STATE OF THE WATER RESOURCE

Ti Tree

2024-25

Department of
Lands, Planning and Environment

NORTHERN TERRITORY GOVERNMENT

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

TI TREE

WATER RESOURCE

TI TREE AQUIFER

PLAN AREA

14,071 KM²

MAJOR COMMUNITIES

TI TREE, NTURIYA AND PMARA JUTUNTA

ACKNOWLEDGEMENT

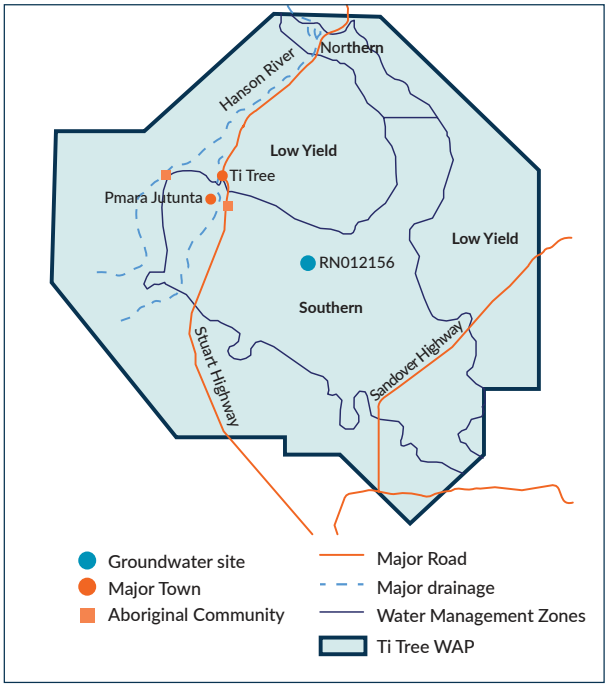
The Department of Lands, Planning and Environment proudly acknowledges the Northern Territory's Aboriginal communities and their rich culture and pays respect to the Elders past and present. We acknowledge Aboriginal peoples as the Traditional Owners and custodians of the lands and waters on which we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

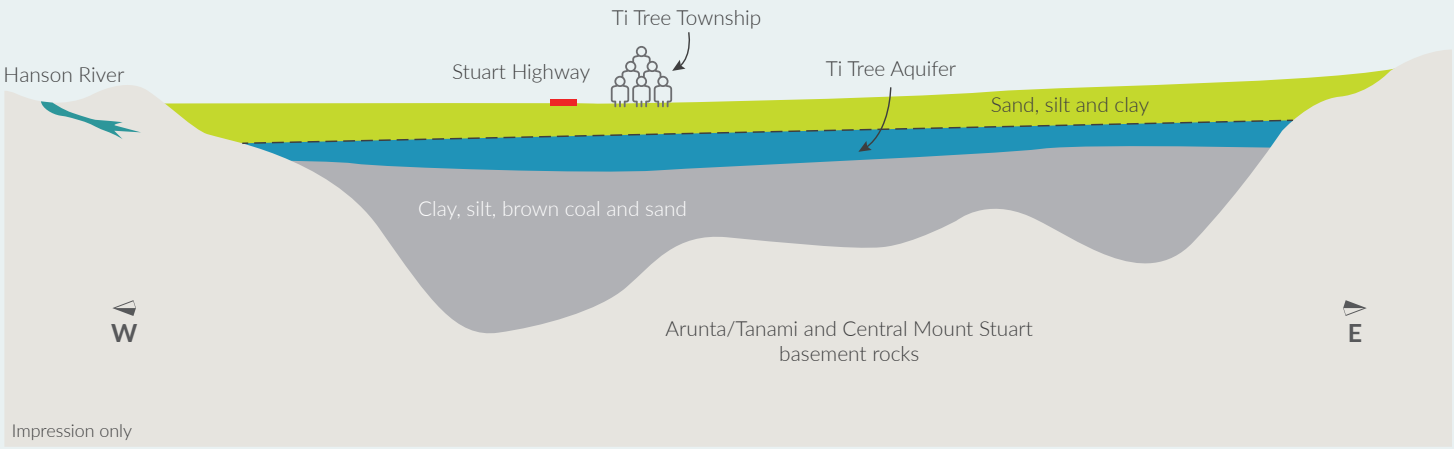
Front cover image: Anmatjere welcome sign

