TiWi ISLANDS

INDIGENOUS PROTECTED AREA

Plan of Management

2023-2033

"Just as Tiwi traditional owners understood and cared for our land when we used it for the traditions in the past, the new generations of Tiwi land managers need to understand and care for it now and into the future.

To keep our country healthy, our people healthy and our culture strong, we need to bring together our knowledge of the past with new ways of doing things today. A Tiwi IPA will help us to continue to look after our country and our culture for all the generations to come."

— **Gibson Farmer Illortaminni**
Tiwi Land Council Chairman

Tiwi Islands Indigenous Protected Area Plan of Management 2023–2033, Northern Territory, Australia

The following people are acknowledged for their contribution to the development of our Plan:

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Aboriginal and Torres Strait Islander people are advised that this document contains images of deceased people.

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SUMMARY

The Tiwi Islands are located north of Darwin in the Northern Territory and include Australia's second and fifth largest islands – Melville and Bathurst – and numerous smaller islands. They cover an area of approximately 8,000 square kilometres and have more than a thousand kilometres of coastline. There has been an unbroken history of occupation and ownership of the islands for many thousands of years by Tiwi people, who possess a distinct culture and language.

The Tiwi Islands are a biodiversity haven, supporting a very high diversity of plant and animal species, including many not recorded anywhere else in the world. This diversity includes 19 threatened plant and 31 threatened animal species, and healthy populations of small mammal species that have undergone recent dramatic declines on the mainland. The Islands contain the NT's best-developed eucalypt forests, along with an unusually high density and extent of rainforests, reflecting the significantly higher rainfall than on the mainland. The Tiwi Islands coastal and marine environments support nationally significant aggregations of seabirds, shorebirds, and marine turtles, including the largest known colony of Crested Terns in the world, and the waters around the north of the islands have national significance for sea-grass beds and dugongs.

Although Tiwi Traditional Owners have long been aware of the outstanding cultural and biodiversity significance of their Islands there are no conservation reserves – in the past they weren't considered necessary for the preservation of their country's biodiversity values.

However, the Tiwi Islands are facing increased natural and cultural resource management challenges and Traditional Owners, increasingly concerned about the future of their Islands, people and culture, now recognise the importance and value of the Australian Government's Indigenous Protected Area program. The Tiwi Islands Indigenous Protected Area is a landmark endeavor by the Tiwi people. It consolidates their long-term commitment to sustainable land management, preservation of cultural heritage, and support of the Tiwi Ranger Program.

Vision for a Tiwi IPA

Our plan is dedicated to the memory of Mr W. Rioli, a proud Munupi man, inspiring leader, and role model, who led the Tiwi Land Ranger Program for 14 years until he sadly passed away in July 2022.

Mr Rioli shared our vision for an IPA and played a key role in its planning and development. He saw land and sea management as an opportunity to harness Tiwi skills and knowledge to generate employment and income, while protecting our Islands' exceptional environmental and cultural values for future generations.

He was a leader in fire management, expertly weaving traditional knowledge and culture with western approaches, and worked tirelessly to establish the Tiwi Fire and Carbon Project, now a successful carbon farming business 100 per cent owned and operated by Tiwi.

"Tiwi people have always understood and cared for country – but now we need to use new knowledge because the world around us is changing."

– MR W. RIOLI

Tiwi Country **– healthy land and sea protected and cared for by our Rangers with Traditional Owners' support**

Tiwi Culture **– staying strong and relevant, particularly to our young people, and enriching our lives now and into the future**

Our Islands and our Customs **– continuing as firm foundations for our health, happiness, and prosperity**

How to use this Plan

This Plan of Management was developed through a combination of approaches including consultations with all eight Tiwi traditional landowner groups, a series of planning workshops with a landowner nominated planning group, senior cultural advisors and Tiwi Rangers, and review of existing community plans such as the Tiwi Islands Regional Natural Resource Management Strategy. IPA planning workshops were structured around Open Standards for Conservation practice. This Plan of Management documents the management aspirations and priorities of Traditional Owners and contains strategies directed at achieving a management regime consistent with the IUCN reserve Category VI (see page 23). The provisions of the Plan underpin the work program and priorities of the Tiwi Rangers and will guide the development and implementation of other community-based programs in the IPA.

The Plan is presented in three parts.

1) **Part A** sets the scene. It describes our country, and us – the Tiwi. It also defines our IPA initiative and its significance as a nationally and internationally recognised protected area.

2) **Part B** is our Plan. It outlines what we value most about our country, the issues that threaten those values and the strategies we believe will reduce the threats over time.

3) **Part C** is a separate strategy. It is a mini plan for adaptive management and includes a summary of our strategies and a framework for monitoring, evaluating, reporting and improving our work over time.

Additional information, including plant and animal lists and themed maps, are provided as **Appendices**.

"Having this IPA will leave something for the future. We will have this IPA our whole lives, we can pass it on to the next generation. They will have it for their whole lives too. This is very good – good for country, good for culture, good for Tiwi!"

—TIWI TRADITIONAL OWNER

PART A: OUR PEOPLE, OUR PLACE

TIWI COUNTRY

The Islands

The Tiwi Islands group is part of the Northern Territory in Australia and consists of two large, inhabited islands – Melville and Bathurst, originally called Ratuwati Yinjara (two islands) – and numerous smaller uninhabited islands including Yirripurlingayi (Buchanan), Harris, Seagull, Purrapinarli (Karslake), Yipinuwurra (Clift), Turiturina, Matingalia, Nodlaw, Muma (East Vernon), Warabatj (Northwest Vernon), and Kulangana (Southwest Vernon). The Vernon Islands are known collectively as Potinga. The Tiwi Islands cover an area of 718,626 hectares and have more than a thousand kilometres of coastline.

