



The National Aquifer Framework

The National Aquifer Framework is an agreed set of terms used to name and group hydrogeologic units in Australia. It supports informed decision making by ensuring that groundwater information is consistent.

What are the benefits of the framework?

States and territories use different terms to describe sediments and rocks with similar hydraulic characteristics (hydrogeologic units). These differences can cause many difficulties, especially for cross-jurisdictional basins such as the Murray Basin.

By standardising terms, the framework ensures consistent information is available. This helps inform decision-making about Australia's vital groundwater resources.

How is the framework used?

The framework standardises information entered into the Bureau's National Groundwater Information System. This system is a spatial database. Users can access and visualise a range of groundwater information through the system, including bores and bore logs.

Why is the Bureau involved?

The Bureau is responsible to compile and deliver comprehensive water information under the Water Act 2007. The framework builds on our commitment to increase access to vital groundwater information. This informs our understanding on the management of Australia's groundwater resources.

How does it work?

The framework aggregates state-level information to consistent hydrogeologic units.

It has three tiers:

- geologic units (the smallest tier)
- hydrogeologic units
- hydrogeologic complexes (the most aggregated tier).

Geologic units

Geologic units are the smallest mapped or defined geological entity consistent at a national scale. They are comparable to geologic formations, such as Wilson Bluff Limestone and Precipice Sandstone.



Hot water pouring from Artesian Bore on the Birdsville track, South Australia.

Hydrogeologic units

Hydrogeologic units are geologic units with similar hydrogeologic characteristics and behaviour. They are created by aggregating geologic units based on an understanding of hydrogeology, such as Millstream Dolomite and Botany Sands.

Hydrogeologic complexes

Hydrogeologic complexes are a collection of hydrogeologic units. Where saturated, these can be considered as being part of the same aquifer or aquitard. Examples include Quaternary Coastal Sands and Tertiary Volcanics.

A collaborative approach

The framework is a collaboration between:

- the Bureau of Meteorology
- Geoscience Australia
- lead state and territory water agencies.

We review and update the framework as our understanding of hydrogeologic units improves.

Where is it available?

The framework is available for download from the Bureau website at www.bom.gov.au/water/groundwater/naf

Geologic unit	Hydrogeologic unit	Hydrogeologic complex
Cowra Formation	Cowra Formation	
Hindmarsh Clay	Hindmarsh Clay	
Narrabri Formation	Narrabri Formation	Upper Tertiary to Quaternary sediment aquifer
Millstream Formation	Robe Pisolite, Millstream Dolomite	
Robe Pisolite		
Shepparton Formation	Shepparton Formation	
Bungunnia Limestone		
Irymple Member	Blanchetown Clay	
Blanchetown Clay		Upper Tertiary to Quaternary sediment aquitard
Nuntin Clay Member	Boisdale Formation (Nuntin Clay)	
Eagle Point Sand	Eagle Point Sand	
Haunted Hills Gravel	Haunted Hills Formation	
Bookpurnong Formation	Bookpurnong Formation	
Loxton Clays	Loxton Clays	Upper Tertiary to sediment aquitard
Munno Para Clay Member	Munno Para Clay Member	
Abrakurrie Limestone	Wilson Bluff Limestone, Abrakurrie Limestone	Upper mid-Tertiary marine to sediment aquifer
Wilson Bluff Limestone		

Table illustrating how the framework organises and standardises hydrogeologic unit terminology

More information

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More information about the National Aquifer Framework is available on the Bureau website www.bom.gov.au/water/groundwater/naf or scan the QR code. You can also contact the Bureau's water team at water@bom.gov.au.