The Ti Tree water allocation plan (the plan) manages the Ti Tree aquifer. The plan has been in place for five years, with a mid-term review of the plan approved by the Minister for Water Resources in 2025.

The plan manages groundwater across three water management zones: the Northern, Southern, and Low Yield zones, each with unique hydrogeological characteristics. The most productive aquifer is found in the Southern zone, which is primarily composed of alluvial sediments. This aquifers is crucial for the region's water supply and horticultural activities. The Low Yield Zone, by contrast, includes areas with limited water potential, making them less suitable for large-scale water extraction but remaining important for local use and for the environment.

The plan tells us how water should be shared between multiple competing uses and sets objectives for management. Where groundwater is close to the surface, it can support important Aboriginal cultural features and groundwater dependent ecosystems. The likely distribution of groundwater dependent ecosystems has been mapped and management of the water resource aims to protect these sites from the impact of potential water extraction.





TI TREE AQUIFER

AVERAGE ANNUAL RECHARGE
36,240 ML/yr

ESTIMATED SUSTAINABLE YIELD (ESY)
10,200 ML/yr

The department has a good understanding of the groundwater resource and maintains 50 monitoring sites, including 48 bores and 2 surface water sites, in the plan area. All monitoring locations are visited annually, and the collected data is 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[1].

1 https://nt.gov.au/environment/water/water-in-the-nt/water-data-portal

WATER THAT STAYS IN THE ENVIRONMENT

ESTIMATED SUSTAINABLE YIELD
10,200 ML/yr

1. **RURAL STOCK AND DOMESTIC***
   537 ML/yr
2. **PUBLIC WATER SUPPLY**
   290 ML/yr
3. **ABORIGINAL WATER RESERVE****
   1,505 ML/yr
4. **ECONOMIC DEVELOPMENT**
   7,808 ML/yr

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

*** There is currently no water available in the reserve, with 1,505 ML/yr to be added once available*

HOW WATER IS SHARED

In the Northern zone, an estimated sustainable yield (ESY) of 100 ML per year has been allocated to cover the essential needs for public water supply and rural stock and domestic use. This limited allocation helps safeguard sensitive environmental and cultural values that rely on shallow groundwater.

The Southern zone has a larger ESY of 7,260 ML per year, reflecting the average annual recharge of the aquifer. This helps support economic activities whilst preserving groundwater storage for the environment.

Although the Low Yield zone is unsuitable for large-scale irrigated horticulture due to its low permeability, 2,840 ML per year has been set aside in the ESY to support potential future economic activities as well as rural stock and domestic needs.

Water in these zones are also allocated to protect environmental and cultural interests.

Provision of drinking water remains the highest priority, with the plan ensuring adequate supply for towns and communities, as well as rural stock and domestic purposes. Following these essential needs, water allocations support regional economic development.

CLIMATE AND WATER

The water resource is characteristic of an Arid Zone, marked by low average annual rainfall and relatively high evapotranspiration rates, which contribute to extended periods of minimal or no groundwater recharge.

Groundwater replenishment occurs during recharge events, typically when surface water flows from the adjacent ranges into the basin. This creates floodouts where standing water may persist for several days to weeks, gradually infiltrating into the soil and percolating down into the aquifer to restore groundwater levels. Unlike the Top End region, these recharge events are infrequent but can involve substantial volumes of water when they do occur. Significant rainfall events generally result in recharge approximately every 7 to 10 years.