Most of the smaller islands lie close to the Tiwi coastline; however, Kulangana (Southwest Vernon Island), is less than five kilometres from the NT mainland coast. Melville Island is the largest island in the group and, at 5,788 square kilometres, is the second largest island off the Australian mainland after Tasmania. Bathurst and Melville Islands are separated by the Apsley Strait, which is approximately 70 kilometres long, and ranges in width from 600 metres to six kilometres. The current isolation of the Tiwi Islands is a result of rapid sea level rise between about 12,000 and 8,000 years ago, which split Melville Island from Bathurst Island along the narrow Apsley Strait and sundered both from the mainland.

According to Tiwi culture, the Islands were created at the beginning of time during the dreaming or Palaneri. Before this time there was only darkness, and the earth was flat.

> *"Long ago there were no people on the earth and darkness covered the land. There were no rivers or billabongs, there was no water in the streams, no hills or valleys. There were no animals living in the sea, no fish, turtles or crocodiles.*
>
> *One day Murntankala dug her way from a cave underground and arrived on earth. When she knelt to rest, her children cried because they were hungry. Murntankala had no milk so she looked around for food for her children, and for soft ground where she could lay them, but she could find nothing. There was no grass, no water nor any bushland where they could look for food.*

So then she began to crawl at that place where she had arrived on the earth. When she crawled along she made a large hole behind her and the seawater began to rush in behind her back. She was facing towards where the sun now rises, and her face was turned to that eastern side. She crawled along and after a long time returned to where she first started. And so she created these two Islands."

— (KERINAIUA 1989)

Landscape

Most of the Tiwi Islands consists of gently undulating country with elevations of less than 50 metres above sea level. The higher country on Bathurst Island reaches elevations of 100 metres, while on Melville Island the maximum elevation is about 140 metres above sea level. Both islands comprise a central plateau, mostly composed of Tertiary laterite and sandstones, surrounded by recent depositional material. The main land systems are the Melville (50 per cent of land area), Pickataramoor (13 per cent) and Littoral_1 (17 per cent) systems, which are dominated by Kandosols (deep red and yellow sandy soils), Leptic Rudosols (rocky, poorly developed soils) and Hydrosols (tidal salt flats), respectively. The coastal plains are made up of mangrove-lined tidal flats extending inland along river channels, and deposits of beach and littoral sand that have accumulated on the western and northern coasts.

Climate and Seasons

The Tiwi Islands have a dry monsoonal climate, characterised by a hot and humid wet season and a hot dry season. Winds are mostly north-westerly in the wet season, and south-easterly in the dry season. The mean monthly maximum temperature is 32.2°C and minimum temperature is 22.2°C The Tiwi Islands receive the Northern Territory's highest rainfall, with around 90 per cent falling between November and April. Mean annual averages range from 1200 mm to 1400 mm on eastern Melville Island, to above 2000 mm in northern Bathurst Island and north-western Melville Island. Tiwi people recognise three main seasons and 13 sub seasons. From December to March is Jamutakari, the wet season, from April to August is Kumunupunari, the dry season of fire and smoke, and from late August to November is Tiyari the season of hot weather and high humidity. The onset and duration of seasons varies from year to year according to climatic conditions.

Hector is the name given to a cumulonimbus, or thundercloud, that forms nearly every afternoon above the Tiwi Islands during Tiyari and Jamutakari (September to March) each year. Hector is known as one of the world's most consistently large thunderstorms, reaching heights of approximately 20 kilometres. It is responsible for bringing significant early rainfall to the Islands, resulting in a slightly longer wet season than that on the Australian mainland. Named by pilots during the Second World War, the recurring position of Hector made it a navigational beacon for pilots and mariners in the region. Hector is caused primarily by a collision of several sea breeze boundaries across the Tiwi Islands and is known for its consistency and intensity. Lightning rates and updraft speeds are notable aspects of this thunderstorm.

TiWi SEASONS

Jamutakari

The call of Alarpiningwani, the Common Koel, tells us that Jamutakari (the wet season) is on its way. It's the time of Mumpikari – the season of the muddy possum tracks. When the first rain falls Wuninga (Northern Brushtail Possums) leave muddy footprints on tree trunks as they return from foraging on the ground. During Jamutakari, Pakitiringa (rain), carried by the north-west wind, Wunijaka, falls every day, filling the swamps, creeks, and rivers. The rain is accompanied by a great deal of Pumurali (lightning) and thunder. The sight of Japarrika (Greater and Lesser Frigatebirds) near the coast or roosting in mangroves warns us of incoming storms or cyclones. Jamutakari is also the season when mangrove worms breed, both Yurwurli (sweet) and Wakatapa (cheeky). It is also the season when Yirrikipayi, Saltwater Crocodiles, build nests and lay eggs. A lot of bush foods are available including Yankumwani (*Buchanania obovata*), Pinyama (*Syzygium suborbiculare*), Pirlamunga (*Terminalia ferdinandiana*), Jimijinga (*Persoonia falcata*), Parntirringa (*Flueggea virosa*) Wurnika (*Vitex glabrata*) and Jaliwaki (*Brachystelma glabriflorum*).

As the monsoonal rains ease and Jamutakari draws to a close, a highly significant event in our calendar takes place – the Kurlama ceremony. These ceremonies centre around a yam – Kurlama (*Dioscorea bulbifera*) – that is harvested and cooked in a specially made earth oven. The call of Mapulinka (Emerald Dove) tells us the yams are ready to eat. Songs are sung by men and women, accompanied by clapping sticks at these ceremonies, hence our name Tawutawungari – the season of clap sticks – for this time of year.

Many trees and shrubs are now flowering, and we call this season Wurrijingari. Muma (Torres Strait Pigeon) migrate after gorging on Jora (*Carpentaria acuminata*) fruit. Marakati (*Sorghum* spp.) grows tall and produces seed heads, and Kurampuka (crabs) have soft shells and plenty of meat.

Kumunupunari

The drying landscape signals the start of Kumunupunari when there is very little or no rainfall.

The first part of Kumunupunari is Wurringawunari – the season of the 'knock-em-downs' – when dry winds blow in from the south-east, flattening Marakati and drying up surface water. The flowers of Jarrikarli (*Acacia auriculiformis* and *Acacia latescens*) tell us that Martapani (Crested Tern) eggs have been laid on Seagull Island and are ready for collection. Jarrikarli flowers also let us know that Kitirika (Green Turtles) are fat and ready to hunt.

