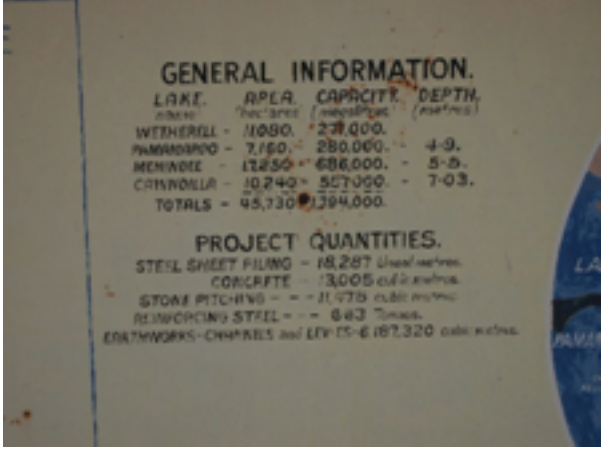
5<sup>th</sup> July 2010

**MDBA 13 October 10**

**Menindee Lakes**  
**1,866 GL**  
 (108% full)

**MDB**  
**15,310 GL**  
 (68% full)

**Excludes Private Storages**



LAKE	AREA (hectares)	CAPACITY (megalitres)	DEPTH (metres)
WETHERILL	11080	270,000	-
PARRAMUNGO	7160	280,000	4-9
MENINDEE	12250	686,000	5-9
CANNOLLA	10240	507,000	7-0.3
<b>TOTALS</b>	<b>40,730</b>	<b>1,394,000</b>	

PROJECT QUANTITIES	
STEEL SHEET PILING	18,287 linear metres
CONCRETE	13,005 cubic metres
STONE PITCHING	31,975 cubic metres
REINFORCING STEEL	643 tonnes
ERTHWORKS - CHMPRES and ERT DS-6	187,320 cubic metres

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Menindee Lakes does not fall under MDBA control until the volume exceeds 640 GL. It reverts back to NSW control once the level falls back to 480 GL. The MDBA only controls Dartmouth and Hume Dams, Lake Victoria and Menindee Lakes under certain conditions. The combined storage capacity of these dams when full is 9,304 GL, 5 times South Australia's minimum entitlement and nearly 52 times the water entitlement of the city of Adelaide and the towns of South Australia which amounts to 180 GL.

**Lake Wetherell Weir (Slide 17)**




### Lake Wetherell Weir 5<sup>th</sup> July 2010



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**Impact of Water Regulation & Storage on the Basin Rivers (Slide 18)**



### Impact of Water Regulation & Storage on the Basin Rivers MDBC 2006

Mean and median annual flows during natural and current conditions since 1892  
(source: Water Audit Study, Murray-Darling Basin Commission, Canberra)

	Flows under natural conditions, in GL/year		Current flows under regulated conditions, in GL/year	
	Mean	Median	Mean	Median
Darling	3,042	1,746	2,272	1,053
Murrumbidgee	2,794	2,527	1,184	644
Goulburn, Broken and Campaspe	3,668	3,510	1,774	1,211
Loddon	247	202	100	37
Namoi	872	570	402	177
Gwydir system*	60	11	120	55
Murray	13,754	11,883	4,915	2,539

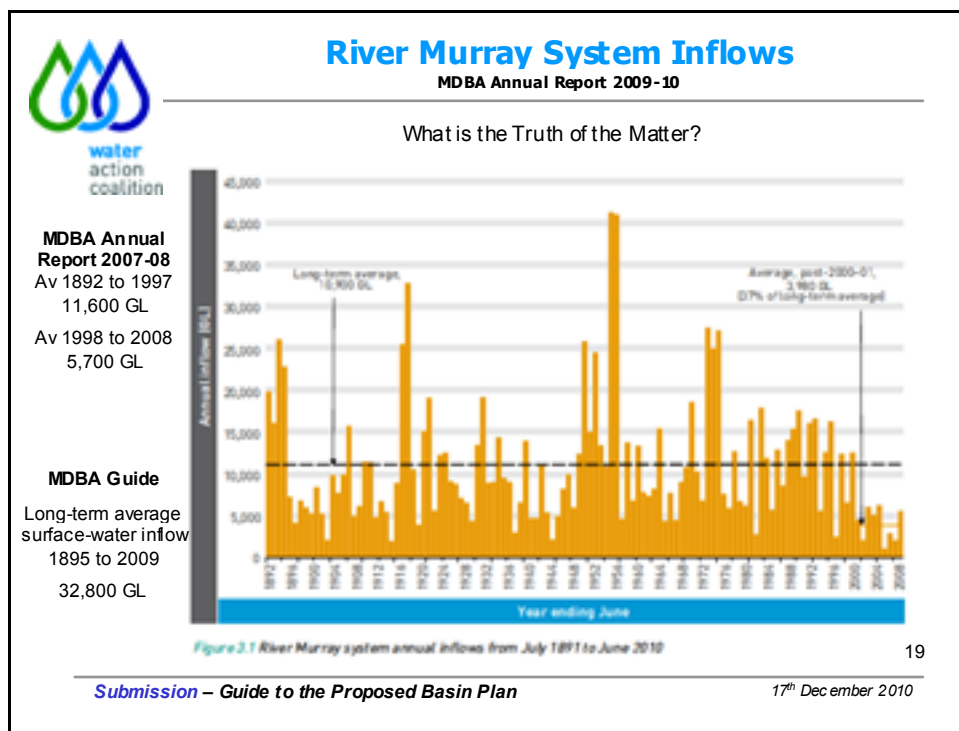
*Submission – Guide to the Proposed Basin Plan* 18<sup>th</sup> December 2010

This table illustrates the follow of the Water Act 2007 and the Basin Plan to be based on long-term average flows. All the significant Basin rivers such as the Murrumbidgee and the Murray have not only significantly decreased



flows but the difference between the mean (average of values or location parameter) and the median (middle value if they are lined up from lowest to highest) are significantly different to each other when compared to flow under natural conditions. Means should not be used to plan for sustainability given their low frequency of occurrence.

### River Murray System Inflows (Slide 19)



South Australia capped its diversions as a result of the 1967/68 flood. South Australia's minimum entitlement of 1850 GL has been unchanged since 1984. The over-allocation of irrigation licenses in the eastern states exacerbates the management problems as flows decrease. There will always be an over-allocation problem given the number of entitlements in existence.

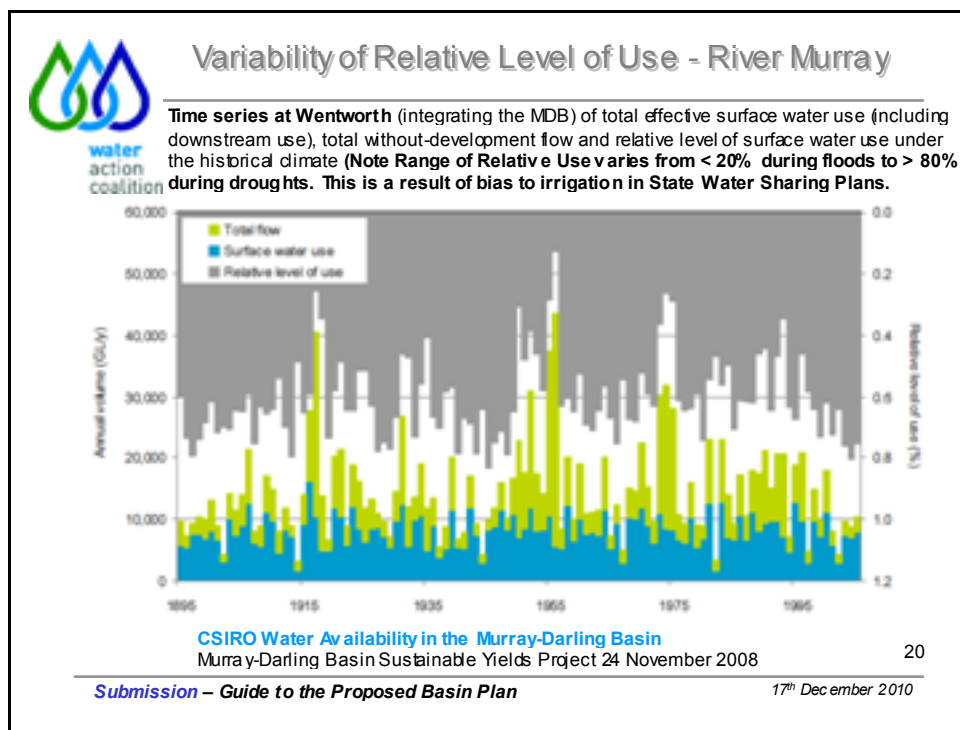
The operations management of the system needs to be designed around actual inflows, storage volumes and choices over what the water can be used for as water availability changes due to natural climate variability.

Given the wide variability in the Australian climate, the recommended approach will result in Australia being able to adapt to climate change whether it becomes wetter or dryer as diversions will be based on a share of inflows and storage volumes with an emphasis on conservation for future years particularly if inflows decline as they did in the Millennium Drought.

These are choices that only politicians can make on behalf of its residents as there are many aspects to consider such as food security and ensuring food production for Australians takes place as close to population centres if we are to become a leaner and less wasteful society in the face of climate-change.

There may be a role for markets in an irrigation district but not for widespread transfers within the basin.

Variability of Relative Level of Use – River Murray (Slide 20)



This is perhaps one of the most important slides produced by the CSIRO's Sustainability Yields project as it shows what the water sharing arrangements mean in practice and that a culture of malpractice of sharing water with the environment has been going on not only in the recent history but for a very long time. When there are very big floods, diversion can be very low but during droughts it can range up to 80% of inflows. It is this practice that has continued during this protracted drought that needs to be turned on its head. There needs to be a focus on conservation and an orderly shut-down of opportunity crops and a cap placed on permanent plantings that minimise the effect of the drought on the environment and the public use of water by residents.

The deep droughts as we have just experienced have been devastating for the environment and communities along the River Murray corridor of South Australia. This has been compounded by Governments who have used climate change to create political fear in the population and gamble on handing over scarce natural resources over to the market to control. The expedient method of political problem solving has been used of Problem-Reaction-Solution instead of the more methodical and transparent and methodical Problem-Public Inquiry-Design-Implement path of corrective action as was used for the [Victorian Bushfires Royal Commission](#).

