



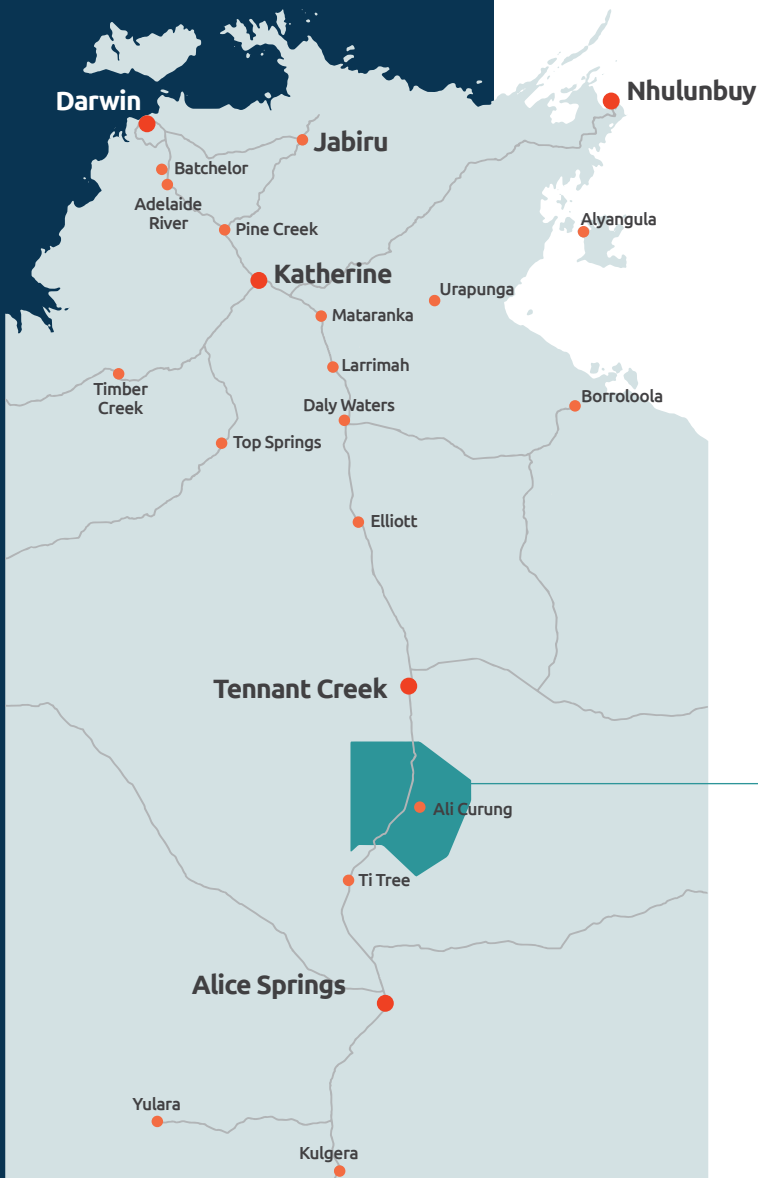
STATE OF THE WATER RESOURCE

Western Davenport

2024-25

Department of
Lands, Planning and Environment





This report provides information about the current status of the water resource, how water is shared and used, and the activities that were undertaken to manage water during 2024-25.

**WATER CONTROL DISTRICT
WESTERN DAVENPORT**

**PLAN AREA
24,500 KM²**

**ABORIGINAL COMMUNITY
ALI CURUNG**

ACKNOWLEDGEMENT

The Department of Lands, Planning and Environment proudly acknowledges the Northern Territory's Aboriginal communities and their rich culture and pays respect to the Elders past and present. We acknowledge Aboriginal peoples as the Traditional Owners and custodians of the lands and waters on which we all rely.