As Kumunupunari progresses Wuninga fatten up as they feast on Wurringilaka (*Corymbia nesophila*) flowers and buds. Timirraringa (*Eucalyptus miniata*) is also in flower – a sign that Mawunga (native beehives) are full of honey.

Kimirrakinari, is the season when we burn our country. It begins during late April and May and lasts until the end of July. Pumutingari – the season of the wind that flakes skin – also occurs at this time along with Yirriwinari and Munuputari – the seasons of cold. These cold weather seasons only last a week or two and are signalled by the flowering of Wurritjinga (*Corymbia confertiflora*). It's also Kumwari – the season of fog – when the cooler temperatures bring morning mist.

Tiyari

Temperatures start to rise and our next main season – Tiyari, the time of hot weather and high humidity – begins. Creeks and waterholes dry up during the sub-season of dry creek beds – Yartupwari – and Punkaringa (*Melaleuca* spp.) flowers tell us that Kurluwarringa (Stingrays) are fat and ready for hunting.

This is followed by Milikitorinari - the season of hot feet. During this time we collect bush foods in the mangroves and jungle patches, rather than the hot, dry plains. As creeks and billabongs dry up it is easier to hunt Jurriyi (Whistling Ducks), Mayimampi (Magpie Geese) and Tirrintirri (Burdekin Ducks).

Milikitorinari is followed by Pumwanyingari – the season of thunder – during November and December. There is little rain at this time of year and there are often Rakungumpara (cloudy skies). Kurukurari - the season of the Mangrove Worm - also occurs at this hot and humid time. When we see Minta's (*Cycas armstrongii*) orange seeds we know that Wakatapa, the cheeky Mangrove Worm, is sweet and good to eat.

Once Jamutakari arrives in late December the cycle of our seasons begins all over again.

Animals

" Before she left, Murntankala covered the islands she had created with plants and filled the land and sea with living creatures. Finally, the land was prepared for her children and for the generations of Tiwi who followed. "

— (KERINAIUA 1989)

Although Tiwi people have long held a deep knowledge of the animals of their lands, the first comprehensive documentation of Tiwi fauna was undertaken in the 1990s when 171 animal taxa were recorded. The majority were bird species, representing one third of the total listing. The next most recorded groups were reptiles, fish, insects, mammals, shellfish and molluscs, and crustaceans.

Mammals

There are 34 native mammal species on the Tiwi Islands. Compared to other Australian islands this diversity is exceptional, and especially remarkable given the apparent absence of widespread mainland species such as the Northern Quoll, Antilopine Wallaby and Short-beaked Echidna.

Significantly, the Tiwis retain substantial populations of medium-sized mammals that have undergone dramatic recent decline on the mainland. The islands are a key refuge for eight threatened species, including healthy populations of the nationally Endangered Brush-tailed Rabbit-rat (*Conilurus penicillatus*) and Northern Brush-tailed Phascogale (*Phascogale pirate*).

Feral mammals on the islands include cats, pigs, water buffalos and horses. There were some cattle on the islands historically, but they are not believed to be present now.

Birds

A total of 233 species of bird have been recorded from the Tiwi Islands. The islands are identified as a Key Biodiversity Area by BirdLife International because they support relatively high densities of Red Goshawks, Partridge Pigeons, and Bush Stone-curlews and up to 40,000 shorebirds on tidal flats, particularly on the south-east of Melville Island.

A record number of 12,000 Great Knots, more than one per cent of the global population, have been recorded surrounding the islands as well as Red-necked Stints, Greater and Lesser Sand Plovers, and Bar-tailed Godwits. Pirripatiriyi (Seagull Island), off the north-western tip of Melville Island, supports a breeding colony of about 60,000 Martapani (Crested Tern), the largest known colony in the world. Three colonies of Little Terns on the islands are considered of national significance.

Fifteen threatened bird species occur on the Tiwi Islands, including the endemic subspecies Tiwi Masked Owl (*Tyto novaehollandiae melvillensis*),

Tiwi Hooded Robin (*Melanodryas cucullata melvillensis*), Red Goshawk (*Erythrotriorchis radiatus*) and Horsfield's Bushlark (*Mirafra javanica melvillensis*). Up to 30 bird species known from the Tiwi Islands are listed in international treaties protecting migratory shorebirds. There is a single South Australian Museum specimen of an Emu purportedly from Melville Island, but this is likely a location error as there is no other evidence of this species occurring on the Tiwi Islands.

Reptiles and frogs

Including sea turtles, a total of 92 reptile species are known from the Tiwi Islands, while the native frog fauna extends to 18 species. Six reptile species found on the Tiwi Islands are considered threatened - four are marine turtles in global decline, two are large goannas impacted on the mainland by Cane Toads but secure on islands. Considering the IPA's size, proximity, and recent (Ice Age) connectivity to the mainland, these are relatively low regional tallies. Several factors may account for this disparity, not least that the Tiwi Islands' reptile fauna remains poorly surveyed.

The Tiwi Islands lack some key mainland habitats, in particular rock massifs and extensive floodplains. This factor alone explains the absence of groups such as saxicoline frogs. Island biogeography also predicts less diverse assemblages, and indeed many common mainland species are unknown on the Islands. Examples exist across most groups and include species such the Slaty-grey Snake (*Stegonotus cucullatus),* Arafura Filesnake (*Acrochordus arafurae*), Mitchell's Water Monitor (*Varanus mitchelli*), Northern Hooded Scaly-Foot (*Pygopus steelescotti*), Coastal Snake-Eyed Skink (*Cryptoblepharus* litoralis) and Chameleon Dragon (*Chelosania brunnea*).

