



Australian Government



Basin Salinity Management 2030

Summary report 2017–18

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Acknowledgement of the Traditional Owners of the Murray–Darling Basin

The Murray–Darling Basin Authority pays respect to the Traditional Owners and their Nations of the Murray–Darling Basin. We acknowledge their deep cultural, social, environmental, spiritual and economic connection to their lands and waters.

The guidance and support received from the Murray Lower Darling Rivers Indigenous Nations, the Northern Basin Aboriginal Nations and our many Traditional Owner friends and colleagues is very much valued and appreciated.

Aboriginal people should be aware that this publication may contain images, names or quotations of deceased persons

Introduction

Basin governments have been working together with their communities for over 30 years to manage salinity in the rivers and catchments of the Murray–Darling Basin. Building on this knowledge, the Basin Salinity Management 2030 (BSM2030) strategy looks ahead to deliver a strategic, cost-effective and streamlined program of coordinated salinity management up to 2030.

Given the maturity of the collaborative Basin salinity management arrangements, reporting has been streamlined under the BSM2030 strategy. Comprehensive reporting is provided to the Ministerial Council every second year under the BSM2030 strategy. In alternate years, partner governments and the MDBA prepare status reports focusing primarily upon key compliance aspects of Schedule B. For the status reporting years, a summary report of partner government and MDBA key outcomes is prepared for Ministerial Council. This report for 2017–18 is the second summary report prepared under the BSM2030 strategy.

Salinity status of the Basin in 2017–18

In 2017–18 temperatures were above average and rainfall was below average in the Basin. This meant that in contrast to a wet 2016–17, Basin inflows in 2017–18 were low. Salinity levels in the River Murray System remained relatively low in 2017–18.

Salinity levels at Morgan in South Australia reflected the trend of generally low salinity levels in the River Murray System. In 2017–18 there was an average daily salinity at Morgan of 359 Electrical Conductivity Units (EC in $\mu\text{S}/\text{cm}$) and a peak daily salinity of 466 EC. Given the intention of the BSM2030 strategy to maintain salinity at Morgan below 800 EC, this outcome is beneficial to the environmental, social and economic values of the River Murray.

A significant part of this achievement is due to mitigation works and measures such as the improvement of land and water management practices over many years and the operation of salt interception schemes (SIS).

Variability in the salinity outcome from year to year is an inevitable characteristic of a dynamic river system. The amount of salinity reduction provided by mitigation works and measures is affected by climate, which delivers variations in dilution flows and changes in catchment salt mobilisation. In light of this variability and its impact on salinity outcomes, modelling is undertaken to understand how improved land and water management practices and mitigation works and measures deliver salinity benefits across both wet and dry periods.

Refinements to modelling over the last 12 months have improved the estimates of salinity impacts of mitigation works and measures. When the refined models were applied over the climatic conditions from 1975–2000 (the benchmark period), mitigation works and measures put in place up to 2017–18 have delivered a simulated average daily salinity level at Morgan of less than 777 EC for 95% of the time. Although these new estimates are slightly higher than previous estimates, they are still within the bounds of what the BSM2030 strategy is trying to achieve (*i.e.* less than 800 EC for 95% of the time at Morgan). It is also important to note that the dilution benefits from the delivery of water recovered under both The Living Murray Initiative and the Basin Plan are yet to be included in this modelling. It is anticipated that when included these benefits will provide a significant reduction to the modelled average daily salinity level at Morgan.

Based on 2017–18 levels of development (including salinity mitigation), river salinity at Morgan was less than 800 EC for 96% of the time—hence, the strategy is achieving the target. As a comparison,

under baseline conditions (without salinity mitigation), river salinity would have been less than 800 EC for only 72% of the time.

In other words, irrespective of climatic conditions, salinity exceedance of 800 EC at Morgan has substantially declined as a consequence of implementing works and measures under the salinity management strategies. The 2017–18 achievement highlights the success of salinity management to date, as shown in Figure 1, and the importance of continuing Basin-wide salinity management strategies to sustain improved salinity outcomes.

These outcomes reflect the partnership and commitment of the Australian Government, state and territory governments and the coordination of Basin-wide salinity management provided by the MDBA. The BSM2030 strategy builds on earlier strategies and complements the objectives of the Basin Plan by supporting the obligations related to salinity targets for flow management.