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

RAINFALL

AVERAGE (1900 - 2025)	MEASURED 2024 - 25
301 mm/yr	275 mm/yr

RECORDED AT TI TREE GRAPE FARM

mm = millimetres

RAINFALL

Rainfall over the plan area is intermittent and highly variable, influenced largely by the dissipation of tropical monsoon depressions over the November to April period. The average rainfall for the district, based on more than 120 years of data, is 301 mm per year recorded at Ti Tree. The Ti Tree Grape Farm recorded a total of 275mm of rainfall in 2024-25.

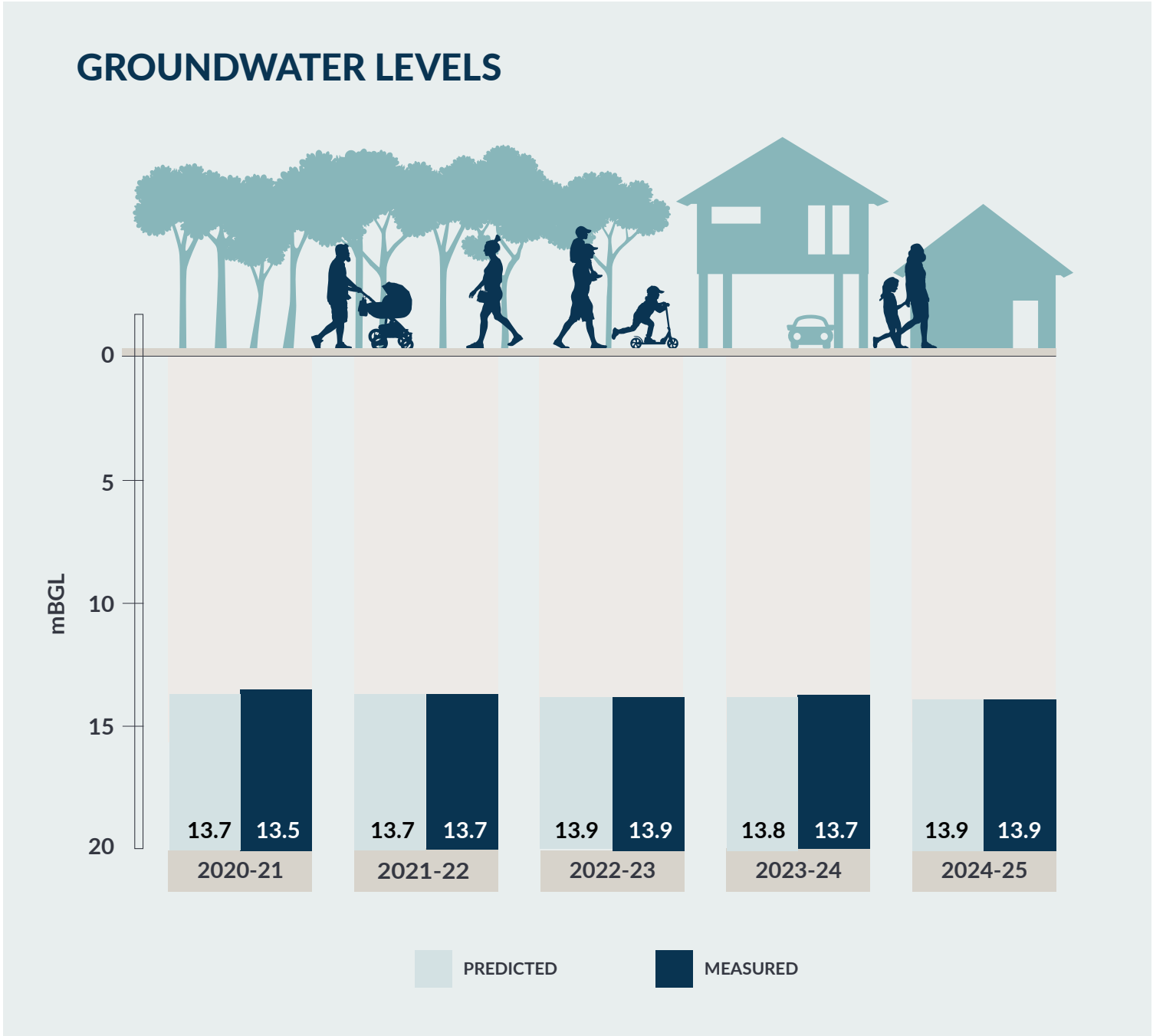
2 https://territorystories.nt.gov.au/10070/843257