A further suite of species recorded only once are also probably absent from the Islands. Iconic species such as the Freshwater Crocodile

(*Crocodylus johnstoni*), Olive Python (*Liasis olivaceus*), Death Adder (*Acanthophis rugosus*), Spiny-tail Gecko (*Strophurus ciliaris*) and Bearded Dragon (*Pogona microlepidota*) are conspicuous, unmistakable species that if present should be well known.

No reptiles or frog species are endemic to the Islands, but the presence of the Translucent Litter-Skink (*Lygisaurus macfarlani*) is noteworthy. This lizard represents a small group of species sharing a distribution across Cape York, northeast Arnhem Land, and southern New Guinea. It is possible that other members of this 'Arafuran' group occur on the Tiwi Islands, for instance the Black-Tailed Bar-Lipped Skink (*Glaphyromorphus nigricaudis*).

Two naturalised reptile species occur on the islands, the Flowerpot Snake (*Indotyphlops braminus*) and the Asian House Gecko (*Hemidactylus frenatus*). Neither are species of concern. Cane Toads (*Rhinella marina*) have not established on the islands but pose a serious environmental threat. The Tiwi Islands are an important refuge for reptiles and frogs impacted by Cane Toads on the mainland.

Sea turtles

Tiwi people have strong cultural and subsistence links to sea turtles and the sandy beaches on the west coast of Bathurst Island and the north coast of Melville Island are very important for sea turtle nesting. Nesting is dominated by Flatback (*Natator depressus*) and Olive Ridley Turtles (*Lepidochelys olivacea*), but Green (*Chelonia mydas*) and Hawksbill Turtles (*Eretmochelys imbricate*) also nest on Tiwi beaches. Each of these marine turtle species is listed as threatened.

Green Turtles are the main turtles harvested in the water while eggs of all sea turtle species are collected on land. Traditional hunting mainly takes place close to communities, leaving most of the coastline free from harvesting pressure. When Jarrikarli (*Acacia auriculiformis*) flowers it indicates that Green Turtles are fat and ready for hunting. The Tiwi Island rookeries at Pirripatiriyi (Seagull Island) and the north-west coast of Melville Island are among the largest in Australia for Olive Ridley Turtles.

Invertebrates

The ant fauna of the Tiwi Islands has high national significance and includes many species occurring nowhere else in the world. More than 200 species of ants have been recorded to-date on the Tiwi islands and Tiwi rainforests have especially high levels of ant endemism. The Tiwi ant fauna includes several genera and species-groups that do not occur on the NT mainland. Six pest ant species have been recorded on the islands - of

most concern are Tropical Fire Ants (*Solenopsis geminata*) Singapore Ants (*Trichomyrmex destructor*) and African Big-headed Ants (*Pheidole megacephala*).

Two dragonfly species are restricted to the Tiwi Islands and a skipper butterfly is known only from Bathurst Island. Other invertebrates, however, are not as well known. Four invertebrate species on the Tiwi Islands are listed as threatened in the NT including two land snails (*Amphidromus cognatus* and *Trochomorpha melvillensis*), Dodd's Azure Butterfly (*Ogyris iphis doddi*), and Atlas Moth (*Attacus wardi*).

Plants

Scientists have recorded at least 1200 native plant taxa on the Tiwi Islands. Eleven plant species have been recorded only on the Tiwi Islands and nowhere else in the world, and a further 17 are known in the NT only from the Tiwi Islands (but also occur beyond the NT, mostly in north Queensland, New Guinea, Indonesia, and the Philippines).

A total of 19 Tiwi plant species are listed as threatened, eight at a national level. An additional 36 plant species have been listed as 'Near Threatened' and 41 as 'Data Deficient' under the Territory Parks and Wildlife Conservation Act, and many of the latter may qualify as threatened in future reviews of their conservation status. At least 200 native plants are used traditionally by Tiwi people for food, in art and as construction material. Most of these plants are associated with rainforest and eucalypt open forests.

The vegetation of the Tiwi Islands includes open eucalyptus forest and woodlands, Punkaringa *Melaleuca* (paperbark) forest, monsoon rainforest, *Acacia* shrublands, treeless plains, freshwater swamps, sedgelands, grasslands, mangroves, coastal dunes, and saltmarsh. Tall forests dominated by Jukwartirringa (*Eucalyptus tetrodonta*), Timirraringa (*Eucalyptus miniata*) and Wurringilaka (*Corymbia nesophila*) cover about 79 per cent of the islands and Tiwi Eucalypts forests, which are found on undulating rises and low-lying plateaux, include the best developed in the NT. The lower open woodlands are composed of a mix of Eucalypt species, some of which are semi-deciduous, and generally occur on more poorly drained sites on foot slopes and flat areas behind the coastal plains. Mixed Karntirrikani (*Callitris intratropica*/*Eucalypt*) open forests are found on drier side slopes and sand sheet areas in the western area of Melville Island.

There are a large number of monsoon rainforest patches on the Tiwi Islands supporting a unique diversity of species, including many endemic species. Creek headwaters, springs and permanent streams support evergreen monsoon vine forests. Dry, semi-deciduous monsoon vine forests and thickets are common in coastal areas and below rocky slopes in seepage zones. Ten monsoon rainforests on the Tiwi Islands are listed on the Register of the National Estate for their natural values, including: Big Pig Jungle, Ilinga Jungle, Hanguana Jungle, Gully Gully Jungle, Tarracumbie Creek Jungle, Jump Up Jungles, Imanawudi Jungle, Third Spring Jungle, East Tjipripu Spring Jungle and Mangkipp Jungle.

Punkaringa *Melaleuca* spp. open forest occur fringing spring monsoon vine forests or fringing more permanent freshwater streams.

Mirriparinga (mangrove) closed forests are well developed on the Tiwi Islands in comparison to most areas of the Top End mainland. These floristically diverse and tall forests occur on coastal mud flats, estuaries and fringing tidal waterways and creeks. Extensive areas of saline flats supporting samphires and mud flats also occur on the Islands, especially in the east. Two of the three known NT populations of Rola (Mangrove Palm – *Nypa fruticans*) occur on the Tiwi Islands.

