

Key messages: Mataranka water plan

These have been prepared to assist people to easily understand the main features of the Mataranka Water Plan 2024–2034 (the plan) and answer likely questions. The plan has two accompanying documents: a Background Report describing the water resource information used to inform the plan; and Implementation Actions that describes the proposed activities to ensure the ongoing management during the 10-year life of the plan.

Key messages:

- A plan sets out the volume of water that must be protected to ensure ecological functions and environmental requirements of the resource. It defines the water available for allocation and for stock and domestic take by establishing the take of water that is sustainable, known as the estimated sustainable yield. The plan also set out management rules for water use, and for trade.
- The plan provides for the protection, allocation and management of the groundwater resources of the Tindall Limestone Aquifer within the plan area.
- The Tindall Limestone Aquifer and the Roper River are subject to a continuous groundwater and surface water monitoring regime, and substantive groundwater investigations and resource assessments that have been undertaken over many decades.
- The plan specifically protects and manages the groundwater that provides the base flows to the Roper River, and its system of springs and creeks, during the dry season. Wet season flows of the Roper River catchment are fed from rainfall and runoff and require different protections and management rules.
- The plan comprises of three water management zones: North Mataranka, South Mataranka and Larrimah across an area of approximately 9,282 km² extending about 190 km from north to south, and up to 70 km east to west.

Larrimah

- provides the opportunity for water development in the region with less impact
- groundwater storage volume is increasing, water moves exceedingly slowly and terrestrial ecosystems do not rely on the water within the Tindall Limestone Aquifer.

North Mataranka and South Mataranka

- recognises the outstanding environmental values of the iconic Rainbow and Bitter Springs
- preserves more than 90 per cent of the dry season flows to the Roper River to sustain its discharges to springs and ecosystems
- caps development at current levels of entitlement
- are sensitive to climate variability, triggering of environmental flow thresholds will reduce the amount of water than can be taken by licence holders in that year.
- Aboriginal economic development in the plan area is supported with 4,574 ML per year allocated to the Aboriginal water reserve from within the estimated sustainable yield, which could increase to a maximum of 11,171 ML per year with the recovery of unused water.
- Aboriginal businesses in the plan area currently hold entitlements of 6,600 ML per year, which are in addition to the water available through the Aboriginal water reserve.

What do we know about the resource?

The plan applies to an area of approximately 9,282 km² and includes the towns of Mataranka and Larrimah and the community of Jilkminggan.

The Tindall Limestone Aquifer and the Roper River have been subject to a continuous ground and surface water monitoring regime, groundwater investigations, and resource assessments undertaken over many decades.

A comprehensive surface and groundwater model has been developed for this aquifer. It is also a region where some water dependant development has occurred, primarily for agriculture, tourism and for public water supply, further informing the understanding of the resource and its response to extraction.

Long term monitoring and assessment studies show that rainfall, recharge and groundwater levels are seasonally variable but have been increasing since the 1960's. Groundwater levels have continued to increase despite extraction occurring, from around the early 2000s onwards, confirming that:

1. Water extraction has had a least impact on groundwater levels or on dry season flows to the Roper River.
2. Groundwater levels and dry season flows of the Roper River are more directly affected by variations in climate over the long term.
3. The impact of extraction is dependent on the location and rate of the extraction, not just the volume.

Based on this understanding, the plan provides for a estimated sustainable yield for each management zone.

Additional management rules apply to the North Mataranka and South Mataranka water management zones to reduce entitlements to mirror the climatic conditions. In practical terms this means reducing entitlements in years where modelling predicts extraction could reduce flows in the Roper River beyond minimum flow thresholds specified in the plan.

This approach maintains groundwater levels and river flows as close to natural conditions as possible.

What is the estimated sustainable yield and how does it work?

The estimated sustainable yield or ESY for the plan overall has been established as a maximum of 62,474 ML per year. Together the ESY and the management rules preserve more than 90 per cent of the dry season flows to the Roper River.

By management zone this is defined as:

- North Mataranka: 2,744 ML per year
- South Mataranka: 24,492 ML per year
- Larrimah: 35,238 ML per year

The ESY operates in conjunction with rules to maintain minimum flow thresholds within the Roper River aligned to climate, and to limit extraction and trade in areas close to the Roper River, known as the Roper discharge zone.

