



Gulf Savanna Region

Northern Territory

NATURAL RESOURCE MANAGEMENT PLAN



2021-2025

VISION

Territorians working together to manage our environment's natural, cultural and economic values for the benefit of all.

For more information

This publication is available on request through contacting info@territorynrm.org.au

Acknowledgements

The NT NRM Plan 2021-2025 was supported through funding from the Australian Government's National Landcare Program. However, the opinions expressed within are those of the NT NRM community.

Layout and design by Hodge Environmental

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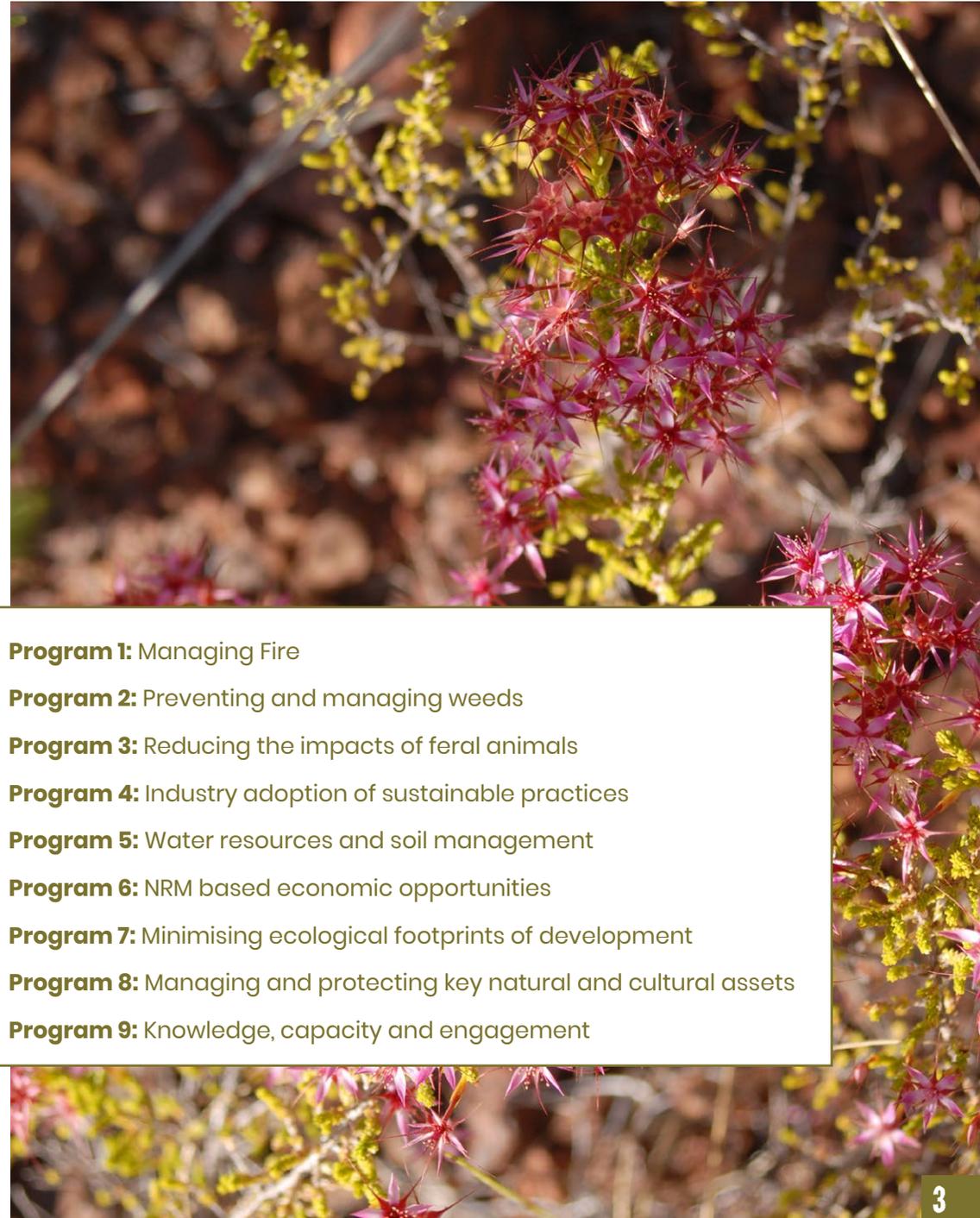
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Foreword

The Northern Territory NRM plan provides an overarching five year strategy for maintaining and enhancing the condition of our land and water resources, the productivity of our soils and the health of our natural habitats and biodiversity. It has been drafted following extensive consultation to capture community priorities across the Territory and is underpinned by the latest science.

By structuring the plan into four regions we reflect the diversity of the Territory landscapes and give a stronger voice to our regional stakeholders. This is a plan for all Territorians.

The plan builds on upon the legacy of previous Northern Territory NRM plans and the lessons learned from their implementation. It learns from the past but also looks to the future, recognising the newly emerging challenges and opportunities that this new decade brings. As the Territory enters an exciting period of growth and investment, this plan provides an effective framework for engaging new partners into NRM, coordinating action and tracking and adaptively managing our progress towards high level objectives.

With this new plan, Territory NRM aims to strengthen regional leadership and coordination in plan implementation. We will bring together and facilitate diverse regional stakeholders to adaptively manage implementation and find the approaches that work best for them.

As Chair I look forward to playing my part in supporting in this collaborative effort. Working together, we aim to ensure that the health of the Territory's natural resources will underpin its future prosperity and the social and economic wellbeing of all Territorians.

Alastair Shields

Chair of Territory Natural Resource Management



Introduction

The Northern *Territory Natural Resource Management Plan (2021-2025) Gulf Savanna Region* (the Gulf Savanna regional plan) provides a framework for maintaining and enhancing the health and productivity of land, water, soils, terrestrial and marine habitats and biodiversity across the region. While preparation of this plan was coordinated by Territory Natural Resource Management, it is not a plan for Territory Natural Resource Management, it is a plan for the whole Gulf Savanna NRM community.

This plan has been developed drawing upon the latest available scientific evidence and expert technical knowledge of the natural, social and cultural assets of the region. It further integrates the interests, priorities and goals of a diversity of stakeholders and interest groups from across the Gulf Savanna, including governments, industry groups, Aboriginal landowners, communities, researchers and conservationists. The plan therefore highlights opportunities for strategic collaboration and partnerships between stakeholders working towards shared goals. By identifying regional NRM priorities and formulating strategies for achieving these, the Gulf Savanna regional NRM plan also constitutes a prospectus for investment.

This Gulf Savanna regional plan is one of four regional plans that make up the Northern Territory NRM plan. It builds directly upon the structure, outcomes and the lessons learned from implementation of the previous plan, the Natural Resource Management Plan (2016-2020) Gulf Savanna Region, and the legacy of NRM planning for the Gulf Savanna since 2005. Each successive plan has refined strategies to best address changing biophysical conditions, a changing policy environment and evolving community expectations across the Gulf Savanna. Accordingly, in 2021, this Gulf Savanna regional plan supports and carries forward the good work that NRM stakeholders have been conducting over many years.

In a fast-changing world, this plan also looks to the future and program strategies have been developed anticipating NRM opportunities and challenges that may emerge across the Gulf Savanna during the period 2021-2025.



Our Vision

Territorians working together to manage our environment's natural, cultural and economic values for the benefit of all

The Gulf Savanna Region

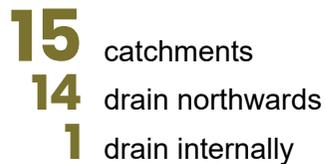
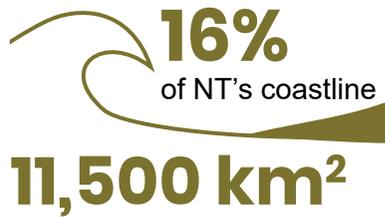
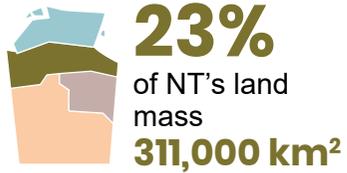
The Gulf Savanna region covers 23% (311,000 km²) of the land area and 16% (11,500 km²) of the coastal region of the NT. The region includes a variety of ecosystems, including arid, savanna, plateau and coastal waters and islands. The region is predominantly savanna woodland, but also includes areas of savanna grassland, spinifex grassland, open forest, escarpment, floodplains, ranges, islands, coastal wetlands, large river systems and marine environments. Approximately 9% of Territorians reside in the Gulf Savanna. The town of Katherine is situated 320km south-east of Darwin and is the largest town and service centre in the area with a population of approximately 10,500 people. Other towns and communities in the region include Mataranka, Miniyeri, Lajamanu, Daly Waters, Larrimah, Daguragu/Kalkarindgi and Borroloola. There are also many small Aboriginal outstations in the region. The diversity of Aboriginal cultures in the Gulf Savanna is demonstrated by the diversity of language groups, numerous listed sacred sites, culturally significant places in the landscape, continuing ceremonial practices and a vast body of knowledge that is held by Aboriginal people in the region. There is also a strong history of pastoralism in the region with nearly two-thirds of the region being under pastoral lease. Some families have lived and managed properties in the Gulf Savanna for many generations and many pastoral properties are vast in size.

The region contains many important breeding sites for marine turtles and colonial seabirds, and roosting and feeding sites for migratory shorebirds in the area. National parks and reserves in the region include Nitmuluk, Limmen Bight, Keep River and Judbarra (Gregory) National Park and Barranyi (North Island). There are three Indigenous Protected Areas (IPAs) in the region, Yanyuwa IPA, Wardaman IPA and the Waanyi Garawa IPA. The area has 13 Sites of Conservation Significance. These are a mixture of islands, ranges, floodplains, the Western Arnhem Plateau and the Mataranka Thermal Pools. There are 37 nationally Listed and 56 Territory listed threatened species. The most severely threatened species that are still thought to occur in the region are the northern quoll and Carpentarian rock-rat which are listed as Critically Endangered in the NT. There are 10 Weeds of National Significance (WoNS) and 44 Territory declared weeds in the area. Five introduced grasses have been recognised as key threatening processes to biodiversity. The area is unique in that it has not been subjected to the same development pressure of urban expansion or intensive agriculture as have other parts of Australia and thus natural landscapes are still largely intact. However, the environmental and cultural values of the region have declined significantly over many years and a number of species are under increasing pressure from threats such as wildfires and feral animals. These values underpin the livelihoods of people living in the region.

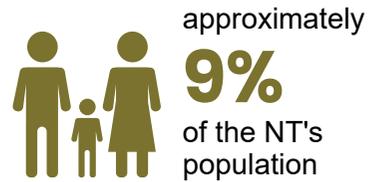


Gulf Savanna Regional Profile

Land



People



Many small
Aboriginal outposts

Sizeable
Pastoral properties

Majority of land classified as
VERY REMOTE

Economy

\$1.7 million

Big Rivers total Gross Regional Product

6% of NT's Gross State Product



mining



agriculture, forestry and fishing



government/public administration

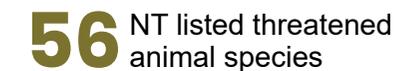


defense



regional service delivery

Natural resources



Social and economic status

The Katherine Region contributed an estimated 6% (\$1.669 billion) of the Territory Gross State Product in 2020. The largest industry sectors in the Katherine region are mining (\$444 million), agriculture, forestry and fisheries (\$194 million), public administration and safety (\$139 million) and construction (\$118 million). The largest mining operation is McArthur River Mine. Katherine is recognised as a tourism, defence and pastoral hub and service centre that supports a growing agricultural industry. It also plays a pivotal role in connecting the trade routes between the NT and other states in Australia. The pastoral industry is long established in the region and cattle are primarily sold for live export to South-east Asia with some cattle transported to Queensland and the remainder for other domestic markets. The Katherine region also contributes approximately a quarter of the Northern Territory's fruit and vegetable production by value and almost half of all broadacre crops.

The climate and remote nature of much of the Gulf Savanna region presents particular challenges regarding creating sustainable livelihoods and delivering NRM activities. Much of the region is classified as “very remote”, according to the Australian Bureau of Statistics (ABS) because of the vast distances needed to travel to access essential services and infrastructure. These factors have significant implications for the costs of extension services needed to deliver NRM activities.

Natural values underpin the livelihoods of pastoralists and Aboriginal people and the viability of industry and other commercial enterprises in this remote region. It is important to maintain these values for current and future generations



Social indicators

The participatory planning process adopted in 2016 highlighted the role of ‘people’ in natural resource management and the capacity of individuals and groups to implement activities and to coordinate and work together with other individuals and groups.

The 2021-2025 Gulf Savanna regional plan retains ‘Community Knowledge’ and ‘People on Country’ as key NRM assets. Without motivated and capable people, the programs and strategies set out in this plan could not be achieved. Accordingly, the plan places heavy emphasis upon building and supporting social capacity in natural resource management. Through implementing successive NRM plans, there is now an improved understanding of the elements that enable social capacity for natural resource management in the Gulf Savanna:

- Opportunities to learn new skills and share knowledge
- The recognition, generational transfer and appropriate use of traditional ecological knowledge
- Capacity for ‘two-way learning’ and working productively across cultures
- Meaningful participation and a sense of ownership in NRM planning
- Strong working relationships and active networks across the region
- Ability to plan and coordinate strategically, and manage adaptively
- Effective communications to reach all audiences
- Overcoming resource, logistical and economic barriers to participation.

Each of these elements are recurrent themes throughout the programs of this plan and will contribute to how success in implementation is measured.

Land tenure

Pastoral lease

Two thirds of the Gulf Savanna is under pastoral leasehold, with grazing being the dominant land use in the region.

Aboriginal land

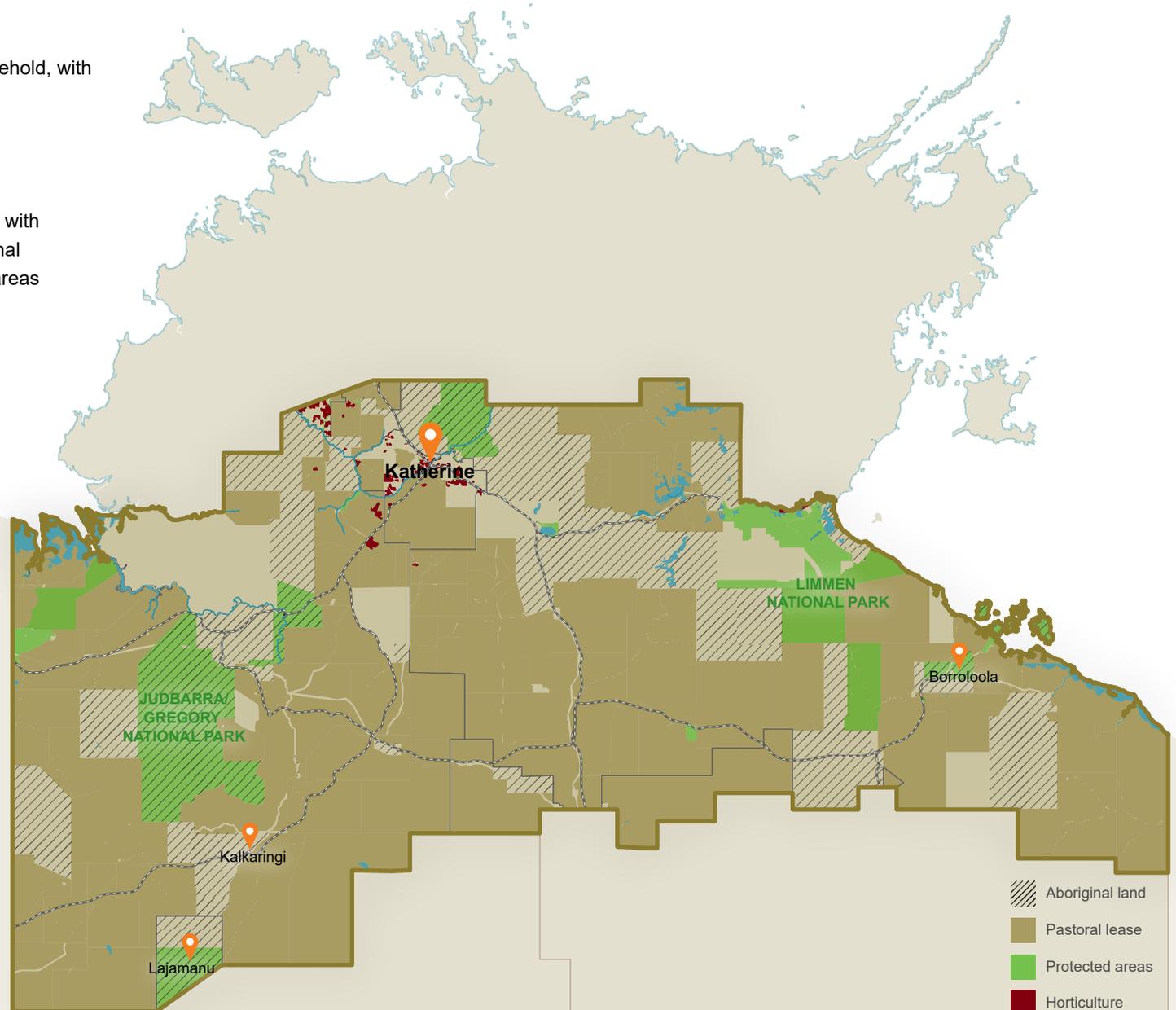
Aboriginal land accounts for about 20% of the region, with a significant proportion of the coastline under Aboriginal ownership. Native title is also recognised over large areas of the region, including some pastoral properties and national parks.

Protected areas

Approximately 13% of the Gulf Savanna is protected, including the Judbarral/Gregory National Park, the Nitmiluk National Park, and the Giwining/Flora River Nature Park which are all jointly managed by the Territory government and Traditional Owners. The Limmen National Park and Keep River National Park also encompass large areas. There are three Indigenous Protected Areas within the region.

