



## River Murray Crisis – What Needs to be Done?

by

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<http://civitrustnet.au/page19.htm>

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## Professor Diane Bell (RLCAG)

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



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## Lower Lakes Communities

WAC Rally 10th October 2009



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## Save Point Lowly

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 **Save Our Gulf Coalition**  
WAC Rally 10<sup>th</sup> October 2009

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 **Cheltenham Park Residents Assoc**  
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## 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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## 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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## What's Been Happening -2009

Communities Groups Coming Together

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**water  
action  
coalition**

- ◆ **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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## What's Been Happening 2010

Communities Groups Coming Together

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**water  
action  
coalition**

- ◆ **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.
    - Committee suspended until after the election.
- ◆ **WAC Meeting with Minister Caica 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 for Greater Metropolitan Adelaide, and
    - Environmental Risks to Gulf St Vincent and Spencers Gulf

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## The Problem - Described


**Failure of Leadership by successive SA & Australian Governments**

- The Drought has been exploited to implement undemocratic COAG water reform agenda led by Federal Government since 1994:
  - Create Water Market, Turn Water into a Tradeable Commodity i.e. privatise what is a common good, the common property of Australia without seeking approval of Australians by Referendum.
  - Downsize below Lock 1, Lower Lakes, Lake Bonney because water is now too valuable and needed for the new National Water Market.
  - Justify **100 GL** Adelaide Desalination Plant
  - Ignore Urgency to Save Adelaide Coastal Waters from Stormwater & Wastewater Pollution & Focus on Conservation
  - Crisis exceeds the State Bank disaster (Economic, Environmental, Social Implications)
- Government failed to demand a National State of Emergency in the MDB
  - Creation of & Faith in Markets came first – Significant Conflict of Interest
  - State of Emergency Required while Water Sharing Plans Suspended
  - New Water Market Should Have Been Suspended or Limited
  - Royal Commission Required - to identify the root cause
  - Collective/Community Effort by Basin to address Emergency
- Forgotten About – SA Long-term Sustainability Diversion Limit
  - Since 1967/68 Drought SA Voluntarily Capped its Diversions
  - 1989 SA Agreed to MDBC Storage Reduction from **2250 GL** to **850 GL** with NSW/VIC so they could use more water.
  - Current Diversion Limit **805 GL** raised **81 GL** by former Minister Maywald in 2008.

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## 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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 **water action coalition**

### River Torrens Stormwater Outlet Henley Beach 11<sup>th</sup> August 2005



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 **water action coalition**

### Clayton Blocking Dam 1<sup>st</sup> Nov 2009



**MDBA 1 Sept 10**

**Lake Alexandrina**  
**1,289 GL**  
(76% full)

**Lake Albert**  
**104 GL**  
(37% full)

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

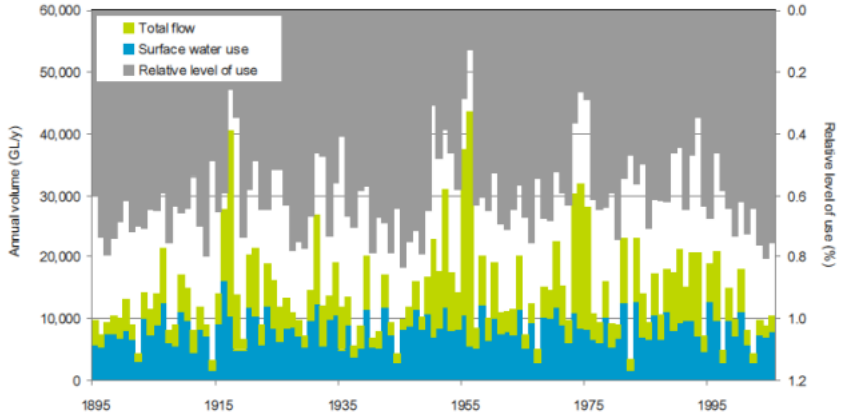


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 **Variability of Relative Level of Use - River Murray**

