

Basin Salinity Management 2030 - South Australia's Status Report 2017-18

1. Overview of Outcomes and Key Achievements

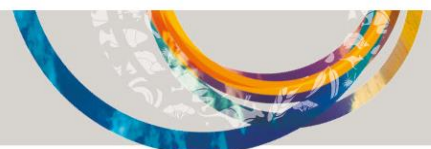
Salinity is a significant water resource management issue that poses ongoing risks to the Murray–Darling Basin. If left unmanaged, salinity has serious implications for the environment, agricultural productivity, the supply of water for critical human needs and industry.

For the past 30 years, the salinity threat has been successfully and jointly managed via a collaborative salinity management program established under the Murray-Darling Basin Agreement. The Basin governments renewed their commitment to manage salinity in 2015 through the adoption of the Basin Salinity Management 2030 strategy (BSM2030).

BSM2030 builds on previous significant investments in salinity management by maintaining the existing accountability framework and management arrangements, while addressing contemporary issues such as the effects of environmental watering and exploring ways to optimise the operation of salt interception schemes.

South Australia's outcomes and key achievements in implementing the BSM2030 strategy in 2017-18 include:

- Salinity remained below the Basin Plan Target and End of Valley Targets.
- South Australia maintained a positive balance of \$6.822 million on the Salinity Registers.
- The reviews of the Waikerie to Morgan, Woolpunda and Pike-Murtho MODFLOW models and accountable actions, which generate salinity impacts, were completed.
- South Australia contributed to the amendment of Schedule B of the Murray-Darling Basin Agreement and the development of BSM2030 procedures.
- River Murray operations and environmental watering actions were made in accordance with annual operating plans, to maintain salinity levels below Basin Plan salinity targets.
- The review of irrigation salinity management policies in South Australia was completed and implementation of recommendations was progressed.
- Water Quality Management Plans for South Australian water resource plan areas were developed.
- The assessment of the potential salinity impacts from actions undertaken as part of the South Australian Riverland Floodplain Integrated Infrastructure Project (SARFIIP) was progressed.



2. Update on Existing and New State Works or Measures

South Australia has two existing State Works or Measures that are included on the Salinity Registers - the Qualco-Sunlands Ground Water Control Scheme and the Pike salt interception scheme.

The Qualco-Sunlands Ground Water Control Scheme is operated by a private trust in accordance with the *Ground Water (Qualco-Sunlands) Control Act 2000*. The arrangements for operation of the scheme are currently being reviewed to improve efficiencies and reduce operating costs.

The Pike salt interception scheme is operated by the Murray-Darling Basin Authority (MDBA) on behalf of the South Australian Government. In 2017-18 the scheme was operated in accordance with the operations and maintenance manual and any directions provided by the MDBA as part of the responsive salt interception scheme trial.

Under SARFIIP, a new State Work or Measure is being constructed to enhance the benefits of inundation of the Pike and Katarapko floodplains and to reduce salt loads entering the River Murray. Construction of stage 1 of the Pike groundwater management scheme commenced in April 2018 and potential alignment of stage 2 works is being investigated. It is anticipated that construction of the groundwater management scheme will be completed by June 2020.

3. Review of Models and Accountable Actions

To meet obligations under BSM2030, the Department for Environment and Water (DEW) maintains and updates a series of accredited MODFLOW groundwater models to assist in calculating South Australia's salinity register entries.

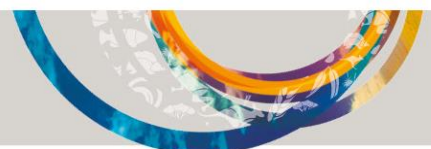
In 2017-18, South Australia completed the reviews of the Waikerie to Morgan, Woolpunda and Pike-Murtho MODFLOW models and the associated accountable actions. The reviews were accepted by the Basin Salinity Management Advisory Panel at meeting 38 on 22 May 2018.

South Australia is undertaking a review of the Loxton-Bookpurnong groundwater model and associated accountable actions in 2018-19 and does not have any proposed amendments to the BSM2030 review plan.

4. Proposed or New Accountable Actions

In accordance with Schedule B of the Murray-Darling Basin Agreement, the South Australian Government has notified the MDBA that actions proposed to be undertaken as a part of SARFIIP are likely to have a Significant Effect (as defined in Schedule B sub clause 18(3)).

DEW is developing groundwater models for the Pike and Katarapko floodplains to assess the potential salinity impacts to the River Murray from the construction and operation of environmental regulators, levee banks and groundwater management schemes as part of SARFIIP.



5. Monitoring Results for End of Valley Target Sites

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 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 1.

In 2017-18, monitored daily salinity remained below the target levels at all sites. The program of salinity controls implemented to date, including improved irrigation system and on-farm practices and salt interception schemes, have contributed to the maintenance of in-river salinity levels below target levels.

Table 1- End-of-Valley summary report card

Valley	End of Valley Target (as % of baseline)	Valley Reporting Site	2017-18 Monitoring data (Daily Mean EC)
SA Border	412 EC (80%ile)	Murray at SA Border (A4261022)	301 EC (Max) 227 EC (Average) 263 EC (80%ile)
Berri	543 EC (80%ile)	Murray at Berri (A4260537)	389 EC (Max) 293 EC (Average) 324 EC (80%ile)
Basin salinity target	800 EC (95%ile)	Murray at Morgan (A4260554)	465 EC (Max) 359 EC (Average) 439 EC (95%ile)
Below Morgan	770 EC (80%ile)	Murray at Murray Bridge (A4261162)	589 EC (Max) 411 EC (Average) 467 EC (80%ile)



6. Basin-wide Core Salinity Monitoring Network

The BSM2030 strategy requires partner governments and the MDBA to nominate their core salinity monitoring network and make a commitment to the operation, maintenance and reporting on the delivery of monitoring at these sites for the life of the strategy.

The Basin-wide Core Salinity Monitoring Network includes monitoring sites considered critical to underpin the models that quantify register entries, evaluate trends at End of Valley Target sites, assess compliance with the Basin Plan, improve knowledge in priority areas and support management of the river, salt interception schemes and environmental flows.

DEW has nominated a groundwater network consisting of 435 groundwater wells as part of the Basin-wide core monitoring network. The MDBA has nominated a further 475 groundwater sites within South Australia for the purpose of operating the joint-venture salt interception schemes and 65 surface water monitoring sites in the River Murray between the South Australian border and the barrages.

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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