

Douglas Daly

Pre-consultation DRAFT of Case Study Area
De-Risking Phase II – NT through
Sustainable Development Precincts



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Abbreviations	Full form
CRCNA	Cooperative Research Centre for Developing Northern Australia
DEPWS	Department of Environment, Parks and Water Security
DITT	Department of Industry, Tourism and Trade
DDRF	Douglas Daly Research Farm
EOI	Expressions of Interest
NT	Northern Territory
SDP	Sustainable Development Precinct

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1. Introduction

The Territory has long been known for its mosaic agriculture model of development, and as such, DITT has worked closely with the Department of Environment, Parks and Water Security (DEPWS) to identify and prepare to progress precinct opportunities within the Northern Territory. Eleven precinct areas were identified based on technical studies, including soil and water, access to logistics routes and other supporting criteria.

Each of the eleven precinct areas were evaluated based on the objectives set out in the *Best Practice Sustainable Precinct Planning and Development Framework* using a multi-criteria analysis-based approach. As a result of the evidence based multi-criteria analysis, the area of Douglas Daly has been prioritised as the case study area for improved practices in planning and development of sustainable agricultural growth in the Northern Territory.

This case study has been developed as part of the CRCNA project 'De Risking the NT through Sustainable Development Precincts' and broader approach to identify and develop key sustainable development precincts in line with the recommendations of the Territory Economic Reconstruction Commission Final Report.

The CRCNA project follows on from the Phase I report and seeks to answer the core question: How can improved prioritisation and planning practice support new sustainable development precincts in the Northern Territory?

To explore the question, the case study provides a comprehensive history of the regions development, along with exploring the current uses, natural resource availability and environmental and cultural areas. With this the project seeks to identify, research and co-design the case study with stakeholders to identify the strengths, opportunities and challenges across the region and broader Northern Territory agricultural industry.

The goal is to stimulate growth, and encourage expansion for existing property owners in the Douglas Daly region where there is potential for further agricultural development and diversification. The project aims to identify advantages of how precincts can benefit current land owners and support ongoing advancement.

The stakeholder engagement phase of the project will seek input for preferences, limitations and experiences with the focus on diversification of land activities that will support, strengthen, and cultivate progression of the current situation.

2. The Region

2.1. Location

The Douglas Daly region is well situated to access road, rail and sea freight networks with Darwin located approximately 200km to the North and Katherine 200km to the south. Douglas Daly is an attractive area for families with existing public infrastructure, including a primary school and community facilities. A community health centre is located in the nearby town of Adelaide River 100km away. The closest police station is located at the community of Daly River.

The NT Government Douglas Daly Research Farm situated in the region is a mixed farming research and demonstration facility covering an area of 3,100 hectares. It has been pivotal in exploring the potential of the area and carrying out trials to assist the emerging agriculture industries of the region.

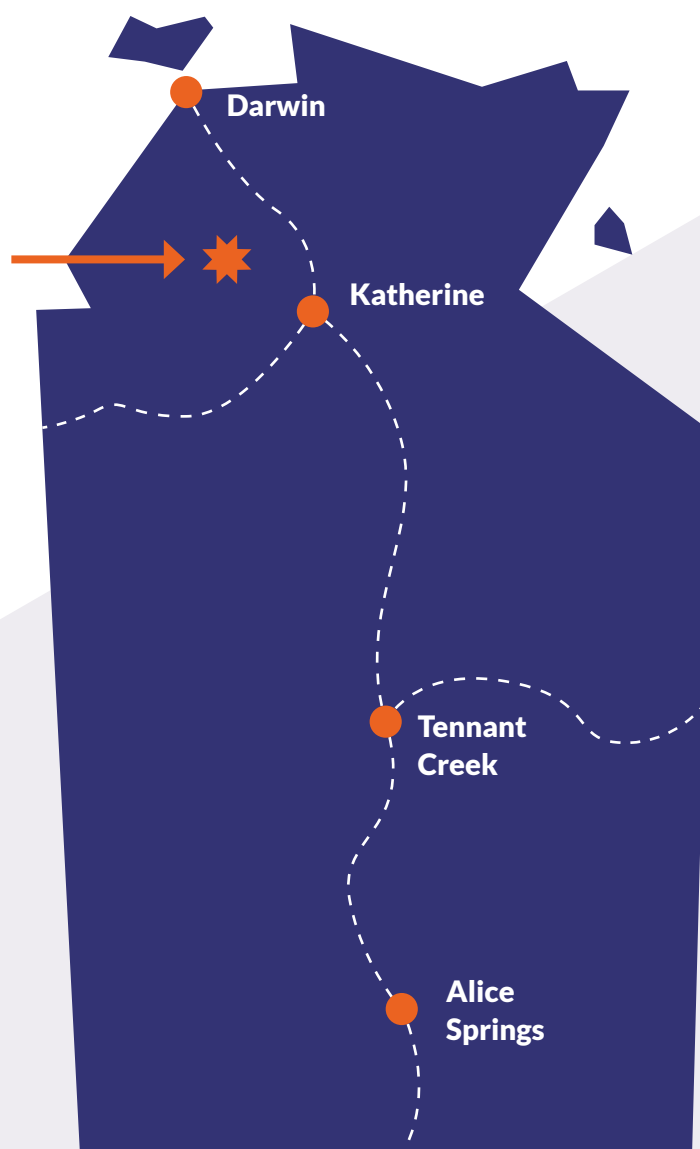


Figure 1 - Locality map

2.2. History

The Douglas Daly region is well known for agricultural diversity and has experienced significant change since the area was first developed for horticulture in the 1980s. From the early cropping era to cattle grazing and assorted horticulture, the district has progressed to become a valuable region of agricultural production.

The Douglas Daly Research Farm (DDRF) facility was established in the 1960s to investigate and research the development and extension of agriculture in the Top End. Early research in the area was focused on peanuts and cotton as potential crops to grow in the Katherine–Daly basin. Various crops followed such as sorghum, safflower, guar, soybean, maize and sesame as well as introduced pasture species sown into cleared and non-cleared areas. Cattle management, breeding, nutrition, market requirements, grazing and carrying capacity trials have been assessed over the years to identify best management practices for the cattle industry. A primary school was established on DDRF in 1982 to cater for the growing demand of families moving into the region with the expansion of agriculture.

With the region showing agricultural potential, Stage 1 of Douglas Daly was developed by the Agricultural Development and Marketing Authority (ADMA) from 1980 which established project farms on land excised from the Douglas and Ooloo pastoral leases. Strict conditions were imposed on farmers around broad acre rain-fed cropping of particular grain crops with initial lease conditions. ADMA provided some on-farm infrastructure along with the construction of supporting grain handling depots in both Douglas Daly and Katherine. The limited marketing opportunities for produced grains coupled with the use of southern farming practices and the remote living situation saw many of the original farmers leave the district after a few years.

The development of improved pastures and the availability of live cattle export markets in Southeast Asia resulted in a new focus on beef production in the 1990s. The Douglas Daly region was used not only for growing out cattle for export, but also as a depot despite road conditions being challenging, with the live export port in Darwin being less than 250km away.