Horticulture and crop agriculture

Crop agriculture only accounts for a small proportion of the Gulf Savanna region, but it is another important land use in the region



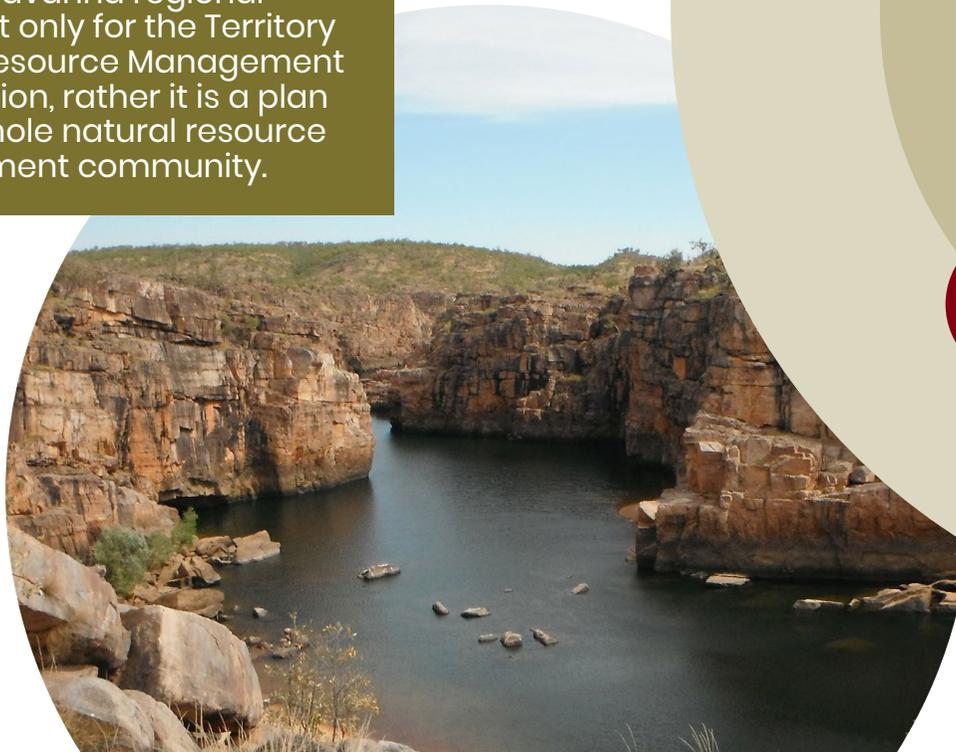
Source: TNRM

Where does the Gulf Savanna regional plan fit in?

The Gulf Savanna regional plan is one of four plans that combine to form the broader Northern Territory Natural Resource Management Plan (2021-2025). It is a non-statutory plan, but it has been developed with reference to broader policy frameworks, Australian Government, Northern Territory Government and local planning initiatives, and local knowledge. The plan aims to provide an overarching framework that integrates this diversity of approaches and instruments into a single coherent agenda for action.

This integrated approach provides a platform to both strengthen existing partnerships and highlight potential new partnerships to underpin NRM collaborations. It recognises that to strategically manage the water, land, soils and biodiversity of the Gulf Savanna, planning and management action must be inclusive of all stakeholders. The planning process during 2020 and 2021 went through multiple stages to most effectively capture the current and future priorities of all stakeholders.

The Gulf Savanna regional plan is not only for the Territory Natural Resource Management organisation, rather it is a plan for the whole natural resource management community.



How did we develop the Top End regional plan?

In 2015 and 2016 the 'Open Standards for the Practice of Conservation' were adopted as a basis for NRM planning. The 'Open Standards' are an internationally recognised planning framework and represent leading practice in participatory planning and adaptive management. Planning for the Gulf Savanna in 2016 established a framework for ongoing monitoring, review and updating of the plan by stakeholders and transformed the plan into a 'live' document. Through reviewing and revising the Gulf Savanna regional plan in 2018 and again in 2020, most stakeholders reported that the structure of the 2016-2020 plan remained relevant to their needs.

The planning approach focuses upon the identified assets of the region and the pressures that act upon them. The 'Theory of Change' (planning logic) suggests that improved management of the pressures acting on assets will promote more sustainable, natural social and economic systems.

The natural, social and cultural assets referenced in this plan were identified by the NRM stakeholders of the Gulf Savanna through a series of workshops and planning sessions undertaken during the development of the 2016-2020 plan. Gulf Savanna stakeholders feel this asset structure remains relevant in 2020.

Collectively, the nine assets identified through the planning process provide Gulf Savanna stakeholders with resources for their daily lives (such as the air they breathe and the water they drink), and underpin key industries such as pastoralism, crop agriculture and tourism. Natural and cultural assets also support the important customary economy that sustains Aboriginal people and provides for their cultural and spiritual wellbeing

1 Review of the 2016–2020 plan

Gulf Savanna stakeholder groups were individually consulted to assess progress made towards plan implementation, and then attended a technical review meeting convened in Katherine where progress towards implementation and achievement of objectives was assessed.

2 Literature and data review

An extensive review of published and grey data, publications, research reports and policy documents produced since 2016 was conducted to update asset and pressures descriptions and highlight trends of change.

3 Technical working-group planning

Key technical stakeholders were brought together in a planning meeting to discuss and identify current and emerging Gulf Savanna NRM priorities and the strategies required to address them.

4 Individual expert consultations

Following up on the planning meeting select thematic experts were consulted individually for more detailed input to develop the program of strategy activities and interim targets.

5 Consultation Draft

A Gulf Savanna Consultation Draft document was prepared and posted for public comment and submissions. Community presentations and consultation sessions were convened in Katherine.

6 Final Draft

Community feedback and stakeholder submissions on the Consultation Draft and planning priorities were collated and drawn upon to produce this final draft of the Gulf Savanna regional plan.

The strategies and major objectives identified to protect the assets identified for the Gulf Savanna NRM Plan 2016-2020 were organised into nine programs. These were:

- Managing fire
- Preventing and managing weeds
- Reducing the impacts of feral animals
- Industry adoption of sustainable practices
- Water resources and soil management
- NRM based economic opportunities
- Minimising the ecological footprints of development
- Managing and protecting key natural and cultural assets
- Knowledge capacity and engagement

In developing the 2021-2025 Gulf Savanna regional plan, this structure has been carried forward.

Key assets



People on Country

Includes remote livelihoods of Aboriginal people, pastoralists and others living throughout the region



Community Knowledge

Includes Indigenous and non-Indigenous knowledge and skills and scientific knowledge



Coastal and Marine

Includes mangroves, estuaries, coastal floodplains, intertidal areas, seagrass and coral reef habitat



Freshwater Systems

Includes rivers, wetlands, lakes, swamps, underground aquifers and their associated values, functions and ecosystem services



Healthy Soils

Includes soil fertility, structure, health and productivity



Grasslands/Rangelands

Includes the dominant Eucalypt woodlands and open woodlands with an understorey of perennial and annual grasses



Cultural Landscapes and Sites

Includes Aboriginal sacred sites, heritage places, cultural landscapes and iconic World Heritage sites



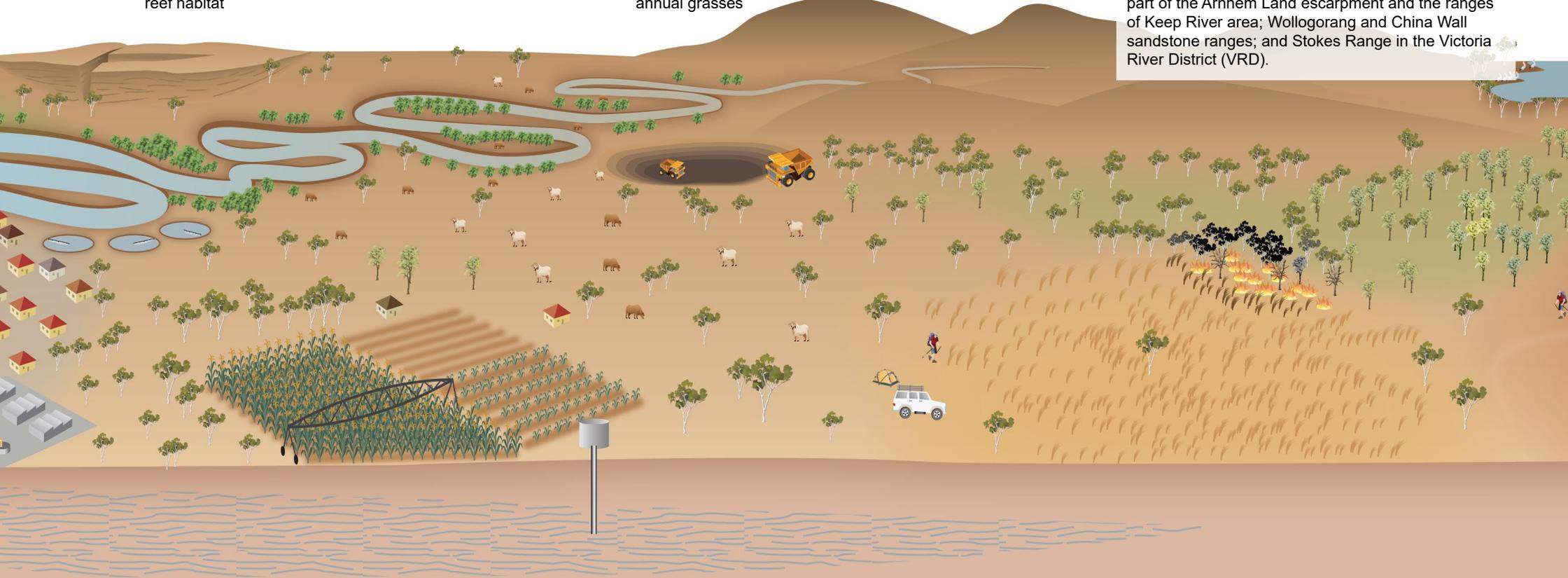
Biodiversity and Conservation Sites

Includes threatened species, Sites of Conservation Significance, key conservation sites and healthy habitat



Ranges

All ranges including: sandstone escarpments; plateaus; cliffs and gorges, notably the southern part of the Arnhem Land escarpment and the ranges of Keep River area; Wollogorang and China Wall sandstone ranges; and Stokes Range in the Victoria River District (VRD).



Assets and pressures descriptions

In describing assets and the pressures that act upon them, there are two qualitative assessments for trends in condition over the last five years (2016-2021).

Community opinion

This is a purely subjective collective assessment elicited at community consultation meetings and based upon personal observations or other evidence. As a measure it reflects the community's perception about what is happening to natural assets and the success of NRM.

Review of secondary data

Available academic papers, data sets, technical reports and policy documents produced and published over the last five years and pertaining to assets in the region were reviewed, noting implications for asset condition. As a caveat, due to delays in publication, some reviewed documents are based upon data collected prior to 2016.

Over past five years (2016-2021)

Overall, positive trend of change in asset condition



No clear trends of change in asset condition



Overall, negative trend of change in asset condition



Insufficient evidence



Assets and pressures descriptions



Coastal and marine

Goal: By 2030, the health of coastal and marine ecosystems is maintained



Coastal and marine

	2016		2021 trend	
	Condition	Trend	Literature/ data review	Community perception
Coastal and marine	Good	█	█	█

Indicators for condition

- Coastal and marine Sites of Conservation Significance being actively managed
- Number of Aboriginal ranger groups actively managing coastal and marine areas
- Proportion of mangrove forests, seagrass beds and coastal and estuarine habitats assessed as remaining in good health
- Catchment, estuarine and coastal water quality
- Fish stocks
- Turtle and dugong numbers

The Gulf of Carpentaria is a large open tropical gulf system in northern Australia which spans both Queensland and the NT. It is characterised by a shallow sea floor for most of its extent and the coastal zone is sparsely populated and largely undeveloped. The coastal zone of the Gulf Savanna NRM region in the Northern Territory makes up about 16% (11,500 km²) of the total coastal area within the Territory. The vast majority of coastline is Aboriginal freehold land. The region has not been subjected to the same level of development as coastal areas in other parts of Australia and remains relatively intact. It contains significant marine and estuarine habitats, such as mangrove communities and seagrass beds that are nursery habitats for commercial fisheries species, as well as internationally recognised populations of sea turtles, dugongs and endangered sawfish. Other important marine species associated with the extensive inshore seagrass beds, included at least three species of the nationally-listed family of seahorses and pipefish occur in the region. Key species of recreational and commercial importance such as prawns, mud crab, barramundi, golden snapper, blue salmon and northern whiting are also found in the region.

The extensive intertidal salt flats and mudflats are one of the most important areas for migratory shorebirds in the Territory, supporting internationally significant numbers of at least five species. The islands of the Gulf Savanna also provide important nesting sites for threatened marine turtles. There are four coastal and marine sites of international conservation significance in the region. The Sir Edward Pellew Group contains the most significant islands in the area. These ecosystems have extremely high cultural, environmental and commercial value. The Northern Prawn Fishery in the Gulf of Carpentaria is the most lucrative fishery in Australia and is dependent on seagrass meadows, such as those found in the region. Coastal and marine environments are also major attractions for camping and fishing for both Territorians and tourists. Aboriginal livelihoods also depend upon the maintenance of productive and healthy marine environments.



Coastal and marine

Pressures and uses



Problem and pest species

Marine pests are a constant threat to the marine environment. These can be carried in ballast water that is discharged at seaports or on the hulls of ships and boats. The long and remote coastline makes surveillance for marine pests challenging.



Climate change and severe weather

Severe weather increases pressure on coastal habitats. Sea level rise threatens freshwater wetlands and in 2015 reduced runoff led to extensive dieback of mangroves around the Gulf of Carpentaria. Increasing ocean temperatures and acidification can further degrade marine ecosystems and bleach coral.



Mining and energy production

The McArthur River Mine and other resources sector developments can alter flow regimes which directly impact on coastal and marine habitats. They can threaten increased sediment loads and the discharge of toxins and pollutants into waterways. Operation of the Port of Bing Bong may also contribute to disturbance of Gulf waters.



Primary industries

Agriculture, aquaculture, and horticulture can pollute the marine environment with silt loads, run off nutrients and toxins.



Pollution

Marine debris and discarded nets are a significant issue along the Gulf coastline. It results in the deaths of many marine species.



Harvest of natural resources

Poor fisheries management can result in habitat destruction and by-catch of non-target species. Illegal fishing and poaching impacts on some economically important species.



Tourism and recreation

Coastal areas can be polluted by waste from recreational visitors and beach nesting sites degraded by vehicle movements. Visitors can also spread terrestrial and aquatic weeds into coastal areas. Lower Roper River, King Ash Bay and other popular destinations are at risk from this pollution and degradation.



Feral animals

Pigs can predate on seabird and turtle nests and together with buffalo can degrade coastal ecosystems. Some islands in the Gulf of Carpentaria remain free from feral animals and remain important refuges for native species, but with hundreds of small islands and no port quarantine it is challenging to maintain this status.



Assets and pressures descriptions



Freshwater systems

Goal: By 2030 the health of freshwater systems is in good conditions with natural values maintained or improved.



Freshwater systems

	2016		2021 trend	
	Condition	Trend	Literature/ data review	Community perception
Freshwater systems	Fair	—	—	↓

Indicators for condition

- Density and diversity of birds using wetlands for nesting and breeding
- Seasonal river flows and discharge rates
- Presence of indicator species (e.g. freshwater turtles or snakes).
- Weed status of riparian and wetland systems
- Feral animal disturbance of riparian corridors and wetlands
- Water quality and sediment loads along catchments
- Rates of water discharge from selected bores
- Ground water level
- Seasonal extent and duration of inland wetlands

Freshwater systems include major rivers, aquifers, creeks, wetlands, lakes and their aquatic wildlife, associated values, functions and ecosystem services. Wetlands are a significant feature of the Gulf Savanna region and provide critical habitat for local and migratory waterbirds and many other aquatic species. The wetlands within the Gulf Savanna region of the Territory and Queensland together form part of Australia's largest wetland area of approximately 20,000km². Freshwater runoff supports important nursery habitats and commercial fisheries in the Gulf of Carpentaria. Aquifers are also vital to the area as they feed dry season flows and are used for production needs. Key Sites of Conservation Significance for freshwater values include the Birrindudu Wetlands that are of international significance and Mataranka Thermal Pools and Nongora Lake, which are of national importance.

Aboriginal people value freshwater systems for their livelihoods, for their cultural and spiritual significance and to support economic development. Customary use of freshwater resources is embedded with a deep understanding of the systems' ecology and environmental water needs. For Aboriginal people, a decline in the condition of a freshwater system may lead to a decline in the availability of traditional resources and sacred sites may also be compromised.

Freshwater systems

Pressures and uses



Feral animals

Introduced animals such as pigs, buffalo, horses and cattle degrade wetlands and riparian zones, increasing nutrients and turbidity. Buffalo trampling can contribute to saltwater intrusion into freshwater coastal wetlands. Noxious fish species can invade Gulf Savanna waterways. The spread of cane toads also impacts aquatic systems.



Weeds

Riparian areas and wetlands are subject to invasion by exotic weeds, including some Weeds of National Significance like mimosa, olive hymenachne, and parkinsonia.



Climate change and severe weather

Climate change and severe weather can make some coastal wetlands vulnerable to saltwater intrusion. Protracted drought will lead to depletion of aquifers and environmental flows, and force stock to concentrate and potentially damage remaining water sources. Severe flooding damages waterways and habitats through erosion.



Inappropriate fire

Fires can disturb and degrade riparian habitats by increasing erosion and the flow of sediments when followed by intense rainfall. Many wetlands plants are fire sensitive and wildfires can lead to the establishment of weeds.



Mining and energy production

In addition to water extraction and the discharge of contaminants from sites like the McArthur River Mine, extractive industries may include hydraulic fracturing, which has raised concerns about groundwater contamination in the Beetaloo Basin and elsewhere. Legacy mines can also be an ongoing source of contaminants.



Primary industries

Rivers and wetlands are sensitive to surface and groundwater extraction for agricultural use. Agricultural can add nutrients to water through fertilisation and land clearing can impact on water catchment function.