**Time series at Wentworth** (integrating the MDB) of total effective surface water use (including downstream use), total without-development flow and relative level of surface water use under the historical climate



CSIRO Water Availability in the Murray-Darling Basin  
Murray-Darling Basin Sustainable Yields Project 24 November 2008

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### 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) (Av 2010 GL)	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
Estimated Basin Wide Diversions (GL)	11,867	11,333	7,867	8,533	7,600	9,067	5,067	3,867		
Irrigation Allocations SA (%)	100	100	100	65 - 95	70 - 95	70 - 100	80 - 60	4 - 32	2 - 18	2 - 48 (Jan10)
Total Temporary Water Trades (GL) <i>Snowy Borrows</i>			239	179	104	273		1,594	2,158	
Water Diverted for Cotton, Rice, Cereals, Pasture					5,587	6,179				
Average Annual Net Inflows River Murray	2002-2007 = <b>3,986 GL per year</b>									
Proportion of inflows diverted for agriculture	2002-2008 (River Murray) = <b>76% per year</b>									
Annual Flow Euston (River Murray)	2000 – 2005 Average Annual Flow Approx <b>10,000 GL</b>									
Estimate Total Diversions (GL)	From 1997 to 2008 total diversions approx <b>97,824 GL (SA Share approx 6,037 GL or 6%)</b>									


**SA Minimum Entitlement**  
**1154 GL**

**+ Dilution Flow**  
**696 GL**

**=**

**1850 GL**

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### 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.	<b>130 GL average per year (18% of 724 GL)</b>
Lower Murray Swamp irrigation	94.2 GL per year consisting of <b>(13%)</b> : 72.0 GL for irrigation, stock & domestic 22.2GL for environmental land management
Country Town Water Supply Purposes	50 GL per year <b>(7%)</b>
Other Purposes <b>(Mostly Irrigation)</b>	449.9 GL (long term average annual diversion) <b>(62%)</b>

Total Cap  
**724 GL**

**39% of SA's**  
**1850 GL**  
**Minimum Entitlement**

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## 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>
Irrigation	554.0 (68.9% of 805 GL)	381.8 (53% of 724 GL)
Industrial	4.2 (0.52%)	2.8 (0.39%)
Stock and Domestic	6.8 (0.84%)	5.1 (0.7%)
Recreational & Environmental	22.9 (2.8%)	16.8 (2.3%)
Metropolitan Water Supplies	650 (over a rolling five year period i.e. 130 GL five year average (16%))	97.0 (13.3%)
Country Town Water Supplies	50.0 (6.2%)	31.3 (4.3%)
Wetlands	15.8 (2%)	13.3 (1.8%)
Environmental Land Management	21.3 (2.7%)	25.7 (3.6%)