Improved cattle production resulted in increased supplementary feed requirements between station yards, in holding depots and during transport by ship. Fodder crop production became an important industry for the Top End and the region to supply high quality fodder and fodder cubes for transporting cattle by ship to Asian markets.

Stage 2 of the Douglas Daly land release known as Stray Creek was the release of seven freehold land parcels in the early 2000s which were excised from the Stray Creek pastoral lease. To ensure future growth, Stray Creek properties were sold with development lease conditions attached that required purchasers to make a certain dollar amount of improvements before receiving freehold titles. Dollar amounts differed between properties.

In the mid-2000s, the introduction of managed investment schemes in plantation forestry resulted in the development of a plantation estate of African mahogany in the region with investment companies purchasing numerous properties. These non-irrigated forestry plantations were developed predominately on freehold land previously cleared for improved pastures with the majority integrating cattle operations.

Although cattle production is still the prominent industry, Douglas Daly has become a more diversified agricultural region with other enterprises emerging. A number of pastoral leases surround the freehold area of the region and properties have expanded operations past cattle grazing. Tipperary Station has been the site of a wide range of agricultural and horticulture projects over the past 40 years.

Tipperary was the first pastoral lease in the Territory to apply for a non-pastoral use permit, allowing pastoral properties to diversify tenure on 30% of their land for up to 30 years. They were also granted the first licence in the Territory to commercially grow opium poppies. In 2019 it was the first commercial cotton trial harvested in the Territory in 15 years. Around the same time an orchard of 3,500 lemon trees were planted with plans to expand to 10,000 trees.

Tourism operations were established in the early days with the Douglas Daly Holiday Park formally named The Corn Patch Caravan Park being built circa 1987.

2.3. Current uses

The diverse mix of tenure in the region allows a range of land uses with private freehold properties, pastoral leases, aboriginal land and conservation areas.

Agricultural development includes centre-pivot irrigation supported by groundwater extraction, small scale horticulture and improved pasture for cattle grazing. The majority of land clearing has occurred on the freehold land with the extent shown in Figure 2. Freehold property identification names and tenure types are shown in Figure 3.

2.3.1. Freehold properties

The most prominent land use across the freehold properties is cattle production on improved pastures with a diverse range of agricultural enterprises. Rain fed hay, fodder and forestry (African mahogany and sandalwood) are also prominent throughout the region with intensive horticulture such as melons, pumpkins, onions, turf and cotton.



Figure 2 - Aerial imagery showing the distribution of cleared blocks for cropping and improved pastures.

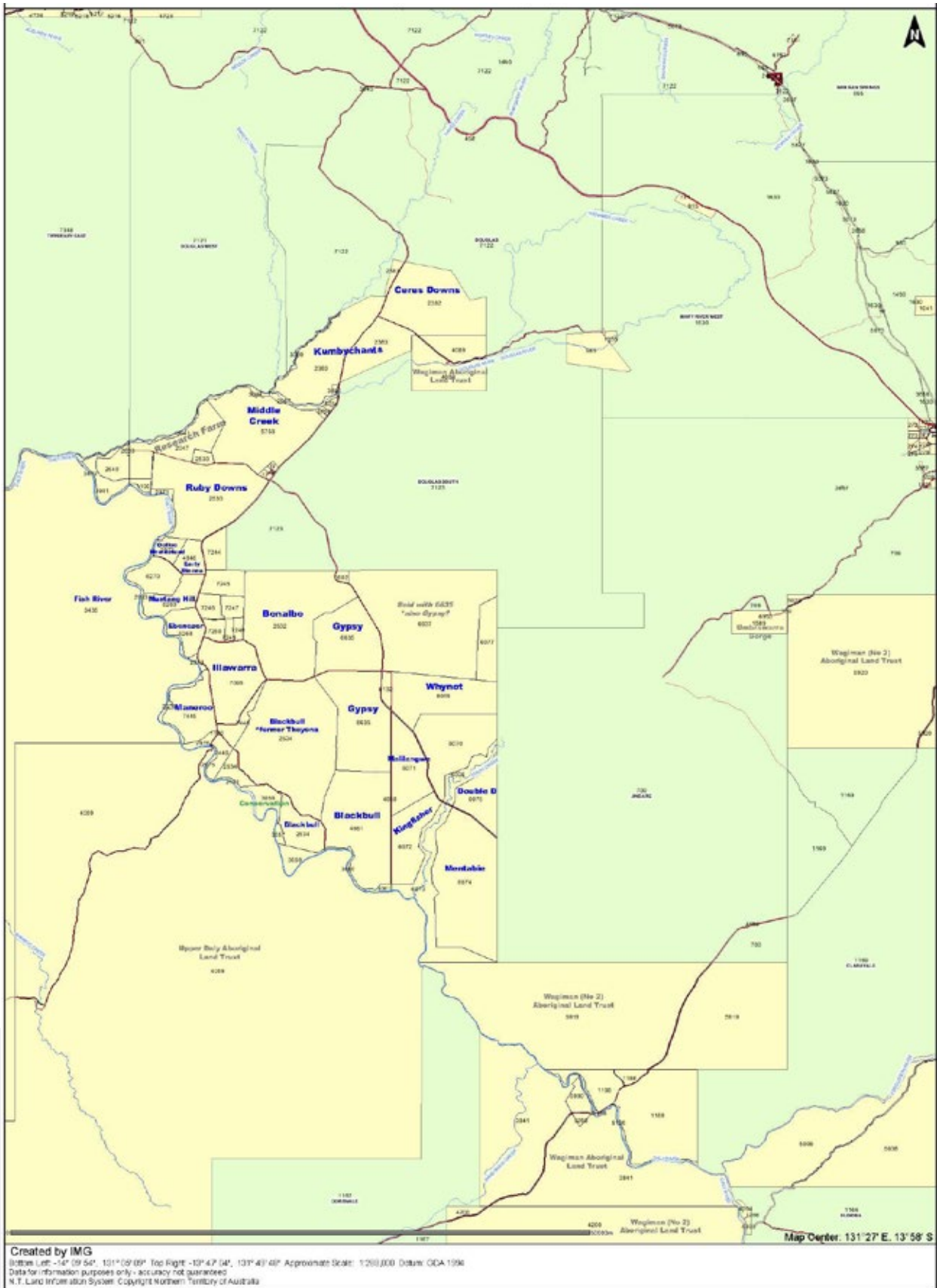


Figure 3 - Property identification names and tenure.

2.3.2. Pastoral leases

The pastoral properties that surround the region are Douglas, Douglas West, Douglas South, Jindare, Claravale, Dorisvale, Tipperary East and Tipperary West.

Tipperary East pastoral lease (N.T. Portion 7348) has applied and been granted a number of non-pastoral use permits for various horticultural and agricultural activities including poppies, mangoes, fruit trees and commercial production of hay. The most recent permit granted was for the purposes of growing cotton, sorghum, soybeans and corn and was issued on 31 July 2020.