The ESY for the Larrimah zone of 35,238 ML per year allows further development where groundwater storage is increasing and where there are no terrestrial groundwater dependent ecosystems to be impacted. Extraction in the Larrimah zone has been shown to have minimal impact on flows in the Roper River as dry season flows are virtually exclusively determined by groundwater levels in the North Mataranka and South Mataranka zones. This is confirmed by the groundwater travel time from Larrimah to the Roper River being exceedingly slow, 0.1 m to 1 m per year, and the estimated contribution to the Roper River flow from the Larrimah area at approximately 1 per cent, meaning any impact is limited.

Modelling also shows that the proposed level of extraction in Larrimah will have no measurable impact on throughflow into the South Mataranka zone and on groundwater levels across the Larrimah zone, eliminating the risk of any change in the regional groundwater flow direction.

What is the Roper discharge zone?

The Roper discharge zone was extensively studied and documented in the Strategic Regional Environmental and Baseline Assessment (SREBA) studies.

The North Mataranka and South Mataranka water management zones are particularly important as they provide 95 per cent of the recharge to the Tindall Limestone Aquifer and maintain dry season flows to the Roper River. Groundwater discharge to the Roper River occurs at Bitter and Rainbow Springs but also through the bed and banks of the river and tributaries that intercept the Tindall Limestone Aquifer.

Within the discharge zone depth to groundwater is shallow, supporting vegetation and surface water features of outstanding ecological and cultural significance. Groundwater levels within the discharge zone are maintained through localised recharge and are influenced by extraction and water uses in this area. This indicates that the closer water extraction is to the discharge zone, the more significant the impact on Roper River dry season flows.

The plan further protects the discharge zone by preventing the grant of any new or increased water licence extraction entitlements within the area.

How does the plan protect the Roper River and springs?

The plan specifically protects and manages groundwater that provides the base flows to the Roper River, and its system of springs and creeks, during the dry season.

Wet season flows of the Roper River catchment are fed from rainfall and runoff and require different protections and management rules.

Additional management rules apply to the North Mataranka and South Mataranka water management zones to reduce entitlements to mirror the climatic conditions. In practical terms this means reducing entitlements using licence conditions in years where modelling predicts extraction could reduce flows in the Roper River beyond minimum flow thresholds specified in the plan.

This approach maintains groundwater levels and river flows as close to natural conditions as possible.

How is cultural heritage considered in the plan?

The plan recognises the importance of identifying cultural heritage values and measures to safeguard these in a culturally appropriate way. The Wubalawun, Yangman, Mangarrayi and Jawoyn people have deep spiritual connection with the regions many springs, soaks, billabongs, creeks, rivers and landscapes. This extends to Aboriginal people and groundwater dependent cultural values downstream of the plan area along the Roper River.

While Aboriginal water values and bio cultural knowledge have been documented for the broader Roper region, much less is known about the specific water requirements (quality and quantity) of cultural values and assets. While the process of developing the plan has had some input from local Aboriginal people, ongoing participation of Aboriginal people is a key focus. This work has been identified in the Implementation Actions.

An improved understanding of cultural values and monitoring of cultural sites throughout the life of the plan will ensure safeguards that are appropriate to the Traditional Owners and custodians and the ecological values of the water control district are implemented.

What about allocation to the Aboriginal water reserve?

An Aboriginal water reserve (the reserve) is designed to provide Aboriginal people with greater access to water resources for economic benefit. The volume of water allocated to the reserve depends on the percentage of eligible land in each water management zone. Allocations are made to the reserve from the estimated sustainable yield once mandatory allocations are made to the environment and allocations have been made to the priority beneficial uses of rural stock and domestic use and public water supply.

Aboriginal economic development in the plan area is supported with 4,574 ML per year available to the Aboriginal water reserve from within the estimated sustainable yield. This volume may increase in the event of water being returned through licence compliance action and the recovery of unused water.

Is there water available for a licence?

The Larrimah water management zone has water available for licensing.

Water is only available for licensing in the North Mataranka and South Mataranka water management zones through the Aboriginal water reserve.

The trading of water may be an available option. A holder of a water extraction licence may apply to the Controller of Water Resources for an amendment of their licence to trade from one licence to another licence or to a new licence within a water allocation plan area.