Fact sheet

Western Davenport Water Allocation Plan

Background

The Western Davenport region 150km south of Tennant Creek has been identified for potential horticulture development because it contains a significant groundwater resource, good soils and suitable climate.

The Department of Environment, Parks and Water Security (the department) received an application for a water licence from Fortune Agribusiness Funds Management Pty Ltd to take up to 40 GL/year from Singleton Station, which falls within the Western Davenport Water Allocation Plan area. The application was advertised and the public comment period closed on 4 October 2020.

Western Davenport Water Allocation Plan

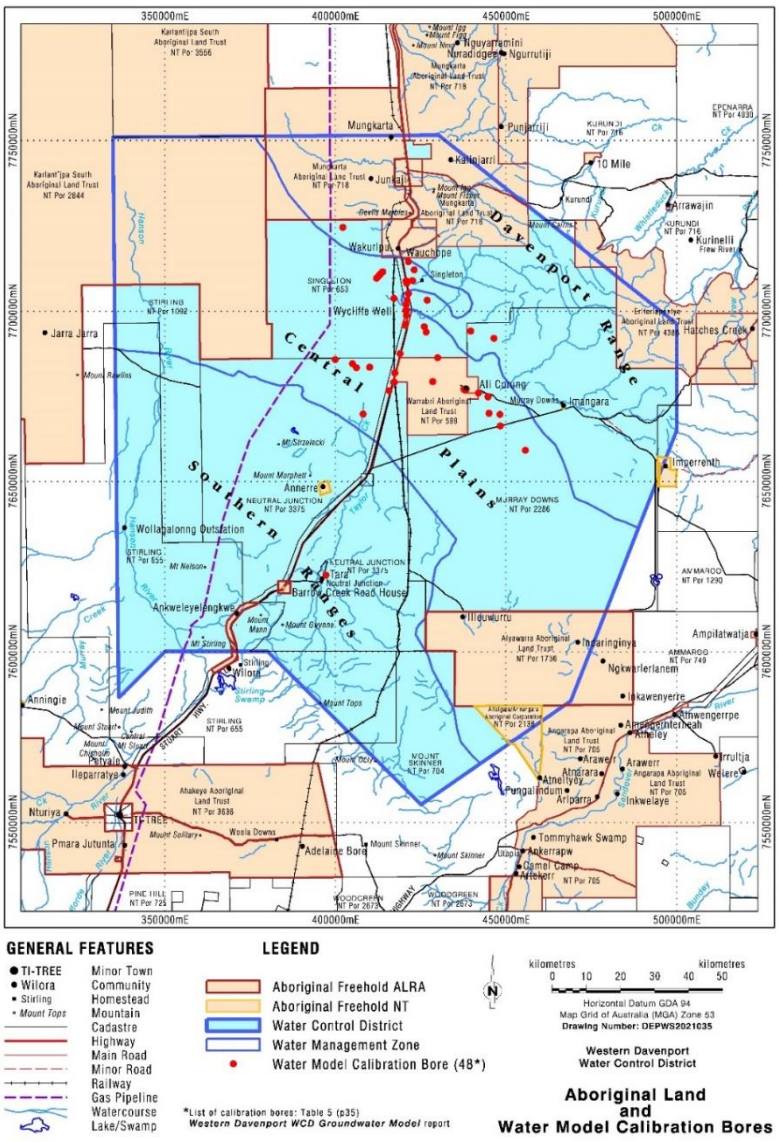
- The Western Davenport Water Allocation Plan 2018-21 (the Plan) was declared just over two years ago. The Plan and policies are available from the department's website at https://depws.nt.gov.au/water
- The Plan was developed with advice from a community based water advisory committee. The committee comprised membership from the Arid Lands Environment Centre, the Central Land Council, NT Farmers, and licence holders from the region.
- The draft Plan was released in 2017 for community comment. The advice from the water advisory committee, key stakeholders and the community consultation process is publicly available as a summary report on the department's website: https://depws.nt.gov.au/__data/assets/pdf_file/0006/625047/WDWAP-Comm-Engagmt-Rpt-20122018.pdf
- In the Northern Territory, water allocations are prioritised to key environmental and cultural values, then public water supply and rural stock and domestic use. Once these needs are met water is reserved for Aboriginal economic development according to the Strategic Aboriginal Water Reserve Policy Framework. After this, the remaining water is allocated to consumptive uses such as agriculture and industry.

