



Australian Government



MURRAY-DARLING
BASIN AUTHORITY

Water quality

Good water quality is vital to ensure the Murray-Darling Basin's water is suitable for drinking, agriculture, recreation and the environment.

Water management and land-use practices, as well as natural processes, affect water quality in this large and complex river system.

Water quality is generally good throughout the Murray-Darling Basin but can be compromised by a number of threats, including high salinity, blue-green algal blooms, low dissolved oxygen levels, nutrients and turbidity.

Natural events such as droughts, floods and high temperatures can also quickly degrade water quality.

Monitoring water quality

Better natural resource management approaches and techniques are improving this situation across the Murray-Darling Basin. Ongoing management and monitoring by a range of organisations is essential to maintaining this.

While natural events that cause blackwater and blue-green algae cannot be controlled, careful monitoring and management can lessen their impact.

Targets are in place for managing water flows, water resource planning, and long-term salinity monitoring and management.

Water quality in this large and complex river system will always be a priority for the people who manage it.

Key facts

Water quality in the Basin is improving due to better management approaches and techniques.



More than **three million Australians** rely on Murray-Darling rivers and their tributaries for drinking water.



Good-quality water powers **\$24 billion of primary production** across the Murray-Darling Basin every year.



Clean, fresh water sustains more than **120 waterbird species** and **more than 60 native fish species**, many unique to Australia.



Across the Basin, **30,000 wetlands**, including internationally significant ones, rely on quality water for their continued existence.



Poor water quality can adversely affect **water-based recreational tourism**, and the communities that depend on it.

Threats to water quality

Potential threats to water quality in the Basin include:

- **Salinity** – salinity occurs naturally when salt levels are increased by irrigation and land clearing, this can affect the health of the environment, reduce drinking water quality, and affect crops and livestock.
- **Blue-green algae** – this is found naturally in fresh water but can be made worse by factors, such as elevated water temperatures, sunny days and nutrient loads. These conditions can lead to algal blooms, which pose a serious risk to both human and animal health.
- **Low oxygen** – in floods, nutrient rich 'litter', such as leaves and branches, is washed into rivers. In some circumstances, breakdown of this organic matter can quickly consume the oxygen in the water, creating a phenomenon called 'hypoxic blackwater' which can kill aquatic life (such as fish, turtles and crabs) in large numbers.
- **Nutrients** – elements such as phosphorus and nitrogen enter the Basin's waterways through agricultural activity, stormwater runoff or erosion, and can stimulate algal growth.
- **Turbidity** – when matter suspended in water, including sediment introduced by erosion or stirred up by carp, reduces light penetration, affecting plants and animals in the water.
- **Temperature** – cold water released from dams in summer can damage ecosystems. Conversely, warmer temperatures in summer can also be harmful and encourage blue-green algae growth.

Salinity can be managed by improving farming systems and operating salt-interception schemes. Currently, 14 schemes divert about half a million tonnes of salt away from the rivers and adjacent landscapes every year.

Managing water quality

Managing flows, wherever possible, can help to mitigate salinity, turbidity, fluctuating water temperature and dissolved oxygen shortages.

Water quality is **managed in partnership** by the Australian Government and the Basin state and territory governments.

At the local level, **communities and landholders are working together**, with the Murray–Darling Basin Authority and local and state governments, to reduce salinity and improve water quality overall.

Water resource plans are required to include **water quality management plans**. These plans identify key causes of water quality degradation and risks to water quality and incorporate water quality and salinity targets. They also specify cost-effective measures that will be undertaken to achieve water quality objectives.

Water quality targets are set out in the Murray–Darling Basin Plan, the Murray–Darling Basin Agreement, the National Water Quality Management Strategy and the Water Quality Guidelines.

The Murray–Darling Basin Authority annually assesses performance against water quality targets for managing water flows, and evaluates Basin Plan water quality outcomes every five years.

Basin Governments apply an adaptive management approach to water quality, using new information, trialling techniques and making changes as needed.



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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