Assets and pressures descriptions

Grasslands/ Rangelands

Goal: By 2030 the production values of grasslands for both pastoral production and biodiversity are maintained



Grasslands/
Rangelands

Condition	2016		2021 trend	
	Trend	Literature/ data review	Community perception	
Fair	—	—	↓	

Indicators for condition

- Condition of native pastures, notably perennial grass cover
- Fire extent, intensity, patchiness
- Extent of long-unburnt areas
- Condition of flora and fauna in savanna areas
- Presence/ absence and density of weed species
- Sustainable stocking rate on pastoral lands

The Gulf Savanna is part of the world's largest intact tropical savanna; it is dominated by eucalyptus woodlands with an understorey of perennial and annual grasses. In the Gulf Savanna, the grasslands include the productive grasses of the Sturt Plateau bioregion, of which approximately 77% is grazed under pastoral lease. The Victoria River District also has important tussock grasslands and some of the best grazing lands of the Territory. The Yinberrie Hills, an area of rolling hills north of Katherine, are dominated by open grassy woodlands and have an understorey of annual and perennial native grasses. They are listed as nationally significant and provide key habitat for the Gouldian finch and support the largest known breeding population of this species.

The region has not been as intensively developed as other savanna grasslands around the world and, therefore, still retains large areas of natural habitat. The tropical savannas in the region are home to an incredibly diverse array of plants, mammals, birds, reptiles and amphibians, as well as thousands of different types of invertebrates. There is a long history of fire use by Aboriginal people in this environment and most species are adapted to periodic burning.

Pressures and uses



Inappropriate fire

Changes in fire regimes seriously threaten many habitats and species in savanna landscapes, including granivorous birds such as the Gouldian finch and partridge pigeon, and mammals such as the northern quoll and brush-tailed phascogale. The spread of invasive grassy weeds is fuelling hotter fires.



Weeds

Introduced grasses such as gamba and mission create high fuel loads and promote hot, late season fires. They are fire resilient and can replace native vegetation to transform landscapes.



Feral animals

In some areas, such as the Victoria River, horses and donkeys compete with both domestic stock and native animals for available pasture. In other areas like the savanna riparian corridors, pigs impact on savanna habitats,.

Assets and pressures descriptions

Ranges

Goal: By 2030 the condition of the ranges in the Gulf Savanna are stabilised with no further decline of small mammals and birds and natural and cultural values are maintained

Indicators for condition

- Numbers of ranges identified as Sites of Conservation Significance being managed for their conservation values
- Fire extent and intensity across ranges
- Area of ranges left unburnt over multiple years
- Diversity and abundance of native mammals
- Area of intact high value habitats (e.g. sandstone heath, monsoon vine forest)
- Distribution and densities of weeds

The ranges of the Gulf Savanna consist of the southern section of the Western Arnhem Plateau, the spectacular sandstone ranges of the Keep River area, parts of the Wollogorang and China Wall sandstone ranges in the south-east of the region, and Stokes Range (including Jasper Gorge) in the Victoria River District. The West Arnhem Plateau is considered the most significant region in the NT for biodiversity. It contains a high number of endemic species, an unusually large number of threatened species and many plants and animals of outstanding biogeographic and scientific interest.

The rugged nature of the ranges in the Gulf Savanna provide critical refuge for moisture-loving and fire-sensitive plants. It supports breeding populations of the threatened gouldian finch as well as sandstone specialists with restricted distributions, such as the short-eared rock-wallaby, sandstone antechinus, the threatened carpentarian grasswren and the highly restricted and critically endangered carpentarian rock-rat. The gorges and gullies within the rocky ranges contain remnants of monsoon vine thickets and offer a significant refuge for animals from fire. The permanently-available water within the gorges and gullies provides valuable habitat for freshwater crocodiles, fish, frogs and other species in an otherwise seasonally harsh, semi-arid savanna environment.



	2016		2021 trend	
	Condition	Trend	Literature/ data review	Community perception
Ranges	Fair			

Pressures and uses



Inappropriate fire

Fire is the most significant threat to unique ranges habitats. On the Arnhem Land Plateau, late season intense fires have reduced the extent of rainforest patches and are a key threat to the health of the highlands in other areas.



Feral animals

Buffaloes and pigs can impact upon habitats of high conservation value, such as springs and monsoon forest patches. Feral cats predate on small mammals in the highlands



Weeds

Some weeds species are now establishing in the highlands and threatening natural and cultural values.



Lack of access and resources

The regions' sparse population and lack of ready access into the upper ranges are significant impediments to their management. Management incurs high logistical costs and difficulties. There is also a lack of knowledge to guide strategies to reverse biodiversity decline.

Assets and pressures descriptions

Healthy soils

Goal: By 2030 soil condition and structure is maintained in horticultural areas



2016		2021 trend	
Condition	Trend	Literature/ data review	Community perception
Fair			

Indicators for condition

- Adoption of best practices in agricultural industries
- Sediment load in watercourses
- Integrated land use plans that address land degradation
- Ground cover % and soil stability
- Productivity and health of soils on farms

Productive soil refers to the fertility, structure, health and productivity of soils for maintaining biodiversity, key habitats and ecosystems, and for commercial uses such as horticulture and pastoralism. In general, most soils in the Gulf Savanna are relatively shallow, weathered and have low fertility. Due to the intense tropical storms and extreme weather, erosion is a typical feature of the landscape in the Gulf Savanna and severe erosion risk exists on slopes of greater than 1.5%. Erosion affects the production and environmental values of the plants and animals species these soils support.

In the Gulf Savanna soils that are suitable for horticulture occur around Katherine and in parts of the Douglas River area. Black soil country in the Victoria River District is important for production. Management practices to maintain and improve soil condition are well understood. Retention of vegetation cover, ground cover and crop residues are management techniques that assist in reducing the risk of wind and water erosion, lower greenhouse gas emissions and improve water use efficiency. Control of feral animals to reduce total grazing pressure and prevent erosion is important across the region.

Pressures and uses



Feral animals

Buffaloes and pigs can contribute to erosion and sedimentation of waterways. Grazing herbivores can contribute to overgrazing, loss of vegetation cover and a resulting decline in soil health.



Primary industries

Poor management of soils can result in salinity, loss of organic matter, changing of soil chemistry and compaction. It can also be contaminated with toxic chemicals or over-treatment with fertilizers. Poor grazing management can lead to erosion and compaction.



Climate change and severe weather

Drought impacts on soil moisture, while windstorms and flooding can remove soil through erosion.

Assets and pressures descriptions



Biodiversity and conservation sites

Goal: By 2030 diverse populations of threatened species are maintained and Sites of Conservation Significance are maintained in good condition

Indicators for condition

- Conservation status of threatened species
- Number of threatened species for which conservation measures are being implemented
- Number of priority sites being managed for their conservation values
- Proportion of high priority sites assessed as supporting structurally intact vegetation and habitats, and healthy postulations of native animals
- Fire seasonality, extent and areas left unburnt
- Number of weeds management plans in implementation
- Number of feral management plans in implementation

The Gulf Savanna is renowned for its extensive natural environments. Low levels of vegetation clearance and development have largely protected the region from the biodiversity loss that has occurred further south. The Gulf Savanna provides habitat for the Territory's unique biodiversity as well as refuges for healthy populations of many species that have disappeared or are threatened elsewhere in Australia. The region contains 13 Sites of Conservation Significance over islands, ranges and floodplains.

Four vegetation communities – mangrove forest, monsoon rainforest, old growth forest and riparian vegetation are recognised by the Northern Territory Government as being sensitive and in need of protection. The region has 55 NT-listed threatened species and 35 species listed under the national Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). Five marine turtle species are found in the area and other key marine species include the Australian snubfin dolphin, brown booby and the narrow sawfish. The endangered Gouldian finch is also found in the region. Protected areas include:

Judburra / Gregory National Park, Giwining / Flora River Nature Park, Nitmiluk National Park, Keep River National Park, Eley National Park, Limmen National Park and Barranyi (North Island) National Park. Indigenous Protected Areas (IPAs) include the Yanyuwa IPA and the Wardaman IPA.



Biodiversity and conservation sites

	2016		2021 trend	
	Condition	Trend	Literature/ data review	Community perception
Biodiversity and conservation sites	Fair	↓	↓	↓



Biodiversity and conservation sites

Pressures and uses



Inappropriate fire

Altered fire regimes are a key threatening process that change Gulf Savanna landscapes and detrimentally impact on populations of small mammals, granivorous birds and fire-sensitive plants. Shifting fire regimes have driven loss of habitat, structural diversity and decline in biodiversity values.



Climate change and severe weather

Temperature increases, sea level rise, increased cyclone frequency and more regular and intense bushfires will adversely impact on Gulf Savanna biodiversity.



Lack of knowledge

Knowledge of ecological processes, biodiversity and its interactions with various threatening processes remains incomplete across the Gulf Savanna. Further research is required to understand the causes of biodiversity decline and monitor conservation efforts to understand whether these are effective. Any loss of traditional ecological knowledge also weakens capacity to manage landscapes sustainably.



Feral animals

Feral animals have a significant impact on native plants, habitats and animal species. Pigs disturb habitats, contribute to erosion and loss of water quality, spread weeds and predate on other species. Buffaloes, horses and donkeys degrade sites of conservation significance, while feral cat predation is driving the decline of many small mammals in the Gulf Savanna, and cane toad toxicity has led to a decline in some native predators.



Weeds

The Gulf Savanna has nine Weeds of National significance (WONS) including parkinsonia, mimosa and salvinia. Some invasive plants have the potential to transform entire habitats and so pose a primary threat to biodiversity. Gamba grass, para grass, olive hymenachne and mission grass have been listed as key threat to biodiversity under the Environment Protection and Biodiversity Conservation Act 1999 (Cth).



Assets and pressures descriptions



Community knowledge

Goal: By 2030 access to and sharing of local landholder knowledge, data, scientific information and Aboriginal knowledge (where appropriate) has improved and is utilised to make informed NRM decisions

Indicators for condition

- Number of traditional ecological knowledge projects and culturally-appropriate recording and storing of knowledge
- Number of opportunities for intergenerational transfer of knowledge
- Number of agricultural knowledge-sharing and extension initiatives
- Number of properties/ land trusts with property/ NRM plans
- Number of community NRM knowledge sharing events and participants
- Extent of utilization of traditional and scientific knowledges in NRM

Cultural and natural resource management requires knowledge and skills, whether this is to restore biodiversity values, to undertake sustainable production or to undertake custodial obligations. The diminishment of this body of knowledge has led to a degradation of other assets described in this plan and impedes the capacity to manage the environment and operate successful businesses based on natural resources. It is imperative that the expertise and insight of stakeholders in the region be captured, valued and shared, so practices and decisions are informed by these knowledge systems. As part of this process stakeholders need to share innovation, improved practices and new information. Formal training and education also have a role in ensuring natural resource managers have the understanding they need to manage effectively.

Aboriginal people possess a wealth of knowledge about the Gulf Savanna and their management practices have shaped the region for many thousands of years. This knowledge has been handed down through generations and today is contributing to the understanding of species declines and extinctions. A critical step to ensure the maintenance of knowledge is to recognise and support Aboriginal people to be able to pass on their knowledge to the younger generations through supporting on Country visits and other innovative ways to record their knowledge. Collaborative projects between scientists and Aboriginal people to document traditional knowledge are also of vital importance. Aboriginal ranger groups utilise Western approaches as well as traditional knowledge to manage threats on Country.

The scientific community and community groups also hold a wealth of invaluable expertise and on-ground understanding vital to carrying out NRM work. Further scientific research in partnership with land managers and owners is required to continue building the knowledge base. Pastoral production is based on an extensive body of knowledge about natural resource management that has been developed over the years since cattle first grazed in the area.



Community knowledge

	2016		2021 trend	
	Condition	Trend	Literature/ data review	Community perception
Community knowledge	Fair	↓		▬

Pressures and uses



Loss of knowledge and lack of access

Traditional ecological knowledge is constantly reaffirmed by continuously being on Country and the reduction in access into rugged and remote country effects capacity to manage cultural and natural landscapes. Likewise, without opportunities for intergenerational transfer of knowledge, traditional ecological knowledge can be weakened and lost. Similarly, knowledge from Western knowledge systems can be lost or degraded by the turnover, transition or retirement of knowledge holders.



Lack of capacity and resources

Lack of funding for research, lack of support for visits on Country and lack of opportunity for recording and sharing knowledge can impact community knowledge. Likewise changing in the status of funding for Landcare and other similar organisations will impact how NRM knowledge is held in the community.

Assets and pressures descriptions



People on Country

Goal: By 2030 the number of people living in the Gulf Savanna region has been maintained or increased with well-established viable remote communities gaining livelihoods through the sustainable use of natural resources

Indicators for condition

- Number of people living outside of urban areas across the Gulf Savanna
- Economic status and wellbeing of communities and outstations
- Level of funding for Aboriginal ranger programs
- Number of Aboriginal ranger groups engaged in cultural and natural resource management
- Number of young people entering agriculture or NRM related industries

'People on country' refers to the livelihoods of Aboriginal landowners, pastoralists and others in the broader NRM support network. People are integral to the viability and success of NRM programs. This goal is broad and encompasses strategies throughout the NRM plan that aim to strengthen local and regional support networks, government policies and community engagement events to support a healthy, thriving, remote population that is well supported by, and engaged in, economic activities in the Gulf Savanna.

People are needed on country in the Gulf Savanna region to manage fire, weeds and feral animals. Aboriginal people have customary obligations to care for their custodial land and sea country. A broad range of socio-economic benefits, as well as conservation outcomes, are attributed to Aboriginal people living on and caring for Country. There are a number of Aboriginal land and sea ranger groups in the Gulf Savanna that provide paid employment for Aboriginal people and training opportunities and employment pathways for younger generations. The pastoral industry has also been an important source of jobs on pastoral lands, with responsibilities extending to weed, feral animal and fire management.



People on country

	2016		2021 trend	
	Condition	Trend	Literature/ data review	Community perception
People on country	Good	—	—	↑

Pressures and uses



Loss of knowledge and lack of access

Aboriginal people can face difficulties in accessing custodial lands and culturally significant places due to remoteness and lack of appropriate resourcing. Also, unless there is effective intergenerational transfer of knowledge, they can be disadvantaged in undertaking their customary land management responsibilities. Similarly, lack of funding for ranger programs or viable livelihoods for agricultural land managers can also deter new generations from living and working on Country. Owing to high turnover and urban drift it can be challenging to find staff and experienced land managers for Gulf Savanna industries.



Climate change and severe weather

Extreme weather and climate change will put additional pressure on communities living and working remotely. In the Gulf Savanna, rising sea levels, increasing fire intensities and protracted drought or flooding will threaten remote livelihoods.



Cultural landscapes and sites

Goal: By 2030 culturally significant sites are being managed cooperatively, based on knowledge of values, threats and best management options

Indicators for condition

- Statutory protection and management of sacred sites
- Programs supporting the intergenerational transfer of knowledge
- Number of sites recorded and listed under legislation
- Condition of sacred sites
- Resources available to TOs and indigenous groups to manage sacred sites
- Access and logistical support to visit and live on country
- Strength and use of Aboriginal languages

The whole landscape of the Gulf Savanna region has cultural significance for Aboriginal people in the area. Traditional Owners refer to the creation period when ancestral beings created the landscape and its wildlife as they travelled. Many important cultural elements manifest themselves in the Gulf Savanna as identifiable geographic forms. Today the region remains alive with the spirits of these ancestral beings and traditional law that informs ceremony, songs, stories and dances that guide how country is looked after. Places or sites of cultural significance may also be ceremonial grounds, rock art galleries or pigment deposits used for cultural practices. The cultural values of the Gulf Savanna region are internationally recognised, such as the Arnhem Land Plateau rock art galleries that are renowned as the most complex and extensive body of rock art in the world.

A sacred site has particular significance and refers to a place within the landscape that is sacred to Aboriginal people. Sacred sites include places within the landscape such as hills, rocks, waterholes, trees, plains, lakes and other natural features. Sacred sites are connected with creation stories and may have significance to several tribal groups across vast areas. They provide special meaning to the natural landscape. Custodians of sacred sites have responsibilities to protect and maintain them. Aboriginal sacred sites are protected and recognised as an integral part of the Territory's and Australia's cultural heritage, through the Northern Territory Aboriginal Sacred Sites Act.



Cultural landscapes and sites

	2016		2021 trend	
	Condition	Trend	Literature/ data review	Community perception
Cultural landscapes and sites	Fair	↓	↓	↓



Cultural landscapes and sites

Pressures and uses



Loss of knowledge and lack of access

Restoration of cultural landscapes and protection of cultural sites requires custodians are sufficiently resourced to do so. Access to custodial land and sea can be difficult in remote areas and in the wet season when roads are cut off.



Recreation and other activities

Sites are threatened by human disturbance by tourism and other recreational activities. Unrestricted access to some sacred sites breaches customary law and can result in the sites being degraded. Aboriginal people are also concerned about access to fisheries in coastal waters and illegal access onto Aboriginal lands.



Feral animals

Feral animals such as pigs and buffaloes can degrade springs and waterholes and sacred sites. However, some introduced animals have become culturally significant to Aboriginal people and so it is important to consult prior to implementing control programs.



Mining and energy production

Mining activities and oil and gas developments can directly impact on sites of cultural significance in the Gulf Savanna.



Inappropriate fire

Disruption of Aboriginal fire management has degraded cultural landscapes. Inappropriate fires fuelled by gamba grass can threaten sites of significance, such as rock art galleries.



