



Water – The Interesting Facts?

by

John E. Caldecott

jec@ciq.com.au
Mobile: 0427 976 503

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

**The Great River Murray Market Experiment
COAG Water Reform Fails South Australia**

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Grieger's Sandbar Rally

19th August 2009

Organised by
Swan Reach
Irrigator David
Peake

Located
downstream of
Lock 1 and
upstream of
Swan Reach




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 **Lower Lakes Communities**
WAC Rally 10th October 2009



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 **Save Point Lowly**
WAC Rally 10th October 2009



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Save Our Gulf Coalition

WAC Rally 10th October 2009



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Cheltenham Park Residents Assoc

WAC Rally 10th October 2009




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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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- ◆ **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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- ◆ **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 shut down because of 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 Plan for Greater Metropolitan Adelaide, and
 - Environmental Risks to Gulf St Vincent and Spencers Gulf

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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 Reduction from 2250 GL to 850 GL with New South Wales and Victoria so they could use more water.
 - Current Diversion Limit 724 GL raised 76 GL by former Minister Maywald in 2008 to 805 GL.

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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."

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 **River Torrens Stormwater Outlet
Henley Beach** 11th August 2005



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 **Clayton Blocking Dam** 1st Nov 2009

MDBA 13 Oct 10

Lake Alexandrina
1,863 GL
(100% full)

Lake Albert
269 GL
(100% full)



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Lake Wetherell Weir

5th 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 (Note Range of Relative Use varies from < 20% during floods to > 80% during droughts. This is a result of bias to irrigation in State Water Sharing Plans.


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

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**1895-2009 MDB
Averages
(GL/yr)**

Rainfall 500,000

Surface Water
Inflow 32,800

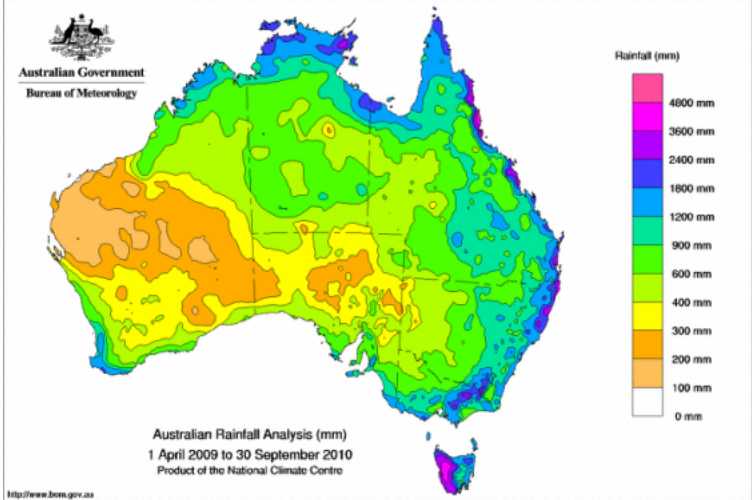
Ground water
Recharge 26,500

Consumptive
Use 15,400

Murray Mouth
Flow 5,100

(MDBA Guide 2010)

Where is SA's Resonable Share of the Basin?




Australian Rainfall Analysis (mm)
1 April 2009 to 30 September 2010
Product of the National Climate Centre

http://www.bom.gov.au
© Commonwealth of Australia 2010, Australian Bureau of Meteorology ID code: AWAP Issued: 09/10/2010

Average annual rainfall averaged across the MDB & based on the historical (1895 to 2006) climate = 457mm (CSIRO)

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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 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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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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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 2010GL)</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
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 = 3,986 GL per year									
Proportion of inflows diverted for agriculture	2002 -2008 (River Murray) = 76% per year									
Annual Flow Euston (River Murray)	2000 – 2005 Average Annual Flow Approx 10,000 GL									
Estimate Total Diversions (GL)	From 1997 to 2008 total diversions approx 97,824 GL (SA Share approx 6,037 GL or 6%)									

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.	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

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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) ¹
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