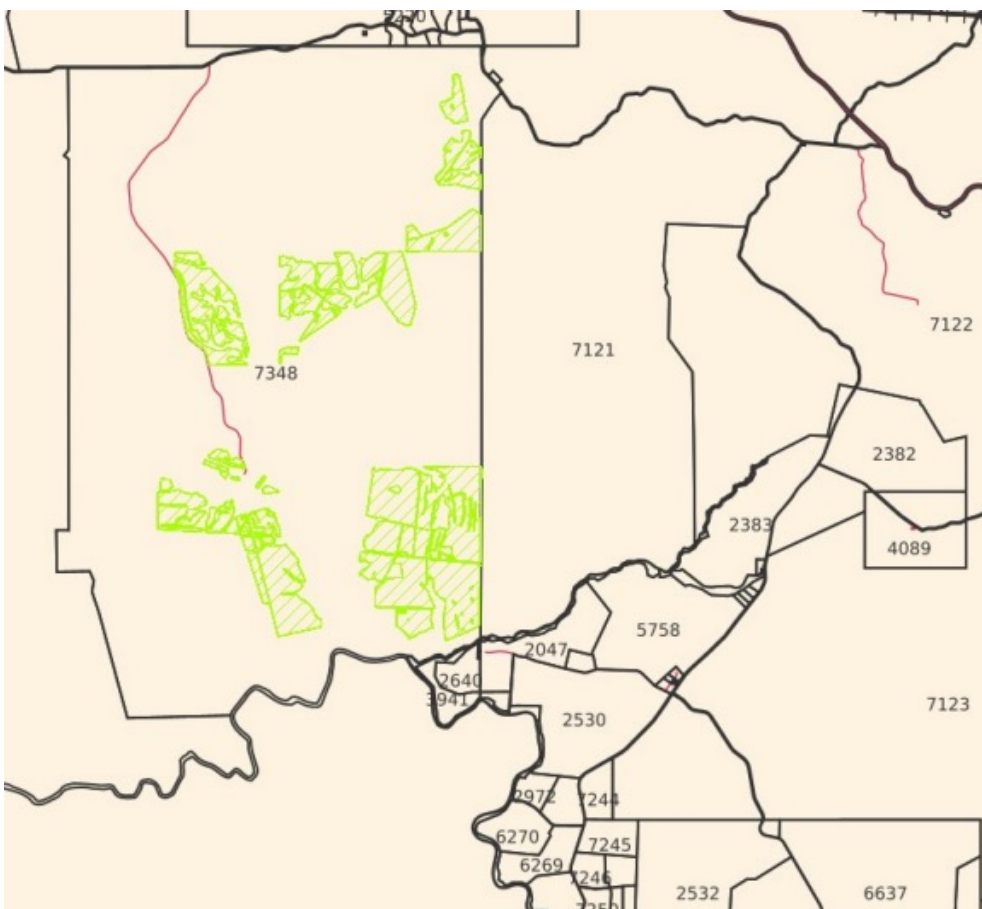


Figure 4 - Current non-pastoral use permits on Tipperary East pastoral lease.

Source: NR Maps.

2.3.3. Aboriginal land

The Upper Daly Aboriginal Land Trust and Wagiman Aboriginal Land Trust areas have a number of Section 19 grazing leases to adjoining landowners.

Section 19 of the *Aboriginal Land Rights Act* allows for government, businesses, organisations and individual people to apply to a land council for leases over specific areas of Aboriginal land. The land council consults with traditional owners and other affected Aboriginal groups and communities to make a decision on each lease proposal.

2.3.4. Douglas Daly Research Farm

The Douglas Daly Research Farm (DDRF) is 3,100 hectares with approximately 2,500 hectares of cleared land mainly for improved pastures with some wet season fodder and grain crops. Paddocks range in size from 2 hectares to 300 hectares depending on the trial types and land usage.

DDRF undertakes research, development and extension activities, with a focus on beef cattle production from improved pasture production systems, investigating potential irrigated crops and fodder and diversification of pastoral land into more intensive agricultural production. Recent research has been centred on cattle, such as Brahman versus Composites, Senepol crossbreeding, improved heifer performance and fertility, and rotational grazing.

Since the 1970s DDRF has maintained a breeder herd of cattle to examine production parameters in order to improve overall production. Sentinel cattle herds are used to identify and monitor the spread of any new arboviruses through the National Arbovirus Monitoring Program. The sentinel herds are bled monthly with insects on the animals being collected for identification. Insects are also collected from the surrounding environment using light traps.

While agricultural research is the main priority for DDRF, other organisations and government agencies have used the facility as a base for staff and temporary accommodation for work and research carried out on the research farm and in the surrounding region. These organisations include the Bushfire Council of the NT, CSIRO, the Australian Geographic Society, Charles Darwin University (CDU), the NT Department of Environment, Parks and Water Security (DEPWS), the Tropical Rivers and Coastal Knowledge (TRaCK) research group and interstate universities.

In 2020, 200 hectares of under-utilised land on DDRF was released through an EOI process for a commercial horticulture grower to undertake agricultural or broad-acre farming activities. The successful proponent is growing melons and was granted a licence term for three years with an option to extend for a further two years.

The office complex has a clean and a dirty laboratory, which have been used for different kinds of sample processing. Other buildings include machinery sheds, workshop, a power generator shed, hay storage, general storage sheds, staff accommodation and a community library. There are four grain silos with grain drying and handling equipment.

The facilities at DDRF make it ideal for training, such as Chemcert/SmartTrain, bushfire training, first aid courses, low-stress cattle handling workshops, pasture schools and grader, backhoe and bulldozer operator courses. The Australian Defence Force has also utilised the facilities during its training exercises.

2.3.5. Tourism

The commercially operated Douglas Daly Holiday Park is currently the only accommodation provider in the region. Located on the Douglas River Esplanade it offers camping sites, cabin accommodation, pool, kiosk, restaurant and fuel facilities.

There are established campgrounds surrounding the conservation areas that can be reserved through the Northern Territory Parks booking system. Campgrounds are available at Crystal Falls, Tipperary Crossing, Stray Creek and Ooloo Crossing with the Tjuwaliyn (Douglas) Hot Springs Nature Park currently closed.

There are many tourism operators in the nearby Daly River community including fishing safari tours and a number of caravan parks and accommodation providers.

2.4. Infrastructure

The road network is a mix of sealed and unsealed surfaces. Overall access is good and reliable, except for the heaviest of rainfall events with several creeks which may cut Ooloo Road for short periods during the wet season.

Telecommunications in the area include limited mobile coverage.

Power exists to part of the region with majority of properties powered by generators.

3. Natural Resources

3.1. Climate

The seasonal conditions of the region are characterised by the wet dry tropics where rainfall is received for seven months of the year from October to April with the remaining five months receiving little or no rain. Annual mean rainfall is 1,246mm with the mean number of days of rain ≥ 1 mm at 67 and the mean number of days of rain ≥ 10 mm at 33. Mean monthly minimum temperatures range between 13 to 24°C and mean monthly maximum temperatures range from 31 to 38°C.

The Bureau of Meteorology official meteorological recording station at Douglas Daly Research Farm has been recording daily climate data since 1968.