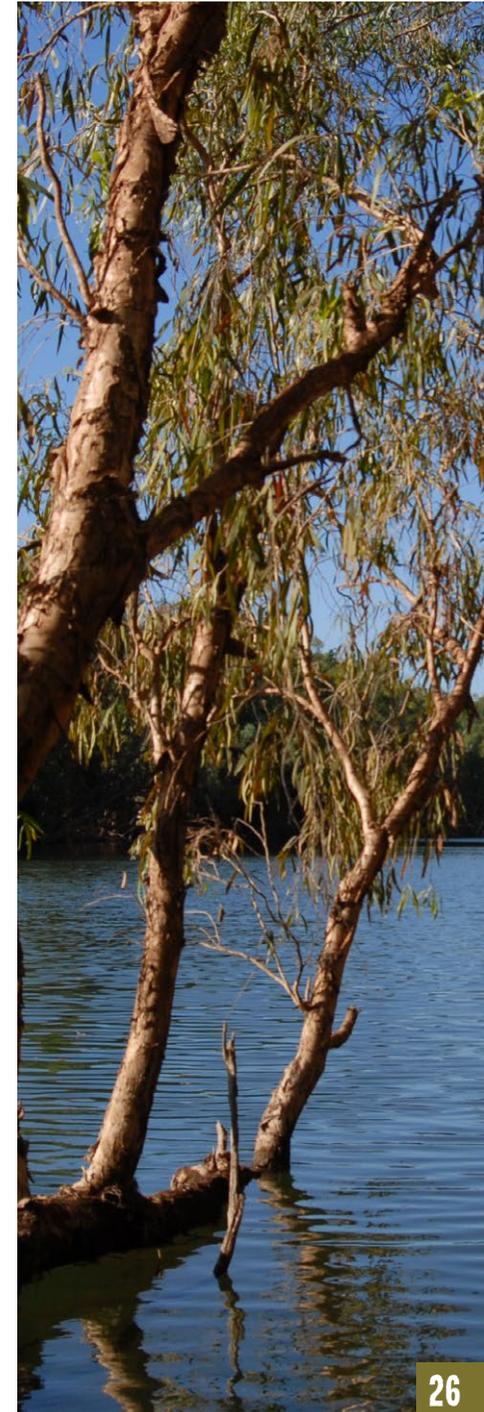
Climate change and severe weather

Increased temperatures and sea level rise, together with more severe fire, can directly affect sites or may increase difficulty of access.



Weeds

Weeds can prevent access to culturally important sites and some grassy weeds can transform the nature of cultural landscapes and sites.



Overview of asset condition and trends

Available data suggests that there has been little overall improvement in NRM asset conditions in the Gulf Savanna since 2016, and some key areas of decline

Coastal and marine environments have been impacted by temporary mangrove dieback and increasing quantities of marine waste but several key fisheries were assessed as sustainable in 2020, and no significant decline has been found in key marine indicator species. Freshwater resources, particularly around Katherine have come under additional pressures from agricultural demand and contamination, accentuated by poor recharge during the wet seasons of 2018-2019. Losses of terrestrial biodiversity continue across the Gulf Savanna, with fire a key driver of habitat change and invasive weeds such as gamba grass accentuating the process. Feral cats have particular impact on small mammal populations. While there is evidence that management is now modifying fire regimes across southern Arnhem Land, this has not yet begun reversing the losses to biodiversity, especially in highly fire sensitive areas such as the Arnhem Land Plateau and other Gulf Savanna Ranges.

While there is evidence indicating continuing damage and disturbance to sacred sites and cultural landscapes across the Gulf Savanna, there have also been positive indications of improved management in some areas. Likewise, loss of important knowledge from the Gulf Savanna NRM community has been to some extent offset by gains in other types of knowledge

On a positive note, available data seems to suggest a strengthening of Aboriginal people working on country, with improved security of funding for ranger groups, the success associated with the growth of savanna burning and the possibility of new compliance/surveillance powers under the NT legislation. However, the number of people employed in agricultural industries across the region has reduced slightly in the last five years.

It is noteworthy that Gulf Savanna community perspectives and observations are generally more pessimistic about resource conditions and trends than available evidence would suggest. But given the general paucity of secondary data it is possible that community assessments provide a more accurate and reliable measure.

	2016		2021 trend	
	Condition	Trend	Literature/ data review	Community perception
 Coastal and marine	Good	—	—	—
 Freshwater systems	Fair	—	—	↓
 Grasslands/ Rangelands	Good	—	—	↓
 Ranges	Fair	—	—	—
 Healthy soils	Fair	—	—	—
 Biodiversity and conservation sites	Fair	↓	↓	↓
 Community knowledge	Fair	↓	—	—
 People on country	Good	—	—	↑
 Cultural landscapes and sites	Fair	↓	↓	↓

Emerging issues for the Gulf Savanna region

The Northern Territory Natural Resource Management Plan (2021-2025) Gulf Savanna Region (the Gulf Savanna regional plan) has been updated with respect to the prevailing resource conditions, trends and priorities that were identified within the region in 2021, but planning must also anticipate any challenges or opportunities that are likely to emerge during the implementation period.

For this reason, stakeholders at Gulf Savanna regional planning workshops were invited to define and discuss major issues that seemed possible to emerge and impact upon the natural resources management agenda during the following five years. In the following section, potential emerging priorities are highlighted along with how they have been addressed in the plan.

Climate change impacts

Gulf Savanna communities have already been touched by the impacts of climate change and weather extremes during the last five years. These activities included record temperatures, cyclones, drought, seasonal water shortages, intensified bushfires and increasing saltwater intrusion of coastal areas. There is an expectation that these impacts will further intensify in coming years.

Strategy	2025 Objective
1.1	Landscape managers have increased understanding of the interaction of fire with cultural, biodiversity and production values and improved risk-management of climatic and other dynamic threats.
4.9	Climate adaptation planning by businesses and industries improve risk-management of climatic variability and related dynamic threats.
6.6	The renewables and environment sector is contributing more to the Gulf Savanna economy than in 2021
8.4	Understanding of the impacts of climate change on ecosystem function and the principles of risk-management inform adaptive management, preparedness and response plans for high value ecological sites and assets.

Sustainable primary industries

Primary industries within the region will require further attention and investment to ensure their ongoing sustainability as grazing businesses are emerging from a period of drought that has depleted the productivity and resources of rangelands. Ambitious new agricultural development plans and proposals have been brought to the Big Rivers region.

Strategy	2025 Objective
4.3	Sustainable grazing practices are achieved across the Gulf Savanna through the increased skills and knowledge of land managers.
4.5	Industry-driven extension programs develop understanding of ecosystems and sustainable management to achieve leading practice horticulture.
5.1	Ground and surface water resources are managed with input from all stakeholders through catchment water allocation plans which include monitoring and ensures that cultural, environmental and production values are respected.
5.4	Understanding of the limitations of soil and water continue to inform the identification of new areas suitable for agricultural development.
6.4	A more diverse rural economy across different land tenures and primary industries on the Gulf Savanna drives increased employment opportunities.

Emerging issues for the Gulf Savanna region

Water demand

Poor wet seasons between 2018-2020 demonstrated how climatic extremes can reduce ground and surface water resources across the Gulf Savanna. Furthermore, ambitious development agendas for the region that include both extractive and primary industries will pose challenges for the sustainable allocation and ongoing management of water resources as regional demand increases.

Strategy 2025 Objective

- 5.1** Ground and surface water resources are managed with input from all stakeholders through catchment Water Allocation plans which include monitoring and ensures that cultural, environmental and production values are respected.
- 5.2** Knowledge of the impacts from key industrial and domestic uses of water resources has increased and a regulatory framework exists to minimise pollution of groundwater.
- 5.4** Understanding of the limitations of soil and water continues to inform the identification of new areas suitable for agricultural development.

Development pressures

Ambitious development agendas for the Gulf Savanna will be implemented in the next few years. These include major investment in defence infrastructure, major resources and energy projects, major land releases and the further growth and diversification of primary industries, collectively valuing billions of dollars. Some see these developments as potentially threatening the natural values of the region through physical disturbance, the spread of weeds or through over extraction or contamination of water resources.

Strategy 2025 Objective

- 4.1** Policies and programs for development in the Gulf Savanna are informed by the best available science and knowledge to ensure the protection of cultural and natural assets.
- 4.3** Sustainable grazing practices are achieved across the Gulf Savanna through the increased skills and knowledge of land managers.
- 4.5** Industry-driven extension programs develop understanding of ecosystems and sustainable management to achieve leading practice horticulture.
- 4.7** An engaged minerals and resources sector contributes to the sustainable management of Gulf Savanna natural resources.
- 5.4** Understanding of the limitations of soil and water continue to inform the identification of new areas suitable for agricultural development.
- 6.4** A more diverse rural economy across different land tenures and primary industries on the Gulf Savanna drives increased employment opportunities.

Conservation of Knowledge

Change and development within the NRM community can result in an incremental loss of knowledge and capacity that underpins the sustainable management of resources. Loss of knowledge may include loss of traditional ecological knowledge within the Aboriginal communities or through turnover of staff, reduced funding and support for research and community groups. The cumulative impact of any loss of knowledge across the Gulf Savanna will be felt within the next few years.

Strategy 2025 Objective

- 9.1** Land managers are empowered by increased resources and long-term approaches to NRM issues in the Gulf Savanna.
- 9.2** Gulf Savanna Natural Resource Managers are incorporating the best available knowledge, information and data into their management including traditional ecological knowledge (TEK) and community knowledge.
- 9.3** More relevant and better targeted training enhances natural resource management skills.

How to read the plan

Overview

The program overview provides a brief summary of the overall purpose of the program and the issues and challenges in delivering it. It also describes how the program relates to other programs in the plan.

Program 5: Water resources and soil management

In 2021, after experiencing two years of drought-like conditions, the NRM community in the Gulf Savanna have an increased awareness of the limitations of water and soil resources. This awareness has come just as an ambitious development agenda opens the way to expanding irrigated agriculture, and developing new mining and resources sector projects. As such, water resources allocation planning has highlighted the diverse interests and aspirations within the community. Similarly, many are aware of the increasing pressures upon fragile soil resources across the Gulf Savanna, arising from unsustainable farming practices, grazing pressure and uncontrolled wildfires.

The objective of this program is to increase sustainability in soil and water management through improving the understanding of resource limitations and opportunities to increase water use efficiency. This program supports extension learning to raise understanding of leading practices in resource management to help buffer primary industries against future periods of drought or climatic extremes. This program also works to strengthen collaboration in water resource management and build stakeholder capacity through effective communications.

The program also promotes robust land capacity studies and assessments to better understand land capability prior to future agricultural developments.

Assets Improved

These are the assets that will be positively impacted or improved through each strategy. Most strategies will positively impact multiple assets. Each identified asset has a goal and delivering this plan also works towards achievement of asset goals.

2025 Objective

This is a statement of the desired outcome of the strategy, intended to reduce pressures and improve asset condition. The success of the strategy will be evaluated against these objectives.

2025 Objective

Ground and surface water resources are managed with input from all stakeholders through catchment water allocation plans that include monitoring and ensure that cultural

Strategy

VERY HIGH PRIORITY
5.1 Water resource planning and management is undertaken in consultation with multiple stakeholders, adopts an integrated

Strategy

This the management approach to the defined objective.

Key activities

- 5.1.1 Identify and quantify competing demands for water resources and the impacts of different activities on water resources
- 5.1.2 Involve multiple stakeholders and users representing a range of interests in water allocation planning in the region
- 5.1.3 Support water stewardship thorough involving the community in application of new water monitoring technology and through communication materials targeted at behaviour change

Priority Activities

These activities should, if implemented, advance and deliver the strategy.

2023 Interim target

The principle of community participation in water resources planning and allocation is well established in the Gulf Savanna.

Interim Target

This is an interim milestone expected to be achieved within two years as the strategy is progressed towards its final objective.

Assets improved



Key Measures of Achievement

These are the things measured to indicate whether strategies are being successfully implemented within the program. They indicate activity and actions as well as impact and outcome.

Key Collaborators

This is a listing of the key groups and organisations who will be involved in implementing the program strategies.

Priority Locations

These are the main geographic areas within the region identified as foci for action. In some cases justifications for the selection are given in brackets.

Relevant Territory Plans/ Strategies

These are relevant regional plans and strategy documents that align with some aspects of the program. In many cases they have been used to inform the development of the program and may provide greater detail regarding targets and activities.

Relevant National Plans/ Strategies

These are high level Australian Government strategies that have provided strategic direction and can provide national context to regional planning initiatives.

Program 1: Managing Fire

Fire is the primary tool for managing Gulf Savanna natural resources at the landscape scale.

In 2021, there is a much better understanding of how fire interacts with other threats across the landscape, facilitating the establishment of some Gulf Savanna weeds and intensifying the impacts of feral predators. In 2018 and 2019, large unplanned fires late in the dry season followed

extended dry seasons and reduced rainfall with devastating impacts across the region.

The NRM community has worked to successfully modify fire regimes across some parts of the Gulf Savanna, but there is still much that can be learned about how to better protect and enhance the natural assets and values through fire management. This includes being able to manage fire at a

finer scale acquiring the right tools to do so.

The overall objective of this program is to build the capacity of land managers to manage fire more effectively through the best available knowledge and tools. This work includes applying the knowledge of leading practices more widely and continuing to engage stakeholders through sub regional cross-tenure collaborative planning and implementation.

2025 Objective	Strategy	Key activities	2023 Interim target	Assets improved
Landscape managers have an increased understanding of the interaction of fire with cultural, biodiversity and production values and improved risk-management of climatic and other dynamic threats.	VERY HIGH PRIORITY 1.1 Increase the application of fire management techniques that promote biodiversity and ecosystem function and minimise risk to infrastructure, cultural sites and human health across the Gulf Savanna	1.1.1 Research the impacts of fire regimes on ecosystem health, developing indicators for ongoing monitoring, and communicate and adapt management approaches	Tools and methods are identified that will enable land managers to track the impact of fire management at a finer scale.	
		1.1.2 Define appropriate indicators and build the capacity of fire managers to measure the ecological impacts of fire to improve the knowledge base and introduce fire management goals at a finer scale (i.e. specific to ecosystem type)		
		1.1.3 Promote greater understanding of the interrelationship between fire, weeds and feral animals in the landscape and plan and prioritise accordingly		
		1.1.4 Increase and support the collaboration of fire planning and burning with Traditional Owners and using traditional knowledge in fire management		

Program 1: Managing Fire

2025 Objective	Strategy	Key activities	2023 Interim target	Assets improved
Fire management is being planned and the impacts monitored across the Gulf Savanna utilising leading edge technologies.	HIGH PRIORITY 1.2 Increase the use of spatial fire management tools, knowledge systems, safe burning practices and equipment throughout the Gulf Savanna	<p>1.2.1 Provide more firefighting equipment to, and encourage the sharing of resources among, rangers, pastoralists and other land managers</p> <p>1.2.2 Support land managers to improve their capacity to utilise new developments of NAFI and other GIS fire planning tools</p> <p>1.2.3 Provide fire managers with basic education about fire management techniques including cool and wet season burns</p> <p>1.2.4 Improve communication and dissemination of information on which tools, techniques and resources are available to fire managers</p>	The equipment needs, capacity gaps and opportunities to introduce improved technologies to the Gulf Savanna have been identified.	
An increased understanding of the interaction of fire with cultural, biodiversity and production values and better coordinated decision making drives strategic collaboration in fire management.	HIGH PRIORITY 1.3 Collaborative approaches to strategic fire management are extended across the Gulf Savanna region	<p>1.3.1 Further develop multi-stakeholder fire management working groups to plan cross-tenure strategic fire management</p> <p>1.3.2 Focus on supporting improved fire management in heavily burned areas such as Southern Arnhem Land, Roper Gulf and Victoria River District</p> <p>1.3.3 Conduct annual reviews and implementation of fire plans at a regional level</p> <p>1.3.4 Increase resourcing to strengthen the role of Bushfires NT and particularly the support they give to landholders to help protect life and property in the Gulf Savanna</p>	Fire planning in the Gulf Savanna engages neighbouring properties/ tenures.	
Increased discussion, deliberation and agreement of annual strategies between landscape managers promotes heterogenous patchy burning and reduces the frequency of catastrophic wildfires.	HIGH PRIORITY 1.4 Promote policies and market forces that support collaborative fire management approaches, providing social/cultural benefit in the Gulf Savanna	<p>1.4.1 Develop and lobby for adoption of clear policies that support market-based approaches (e.g carbon credits or offset services) to collaborative fire management</p> <p>1.4.2 Increase communication of fire management success to funding bodies</p> <p>1.4.3 Use fire management as a tool to maintain and support access to and cultural connection to Country</p> <p>1.4.4 Explore opportunities to engage Aboriginal rangers with providing fire management services on pastoral lands</p>	The social and cultural benefits of collaborative fire management are being effectively communicated to policy makers and other stakeholders.	

Program 1: Managing Fire

Key Measures of Achievement

- Number of individuals and organisations involved in collaborative fire management
- Trends in fire extent, seasonality and areas left unburned
- Scale of areas subject to collective fire management planning, review and adaptation
- Proportion of fire managers adopting latest techniques and technologies
- Number of Traditional Owners involved in fire management
- Economic contribution of fire management to Gulf Savanna communities

Key Collaborators

- Northern Land Council
- Aboriginal ranger groups
- DEPWS (Bushfires NT)
- CDU (Bushfires Research Centre)
- Pastoral Landcare groups
- DEPWS (Parks and Wildlife)
- Roper Gulf Shire
- Victoria Shire

Priority Locations

- Nitmiluk (Sandstone heath, riparian rainforest, woodlands, cultural sites)
- Southern Arnhem Land (Sandstone outcrops, springs and riparian rainforest, cultural sites)
- Roper Gulf, Borroloola, Robinson River (Outcrops and ranges, riparian corridors and rainforest pockets, cultural sites and rangelands)
- Timber Creek (Gregory/Judbarra park, ranges and riparian corridors, cultural sites)

Relevant Territory Plans/Strategies

- Savanna Regional Bushfires Management Plan

Relevant National Plans/Strategies

- National Bushfire Management Policy Statement for Forests and Rangelands (COAG 2014)

We haven't been here managing fire and so destructive fires have come. We have to find new ways to make this country healthy, so with scientist friends we studied fire in the different seasons. We proved that if we burn in patches and at different times of day we can control the spread and intensity of fires. This makes our soils and plants healthy again.



Program 2: Preventing and managing weeds

The program for managing the impacts of weeds across the Gulf Savanna builds upon the momentum and the stakeholder capacity developed during the 2016-2020 plan implementation period. It also aligns with the Katherine Regional Weeds Strategy 2021-2026.

Critically, the work focuses on developing capacity to identify and respond to new and 'alert' weeds which threaten to

enter the region, and containing the incursion of weeds such as gamba grass, which has potential to spread across the savanna.

The program supports industry partnerships and capacity for collaborative action to strategically manage the spread of existing 'priority' weeds at a landscape scale. This work includes promoting the continued research and trialling

of techniques to identify leading practices in weeds management and communicating those findings to enable increasingly adaptive management.

