



Australian Government



Summary of the Discussion Paper: Climate change and the Murray-Darling Basin Plan

In February 2019 the Murray-Darling Basin Authority released a discussion paper which explains how the Basin Plan helps to adaptively manage climate change impacts and informs the design and implementation of an MDBA climate change research program.

The **Earth's climate is changing** and projections suggest an increase in drought frequency and severity will continue, with extreme weather events such as storms and floods becoming more frequent and intense.

Climate change is expected to have significant impacts on **water availability in the Basin**. The Bureau of Meteorology projects rainfall will decrease. Increased variability is also predicted, with declines less certain in the **northern Basin**, which historically, has a more variable and intermittent rainfall pattern. Overall, the **southern Basin** is receiving less annual rainfall compared to the long-term average.

Adaptive management and climate change

The MDBA Discussion Paper provides an in-depth analysis detailing how the current settings in the Basin Plan consider climate change.

Monitoring, new science and evaluation are at the core of **adaptive management** in the Murray-Darling Basin. When the Plan was developed in 2012, a variable and changing climate was considered and built into many elements of the Plan and water management in the Murray-Darling Basin.

MDBA climate change research program

As a next step, the MDBA will work with the independent Advisory Committee on Social, Economic and Environmental Sciences (ACSEES) and other key stakeholders, to develop a climate change research program for the MDBA.

The following **five elements** are proposed for initial consideration:

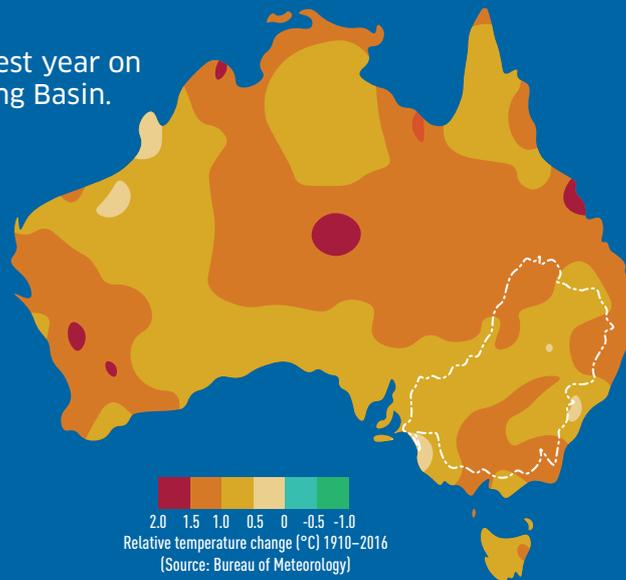
- 1.** Continued collaboration with the Bureau of Meteorology, CSIRO and other research partners to understand and utilise the latest climate change science.
- 2.** Review of adaptation actions implemented by Basin governments and environmental water holders; and working with these stakeholders to create a unified approach to identifying and addressing climate risks.
- 3.** Working with policy institutions, eminent scientists and governments to advance discussions around difficult policy questions arising from climate change impacts.
- 4.** Assessment of progress towards addressing climate change risks through Basin state water resource plans.
- 5.** Enhancing our capacity to assess climate change impacts on the Basin; refining the way we test policy robustness; develop planning and operational tools to support decision making; and exploring alternative strategies to provide for a better future.

The Basin's climate is changing

The year 2018 was the hottest year on record for the Murray-Darling Basin.

Extremely low rainfall recorded in the Basin over the past two years has only occurred on two other occasions since 1900.

In 2018, the Basin as a whole recorded the eighth driest year on record—the driest the Basin has been since 2006.



Temperatures across Australia are now 1°C hotter (on average) relative to 1910.

For NSW, 2018 was the sixth driest year on record, and in some parts of northern NSW, the lowest rainfall on record.

For Victoria, 2018 was the twelfth driest year on record.

The discussion paper poses some questions that may be considered in the research program:



Hydrology & ecology:

What management and operational measures can be put in place to improve the resilience of the Basin's environmental assets?



Water quality:

As water quality risks change under climate change, what strategies can be implemented to ensure water quality remains fit-for-purpose across the Basin?



Basin economies & the water market:

What are the climate change business risks to irrigators? Will the existing trade rules continue to be effective in achieving productive and resilient water-dependent industries and communities?



River Murray operations:

What more can be done to adapt the operation of the River Murray in response to the changing climate and how can we work with all other river operators in the Basin to help adaptation?

The Murray-Darling Basin



For more information visit

mdba.gov.au/basin-plan-roll-out/climate-change

Office locations

Adelaide, Albury-Wodonga, Canberra, Goondiwindi, Toowoomba



1800 230 067



engagement@mdba.gov.au



mdba.gov.au