- 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 1st 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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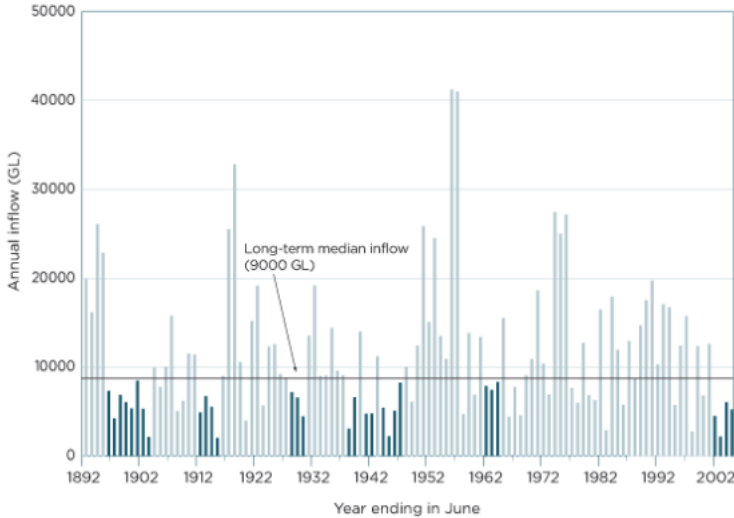
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The Problem – Deep Droughts Been Before

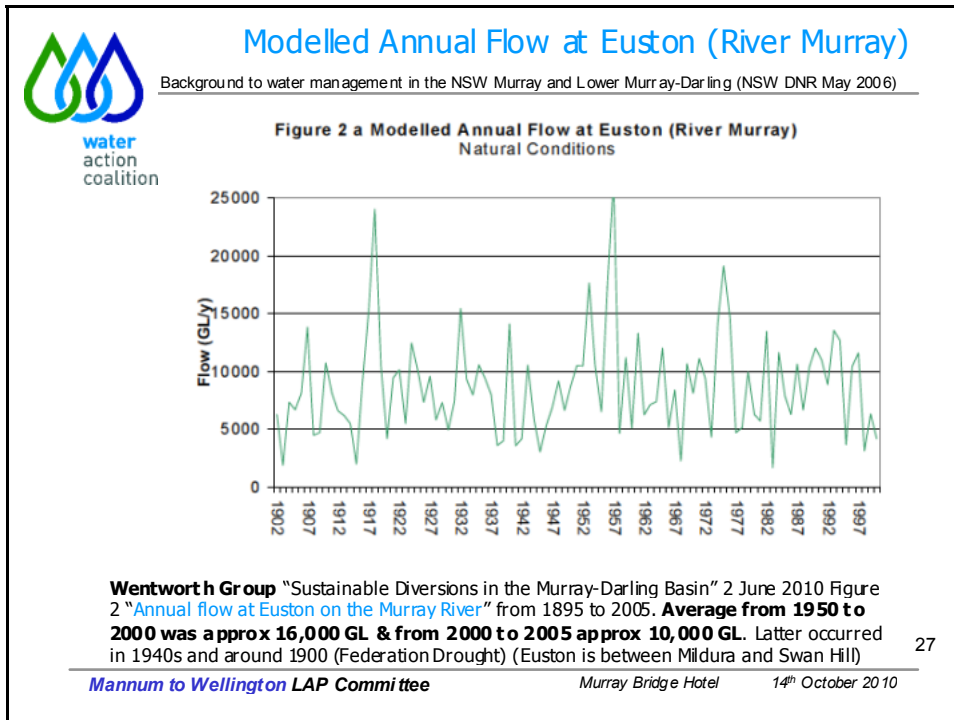
Figure 2.2 River Murray system inflows with extended drought periods highlighted (MDBC 2005)



Year ending in June

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Irrigation Allocation History
SA Murray vs. Victorian Murray & Goulburn