The following selected quotes from a paper dated 15<sup>th</sup> February 2010 "[Economics of Water Reform in the Murray-Darling Basin](#)" by R. Quentin Grafton of the Centre for Water Economics, Environment and Policy of the ANU and submitted to the recent Productivity Commission Inquiry underscore the points above:

Page 1 "The 'Big Dry' in the southern part of the Basin, on-going since 2001, has placed many environment assets in a critical state. This is not only because of reduced in flows due to the drought, but *because of a proportionally much greater decline in water allocated by States to environmental flows relative to diversions by irrigators* (Connell and Grafton 2008)".

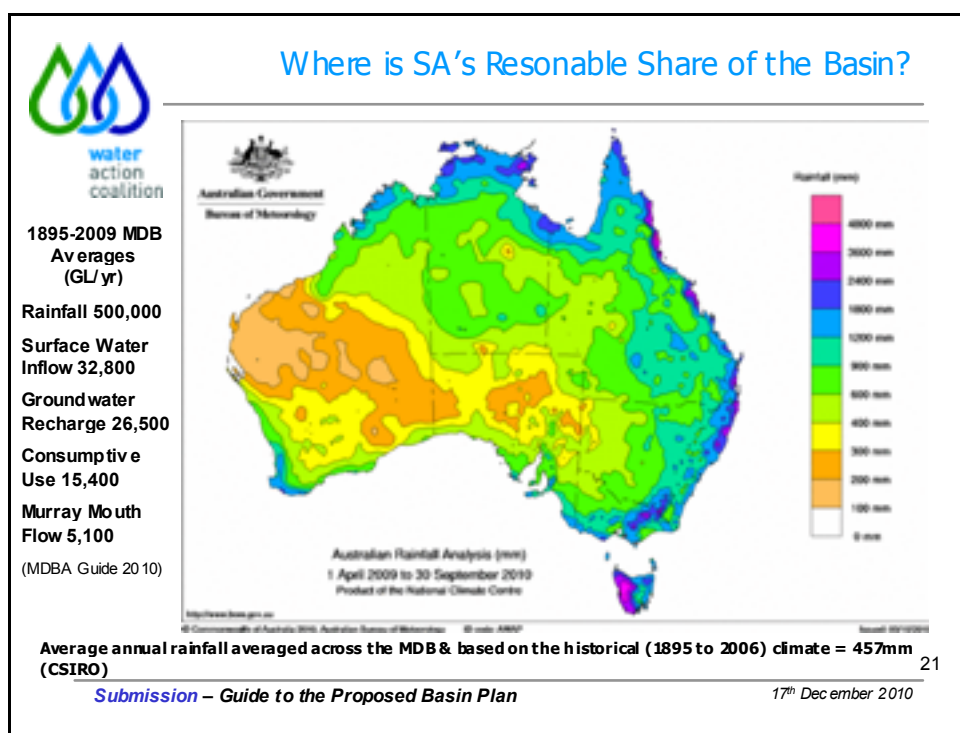
Page 3 "In addition to allocating water to entitlement holders, states also provide 'planned' or 'rules-based' water to the environment under water resource plans. This planned or rules based water is, however, not a fixed entitlement despite the Cap because of the operational rules of water management. *As a result, in many water sharing plans the proportion of rules-based water allocated to the environment declines with inflows to accommodate the needs of irrigators.*"

Page 3 "For the period 2002-2007, average annual net inflows in the Murray River totalled 3,986 GL — the lowest recorded for a five year period."

Page 4 "It has also resulted in the proportion of inflows diverted for agriculture in the River Murray to increase from less than 50 per cent in the 1980s and 1990s to 76 per cent over the period 2000-2008 (Grafton and Jiang 2010).

Page 4 "The impact of the drought on the environment has been greater in terms of reduced flows because of the way regulated water is allocated in many parts of the Basin. Under existing water sharing rules reductions in water diversions are typically much smaller than the actual declines in inflows. Rules-based or 'planned' water for the environment is, typically, treated as a residual after allocations to water diversions (Connell 2007a), and incurs a greater proportional reduction in volumes as inflows decline. *Suspension of water sharing plans that have specified volumes of water for the environment has exacerbated this problem* (Hamstead et al. 2008).

**Where is SA's Reasonable Share of the Basin? (Slide 21)**



**Is the Murray Below Lock 1 Ready for Floods?**

This is a record of the considerable rain fall that the Murray-Darling Basin has received in the 12 months to 30<sup>th</sup> September 2010. Since then it has stilled continued to rain into December 2010. Because the river below Lock 1 has been left to dry out for too long a 120 km of government and private levee banks have cracked, heaved and deflated. River banks have cracked and slumped into the river.

This outcome is a failure of water reform and is just but a small part of South Australia's Murray disaster during the Millennium drought.

(For graphic images of the destruction see the following presentation given in the United States dated 14<sup>th</sup> January 2010 [Environment Panel - Preserving our heritage](#) by Scott Ashby, Chief Executive, Dept. of Water, Land, and Biodiversity Conservation, Government of South Australia. This presentation was part of the [G'Day USA 2010: Australia-US Water Sustainability & Management Forum](#) (Los Angeles, 14 January 2010))



### **A dry argument: a future for dairy in the Murray Basin?**

Report of the Lower Murray Darling Basin Inquiry November 2009 by The Allen Consulting Group Part 1 (selected quote)

Authors: Roger Beale AO (Chair), Dr John Radcliffe AM, FTSE and Peter Ryan

"The Murray Swamps are facing an economic and ecological disaster if water allocations and river levels typical of the last ten years continue. The reduction in allocations and in particular the reduction of the Environment Land Management Allocation have led to the loss of twenty million dollars of public and private funds invested in irrigation efficiency and sustainability improvement. It has also put at risk hundreds of kilometres of the River Murray levies. Failure to gradually re-wet the Swamps is likely to lead to environmental decay because the land is virtually unusable for dryland farming. The degree of cracking and heaving and the underlying Blanchetown clays make farming it uneconomic without irrigation. Failure to re-wet the Swamps will also increase the risk to the levies. If the levies fail these areas could become another potential source of high levels of evaporation as river levels are restored."

[Report for Dairy Australia by Allen Consulting Group Part 1](#)

### **Report to Dairy Australia - Water Availability – Background Paper**

Final Report August 2009 by RMCG Consultants for Business, Community and Environment


#### **Selected Quote: Lower Lakes**

"The dairy industry on the Lower Lakes consists of the irrigated area between Narrung and Meningie and the dryland dairies south and east of Meningie. The district generally experiences hot dry summers and mild, wet winters. At present, 21 dairy farms choose to irrigate if possible, but are currently running as dryland operations. The Lower Lakes farms generally receive a reliable rainfall with an average rainfall of 466mm and a median of 456mm. For 2008, 394mm was received and the outlook for the remainder of 2009 is warmer and slightly drier than average. There is a 40 per cent chance of exceeding the median rainfall of 456mm, and an expectation the spring will be similar to 2008. The rainfall for this area has historically been consistent with the 10 per cent decile of 340mm. Rainfall occurs predominantly during the winter season, with 70 per cent falling from April to October. The "seasonal break" can vary from March to June, with the average being around the second week of May. Average annual evaporation ranges from 1500–1800mm.

The district is largely a coastal plain with overlying calcareous coastal dunes. These dunes trend north-west and south-east and are usually between 10-30 metres above sea level. Most sands are slightly acidic in the surface to neutral or slightly alkaline at depth. Because of the permeable nature of the mostly sandy soils, there is very little surface drainage throughout most of the area. Groundwater in the region is part of the groundwater system of the Murray–Darling Basin. From the high rainfall areas in Western Victoria, groundwater moves slowly in a westerly direction. Discharge from the system occurs to the Lakes, the Coorong or low lying salinised areas. Salinity levels of the watertable reach levels of up to 3000mg/l in the confined aquifers and are generally unsuitable for irrigating pasture or crops."

[Report for Dairy Australia by RMCG Consultants](#)

**Australian Constitution Section 100 – Nor abridge right to use water (Slide 22)**



**Australian Constitution Section 100**  
**Nor abridge right to use water**

*"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".*

"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"

(Page 63 Water Politics in the Murray-Darling Basin). Sir Isaac Isaacs Victorian Delegate at the Constitution Convention who went on to become a Commonwealth Attorney-General, Chief Justice of the High Court and Governor General of Australia.

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*Submission – Guide to the Proposed Basin Plan* *17<sup>th</sup> December 2010*

***Australian Constitution Section 100 - Nor abridge right to use water***

*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.*

Isaacs Isaacs who was the Victorian delegate at the Constitutional Convention in the early 1900s when section 100 was being discussed, and quoting from the book "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" (page 63 Water Politics in the Murray-Darling Basin). Sir Isaac Isaacs when on to become a Commonwealth Attorney-General, Chief Justice of the High Court and Governor General of Australia.

The High Court of Australia December 2009 – Judgement Against ICM Agriculture Pty Ltd (Slide 23)



The High Court of Australia December 2009  
Judgement Against ICM Agriculture Pty Ltd

ICM Agriculture Pty Ltd were seeking compensation for significant reductions in groundwater entitlements

Clause 55 - *"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]."*

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ICM Agriculture Pty Ltd v The Commonwealth [2009] HCA 51

High Court of Australia 9<sup>th</sup> December 2009

Clause 55 "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]."

<http://www.austlii.edu.au/au/cases/cth/HCA/2009/51.html>

Water Sharing River Murray – Some Facts (Slide 24)



## Water Sharing River Murray – Some Facts

Financial Year	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Flow to SA (GL) <i>(Av 2010 GL)</i>	4424	2275	1836	2068	1880	2311	1433	973	1170	1770
Difference vs. 1850 (GL) Min Entitlement	2574	425	-14	218	30	461	-417	-877	-680	-80
Basin Wide Diversions (GL) <i>(Basin Guide Technical)</i>	12,124	11,567	8,091	8,785	7,842	9,228	5,260	4,514	4,119	
Irrigation Allocations SA (%)	100	100	100	65-95	70-95	70-100	80-60	4-32	2-18	2-48 <i>(Jan10)</i>
Total Temporary Water Trades (GL) <i>Snowy Barrows</i>			239	179	104	273		1,231	1,883	2,301
Water Diverted for Cotton, Rice, Cereals, Pasture					5,587	6,179				
Average Annual Net Inflows River Murray		2002-2007 = 3,986 GL per year 1998-2008 = 5,700 GL per year								
Proportion of inflows diverted for agriculture		2002 - 2008 (River Murray) = <b>76% per year</b>								
Annual Flow East on (River Murray)	2000 – 2005 Average Annual Flow Approx <b>10,000 GL</b>									
Total Diversions GL (Basin Guide Technical)	From 1997 to 2009 total diversions approx <b>104,660 GL Mean 8,722 GL (SA Share approx 6%)</b>									

**SA Minimum Entitlement**

**Entitlement 1154 GL**

**+**

**Dilution Flow 696 GL**

**=**

**1850 GL**

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8 February 2011 **24**

This slide further underscores the need for a Royal Commission into the management of the Basin during the Millennium Drought and into Water Reform:

Why wasn't a State of Emergency called when South Australia need just **2,054 GL** (2% of the total diversions between 1997 and 2009) to address the deficits in the non-supply of its 1850 GL Minimum Entitlement?