The program also aims to increase public awareness about the threat posed by weeds through community education and outreach.

2025 Objective	Strategy	Key activities	2023 Interim target	Assets improved
A 'working together' approach reduces the establishment, spread and adverse impacts of weeds across the Gulf Savanna.	<p>HIGH PRIORITY</p> <p>2.1 Collaborative approaches strategically control high priority weed species in the Gulf Savanna region in implementation of the Katherine Regional Weeds Strategy 2021-2026</p>	<p>2.1.1 Strengthen the regional approach to weed management through the Katherine Regional Weeds Reference Group, encouraging collaboration between multiple stakeholders and ongoing review of management effectiveness</p> <p>2.1.2 Implement integrated management actions for control of identified 'priority' weeds as described in the Katherine Regional Weeds Strategy (2021-2026), with reference to defined priority landscape areas</p>	Stakeholders are working together to plan weed management at the catchment scale.	   
Pathways for the introduction of new weeds and spread of 'priority' weeds are monitored, and practical and cost effective management solutions minimise weed spread.	<p>VERY HIGH PRIORITY</p> <p>2.2 Prevent the introduction of 'alert' weeds and spread of 'priority' weeds, as defined in the Katherine Regional Weeds Strategy (2021-2026)</p>	<p>2.2.1 Implement the Katherine Regional Weeds Strategy (2021-2026) and increase resources to monitor pathways of weed spread for prevention, early detection and enforce compliance</p> <p>2.2.2 Monitor and manage for 'alert' weed incursions in the region in partnership with QLD and WA</p> <p>2.2.3 Prioritise rapid response to detected outbreaks of 'alert' weeds and increase skills and participation of land managers to identify and report priority weeds</p> <p>2.2.4 Increase skills and participation of land managers to identify and report 'priority' weeds</p>	There is common understanding and agreement on how pathways for the introduction of 'alert' weeds will be monitored, and what leading practices will be used to control the spread of 'priority' weeds	    

Program 2: Preventing and managing weeds

2025 Objective	Strategy	Key activities	2023 Interim target	Assets improved
<p>Best practice, including new innovative tools, are adopted throughout the region and delivering improved strategic management of weeds.</p>	<p>HIGH PRIORITY</p> <p>2.3 Continue to improve adaptive weed management through monitoring, research, utilising data, training and capacity building</p>	<p>2.3.1 Identify knowledge gaps and prioritise future research that links to improving the capacity of weed management stakeholders</p> <p>2.3.2 Trial new weed management techniques and communicate results with land managers</p> <p>2.3.3 Promote and improve the skills and tools available to record and interpret data on weed distributions and treatment (eg. NT WeedMate app, drones, etc.) and standardise data collection where applicable</p> <p>2.3.4 Increase the effort and resources put into measuring management effectiveness of weed control and utilise information to continually improve weed management practices</p>	<p>New research and trials are underway to address identified knowledge gaps.</p>	
<p>Community awareness of weeds and the threats they pose, together with the increased capacity to manage them, improves their strategic management.</p>	<p>HIGH PRIORITY</p> <p>2.4 Increase the region's awareness of its priorities and capacity to manage the impacts of weeds</p>	<p>2.4.1 Increase the frequency of education and awareness programs on weed ID and control for land managers, contractors and community members in the region</p> <p>2.4.2 Raise awareness of 'alert' weeds, as potential high impact weeds should they become established</p> <p>2.4.3 Provide training of land managers in effective control methods and strategic weed management approaches</p> <p>2.4.4 Communicate weed management success stories to the wider community to encourage support and further activity</p>	<p>A communications strategy has been developed to support delivery of the Katherine Regional Weeds Strategy 2021-2026.</p>	

Program 2: Preventing and managing weeds

Key Measures of Achievement

- Number of 'priority' weeds being strategically managed at the catchment scale
- Number of groups/individuals involved in weeds management
- Extent of area surveyed and subject to weed control measures
- Effectiveness of weed management effort and adaptive management process
- Frequency of meetings of the Katherine Regional Weeds Reference Group
- Milestones achieved in Katherine Regional Weeds Strategy (2021-2026)

Key Collaborators

- DEPWS (Weeds Branch)
- Northern Land Council
- Aboriginal ranger groups
- Pastoral Landcare groups
- DEPWS (Parks and Wildlife)
- Department of Defence
- Territory NRM
- Researchers
- Roper Gulf Shire
- Victoria Shire
- Private landholders

Priority Locations

- Katherine, Victoria and Roper River corridors (gamba grass, bellyache bush, grader grass, parkinsonia, mesquite, mimosa, salvinia, chinee apple)
- Nitmiluk (gamba grass)
- Southern Arnhem Land (gamba grass, grader grass, neem, prickly acacia, chinee apple)
- Legune and Limmen Floodplain (mimosa)
- Sturt Plateau (gamba grass, prickly acacia)
- Beetaloo Basin (risk of weed infestation)
- Victoria River catchment (prickly acacia, neem, parkinsonia, Mesquite, mimosa, chinee apple)
- Borroloola, Gulf and Robinson River (parkinsonia, neem, bellyache bush, rubber vine)

Relevant Territory Plans/Strategies

- Katherine Regional Weeds Strategy 2021-2026 (DEPWS 2021)
- Weed Management Plan for Gamba Grass (DEPWS 2020)
- Weed Management Plan for Grader Grass (DLRM 2016)
- Weed Management Plan for Neem (DLRM 2015)
- Weed Management Plan for Bellyache Bush (DENR 2018)
- Weed Management Plan for Mimosa (DENR 2018)
- Weed Management Plan for Mesquite (DENR 2020)
- Weeds Management Plan for Chinee Apple (DEPWS 2021)

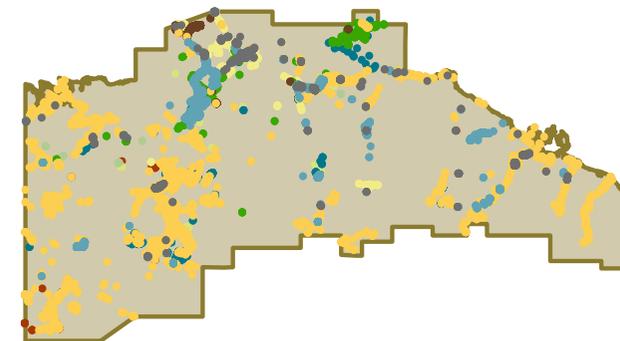
Relevant National Plans/Strategies

- Australian Weeds Strategy 2017-2027 (DAWR 2017)

Weeds

Priority Weed Distributions (Class A's)

- Bellyache Bush
- Chinee Apple
- Devils Claw
- Gamba Grass
- Grader Grass
- Mesquite
- Mimosa
- Neem
- Parkinsonia
- Prickly Acacia
- Snakeweed spp



Source: NT Government – Weeds Branch

VRDCA is passionate about creating a better future for the next generation of land managers. By working together and a commitment to take positive action, VRDCA is making a difference to the environmental, social and economic value of the region.



Program 3: Reducing the impacts of feral animals

Feral animals continue to have a significant impact on both the ecological health of Gulf Savanna landscapes and on their economic productivity. Together with fire, feral animals are understood to play a primary role in degrading natural habitats. Disturbance by grazing herbivores or intense fires deprives small mammals of food and shelter and exposes them to feral cat predation. Large herbivores, like horses and buffalo, degrade ground cover and expose soils to erosion. Pigs and buffalo can damage valuable freshwater

systems and coastal plains. This destruction accentuates the impacts of climatic extremes and spread weeds.

Consequently, the primary objective for this program is to develop an effective Gulf Savanna feral animal strategy, which is needed to coordinate action of the impact of feral animals is to be reduced at a landscape scale.

The activities in the program include raising awareness about feral animal damage and supporting the development of leading practices for their control and management. It also promotes the adoption of coordinated approaches to feral animal management through collaborative planning and the sharing of knowledge and data. Furthermore, activities of the program ensures land managers have accurate information to make decisions about the economic opportunities arising from feral herbivore harvest.

2025 Objective	Strategy	Key activities	2023 Interim target	Assets improved
Feral animal control programs are prioritised and targeted through risk-based approaches set out in a Gulf Savanna feral animal strategy that establishes an agreed understanding of the problem and shared recognition of key values that require protection.	VERY HIGH PRIORITY 3.1 Strengthen regional feral animal management programs through coordinated and collaborative action	3.1.1 Develop a Gulf Savanna regional feral animal strategy that establishes a risk-based approach to the prioritisation and management of feral animal impacts	Key stakeholders have been engaged through a working group supporting the development of a regional feral animal strategy.	      
		3.1.2 Establish a multi-stakeholder group to support implementation of landscape scale feral animal management approaches		
		3.1.3 Plan and undertake regional meetings with key stakeholders leading effective collaboration between fire, weed and feral animal programs		
Monitoring data from a range of sources consistently informs and guides strategic action in feral animal management programs.	HIGH PRIORITY 3.2 Use common measures and analysis to monitor, evaluate, report on and adapt the feral animal management program	3.2.1 Develop field indicators that can be readily used by land managers to quantify the damage and impact of feral herbivores	The tools and methods exist to produce an improved, finer scale understanding of the impact of feral animals within the region.	  
		3.2.2 Act to liaise with and implement key Commonwealth feral animal strategies (e.g. The National Feral Pig Action Plan 2021)		
		3.2.3 Undertake surveys to establish trends and engage support from diversified funding sources for priority areas in the Gulf Savanna region		

Program 3: Reducing the impacts of feral animals

2025 Objective	Strategy	Key activities	2023 Interim target	Assets improved
Innovative feral control techniques are being applied to cats, cane toads, horses and donkeys in the Gulf Savanna.	<p>HIGH PRIORITY</p> <p>3.3 Support research and innovation in techniques, training and motivation to control feral animals</p>	<p>3.3.1 Communicate to a range of stakeholders the importance of horse and donkey control on Aboriginal and pastoral land</p> <p>3.3.2 Support Commonwealth initiatives trialling feral cat control techniques and assess for their effectiveness and practical application in savanna ecosystems</p> <p>3.3.3 Support Traditional Owners and Aboriginal rangers in early detection measures, including with new technology, to keep offshore islands free of cane toads</p> <p>3.3.4 Support applied research projects to test, trial and demonstrate the efficacy of different feral animal control techniques</p> <p>3.3.5 Educate landholders about the best methods to control feral animals</p>	The range of innovative feral animal control methods appropriate to trial in the Gulf Savanna has been identified.	
An enabling environment incentivises and promotes an integrated approach to feral animal control that, where appropriate, includes commercial harvest.	<p>MEDIUM PRIORITY</p> <p>3.4 Promote policies and legislation to enable commercial utilisation that is consistent with the objectives of collaborative feral animal control programs</p>	<p>3.4.1 Consult stakeholders and explore the potential role of feral animal harvest within broader programs of control, including both economic viability and environmental outcomes</p> <p>3.4.2 Prepare communications materials and ensure all stakeholders have correct information with regard to the true economic value of feral animals to better inform decision making</p> <p>3.4.3 Improve and streamline communication and understanding between land managers and the holders and administrators of Section 19 Land Use Agreements</p>	Communications materials exist to better inform landholder decisions about the commercial use of feral animals.	
Collaborative biosecurity programs continue to reduce likelihood of new pest animals becoming established in the Gulf Savanna.	<p>HIGH PRIORITY</p> <p>3.5 Strengthen the coordination and delivery of biosecurity surveillance and response to potential pest animals, insects and marine pests</p>	<p>3.5.1 Distribute communication materials on biosecurity in northern Australia</p> <p>3.5.2 Strengthen coordination between territory and federal programs to build the NRM community's capacity to detect new and emerging pests</p> <p>3.5.3 Increase awareness of the link between economic livelihoods and biosecurity</p> <p>3.5.4 Support communities with awareness campaigns to prevent cats and cane toads from reaching offshore islands</p>	Gulf communities have the knowledge and awareness to undertake useful biosecurity surveillance.	

Program 3: Reducing the impacts of feral animals

Key Measures of Achievement

- Number of groups/individuals involved in feral animal control programs
- Trends in feral animal distribution and densities
- Number of landscape scale feral animal management programs
- Effectiveness of innovative feral animal control techniques
- Landholder knowledge about feral animal impacts and control techniques

Key Collaborators

- DEPWS (Fauna and flora)
- DEPWS (Parks and Wildlife)
- Northern Land Council
- Aboriginal ranger groups
- Pastoral Landcare groups
- Department of Defence
- Territory NRM
- Researchers
- Private landholders
- Australian Quarantine Inspection Service
- DITT (Biosecurity)

Priority Locations

- Southern Arnhem Land (buffalo, pigs, horses, cats)
- Nitmiluk (buffalo, pigs, cats)
- Limmen Floodplain (buffalo pigs)
- Roper Gulf (buffalo, pigs, cats)
- Timber Creek, Gregory/Judbarra park (horses, donkeys pigs)
- Sturt Plateau (horses, donkeys pigs)
- Islands (cats, toads)
- Victoria River District (camels, horses, donkeys)

Relevant National Plans/ Strategies

- Australian Pest Animal Control Strategy 2017-2027 (DAWR 2017)
- National Wild Dog Action plan (DAWR 2017)
- Draft National Feral Pig Action Plan (Australian Pork 2021)



This island is virtually pest free aside from cats; we've got no buffalo, no Cane Toads, no pigs. But it only takes someone to bring something onto the island for big problems to start.

Program 4: Industry adoption of sustainable practices

Entering the 2020s, the Gulf Savanna region is poised for considerable economic growth as the agriculture and resources sectors spearhead Australia's global economic resurgence. In the primary industries, beef is fetching strong prices as producers restock following drought and there is increased demand for horticultural products. With the Developing the North agenda now firmly on track, there is an opportunity to productively engage across industry sectors to ensure that this development follows a sustainable pathway and secures the prosperity and wellbeing of Territorians into the future.

This program encourages the NRM community to develop a partnership with primary industries to identify and apply leading practices and technologies to enhance sustainability and resilience. It also supports industry-driven extension programs that demonstrate both economic and environmental benefits from practice change and so enable Gulf Savanna agribusinesses to build both industry efficiency and competitiveness.

The program encourages the resources and other industries to create opportunities to engage more effectively in natural resource management and so build social license. The program also encourages the NRM community to engage with the wider community to strengthen biosecurity surveillance as a way to protect the primary industries and supports climate resilience activities for rural communities and industries.

This program envisages Gulf Savanna industries as essential partners in the future management of our natural resources and key to maintaining healthy landscapes.

2025 Objective	Strategy	Key activities	2023 Interim target	Assets improved
Policies and programs for development in the Gulf Savanna are informed by the best available science and knowledge to ensure the protection of cultural and natural assets.	HIGH PRIORITY 4.1 Engage with industry and other relevant stakeholders to encourage sustainable approaches to Developing the North policies and programs	4.1.1 Strengthen linkages between NRM managers, researchers and the government agencies and industry bodies responsible for future strategic economic development in Gulf Savanna	Appropriate mechanisms and protocols for sharing data between NRM specialists, researchers and development decision makers have been identified and are in use.	    
		4.1.2 Ensure that relevant and timely empirical data is channelled to inform large scale development planning decisions in the Gulf Savanna		
		4.1.3 Promote compliance and enforcement of regulations associated with existing planning decisions		
The biosecurity system is integrated and risk-based with strong community and government involvement that minimises the establishment of exotic pests and diseases.	MEDIUM PRIORITY 4.2 Ensure resources are increased for biosecurity support services in line with increased agricultural development	4.2.1 Implementation of the 2015-2025 NT Biosecurity Strategy, particularly increasing the NRM community's involvement in biosecurity surveillance	NRM stakeholders have the capacity to play an increased role in delivering biosecurity outcomes.	
		4.2.2 Develop enhanced surveillance and effective capability to detect and respond to biosecurity emergencies		
		4.2.3 Strengthen community and industry capacity to risk-manage biosecurity threats by raising awareness and supporting the development of washdown facilities, where appropriate		
		4.2.4 Increase transparency of processes that enable community to report biosecurity matters		

Program 4: Industry adoption of sustainable practices

2025 Objective	Strategy	Key activities	2023 Interim target	Assets improved
Sustainable grazing practices are achieved across the Gulf Savanna through the increased skills and knowledge of land managers.	HIGH PRIORITY 4.3 Support best practice grazing management through delivery of regional monitoring programs and practices that promote both productivity and ecological outcomes	4.3.1 Develop case studies and demonstration sites showcasing best practice grazing management for biodiversity conservation and production	Improved access to new technologies, data and training to enhance land management has increased the number of producers adopting leading practices.	    
		4.3.2 Facilitate the adoption of new technology in rangelands management and sustainable grazing and encourage pastoralists to conduct their own monitoring to inform grazing practices		
		4.3.3 Draw upon national tools, benchmarks and frameworks that are applicable to the Gulf Savanna to assist in standardising rangelands condition assessments and monitoring programs		
		4.3.4 Develop local management plans and landholder stewardship programs for high value conservation assets		
		4.3.5 Develop more information on leading practices for more efficient cattle production in the region		
		4.3.6 Encourage diversification of income streams on pastoral land through alternative activities that support sustainable stocking rates		
Dingoes/wild dogs are strategically managed based on understanding of their impact on both pastoral and biodiversity productivity.	MEDIUM PRIORITY 4.4 Reconcile conflicting management objectives for wild dogs and dingoes	4.4.1 Continue to research the impacts of wild dogs and dingoes on pastoral productivity and biodiversity, and engage stakeholders in evidence-based management programs	Research programs are increasing knowledge about the respective impacts of wild dogs/ dingoes on production and their value in supporting ecosystems.	  
		4.4.2 Identify properties on which dingo populations are being maintained and establish demonstration sites to help assess the impacts on productivity and biodiversity		
		4.4.3 Communicate results of research with land managers to foster collaborative action on wild dog management		

Program 4: Industry adoption of sustainable practices

2025 Objective	Strategy	Key activities	2023 Interim target	Assets improved
Industry-driven extension programs develop understanding of ecosystems and sustainable management to achieve leading practice horticulture.	<p>HIGH PRIORITY</p> <p>4.5 Support best practice horticulture and broad scale agriculture through knowledge sharing, adoption of new technology and training and innovation</p>	<p>4.5.1 Quantify the damage to crops by magpie geese to develop a balanced management approach</p> <p>4.5.2 Conduct a mixture of extension approaches targeting improved horticultural practices - one-on-one extension, group training, best practice manuals, knowledge sharing and mentoring within the industry</p> <p>4.5.3 Attract more workers to the horticulture industry and focus on potential Aboriginal employment opportunities</p> <p>4.5.4 Improve access to training, especially promoting soil and water management best practice and ensuring that crops best suited to Gulf Savanna conditions are cultivated</p> <p>4.5.5 Increase the use of new and emerging technologies, such as drone aircraft, GIS and remote sensing, and better land-use planning and soil health plans to improve productivity and sustainability</p> <p>4.5.6 Trial the use of biochar and other organic farming techniques in a variety of horticultural contexts</p>	Improved access to new technologies, knowledge and resources have increased the number of farmers adopting leading practices.	 
Improved data collection and analysis informs fisheries management to achieve and sustain healthier fish stocks in the Gulf.	<p>MEDIUM PRIORITY</p> <p>4.6 Support ecologically sustainable fisheries management through monitoring and improved technology</p>	<p>4.6.1 Develop and improve current fisheries data collection and systems by commercial, amateur fishing groups and Aboriginal people</p> <p>4.6.2 Consolidate and implement environmental management systems for the commercial fishing industry</p> <p>4.6.3 Facilitate stakeholder groups to collaborate on important fisheries related NRM activities</p>	Leading practice data collection and fisheries management systems have been identified.	 