**Total Average Annual Demand 2003/08 by SA**  
573.8 GL

79% of 724 GL Cap


**Total Average Annual Demand 2003/08 by SA Towns & Metro**  
128.3 GL

18% of 724 GL Cap

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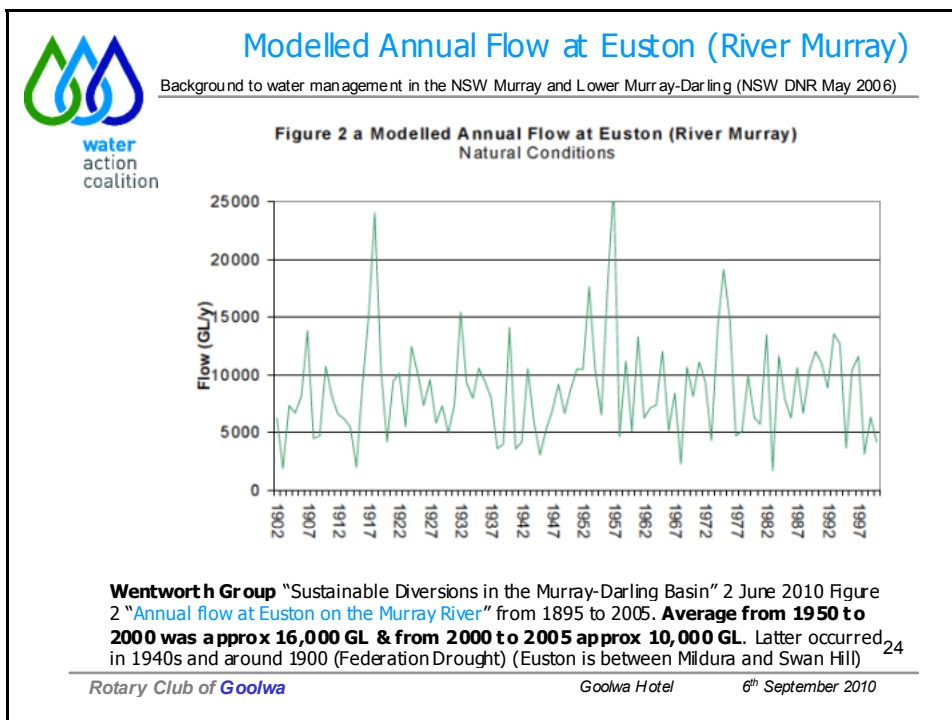
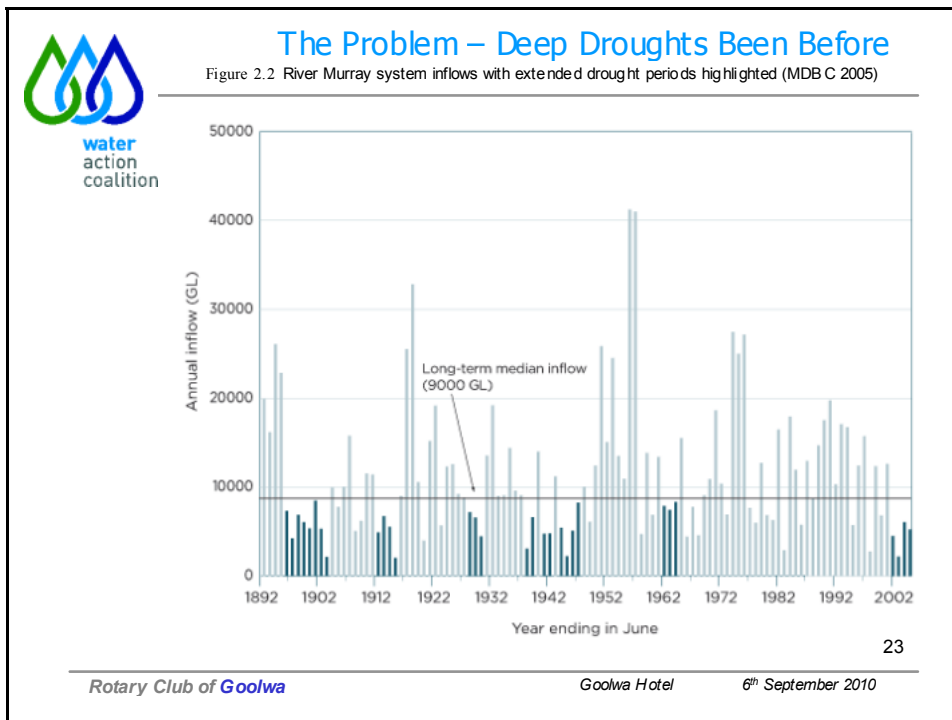
## Time Line of Some Key Decisions/Events


- 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 – **Capacity of Adelaide Desalination Plant increased to 100 GL**
- 23 April 2009 - **SA Irrigation Act** (Comply with Water Act 2007)