Freshwater and estuarine swamps are well developed in Andranangoo Creek on Melville Island and Dudwell Creek on Bathurst Island. Grasslands and sedge lands occur in the upper reaches of creeks on open drainage depressions. Grasslands are well developed around Cape Gambier on Melville Island and in conjunction with treeless plains on both Islands. Treeless plains, or sparsely wooded plains, occur as distinctive and unusual vegetation patterns on both Islands and are most conspicuous in the Yapilika area on Melville Island.

Forestry Plantations

The Tiwi Islands has a long history of forestry. A small sawmill on Melville Island provided Karntirrikani or native Cypress Pine (*Callitris intratropica*) for the rebuilding of Darwin after the 1897 cyclone. The first forestry plantations of an exotic pine, Caribbean Pine (*Pinus caribaea*), were trialled in the 1950s and 60s. Within a decade Caribbean Pine had shown real potential and was adopted for the main thrust of future forestry development. When the NT Government ended its involvement in Tiwi forestry in 1986, more than 4900 hectares of Caribbean Pine, Karntirrikani, and the first trials of *Acacia mangium* were handed over to the Tiwi Land Council. In 2001, the Tiwi Land Council and Australian Plantations Group (later named Sylvatech) commenced a major 35,000-hectare (2.1 per cent of the islands) expansion of *Acacia mangium* plantations on Melville Island to supply woodchips.

In 2005, Sylvatech were bought out by Great Southern Plantations, who went into receivership in 2009. Tiwi leaders then formed their own forestry company, Tiwi Plantations Corporation Trust, to oversee the management and harvest of their plantations. Tiwi Plantations Corporation Pty Ltd is the Trustee company for the Tiwi Plantations Corporation Trust. If Traditional Owners approve a second rotation in 2023, *Acacia mangium* plantations will be replaced with *Eucalyptus pellita*.

Threats to Tiwi Values

Tiwi see their Islands as theirs, and theirs alone, created for them by creation figures at the dawn of time. Tiwi perspectives of country differ markedly from those of Westerners. Their worldview captures not only the material aspects of landscape, wildlife, and climate, but ethereal qualities such as spirits, forces, signs, stories and songlines of ancestors who shaped the land. Consequently, Tiwi value their country dearly, and worry deeply about threats to its health and cultural integrity.

Threats to Tiwi values fall into four categories:

1) **Threats that are widespread across northern Australia.**
2) **Threats peculiar to island ecosystems.**
3) **Threats associated with Tiwi economic enterprises.**
4) **Threats linked to the interruption of traditional culture and practices.**

1) North Australian threats include climate change, feral pests, weeds, and pathogens and are best managed in cooperation with agencies or partners who can share funding, experience, and expertise. Widespread threats are often hard to solve at a local level. Reducing impacts or adapting to them may be the only viable approach.

2) Island-specific issues are a product of isolation. They centre on environmental assets that have evolved in seclusion; unique plant and animal communities disproportionately impacted by introduced weeds, pests and diseases. Avoiding the introduction of exotic species through effective quarantine measures is the best strategy for this category of threats.

3) In contrast to most other NT Aboriginal lands, risks associated with commercial enterprises are a serious consideration on the Tiwi Islands. Broadscale clearing for forestry and the spread of the introduced plantation species *Acacia mangium* into native bushland are clear impacts. Less obvious are the risks associated with bulk fuel storage in the Apsley Strait, or inadequate rehabilitation of legacy mines. These threats are beyond the capacity of the IPA to address – they must be dealt with as part of the planning and operation of individual enterprises.

4) The most pervasive threats are those linked to the loss of cultural knowledge, skills, and practices. Traditional land management including burning, hunting and harvesting has shaped the Islands' ecosystems over tens of thousands of years. Therefore, it is unsurprising that Tiwi flora and fauna are affected by the cessation of these traditional practices. Measures to address these threats include programs that value and reinvigorate Indigenous knowledge and skills. Projects designed to emulate traditional practices at a landscape scale, such as the Tiwi Fire and Carbon project, are also valuable.

The inevitable interaction of these threats to Tiwi values are likely to result in significant and severe consequences. Consequently, land management strategies need to be well integrated, wholistic, and most importantly, implemented by Tiwi, for Tiwi.

TIWI PEOPLE

“ The Tiwi are today arguably Australia’s most intact Aboriginal group. Certainly, they retain their fiercely possessive attitude toward their land and their culture, and they have a resolute determination to maintain controls over those essentials of Tiwi integrity.”

— PETER FORREST (1998)

The Tiwi People have occupied their land for many millennia. Through much of this time the Tiwi Islands were connected to the mainland via a land bridge through what is now Coburg Peninsula. Rapid sea level rise at the end of the last Ice Age (8,000 to 12,000 years ago) separated the islands from the mainland and each other. This event, described in the Tiwi legend of *Murntankala, left* the Tiwi to develop a unique and resilient culture over thousands of years of isolation. Tiwi people have long considered themselves distinct from other Australian First Nations people, reflected in the translation of ‘Tiwi’ as ‘*we, the only people*’.

Early descriptions of Tiwi Islanders gave special attention to the high quality of their physical health. Tiwi believe that, prior to European arrival, every Tiwi person was expected to live into old age; their life would only be cut short by fighting or an accident. At the time of European contact, Tiwi still lived predominantly in small bands that spread across the landscape for most of the year. Each day women and men would venture out in small groups to collect food. Older women were acknowledged as the primary food collectors who taught younger women foraging skills, much of which occurred within the mangroves.

Through the benefits of an island society still rich in natural resources and tradition Tiwi culture remains vibrant and strong. Tiwi are adept at walking in two worlds and are renowned for their cultural distinction as well as for their achievements in the mainstream spheres of politics, football, and business. Key aspects of Tiwi culture continue to be passed down through the generations and continue to provide the basis of Tiwi peoples’ worldview.

