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Briefing Note

Salinity Management Report

120203

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Member Organisations: Bega Cheese Limited, Border Rivers Food & Fibre, Coleambally Irrigation Co-Op Ltd, Cotton Australia, Gwydir Valley Irrigators' Association Inc., High Security Irrigators Inc, Hunter Valley Water Users' Association, Lachlan Valley Water, Macquarie River Food & Fibre, Mid Coast Dairy Advancement Group, Mungindi-Menindee Advisory Council, Murray Irrigation Limited, Murray Valley Water Diverters' Association, Murrumbidgee Groundwater Inc., Murrumbidgee Irrigation Ltd, Murrumbidgee Private Irrigators' Inc., Murrumbidgee Valley Food and Fibre Association, Namoi Water, NSW Farmers' Dairy Committee, NSW Farmers' Association, Ricegrowers' Association of Australia, Richmond Wilson Combined Water Users Association, Riverina Citrus, Southern Riverina Irrigators, South Western Water Users', West Corugan Private Irrigation District, Wine Grapes Marketing Board.

Overview

Recently, environmental lobby groups have turned their attention to the issue of salinity as a reason why the Basin Plan must devastate regional economies and communities. It should come as no surprise that their arguments are largely devoid of fact.

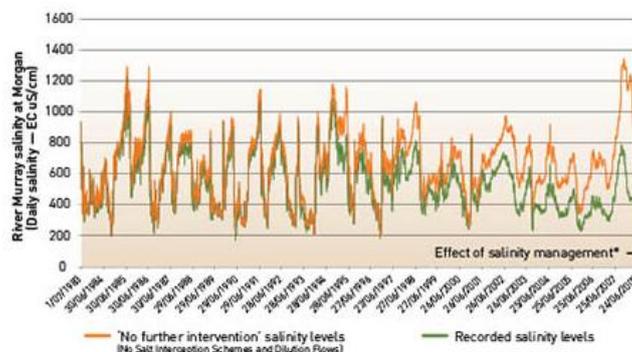
Salinity issues in the Basin are neither new nor the disaster that environmental lobby groups claim. To the contrary, salinity management across the Basin has been underway for decades and has proven particularly successful. A Basin Plan is *not* required to manage salinity – history shows that it can be effectively managed without a blunt instrument.

Salt occurs naturally in the Murray Darling Basin landscape and its river system. “The groundwater systems close to the River Murray hold more than 100,000 million tonnes of salt which originates from the weathering of rocks, ancient oceans and from salts deposited by rainfall over millions of years.”¹

The success of the Salinity and Drainage Strategy in 1988 and the Basin Salinity Management Strategy (2001-2015) are evident in the large quantities of salt that have been prevented from reaching the River Murray due to salt interceptions schemes and the improved irrigation practices. These salinity management strategies have reduced salinity in the River Murray by approximately 200 EC per year according to the Murray Darling Basin Commission annual report 2007/08.

In line with the objective to maximise the net benefits from salinity control and maintain a salinity level in Morgan (SA) of less than 800 EC for 95% of the time, the work undertaken by the Murray Darling Basin Commission showed that the salinity levels would have been substantially higher if not for the operation of the salinity management schemes. The graph below shows that salinity levels in the Murray Darling Basin have always been highly variable but **the volatility and levels have declined since 2002** as a result of the salinity management measures.

Figure 1.3 The effect of salinity management in the Murray–Darling Basin — daily salinity levels, 1 July 1983 to 1 July 2008



Reference: http://mdba.gov.au/annualreports/mdbc/AR_2007-08/objective1_s1_3.htm

¹ MDBA paper – Keeping salt out of the Murray – reprinted Sept. 2010.

Even through the prolonged drought, the average salinity levels recorded at Morgan, SA, have been considerably lower. This decline in salinity reflects the combined effects of lower in-river salt loads due to a substantial decline in salt mobilisation and the cumulative benefits arising from the progressive salinity mitigation works, i.e. salt interception schemes.

The in-river salinity level of less than 800 EC in Morgan were modelled to occur 88% of the time through the salinity management strategies based on a land use over the period 1975 - 2000.

