



The Cambrian Limestone Aquifer:

A fact-based response to misleading claims by the Finocchiaro Government

Water is life in the Northern Territory.

Our ancient underground aquifers are our lifeblood, supplying 90% of our water needs, keeping our springs and rivers flowing, and home to diverse ecosystems not found anywhere else on earth.

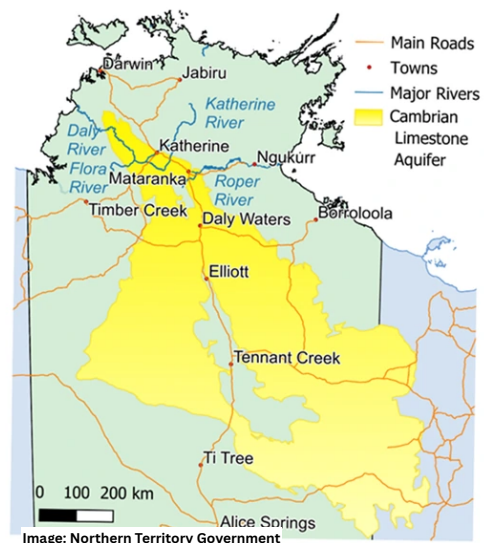
The Cambrian Limestone Aquifer is a massive groundwater system in the Northern Territory. It supplies water for communities, as well as the tourism, farming and pastoral industries, and discharges into the Roper and Daly rivers.

However, [recent independent research](#) by Griffith University concluded that this vital water source has been drying, and it can be seen from space.

The research was peer-reviewed and analysed 20 years of satellite, bore, rainfall, river, and remote sensing data to track changes in the aquifer.

The Northern Territory Government (NTG) has since [publicly criticised the study](#), claiming it is “flawed” and misleading.

The research team refutes these claims.



The Facts

The Griffith Research team has identified six key claims the government made as being misleading, including misrepresentation of the study's findings and unfounded criticisms

of the methodology.

GOVERNMENT CLAIM ONE:

The Griffith University study is “flawed” and makes misleading claims about the aquifer.

FACT:

According to the study's researchers, the research underwent rigorous anonymous peer review by field experts and met the journal's editorial and publishing standards.

GOVERNMENT CLAIM TWO:

The study only used a short, recent period of data and is therefore unreliable.

FACT:

The study analysed 20 years of data (2002–2022), including a decade of baseline data before groundwater extraction from the aquifer increased during 2013–2014.

The study ended in 2022 due to the time required to acquire, process, and quality-check new GRACE data, as well as the academic peer-review timeline – both standard practices in this field.

More recent data is being carefully analysed as part of ongoing research by the team.

GOVERNMENT CLAIM THREE:

GRACE satellite data is too coarse to assess groundwater changes.

FACT:

NASA guidelines confirm that GRACE satellite data is appropriate for large aquifer systems like the Cambrian Limestone Aquifer, which is large enough for GRACE to reliably detect groundwater storage changes.

In addition, the study used a wide range of datasets to assess these changes. GRACE satellite data is reliable when combined with other datasets used by the team – including government's own bore data, rainfall, river flows, model outputs, and Landsat satellite imagery.

All these datasets were used in combination with the GRACE data to track aquifer storage and water balance changes. This is not acknowledged in the government's statement.

GOVERNMENT CLAIM FOUR:

Water loss in the aquifer is tiny – “the depth of your thumbnail.”

FACT:

The government statement's method for calculating water loss is misleading because it ignores the aquifer's physical and hydraulic characteristics, such as the amount of pore space in the rock. When these factors are properly accounted for, actual changes in groundwater levels range from tens of centimetres to over a meter.

This is enough loss of water to reduce spring flows, harm ecosystems, and impact culturally important water places.

Further, depth-based averages across the whole extent of the Cambrian Limestone Aquifer hide potentially serious local depletion.

GOVERNMENT CLAIM FIVE:

The study claims extraction is the sole cause of depletion.

FACT:

The study explicitly acknowledges the role of climate variability in the depletion of groundwater levels. But it is scientifically valid to note that increased extraction coincided with intensified groundwater decline, using multiple datasets to support this connection.

GOVERNMENT CLAIM SIX:

The Cambrian Limestone Aquifer is vast, stable and “plentiful”, so water extraction isn’t a problem.

FACT:

Size does not equal safety. This is a fractured, karst aquifer where impacts are uneven, delayed and concentrated at springs, rivers and ecosystems, not spread evenly across the landscape.

One of the key findings from the research was slower recovery of freshwater storage after dry periods in recent years, indicating that the aquifer is becoming less resilient.

Bottom Line:

The question is simple: when it comes to protecting the Territory’s water – do we listen to rigorous, independent peer-reviewed science?