Water resource and availability

- Previous to 2017 the water available in the Water Allocation Plan 2011-2021 was based on an estimate of recharge on a much smaller area rather than a model that considers the whole aquifer. This was appropriate for the time based on available data and a highly conservative approach.
- In 2017, an integrated groundwater/surface water model was developed to calculate the natural water balance and determine a sustainable level of extraction to maintain key environmental and cultural values associated with water. The report on the development of the model for the Western Davenport is available on the department's website: https://depws.nt.gov.au/__data/assets/pdf_file/0014/431060/Knapton-WD-GW-model-report-2017.pdf

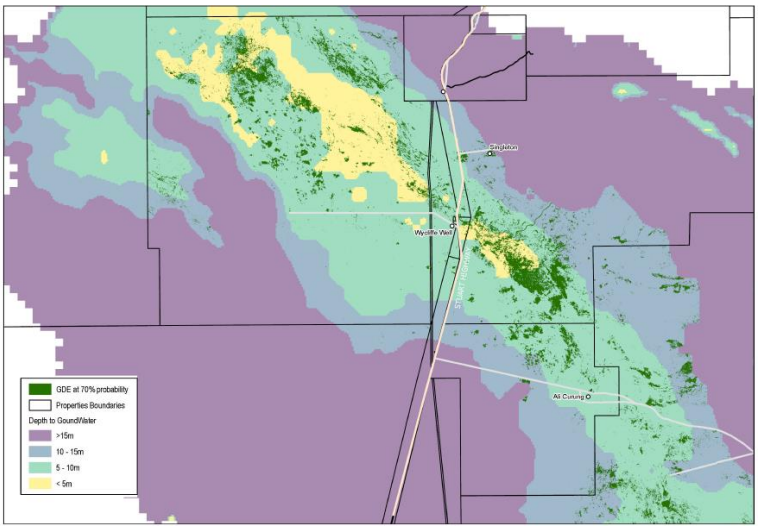
NORTHERN TERRITORY GOVERNMENT

- The model covers a more extensive area based on 100 years of climatic data, information obtained from investigation bores and bore reports, which has been calibrated using groundwater monitoring information collected by the department.
- The model underpins decision making by considering the large aquifer storage capacity and the irregular recharge processes.
- The model uses the facts about the geology, groundwater levels and hydrogeological processes, including actual data from:
    - Core logs of the geology from 176 bores to determine the lithology.
    - Water level data from 48 bores to calibrate the water levels.
    - On ground field investigations pumping water from 50 bores
    - Climatic data of rainfall and evaporation in the region.
- The Plan uses the model to cautiously make water available for consumptive use based largely on water recharge volumes, preserving more than 96% of the stored aquifer volume for the future.
- The water resources in the Western Davenport region are divided into three management zones. Davenport Ranges; Southern Ranges; and Central Plains.
- The Central Plains Management Zone (the zone in which the current licence application for Fortune Agribusiness applies) has a modelled storage volume of 138,314 GL.
- Of this, 87.7 GL per year is available under the Plan for consumptive uses. This level of availability is based on using recharge and a drawdown of storage in the management zone of less than 4% over 100 years of extraction. The 87.7GL/year available for consumptive use in the Central Plains Management Zone is further apportioned as follows:
    - 0.75 GL/year is allocated to public water supply and rural stock and domestic use.
    - 26.1 GL/year to Strategic Aboriginal Water Reserves.
    - The remaining 60.9 GL/year is available to be applied for development purposes under a water licence arrangement.
- The Fortune Licence application requests 40 GL/year from this 60.9 GL/year, which represents extraction of less than 0.03% per year of the overall modelled storage volume.