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### 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

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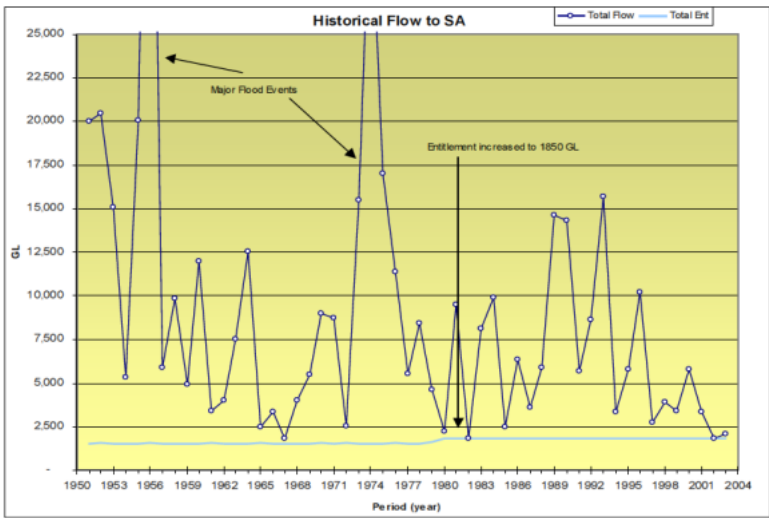
