THE MURRAY–DARLING BASIN

at a glance
The Murray–Darling Basin is made up of 22 catchments which are grouped into the northern (Darling) basin and the southern (Murray) basin. Australia’s four longest rivers are in the basin.

LENGTH OF MAJOR RIVERS IN THE BASIN (not to map scale)

- **MURRAY**: 2,508 km
- **DARLING**: 1,545 km
- **MURRUMBIDGEE**: 1,485 km
- **LACHLAN**: 1,339 km
- **CONDAMINE–CULGOA**: 1,195 km
- **MACQUARIE**: 1,076 km
The river system

The Murray–Darling river system carries one of the smallest volumes of water for its size (an average of 32,500 GL a year).

The volume is very variable and can range from 7,000 GL (in 2006) to almost 118,000 GL (in 1956).

The Murray Mouth is the only place in the basin where a river meets the sea.
**Basin snapshot**

- Around 40% of all farms in Australia are in the basin – almost 51,000 farms
- Total capacity of around 22,214 GL in major water storages
- Gross value of agricultural production is around $19.4 billion (of this $7.1 billion is from irrigation)
- 46 species of native fish and 98 species of waterbirds
- Over 40 Aboriginal Nations. Aboriginal names for rivers include:
  - Galari (Lachlan)
  - Millewa, Dhungala, Murrundi (Murray)
  - Barka (Darling)
  - Wambool (Macquarie)
  - Murrumbidya (Murrumbidgee)

**Population of over 2 million people** (around 10% of Australia’s population)

**Provides water to around 3 million people** (includes Adelaide)

**50% of Australia’s irrigated produce** (area of irrigated production is around 1.6 million hectares)

**14% of Australia’s land mass** (over 1 million km²)

**Agriculture in the basin**

The Murray–Darling Basin generates about $19.4 billion a year from agricultural produce. This includes around 50% of Australia’s irrigated produce, which is worth around $7.1 billion a year.

**The basin produces around:**

- 100% of Australia’s rice
- 80% of Australia’s grapes
- 94% of Australia’s cotton
- 28% of Australia’s dairy
- 96% of Australia’s oranges

(PHOTO BY ARTHUR MOSTEAD)
Aboriginal people have a strong connection with the land and rivers of the Murray–Darling Basin, which has continued for more than 40,000 years.

Cultural sites throughout the basin provide an insight into traditional Aboriginal culture. These sites include fish traps, middens, ochre sites, scarred trees and rock shelters.

Some of the oldest human remains outside of Africa have been found at Lake Mungo, part of the world heritage listed Willandra Lakes region. Evidence of the oldest ritual cremation in the world has also been found there.
A brief history

1863 the first intercolonial conference decides to improve the navigability of Australia’s inland rivers

1902 in response to the Federation drought (1895–1902) the states meet in Corowa, NSW, to resolve competition for River Murray water

1917 the River Murray Commission is established

1922 Weir 1 completed at Blanchetown, SA, on the River Murray (13 more built by 1939)

1936 Hume Dam completed

1939 the barrages in South Australia are completed, to stop sea water entering the Lower Lakes

1956 the largest flood on the River Murray in recorded history

1981 the Murray Mouth closes for the first time in recorded history

1992 the Murray-Darling Basin Commission replaces the River Murray Commission

1996 the longest drought in Australia’s recorded history begins (1996–2010)

2003 one of Australia’s largest river restoration programs is announced – The Living Murray – which aims to restore the health of the River Murray system

2007 the Water Act implements key reforms for water management in Australia. It sets out the requirements for the Basin Plan

2008 the Murray-Darling Basin Authority takes over the functions of the Commission. For the first time, a single agency is responsible for planning the integrated management of water resources across the Murray-Darling Basin

2012 the Basin Plan becomes law, providing for the first time a coordinated sustainable approach to water use across the basin’s four states and the Australian Capital Territory

Droughts and floods have long been part of the basin’s climate. Predictions are that seasonal variability will be greater than experienced in the last 200 years.
Water use

Australia is the second driest continent, only Antarctica is drier. The average annual rainfall across the basin is around 530,000 GL. Only 4% of this rainfall makes it to the river system (because much of the basin is very flat), 2% drains into the ground, and 94% evaporates or is transpired by plants.

Water is diverted for agricultural, household and urban use. Around 80–90% is used for irrigated agriculture.

An average of about 1,375 GL of groundwater is extracted annually. Groundwater is a finite resource and is replenished only when surface water seeps into (recharges) the aquifers.
Environmental water

In recent decades, the health of the Murray-Darling Basin has been affected by droughts and over-use of water resources. The key to improving the health of the basin’s river system is through managing more natural and variable flows by leaving more water in rivers, wetlands and floodplains.

The Australian Government recovers environmental water by investing in water-efficient infrastructure on farms and buying back water. The water is then used to help improve the health of priority environmental sites.

The Murray-Darling Basin Authority works with the basin governments to develop short and long term priorities for environmental watering so that it is coordinated across the whole basin.
There are 16 wetlands listed as internationally significant (Ramsar sites).
The Basin Plan

The Basin Plan was introduced in November 2012 and provides a coordinated approach to water use across the basin’s four states and the Australian Capital Territory. It sets sustainable limits on extraction of both surface water and groundwater.

The Basin Plan will be rolled out over seven years. It aims to achieve a balance between environmental, economic and social considerations. The Plan is supported by Australian Government investment in irrigation infrastructure and voluntary water purchasing.

There can be an adjustment to the Plan if ways are found to achieve the same environmental outcomes with less water.
Environmental water recovery progress

Before the Basin Plan

13,623 GL was the average amount of water extracted from the basin’s rivers annually

That’s a reduction of 2,750 GL

30% to be recovered by 2019

around 70% already recovered

Basin Plan target

10,873 GL

known as the: sustainable diversion limit (SDL)

There is an opportunity to change the SDL through making river system or on-farm improvements.

The SDL can be changed providing there is no adverse impact on environmental, social or economic outcomes.

Around 70% of environmental water recovery progress has already been recovered. 30% is to be recovered by 2019.

3,468 GL northern basin
7,405 GL southern basin
7,405 GL

10,873 GL ± 5%

Before the Basin Plan

13,623 GL was the average amount of water extracted from the basin’s rivers annually.
Basin Plan implementation steps

2014
- Basin environmental watering strategy published
- Groundwater reviews completed
- Water trading rules begin

2015
- Northern Basin Review completed
- Roll out of the Aboriginal Waterways Assessment tool

2016
- Constraints projects begin
- Sustainable diversion limits reviewed in the northern basin

2017
- Adjustment of sustainable diversion limit determined
- Five yearly report on the effectiveness of the Basin Plan published

2019
- Sustainable diversion limits come into effect
- Five yearly report on the effectiveness of the Basin Plan published

2022
- All state water resource plans revised in line with Basin Plan
- Ten year review of Basin Plan

2024
- Completion of agreed constraints measures
- Completion of ‘supply’ and ‘efficiency’ measures for the sustainable diversion limit adjustment

Note: the timing of some elements may change because of the review of the Water Act 2007 or other factors.