Program 4: Industry adoption of sustainable practices

2025 Objective	Strategy	Key activities	2023 Interim target	Assets improved
An engaged minerals and resources sector contributes to the sustainable management of Gulf Savanna natural resources.	HIGH PRIORITY 4.7 Support and promote partnerships between the NRM community and the resources sector regarding mine rehabilitation and offset programs	<p>4.7.1 Encourage the use of the environmental levy from mining companies to engage NRM stakeholders in legacy mine rehabilitation</p> <p>4.7.2 Establish a working group or advisory committee that includes DITT, NT EPA and DENR, Land Councils and key NGOs, such as TNRM, to engage with the mining industry to strengthen links and support their involvement in NRM activity</p>	A working group liaising between NRM stakeholders and the minerals and resources industries has been established.	
Leading practices are adopted throughout Gulf Savanna forestry plantations and underpin industry sustainability.	MEDIUM PRIORITY 4.8 Develop and implement a forestry management and assessment framework	<p>4.8.1 Develop a framework for plantation forestry operations in the NT to help understand water use and impacts, and resource use efficiencies</p> <p>4.8.2 Progress adoption of best practice through an industry code of practice that encourages self-regulation with clear links to government regulations through land clearing and other forestry-specific legislation, policy and planning framework</p>	Best practice guidelines for forestry operations in the Gulf Savanna have been disseminated and operators are being supported to adopt them.	
Climate adaptation planning by businesses and industries improve risk-management of climatic variability and related dynamic threats.	HIGH PRIORITY 4.9 Carry out adaptation planning with industry on the likely impacts of climate change	<p>4.9.1 Develop strategies that will support industry and communities to adapt to the likely impacts of climate change</p> <p>4.9.2 Encourage governments and other stakeholders to develop strategies to adapt to climate change, especially in Developing the North considerations</p> <p>4.9.3 Engage with, and regionally deliver, Commonwealth programs supporting adaptation and resilience to climate change, including pathways to diversification, increased water security and production efficiencies</p>	Industries and communities are supported to undertake climate adaptation planning.	

Program 4: Industry adoption of sustainable practices

Key Measures of Achievement

- Level of input from environmental research into major development decisions
- Number of industry-driven programs for improving sustainability and resilience
- Participation in and feedback from industry extension programs
- Proportion of primary producers adopting more sustainable practices
- Value of resources channelled into NRM through industry partnerships
- Proportion of businesses and industries including climate change considerations in development planning

Key Collaborators

- DITT (Livestock industries)
- DITT (Plant industries)
- DITT (Mines)
- DEPWS (Rangelands)
- DITT (Business innovation)
- NT Cattlemen's Association
- NT Farmers Association
- Northern Territory Seafood Council
- Forrest Industry Association of the Northern Territory
- Territory NRM
- Northern Land Council

Farmers are natural resource managers. We manage natural resources for economic ends rather than conservation ends but one is no more or less important than the other – preservation is a critical NRM strategy but equally critical is the ongoing learning process around sustainable development



• Priority Locations

- Beetaloo Basin (Informing development)
- Katherine, Victoria and Roper River corridors (pastoral and agricultural extension, climate change adaptation)
- Roper Gulf (pastoral and agricultural systems extension, mining and resources, industry engagement, biosecurity programs)
- Sturt Plateau (pastoral and agricultural extension, climate change adaptation)
- Gulf coastal and marine environments (fisheries, sustainability)

Relevant Territory Plans/Strategies

- Northern Territory Business Innovation Strategy (DITT 2021)
- The Territory Critical Minerals Plan (DPIR 2020)
- Northern Territory Biosecurity Strategy 2016-2026 (DPIF 2016)
- Plant Industries Strategic Plan 2018-2028 (NT Farmers 2018)
- Crocodile Industry Strategic Plan 2015-21 (CFA 2015)
- Northern Territory Seafood Council Strategic Plan 2018-2023 (NTSC2018)
- Aquaculture Policy Framework (DITT 2019)
- Recreational Fishing Development Plan 2012-2022 (DPIR 2012)
- Northern Territory Fisheries Harvest Strategy Policy (DPIR 2016)
- NT Plant Industries Workforce Development Plan (2020-2025)
- Draft Space Strategy 2021-2025

Relevant National Plans/Strategies

- Buffalo Program: Strategic R&D Plan 2021-2025 (Agrifutures 2021)
- Australian Beef Sustainability Framework (MLA 2017)
- Delivering Ag2030 (DAWE 2020)
- Developing Northern Australia (ONA 2021)
- Biosecurity 2030 (DAWE 2021)

Program 5: Water resources and soil management

In 2021, after experiencing two years of drought-like conditions, the NRM community in the Gulf Savanna have an increased awareness of the limitations of water and soil resources. This awareness has come just as an ambitious development agenda opens the way to expanding irrigated agriculture, and developing new mining and resources sector projects. As such, water resources allocation planning has highlighted the diverse interests and aspirations within the community. Similarly, many are aware of the increasing

pressures upon fragile soil resources across the Gulf Savanna, arising from unsustainable farming practices, grazing pressure and uncontrolled wildfires.

The objective of this program is to increase sustainability in soil and water management through improving the understanding of resource limitations and opportunities to increase water use efficiency. This program supports extension learning to raise understanding of leading practices

in resource management to help buffer primary industries against future periods of drought or climatic extremes. This program also works to strengthen collaboration in water resource management and build stakeholder capacity through effective communications.

The program also promotes robust land capacity studies and assessments to better understand land capability prior to future agricultural developments.

2025 Objective	Strategy	Key activities	2023 Interim target	Assets improved
Ground and surface water resources are managed with input from all stakeholders through catchment water allocation plans that include monitoring and ensure that cultural, environmental and production values are respected.	VERY HIGH PRIORITY 5.1 Water resource planning and management is undertaken in consultation with multiple stakeholders, adopts an integrated catchment-based approach and is underpinned by the best available scientific information	<p>5.1.1 Identify and quantify competing demands for water resources and the impacts of different activities on water resources</p> <p>5.1.2 Involve multiple stakeholders and users representing a range of interests in water allocation planning in the region</p> <p>5.1.3 Support water stewardship through involving the community in application of new water monitoring technology and through communication materials targeted at behaviour change</p> <p>5.1.4 Support research and innovation, including on the impacts of climate change, that increase our understanding of water resources</p> <p>5.1.5 Water allocation plans are strengthened where necessary to enhance the sustainability of water use</p>	The principle of community participation in water resources planning and allocation is well established in the Gulf Savanna.	

Program 5: Water resources and soil management

2025 Objective	Strategy	Key activities	2023 Interim target	Assets improved
Knowledge of the impacts from key industrial and domestic uses of water resources has increased and a regulatory framework exists to minimise pollution of groundwater.	<p>HIGH PRIORITY</p> <p>5.2 Increase knowledge and resources available to understand and manage the impacts on ecosystems and groundwater from mining, pastoral, agricultural and domestic use</p>	<p>5.2.1 Continue to research the impacts of water extraction on water resources, including use for domestic, pastoral, mining and agricultural activities</p> <p>5.2.2 Continue to implement more broad water use monitoring on both surface and groundwater (including bore meters) to more accurately assess water use</p> <p>5.2.3 Research and trial water efficiency techniques for pastoral and agricultural industries</p> <p>5.2.4 Monitor water quality and aquatic ecosystem health to maximise chances of early detection of pollution</p> <p>5.2.5 Regionally engage with and deliver Commonwealth programs that promote greater water security, water use efficiency and the sustainable development of resources (e.g. Future Drought Fund)</p>	Systematic monitoring tracks water consumption in key industries.	
Soil loss, soil function and land degradation is being prevented and, where necessary, addressed.	<p>HIGH PRIORITY</p> <p>5.3 Support training and extension services on sustainable soil management</p>	<p>5.3.1 Raise the awareness of the importance of soil erosion, soil fertility, soil health and soil moisture for primary industries productivity</p> <p>5.3.2 Collate existing soil information and develop communications materials targeting contractors to promote improved soil management practices in the landscape</p> <p>5.3.3 Utilise rangelands remote sensing tools to encourage improved grazing management and enhance production efficiency to minimise soil erosion issues</p> <p>5.3.4 Continue the requirement for erosion and sediment control plans and adherence for all developments</p> <p>5.3.5 Review and update land clearing regulations with new information to deal with potentially increased development in the Gulf Savanna</p> <p>5.3.6 Develop Acid Sulfate Soil Management Guidelines to identify and manage areas at risk</p>	There is a regular program of capacity building and awareness raising events to improve soil management practices in the Gulf Savanna.	

Program 5: Water resources and soil management

2025 Objective	Strategy	Key activities	2023 Interim target	Assets improved
There is a regular program of capacity building and awareness raising events to improve soil management practices in the Gulf Savanna.	MEDIUM PRIORITY 5.4 Identify areas with potential for agricultural development through assessments of soil and water resources	5.4.1 Undertake research and assessments for areas that are being proposed for new and intensified agricultural development	There is an improved, empirically based understanding of the long term sustainability of natural resources under different land use and development scenarios.	
		5.4.2 Link physical assessments of soil and water resources with crop suitability, land tenure and market considerations in developing new agricultural zones		
		5.4.3 Conduct transparent risk analyses across all resources and consumptive uses including resources highlighted for new development and those supporting existing demand		
		5.4.4 Promote and support developer compliance with the outcomes of land capability assessments		

Key Measures of Achievement

- Number of groups/individuals participating in water stewardship
- Progress in implementation of water allocation plans
- Establishment of water use monitoring capacity in different industries and uses
- Number of individuals/ businesses adopting leading practices in soil management
- Proportion of agricultural land developments based upon thorough land capability assessments

Key Collaborators

- DEPWS (Water resources)
- DITT (Plant industries)
- NT Farmers Association
- NT Cattlemen's Association
- DEPWS (Mapping the Future)
- DEPWS (Rangelands)
- Northern Land Council
- Landcare groups
- Territory NRM
- Minerals Council NT
- Researchers
- Aboriginal ranger groups
- Contractors

Priority Locations

- Katherine, Victoria and Roper River corridors (Tindall aquifer, water allocation, environmental flows, healthy soils)
- Beetaloo Basin (ground water quality, extraction)
- Sturt Plateau (water use efficiency, water allocation, healthy soils)
- Victoria River district (environmental flows, soil management and health)
- Roper River district and Gulf rivers (environmental flows, soil management and health, mining and resources impact on water)

Relevant Territory Plans/ Strategies

- Ooloo Dolostone Aquifer Water Allocation Plan 2019-2029 (DENR 2019)
- Katherine Tindall Limestone Aquifer Water Allocation Plan 2019-2024 (DENR (2019)
- Northern Territory Strategic Water Plan; Directions Paper (DEPWS 2021)

Relevant National Plans/ Strategies

- Charter National Water Quality Management Strategy (WQA 2018)
- National Soil Research Development and Extension Strategy (Commonwealth of Australia 2014)

If we don't have our soil in check with our Landcare practices there is no point in being here and we want to be able to hand it over to our children in a much better condition than we received it



Program 6: NRM based economic opportunities

Savanna fire projects remain the outstanding success in developing NRM-based economic opportunities, closely followed by the growth in the number of groups and communities benefiting from NRM-related fee-for-service arrangements. These types of economic opportunities have been important in building pathways to self-determination people who live on country throughout the region.

However, the landscape of the conservation economy is set to transform with the introduction of the new Territory Offsets

Framework, which will generate growing demand for land management skills and services. Steps are already also being taken to engage Aboriginal land managers in the ongoing maintenance and rehabilitation of legacy mine sites. Similarly, some Gulf Savanna groups are exploring opportunities to assume new biosecurity and compliance related roles.

There is also strong renewed interest in the carbon economy from across Gulf Savanna land tenures growing and interest in diversifying operations on both pastoral and Aboriginal lands.

In recognition of these factors, this program focuses on identifying new potential opportunities, assessing their viability and then providing land managers with appropriate knowledge and tools to develop them. The program also recognizes the growing potential for renewable energy projects and the emergence of genuine opportunities within the conservation economy. Key to this is building the capacity of land managers to operate as businesses.

2025 Objective	Strategy	Key activities	2023 Interim target	Assets improved	
The sustainable harvest of native species creates new employment and economic opportunities.	MEDIUM PRIORITY	<p>6.1.1 Continue to identify markets and opportunities</p> <p>6.1.2 Provide institutional and business support for the development of NRM-based economic activities</p> <p>6.1.3 Improve systems for permits, monitoring and accreditation</p>	Potential native harvest products and their commercial feasibility is known.		
	MEDIUM PRIORITY	<p>6.2.1 Develop and incorporate business skills into NRM activities</p> <p>6.2.2 Link local Landcare and Aboriginal ranger groups to commercial opportunities</p> <p>6.2.3 Provide training, business support and mentoring to help establish and manage land and sea management contract businesses</p> <p>6.2.4 Support Aboriginal enterprises and land managers to tender for potential contracts and fee-for-service opportunities</p> <p>6.2.5 Support successful Aboriginal enterprises to share their stories and to provide mentoring for new enterprises</p>			Aboriginal enterprises engaging in fee-for-service activities have received basic business training/mentoring.
	MEDIUM PRIORITY	<p>6.2 Develop capacity for NRM groups to better target service delivery to pastoral and other Gulf Savanna rural industries</p>			

Program 6: NRM based economic opportunities

2025 Objective	Strategy	Key activities	2023 Interim target	Assets improved
A diversity of NRM stakeholders have taken up and benefit from increased opportunities to participate in carbon markets.	HIGH PRIORITY 6.3 Support projects and research to further increase participation in national, Territory and regional carbon market initiatives	<p>6.3.1 Continued communication of information to the NRM community educate on carbon market developments</p> <p>6.3.2 Clarify ownership and governance arrangements around carbon stocks</p> <p>6.3.3 Support the involvement of land sector carbon projects, including blue carbon opportunities</p> <p>6.3.4 Support greater involvement in savanna burning for carbon abatement and sequestration in the Gulf Savanna region</p>	Carbon market opportunities relevant to the Gulf Savanna have been clearly communicated to stakeholders.	
A more diverse rural economy across different land tenures and primary industries on the Gulf Savanna drives increased employment opportunities.	MEDIUM PRIORITY 6.4 Investigate, progress and communicate emerging primary industry and diversification economic opportunities on Aboriginal and pastoral lands including horticulture, aquaculture and tourism	<p>6.4.1 Support the research and development of horticultural projects that enable commercial opportunities on Aboriginal and pastoral land</p> <p>6.4.2 Support projects that increase participation of Aboriginal land owners in remote horticultural and tourism projects</p> <p>6.4.3 Support emerging and innovative sustainable primary industry activities on pastoral land allowed by the Pastoral Land Legislation Amendment Bill 2017 (NT)</p> <p>6.4.4 Facilitate improved exchange of knowledge and experience between producers, land managers, researchers and NT government agencies</p>	Viable opportunities for diversification across the Gulf Savanna have been identified and clearly communicated to stakeholders.	 
New opportunities and new partnerships have been developed between private sector and NRM stakeholders in the Gulf Savanna.	MEDIUM PRIORITY 6.5 Link new and emerging opportunities with NRM stakeholders in the Gulf Savanna	<p>6.5.1 Create new links between industry, corporate bodies and NRM stakeholders particularly looking to deliver new and innovative approaches to NRM</p> <p>6.5.2 Facilitate opportunities between governments and industry to link to the delivery of priorities in this NRM plan</p>	An investment portfolio describing partnership opportunities supporting Gulf Savanna NRM is developed.	 

Program 6: NRM based economic opportunities



2025 Objective	Strategy	Key activities	2023 Interim target	Assets improved
The renewables and environment sector is contributing more to the Gulf Savanna economy than in 2021.	HIGH PRIORITY 6.6 Investigate and support development opportunities from new environmental technologies and renewables	6.6.1 Continue trialling biochar and other emerging technologies, promoting waste management, soil rehabilitation and carbon opportunities 6.6.2 Support the development of new or existing technology for renewable energy, carbon abatement and other initiatives that support sustainable industries in the Gulf Savanna region	The Gulf Savanna is on track to achieve its 2050 net zero emissions target.	 