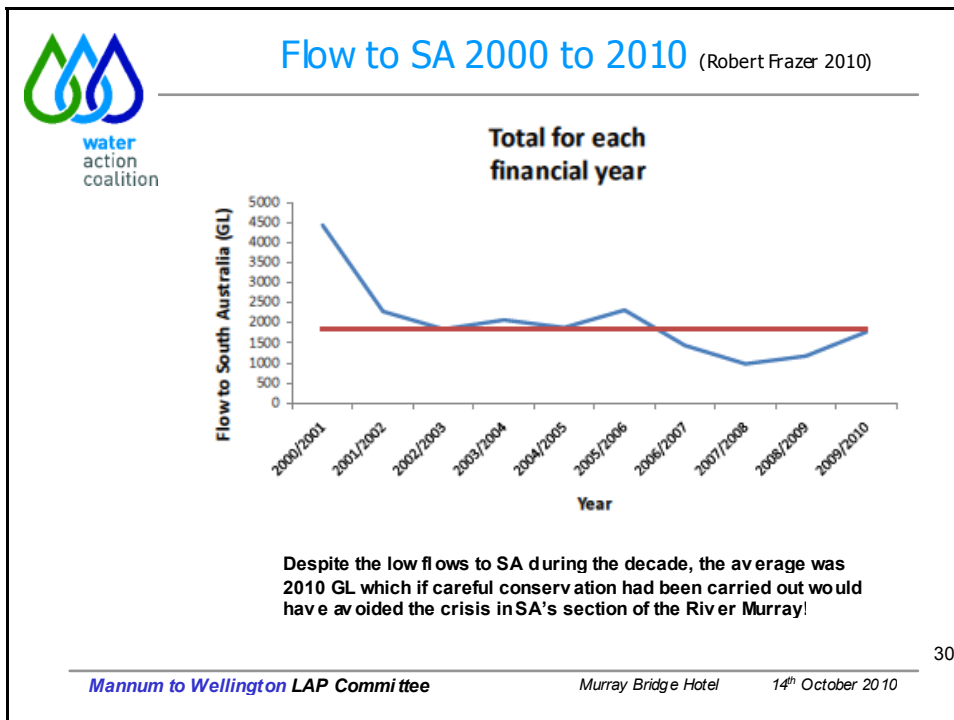
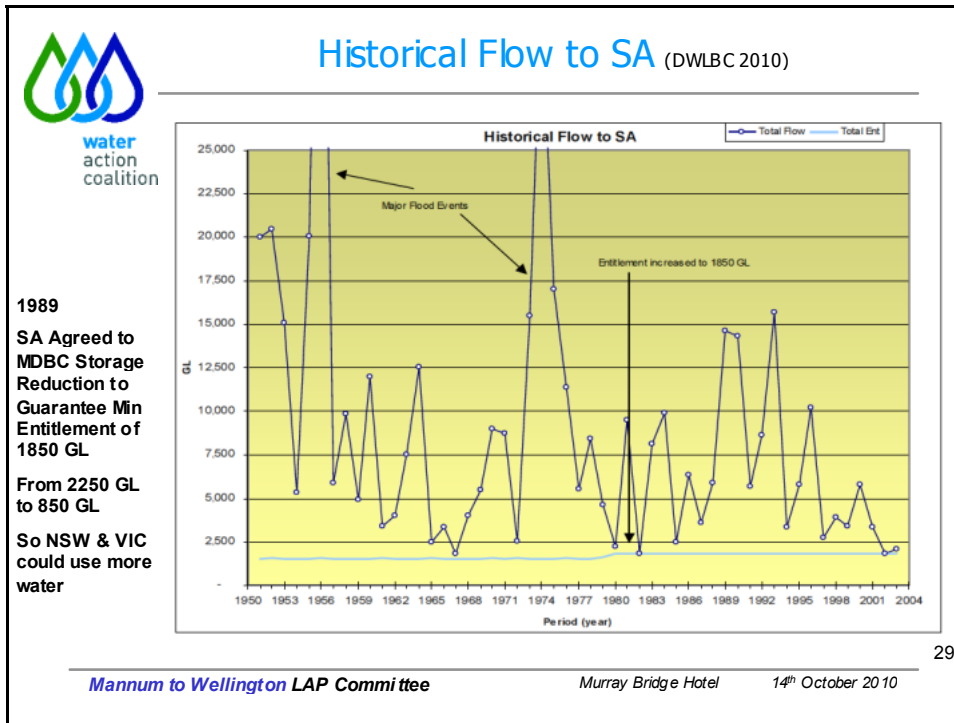
Water allocation as a % of water right