Measures to protect Groundwater Dependant Ecosystems

- Groundwater dependent ecosystems (GDEs) are ecosystems that require access to groundwater to meet some or all of their water requirements. Groundwater dependent vegetation can usually only occur where the depth to groundwater is less than 15m.
- The Plan considers the potential impact of water use on the GDEs in the area. The Plan defines a GDE protection area and describes limits to changes in groundwater levels that will protect GDEs. These limits are based on the ability of GDEs to adapt to changing water levels, and were based on independent scientific advice. A report is available on the department's website: https://depws.nt.gov.au/__data/assets/pdf_file/0004/498883/The-Potential-Use-for-Groundwater-Use-by-Vegetation-in-the-Aust.-Arid-Zone.pdf
- Since the Plan was declared there has been significant advances in the understanding of GDEs in the Western Davenport area. The potential distribution of GDEs has been mapped using a probability model based on an analysis of vegetation indices derived from a seven-year time series of Landsat satellite imagery. The model was developed and validated using 425 ground sites in the study area that were classified as being either groundwater dependent vegetation (GDV) or non-GDV.
- The ecological characteristics of GDE in the Central Plains have been described following detailed on-ground sampling of plant species composition and vegetation structure at 60 sites. This identified distinct vegetation communities associated with shallow (<10m depth) groundwater in both sandplain and alluvial landscapes. Large bloodwood and ghost gum trees within the 10-15m groundwater depth zone are also likely to be groundwater dependent.
- A further refinement of the approach to protecting GDEs, published in February 2020, is the *Guideline: Limits of acceptable change to groundwater dependent vegetation in the Western Davenport Water Control District* available on the department's website: https://depws.nt.gov.au/__data/assets/pdf_file/0006/904758/GDE-Guidance-document-Western-Davenport-2.pdf
- The Guidelines recognise that with development some impact will occur and limits that impact by protecting 70% of GDEs within each of the sandplains and alluvial landscapes, and at regional and sub-regional scales. This limit was informed by broader ecological research on thresholds for vegetation retention to maintain biodiversity conservation values and/or ecosystem processes.



Singleton distribution of the GDEs with 70% probability of occurrence

- Applicants such as Fortune that seek to extract large volumes of groundwater will be required to demonstrate how their proposal will remain within these limits. This involves additional on-ground work to validate the local extent of GDEs, based on the mapping and ecological characterisation described above; and modelling the spatial extent of changes in groundwater levels over time, linked to the limits of acceptable change described in the Plan and Guideline.
- Additional certainty around the protection of GDEs is provided by the requirement for an adaptive management approach in water licence conditions.

Available from https://www.ntlis.nt.gov.au/walaps-portal/documents/application/2295600?tags=NOD,NOI,SOD

Adaptive Management

- A key feature of the Plan is the adaptive management framework. This is an iterative process whereby monitoring data is reviewed and interventions are introduced if thresholds defined in an adaptive management plan are triggered.
- Currently, the Western Davenport area is largely undeveloped, which means we predict the impact of development on water-related features through models of how the environment will respond to taking water.
    - The impact on GDEs is based on conceptualising the best information available and undertaking field surveys and mapping exercises to determine the current status of GDEs.
- The department requires licence holders to provide an adaptive management plan to ensure that changes in groundwater levels are consistent with the model and any impact on the health and extent of GDEs and salinity levels is within acceptable levels.
- Any adaptive management plan requires approval by the department, which also independently monitors water levels, GDE extent and health and salinity levels. Monitoring groundwater levels can provide an early indicator of greater changes than predicted by the model, prior to any impact on the GDEs, and licence conditions can be changed by the Controller of Water Resources (the Controller).
- The adaptive approach enables development to proceed cautiously, while providing more information on the water resource response to extraction and the ability to limit extraction if triggered.