The Tiwi language has undergone significant change over the past 100 years and what is commonly referred to as ‘old Tiwi’ is no longer spoken. Most senior elders converse in ‘modern Tiwi’, which incorporates English words, and young people now speak a highly blended ‘new Tiwi’ which includes even more English. Language preservation is identified by elders as a key component of maintaining culture, promoting wellbeing, and instilling a sense of pride in future generations.

“ Our language is key to everything, to keep culture strong and healthy.”

— TIWI TRADITIONAL OWNER

Skin Groups

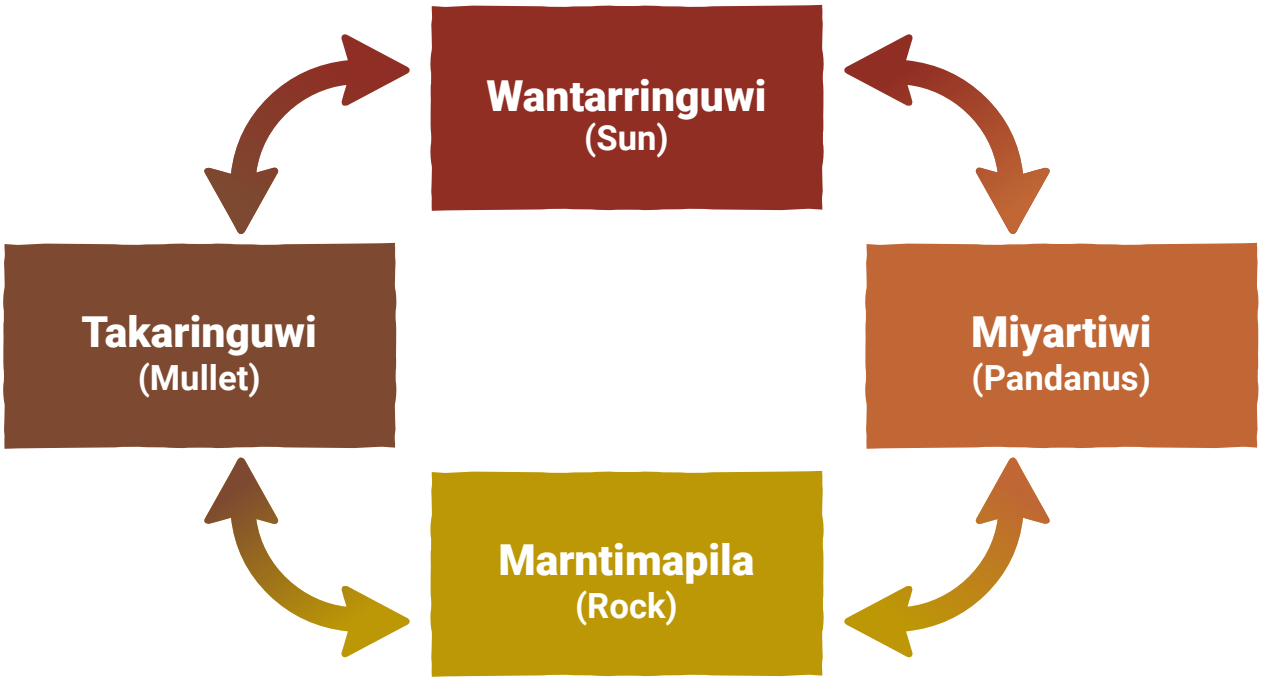
All Tiwi are born into a skin group or 'Yiminga' and a linked kinship system. The skin group system is matrilineal and represents important foundations for Tiwi life, with group members providing physical, moral, and emotional support to fellow members throughout their lives.

There are four Tiwi skin groups. (See diagram below). The skin-group into which each Tiwi is born determines who they may and may not marry. For example, a person in the Wantarringuwi group can marry someone from the Miyartiwi or Takaringuwi groups, but never someone from the Marntimapila group, or from their own group. Children are taught this from birth, so they understand the avoidance, familial and obligation relationships fundamental to Tiwi culture. For thousands of years the Tiwi peoples' complex kinship system safeguarded their genetic integrity, a crucial issue for an island-bound population.

Each Tiwi person has their own dreaming, or totem, and associated dance which they inherit from their father. Totems include Yirrikipayi (Crocodile), Jarrangini (Buffalo), Kitirika (Turtle), Tartuwali (Shark), Tarangini (Snake), Yingwati (Sugarbag), and Kirilima (Orange-footed Scrub Fowl). A Tiwi may not kill or eat their dreaming – it has a significant relationship with them that must be observed and respected. Children are encouraged to learn their dreaming dance at a very young age.

"Need to have respect for totem animals, like crocodile, not only the animal but the eggs too. We belong to those animals, they're our totems, they need to be respected."

– TIWI TRADITIONAL OWNER



Ceremonies

Ceremonies play a very important role in Tiwi culture and the most significant are Pukumani and Kurlama.

Pukumani

The Pukumani, or burial, ceremony is considered the most important ceremony in a Tiwi person's life: it ensures that the spirit of the dead person goes from the living world into the spirit world. The Pukumani, which takes place months after the deceased has been buried, allows Tiwi full expression of their grief, and provides a forum for artistic expression through song, dance, sculpture and body painting.

Tiwi believe that the dead person's existence in the living world is not finished until the completion of the ceremony. The final Pukumani is the climax of a series of ceremonies that continue for many months after burial and culminates in the erection of monumental tutini or Pukumani poles around the burial site. Tutini are carved from Kartukini (*Erythrophleum chlorostachys*) and are decorated to celebrate the dead person's life, status, and spiritual journey.

Kurlama

The Kurlama, or yam, ceremony takes place towards the end of Jamutakari, the wet season. It is an annual celebration of life and involves three days and nights of ritual body paintings, singing and dancing complete with the eating of yams according to a ritual custom.