Why was 795 GL allowed to be borrowed by Murrumbidgee irrigators from the Snowy given the continuing decline of inflows, the condition of MDB storages and the risks to the South Australia?

Diversions for cotton, rice, cereals and pasture amounted to 11,766 GL in 2004 to 2006; just 20% of this water reserved for South Australia would have prevented the crisis in South Australia. This crisis was also used to justify the building of the Adelaide Desalination Plant and the proposed BHP Desalination Plant in Upper Spencer Gulf

Did the eastern states deliberately maximise water diversions to help facilitate the interstate trade in water that was launched in 2007 to maximise water prices. This was at a time when MDBA Authorities storages and inflows were at historic lows representing an ideal time for the advocates of water reform to launch the new national market in water?

Given the commitment to the environment by water reform, the National Water Initiative and the Water Act 2007, why did the MDBA and the MDBC before it fail to demand action by Governments of the Basin to minimise damage to the environment, society and economy of South Australia when the ebb and flow of droughts and floods are a fact of life in Australian?

**South Australia's Right to Divert Water from the River Murray (724 GL) (Slide 25)**



### South Australia's Right to Divert Water from the River Murray (724 GL)

For Consumptive Purposes under the Murray Darling Basin Agreement as it appears  
in Schedule 1 of the Water Act 2007 (Commonwealth) (MDBNRM 2009)

Consumptive Purpose	Maximum Volume of Water (Gigalitres)
Water supply purposes delivered to Metropolitan Adelaide and associated country areas	650 GL (over any five year period)
Through the Swan Reach-Stockwell, Mannum-Adelaide and Murray Bridge-Onkaparinga pipeline systems.	130 GL average per year (18% of 724 GL)
Lower Murray Swamp irrigation	94.2 GL per year consisting of (13%): 72.0 GL for irrigation, stock & domestic 22.2GL for environmental land management
Country Town Water Supply Purposes	50 GL per year (7%)
Other Purposes (Mostly Irrigation)	449.9 GL (long term average annual diversion) (62%)

**Total Cap**  
**724 GL**  
39% of SA's  
1850 GL  
Minimum  
Entitlement


*Submission – Guide to the Proposed Basin Plan*

17<sup>th</sup> December 2010

To put South Australia's entitlement into perspective, earlier this year it was announced that Carrington Farms is being put up for sale. Carrington Farms is privately owned and comprises 16 dryland and irrigated properties in six groupings covering 57,370 hectares of land stretching for 80 kilometres along the Macintyre River which straddles the Queensland / NSW border. The properties are licensed to store 85 GL of water in 29 dams and hold water licenses for 160 GL, or 22% of South Australia's total allowable diversion for consumptive use. The enterprise is expected to fetch from \$300 to \$400 million.

According to Ticky Fullarton in the 2001 book "WaterShed" page 231, water is stored in huge 5-metre dams where water evaporation amounts to 2 metres per year. The infamous Cubbie Station has water licenses for 500 GL of water. "It brings in \$50 million a year (2001), but compare this with the entire South Australian agricultural product grown under a self-imposed cap of 700,000 megs per year, which brings in billions of dollars a year!".

**New Allocations July 2008 & Actual Average Demands for River Murray 2003 to 2008 (Slide 26)**



### New Allocations July 2008 and Actual Average Demands for River Murray 2003 to 2008


Allocations and Actual Average Demands for River Murray Prescribed Watercourse Water 2003/04 to 2007/08 (MDBNRM 2009) – Annual Average 573.8 GL vs. Cap 724 GL

Water Use Purpose	Allocations of Water endorsed on Licenses as at July 2008 (expressed as gigalitres that may be taken and used in a water-use year)	Actual Average Demand 2003/04 to 2007/08 (expressed as gigalitres taken and used in a water-use year) <sup>1</sup>
<b>Total Average Annual Demand 2003/08 by SA 573.8 GL</b> 79% of 724 GL Cap	Irrigation	381.8
	Industrial	2.8
	Stock and Domestic	5.1
	Recreational & Environmental	16.8
<b>Total Average Annual Demand 2003/08 by SA Towns &amp; Metro 128.3 GL</b> 18% of 724 GL Cap	Metropolitan Water Supplies	97.0
	Country Town Water Supplies	31.3
	Wetlands	13.3
	Environmental Land Management	25.7

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For decades South Australia has used the least amount of water while our irrigators have been the most productive and efficient users of water. Of course all this has been forgotten now that water is worth even more as a commodity that what it is to grow crops particularly in the eastern states. South Australia controls only 6% of water entitlements in the regulated systems of the MDB because the government of the day capped water licenses in 1967/68.

**Time Line of Some Key Decisions / Events (Slide 27)**



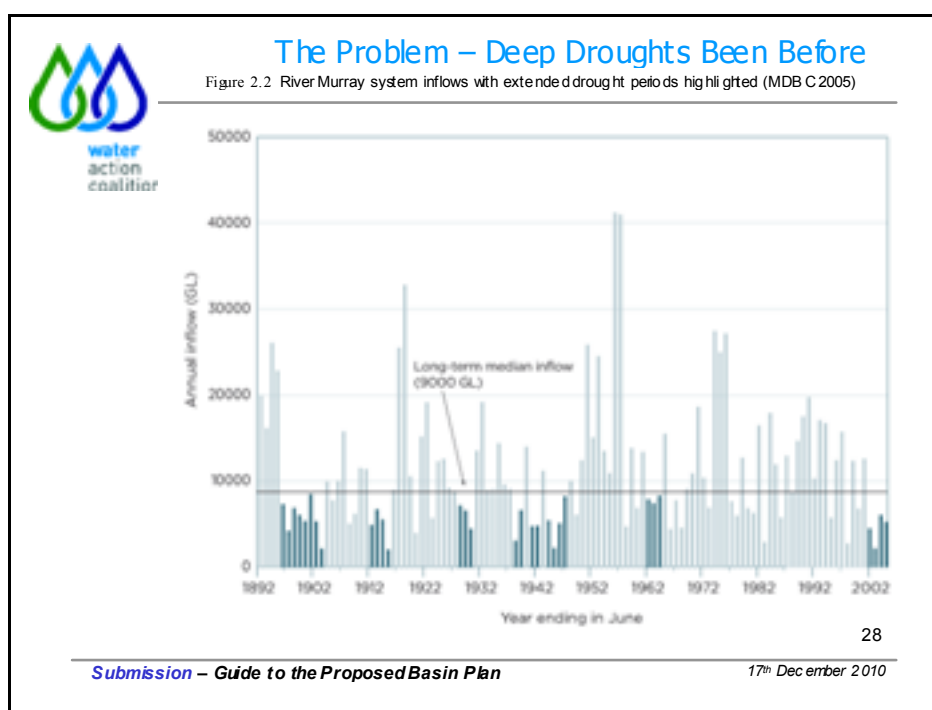
### Time Line of Some Key Decisions/Events

- > 11 December 2001 – **MDBC** Considers Options for Water Savings from the Lower Lakes
- > 2 September 2004 - **SA NRM Act 2004**
- > 16 March 2006 SA's **Daily Cross-Border flow fell below 5,068 ML** – Daily average required to achieve 1850 GL
- > June 2006 Department of the Prime Minister and Cabinet **National Water Initiative Water Trading Study Final Report** (304 pages)
- > 3 March 2008 – **Water Act 2007 Commenced**
- > 17 April 2008- **50 GL Adelaide Desalination Plant declared a Major Project**
- > 1 July 2008 - **805 GL of water authorised to be taken as allocations from the River Murray Prescribed Watercourse due to water trading – an increase of 76 GL for irrigation, cap up from 724 GL.**
- > **July 2008 CSIRO Sustainability Yields Project** – Murray Region Report
- > December 2008 – **National Water Commission's 1<sup>st</sup> Water Market Report**
- > 26 February 2009 – **Cap act y of Adelaide Desalination Plant increased to 100 GL**
- > 23 April 2009- **SA Irrigation Act** (Comply with Water Act 2007)

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This is but a snap shot of some of the key events that have taken place to establish the new National Water Market. The point I want to get across is that **Augusto Pinochet used** a dictatorship to openly privatise water in Chile in 1980 by unilaterally changing Chile's constitution. In Australia it has been covertly done by changing legislation in small pieces all over the place over a long period of time and use legislative instruments to avoid parliamentary scrutiny. So strong has the consensus between politicians, the media and so called environmental groups been that hardly ever has the word "water privatisation" or "Murray-Darling privatisation" been used. I don't recall the national newspapers of this country ever coming forward, whenever it published stories about COAG's big announcements on water reform, to suggest to politicians that by the way, do you realise you are privatising the natural water resources of this country. To do so you will need to gain the approval of the Australian people before you get too far down the track by holding a referendum. This is the biggest scandal in Australia's history.

**The Problem – Deep Droughts Been Before? (Slide 28)**



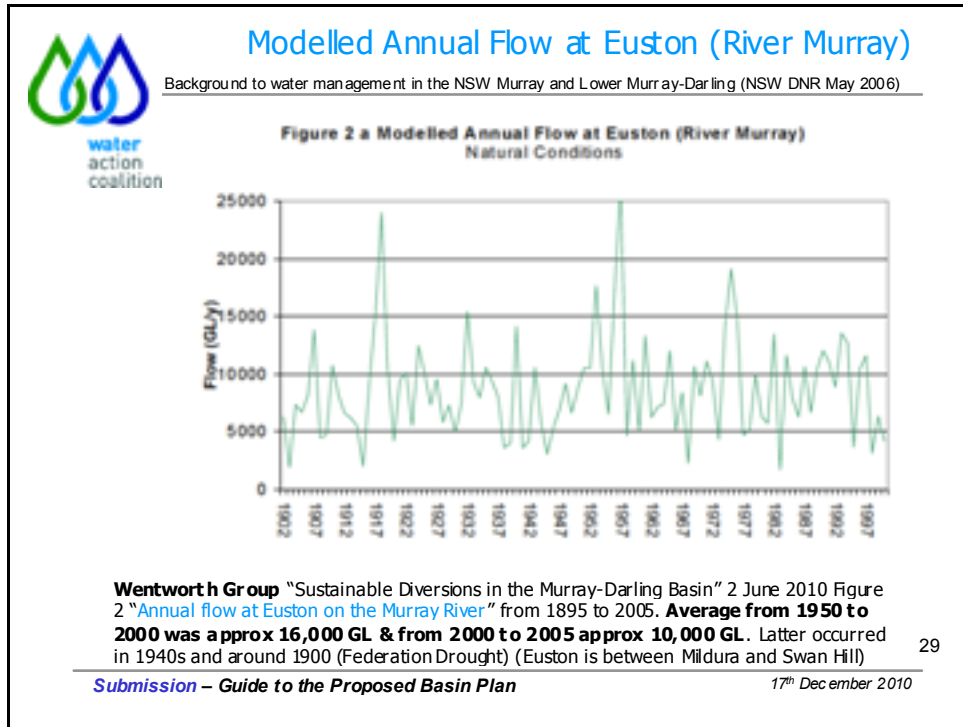
As you can see there have been deep protracted droughts before. The Federation drought was just as severe in the early 1900s and again in the 1940s. So why are there problems supplying SA's water supply, meager as it is? Why did all Murray-Darling Basin Agreement and the COAG water reforms fail South Australia? More matters for a Royal Commission to address.