Front cover image: Ali Curung

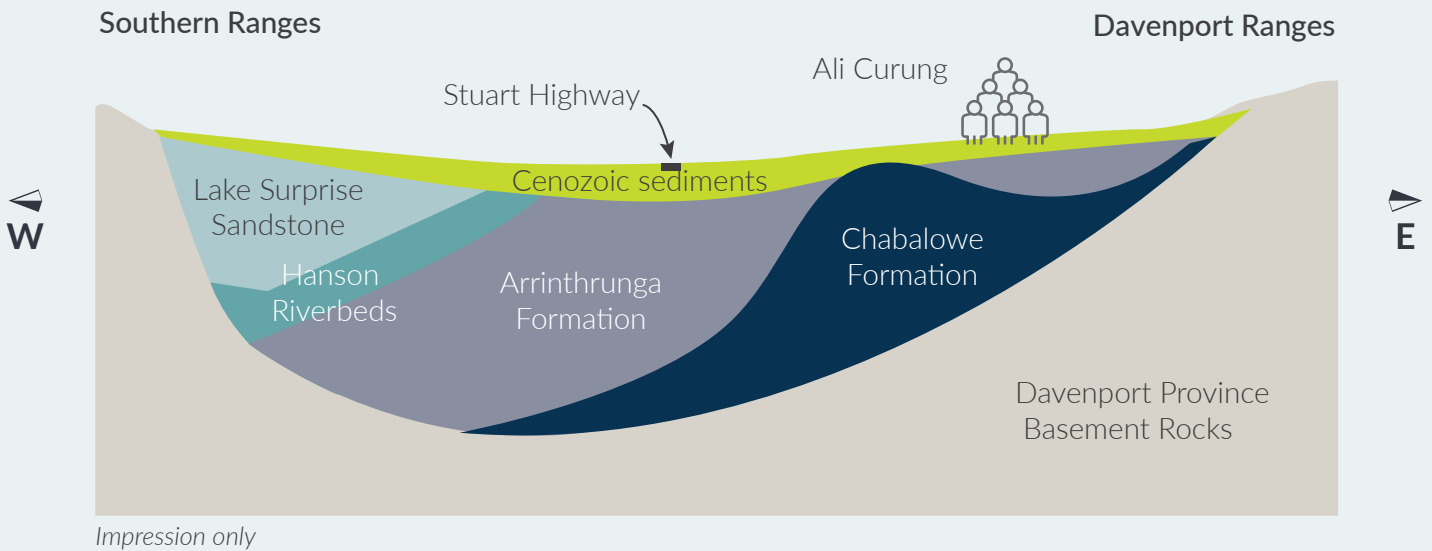
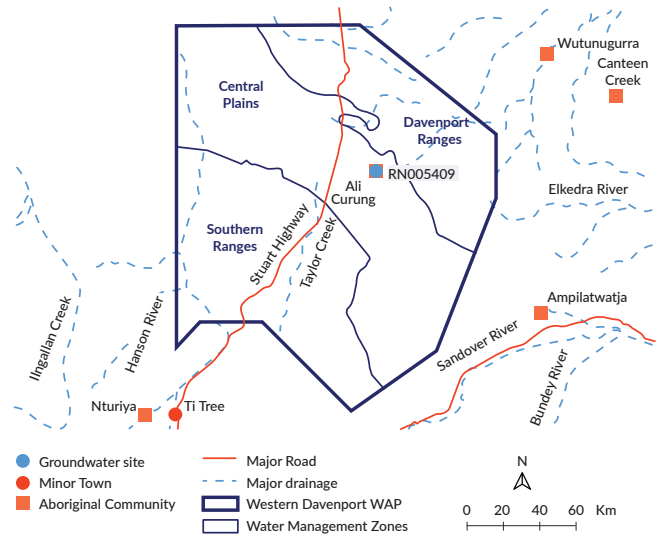
The Western Davenport water allocation plan (the plan) is the fifth for the district and was declared in December 2024 for 10 years.

The plan has three water management zones, each with different groundwater characteristics: the Davenport Ranges, Central Plains and Southern Ranges. The major, and most productive aquifers are located in the Central Plains management zone, and include aquifers in the Cenozoic sediments, Lake Surprise Sandstone, Arrinthrunga and Chabalowe Formations.

The district was first identified for its groundwater potential through a soil and land suitability assessment for irrigated agriculture in 2016.

The plan tells us how water should be shared between competing uses and sets objectives for management.