According to Tiwi lore, not long before the death of Purrukapali, when all animals and birds were still men and women, Purutjikini, a Boobook Owl man and his wife Pintoma, a Barn Owl woman decided to perform the first Kurlama ceremony. The White-bellied Sea Eagle, Jirakati, was the first initiate and still wears the ceremonial paint. At the close of the creation period, the spirit performed a second and complete Kurlama ceremony. This included the preparation of the Kurlama yam (*Dioscorea bulbifera*) for food and the performance of all stages of initiation. At its completion, they agreed that this form of ceremony should always remain the same. When a gold ring forms around the moon towards the end of the wet season, Japara the moon man is performing Kurlama. Inside this ring a multitude of star people sing and dance Kurlama songs. This is the time to prepare for Kurlama, the annual celebration of life.

"We have Kurlama every year, singing for three days and three nights. We now start on a Friday, over the weekend because people work. We decide when it will happen, then we tell everyone. We sing. We sing about lost family, and then we sing more, about our mother-in-law, she gave us a fantastic daughter, we sing about that. We sing about the roads going to country, about our ancestors, making a track to our country, so we can visit our country, spend time there. We sing about our fathers, thank our father that brought us here, taught us about homelands, respect for country, we give names to the children, girls, and boys. All this happens at Kurlama."

– TIWI TRADITIONAL OWNER

Land ownership

"We have always said who can come to our country and who must go."

– TIWI TRADITIONAL OWNER

There has been an unbroken history of occupation and ownership of the Tiwi Islands by Tiwi people. European colonisation of mainland Australian did not result in displacement of Tiwi from their traditional lands. Tiwi have never surrendered their murrakupuni (land) and have proved through history that outsiders who want to visit their islands can only do so on Tiwi terms. Murrakupuni plays an important role in kinship and relationship networks, with each person belonging to a landowning group, and having connections to spatially defined areas. Similarly, there are aspects of managing and allocating land and natural resources that are inseparable from kinship and relationship ties.

While landowning rights are inherited from the father, the responsibility for the care of country comes through the mother's line. The Islands are divided into eight *murrakupuni* or clan estates, each belonging to a well-defined Tiwi landowning group – Malawu, Jikilaruwu, Wurankuwu, Mantiyupwi, Munupi, Marrikawuyanga, Wulirankuwu and Yimpinari. Delegates represent each of the eight clans on the Tiwi Land Council and on the Tiwi Resources Board.

Since 2007, the Tiwi Land Council has encouraged and supported landowner groups to establish their own companies to develop economic opportunities on their country. Mantiyupwi Pty Ltd was the first formed to maximise business opportunities through their Township Lease of Wurrumiyanga. Wurlirankuwu Pty Ltd at Milikapiti and Portaminni Pty Ltd at Wurankuwu followed in 2012, while Munupi Pty Ltd was established in 2013. Yimpinari Aboriginal Corporation was established in 2015 by landowners to take advantage of sand mining on their land, and in 2017 the Munupi Aboriginal Corporation was established. Landowner companies have their own directors, policies and procedures, and are independent of the Tiwi Land Council.

Post-European History

The story of Tiwi peoples' early contact history begins in the 17th century with the arrival of Makassan prau (Indonesian traditional boats) skippered by Makassarese people from southeastern Indonesia. The Malai-ui, as they were known, visited the islands in search of trepang and pearl shell. They gained the trust of Tiwi with steel parang (machetes) and other exotic goods which they exchanged for turtle shell and coastal access. The Tiwi relationship with Makassar traders lasted into the early 1900's and is thought to have greatly influenced Tiwi culture and society. Tools, technologies, terms, and customs acquired from the Indonesians were noted by early European visitors to the Islands. The most obvious signature of this long period of contact were the large dugout canoes deftly fashioned by Tiwi.

The first known written recording of a sighting of the Tiwi Islands was by Dutch navigator Pieter Pieterszoon in 1636. In 1644 another Dutch navigator, Abel Tasman sailed through the Dundas Strait between the Tiwi Islands and Cobourg Peninsula. Neither of these two established that the two islands were separate land areas.

Early contact with the Tiwi was characterised by violence and hostility. The first recorded contact was in 1705 when three Dutch ships led by Maarten van Delft spent several months charting the Islands' west and north coasts. Landing in several places in search of water and provisions, the expedition's journals and collected artifacts comprise the first detailed records of European contact with Indigenous Australians. Tiwi culture also chronicles this early contact, in stories and song that recount their meeting with Dutch sailors at Purrampunarli (Cape Lavery).

Tiwi had always been defensive of their country and culture, but tolerance of outsiders diminished with the arrival of Portuguese slavers from Timor in the 18th century. Waves of violent abductions made Tiwi hostile and suspicious. Trade with Makassans virtually finished and colonial mariners were fiercely repelled. It would be another 110 years before European visitors again landed on Tiwi shores. The 1818 expedition of Philip Parker King was, however, pivotal in confirming British interest in 'New Holland'. King finally established that there were two separate land areas and named them Bathurst Island and Melville Island. King's exploration led to the British becoming interested in establishing a settlement on the north coast of Australia, and in 1824 Fort Dundas was established on Melville Island near what is today Pirlangimpi. Continuing hostility between the British and the Tiwi along with other problems associated with the location led to the fort becoming abandoned in 1829.

The arrival of mainland buffalo hunters on Melville Island in 1895 effectively ended Tiwi's long cultural seclusion. Lured to the island by an estimated 25,000 animals, Joe Cooper and his Iwadja work team feature in Tiwi oral histories as a vanguard of frontier interactions. After a tense and sometimes violent start Cooper eventually forged a respectful relationship with Tiwi, in part mediated by his Tiwi wife, and on-going supply of goods such as calico and axes. As an off-season activity and as buffalo numbers became depleted, interest turned to cutting and milling the native Cypress Pine (*Callitris intratropica*) and three sawmills were established on Melville Island between 1895 and 1916.

Joe Cooper's time overlapped with the 1911 establishment of the Catholic mission by Father Francis Gsell at Nguiu (now Wurrumiyanga) on the south-eastern tip of Bathurst Island. From his camp at Paru Joe Cooper provided Cypress Pine (*Callitris intratropica*) for construction of mission buildings. Around the same time a number of major administrative changes, including separation and transfer of the NT from SA to the Commonwealth Government, saw increased State protections for Tiwi – but with this came increased intervention in their lives.