**Some evidence:** page 14 "Background to water management in the NSW Murray and Lower Murray-Darling river systems" May 2006 (NSW Government Department of Natural Resources)

"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."

This is great for NSW irrigators but not great in terms of meeting its shared responsibility with Victoria to guarantee South Australia's minimum entitlement. This is evidence that focussing on maximising the market for water and the market for agriculture products precipitated South Australia's disaster.

**Modelled Annual Flow at Euston on River Murray? (Slide 29)**




The Wentworth Group published their "Sustainable Diversions in the Murray-Darling Basin" on the 2<sup>nd</sup> July - Figure 2 "Annual flow at Euston on the Murray River" from 1895 to 2005.

Average from 1950 to 2000 was approx 16,000 GL & from 2000 to 2005 approx 10,000 GL. The latter occurred in 1940s and around 1900 (Federation Drought) (Euston is between Mildura and Swan Hill).

South Australians are entitled to ask where our reasonable share under section 100 of the Australian Constitution is. The River Murray should not have to pay for a fair share of water which is the common property of Australians and is supposed to being held as a Public Trust.



**Irrigation Allocation History – SA Murray vs. Victorian Murray & Goulburn (Slide 30)**



### Irrigation Allocation History

#### SA Murray vs. Victorian Murray & Goulburn

Irrigation Season	Water allocation as a % of water right		
	Murray System (South Australia)	Murray System (Victoria)	Goulburn System
2000/2001	100	200	100
2001/2002	100	200	100
2002/2003	100	129	57
2003/2004	65 to 95	100	100
2004/2005	70 to 95	100	100
2005/2006	70 to 100	144	100
2006/2007	80 to 60	95	29
2007/2008	4 to 32	43	57
2008/2009	2 to 18	35	33
2009/2010	2 to 48 (Jan-10)	100	71

**SA Murray Irrigator Allocation 67%**  
**Private Carryover Water Increased from 170 to 228 GL**  
 (ABC Riverland 1 October 2010)

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The table illustrates the allocations on the two main irrigation systems over the past 10 years in Victoria, including the South Australian section of the River Murray.

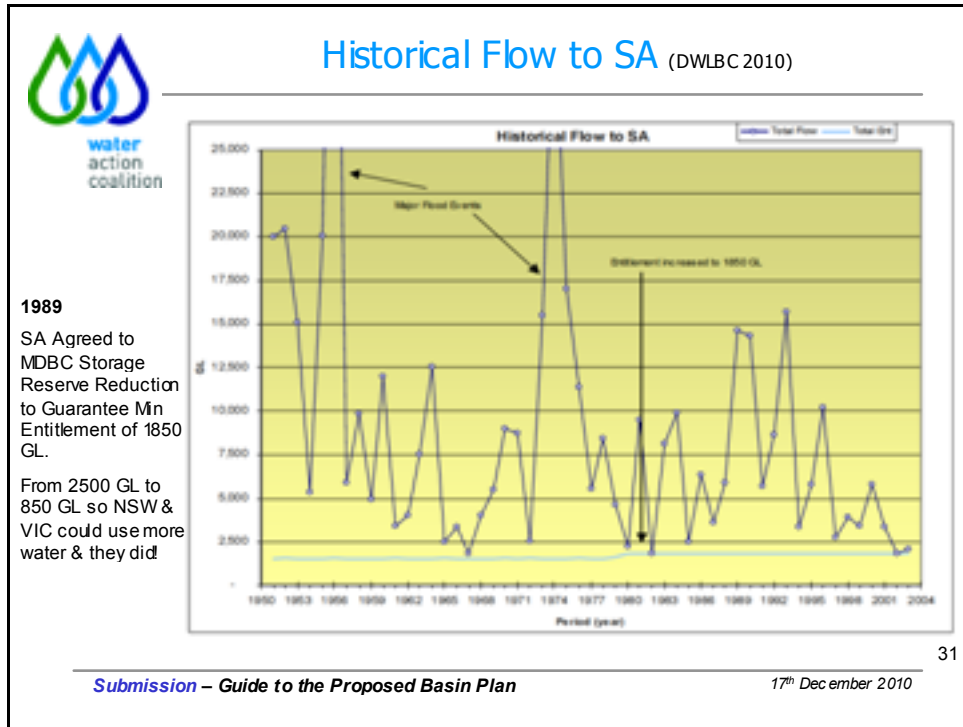
Note (Victorian Allocations): The table expresses water allocations as a percentage of water right. Due to changes in water policy future allocations will be expressed as allocations against HRWS and allocations against LRWS." (High Reliability Water Shares (HRWS) and Low Reliability Water Shares (LRWS)).

<http://www.murraydairy.com.au/water-victoria.html> (1991 to 2007)

<http://www.g-mwater.com.au/news/allocation-announcements/archive.asp> (2008 to 2010)

The practice of over-allocations above a viable water entitlement need to be outlawed and the excess reserved for future years. The practice of over-allocating beyond a water entitlement helps to explain why the storage potential of the MDB has never looked close to being realised. This is another area that needs urgent investigation by a Royal Commission.

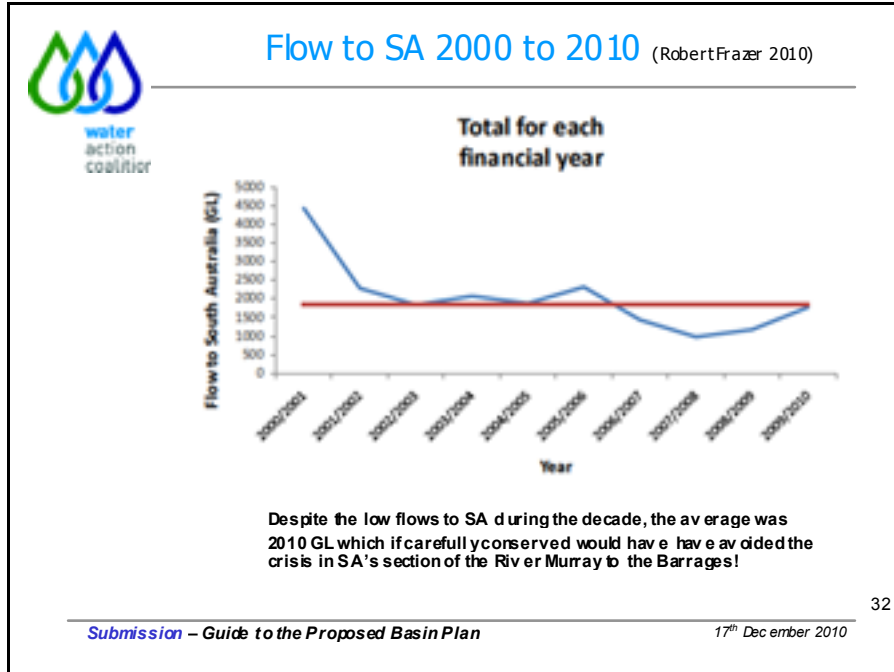
**Historical Flow to SA (Slide 31)**



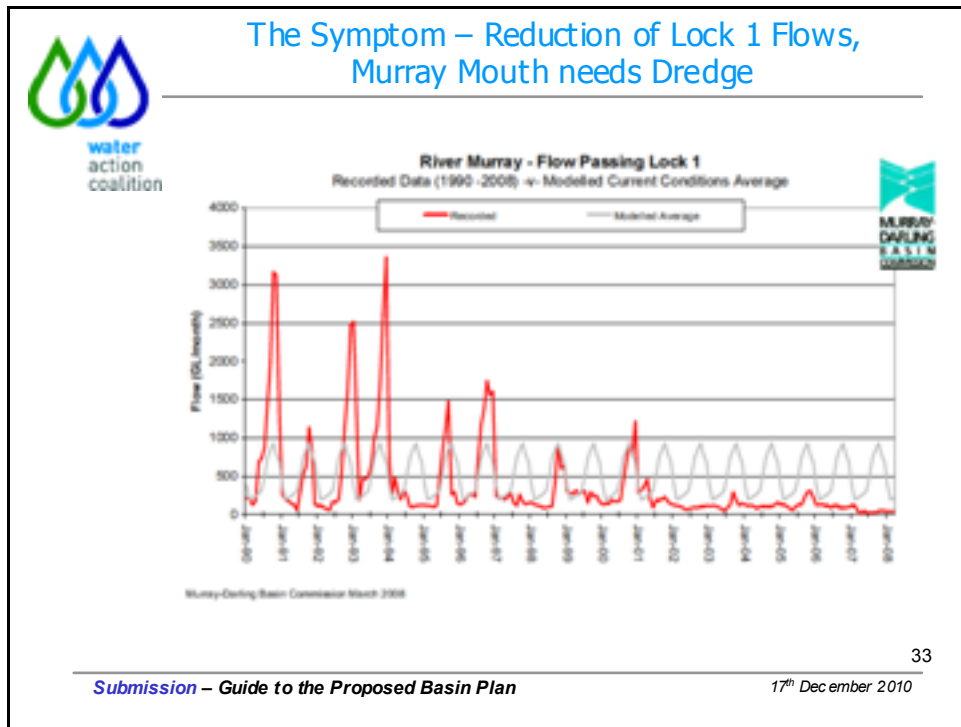
This graph underscores the need for a National State of Emergency in the MDB to immediately be called whenever South Australia's minimum flow entitlement of 1850 GL is under threat. [Fair Water Use \(Australia\)](#) has published draft terms of reference for both a State of Emergency and a complementary Royal Commission on their website. The pre-1989 reserve of 2,500 GL reserve to guarantee South Australia's minimum entitlement also needs to be restored as a matter of urgency.