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### Historical Flow to SA (DWLBC 2010)

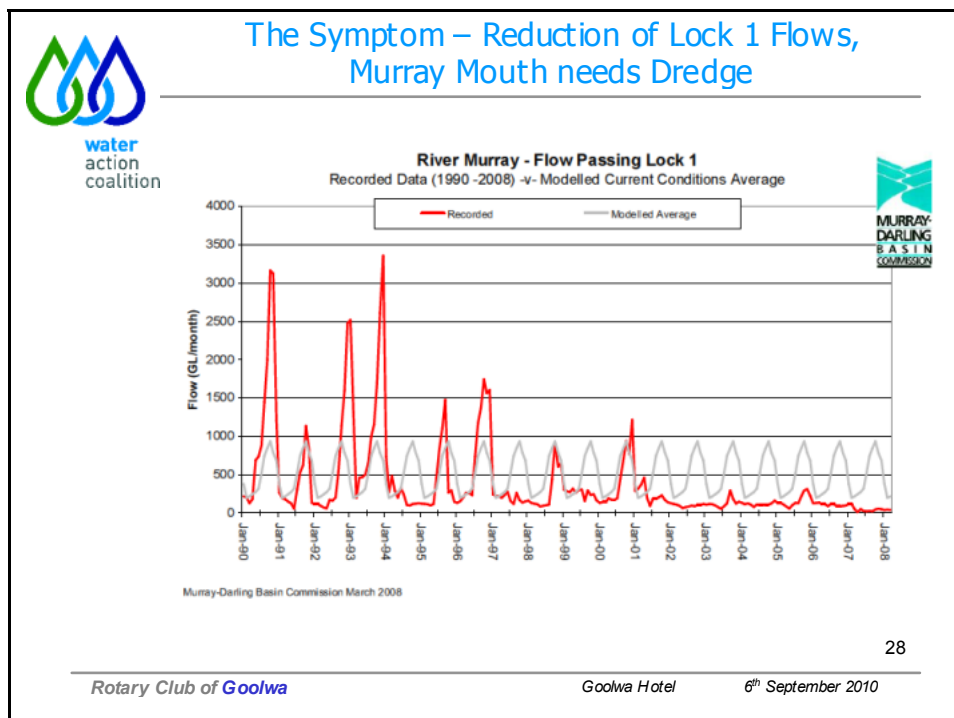
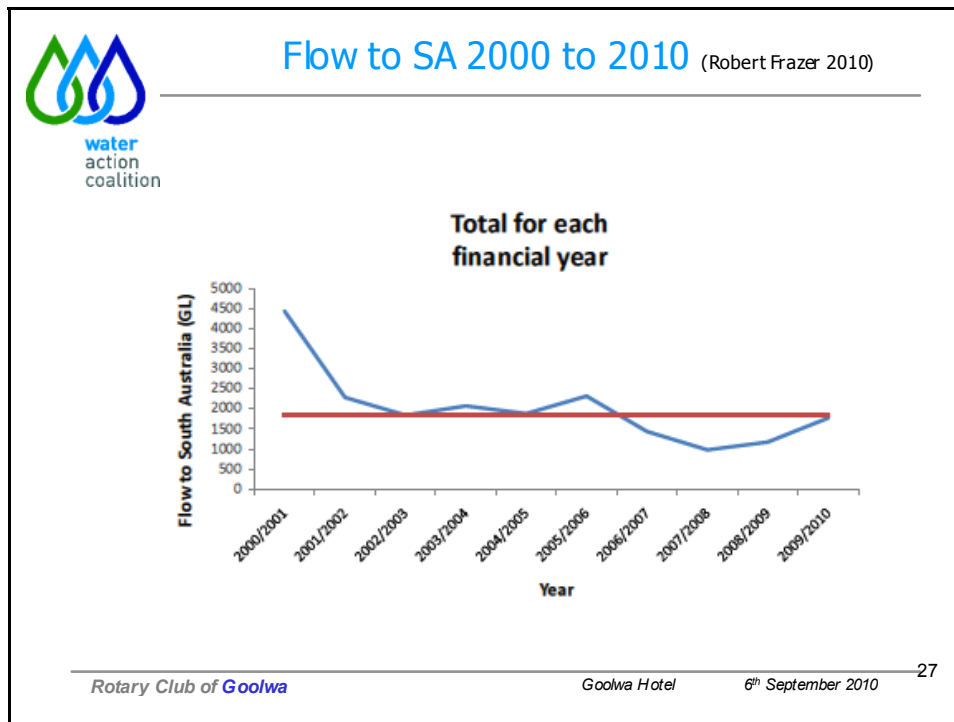



