



Core units: Exemplars – Year 7

Illustration 2: Murray-Darling Basin Plan: Alternative perspectives

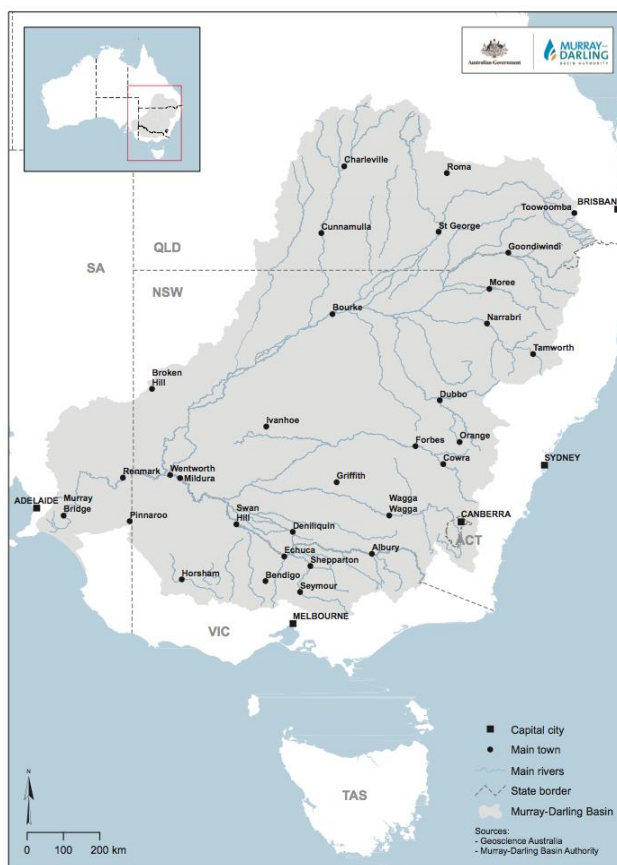
# The Murray-Darling Basin: Overview

## Introduction

The combined catchments of the Murray and Darling Rivers and their various tributaries are often referred to as the Murray-Darling Basin. It is home to more than two million Australians and includes the majority of Australia's larger inland regional urban centres. It also includes Canberra, the nation's capital. Thirty Aboriginal nations live in the Basin with the rivers being central to their rich cultural heritage and spiritual wellbeing.

## Location and extent

The Murray-Darling Basin is enormous (see map below). It includes three-quarters of New South Wales and half of Victoria. In total there are 23 river catchments in the Basin, covering over one million square kilometres, or 14% of Australia.



**Map of the boundaries of the Murray-Darling Basin**

Source: Murray-Darling Basin Authority. Retrieved January 2013 from: [http://www.mdba.gov.au/files/cartographicmapping/8\\_Murray-Darling\\_Basin\\_Boundary.pdf](http://www.mdba.gov.au/files/cartographicmapping/8_Murray-Darling_Basin_Boundary.pdf). This resource is provided under a Creative Commons Attribution 3.0 Australia Licence.



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## Water resources

Rainfall within the Basin is highly variable and unevenly distributed. On average, however, the Basin receives 530,618 gegalitres of rainfall per year. This is 1,000 times the volume of Sydney Harbour! Of this, 94% evaporates or transpires through plants, and 2% drains into the ground, leaving only 4% as run-off. The catchments draining the Great Dividing Range, especially in the south-east and southern parts of the Basin, contribute most of the run-off. For example, the Murrumbidgee and Goulburn, Broken and Loddon catchments account for 35% of the Basin's total run-off, but covers only 12% of its area. The Upper Murray catchment contributes 17.3% of the Basin's run-off, but covers only 1.4% of its area.

Throughout the catchment, water is stored for domestic supplies, irrigation and industry. The Murray-Darling Basin Authority's <<http://www.mdba.gov.au/>> website features a map showing the status of the whole Basin's water in storages <<http://www.mdba.gov.au/water/waterinstorage>>. The map is updated weekly.

## Economic activity in the Basin

The Basin is one of Australia's most important agricultural regions. It accounts for 39% of the country's income derived from agricultural production, produces 53% of the grain-based cereals (including 100% of the rice crop), 95% of its oranges and 54% of its apples. The Basin supports 28% of the nation's cattle herd, 45% of sheep and 62% of its pigs. In total, the Basin accounts for over one-third of Australia's food supply. The Basin includes 65% of Australia's irrigated agricultural land.

## Murray-Darling Basin Plan

In late November 2012, the Australian Government's final plan for the Murray-Darling Basin was signed into law. The plan involves cutting existing water allocations and increasing environmental flows. These actions are designed to address the problems of the Murray-Darling Basin, which include:

- over-allocation (that is, granting irrigators water licences that exceed the available amount of water in a river system)
- prolonged drought
- natural climate variability
- climate change.

Over time, these issues have led to the deterioration of rivers, wetlands, forests and the floodplains of the basin.

The Basin Plan <<http://www.mdba.gov.au/basin-plan>> represents an integrated approach to water management. It:

- establishes basin-wide objectives for environmental wellbeing, water quality and salinity
- ensures that there is sufficient water allocated to the environment by setting sustainable limits on the water used for irrigation in the Basin
- provides a consistent framework for water trading
- encourages improvements in the management of water resources.

Under the plan, 2,750 GL of water will be returned to the river system by 2019 to maintain environmental flows. This will be used to revitalise the Basin's wetlands, flood plains and riverside forests. A further 450 GL of water will be returned to the river system by 2024 through more efficient and smarter water use.

Environmentalists and some hydrologists argue that 7,600 GL is needed to be returned to the river system to bring long-term sustainability to the Basin. Others argue that the loss of such a large amount of water would not be socially or economically responsible and would have a serious impact on the communities and economy of the Basin.

### Key terms

**Environmental flow:** The flow of water in a river or stream required to maintain healthy aquatic and riverine ecosystems.

**Water trading:** The process of buying and selling water entitlements. It is argued that water trading can promote more efficient allocation and use of water because a market-based price acts as an incentive for users to allocate resources from low-value agricultural activities to those of higher value.

**Gigalitre (GL):** One billion litres (that is 1,000,000,000 litres or 1,000 megalitres). By way of comparison, the volume of Sydney Harbour is 560 GL.