3.2. Water availability

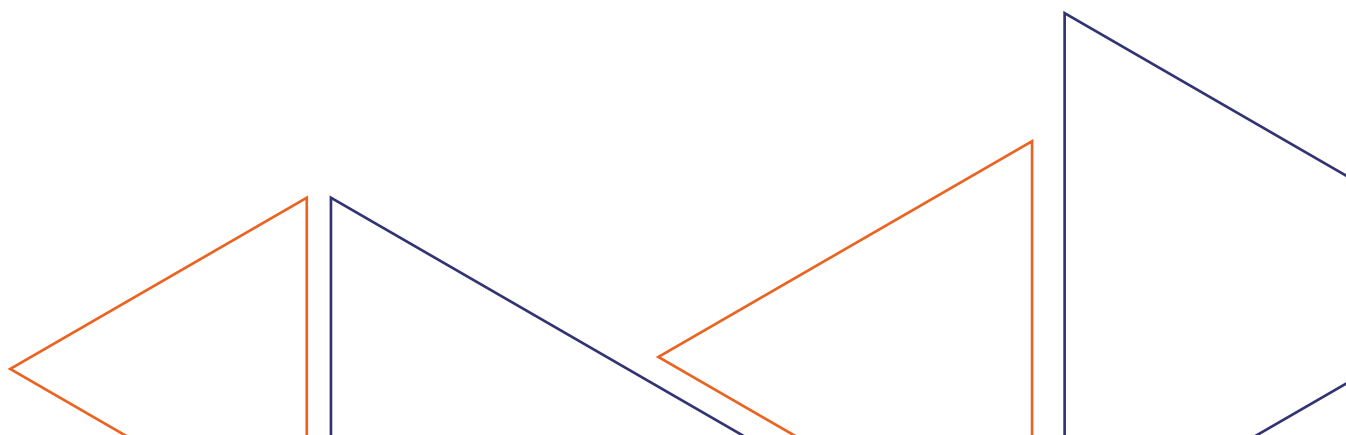
Rivers

Perennial rivers throughout the region support irrigation development, domestic and stock use. The Daly River is one of only a few large perennial river systems in northern Australia and is well recognised for its natural and cultural values. (Erskine WD, 2003)

Aquifers

The Ooloo Dolostone aquifer that underlies the region is the uppermost formation of the Daly groundwater basin, located just north of the Douglas and Daly River confluence and extending southeast to beyond the Katherine River. The extent of aquifer boundaries are shown at Figure 5.

The Ooloo Dolostone aquifer is an important karstic aquifer with its groundwater discharging into the Daly River, maintaining flow throughout the dry season and supporting the associated riverine ecosystems. It currently provides reliable, good quality water supply for agricultural production with low salinity. Typical bore yield is around 50L/sec and ranges up to 150L/sec. Water level ranges up to 38 metres below ground.



Ooloo Dolostone Aquifer Water Allocation Plan 2019–2029

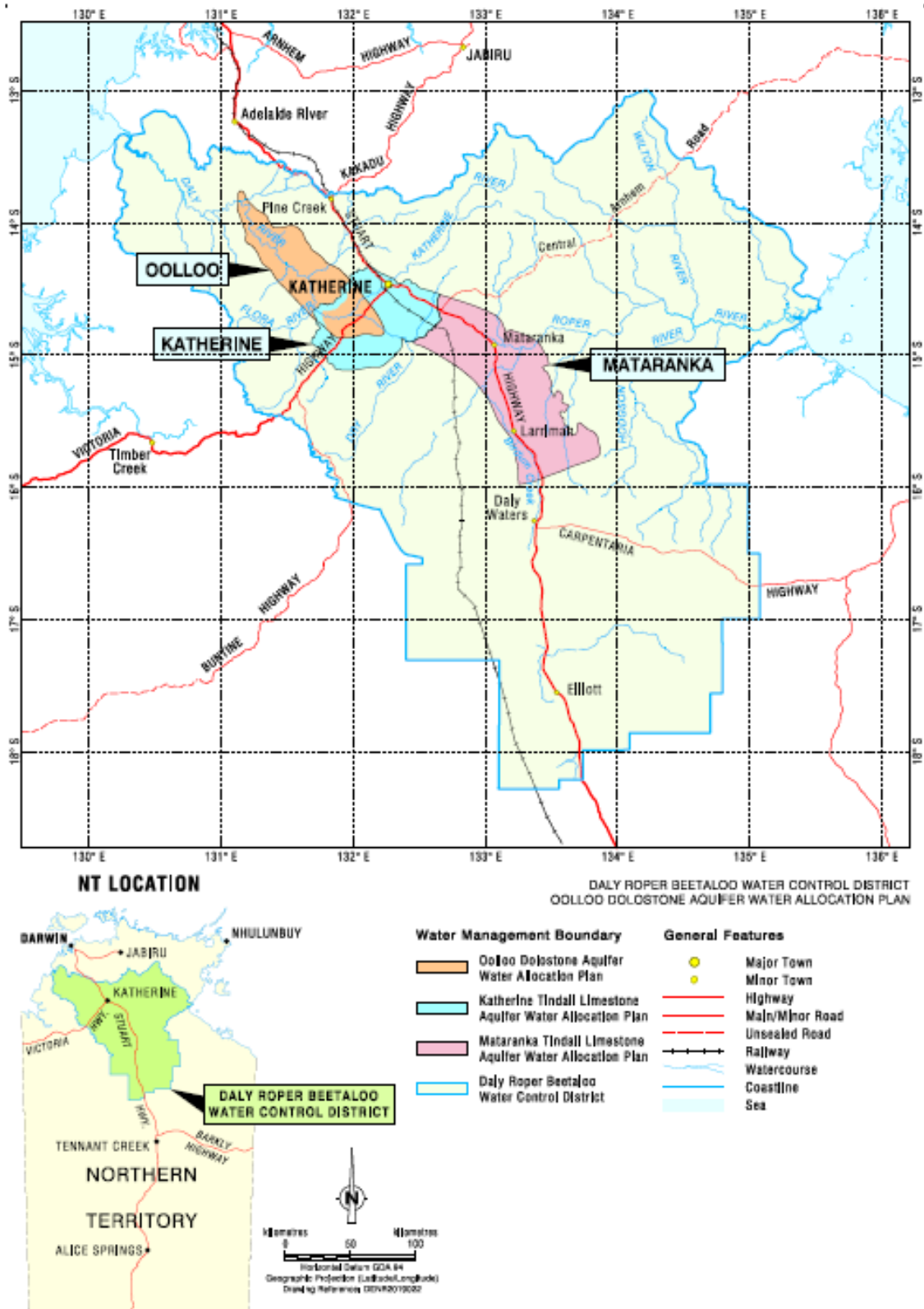


Figure 5 – Aquifer locations

Source: Ooloo Dolostone Aquifer Water Allocation Plan 2019-2029.

Water Allocation Plan

A water allocation plan exists for the Ooloo Dolostone aquifer 2019-2029 to ensure water resources are managed in a manner that protects and maintains environmental and cultural values while providing a sustainable volume of water for consumptive beneficial use.

In the Northern Territory, water entitlements have been allocated on a first-in first-served basis, with each decision based on its merits along with the cumulative impact on the water resource and other

users of the resource. As per the Act, licences are generally issued for a maximum 10-year period, with an option of renewal. The distribution of water licences in the region is shown in Figure 6.

The provision for trading water is enabled by the *Trading Licensed Water Entitlements Policy* which allows all or part of a water licence to be transferred within a water allocation plan area. To date there has been one water trade within the southern zone of the Ooloo Dolostone aquifer for 500ML which expired on 30/04/2021.