A Royal Commission into the mismanagement of South Australia's entitlements and environmental heritage of the River Murray to the sea, Gulf St Vincent and Spencer Gulf [Draft Terms of Reference](#) for this inquiry have been produced by WAC and used to lobby all South Australian politicians prior to the vote during the last sitting day of the last Parliament in 2009 by the South Australian Legislative Council.

Flow to SA 2000 to 2010 (Slide 32)



The Problem – Reduction of Lock 1 Flows (Slide 33)



## Market Mechanisms for Recovering Water in the Murray-Darling Basin

Productivity Commission Research Report 31 March 2010

<http://www.pc.gov.au/projects/study/water-recovery/>

See page 31 of the Productivity Commission Report "**Market Mechanisms for Recovering Water in the Murray-Darling Basin**" section "**Variation of environmental water**" and see graph:

"The National Water Commission (NWC 2009b) points out that current water plans do not adequately address water sharing arrangements in very dry conditions. The situation has been exacerbated by recent state government suspensions of water plans, and by borrowing from environmental allocations, so that consumptive needs can be met (NWC 2009b). Furthermore, the volume of water for the environment also declined following the introduction of the Cap, due to an increase in groundwater extraction and floodplain harvesting (MDBC 2000). To the extent that groundwater is connected to surface water, and that floodplain harvesting reduces flow in waterways, growth in the use of these forms of water decreases the amount available for the environment."

This was also pointed out, but not as well in CSIRO's "Sustainability Yields" project.

## Market Mechanisms for Recovering Water in the Murray-Darling Basin

Productivity Commission - Submissions

<http://www.pc.gov.au/projects/study/water-recovery/submissions>

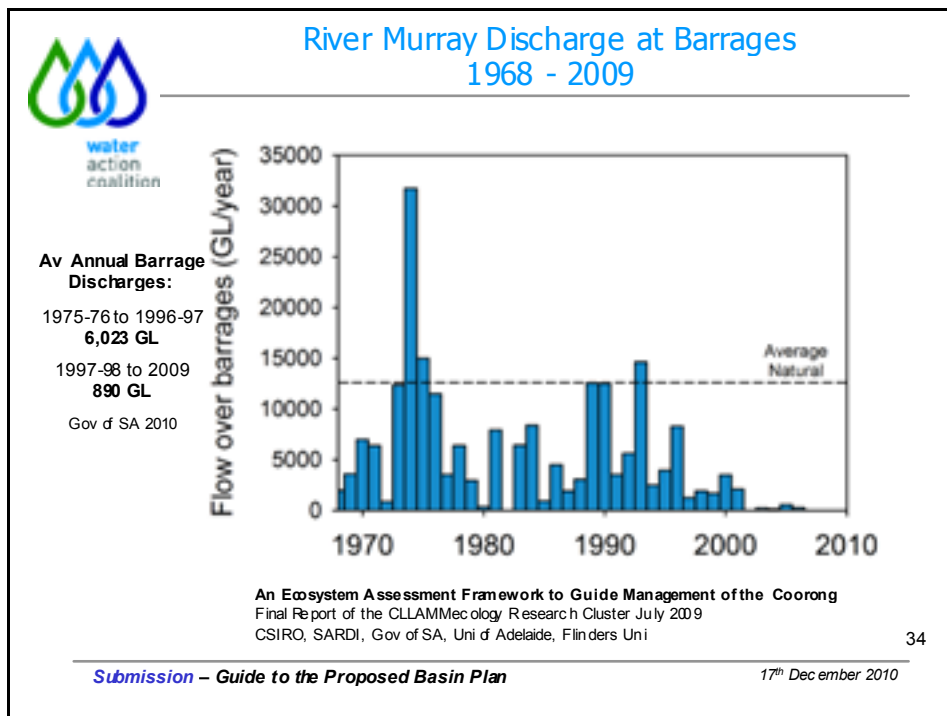
*Extract from DR81 page 3 referenced in the above section – see graph and DR82 has lots of interesting graphs*

### *"The Big Dry*

The past decade has witnessed a sharp drying trend in the southern part of the Basin that provides, on average, about 80 per cent of the river flows of the MDB. The Big Dry has been caused by both reduced rainfall and also higher temperatures that have increased evapo-transpiration. As a result, the proportion of agricultural land declared as being under 'exceptional circumstances', a proxy measure of the impact of the drought, has increased from about 5% in 2000 to about 70% in 2009 (Australian Bureau of Statistics, Australian Bureau of Agricultural and Resource Economics and Bureau of Rural Sciences 2009, p. 92). For the period 2002-2007, average annual net inflows in the Murray River totalled 3,986 GL — the lowest recorded for a five year period. This is much less than in any other recorded drought. By comparison, net inflows averaged 5,501 GL over the period 1940-45 and 5,707 GL over the period 1897-1902 during the Federation Drought (see Figure 1). This has translated into much reduced water diversions by irrigated farmers of between 30 and 50 per cent (see Figure 2 for the Murray River) and virtually no flows to the River Murray Mouth (see Figure 3).

It has also resulted in the proportion of inflows diverted for agriculture in the River Murray to increase from less than 50 per cent in the 1980s and 1990s to 76 per cent over the period 2000-2008 (Grafton and Jiang 2010). The impact of the drought on the environment has been greater in terms of reduced flows because of the way regulated water is allocated in many parts of the Basin. Under existing water sharing rules reductions in water diversions are typically much smaller than the actual declines in inflows. 'Rules-based' or 'planned' water for the environment is, typically, treated as a residual after allocations to water diversions (Connell 2007a), and incurs a greater proportional reduction in volumes as inflows decline. Suspension of water sharing plans that have specified volumes of water for the environment has exacerbated this problem (Hamstead et al. 2008)."

River Murray Discharge at Barrages 1968 - 2009 (Slide 34)

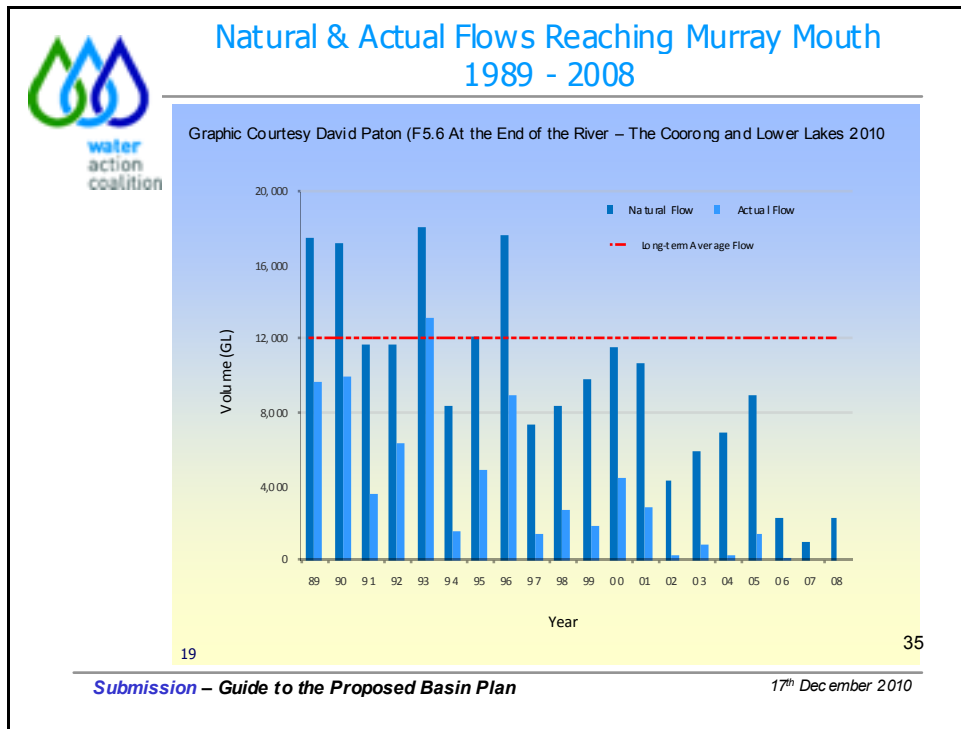


“ At the MDB scale therefore, the largest share of the hydrological impact of climate change **under current water sharing arrangements** would occur at the end of the Murray River – that is, inflows to the Lower Lakes and the Coorong.”


(CSIRO Water Availability in the Murray – Report p 42, 14 July 2008)

The above bar graph of discharges through the Barrages vividly demonstrates the impact of current water sharing arrangements which have not delivered the flows to the Murray Mouth that the Authority claims in the Basin Guide as a long-term average of 5,100 GL.

**Natural & Actual Flows Reaching Murray Mouth 1989 - 2009 (Slide 35)**



**Future Predictions for acid sulfate soils and lake acidity (Slide 25)**



**Future Predictions for acid sulfate soils and lake acidity (Lower Lakes)**

"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."**

Murray-Darling Basin Natural Resource Management Board  
developed for the Murray-Darling Basin Ministerial Council

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

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There is an excellent report prepared by the Murray-Darling Basin Natural Resource Management Board developed for the Murray-Darling Basin Ministerial Council "[Lake Alexandrina and Albert Ecological Condition Progress Report](#)" dated April 2008 that everybody should read which underpins the criticality of a minimum flow over the border to South Australia of 1850 GL.


*Future predictions for acid sulfate soils and lake acidity (page 15)*

"South Australia has a current minimum inflow in 2008-09 of 900 GL. Modeling 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."

*Recovery (page 17)*

"There is still hope for recovery if water is made available to manage the Lakes. Significant improvement in the health of the Lakes ecosystems will only begin once the lake levels reach +0.3m AHD. From current levels, this would require in excess of 600 GL of water. This would still not be sufficient to achieve reconnection with the Coorong, which would occur at around +0.65m AHD and require approximately 800 GL. Once Lake levels reach +0.65 m AHD, all fishways are operational. Regular flushing and fishway operation would begin to restore connectivity between the Mouth, Coorong and Lakes enabling fish to migrate and complete their life cycles."

