

Basin Salinity Management 2030 - South Australia's Status Report 2015-16

South Australia has actively contributed to the management of salinity in collaboration with partner governments across the Murray-Darling Basin since the 1980's.

While joint salinity management and accountability have been successful in reducing salinity levels, a recent review confirmed that salinity remains an ongoing risk to the health of the Murray-Darling Basin and the communities and industries that rely on it.

A new Basin Salinity Management 2030 (BSM2030) strategy was adopted in November 2015 to build on the significant investment in salinity management by partner governments over the last 30 years.

The BSM2030 strategy retains existing regulatory settings and management arrangements that provide the foundation for Basin salinity management, while bringing in contemporary issues to align with the Basin Plan, streamlining administration and exploring ways to further optimise operation of salt interception schemes and reduce costs.

The joint commitment made in BSM2030 will ensure that South Australia continues to benefit from ongoing efforts by Basin jurisdictions to manage salinity, including ongoing operation of salt interception schemes, for another 15 years.

This is South Australia's first status report under the new BSM2030, with a more comprehensive report due in 2017.

Key achievements and outcomes for 2015-16 include:

- Development and adoption of the new Basin Salinity Management 2030 strategy.
- Contributing to the review of Schedule B of the Murray-Darling Basin Agreement.
- Groundwater modelling to support update of South Australian and Joint Works and Measures entries on the Salinity Registers.
- Development of the 2016-17 South Australian River Murray Operating Plan.
- Implementing the Sustainable Rural Water Use and Infrastructure Programs and South Australian River Murray Sustainability Program to improve irrigation efficiency and return water to the environment.
- Preparation for the implementation of the responsive Salt Interception Scheme trial in partnership with the Murray-Darling Basin Authority (MDBA).
- On-ground and instream investigations for salinity management measures for the Pike and Katarapko floodplains under the South Australian Riverland Floodplains Integrated Infrastructure Program.



REVIEW OF ACCOUNTABLE ACTIONS AND MODELS

To meet obligations under BSM2030, the Department of Environment, Water and Natural Resources (DEWNR) maintains and updates a suite of accredited MODFLOW groundwater models to assist in calculating South Australia's salinity register balance.

In 2015-16 South Australia progressed reviews and updates of the Waikerie to Morgan, Woolpunda and Pike-Murtho MODFLOW models in consultation with the MDBA and partner governments.

It is anticipated that the review and updates will be finalised and register entries updated in 2016-17.

ACCOUNTABLE ACTIONS

In accordance with Basin salinity accountability arrangements, South Australia reports annually on the potential salinity impacts from new irrigation developments using the SIMRAT model.

Changes to Site Use Approvals are used to represent new irrigation development as they provide the permission to use water at a particular location for a specified purpose.

In 2015-16 there were two increases to Site Use Approval volumes in the South Australian low salinity impact zone that were assessed using the SIMRAT model. The estimated salinity impacts associated with these approvals are documented in table 1.

Table 1- Updates for 2016 Salinity Register - Post 1988 irrigation based on site use approvals

Lock Reach	Site Use Approval	Volume (ML)	Salt Load (tonnes/day)		
			2015	2050	2100
Lock4 to Lock3	1	33,874	0.00	3.14	26.25
Lock1 to Murray Bridge	1	2,006	0.00	0.00	0.24
Total	2	35,880	0	3.14	26.50

END OF VALLEY TARGETS

BSM2030 retains the End of Valley Targets to preserve Basin-wide monitoring and to inform the assessment of salinity risk to the shared water resources and within-valley assets.

As part of the BSM2030, flow and salinity must be monitored at each End of Valley Target site and reported annually. The flow monitoring results for the Basin Salinity Target and the three South Australian End of Valley Target sites are presented in Table 2.

In 2015-16 monitored daily salinity remained below the target levels at all sites. The program of salinity controls implemented to date, including salt interception schemes, improved irrigation system and on-farm practices, have contributed to the maintenance of in-river salinity levels below target levels.



Table 2- End-of-Valley summary report card

Valley	End of Valley Target (as % of baseline)	Valley Reporting Site	2015-16 Monitoring data (Daily Mean EC)
Basin salinity target	800 EC (95%ile)	Murray at Morgan (A4260554)	378 EC (Max) 268 EC (Avg) 344 EC (95 %ile)
SA Border	412 EC (80%ile)	Murray at SA Border (A4261022)	269 EC (Max) 173 EC (Avg) 198 EC (80 %ile)
Berri	543 EC (80%ile)	Murray at Berri (A4260537)	303 EC (Max) 221 EC (Avg) 252 EC (80 %ile)
Below Morgan	770 EC (80%ile)	Murray at Murray Bridge (A4261162)	435 EC (Max) 328 EC (Avg) 356 EC (80 %ile)

For more information

Further information on the Basin Salinity Management 2030 strategy and South Australia's salinity management program is available online at:

<http://www.environment.sa.gov.au/managing-natural-resources/river-murray/restoring-river-health/water-quality-and-salinity>

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