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 (the depth to groundwater become less) in response to significant rainfall events.

The graph shows the depth to groundwater for the last 5 years in the Ti Tree aquifer measured at RN012156, south east of Ti Tree, where the standing water level is relatively consistent. The department's modeling has a strong correlation to observed and measured values.

You can view groundwater levels for the Ti Tree plan area throughout the year on the water data portal[3].



3 https://ntg.aquaticinformatics.net/Data

REGULATING WATER USE

All water available for economic development in the Southern zone has been licensed and as a result no new licences were granted this financial year. Water is available in the Low Yield zone of the plan area. To see water licences in the plan area visit the water licensing portal[4].

Overall, about half of all licensed water is being used by water licence holders which provides opportunities for water trading in the region.

Visit the website to find out more about how to trade water[5].

The department regulates water licence holders to ensure compliance with the conditions of the licence. Regular audits and checks of licence records are undertaken to identify breaches of licences.

Visit the website to find out more about compliance and enforcement[6].

WATER LICENCE STATISTICS 2024–25

WATER EXTRACTION LICENCES	14
VOLUME OF WATER LICENSED FOR ECONOMIC USE	7,259 ML
VOLUME OF WATER AVAILABLE*	2,344 ML
LICENCE DECISIONS MADE**	3
LICENCES TRANSFERRED TO NEW OWNERSHIP	0

WATER COMPLIANCE STATISTICS 2024–25

LICENSED WATER USED	53%
LICENCES REPORTING WATER USE	93%
LICENCES METERED	93%
LICENCE INSPECTIONS	8
COMPLIANCE ACTIVITES	0

*available in the Low Yield zone only
**amendment, renewal and trade

WATER MANAGEMENT

Water management adapts and improves over time. The plan supports this by identifying strategies and actions to effectively share water and manage risks to the water resource.

RECENTLY COMPLETED ACTIVITIES

- The groundwater monitoring program was assessed and upgraded with data loggers that were installed at key locations.
- The department attended Local Authority meetings and worked with the Aboriginal Reference Group on the Ti Tree Aboriginal Water Science project[7].
- The plan went through its mid-term review, and was signed-off by the Minister for Water Resources. The review report can be found here[8].

KEY PRIORITIES FOR THE FUTURE

The following activities were prioritised by the Minister for Water Resources in the plans mid term review:

- Enhance knowledge and safeguard the Aboriginal cultural values connected to the water resource.
- Increase understanding of groundwater recharge processes and the basin's geological layers.
- Conduct a one-time water quality audit throughout the plan area to establish baseline conditions and monitor changes over time.

4 https://nt.gov.au/environment/water/licensing/licensing-portal
5 https://nt.gov.au/environment/water/licensing/water-extraction-licence/water-trading
6 https://nt.gov.au/environment/water/management-security/water-policies-and-guidelines
7 https://www.nationalwatergrid.gov.au/projects/aboriginal-water-science-ti-tree-basin
8 https://nt.gov.au/environment/water/management-security/water-plan/water-control-districts/ti-tree/ti-tree-water-allocation-plan-multi

NORTHERN TERRITORY GOVERNMENT

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Ti Tree

For more information visit
Ti Tree water allocation plan | NT.GOV.AU