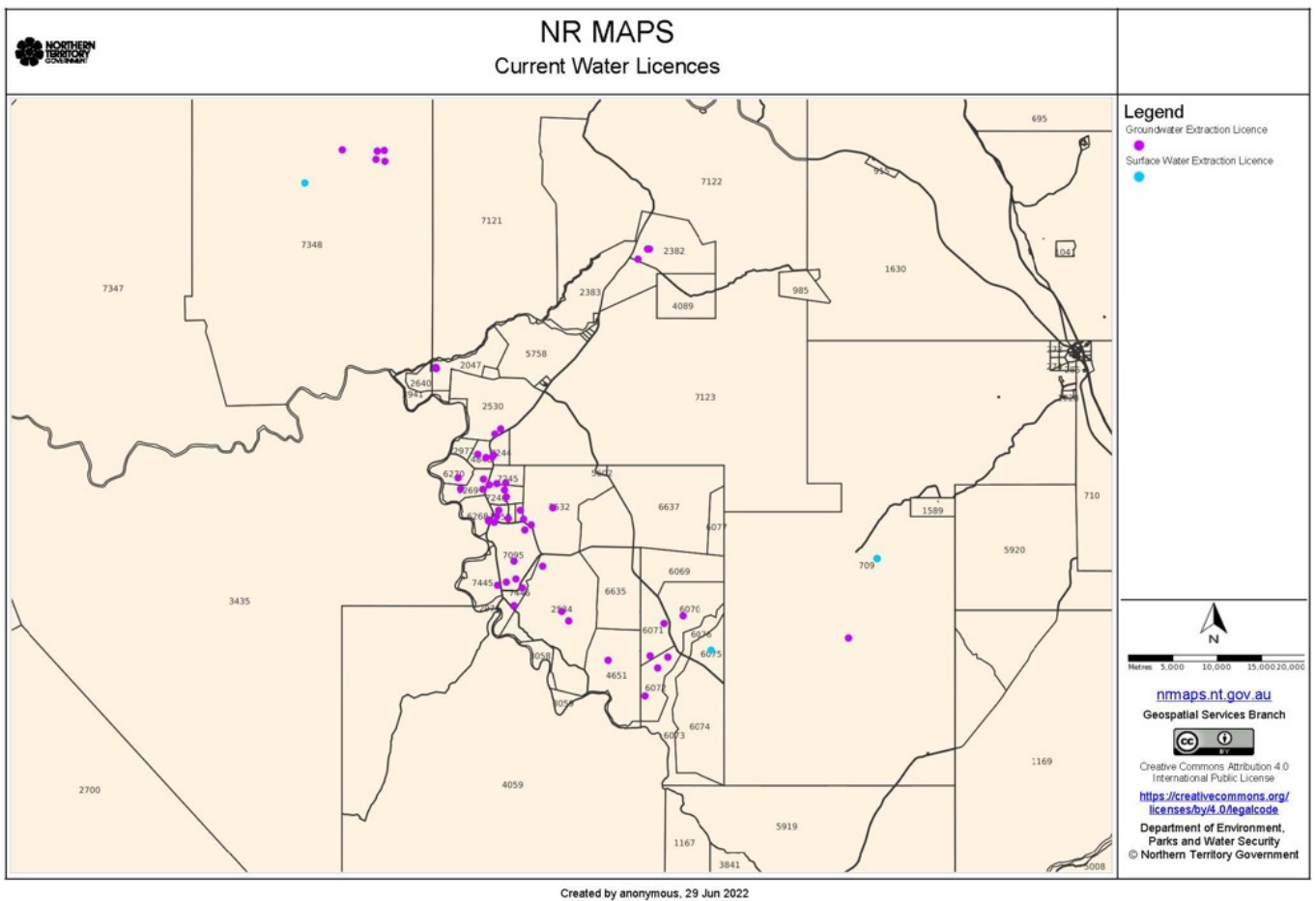


Figure 6 – Water extraction licences

Strategic Aboriginal Water Reserve

A reserved percentage of water exists within the consumptive pool of the water allocation plan exclusively accessible to eligible Aboriginal people to use or trade. The total area of the Groundwater Management Zone (GMZ) is 527,687 hectares of which 125,609 hectares is eligible Aboriginal land with locations shown at Figure 7.

The accessible Strategic Aboriginal Water Reserve available in the water allocation plan as at 20 August 2019 was 9,825ML/year.

Further water provision may become available to the Strategic Aboriginal Water Reserve in the future through surrendered, amended or cancelled licences or changes to the estimated sustainable yield following a review of the water allocation plan. In line with the *Strategic Aboriginal Water Reserve Policy Framework*, water required for public water supply, rural stock and domestic use must be made before provisioning the Strategic Aboriginal Water Reserve.

If the status of Aboriginal land changes, then the Strategic Aboriginal Water Reserve is reviewed as part of the water allocation plan review, which must occur at least every five years.

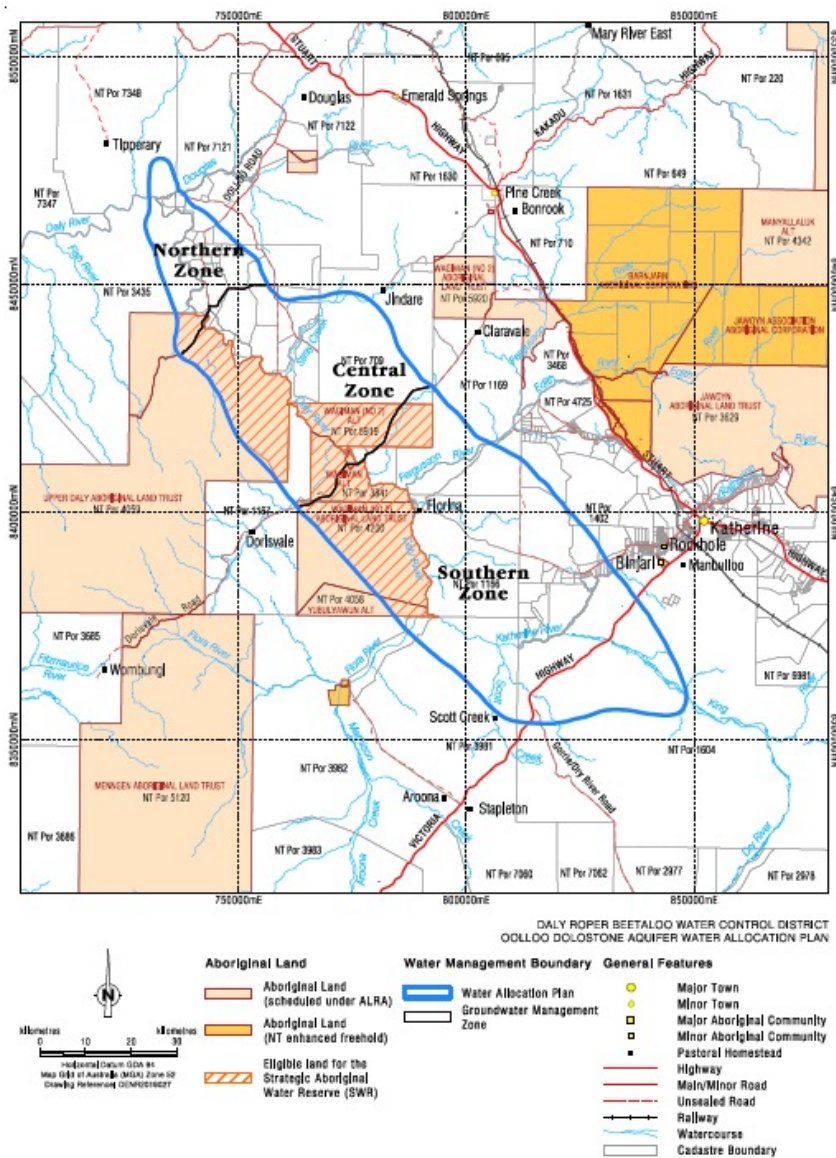


Figure 7 - Aboriginal land overlying the Ooloo Dolostone aquifer in the Northern, Central, Southern Zones.