Where groundwater lies close to the surface, it can support important Aboriginal cultural values and groundwater dependent ecosystems (GDEs). The likely distribution of GDEs has been mapped, and the plan requires the protection of at least 70% of these sites from water extraction impacts.



WESTERN DAVENPORT PLAN AREA



AVERAGE ANNUAL RECHARGE
152,400 ML/yr



ESTIMATED SUSTAINABLE YIELD (ESY)
87,700 ML/yr

The department maintains 56 monitoring sites including 50 bores and 6 surface water sites in the plan area. All monitoring locations are visited each year, with the data used in a groundwater model.

The model allows us to predict what might happen to the water resource under different climate and water extraction scenarios. To view monitoring data across the Northern Territory, visit the [water data portal](https://ntg.aquaticinformatics.net/)¹.

¹ <https://ntg.aquaticinformatics.net/>

WATER THAT STAYS IN THE ENVIRONMENT

ESTIMATED SUSTAINABLE YIELD

87,700 ML/yr

1 RURAL STOCK AND DOMESTIC*



983 ML/yr

2 PUBLIC WATER SUPPLY



565 ML/yr

3 ABORIGINAL WATER RESERVE



25,677 ML/yr

4 ECONOMIC DEVELOPMENT



60,445 ML/yr

* Rural stock and domestic usage is unlicensed and extractions estimated.

HOW WATER IS SHARED

The plan protects the environment by keeping the majority of groundwater in the aquifers. The plan enables the use of 0.06% of groundwater in the aquifers each year, not including rainfall that might top the aquifers back up. Over the 10-year life of the plan, that equates to 0.6% of the aquifer, or approximately 6% use over 100 years, meaning approximately 94% will remain in the aquifer, not accounting for rainfall and recharge events that will occur during this time.

The plan determines that up to 87,700 ML (0.06% stored volume) can be taken sustainably (estimated sustainable yield).

Drinking water will always be allocated first so towns and communities have enough water supply. Provisions are also made for rural stock and domestic users. After water for people has been prioritised, water is allocated to support economic development in the region, including provisions for an Aboriginal water reserve to support Aboriginal economic development.

CLIMATE AND WATER

Aquifers in the plan area display characteristics typical of Arid Zone resources, with low annual rainfall and relatively high rates of evapotranspiration contributing to long periods of little to no groundwater recharge.

Significant rainfall events result in recharge to aquifers approximately every 7-10 years. Surface runoff is intermittent, with short lived flows in rivers and creeks.

Find out more about how resources behave in the Top End compared to the Arid Zone [here](#)².



HOW WATER IS STORED

There is a large amount of water stored within the Western Davenport plan area, most of which is in Central Plains.

The water in storage is replenished during recharge events from surface runoff flowing into the Central Plains from the Davenport and Southern Ranges. Recharge occurs when surface water runoff forms floodouts, where standing water remains for days to weeks at a time. Above is a photograph of flooding at Wycliffe Well after the 2023-24 wet season.

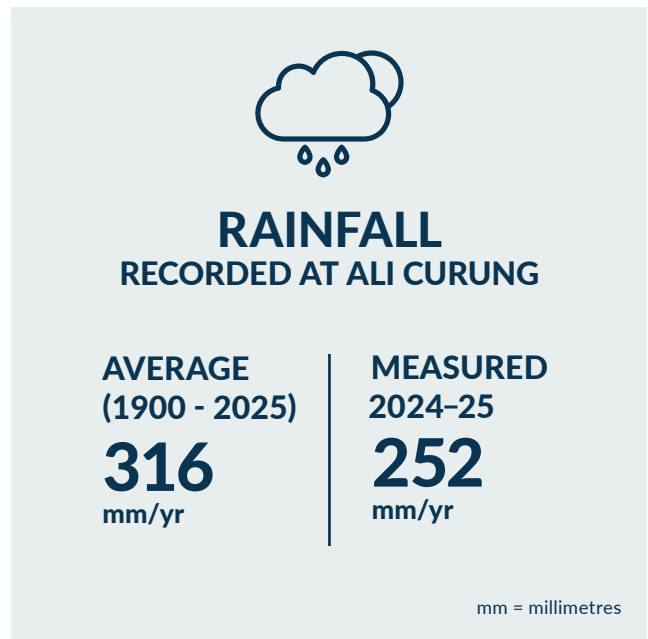
² <https://territorystories.nt.gov.au/10070/843257>