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## Future Predictions for acid sulfate soils and lake acidity (Lower Lakes)

"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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## Climate Change Impact

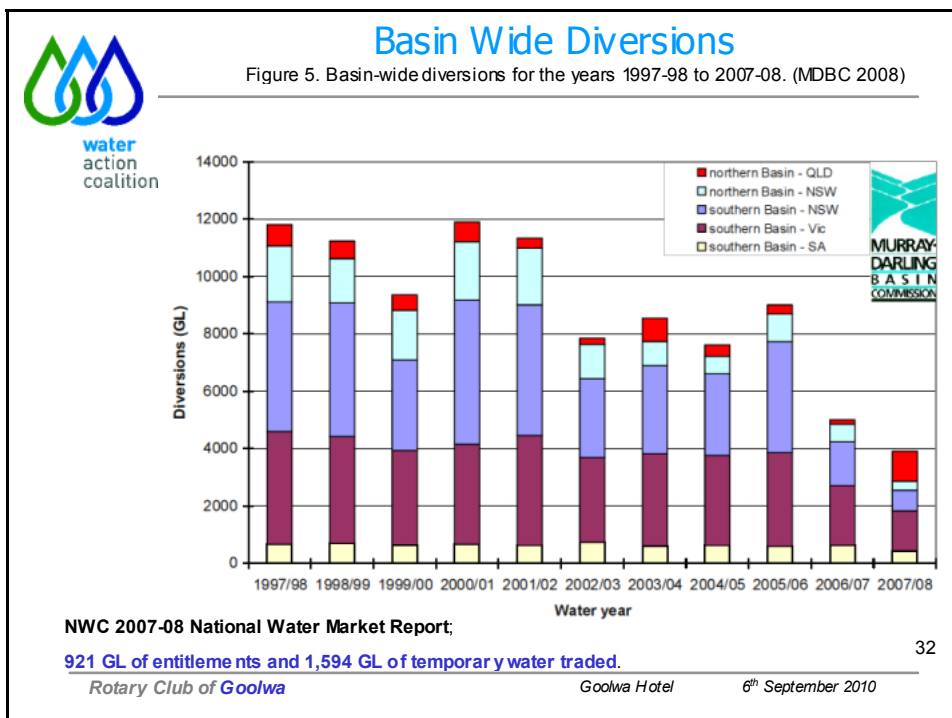
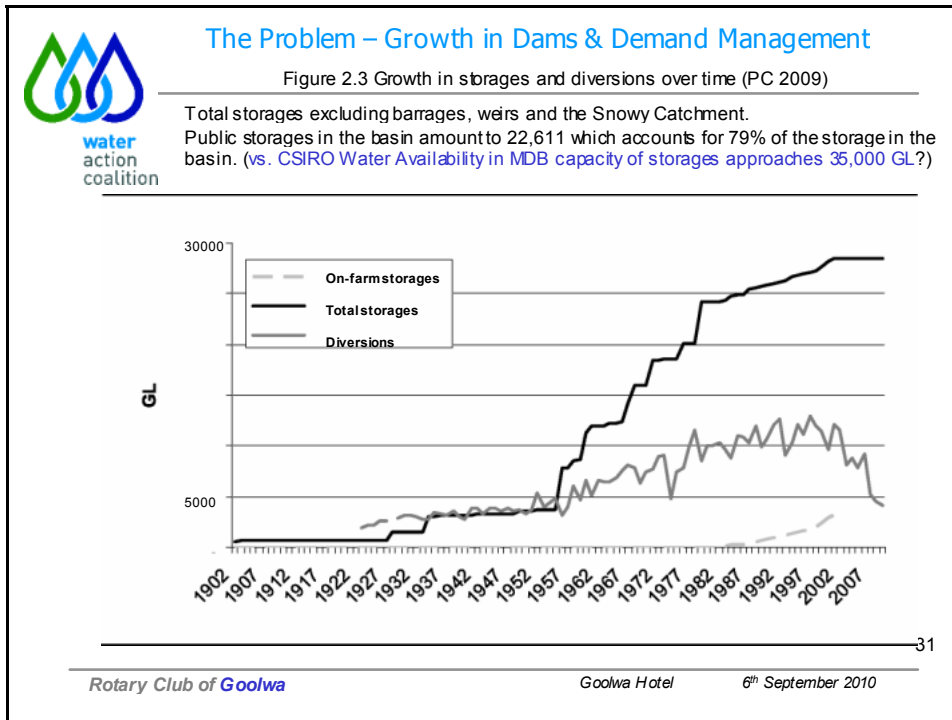
(CSIRO Sustainability Yields Project – Selected Quotes)