Water use and licence applications

- There has been a successful water melon farm operating near Ali Curung for several years demonstrating the potential for horticulture development.
- The department has received a number of other applications for groundwater extraction licences to grow fruit, vegetables and fodder in this area. These applications are being processed and assessed by the department for the Controller's consideration.
- An application has been received from Fortune to take up to 40 GL/year at Singleton Station. The application was advertised and the public comment period closed on 4 October 2020.
- Submissions on the Fortune application have been received from various organisations including those who represent Native Title holders. These submissions will be made available to the applicant and will be published with the Notice of Decision.

Water licence decision process

- In making a decision about the application, section 90(1) of the Water Act 1992 directs the Controller to take into account any of the specified factors that are relevant to the decision. These include factors relating to water availability, water allocation plans and adverse effects likely to be caused by the activity on the supply of water to other water users.
- In making a decision the Controller will take advice from a number of key documents: the declared Plan; Guideline: Limits of acceptable change to groundwater dependent vegetation in the Western Davenport Water Control District; the Northern Territory Government Strategic Aboriginal Water Reserves Policy Framework and the Processing Water Extraction Licence Applications Policy.
- The Controller's decision on the water extraction licence will enable Fortune to define the project to a greater degree of certainty. Fortune is aware of the requirement to refer the project to the Northern Territory Environment Protection Authority (NT EPA) under the new *Environment Protection Act 2019*

and will do so once a decision on water extraction has been made and reflected in the project scope and design.

- If the project requires assessment under the *Environment Protection Act 2019* (as determined by the NT EPA) the water extraction licence would cease to have effect until the completion of the environmental assessment and approval process (refer section 59) and an environmental approval for the project would prevail over the water extraction licence to the extent that they are inconsistent.
- The department has prepared an approvals map which outlines how the environmental approvals associated with this project intersect, including environmental impact assessment and approval under the *Environment Protection Act 2019*. The approvals map is available online from the department's website at https://depws.nt.gov.au/land-resource-management/development-coordination/project/singleton-horticulture-project
- The approvals map prioritises a water extraction licence decision and notes that Fortune will refer the project to the NT EPA after a water extraction decision is made and before a decision regarding any native vegetation clearing or non-pastoral use application. The water licence is a priority as the volume of water licensed will affect all other aspects of the project.
- Once the Controller makes a decision, a notice will be published in the NT News with a summary of the reasons for the decision. A full copy of the decision will be made available online from the Water Licensing Portal at https://waterresources.nt.gov.au/licenceportal

Water licence conditions to support the Plan

- The Plan recommends water extraction licences give effect to the adaptive management framework outlined in the Plan.
- This includes, where appropriate, monitoring conditions and corrective actions for licences that have the potential to impact terrestrial GDEs or groundwater dependent cultural values and salinity levels.
- This is achieved by tailored licence conditions that release water for extraction incrementally over the term of the licence, once agreed development milestones have been met. A licence holder is generally required to demonstrate to the Controller that the water resource is behaving as predicted and is being managed within the thresholds specified in the licence.

Staged licences

- The Plan recommends that development milestones be used to inform the release of water over the term of a licence. This is commonly referred to as 'staged licensing'.
- A staged licence seeks to manage uncertainties associated with extraction of large volumes of water required to support projects of scale and subject to long development periods.
- A staged licence sets conditions that are aligned with a project's development plan and agreed project milestones. Failure to meet project milestones or environment protection thresholds prevents the release of the next stage of water and may result in a reduction in the total maximum licensed entitlement for the duration of the licence.
- Staging also provides protection for the trade of the water under the licence entitlement.
    - The water may only be traded temporarily from the licence entitlement that is approved under a set stage and must meet the project milestones.
- A Staged Water Extraction Licence Policy has been developed and will be available on the department's website shortly.