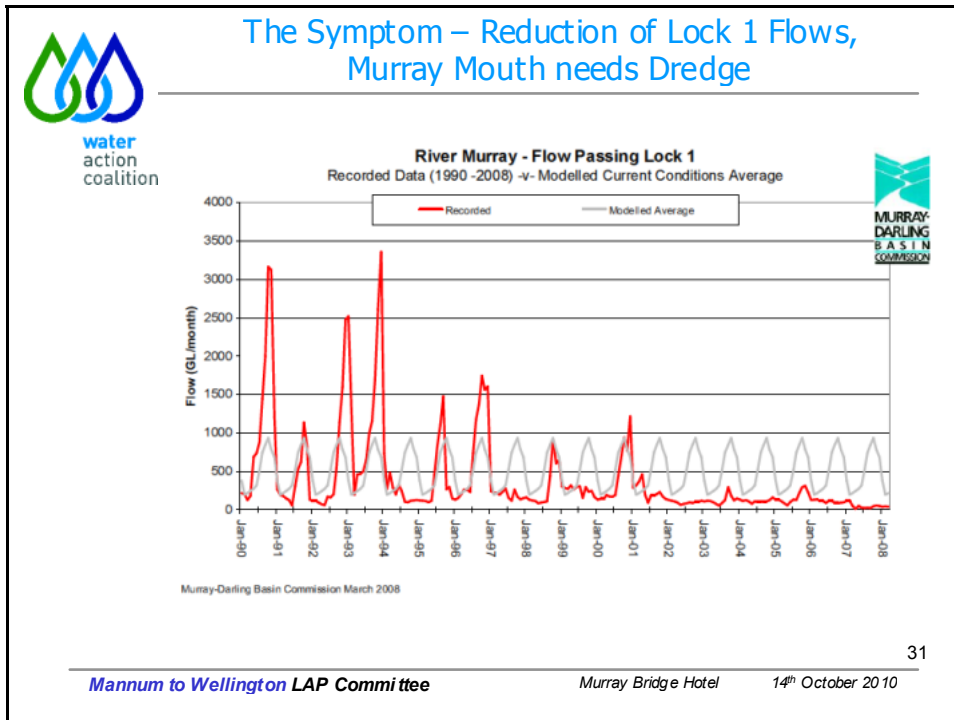
Irrigation Season	Murray System (South Australia)	Murray System (Victoria)	Goulburn System
2000/2001	100	200	100
2001/2002	100	200	100
2002/2003	100	129	57
2003/2004	65 to 95	100	100
2004/2005	70 to 95	100	100
2005/2006	70 to 100	144	100
2006/2007	80 to 60	95	29
2007/2008	4 to 32	43	57
2008/2009	2 to 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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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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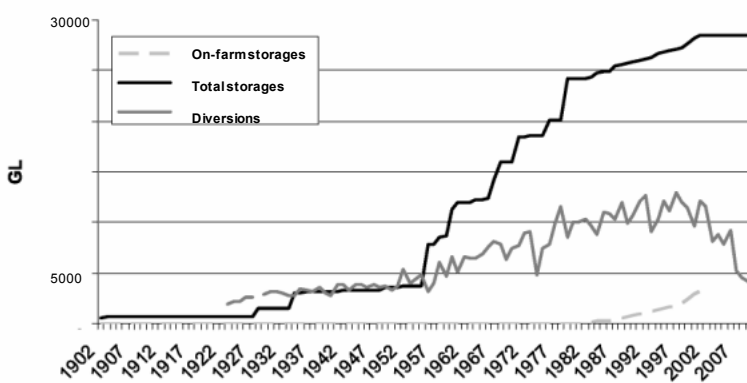
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The Problem – Growth in Dams & Demand Management