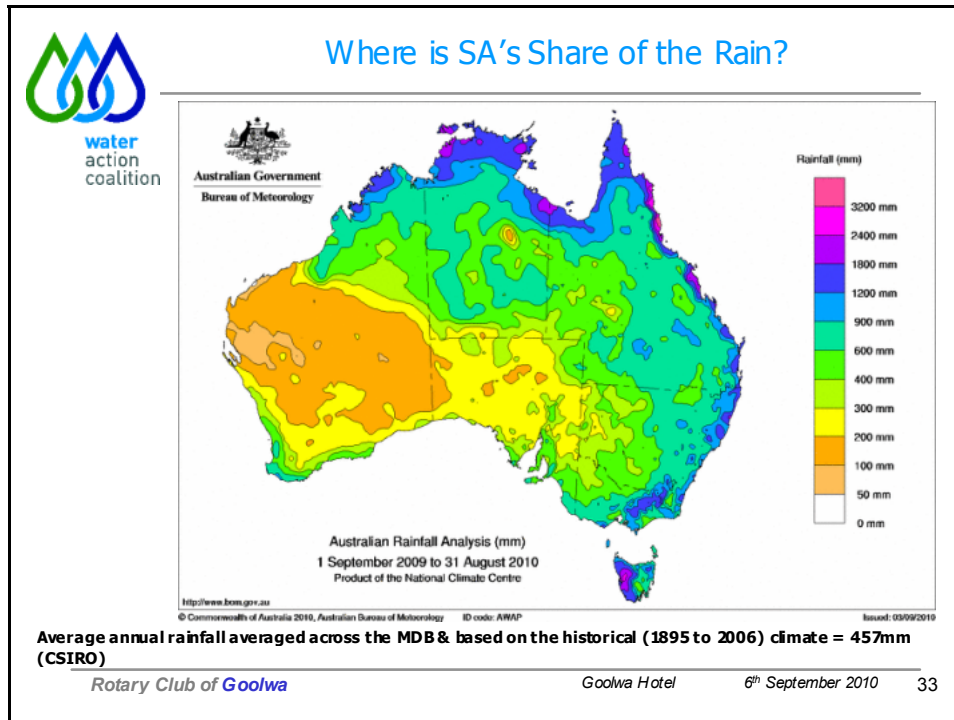
- **Water Availability in the Murray – Presentation** 4 July 2008
  - "Adelaide and SA rural town water supply would be **unaffected** under this or any 2030 climate (change model) scenario"
  - "The modelling indicates that levels in the Lower Lakes **would not fall below mean sea level** under any 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** 25th 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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**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
Rice	619	9	1 252	16
<b>Cereals (excl. Rice)</b>	844	12	782	10
Cotton	1 753	24	1 574	20
Grapes	510	7	515	7
<b>Fruit (excl. Grapes)</b>	399	6	413	5
Vegetables	152	2	152	2
Other Agriculture	546	8	461	6
<b>Total</b>	7 204	100	7 720	100

Source: ABS (2008b)

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### 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
	\$	\$
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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### 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 Allocation (\$m) 2008-09 \$370 per ML	Cost of Entitlement (\$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 (1850 – 805 GL)	1,045	387	<b>\$3.2 B</b>

This table is provided for illustration 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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## 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 (2008).

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


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



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### Harvested Cotton Crop – Oxley Hwy NSW


6<sup>th</sup> July 210



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### Large Scale Orchards – Robinvale VIC


23<sup>rd</sup> July 210




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 **Pump Battery – Boundary Bend VIC**  
23rd July 210

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 **State in Water & Environmental Crisis**

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♦ **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 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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## Recommendations - Local

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- ◆ Campaign against the Consensus on Water Reform (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 all resources of the Murray, say no to water & river privatisation and work together (Country, City, Industry and Farmers).
  - 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 the needs of SA during all climate cycles.
  - Operation of the River to benefit the River & Consumptive Use.
  - Any sensible response to climate change needs to emphasise sustainability of the environment for all climate scenarios & prioritise local food production and local consumption
  - Great Complexity of Commonwealth Water Management Solution: COAG, MDBA, NWC, ACCC, BOM, Financial Markets, State Governments & Agencies – need to focus on all these. 43

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## Recommendations - Strategic

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- ◆ Section 100 of the Australian Constitution only allows reasonable use by irrigators and residents (for climate cycles experienced in Australia):
  - Plan & design for full 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, and South Australia's minimum entitlement of 1850 GL is restored without delay whilst water sharing plans are suspended.
- ◆ 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 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 management of the Murray River in South Australia and the decisions and plans to build desalination plants in our Gulfs.
- ◆ Adelaide needs to establish plans to comprehensively harvest stormwater and wastewater and investigate using the Adelaide Desalination Plant to achieve that purpose. 44

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