RAINFALL

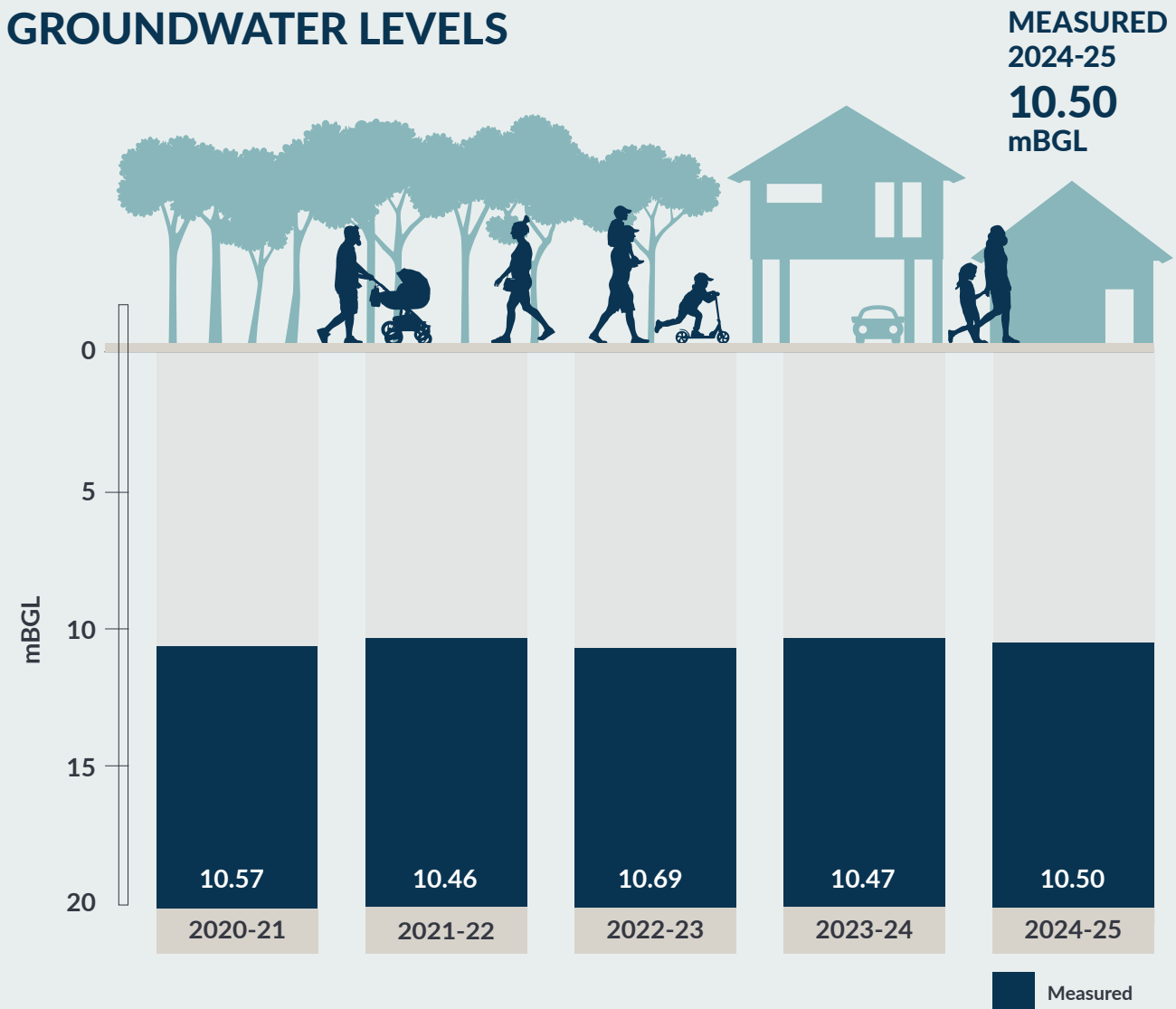
Rainfall across the plan area is irregular and unpredictable, primarily driven by the weakening of tropical monsoon depressions between November and April. Long-term records³ spanning over 125 years indicate an average annual rainfall of 316 mm at Ali Curung.