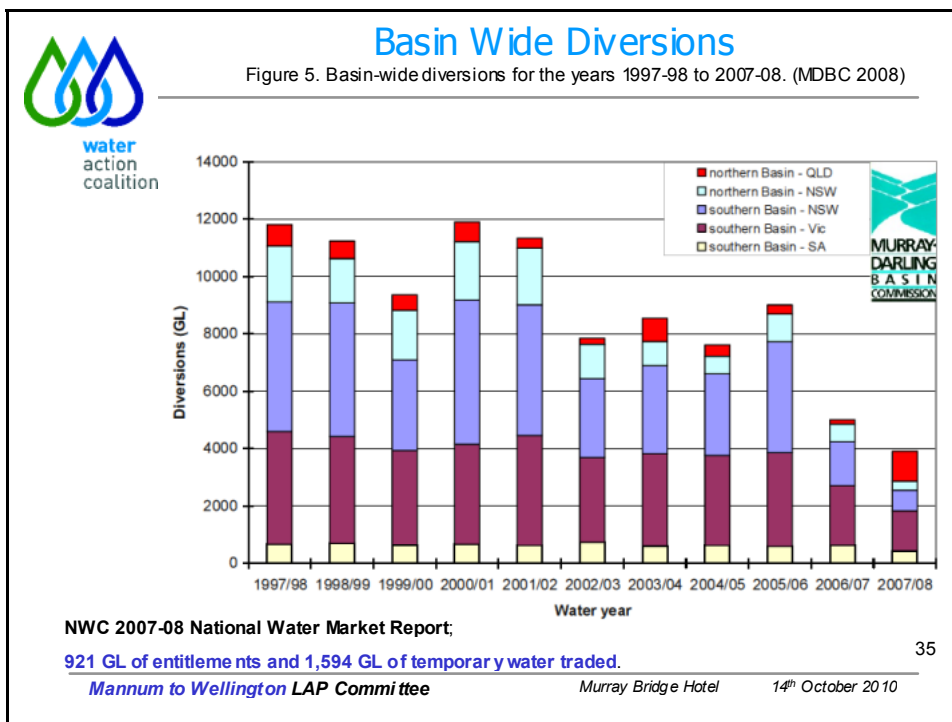
Figure 2.3 Growth in storages and diversions over time (PC 2009)

Total storages excluding barrages, weirs and the Snowy Catchment.
Public storages in the basin amount to 22,611 which accounts for 79% of the storage in the basin. (vs. CSIRO Water Availability in MDB capacity of storages approaches 35,000 GL?)



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Agriculture Water Use 2004-2006 (PC 2009)

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

Source: ABS (2008b)

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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 4th 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


6th July 2010



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Large Scale Orchards – Robinvale VIC


23rd July 2010



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Pump Battery – Boundary Bend VIC

23rd July 2010




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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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Conclusions


◆ 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 create interstate market in water
- Basin States Water Sharing Plans have always been biased against the Environment during low flows.
- There has been consistent systemic failure in governance to conserve and place restrictions on what could be grown during the sustained 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 water markets.

◆ Basin Plan SDLs need to be set for the range of inflow scenarios and not just long-term averages.

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Recommendations - Local

◆ 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

- ◆ 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.
- ◆ Adelaide needs to establish plans to comprehensively harvest stormwater and recycle wastewater for irrigation & industry use, quarantine required areas from unsuitable development and investigate using the Adelaide Desalination Plant to help achieve that purpose. 47

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Useful Information Sources

- ◆ Bureau of Meteorology - [Australian Rainfall Analysis](#)
- ◆ MDBC [Options for Water Savings from the Lower Lakes for Improved flows in the Coorong and through the Murray Mouth](#) 1 December 2001
- ◆ MDB NRM [River Murray Prescribed Water Course](#)
- ◆ CSIRO Adelaide Coastal Water Study 2008 - <http://www.csiro.au/solutions/AdelaideCoastalWates.html>
- ◆ Terms of Reference for a National State of Emergency of the MDB and a National Public Inquiry into the MDB) - <http://www.fairwateruse.com.au/>
- ◆ Lake Alexandrina and Albert Ecological Condition Progress Report April 2008 - <http://www.abc.net.au/news/opinion/documents/files/20080618murray-darling.pdf>
- ◆ Presentation of Results from the Murray Region CSIRO Murray-Darling Basin Sustainable Yields Project - <http://www.csiro.au/resources/MurrayPresentation.html>
- ◆ Water (Crisis Powers and Floodwater Diversion) Bill 2010 – Senate Inquiry http://www.aph.gov.au/Senate/committee/eca_ctte/water_crisis/info.htm
- ◆ Background to water management in the NSW Murray and Lower Murray-Darling river systems NSW Department of Natural Resources May 2006 - http://www.mpi.org.au/nswgovdocs_files/pdf/background_watermanagement.pdf

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