Table 1.4 Summary of salinity levels recorded at Morgan, South Australia

	Time Interval	Average	Median	Peak	% Time > 800 EC
1 year	July 2007 – June 2008	549	495	785	0%
5 years	July 2003 – June 2008	420	396	785	0%
10 years	July 1998 – June 2008	467	446	826	0%
25 years	July 1983 – June 2008	535	511	1220	7%

Reference: http://mdba.gov.au/annualreports/mdbc/AR_2007-08/objective1_s1_3.htm

The table above clearly shows that the salt mitigation measures have been invaluable in managing salinity.

The table below furthermore outlines the specific benefits of the salt interception schemes recorded in the performance report 2007/08 which show that the target level in various key areas within the basis were achieved in the majority of the cases.

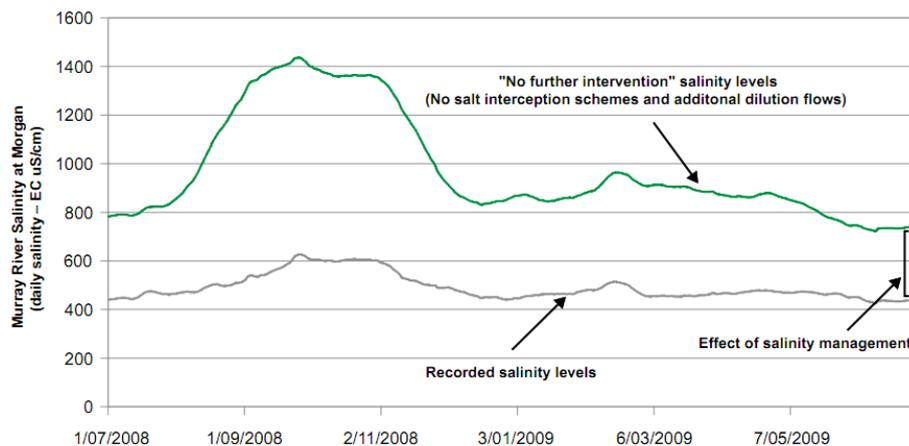
Table 1.6 Joint salt interception scheme performance reporting, 2007–08

Salt interception scheme	Volume pumped (ML)	Salt load diverted (Tonnes)	Average salinity (EC units)	Target achieved (% of time)	Power consumption (kWh) Totals
Pyramid Creek	753	20,398	39,401	100%	109,495
Barr Creek	528	5,554	14,161	97%	10,203
Mildura–Merbein	1,378	36,954	46,793	69%	74,702
Mallee Cliffs	2,620	88,870	53,000	85%	715,300
Buronga	2,830	84,148	46,460	95%	495,266
Bookpurnong	1,287	38,626	45,000	95%	389,422
Loxton1	789	19,215	38,500	100%	324,225
Woolpunda	5,405	109,300	30,000	98%	3,480,000
Waikerie	3,568	62,400	25,800	95%	1,440,000
Rufus River	619	15,185	55,590	98%	132,749
Totals	19,777¹	480,651			7,171,362

¹ Loxton is still under construction

Reference: http://mdba.gov.au/annualreports/mdbc/AR_2007-08/objective1_s1_3.htm

Even more recent data (July 2008 to June 2009) shows that the **actual recorded salinity at Morgan have been decreasing without any further intervention**. The effect of the salinity management activities however show further salinity reductions between 295 and 831 EC.



reference: <http://www.mdba.gov.au/files/publications/MDBA-AIR-13365-WEB-FA.pdf>

The long term salinity management by the Basin Salinity Management Strategy and federal, state and territory governments have achieved a mean salinity level at Morgan for 2008/09 of 489 EC and prevented approximately a cumulative amount of 450,000 tonnes of salt from entering the River Murray System. The large scale investments by state Government in the construction, operation and maintenance of Salt Interception and Drainage Disposal Schemes to meet the salinity targets have evidently been highly successful.

According to the NSW Salinity Audit (2009)² only some sub-catchments were recognised to have increasing salinity trends in 2009 whilst most sub-catchments appear to be in equilibrium. Successful methods to reduce salinity levels in certain sub-catchments include among others; the reduction of saline drainage by improved irrigation efficiency and better delivery systems as well as the re-use drainage waters on-farm irrigation.

In short, the environmental lobby simply aren't telling the truth about salinity. It's merely another tactic to push for a Basin Plan that doesn't deliver a triple bottom line outcome.

² Salinity Audit – Upland catchments of the New South Wales Murray-Darling Basin – DECC 2009