GROUNDWATER LEVELS

Groundwater level monitoring shows changes to groundwater storage in the aquifer in response to climate and water extraction. Groundwater levels are measured in depth metres below ground level (mBGL). Groundwater levels generally rise in response to significant rainfall events. The graph below shows the depth to groundwater for the last 5 years in the Central Plains aquifer system, measured at RN005409 near Ali Curung. The standing water level here is around 10 mBGL. The 2024-25 wet season saw a small groundwater level decrease of 0.03 metres at this location compared to the same time last year.



GROUNDWATER LEVELS



³ <https://ntg.aquaticinformatics.net/> data with observed (measured) data to create a continuous dataset for a location.



REGULATING WATER USE

No additional water extraction licences were granted in the plan area this financial year. To see water licences in the plan area visit the [water licensing portal](#)⁴.

Overall, substantially less water is being used by water licence holders than has been allocated, which provides opportunities for water trade in the region. You can find out more about how to trade water [here](#)⁵.

A significant portion of water that has been issued under water extraction licences is subject to staged water extraction conditions.

Staged conditions limit the amount of water that can be extracted under larger licences, to allow monitoring of aquifer response to smaller volumes of extraction, to confirm that the aquifer is responding as predicted, before allowing larger volumes of water to be extracted in following years. To read more about staged licence conditions, please visit the policy located [here](#)⁶.

The department regulates water licence holders to ensure compliance with the conditions licence. You can find out more about compliance and enforcement [here](#)⁷.

WATER LICENCE STATISTICS 2024-25



WATER EXTRACTION LICENCES	11
VOLUME OF WATER LICENSED FOR ECONOMIC USE	51,479 ML
VOLUME OF WATER AVAILABLE	35,208 ML
LICENCE DECISIONS MADE*	6
LICENCES TRANSFERRED TO NEW OWNERSHIP	1

WATER COMPLIANCE STATISTICS 2024-25



LICENSED WATER USED	4%
LICENCES REPORTING WATER USE	64%
LICENCES METERED	73%
LICENCE INSPECTIONS	5
COMPLIANCE ACTIVITES	0

*amendments and trades

4 <https://nt.gov.au/environment/water/licensing/licence-and-notice-portals>

5 <https://nt.gov.au/environment/water/licensing/water-extraction-licence-water-trading>

6 https://nt.gov.au/_data/assets/pdf_file/0006/1299939/staged-water-extraction-licence-guidelines.pdf

7 <https://depws.nt.gov.au/consultation-publications/water-licensing-policies>

WATER MANAGEMENT

Water management adapts and improves over time. To do this, the plan identifies priority strategies and actions to improve the understanding and management of water in the resource.

RECENTLY COMPLETED ACTIVITIES

- 25 shallow monitoring bores have been drilled to provide continuous groundwater level monitoring to further understanding of recharge into the aquifer, and around areas of high GDE likelihood.
- Deep drilling and water quality sampling to improve the understanding of connectivity between aquifers.
- Site visits were undertaken in the Southern Ranges to verify GDE locations identified in satellite imagery.
- The groundwater monitoring program was assessed, with some sites upgraded to include data loggers at key locations.
- An investigation into micro fossils was undertaken on drill cores from deep investigation boreholes to refine the geological basin boundaries within the water control district.

KEY PRIORITIES FOR THE FUTURE

- Recalibrate the groundwater model using the latest monitoring data and information from field investigations, to improve the accuracy and certainty of predictions.
- Sample boreholes to identify the presence of stygofauna e-DNA.





STATE OF THE WATER RESOURCE 2024-25
Western Davenport



For more information visit
[Western Davenport water allocation plan | NT.GOV.AU](https://www.nt.gov.au/water/western-davenport-water-allocation-plan)