Source: Ooloo Dolostone Aquifer Water Allocation Plan 2019-2029.

3.3. Soil suitability

The majority of land systems in the area are Blaine soils of various sub-classifications. Blaine soils are typically deep sandy red Kandosols. They are characterised by being highly siliceous at the surface, earthy, increasing to clay loams at depth (1.0 – 1.5m) of low fertility, moderately acid and have low water-holding capacity.

The soils are well drained and suited for overhead irrigated farming systems. They have over time proved to be highly productive for annual agricultural/horticultural and other broad-acre cropping systems in the Top End.

3.4. Technical studies

Extensive studies have been completed including soil, water, flora and fauna.

Further details will be obtained during stakeholder engagement process with DEPWS.



4. Environment and Cultural

4.1. Conservation areas

The regions conservation areas protect a significant section of the Douglas and Daly Rivers riverine systems. The areas include:

- Douglas River/Daly River Esplanade
- Stray Creek
- Tjuwaliyn (Douglas) Hot Springs
- Butterfly Gorge Nature Park
- Umbrawarra Gorge Nature Park

The Daly River middle reaches is declared a conservation site of national significance.

The middle reaches of the Daly River runs through two pastoral properties - Tipperary and Fish River - with smaller portions of the Site at the eastern and western ends of this river section comprising a mixed tenure including freehold and Crown leasehold land. The small communities of Daly River and Nauiyu occur in the western part of the Site.

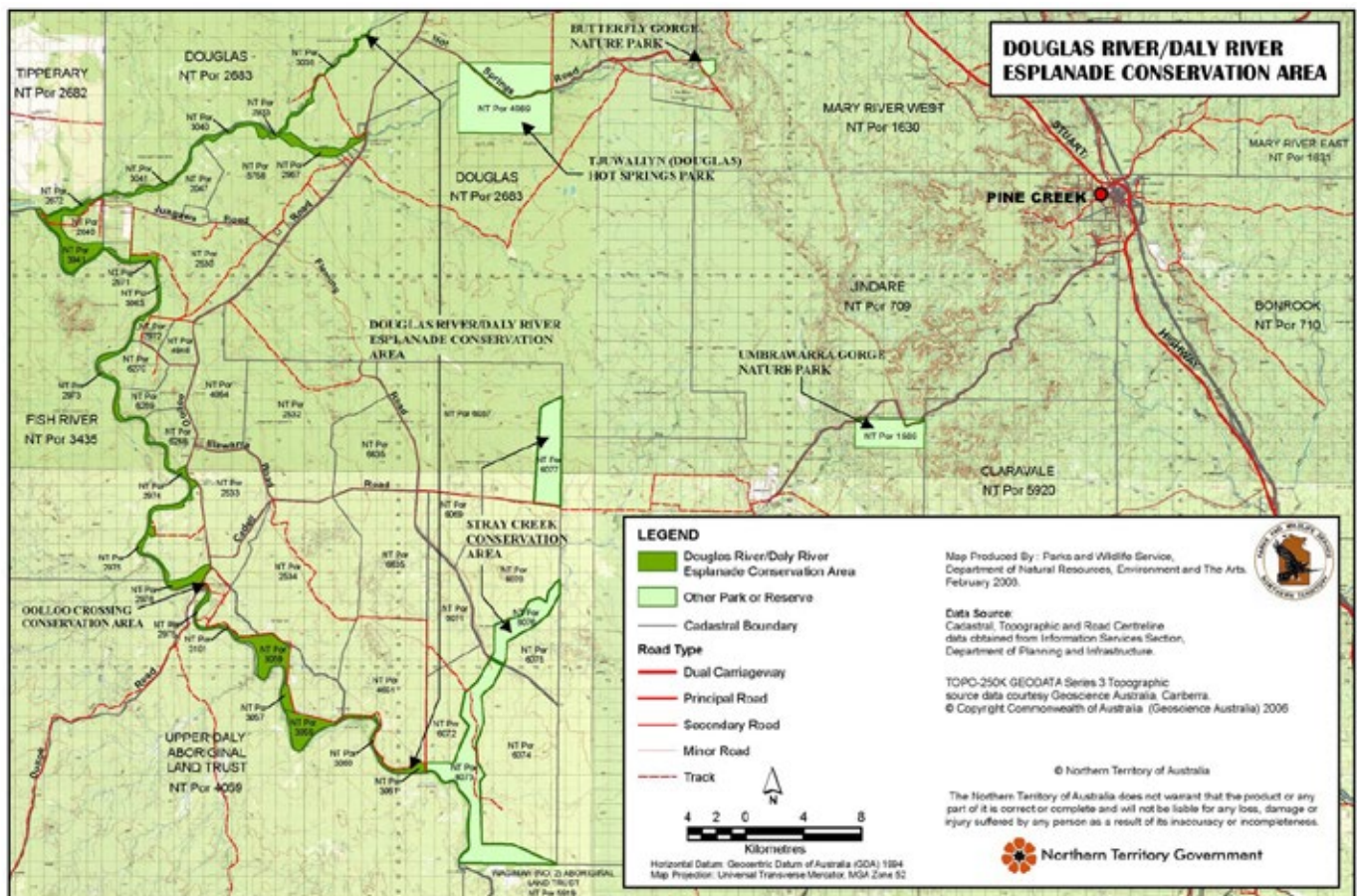


Figure 8 - Conservation areas

4.2. Flora and fauna

Diverse flora and fauna has been studied with a range of threatened species present in the region. Eight of the nine species of freshwater turtles found in the Northern Territory are present in the Daly River (Price et al 2002). The high profile pig nosed turtle (*Carettochelys insculpta*) is a flagship species. It is of considerable international concern, being the sole remaining member of a once widespread family with the best Australian populations of the species found in the Daly River (Georges et al 2002).

Furthermore, at least two nationally threatened species of elasmobranchs, the freshwater whipray (*Himantura chaophraya*) and the freshwater sawfish (*Pristis microdon*) are also present. According to (Pogonoski et al 2002), these species are critically endangered and vulnerable, respectively. The Daly River is also an important recreational fishery for barramundi (*Lates calcarifer*).

Further details will be obtained during stakeholder engagement process with DEPWS flora and fauna branch.

4.3. Heritage

NT Declared Heritage Sites:

- Fenton Airfield

Fenton Airfield was a WWII bomber base located on Douglas Station with public access off Ooloo Road.

