



# Improving Australia's water information

Australia supports its population, agriculture and industry by making water available for various uses. As demand for water increases, it becomes more important to measure, monitor and report on our water resources in a transparent and rigorous way.

Australia has highly variable rainfall from region to region and year to year. Rainfall affects streamflow and groundwater replenishment, which in turn affects the water available for human use and ecosystem health. This variability poses challenges for water management and has resulted in times of scarcity when drought arrives.

Several environmental and economic factors increase the pressure on Australia's water resources:

- a drying and warming climate;
- increasing groundwater extraction;
- urban population growth;
- the need to increase environmental flows;
- increasing demand for irrigation;
- expanding plantations, farm dams and other agricultural activity;
- impacts on streamflow of more frequent bushfires.

As demand increases it becomes more important to have a common source of comprehensive, accurate and timely information about our water resources so that they can be managed effectively across the country.



Agriculture on the Ord River, one of the regions in the National Water Account.

## What do we mean 'water information'?

The *Water Act 2007* defines water information as raw data or value-added information about:

- the availability, distribution, quantity, quality, use, trading or cost of water;
- water access rights, water delivery rights and irrigation rights.

The definition also includes metadata and relevant information about land use and geological and ecological context.

## The Bureau's responsibility

Under the Water Act, the Bureau is responsible for collecting and compiling water information and making it accessible to the Australian public. This work is carried out with funding from the *Improving Water Information Programme*, part of a 10-year programme announced by the Australian Government in 2008 to secure long-term water supply for all Australians.

## What is involved

The water information published by the Bureau is based on data supplied by almost 200 organisations across Australia.

Securing comprehensive and accurate data from so many sources requires sustained collaboration at the local, state and national level. Since 2008, the Bureau has been working closely with data collectors and stakeholders in the water industry and research sector to produce water accounting standards, national guidelines for hydrometric monitoring and a common data transfer format.



It also requires effective data collection. Since 2008, Australia's hydrologic monitoring system has been modernised and extended making it easier for water collectors to provide accurate information from across the country in a consistent and timely manner.

Further work on data warehousing and procedures for data sharing and management ensures that more than 29 million files and the 4 billion time-series observations that the Bureau has received since 2008 are standardised and accessible to all stakeholders.

Together these activities ensure that the water information made available to the Australian public is accurate, comprehensive and comparable from one region to another.

### The Bureau's water information products

The Bureau now has a wide portfolio of water information products covering historical information and trends, current status, forecasts and planning tools allowing users to take both the local and national perspective on water resources in Australia.

Key products include the National Water Account, the Groundwater Information Suite, Water Storage, Design Rainfalls, Geofabric and the seasonal and 7-day streamflow forecasts. Visit [www.bom.gov.au/water](http://www.bom.gov.au/water) to see the full portfolio.



Water information helps policymakers and managers look after wetlands like the Barmah-Millewa Forest. Photographed by Alison Pouliot.

### From information to intelligence

The water information now available has transformed decision-making. It is now possible for anyone working in policy, water management and research to access reliable information to help answer questions like

- How is water availability changing over time?
- Who is entitled to use water?
- How much water is being traded?
- How much water might flow downstream in the next week or the next few months?
- What is the status of our aquifers?
- What is the soil moisture level and how is it changing?
- How are water management and climate influencing the availability and use of water?

The Bureau's water information has proven its value over the years for a range of purposes in infrastructure design, flood mitigation, water supply forecasting, river management and environmental flows, water sharing plans, policy advice and investment and rural financing.

This list of the ways that water information has been used shows the type of questions we face in managing water, both to secure supply and look after the health of our ecosystems. These questions will always be with us. The depth and range of our water information, together with the capability of the Bureau and the wider water community to work together to collect, manage and share water information, means we are better placed to manage water and prepare for the future.

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