Climate Change Impact (Slide 37)



### Climate Change Impact

(CSIRO Sustainability Yields Project – Selected Quotes)

- **Water Availability in the Murray – Presentation** 4 July 2008
  - "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" (assumes full implementation of SA allocation practices)
  - The south of the MDB was in severe drought from 1997 to 2006 – in places a **1 in 300 year event without climate change**. The drought has continued in 2007 and 2008
- **Water Availability in the MDB – Presentation** 25<sup>th</sup> November 2008
  - Under the **median 2030 climate** water availability would fall by 11% – 9% in the north and 13% in the south
  - The range of possible climate outcomes is wide due to the uncertainty inherent in current climate models
  - Under current arrangements 11% less water **would only reduce average use by 4%**;
  - **the majority of the impact would be borne by the environment**

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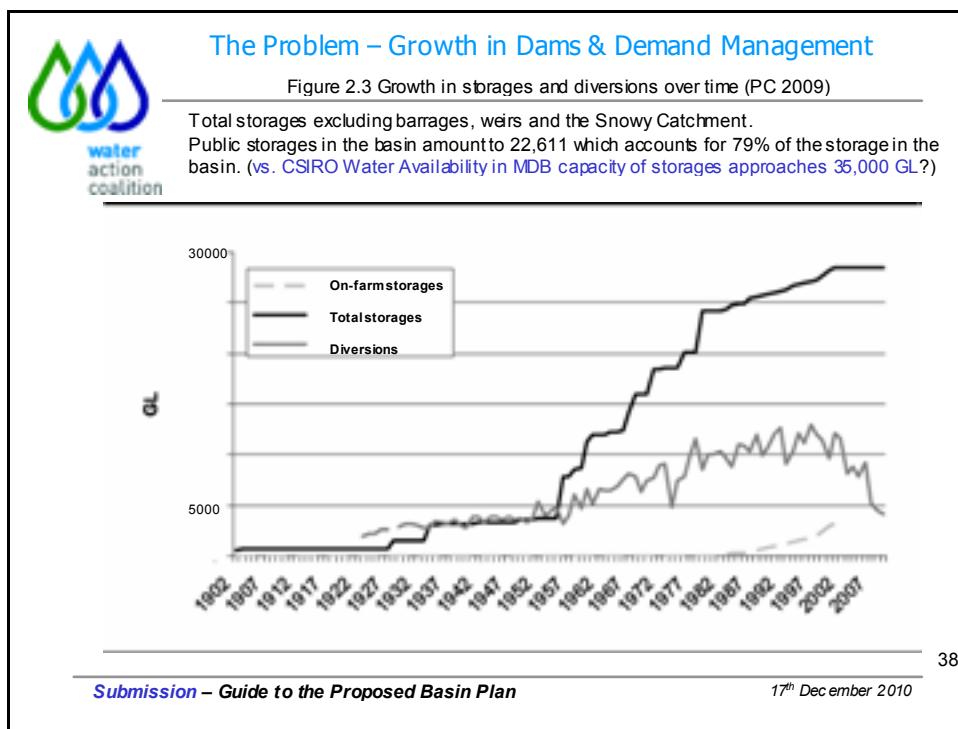
These are the conclusions from CSIRO's largest research and most politically scrutinised project ever and again, these conclusions do not justify the building of Desalination Plants in our Gulfs or the disconnecting of the Lower Lakes from the River Murray. Again grounds for a Royal Commission. The following table is from the CSIRO Sustainability Yields Project final report "Water Availability in the Murray-Darling Basin" in October 2008. There are significant differences between the long-term averages used in the Basin Guide in Chapter 5 and CSIRO's report particularly in terms of inflows (32,800 GL vs. 28,711 GL), surface water use (10,075 GL vs. 15,400 GL) and environmental flows (14,000 GL vs. 9,868 GL (losses)). The Basin Guide does not disclose channel and pipe loss, evaporation from reservoirs and lakes.



Average annual surface water balance for the MDB

	Without development, historical climate	Current development, historical climate	Current development, median 2030 climate	Future development, median 2030 climate
GL/y				
<b>Inflows</b>				
Inflows	28,630	28,711	25,846	25,602
Transfers into basin	1,010	1,068	1,041	1,041
Irrigation and urban returns	0	163	155	154
<b>Sub-total</b>	<b>29,640</b>	<b>29,942</b>	<b>27,041</b>	<b>26,797</b>
<b>Surface water use</b>				
Surface water diversions	0	10,075	9,673	9,575
Channel and pipe loss	0	1,233	1,183	1,181
Net streamflow loss induced by groundwater use	0	181	229	352
Evaporation from reservoirs and lakes	4,448	3,851	3,473	3,428
Losses	12,959	9,868	8,908	8,779
<b>Sub-total</b>	<b>17,407</b>	<b>25,209</b>	<b>23,467</b>	<b>23,315</b>
<b>Outflows</b>				
Outflows	12,233	4,733	3,575	3,482
<b>Efficiency</b>				
Efficiency (outflow/net inflow)	41%	16%	13%	13%

The Problem – Growth in Dams & Demand Management (Slide 38)

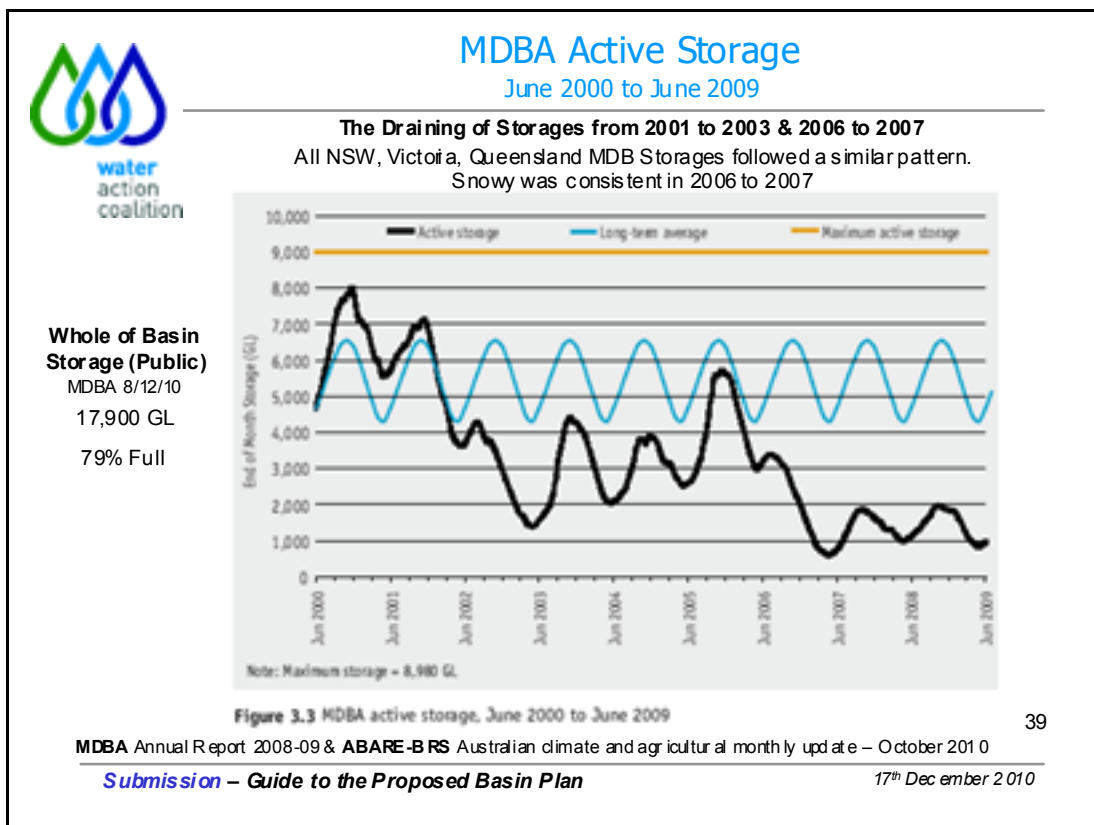


There are 65 major storages and 600,000 private dams in the MDB capable of diverting one and half times the average flow of every river in the basin and 25,560 km of irrigation supply and drainage channels. It is time a full audit of all water storages is conducted that includes all forms of water storage including flood plain harvesting, private dams, irrigation supply, drainage channels and pipe systems.

Dams were built together with weirs, locks and barrages to drought proof or climate proof the Murray-Darling Basin and protect consumption from the variation in climate. The system goes pear-shape when inflows, storage and demand are not effectively managed.

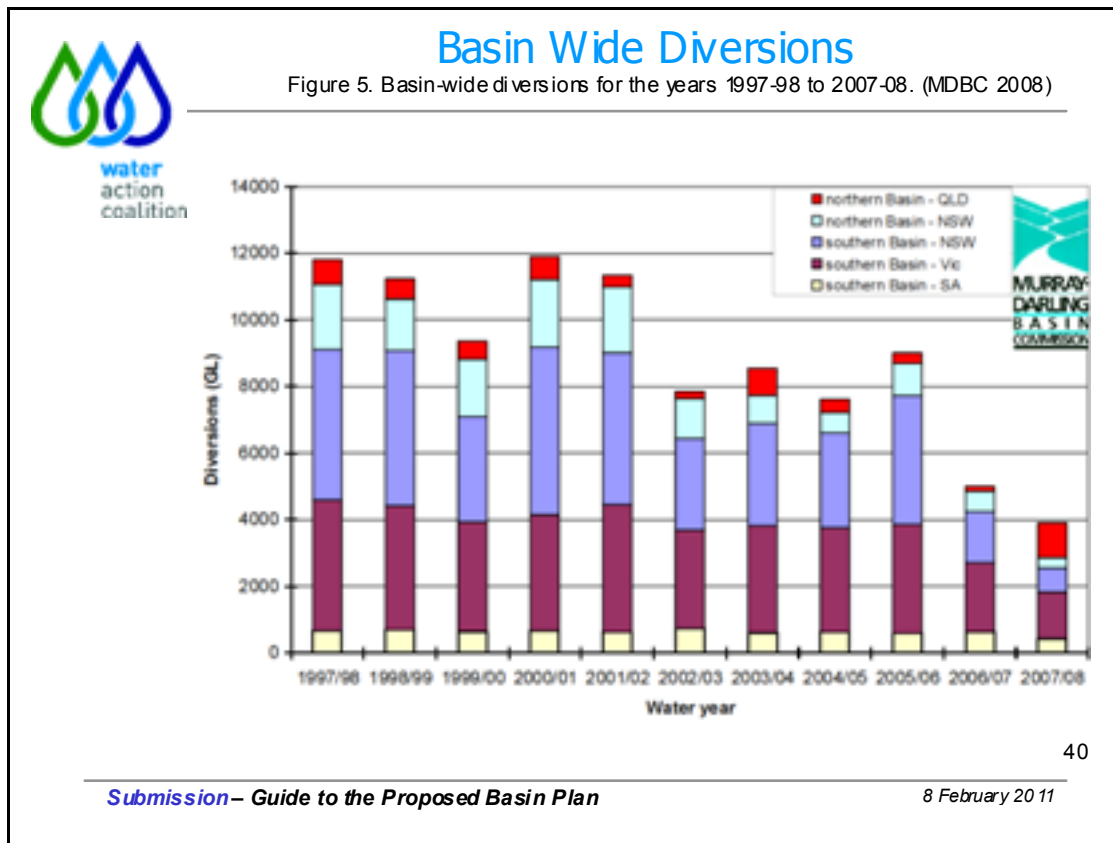
A significant proportion of all water (mostly Northern Basin and South-Eastern Mt Lofty Ranges) is held by private storages. However, as you will notice the system is still capable of diverting around 5,303 GL (2006/07) - 10 years into a protracted drought. These are in fact record figures given the severity of the drought over the 111 years of records of the MDB.