- B24-D Liberator wreck “Nothing Sacred”

The crash site of the “Nothing Sacred” is located on Douglas West Station. It lies approximately 4.8km northwest of the Heritage listed WWII Fenton Airfield.

Douglas Station has a range of gold mining heritage sites.

Other WWII history in the greater area includes the nearby Adelaide River War Cemetery which is a Commonwealth heritage listed site.

4.4. Cultural

Traditional custodians and further information will be obtained during stakeholder engagement process with Land councils.



5. Opportunity

5.1. Precinct planning

How can improved prioritisation and planning practice support new sustainable development precincts in the Northern Territory?

The Phase I report's recommendations proposed to enable pathways to sustainable (economic, environment, and social) development. These include:

- developing an efficient approach to converting parts of pastoral leases to freehold
- de-risking agricultural precincts that provide certainty for investors
- enabling Aboriginal agricultural development
- targeting infrastructure to facilitate development
- providing a supportive regulatory environment
- strategic de-risking in coordinated and targeted research, and
- improving trust, relationships and culture in development assessment and approval.

What is best practice in precinct planning?

The key purpose of precinct planning is to provide de-risked land that is investment-ready and suitable for purpose. Land uses should be considered, planned and provided for in master plans and land-use plans based on an assessment of the lands' capacity. An evidence-based approach will underpin the development of SDPs, through government-led technical studies to identify the most suitable land uses, site opportunities and infrastructure requirements, and economic assessments to determine commercial viability.

Planned precincts would ideally be released to the market with:

- land parcels sized for development and market
- tenure suitable for development for the relevant industry
- land zoned suitably for development for the relevant industry
- water resources available and suitable for use
- specific soil suitability studies rather than broad-scale theoretical assessments

- environmental approvals addressed prior to land release
- Native Title approvals addressed prior to land release
- Aboriginal land claims (including any nearby beds and banks) finalised
- land clearing permits approved
- infrastructure (water, energy, communication) that is reliable and suitable for use
- road access all year round
- supply chain opportunities for access to market
- community infrastructure
- available workforce
- acknowledgment and consideration for areas of cultural and environmental significance within the precinct.

5.2. Horticulture

With the establishment of the Northern Territory's first cotton gin on Tarwoo Station 35km north of Katherine, cotton growers will no longer be required to send their product to the Queensland-based cotton gin for processing.

Further detail to be added during stakeholder engagement process with Industry groups.

5.3. Livestock

Further detail to be added during stakeholder engagement process with Industry groups.

5.4. Tourism

The flora and fauna of the region and extensive conservation areas provide significant tourism potential including:

- four-wheel driving
- fishing safaris
- wildlife watching
- camping
- agritourism farm experiences.

5.5. Emerging industries

The development of the industrial hemp industry presents an opportunity for the region, with broad-scale hemp expected to have competitive farm gate return in comparison to other broad acre crops such as cotton, sorghum and soybean. The Territory does not currently have a suitable processing facility for industrial hemp production.

Further detail to be added during stakeholder engagement process with Industry groups.

5.6. Future water security

Where demand exceeds supply and a resource nears full allocation there is a need to look at other alternatives to ensure that water is being optimally managed to encourage highest value and efficient use of water. There is opportunity to increase water resource availability and improve water distribution efficiency within the limitations of the water allocation plan. Development of policy mechanisms such as the management of unused water, encouraging trading and water markets may provide new opportunities into the future.

Surface water development is yet to be explored in detail due to the reliance on groundwater in the region. With the draft *Northern Territory Surface Water Harvesting Policy* released for public consultation in late 2022, there is opportunity for secure access to suitable quality water particularly over the dry season. Water flow modelling studies would need to be completed to quantify the extent of availability in the catchment that could be utilised without having an impact on groundwater recharge, surface water base flows and environmental and cultural values associated with water.

Storage of wet season flows is also an opportunity through managed aquifer recharge (MAR) weirs to purposefully recharge water into the aquifer for subsequent recovery and environmental benefit. MAR sites have been identified within the Ooloo Dolostone aquifer which has capacity for artificial storage at the end of each wet season. The potential sites are on Stray Creek in the northern zone and the Fergusson River in the southern zone. The Stray Creek site is considered to be the most prospective site with analytical analysis indicating that 5.5GL could be recharged into the aquifer over the wet season with one 2-metre high weir. If a series of five weirs were used, recharge would increase to 27GL during the wet season (Jacobs Group, 2017).

The provision for trading water is enabled by the *Trading Licensed Water Entitlements Policy* which allows all or part of a water licence to be transferred within a water allocation plan area. A peer-to-peer water market could be established similar to the water ledger trading platform in Mareeba-Dimbulah irrigation district in Far North Queensland.

Continued research into water resource availability will provide information for new development and greater certainty and security to existing users.

5.7. Future infrastructure

A number of infrastructure projects are planned to provide for new opportunities and encourage the future growth of the region. This creates a foundation for informed investment decisions along with certainty in business planning and workforce development.

The *Department of Infrastructure, Planning and Logistics 10 Year Infrastructure Plan 2018-2027* has allocated \$60 million for the Douglas Daly connector road. This road network will link the Edith Farms area north of Katherine with the existing Fleming Road in the Stray Creek area of Douglas Daly. This will significantly reduce travel time between Douglas Daly and Katherine, as well as providing a new logistics route for access to further opportunities.

A public weighbridge may be returned to service on Ooloo Road following an expressions of interest (EOI) process undertaken by the Department of Infrastructure, Planning and Logistics in early 2022 for the redevelopment of a Crown land site to support the agricultural and cattle industry in the region. The 4.8 hectare site includes four grain silos, a weighbridge, sheds and other improvements which have not been operational since 1994. If the weighbridge is reinstated to operational capacity by the successful proponent following completion of the EOI process, it will be required to comply with the *National Measurement Act 1960*.

The nearby community of Daly River is receiving \$4.35 million in upgrades to the public boat ramp with works expected to be complete in late 2022. These upgrades will provide improved access and additional amenities to create more opportunities for the fishing tourism sector.

The Katherine Logistics and Agribusiness Hub is being developed by the Department of Infrastructure, Planning and Logistics as a new land release for the purpose of supporting agricultural

industries and servicing surrounding communities. The hub will also support the growth of the resource, defence, transport and tourism sectors. It is strategically located near the intersection of the Katherine railway terminal, Victoria Highway and proposed future heavy vehicle bypass route, within Manbulloo Station.

Telecommunications - Regional Connectivity Program - The Douglas Daly (\$904,950) project will deploy one new Telstra macro cell base station in the Douglas-Daly region, providing new and improved coverage to the area.

