



Australian Government



The Murray-Darling Basin

Australia's largest and most diverse river system

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The Murray–Darling Basin is Australia’s largest and most diverse river system — a place of great national significance with many important social, economic and environmental values.

The Basin dominates the landscape of eastern Australia, covering over one million square kilometres — about 14% of the country — including parts of New South Wales, Victoria, Queensland and South Australia, and all of the Australian Capital Territory. Australia’s three longest rivers — the Darling, the Murray and the Murrumbidgee — run through the Basin.

The Basin is best known as ‘Australia’s food bowl’, producing around one-third of the national food supply. Agriculture (and associated industries) has helped create and continues to support important regional communities. The Basin has an important place in the cultural heritage of all Australians. Many of its iconic heritage features underpin our collective identity and are celebrated in the work of our authors, painters, film-makers and other artists.

Basin landscapes and climates

The Murray–Darling Basin is made up of the catchments of the Murray and Darling Rivers, and all of the rivers and creek that flow into them.

The Basin’s climatic zones range from subtropical in the far north to cool and humid eastern uplands, the high alpine country of the Snowy Mountains, the temperate southeast and the hot, dry semi-arid and arid western plains.

The underlying landscapes of these climatic zones evolved over hundreds of millions of years. Between 45 million and 160 million years ago, as Australia separated from the ancient supercontinent of Gondwana, land near the eastern edge of Australia was pushed upwards to form what is now the Great Dividing Range. This range forms the eastern boundary of the Basin. About 65 million years ago, the southern part of the Basin began to sink slightly, causing the rivers to flow generally westward to the mouth at Goolwa and eventually forming the Basin’s current southern and western boundaries.



Hume Dam at 7% capacity in 2007 (left) and 100% capacity in 2011 (right)

A highly variable river system

Australia is the driest inhabited continent on earth, and despite having one of the world’s largest catchments, river flows in the Murray–Darling Basin are among the lowest in the world.

Most of the Basin is arid or semi-arid, and rainfall varies greatly from year to year. In fact, the Basin has the most varied river flows of any similarly-sized river system in the world, with long droughts often broken by large rainfall events and floods.

Water inflows also vary greatly between the north and south. The sheer size of the Basin, coupled with a high evaporation rate, means that heavy rainfall in upland areas doesn’t always reach downstream areas. (94% of rainfall in the Basin is lost to evaporation.)

It is predicted that climate change will see extremes in weather becoming more common, and modelling suggests that the Basin will become hotter and drier, particularly in the south.

Resources

The Murray–Darling Basin’s natural resources support two million people living within its boundaries, and millions of other Australians. Industries that rely on these resources include gold, copper, coal and natural gas mining operations; forestry and fisheries; tourism; and all the businesses that service those sectors.

As one of the driest catchments in the world, water is an extremely valuable resource in the Murray–Darling Basin. More than three million people (living within and outside the Basin) depend on its water. Water is also vital for not only the Basin’s most significant industry — agriculture — but also forestry, fishing, tourism and recreation. The health of many unique ecosystems and a large number of plants and animals is also dependent upon the water.

Basin animals and habitat

The Basin supports a diverse range of plants and animals. Over 350 species of birds (35 endangered), 100 species of lizards, 53 frogs and 46 snakes have been recorded — many of them found only in Australia.

At least 34 bird species depend upon wetlands in the Basin for breeding. The Macquarie Marshes and Narran Lakes are vital habitats for colonial nesting waterbirds (including straw-necked ibis, herons, cormorants and spoonbills). Sites such as these regularly support more than 20,000 waterbirds and, when in flood, over 500,000 birds have been seen. Fifteen species of frogs also occur in the Macquarie Marshes, including the striped and ornate burrowing frogs, the waterholding frog and crucifix toad.

More than 60 species of fish live in the Basin's waterways, including the iconic Murray cod. This includes 11 non-native and seven marine or estuarine species. Native fish numbers and distribution have reduced significantly since European settlement, and about 50% of the species are considered threatened or of conservation significance.

Habitat for Basin animals includes over 25,000 wetlands — 16 of these have been recognised internationally for their importance to migratory birds. The Basin also contains the world's largest stand of river red gum, the Barmah–Millewa Forest. Many of the native plants and animals in the Basin are protected in national parks and other reserves, which make up around 7% of the Basin's total area.



Left to right: Sacred kingfisher, a river red gum in Doctors Swamp during a flood, and the iconic Murray cod.



Top to bottom: Canoeing on Keepit Dam, inspecting a demonstration canola field, and locals enjoying a swim in the River Murray.

Basin people

The Basin is home to more than two million people across four states and one territory.

Many Aboriginal nations are located within the Basin (making up around 15% of the national Indigenous population) and their cultural heritage dates back over 45,000 years. Guided by traditional law and custom, Aboriginal people protect and conserve ecosystems in their natural state to ensure balance; and healthy ecosystems also support their cultural and commercial practices. There are over 10,000 known Aboriginal sites in the Basin.

European settlement started throughout the Basin from the early 19th century, and regional centres began developing in support of agriculture and other industries. Many of these have grown into significant towns or cities such as Toowoomba, Wagga Wagga, Albury–Wodonga and Bendigo.

Basin communities support a rich and diverse range of cultures, and provide valuable contributions to Australia's economic prosperity and social fabric.

