

# Key messages: Western Davenport water allocation plan documents

These have been prepared to assist people to easily understand the main features of the declared Western Davenport Water Allocation Plan 2024 – 2027 (the plan) and answer likely questions. The plan has been declared with two accompanying documents, a Background Report describing the water resource information used to inform the plan; and Implementation Actions that describes the water resource management in the district.

## Key messages:

- The Minister declared the plan on 30 July 2024 as the fourth plan for the district.
- The most recent work started in four years ago with the appointment of the water advisory committee to provide advice on the development of the plan.
- A plan sets out the 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). It also sets out management rules for water use, and for trade.
- The region has vast groundwater resources. The largest and most productive is the Central Plains, which holds an estimated 138 million mega litres.
- The plan:
  - allows a maximum ESY of 67,700 ML per year to be taken from the vast groundwater stores available over the next three years
  - is based on the scientific understanding of the water resource, underpinned by water monitoring, assessments and modelling
  - maintains the vast majority of the water in storage, with 96% remaining in storage over 100 years, which does not account for recharge events that will also occur
  - relies on stored water to meet the continuous demand for water, as rainfall in the region does not occur regularly
- Groundwater depths range from near surface to 50 metres below ground level.
  - shallow groundwater sustains large trees and groundwater dependent ecosystems (GDEs), especially during long periods of no rainfall.
  - the plan recognises the extensive understanding of GDEs and protects 70% of GDEs from development in the area.
  - where the water is taken is moderated through water licences that must meet specific limits
- Drinking water will always be protected, so towns and communities have enough safe water.
- Aboriginal economic development in the plan area is supported with 11,681 ML per year allocated to the Aboriginal water reserve from within the ESY, which could increase to a maximum of 19,666 ML per year with the recovery of unused water.

## How is the declared plan different from the draft?

The declared plan reduces the ESY from 87,700 to 67,700 ML per year and the term of the plan from ten years to three years.

The difference reflects the Minister's determination of community views and providing the opportunity to review and reset the plan ahead of the five year statutory review period.

Details of other changes in the plan as a result of feedback are captured in the Consultation Summary. Overall, the key themes from public consultation have been used to revise the overview boxes for each section of the background report to focus key information on the aspects that people were interested in and raised. The availability and links of supporting reports have been updated, the most recent work on the uncertainty analysis of the department's model has been completed and added as part of the continuous management of the resources.

## How was the ESY determined?

Minister has determined that a more precautionary approach and set the ESY at 67,700 ML per year.

The ESY is informed by scientific understanding of the water resources underpinned by water monitoring, assessments and modelling, which is outlined in the Background Report.

During the development of the plan, six scenarios ranging from 61,000 to 307,000 ML per year were used to test and verify that impacts are within acceptable levels. This included modelling the impact of taking different volumes of water over time, which were compared with where no water is taken. Modelling considers climate and water resource data with actual and proposed water take, including taking water from the Aboriginal water reserve.

At a regional scale the department's model is considered fit-for-purpose for estimating groundwater availability. The model uses the facts about the geology, groundwater levels and hydrogeological processes and climate data, including actual data obtained from investigation bores and bore reports, which has been calibrated using groundwater monitoring information collected by the department.

Independent reviews are conducted as part of ongoing scientific advancement within the department. Most recently, considerable work was carried out to test the model parameters by running over 1,000 simulations. This testing confirmed the model was fit-for-purpose. The model has simulated actual data sets collected from several bore sites in the Central Plains Management Zone with considerable accuracy. The paucity of bore data in the remaining zones and the far eastern and western parts of the Central Plains Management Zone is acknowledged.

An [uncertainty analysis](#) of the model concluded that the model parameters are acceptable. The independent review shows that the model meets industry standards as a Class 2 model at the basin scale with some individual parameters considered to be at Class 3 level. Based on this, the model is considered adequate for water allocation planning.

The monitoring data collected builds understanding of hydrological processes and enables better assessment of the impacts of water extraction proposed under licence applications. Data collected is checked and then made available on the [NT Water Data Portal](#).

Drawdown modelling and field monitoring enables timely detection of drawdown and if it is occurring as predicted. The department will continue this work during the implementation of the plan to ensure decision making is scientifically robust and responds quickly to unforeseen changes to the environment.

## How does the plan protect the trees depending on the groundwater?

The department has undertaken extensive work to establish the extent and location of GDEs within the district using remote sensing techniques combined with field verification to produce a predictive map of GDEs in the central part of the Central Plains management zone.

In order to achieve all the objectives of sharing equally, water extraction will have an impact on GDEs because they occur extensively across the plan area. The impact of extraction varies spatially throughout the area and impacts on the water table are not universal, it is greatest at the site of bore extraction and lessens the further away from development, also monitoring shows that once pumping stops the water levels increase again.

The department developed the [Guideline: Limits of acceptable change to groundwater dependent vegetation in the Western Davenport Water Control District](#) (including revised limits of acceptable change) to find a balance between maintaining biodiversity and reasonable development to provide economic opportunity for the region. The plan requires licence holders and licence applicants to demonstrate that the water taken or proposed to be taken under a groundwater extraction licence will not affect GDEs in a manner that exceeds the limits of acceptable change as set out in the Guideline.

The Guideline protects 70% GDEs at regional and property scale by considering thresholds that are relevant to groundwater depth and managing the rate of change. The Guideline's 70% threshold includes consideration of the:

- cumulative GDE impacts, including those that are a result of proposed land clearing and other activity for the development
- additional principles to enhance the protection of ecological values associated with GDEs that meet additional thresholds
- protection of all GDEs that are known to support significant populations of threatened species.

## How is sacred sites and 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. 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 district are implemented.

The work to define cultural sites that need to be protected has not yet been completed, however once these sites are defined there remain mechanisms for their protection through policy and guidance considered in licence decision-making processes and through the review of the plan. The department commits to doing this work through the implementation actions.

The department in partnership with Charles Darwin University, Central Land Council and funded through National Environmental Science Program (NESP) is developing a project to improve the methods to detect and protect arid-zone GDEs. Over the next 3-5 years, the project aim is to combine cultural ecological knowledge with remote sensing and ecohydrological methods to better understand arid-zone GDEs. This will inform improved detection and mapping tools for sustainable management of both groundwater resources and dependent ecosystems.

## How is the drinking water for communities protected?

In the plan, allocations for public water supply are prioritised over water for other beneficial uses, protecting the quantity of water for drinking. Existing allocations to public water supply allow for projected growth over the next 30 years. The quality of water within the resource will continue to be monitored through the work identified in the implementation actions.

## How much water is left, can I apply for a licence?

Water is available for licensing in the Davenport Ranges and Southern Ranges water management zones through the Aboriginal water reserve the other consumptive users.

Water is available for licensing in the Central Plains water management zone of 10,656 ML per year through the Aboriginal water reserve for Aboriginal economic development.