6. Constraints

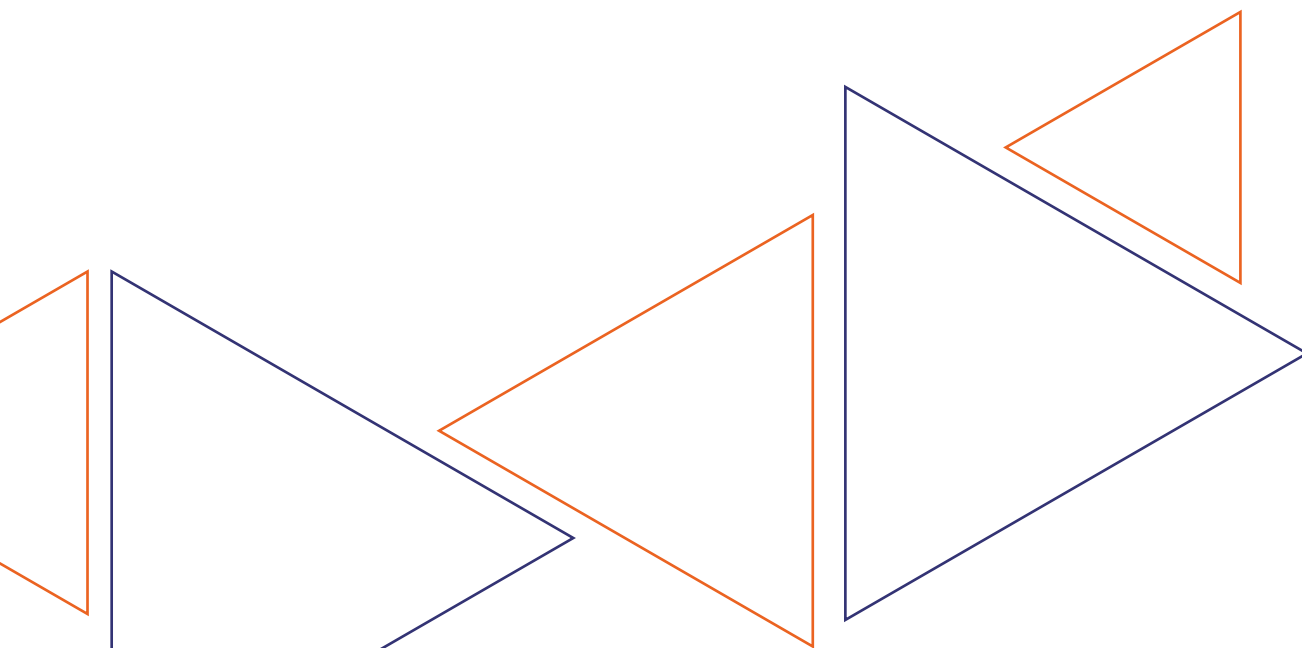
Although the region has long been recognised for its agricultural potential irrigation development has been limited by concern and debate over water allocations, in-stream ecology, tree clearing and fishing and cultural values.

Key issues facing the progression of agricultural precinct development raised in Phase I of the project were:

- environmental approval process
- water availability and licencing
- land available and ready for development
- lack of precincts for small-scale development
- approval pathways
- distance and cost to markets

- resilient and reliable infrastructure
- skilled labour availability
- support service availability.

The region has the highest rate of land clearing in the Territory. In November 2003 a clearing moratorium was declared in the Daly River region affecting freehold and pastoral leases. The moratorium was extended in 2007 with an emphasis on water allocation planning. In 2008 the clearing moratorium was formalised by Interim Development Control Order 17 which expired in 2010. The moratorium did not prohibit land-clearing but introduced a more stringent approval process and greater protection for riparian zones within 1000m from the Daly River. Special provisions for the Daly River catchment are now included in the freehold land clearing guidelines.



7. Engagement

7.1. Engagement strategy

Workshop objectives:

The engagement strategy includes workshops with key stakeholders to:

- identify strengths across the broader Northern Territory agricultural industry
- discuss advantages of how precinct areas can benefit current land owners and future growth
- obtain input into preferences around improving water trading
- seek feedback on benefits and limitations of the non-pastoral use permit process
- obtain experiences in approaching all relatable development processes and suggestions for improvement
- ascertain where infrastructure could be prioritised
- assess other avenues where the Northern Territory can assist in agricultural development.

Research objective questions have been prepared specifically for land owners and industry groups.

7.2. Key stakeholders

During the stakeholder engagement phase, we will collaborate with key stakeholders to understand their needs and negotiate traditional owner involvement and aspirations. These stakeholders include:

- Environment Centre NT
- CSIRO
- Regional Development Australia NT
- Charles Darwin University
- Douglas Daly property owners
- NT Cattlemen's Association
- NT Farmers
- DEPWS Rangelands Division
- DEPWS Water Resources Division
- DITT Fisheries
- DITT Strategic Policy and Reform
- Northern Land Council.

8. Conclusion

Based on our findings about the region from historic data and extensive studies we seek to enter the consultation and stakeholder engagement phase of this case study project to identify where further research could support future growth and investment.

The stakeholder engagement process will identify future planning, improvement of processes, further research and growth incentives that will be explored in detail in the Action and Research Plan.

9. References

- Department of Infrastructure, Planning and Logistics. (2018). *10 Year Infrastructure Plan*.
- Erskine WD, B. G. (2003). *Recommended environmental water requirements for the Daly River, Northern Territory, based on*. Environment Australia, Commonwealth Department of Environment and Heritage.
- Jacobs Group. (2017). *Northern Territory Irrigated Agriculture Feasibility Study*.
- Lindsay B Hutley, I. L. (2012). *Quantifying interception associated with large-scale plantation forestry in the Northern Territory*. Australian Government National Water Commission.
- Shotton, P. (2011). *A Historical Overview of Agricultural Research at Douglas Daly Research Farm (1960s – 2010)*. Northern Territory Government, Australia. Technical Bulletin No. 338.
- Northern Territory Government (2018). *Annual Review - 10 Year Infrastructure Plan 2018-2027*, Department of Infrastructure, Planning and Logistics, Northern Territory Government.
- Northern Territory Government (2019). *Ooloo Dolostone Aquifer Water Allocation Plan 2019–2029*, Department of Environment and Natural Resources, Northern Territory Government.
- Northern Territory Government (2017). *Agribusiness potential of the Big Rivers Region*, Department of Primary Industries and Resources.
- Bureau of Meteorology (28/06/2022). *Climate Statistics for Australian Locations: Douglas River Research Farm*. http://www.bom.gov.au/climate/averages/tables/cw_014901_All.shtml
- NRETAS (2009). WWII B-24D Liberator “Nothing Sacred” wreck: Background Historical Information. Prepared by the Heritage Branch, NT Department of Natural Resources, Environment, the Arts and Sport, Darwin.
- Anthony P O’Grady, Derek Eamus, Peter G Cook and Sebastian Lamontagne (2006). *Groundwater use by riparian vegetation in the wet-dry tropics of northern Australia*. CSIRO Australian Journal of Botany.
- Georges A, Webster I, Guarino E, Thoms M, Jolly P & Doody S 2002. *Modelling dry season flows and predicting the impact of water extraction on a flag ship species*. Final Report for Project ID 23045. Applied Ecology Research Group and CRC for Freshwater Ecology, University of Canberra, Canberra.
- Pogonoski JJ, Pollard DA & Paxton JR 2002. *Conservation overview and action plan for Australian threatened and potentially threatened marine and estuarine fishes*. Environment Australia, Canberra.
- Price O, Milne D, Connors G, Harwood R, Woinarski J & Butler M 2002. *A conservation plan for the Daly Basin bioregion (Draft)*. Parks and Wildlife Commission of the Northern Territory, Palmerston.