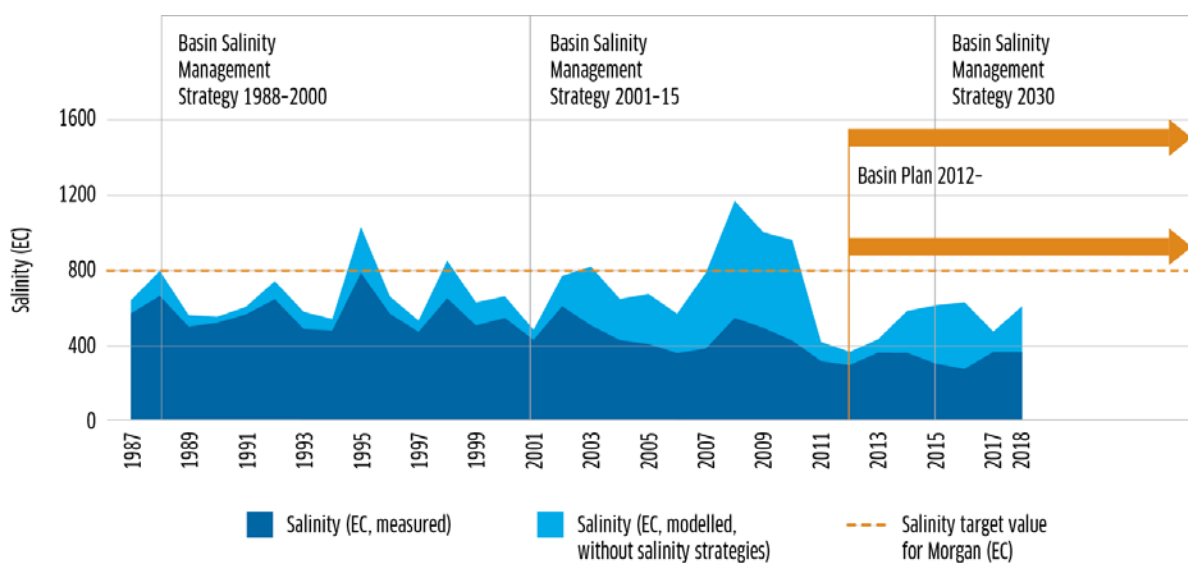


Figure 1: River Murray salinity at Morgan and the impact of management strategies

In 2017–18, governance and planning under the BSM2030 strategy continued to be supported by the Basin Salinity Management Advisory Panel, which comprises representatives from the six partner governments: the Australian Government and the governments of Queensland, New South Wales, the Australian Capital Territory, Victoria and South Australia.

Highlights from 2017–18

Throughout 2017–18, the MDBA and partner governments continued to implement the BSM2030 strategy, including reviewing and updating the salinity registers as well as operating and maintaining SIS. Key highlights from 2017–18 included:

- Ministerial Council’s agreement to the Water Amendment Regulations that amend Schedule B of the Murray-Darling Basin (MDB) Agreement to give effect to the BSM2030 strategy.
- Completion of the first independent audit under the BSM2030 strategy, which confirmed New South Wales, Victoria and South Australia had a net credit balance on the 2017 salinity registers (the Australian Capital Territory and Queensland have no items on the salinity registers).
- The Basin salinity target was met for the ninth consecutive year. The target aims to maintain the average daily salinity at a simulated level of less than 800 EC for at least 95% of the time at Morgan, South Australia.

- The SIS diverted approximately 484,586 tonnes of salt away from the River Murray system and adjacent landscapes.
- Knowledge priority projects to reduce uncertainty around future salinity risks were progressed.
- Victoria initiated a review of the metric used for accountable water use and irrigated area change in the Goulburn Murray Irrigation District. Victoria also completed reviews of several entries in the salinity registers - Campaspe West Salinity Management Plan and Shepparton Irrigation Region Land and Water Management Plan and catchment reviews for the Ovens, Kiewa and Campaspe valleys.
- South Australia completed a review of their irrigation salinity management policies, and reviews of the Waikerie to Morgan, Woolpunda and Pike-Murtho groundwater models and updated salinity register entries affected by the model reviews.
- New South Wales completed salinity technical reports for each of the nine New South Wales Murray–Darling Basin catchments. These reports defined the causes of, risks associated with, and mitigation measures for managing catchment salinity impacts. New South Wales also presented at the 2017 Annual Salinity Forum on the circumstances leading to and the management of the September 2016 elevated salinity event along the Lower Darling.
- Queensland continued salinity risk investigations in the Border Rivers and Lower Condamine to further clarify risks associated with irrigation development. Additional projects also continue to generate data and knowledge that will improve long-term understanding of salinity processes in the lower Balonne floodplain.
- The Australian Capital Territory’s environmental flow guidelines were reviewed by an independent expert group in 2017 and after community consultation a new set of guidelines are scheduled to come into force shortly.
- The Commonwealth continued to review the influence of Commonwealth environmental watering on salinity in the Murray-Darling Basin and quantified the benefit of Commonwealth environmental water on salt export through the Murray Mouth.

The next phase

The priorities for the next phase of Basin-wide salinity management arise from the continuing obligations in Schedule B of the MDB Agreement and new activities under the BSM2030 strategy.

In 2018–19, priorities for continuing to implement the BSM2030 strategy include:

- Progressing updates to the MDBA river model for salinity accountability purposes.
- Preparing guidance material and implementing Basin Salinity Management procedures.
- Progressing projects related to the BSM2030 Knowledge Priorities.
- Continuing to implement the trial of responsive management of the SIS.
- Progressing major reviews of actions with significant river salinity effects located in the South Australian river reaches and the Mallee and riverine plain regions of NSW and Victoria.
- Identifying and implementing Basin-wide core salinity monitoring network.
- Undertaking other activities in line with the BSM2030 implementation plan.
- Updating groundwater models to assess potential salinity impacts.
- Implementing projects to improve understanding and management of salinity issues.