Development and water management

Farming has been practiced in the Basin for more than a century and many regional communities grew around agriculture and related industries. As the population and industries expanded, dams and weirs were built which allowed water to be captured, stored and diverted for human use (providing a more reliable water supply). These structures were vital for inland Australia's development; and they are also used to help reduce the impact of floods.

From the 1950s, the amount of water being taken from the Basin's rivers for agriculture increased rapidly. This increase, combined with droughts and water management decisions, left less and less water for the environment. This resulted in a decline in the health of rivers and the plants and animals that depend on water to survive. Reductions in river flows and natural floods also contributed to an increase in the amount of salt in the Basin's rivers and blue-green algae outbreaks started occurring more often.

These issues highlighted a need to change the way the Basin's rivers were managed. More water had to be available to support valuable ecosystems and ensure the health of the Basin for future generations.

The Water Act and Basin Plan

Until recently, Australian water management was the responsibility of individual state/territory governments. Their primary focus was the fair distribution of water between states, for human use.

Spurred by the impacts of recurring drought, by 2007 it was agreed that the Basin needed a solution that balanced the needs of people and the environment. This resulted in the Water Act, which was endorsed by Parliament.

The Water Act put the Murray–Darling Basin Authority (MDBA) in charge of creating a solution that would result in a healthy, working Basin. The solution was the Basin Plan, which became law in November 2012. Under the Basin Plan, a limit was set on the amount of water that can be taken from the Basin's rivers for human use, and a target was set for recovering water that can be used to improve the health of the environment.



Clockwise from left: Outflow from Buronga salt interception scheme, Yarrowonga Weir forming Lake Mulwala and irrigation channels, weir on the River Murray at Mildura.

To create the Plan, MDBA worked closely with the Basin state governments, scientists, representatives of industry, Indigenous and environmental organisations. We also toured the Basin, talking and listening to the communities involved. This made sure the Plan was informed by the best-available scientific, social, cultural and economic knowledge.

As the Plan takes effect and knowledge increases, it may be revised to improve outcomes for people and the environment.

Tell me more

To learn more about the Murray–Darling Basin, or to get the latest updates on the Basin Plan, visit our website: www.mdba.gov.au.

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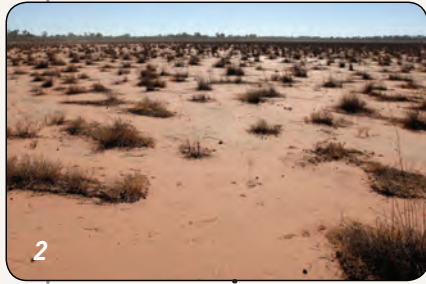
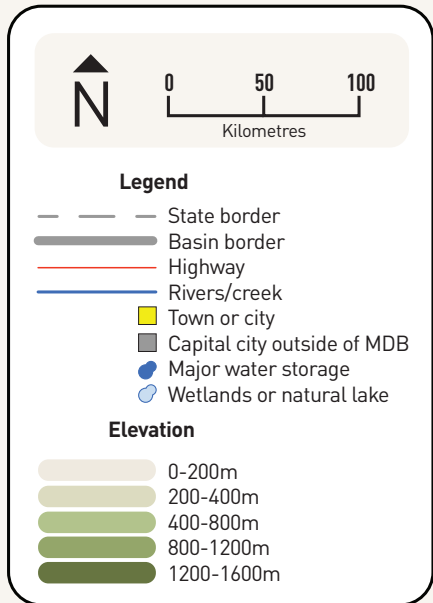
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Landscapes of the Murray-Darling Basin



The Murray-Darling Basin:

- contains 77,000 km of rivers, including Australia's three longest (Darling, Murrumbidgee, Murray)
- receives very variable rainfall, with drought every decade on average
- carries very little water for its size: the average yearly flow is less than the daily flow of Brazil's Amazon River
- has a broad climatic range from semi-arid and sub-tropical in the north to alpine in the south-east
- has around two million residents
- produces 1/3 of Australia's food
- contains over 30,000 wetlands (16 are listed under the Ramsar Convention for their international significance)
- has one World Heritage site (Willandra Lakes region)
- is home to more than 95 threatened species (35 birds, 16 mammals and five snakes are endangered).

For more information on the Murray-Darling Basin, visit our website: www.mdba.gov.au

Photos

- Narran Lakes in flood – Michael Bell
- Dry Warrego floodplain – Arthur Mostead
- Menindee Lakes – Arthur Mostead
- Cliffs along the Murray in the riverland area – Arthur Mostead
- Murray Mouth and Coorong – Michael Bell
- Renmark, South Australia – Michael Bell
- Mallee scrub at Hattah Lakes – Arthur Mostead
- Barmah Forest in flood – Keith Ward
- Cereal crops in the Murrumbidgee irrigation district – Arthur Mostead
- Hume Dam on the River Murray – Michael Bell
- Dartmouth Dam, the MDB's largest storage – Michael Bell
- Tumut River landscape – Irene Dowdy
- Snowmelt in the Alpine region – Arthur Mostead
- Canola crops near Cootamundra – Arthur Mostead
- Flooding near Bourke – Arthur Mostead
- Cotton harvesting in the Darling Downs region – Arthur Mostead
- Balonne River downstream of St George – Arthur Mostead
- Barwon River upstream of Walgett – Arthur Mostead



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