



Australian Government



MURRAY-DARLING  
BASIN AUTHORITY

# Salinity in the Murray-Darling Basin

Salinity is a major issue for the Murray-Darling Basin. High salinity can reduce the amount of crops that can be grown, affect the health of plants and animals, damage buildings and other infrastructure, and impact the quality of water used by people.

Land clearing and water intensive farming methods have resulted in underground water tables (groundwater) rising closer to the surface. This has brought more salt into the river system.

Increased water use by communities and industry (including farming) has reduced river flows, leaving less water to dilute salt in rivers or flush it out to sea.

Salt is a natural feature of the Murray-Darling Basin's landscapes and rivers. It is derived from ancient ocean sediments, the weathering of rocks and from rainfall over millions of years.

The only natural way that salt can leave the Basin is by flowing down the river and out to sea through the Murray Mouth in South Australia.

Since the late 1960s, there has been a concerted effort by governments and communities to manage the impact of salinity on people and the environment. The *Basin salinity management 2030 strategy* has been in place since 2015, and outlines how Basin governments are working together to address salinity and meet agreed targets. Good progress has been made and the work continues.

Salt interception schemes divert salt away from the rivers and will continue to be critical for protecting the river system. Smarter land management and improved farming practices are also addressing the problem of salinity in the Basin.

Salinity is forecast to continue to increase over time and requires careful ongoing management to prevent a return to the highly saline conditions of previous decades.

## Key facts

**Salinity management is one of the most significant challenges in the Murray-Darling Basin.**



There is **more than one trillion tonnes of salt** in groundwater systems close to the River Murray, deposited over millions of years by ancient oceans, weathering of rocks and rainfall.



Water flowing through the river system and out to the sea through the Murray Mouth is the only **natural way that salt can leave the Basin.**



**14 salt interception schemes** divert approximately half a million tonnes of salt away from the river and adjacent landscapes each year.

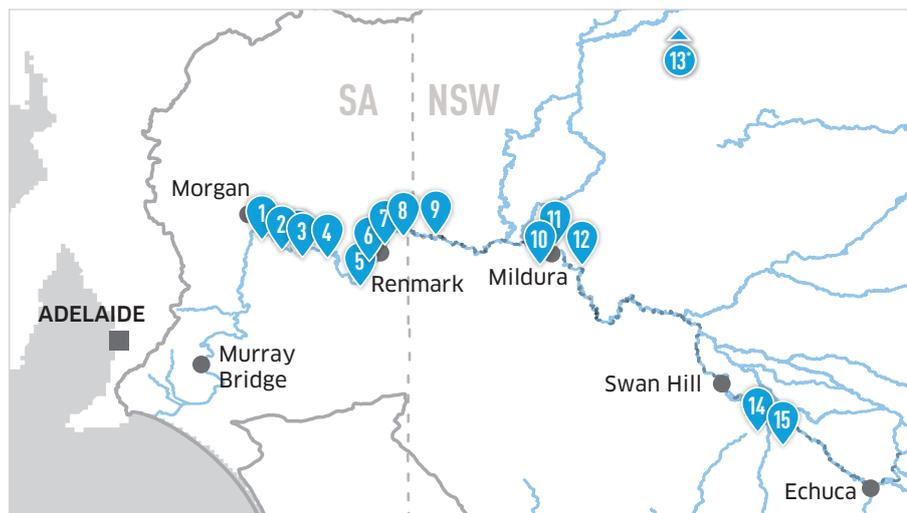


The *Basin salinity management 2030 strategy* **addresses the salinity problem** and supports Basin Plan implementation through salinity targets.



**Smarter development and progressive farming techniques** can help prevent water tables from rising and keep saline groundwater from reaching the roots of plants.

# Salt interception schemes on the Murray and Darling Rivers



1. Waikerie 2A
2. Waikerie (Lock 2)
3. Waikerie
4. Woolpunda
5. Loxton
6. Bookpurnong
7. Pike
8. Murtho
9. Rufus River
10. Mildura-Merbein
11. Buronga
12. Mallee Cliffs
13. Upper Darling
14. Barr Creek
15. Pyramid Creek

## Keeping salt out of the rivers

Reducing the impacts of salinity on our river systems and surrounding landscapes is achieved in two key ways.

### Development and land management

Smarter development can prevent water tables from rising and can keep saline groundwater from reaching plant roots.

In irrigation areas, improved farming methods include:

- improving irrigation efficiency
- updating irrigation infrastructure
- salinity zoning – establishing new irrigation development in areas where the impacts are low.

Improved farming methods in dryland areas include:

- better grazing and crop management
- practicing conservation farming (such as minimal tillage cropping and precision farming)
- the use of deep-rooted plants (such as lucerne, saltbush and farm forestry) to minimise the rise of water tables.

### Salt interception schemes

Salt that is already moving through groundwater is intercepted before it reaches the rivers.

These systems are known as salt interception schemes and consist of a series of bores located near rivers, connected to disposal basins by a network of pipes. The intercepted groundwater is diverted to disposal basins where salt is harvested or deposited in areas that pose less risk to rivers, farm land and natural environments.

There are currently 14 salt interception schemes in the Basin, which divert more than half a million tonnes of salt away from the rivers and adjacent landscapes each year.

## Measuring salinity

Salinity is measured by passing an electric current through a water sample. The presence of salt in the water increases its electrical conductivity (EC), indicating a higher salinity level.

The electrical conductivity of drinking water is usually less than 800 EC, however, sea water is more than 50,000 EC.

The Murray-Darling Basin Authority measures salinity at various locations along the River Murray.



### Connect with us.

The MDBA has offices in Adelaide, Albury-Wodonga, Canberra, Goondiwindi, Griffith, Mildura, Murray-Bridge, Toowoomba, and regional engagement officers around the Basin.

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