**MDBA Active Storage June 2000 to June 2009 (Slide 39)**



Between 2000 and June 2003, and then again in 2006 to June 2007, significant draining of the MDB storages took place which helped to contribute to the crisis that occurred in South Australia as use of storage capacity was used to maximise agricultural production. This was an unforgivable practice given the known trends of inflows that began decreasing in the late 70's. The Snowy storage also followed the pattern from 2006 to June 2007. 2007 also happened to be the year that the national water market was launched with the passing of the 2007 Water


**Basin Wide Diversions (Slide 40)**



As you can see when the Lower Lakes began to suffer, basin-wide diversion continued to treat each year one at time as if the good times would return the following year. The reduction of inflows that began in 1997 were ignored, except in South Australia when the death by a thousand cuts to the river, ecology and communities that were abandoned as the drought deepened to implement a national water market.

A Royal Commission is needed to determine whether this was the result of reckless mismanagement given the emergence of the new water market in 2007 and to determine the changes that need to be made to the governance of the MDB so that mistakes of the past are never repeated again in the future.

**Agricultural Water Use 2004-2005 (Slide 41)**



**Agriculture Water Use 2004-2006** (PC 2009)

	2004-05		2005-06	
	Consumption	Share of agricultural water use	Consumption	Share of agricultural water use
	GL	%	GL	%
<b>Irrigated Pasture</b>	2 371	33	2 571	34
<b>Rice</b>	619	9	1 252	16
<b>Cereals (excl. Rice)</b>	844	12	782	10
<b>Cotton</b>	1 753	24	1 574	20
<b>Grapes</b>	510	7	515	7
<b>Fruit (excl. Grapes)</b>	<b>399</b>	<b>6</b>	<b>413</b>	<b>5</b>
<b>Vegetables</b>	<b>152</b>	<b>2</b>	<b>152</b>	<b>2</b>
Other Agriculture	546	8	461	6
<b>Total</b>	<b>7 204</b>	<b>100</b>	<b>7 720</b>	<b>100</b>

Source: ABS (2008b)


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Since 1997 MDB average inflows have been 5,700 GL/year vs. previous average inflows of 11,600 GL/year. MDB diversions for consumptive use during this period of time have averaged 8,893 GL/year. One of the questions that a Royal Commission needs to answer is; have the storages been allowed to run down deliberately to help facilitate the establishment of the new national water market in the Murray-Darling Basin? The total volume of water diverted since 1997 is over 100,000 GL and South Australia's share of this water was a meagre 6%.

You need to be aware that most water used for irrigation in the MDB is used for exports and is called virtual water. Water should have been prioritised to ensure South Australia received its minimum entitlement of 1850 GL to ensure sustainability of its environment, economy, communities and urban use. Any diversions need to be prioritised to ensure the needs of domestic urban water supply and food production are met before water is used for exports.

**MDBA Irrigated Farms Performance 2005 - 06 (Slide 42)**



**MDBA Irrigated Farms Performance 2005 – 06**  
MDBA Basin Plan: BP02 Sept 2009

Industry	No Businesses	$\frac{GVIAP}{GVAP}$ %	Water Applied ML	GVIAP \$m	$\frac{GVIAP}{kilolitre}$
Cereals	1,714	5	623,678	180	0.29
Hay	4,159	23	648,762	161	0.25
Cotton	638	93	1,574,435	798	0.51
Rice	1,055	100	1,251,881	274	0.22
Other broadacre crops	490	np	117,654	np	np
Fruit & Nuts	3,116	91	412,653	1,011	2.46
Grapes	4,845	93	514,819	721	1.40
Vegetables	1,062	92	152,002	555	3.65
Nurseries, cut flowers & turf	426	66	12,166	150	12.31
Diary	3,170	89	1,028,430	901	0.88
Meat cattle	6,181	21	554,402	593	1.07
Sheep & other livestock	3,422	8	439,364	143	0.83
<b>Totals</b>	<b>18,634</b>	<b>37</b>	<b>7,369,806</b>	<b>5,522</b>	<b>0.75</b>


**GVIAP** – Gross Value of Irrigated Agriculture Production  
**GVAP** – Gross Value of Agriculture Production

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The theory of water markets is that water goes to the most productive user. It is insightful that the most productive users of water use the least when compared to those that use the most. No agriculture industry is as productive as an Australian Household yet households are paying prices of well over a one dollar per kilolitre for their meager share of water.

**Household Water Consumption (Slide 43)**



**Household Water Consumption 2004-05**


	MDB Water Consumption GL	$\frac{Kilolitre}{Household}$	Median Household Income 2005-06 (\$)	$\frac{Income(\$)}{kilolitre}$
New South Wales	68	227	65,468	288
Victoria	52	233	56,576	243
Queensland	26	314	59,228	189
South Australia	11	253	49,608	196
Australian Capital Territory	31	252	75,140	298
Australia	2108	268	59,228	221

MDBA Basin Plan: BP02 Sept 2009 and ABS 6523.0

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**MDB Water Market Prices (Slide 44)**



### MDB Water Market - Prices

Table 3.4 Allocation and entitlement prices for selected entitlement types, 2008-09 (PC 2009)

Entitlement type	Average allocation price	Average entitlement price
3 Dec 2010		
Temporary water prices fall to \$20 per Megalitre (\$0.02 per kilolitre)		
NSW Murray HS	363	2 564
NSW Murray GS	363	1 095
NSW Murrumbidgee HS	343	<b>3 100</b>
NSW Murrumbidgee GS	343	1 284
SA Murray HS	352	2 380
Vic Greater Goulburn HR	<b>370</b>	2 228
Vic Murray HR	340	2 174

**Cost of 100 GL of Temporary Water \$37 Million vs. Cost of 100 GL of Permanent Water \$310 Million (Highest average prices used) vs. \$1.8 Billion for Adelaide Desalination Plant & Approx \$200 Million to operate and power each year! + \$400 Million for N-S Pipeline in Adelaide**

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Based on average temporary water price of \$370 per megalitre in 2008-09, 100 GL of water would cost \$37 million vs. permanent high reliability water @ \$3,100 per megalitre for a cost of \$310 million. What Government in their right mind would build a 100 GL Desalination plant at a cost of \$1.8 billion with on-going operating and power costs of around \$200 million per year when there is no issue with water availability from the MDB? Already temporary water in the Southern Basin has fallen to around \$20 per megalitre given the floods. An extra 50 GL of water, if required for the cities and towns of South Australia in 2010 would cost SA Water just \$1 million (2 cents per kilolitre). Compare that to what South Australian residents are being charged for their water by SA Water.

The Australian Financial Review revealed details on 20<sup>th</sup> January 2010 of the statement of claim that the South Australian Government has lodged with the High Court to remove barriers to water trade between the states. "The SA statement of claim itemises five separate deals, where SA Water had tried to spend about \$3.4 million buying a total of 1,365.6 megalitres of high-security water entitlements from Victorian vendors." Using these prices, 100 GL of permanent high reliability water would cost just \$245 million!

Why the South Australian Government is not simply demanding a fair share of all waters of the Murray-Darling Basin under section 100 of the Constitution is another question for a Royal Commission to answer.

Questions are already being raised as to the integrity of water pricing once the Melbourne Desalination Plant is commissioned:


**Time to come clean on the cost of water**

Ken Davidson The Age 31 May 2010

"Victorians haven't been told the full story on how much they could pay.

<http://www.theage.com.au/opinion/politics/time-to-come-clean-on-the-cost-of-water-20100530-wndv.html>

**SA Water Allocations – Cost of Temporary & Permanent Water (Slide 45)**



**SA Water Allocations – Cost of Temporary & Permanent Water**

Highest Average Prices Used for 2008 – 2009 Year

Water Use Purpose	SA Allocations of Water Entitlements July 2008 (Total 805 GL)	Cost of Temporary Water (\$m) 2008-09 \$370 per ML	Cost of Permanent Water (\$m) 2008-09 \$3,100 per ML
Irrigation	554.0	205	1,717
Industrial	4.2	1.6	13
Stock and Domestic	6.8	2.5	21
Recreational & environmental	22.9	8.5	71
Metropolitan Water Supplies	130 (five year rolling average)	48.1	403
Country town Water Supplies	50.0	18.5	155
Wetlands	15.8	5.8	49
Environmental Land Management	21.3	7.9	66
River Murray Environment (1850 – 805 GL)	1,045	387	\$3.2 B

**This table is provided for demonstration purposes.**

**In reality water is common property & ultimately controlled by the states.**

**It is nonsense that governments should have to buy back what is owned by the government.**


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For 2008 – 2009 the highest average allocation price of \$370 per ML and highest average entitlement price of \$3,100 per ML were used. Since the breaking of the drought, water prices have collapsed to around \$20 per ML for temporary water and I have seen prices for entitlements fall below a \$1,000 ML. If the Commonwealth Government was serious about saving the Lower Lakes it would have entered the new national water market and purchased the necessary temporary water. It has consistently failed to put the environment first and has instead hid behind its purchases of water entitlements and the new Basin Plan when the real action lies with reforming state water sharing plans.



**MDB Water Entitlements Market (Slide 46)**



### MDB Water Entitlements Market

Table 3.2 Tradeable water entitlements on issue, 2007-08 (PC 2009)

	Regulated systems		Unregulated systems		Groundwater	
	Number	Nominal volume (GL)	Number	Nominal volume (GL)	Number	Nominal volume (GL)
NSW	10 401	8 464	1 345	110	2 867	1 004
Victoria	37 260	3 550	7 704	162	6 236	490
Queensland	10 893	3 142	1 018	349	369	76
SA	3 703	980	223	1	5 719	215
ACT	27	64	0	0	114	1

Source: NWC (2009).


