



Australian Government



MURRAY-DARLING  
BASIN AUTHORITY

# The Barmah Choke

About 25,000 years ago, an uplift of land created a north-south geological fault in the earth's surface near Deniliquin (New South Wales) and Echuca (Victoria). This natural event changed the River Murray forever, creating what is known as the Barmah Choke—a narrow section of the River Murray that runs through the Barmah-Millewa Forest. While it is generally referred to as the Barmah Choke, it is actually made up of three key flow constriction points: the Tocumwal Choke, the Barmah Choke and the Edward Choke.

In fact, the forest formed, as a result of regular flooding in this section of the river. Because the river is so narrow, flows would often spill over onto the floodplain.

The Choke restricts the flow of the River Murray to just around 7,000 megalitres (ML) per day, estimated at Picnic Point. This is the lowest flow in any stretch of the Murray. It presents a challenge for river management, primarily because it limits the delivery of irrigation water during periods of peak demand, generally in spring and summer.

During summer and autumn, river managers aim to keep flows at or below channel capacity to minimise unseasonal flooding of the Barmah-Millewa Forest. This constraint provides challenges in meeting downstream peak water use demands and transferring water to Lake Victoria and South Australia, for storage in use even in relatively dry years.

The Choke has led to a restriction in water trade from areas upstream to downstream of the Barmah Choke, which must be considered in business planning.

## Key facts

**The Barmah Choke is a narrow section of the River Murray that runs through the Barmah-Millewa Forest.**



The Choke is made up of **three key flow constriction points**: the Tocumwal Choke, the Barmah Choke and the Edward Choke



Trade is restricted **downstream of Cobram, Victoria** and **upstream of Echuca, Victoria**.



It runs through the **Barmah-Millewa Forest** on the Victorian/NSW border.



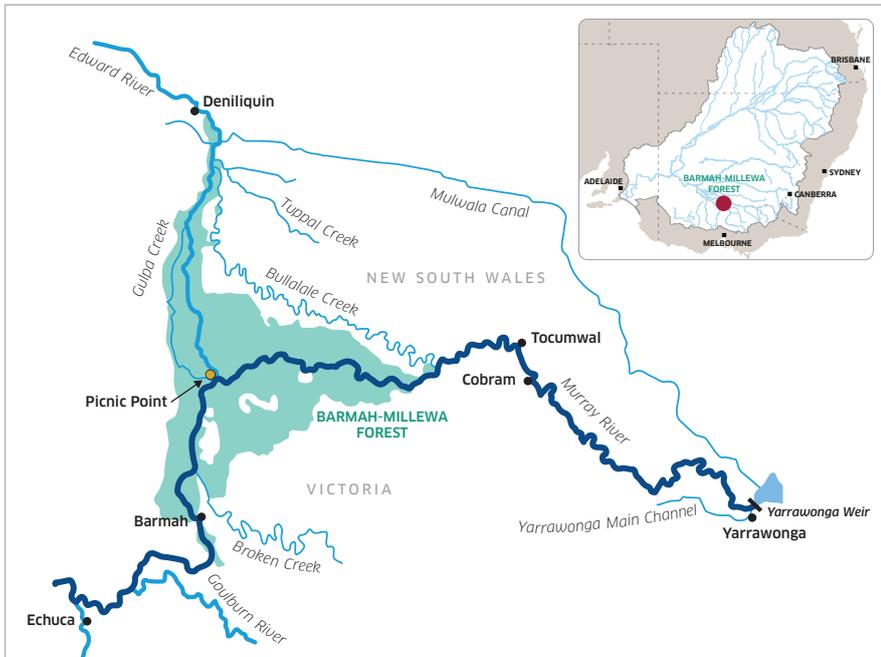
The Choke **restricts the flow of the River Murray** to just around **7,000 ML per day**. This is the lowest flow in any stretch of the Murray.



It **limits the delivery of irrigation water during periods of peak demand**, generally in spring and summer.



**Trade** from above the Barmah Choke to below the Choke **is restricted** to protect delivery of water downstream.



The Barmah Choke is located where the River Murray flows through the Barmah-Millewah Forest, the green shaded area on the left. Picnic Point is the narrowest point of the River Murray

## Environmental challenges

The Barmah Choke presents environmental challenges for river managers. Operating the river for long periods at ‘top of bank’ levels leads to notch erosion and bank instability.

Unexpected changes in weather and water demands can lead to events such as **rainfall rejections**, where unseasonal flooding is unavoidable.

A **rainfall-rejection** occurs when a combination of rainfall and reduced irrigation demands due to rain, leads to increased inflows into the River Murray. The River level rises and exceeds the capacity of the Choke, flooding the forest.

The Barmah Choke also limits the ability to target the delivery of water for the environment from upstream storages to downstream sites.

## Trade and the Choke

A default trade restriction is in place at the Choke—this is necessary to protect water delivery to existing entitlement holders and for environmental reasons.

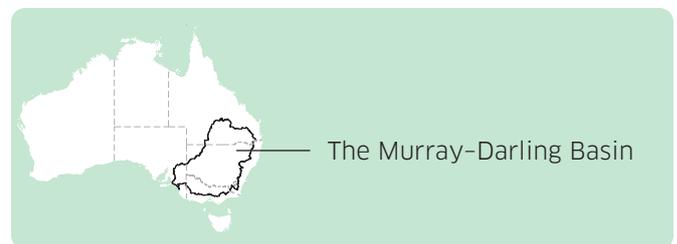
The restriction means that trade downstream of the Choke may only occur when there is sufficient matching trade capacity available in the opposite direction, which is called ‘back trade’. This means people upstream of the Choke can sell water to buyers downstream of the Choke, but only if the same or greater volume of water has been transferred from downstream to upstream of the Choke first.

Factors that influence the restriction include water availability and allocations, and high demand due to climatic conditions. More information on these factors is available in the River Murray Annual Operating Plan.

## Roles and responsibilities

The Murray–Darling Basin Authority (MDBA) is responsible for keeping track of the balance of trade when the restriction activity is in place.

The MDBA also monitors the situation and will lift or adjust the restriction if conditions permit. For example, through the Millennium Drought, the trade restriction was relaxed and trade occurred freely from above to below the Barmah Choke. In October 2014, trade from above the Barmah Choke reverted to the default position and the restriction was actively applied.



### Connect with us.

The MDBA has offices in Adelaide, Albury-Wodonga, Canberra, Goondiwindi, Griffith, Mildura, Murray-Bridge, Toowoomba, and regional engagement officers around the Basin.

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