Key Measures of Achievement

- Number of Aboriginal enterprises wild harvesting for commercial use
- Value of fee-for-service contracts delivered by Ranger groups
- Number of new nature-based enterprises established on Aboriginal and pastoral land
- Value of income from carbon market projects
- Value of renewable energy and sustainable industry investments in the Gulf Savanna
- Number of corporate partnerships supporting NRM

Key Collaborators

- Environment Protection Authority
- DITT (Business innovation)
- DITT (Plant industries)
- NT Farmers Association
- NT Cattlemen's Association
- Roper Gulf Shire
- Victoria Shire
- Territory NRM
- Researchers
- Indigenous Carbon Industry Network
- Batchelor Institute
- Northern Land Council
- Environment Centre NT

Priority Locations

- Katherine, Nitmiluk (tourism, fee-for-service, fire management, horticulture, wild harvest)
- Borroloola/ Mc Arthur River (tourism, fee-for-service, biosecurity surveillance, fishing, mine site rehabilitation)
- Timber Creek/ Kalkaringi (fee-for-service)
- South Arnhem Land (fire management, fee-for-service, native harvest)
- Sturt Plateau (fee-for-service, carbon abatement, horticulture, diversification)
- Victoria River district (fee-for-service, tourism, diversification, carbon abatement)
- Roper River district (fee-for-service, tourism, diversification, carbon abatement)

Relevant National Plans/Strategies

- National Indigenous Land and Sea Strategy (ILSC 2019)
- Indigenous Business Sector Strategy 2018-2028 (NIAA 2018)
- Australian Renewable Energy Funding and Investment Plan 2021-2024 (ARENA 2021)

Relevant Territory Plans/Strategies

- Aboriginal Land and Sea Action Plan (DCM 2019)
- Northern Territory Aboriginal Tourism Strategy 2020-2030 (Tourism NT 2020)
- Management Program for the Kakadu Plum 2019-2023 (DENR 2019)
- Northern Territory Tourism Industry Strategy 2030 (Tourism NT)
- Aboriginal Carbon Industry Strategy (DENR 2019)
- Northern Territory Renewable Energy Implementation Plan 2018-2020 (NTG 2019)
- Northern Territory Renewable Hydrogen Strategy (DTBI 2020)
- Destination Management Plan: Big Rivers Region 2020 (DITT 2020)
- NT Offsets Framework (DEPWS 2020)
- Waste Management Strategy for the Northern Territory 2015-2022 (NTEPA 2015)
- NT Compact Urban Growth Policy (NTG 2015)

Program 7: Minimising ecological footprints of development

Australia's National Strategy for Ecologically Sustainable Development (ESD) defines ESD as *'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased'*.

The Gulf Savanna region is home to about 10% of the Territory population and the greatest pressure on the regions natural resources is from industrial development. Because of

the sparse population, some Gulf Savanna communities lack capacity to sustainably manage waste and have poor energy efficiency which risks both natural values and community wellbeing.

This program supports the introduction of leading practices in design, planning and construction of infrastructure for future residential and industrial developments. The work includes activities to raise community awareness about

Ecologically Sustainable Development and promotes evidence-based management of toxic waste, pollutants and other contaminants that are at risk of discharge into the environment.

It also promotes enhanced cooperation with recreational users and visitors to reduce pressures on high value natural assets.

2025 Objective	Strategy	Key activities	2023 Interim target	Assets improved	
Katherine and other towns/ communities in the region introduce leading practices in environmental management.	MEDIUM PRIORITY	<p>7.1 Minimise the environmental footprint of main population centres in the Gulf Savanna</p>	Plans have been developed to introduce leading practices in environmental management to Gulf Savanna population centres.	 	
		<p>7.1.1 Support sustainability initiatives that promote water and energy use efficiency</p> <p>7.1.2 Establish regional waste facilities capable of storing and handling toxic substances</p> <p>7.1.3 Promote and support the uptake of renewable energy sources and renewable energy industries across the Gulf Savanna</p>			
		<p>7.2.1 Establish regional waste facilities capable of storing and handling toxic substances and a regional response capacity for spillages of mine pollutants, fuels, agricultural chemicals and other hazardous materials</p> <p>7.2.2 Undertake the monitoring and rehabilitation of legacy mines in the Gulf Savanna, including Redbank and Moline</p> <p>7.2.3 Develop reporting mechanisms for key areas at risk from mine site pollution</p> <p>7.2.4 Support policy and legislative mechanisms that promote best environmental practice in the resources industry and on-ground mining operations</p> <p>7.2.5 Promote a culture of disclosure and compliance amongst industry</p>			
The cumulative impact of environmental pollutants across the Gulf Savanna is known and within acceptable levels.	MEDIUM PRIORITY	<p>7.2 Implement processes that manage the entry of toxic chemicals in the environment in the Gulf Savanna</p>	Acceptable levels for cumulative pollutants have been established for the Gulf Savanna.	 	

Program 7: Minimising ecological footprints of development

2025 Objective	Strategy	Key activities	2023 Interim target	Assets improved
Offsets are well directed, transparent and linked to achieving prioritised NRM strategies in the Gulf Savanna.	HIGH PRIORITY 7.3 Strengthen and consolidate environmental offset arrangements to direct offsets where they are likely to be most effective	7.3.1 Develop a clear direction for 'voluntary' offset activities that encourages more investment into regional NRM priorities 7.3.2 Develop partnerships between the private sector, government and NRM stakeholders to enable the use of Offsets to support NRM activities	The NT Offsets Framework is finalised and has been communicated to all stakeholders.	 
The impacts of recreational users upon the natural resources of the Gulf Savanna is reduced, owing to a growing awareness among these users.	MEDIUM PRIORITY 7.4 Minimise the impact of recreational uses on the environment through the adoption and promotion of sustainable tourism practices and enterprises	7.4.1 Develop and support strategies that minimise environmental and cultural impacts of recreational users and visitors to key areas and sites within the Gulf Savanna 7.4.2 Collaborate with key recreational user groups to manage impacts on key areas	Strategies to raise awareness about the impact of recreational visitors on priority areas in the Gulf Savanna have been developed.	 

Key Measures of Achievement

- Trends in per capita power and water consumption
- Proportion of energy coming from renewable sources
- Value of investment in NRM arising from development Offsets
- Status of regional waste and pollution management facilities
- Number of sites with strategies to manage the cultural and environmental impacts of visitors

Key Collaborators

- Environment Protection Authority
- DITT (Business innovation)
- Environment Centre NT
- DITT (Mines and Energy)
- Local Governments
- Katherine Town Council
- Northern Land Council
- Territory NRM
- DEPWS (Parks and Wildlife)
- DEPWS (Fauna and Flora)
- DITT (Tourism)

Priority Locations

- Katherine (waste management, renewable energy, water efficiency)
- Borroloola (waste management, renewable energy, water efficiency)
- Remote communities (waste management, renewable energy, water efficiency)
- Nitmiluk (visitor impacts)
- Beetaloo and Gulf resources and mining industries (environmental impacts, NRM offsets)

Relevant Territory Plans/ Strategies

- Waste Management Strategy for the Northern Territory 2015-2022 (NTEPA 2015)
- Statement of Intent 2020-2022 (NTEPA 2020)
- Ecologically Sustainable Development in the NT (NTEPA 2010)
- Northern Territory Compact Urban Growth Policy (NTPS 2020)
- Waste Management Strategy 2021-2026 (Katherine Town Council 2021)

- Strategic Plan 2018-2021 (Roper Gulf Council 2018)
- Regional Plan 2019-2020 (Victoria Daly Council 2019)
- Destination Management Plan: Big Rivers Region 2020 (DITT 2020)

Relevant National Plans/ Strategies

- National Waste Policy Action Plan (ALGA 2019)
- Australian Renewable Energy Funding and Investment Plan 2021-2024 (ARENA 2021)

Program 8: Managing and protecting key natural and cultural assets

The Gulf Savanna is home to a large number of sites considered to be of high conservation value. These include several properties within the national park boundaries and 13 identified Sites of Conservation Significance which encompass islands, floodplains and ranges. The region has 55 NT listed Threatened Species and 35 listed under the national EPBC. Many individual sites, together with the broader landscape they are situated within, carry deep cultural significance for the traditional custodians of the land. In 2021, plans and strategies for landscape management

recognise the importance of this knowledge and explicitly work with Traditional Owners and local Aboriginal groups to lead the management and protection of natural and cultural assets across the region.

The objective of this program is to strengthen partnerships with landholders across all tenures to better maintain key natural and cultural assets. This is done by updating the collective knowledge of regional conservation priorities and informing land managers of leading management practices. In particular, land managers outside of the conservation estates

are encouraged to enter into formal conservation/stewardship arrangements.

Another focus of the program is to reinvigorate threatened species management, by using evidence-based management to improve the understanding of the pressures and threats and linking to National Threatened Species initiatives. Recognising the potential impacts of climate change on landscapes across Gulf Savanna landscapes, the program supports evidence-based planning to mitigate these impacts.

2025 Objective	Strategy	Key activities	2023 Interim target	Assets improved
High priority areas are subject to conservation management with regular review by key stakeholders.	MEDIUM PRIORITY 8.1 Continue to develop, implement and maintain conservation management programs for high priority areas across the Gulf Savanna	<p>8.1.1 Update knowledge and establish priorities for improved management of high priority sites, where appropriate</p> <p>8.1.2 Plan for the future adaptive management of these sites, utilising collaborative planning approaches and consultations across stakeholders and tenures</p> <p>8.1.3 Raise public awareness of sites with high natural values through targeted communications, particularly where they occur outside of protected areas</p>	Knowledge of high priority areas has been updated and sites requiring management programs have been identified.	   
Threatened species management is integrated with strong links between research, monitoring and on-ground action to progress key indicators in Threatened Species Action Plans.	HIGH PRIORITY 8.2 Implement Threatened Species Action Plans in the Gulf Savanna and update on-ground actions with the latest knowledge	<p>8.2.1 Communicate the action plans for threatened species to land managers in the Gulf Savanna and support their implementation</p> <p>8.2.2 Link threatened species action plans in the Gulf Savanna to the National Threatened Species Strategy and implement key priorities relevant to the region</p>	Foundational research and monitoring in support of priority Threatened Species Action Plans is underway.	   

Program 8: Managing and protecting key natural and cultural assets

2025 Objective	Strategy	Key activities	2023 Interim target	Assets improved
Landowners across the Gulf Savanna have identified high priority sites on their lands and are adaptively managing these for conservation.	<p>HIGH PRIORITY</p> <p>8.3 Facilitate stewardship of high value conservation areas through schemes such as Territory Conservation Agreements and Indigenous Protected Areas</p>	<p>8.3.1 Support private land owners and pastoral lease holders to develop conservation agreements (stewardship) over priority areas</p> <p>8.3.2 Support Traditional Owners and Aboriginal ranger groups to develop and implement Indigenous Protected Area management plans</p> <p>8.3.3 Increase awareness and stewardship of important conservation sites and cultural heritage within the region</p>	Targeted case studies have been developed to highlight the importance and promote the benefits of conservation on private land.	
Understanding of the impacts of climate change on ecosystem function and the principles of risk-management informs adaptive management, preparedness and response plans for high value ecological sites and assets.	<p>MEDIUM PRIORITY</p> <p>8.4 Develop adaptation plans for the impacts of climate change for vulnerable ecosystems in the Gulf Savanna</p>	<p>8.4.1 Investigate the likely impacts of climate change on threatened habitat/species communities in the Gulf Savanna</p> <p>8.4.2 Develop management strategies and prioritise action on vulnerable assets most likely to be impacted by climate change</p>	Appropriate monitoring approaches and techniques have been identified.	
Aboriginal land managers and Traditional Owners are managing culturally significant sites and landscapes.	<p>HIGH PRIORITY</p> <p>8.5 Support best practice management of culturally significant Aboriginal sites and landscapes</p>	<p>8.5.1 Support the mapping, documentation and management of culturally significant sites by Traditional Owners</p> <p>8.5.2 Negotiate access to cultural sites on non-Aboriginal land tenure, increase the awareness of industry and government agencies about Aboriginal sacred sites, and the processes and mechanisms for their protection in development activities</p> <p>8.5.3 Encourage the development of enterprises for Aboriginal ranger groups to carry out cultural heritage contract work</p>	Traditional Owners are adequately supported and resourced to continue the mapping and recording of culturally significant sites.	

Program 8: Managing and protecting key natural and cultural assets

Key Measures of Achievement

- Number of management plans being implemented at high priority sites
- Number of Threatened Species Action Plans in implementation
- Area of private land subject to stewardship or conservation management
- Number of sites in which climate change monitoring is being implemented
- Number of cultural sites subject to enhanced management/ protection

Key Collaborators

- Research institutions
- Aboriginal ranger groups
- DEPWS (Parks and Wildlife)
- DEPWS (Fauna and Flora)
- Traditional Owners
- Pastoral Landcare groups
- Landholders
- Aboriginal Areas Protection Authority
- Territory NRM
- DAWE

Priority Locations

- Nitmiluk (EPBC listed Sandstone plateau, and rainforest pockets, threatened species, cultural sites)
- Timber Creek (Gregory/Judbarra park, ranges and riparian corridors, threatened species cultural sites)
- South Arnhem Land (Indigenous Protected Areas, EPBC listed Sandstone Plateau, cultural sites)
- Limmen Floodplain (coastal floodplain, wetlands)
- Sturt Plateau (rangelands and seasonal wetlands, private conservation)
- Estuaries (wetlands, marine habitats, mangroves)
- Gulf islands (biodiversity)
- Kidd river/ Spirit hills (biodiversity, cultural)
- Legune Floodplain (coastal floodplain)
- Upper Victoria/Daly (Indigenous Protected Area, cultural sites)

Relevant National Plans/Strategies

- Threatened Species Strategy 2021-2031
- Australia's Strategy for Nature 2019-2030

Relevant Territory Plans/Strategies

- Draft NT Parks Masterplan (2022-52)
- Aboriginal Areas Protection Authority Strategic Plan 2017-2021
- Nitmiluk National Park Park Plan of Management (PWC 2014)
- Limmen Bight Marine Park Plan of Management (PWC 2019)
- Judbarra Gregory National Park Joint Management Plan (PWC 2011)
- Elsey National Park Plan of Management
- Giwining/ Flora River Nature Park Joint Plan of Management (PWC 2011)
- Cutta Cutta Caves Plan of Management (PWC 2009)
- Caranbirni Conservation Reserve Management Plan (PWC 2000)
- Bullwaddy Conservation Reserve Plan of Management (PWC 2005)
- Kintore Caves Plan of Management (PWC 2000)
- Garawa Land and Sea Country Plan (Gangalidda Garawa 2014)
- Ganalanga-Mindibirrina IPA Management Plan (NERP 2015)
- Wardaman IPA Management Plan 2014-2024 (NLC 2013)
- Jawoyn Healthy Country Plan 2018-20228 (Jawoyn 2018)

This IPA is very important. It encompasses all of the islands to protect them for my grandchildren and their children. We want everyone to work together to look after this land for future generations



Program 9: Knowledge, capacity and engagement

Effective natural resource management requires capable and knowledgeable land managers with access to the necessary tools and resources to achieve the required outcomes. This program is designed to support Gulf Savanna managers and other stakeholders to most effectively implement regional NRM priorities and strategies.

Activities of the program include opportunities to foster new partnerships and build the potential for effective collective

action. In particular, the program encourages the NRM community to seek additional resources to support land management groups. This includes having access to the most relevant and up-to-date knowledge through building capacity for capturing, storing accessing and sharing information and data within the NRM community.

This program recognises the need for formal training and skills development within the NRM community, and includes

actions to identify priority needs and create opportunities for land managers to achieve skills development, including strengthening the governance of land management groups.

Critically, Territory Natural Resource Management will continue engaging across the whole NRM community to support delivery of activities within the Gulf Savanna NRM plan and ensure that implementation is adaptively managed.

2025 Objective	Strategy	Key activities	2023 Interim target	Assets improved
Land managers are empowered by increased resources and long-term approaches to NRM issues in the Gulf Savanna.	<p>HIGH PRIORITY</p> <p>9.1 Strengthen the effectiveness of NRM stakeholder networks, including building new relationships with industry, philanthropic organisations and strengthening coordination of on-ground land management</p>	<p>9.1.1 Consolidate and extend landscape level and cross border partnerships through supporting workshops that bring together stakeholders and share knowledge</p> <p>9.1.2 Support the development of fee-for-service opportunities and a diversified funding base to ensure the long-term growth and development of Landcare groups, Aboriginal rangers and other NRM groups</p> <p>9.1.3 Seek alternative sources of funding for NRM activities through new partnerships with philanthropic organisations and Offsets arrangements</p> <p>9.1.4 Develop and build the capacity of land managers, Landcare volunteers, and Aboriginal ranger groups</p> <p>9.1.5 Support collaboration between key technical agencies to encourage their support for actions of land managers</p> <p>9.1.6 Promote good 'stories' from NRM to increase the profile of NRM in the community</p>	There is an increase in the number of successful partnerships supporting NRM activities across the Gulf Savanna.	 

Program 9: Knowledge, capacity and engagement

2025 Objective	Strategy	Key activities	2023 Interim target	Assets improved
Gulf Savanna natural resource managers are incorporating the best available knowledge, information and data into their management strategies, including traditional ecological knowledge (TEK) and community knowledge.	<p>MEDIUM PRIORITY</p> <p>9.2 Support land managers to record, utilise and share scientific research, TEK and pastoral knowledge in NRM planning and management activities</p>	<p>9.2.1 Conduct forums to facilitate knowledge sharing between NRM stakeholders and researchers</p> <p>9.2.2 Identify knowledge gaps and research priorities in collaboration with key stakeholders</p> <p>9.2.3 Establish knowledge capture, storage and sharing projects by Traditional Owners and Aboriginal rangers</p> <p>9.2.4 Develop programs that facilitate community monitoring of key environmental assets (adding to the NT species database) ensuring data collection is relevant, efficient and utilised</p> <p>9.2.5 Share knowledge through websites, newsletters, fact sheets and facilitate two-way information exchange with government</p>	Regular forums and events communicate the latest technical knowledge between knowledge holders and NRM stakeholders.	  
More relevant and better targeted training enhances natural resource management skills.	<p>MEDIUM PRIORITY</p> <p>9.3 Support accredited and informal training in land management and sustainable industry practices</p>	<p>9.3.1 Assess training needs (accredited and non-accredited) for NRM stakeholders and support the delivery of appropriate training where needed, particularly supporting skills linked to employment in NRM</p> <p>9.3.2 Assess the efficiency of training and improve where necessary, introducing stronger mentoring programs (such as Young Rural Leaders and Learning on Country) in the NRM sector</p> <p>9.3.3 Deliver training and support for sustainable grazing practices</p> <p>9.3.4 Support governance and leadership training of locally-based NRM groups and establish clearer career pathways in NRM</p>	The number of available training courses and opportunities to build NRM skills has increased in the Gulf Savanna.	 
Multi-stakeholder review processes are strengthened, leading to adaptive management, improved practices and stakeholder cooperation.	<p>HIGH PRIORITY</p> <p>9.4 Continue to review NRM outcomes, facilitating adaptive management</p>	<p>9.4.1 Multi-stakeholders gather to review outcomes and progress against the objectives in the NRM plan</p> <p>9.4.2 Support a multi-stakeholder approach to adaptive management to help prioritise funding, resources and effort in areas of highest need</p>	The first review of the 2021-2025 NRM plan is underway.	 