**Total Regulated 16,200 GL; Total Unregulated 622 GL; Total Groundwater 1,786 GL**

**SA Share Regulated 6%      Unregulated 0.2%      Groundwater 12%**

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This is further evidence of the need for a Royal Commission, the tradable water entitlements on issue have all been given away for free by State Governments under the leadership of the Commonwealth Government. All this has been done to turn water into a commodity for the free benefit of global financial markets. It also means there will be always over-allocation not only because of the huge number of entitlements granted but because of the natural variability of the MDB.

**Gomersal Road Tanunda (Slide 47)**



**Gomersal Road Tanunda SA** 4<sup>th</sup> November 2008

**Conversion of viable dry broad acre farm in SA to grapevine irrigation during the worst drought in history of the MDB**



**Wine grape production was allowed to expand from 1.1 million tonnes in 2001 to 1.5 million tonnes in 2008**

MDBA Basin Plan BP02 Report Sept 2009

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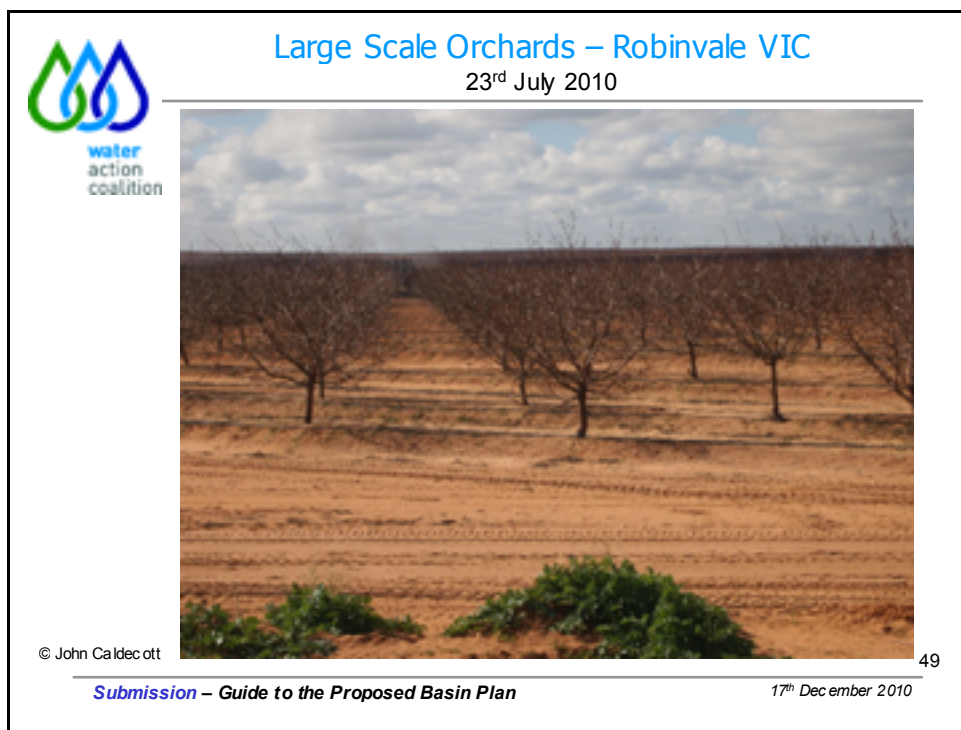
17<sup>th</sup> December 2010

What Government in their right mind would allow the conversion of a viable dry broadacre farm into irrigated vineyards from the River Murray in one of the most protracted droughts in history? Again more grounds for a Royal Commission in and we need get back to common-sense planning that limits permanent plants for overseas markets.


**Harvested Cotton Crop – Oxley Hwy NSW (Slide 48)**



Large Scale Orchards – Robinvale VIC (Slide 48)




Pump Battery – Boundary Bend VIC (Slide 50)



water  
action  
coalition

### Pump Battery – Boundary Bend VIC

23rd July 2010




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State in Water & Environmental Crisis (Slide 51)



### State in Water & Environmental Crisis

◆ Disasters:


- River Murray; Lake Bonney, below Lock 1, Lower Lakes, Coorong (& SE Wetlands) and Murray Mouth.
- Adelaide Coastal Waters Seagrass & Reefs; stormwater, wastewater & soon desalinated water.
- Upper Spencer Gulf; Point Lowly, unique population of cuttlefish typifies the unique & rich marine ecology of Gulfs.
- Rivers, creeks and underground water; over-used, pollution, natural ecology lost - some of the key issues
- **What Do All These Issues Have in Common?**
- The failure of the Federal Government COAG led Water Reform & Governments to take leadership for the common & public good of Australians.
- Environmental disasters have economic and social consequences

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Just how much industrialisation can the Upper Spencer Gulf take? It is time substantive Environmental Assessments were carried out of sensitive ecology areas in South Australia that are likely to be targeted for future development. It is time the Government got on the front foot with respect to environmental matters before it is too late for future generations.

**Conclusions (Slide 52)**



## Conclusions

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- ◆ **Significant Proportion of Entitlements – Worthless!**
  - This decade surface diversions have ranged from 12,000 GL to 4,000 GL when there are around 16,200 GL of Tradeable Surface Water Entitlements.
  - South Australia's decades of water conservation has resulted in SA having only 6% of water entitlements, this is not a reasonable share of the River Murray under the Constitution
  - The Commonwealth water buyback of 900 GL failed to prevent South Australia's crisis; designed to give interstate irrigators a soft landing and sanction water market
  - Basin States Water Sharing Plans have always been biased against the Environment during low flows – no action to change during Millennium Drought.
  - There has been consistent systemic failure in governance to conserve and place restrictions on what could be grown by agriculture during the Millennium Drought.
  - The Rann Government and Opposition Parties have failed to stand up for our rights and gambled the most reliable and conservative water supply system on a water markets experiment.
- ◆ **Basin Plan SDLs need to be set for the full range of water availability scenarios and not just long-term averages.**

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**Recommendations – Local (Slide 53)**



## Recommendations - Local

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- ◆ Campaign against the Consensus on Water Reform as Water Privatisation is the main game; weirs, blocking dams, seawater solutions are distractions fragmenting the community when the problem is man-made, our politicians over many decades have failed us:
  - Critical all South Australians demand a fair share of the Murray, say no to water & river privatisation and all stakeholders work together.
  - The focus needs to be on demanding restoration of minimum (sustainable) entitlement of 1850 GL then a fair share of all inflows both now and in the future.
- ◆ The Basin Plan is unproven other issues to focus on:
  - Demand change to Murray-Darling Basin Agreement to ensure NSW, VIC and QLD are focussed on meeting their commitments to supply the needs of SA during all climate cycles.
  - Operation of the River to benefit River Ecology.
  - Any sensible response to climate change needs to emphasise sustainability of the environment for all climate scenarios & prioritise local food production and local consumption over exports
  - Great Complexity of Commonwealth Water Management Solution: COAG, MDBA, NWC, ACCC, BOM, Financial Markets, State Governments & Agencies – This is a Mess needs to be simplified.
  - The MDBA independent review of Drought Water Accounts announced January 2009 must be made public as a matter of urgency.

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## Recommendations – Strategic (Slide 54)



### Recommendations - Strategic

- ◆ Section 100 of the Australian Constitution only allows reasonable use by irrigators and residents (for climate cycles experienced in Australia):
  - Plan & design for full of variability of the Basin; Floods, normal flows, low lows, droughts and emergencies
  - The whole Basin must work for the common good instead of behaving as greedy (water) bankers.
- ◆ A National State of Emergency must be established in the MDB with the full support of the Commonwealth to ensure water use is prioritised, whenever South Australia's minimum entitlement of 1850 GL is at risk
- ◆ A wide-ranging and public National Public Inquiry with the powers of a Royal Commission must be established to properly inform Australians of the problems created in the basin by water reform and determine the required long-term corrective actions.
- ◆ South Australia must also have a wide ranging and Public Inquiry with the powers of a Royal Commission to inquire into the mismanagement of the River Murray in South Australia, the decisions and plans to build desalination plants in our Gulfs and impact on the state budget.
- ◆ All capital cities needs to establish plans to comprehensively harvest stormwater and recycle wastewater for irrigation & industry use, quarantine required areas from unsuitable development & investigate using their Desalination Plants to help achieve that purpose.

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On the 14<sup>th</sup> August 2008 I met with John Faulkner at the Hallett Cove Community Cabinet Meeting. At this meeting I handed over a paper "[Market Privatisation of the Murray-Darling](#)" which was subsequently published by [Fair Water Use \(Australia\)](#) and a further article was published by [Australian Options](#) magazine. This article called for a Royal Commission and State of Emergency in the Murray-Darling Basin. These measures were required then and are still required. Any political party that doesn't support these measures is not to be trusted for what have they got to hide from a full and open public inquiry? By not holding a Royal Commission, any planning carried out to establish a viable system of management will not be fully informed unless the root causes of the problems of the past are comprehensively identified to prevent them from ever happening again. The Dairy Industry recognised the need to carry out a comprehensive inquiry in 2009 so they could make the right policy decisions in the interests of their industry. Governments of the MDB must recognise that a Royal Commission is inevitable given the mess that is being created.

Above all water in Australia must remain the common property of Australia in "Public Trust" as intended by our founding fathers when the Australian Constitution was drafted.

Thank you all for listening.

John Caldecott



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## A.2 Definitions And Acronyms

### A.2.1 Definitions

Term	Description
Authority	Murray-Darling Basin Authority
Gigalitre (GL)	One Gigalitre is 1,000 ML or 1 billion litres and represents a volume of water one square kilometre by one metre deep. When full, the Hope Valley reservoir holds about 2.8 GL and the Happy Valley Reservoir holds 11 GL.
Hectare	Equivalent to an area of 10,000 m <sup>2</sup> or 2.471 acres

### A.2.2 Acronyms

Acronym	Description
ACWS	Adelaide Coastal Waters Study 2007
CSIRO	Commonwealth Scientific and Industrial Research Organisation
ERDC	Environment, Resources and Development Committee Parliament of South Australia
GSV	Gulf St Vincent
MDB	Murray-Darling Basin
MDBA	<a href="#">Murray-Darling Basin Authority</a>
OWS	Office Water Security (South Australian Government)



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

<b>Acronym</b>	<b>Description</b>
SDL	Sustainable Diversion Limits
WAC	Water Action Coalition <a href="http://civ ictrust.net.au/page25.htm">http://civ ictrust.net.au/page25.htm</a>
WPA	Water Proofing Adelaide