Program 9: Knowledge, capacity and engagement

Key Measures of Achievement

- Number of accredited and non-accredited training opportunities
- Number of NRM organisations, Landcare groups and Aboriginal ranger groups active in the region.
- Number of forums and meetings to exchange information and coordinate regional NRM efforts
- Multi-stakeholder adaptive management processes are implemented for relevant plans and strategies

Key Collaborators

- Landcare NT
- Pastoral Landcare groups
- Aboriginal ranger groups
- Batchelor Institute
- Territory NRM
- DAWE
- NT Cattlemen's Association
- NT Farmers Association
- Northern Land Council
- Traditional Owners
- Conservation organisations

Priority Locations

- Katherine (ranger groups, Charles Darwin University, community groups)
- Bulman (ranger group)
- Timber Creek/ Victoria River (ranger groups, pastoral land managers)
- Mataranka and Roper River (Landcare group, ranger groups, pastoral land managers)
- Sturt Plateau (pastoral and agricultural land managers)
- Borroloola/ Sir Edward Pellow Isles (ranger group)

Relevant Territory Plans/Strategies

- Landcare NT Strategic Plan
- Northern Territory NRM Plan 2021-2025

It's really, really great for our young to be able to have work opportunities that involve first learning about their country. They can access to all of the country now and the traditional practices and learn about all of those. So that there'll be really strong employment for them in the future.



Taking this Plan Forward

This plan was collaboratively developed to build upon the current momentum in collaborative NRM and address emerging natural resource management opportunities and challenges (2021-2025). The planning process has represented another stage in the ongoing collaboration between regional NRM partners.

Implementing this plan, reviewing progress and then adaptively managing it will require regional coordination to be continue and be further strengthened.

Follow regional NRM plan implementation status online on the Regional NRM plan dashboard



Plan



Implement

Progress review



Plan review



Progress review



Final Plan review

2021

Gulf Savanna stakeholder groups and technical experts were brought together through a series of planning workshops and consultations in Katherine and elsewhere to identify strategic NRM priorities.

2021-2025

Coordination and support the for implementation of priority actions and strategies in the plan. Monitoring and tracking activities and outcomes

2022

Regional stakeholder meeting to assess coordination and progress in implementing the plan, highlighting any gaps or barriers to progress

2023

Regional stakeholder consultations and workshops to assess progress towards plan objectives and adaptively manage implementation of the plan

2024

Regional stakeholder meeting to assess coordination and progress in implementing the plan, highlighting any gaps or barriers to progress

2025

Regional stakeholder consultations and workshops to assess overall progress, impact and outcomes achieved through the plan.

Threatened plant species of the Gulf Savanna

Plant	Scientific name / Common name	EPBC Act Status	NT Conservation Status
Apiaceae	<i>Platysace saxatilis</i>	-	VU
Cycadaceae	<i>Cycas armstrongii</i>	-	VU
Cyperaceae	<i>Eleocharis papillosa</i> / Dwarf desert spike-rush	VU	VU
Gleicheniaceae	<i>Gleichenia</i> sp. Victoria River	-	VU
Lentibulariaceae	<i>Utricularia singeriana</i>	-	VU
Malvaceae	<i>Helicteres macrothrix</i> / <i>H. sp. Glenluckie Creek</i>	EN	EN
Malvaceae	<i>Hibiscus cravenii</i>	VU	VU
Orchidaceae	<i>Zeuxine oblonga</i>	-	VU
Poaceae	<i>Triodia</i> sp. Matt Wilson (was <i>T. fitzgeraldii</i>)	-	VU
Pteridaceae	<i>Adiantum capillus-veneris</i> / Venus-hair fern	-	VU

CE - Critically endangered EN - Endangered VU - Vulnerable

Sources: www.nt.gov.au/environment/native-plants/threatened-plants
www.environment.gov.au/cgi-bin/sprat/public/sprat.pl



Threatened animal species of the Gulf Savanna

Sources: www.nt.gov.au/environment/animals/threatened-animals
www.environment.gov.au/cgi-bin/sprat/public/sprat.pl

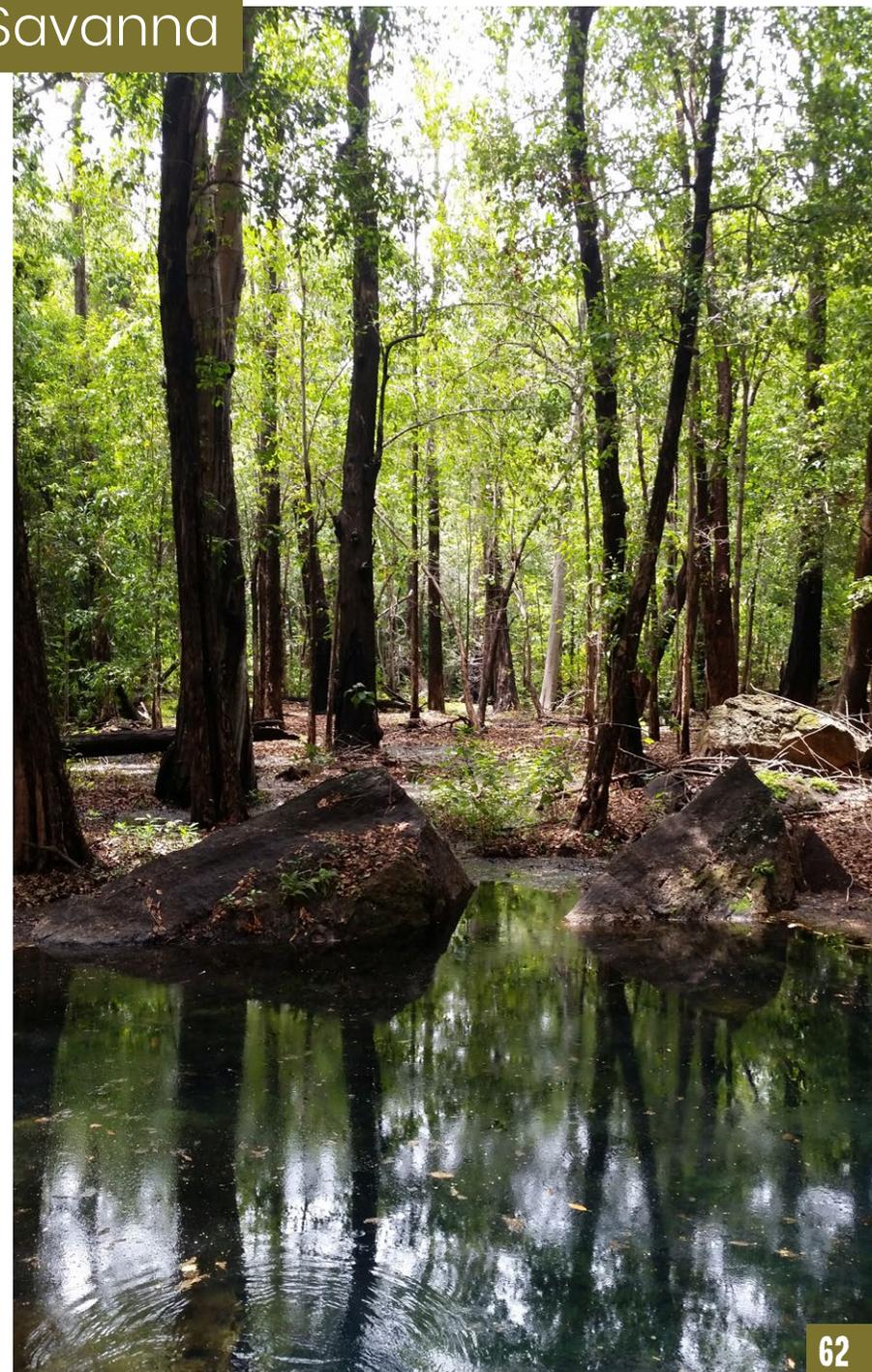
Scientific name	Common name	EPBC Act Status	NT Conservation status
Birds			
<i>Amytornis dorotheae</i>	Carpentarian grasswren	EN	EN
<i>Amytornis woodwardi</i>	White-throated grasswren	VU	VU
<i>Calidris canutus</i>	Red knot	EN	VU
<i>Calidris ferruginea</i>	Curlew sandpiper	CE	VU
<i>Calidris tenuirostris</i>	Great knot	CE	VU
<i>Charadrius leschenaultii</i>	Greater sand plover	VU	VU
<i>Charadrius mongolus</i>	Lesser sand plover	EN	VU
<i>Erythrotriorchis radiatus</i>	Red goshawk	VU	VU
<i>Erythrura gouldiae</i>	Gouldian finch	EN	VU
<i>Falco hypoleucos</i>	Grey falcon	VU	VU
<i>Falcunculus frontatus whitei</i>	Northern/crested shrike-tit	VU	-
<i>Geophaps smithii</i>	Partridge pidgeon	VU	VU
<i>Grantiella picta</i>	Painted honeyeater	VU	VU
<i>Limnodromus semipalmatus</i>	Asian dowitcher	-	VU
<i>Limosa lapponica</i>	Bar-tailed godwit	-	VU
<i>Malurus coronatus coronatus</i>	Purple-crowned fairy wren (Victoria River District)	EN	VU
<i>Numenius madagascariensis</i>	Eastern curlew	CE	VU
<i>Pezoporus occidentalis</i>	Night parrot	EN	CE
<i>Polytelis alexandrae</i>	Princess parrot	VU	VU
<i>Rostratula australis</i>	Australian painted snipe	EN	VU
<i>Tyto novaehollandiae kimberli</i>	Masked owl (mainland Top End)	VU	VU
Fish			
<i>Pristis clavata</i>	Dwarf sawfish	VU	VU
<i>Pristis microdon</i>	Freshwater sawfish	VU	VU
<i>Scortum neili</i>	Angalarrri grunter	-	VU
Invertebrates			
<i>Mesodontrachia desmonda</i>	Desmond's land snail	-	CE
<i>Mesodontrachia fitzroyana</i>	Fitzroy land snail	EN	CE
<i>Setobaudinia victoriana</i>	Victoria's land snail	-	VU

CE - Critically endangered EN - Endangered VU - Vulnerable

Scientific name	Common name	EPBC Act Status	NT Conservation status
Mammals			
<i>Dasyuroides byrnei</i>	Kowari	VU	Extinct
<i>Hipposideros inornatus</i>	Arnhem leaf-nosed bat	EN	VU
<i>Hipposideros stenotis</i>	Northern leaf-nosed bat	-	VU
<i>Isoodon auratus</i>	Golden-bandicoot	VU	EN
<i>Macrotis lagotis</i>	Greater bilby	VU	VU
<i>Mesembriomys gouldii</i>	Black-footed tree-rat	EN	VU
<i>Mesembriomys macrurus</i>	Golden-backed tree-rat	-	CE
<i>Notomys aquilo</i>	Northern hopping-mouse	EN	VU
<i>Phascogale pirata</i>	Northern brush-tailed phascogale	VU	EN
<i>Rattus sordidus</i>	Canfield rat	-	CE
<i>Rattus tunneyi</i>	Pale field-rat	-	VU
<i>Saccolaimus saccolaimus</i>	Bare-rumped sheath-tailed bat	VU	-
<i>Trichosurus vulpecula vulpecula</i>	Common brushtail possum	-	EN
<i>Zyomys palatalis</i>	Carpentarian rock-rat	EN	CE
Reptiles			
<i>Acanthophis hawkei</i>	Plains death adder	VU	VU
<i>Bellatorias obiri</i>	Arnhem land skink - (previously Arnhemland Egrnia)	EN	EN
<i>Caretta caretta</i>	Loggerhead turtle	EN	VU
<i>Chelonia mydas</i>	Green turtle	VU	-
<i>Ctenotus rimacola camptris</i>	Victoria River District blacksoil ctenotus (Keep River/Ord)	-	VU
<i>Eiseya lavarackorum</i>	Gulf snapping turtle	EN	-
<i>Lepidochelys olivacea</i>	Olive ridley	EN	VU
<i>Natator depressus</i>	Flatback turtle	VU	-
<i>Varanus mertensi</i>	Merten's water monitor	-	VU
<i>Varanus mitchelli</i>	Mitchell's water monitor	-	VU
<i>Varanus panoptes</i>	Floodplain monitor (previously Yellow-spotted monitor)	-	VU

Sites of conservation significance in the Gulf Savanna

Site name	Significance	World heritage area	Ramsar	% Protected
Wollogorang and China Wall sandstone ranges	National			-
Birrindudu wetlands	International			-
Borrooloola area	National			14.9
Keep River area	International			32.4
Legune coastal floodplain	International			-
Mataranka thermal pools	National			66.1
McArthur River coastal floodplain	International			3.7
Nongra Lake	National			-
Sir Edward Pellew island group	International			29.4
Victoria River middle reaches and Gregory area	International			40.5
Yinberrie Hills	National			8.1
Limmen Bight and associated coastal floodplains	International			10.9
Western Arnhem Plateau	International			79.3



Weeds of the Gulf Savanna

Source: nt.gov.au/environment/weeds

Category 1 - Priority weeds for eradication - widely considered feasible to eradicate, very high risk with isolated/restricted distributions

Scientific Name	Common Name	Declared NT	WoNS
<i>Annona glabra</i>	Pond apple	A	Yes
<i>Cabomba caroliniana</i>	Cabomba	A	Yes
<i>Chromolaena odorata</i>	Siam weed	C	-
<i>Cryptostegia grandiflora</i>	Rubber vine	A	Yes
<i>Eichhornia crassipes</i>	Water hyacinth	A	Yes
<i>Neptunia oleroides, Neptunia plena</i>	Water mimosa	A	-
<i>Sagittaria platyphylla</i>	Sagittaria	A	Yes

Category 2 - Priority Weeds for strategic control - high impact on land managers, economic/environmental values - typically have statutory weed management plan

Scientific Name	Common Name	Declared NT	WoNS
<i>Andropogon gayanus</i>	Gamba grass	A/B (zoned)	Yes
<i>Cenchrus polystachios</i>	Mission grass, perennial	B	-
<i>Cryptostegia madagascariensis</i>	Rubber vine, ornamental	A	-
<i>Hymenachne amplexicaulis</i>	Olive hymenachne	B	Yes
<i>Jatropha gossypifolia</i>	Bellyache bush	A/B (zoned)	Yes
<i>Mimosa pigra</i>	Mimosa	A/B (zoned)	Yes
<i>Parkinsonia aculeata</i>	Parkinsonia	B	Yes
<i>Salvinia molesta</i>	Salvinia	B	Yes

Category 3 - Weeds of concern - have been identified by stakeholders as posing a threat, but without Territory plans or strategies for control

Scientific Name	Common Name	Declared NT	WoNS
<i>Themeda quadrivalvis</i>	Grader grass	B	-
<i>Cenchrus pedicellatus</i>	Mission grass, annual	Not declared	-
<i>Hyparrhenia rufa</i>	Thatch grass	A	-
<i>Lantana camara</i>	Lantana	B	Yes
<i>Leucaena leucocephala</i>	Coffee bush	Not declared	-
<i>Sporobolus natensis and S. pyramidalis</i>	Giant rats tail grass	Not declared	-

Category 4 - Hygiene and biosecurity weeds - low risk, but have local impacts, so it is important for landowners to control these species

Scientific Name	Common Name	Declared NT	WoNS
<i>Cenchrus echinatus</i>	Mossman River grass	B	-
<i>Hyptis suaveolens</i>	Hyptis	B	-
<i>Senna alata</i>	Candle bush	B	-
<i>Senna obtusifolia</i>	Sicklepod	B	-
<i>Senna occidentalis</i>	Coffee senna	B	-
<i>Sida acuta, Sida cordifolia, Sida rhombifolia</i>	Sida	B	-
<i>Stachytarpheta spp.</i>	Snakeweed	B	-
<i>Xanthium strumarium</i>	Noogoora burr	B	-

Category 5 - Alert weeds for eradication on detection - potential to have a high level of impact should they become established

Scientific Name	Common Name	Declared NT	WoNS
<i>Alternanthera philoxeroides</i>	Alligator weed	A	Yes
<i>Limnobiium laevigatum</i>	Amazon frogbit	C	-
<i>Limnocharis flava</i>	Limnocharis (Yellow Burrhead)	C	-
<i>Parthenium hysterophorus</i>	Parthenium weed	A	Yes

WONS - Weed of National Significance

Class A - Eradicate

Class B - Control

Class C - Prevent entry (Note: All Class A and Class B weeds are also considered to be Class C weeds.)

Feral animals of the Gulf Savanna

Category	Animal
Amphibians	Cane toads
Birds	Barbary dove
	Common Starling
	Eurasian Tree Sparrow
	Rock Dove
	House sparrow
Invertebrates	Big-headed ants
	Common Honeybee
	Ghost Ant
	Ginger Ant
	Singapore Ant
	Tropical Fire Ant
	Yellow Crazy Ant
	Exotic invertebrates
Mammals	Banteng
	Brown rat
	Feral buffalo
	Feral camel
	Feral cattle
	Feral donkey
	Feral fox
	Feral pig
	Feral rabbit
	House mouse
	Rusa deer
	Sambar deer
	Wild dog
Reptiles	Asian House Gecko
	Flower-pot Blind Snake



Source: nt.gov.au/environment/animals/feral-animals