Governance

In 1928, the Tiwi population of 1,062 was based on nine 'bands' or tribes made up of smaller family or clan groups. These groups met continually for ceremony and to determine unified joint responses to external threats. By 1941 the Tiwi Islands had been declared Aboriginal Reserves, then in 1978, following the passage of the Aboriginal Land Rights (Northern Territory) Act (1976), they were subject to a successful land claim. This saw the creation Tiwi Land Council as a statutory authority administering the Tiwi Aboriginal Land Trust.

> ***"The Tiwi Land Council is primarily an expression of Tiwi traditions, going back more than 40,000 years."***

In the 1980s Tiwi gained local government authority with the establishment of Community Government Councils for Milikapiti, Pirlangimpi and Nguiu (Wurrumiyanga). In 2008, a local government rationalisation led to the creation of the Tiwi Islands Shire Council to administer all three communities, as well as several smaller outstations. In 2014 the Shire Council was elevated as the Tiwi Islands Regional Council. The communities of Nguiu (Wurrumiyanga), Milikapiti, Wurankuwu and Pirlangimpi are all subject to 99-year Township Leases.

In 1991, Tiwi Resources Pty Ltd was established to help Tiwi people benefit economically from land-use activities such as mining, carbon farming, fishing, and forestry on their Islands. Tiwi Resources is owned by the eight Tiwi landowner groups – Malawu, Mantiyupwi, Munupi, Marrikawuyanga, Jikilaruwu, Wurankuwu, Wulirankuwu and Yimpinari. Under the guidance of a strong governance board representing all landowner groups, income is used to relieve poverty, advance education, improve land management and support cultural and ceremonial activities.

Since 2018, Tiwi Resources has successfully managed a range of natural resource management projects for Tiwi people including the Tiwi Ranger Program, the Tiwi Islands IPA Consultation Project, the Tiwi Fire & Carbon Project, and healthy country research projects with Charles Darwin University, the University of Melbourne, and Deakin University. Tiwi Resources and the Tiwi Ranger Program are working with scientists from the Northern Territory Government's Department of Environment, Parks, and Water Security to manage weeds and feral pigs on the Islands and Tiwi Resources will continue to manage the Tiwi Islands IPA once it is dedicated.

Tiwi Land Council Statement about the Present

The Tiwi Land Council represents all Tiwi people in the protection of our land, sea and environment, while at the same time supporting sustainable economic development to improve Tiwi lives through employment, income, education and health opportunities. Our reputation is founded on our cultural and leadership strengths, following in the footsteps of our visionary leaders.

Today

The 2021 Census counted 2,348 people on the Tiwi Islands. Ninety per cent identify as Tiwi and almost half are under 30. There are three major communities; the largest, Wurrumiyanga, is on the southeast coast of Bathurst Island while Milikapiti and Pirlangimpi are located on the north coast of Melville Island. There are also a number of smaller communities and outstations including Wurankuwu, Paru, Pickataramoor, Taracumbi, Yimpinari (Conder Point), Takampirmili, Pitjimirra and Four Mile.

There are approximately 250 km of roads on Bathurst Island and 280 km on Melville Island, not including numerous cultural, hunting, and recreational tracks. Access to the eastern side of Melville Island is limited. The Islands are well serviced by air, and the three major communities have community owned sealed airstrips. Landing areas are also located at Port Hurd (Bathurst Island), Pickataramoor, Rolla Plains and Yapilika (Melville Island). The Tiwi Islands rely heavily on shipping services for freight transport and each community has a government owned barge landing.

Our Future

Tiwi are entrepreneurial people, keen to explore economic development opportunities on their Islands. Timber, tourism, pulpwood plantations, sand mining and Port Melville are all recent examples of their endeavour. However, Tiwi also understand that land-based enterprises pose inherent risks to the health of their country. The Tiwi Islands IPA is a strategic response to this dilemma, a mechanism for both conserving their Islands' natural areas, and supporting environmentally responsible development.

Tiwi are also seeking to honor their significant saltwater foundations by establishing a Sea Country IPA. As proposed, this would adjoin the Tiwi Islands IPA and consolidate management across the entirety of Tiwi traditional estates.

Economic Development

Building on the IPA with other initiatives is a priority for Tiwi Land Council and Tiwi Resources – the trust company established in 1991 by the Tiwi Land Council and owned by the eight landowning groups - which manages the IPA. The Fire and Carbon project will become fully integrated, and the IPA will facilitate productive collaboration between the Ranger Program and the Land Council's Environment Group. The IPA will also be a catalyst for new initiatives. Ventures under consideration within the framework of the IPA include environmental offset areas for regional developments, blue carbon projects, and industry sponsorship of defined ranger activities.

Training and work experience gained through the IPA and Ranger Program are a gateway to further opportunities. In combination these programs offer real jobs that are valid and accessible to Tiwi – people working on country under the direction of elders. Involvement in these programs develops capabilities transferable to other sectors or enterprises. Social and economic returns on public investment in the IPA and Ranger Programs are therefore high. Rangers are important role models in their communities, and the IPA is a valuable conduit for good ideas and useful knowledge. Through their work, rangers interact with researchers, government staff, consultants, and the public. These interactions build confidence and skills which flow back to communities, encouraging employment participation and countering apprehension of the wider world. Socio-economic benefits of this nature are an intended feature of the IPA, with arrangements and activities designed to promote them.

TIWI ISLANDS INDIGENOUS PROTECTED AREA

The Tiwi Islands cover an area of approximately 800,000 hectares. Tiwi landowners have chosen to dedicate their entire land trust, excluding forestry plantations and four township leases totalling 36,624 hectares, resulting in an IPA covering 718,626 hectares.

The seaward boundary if the IPA lies at the mean high tide mark of Melville and Bathurst Islands, and at the mean low tide mark for the Vernon Islands. This variance is a function of the Land Trust's current cadastre. As a more recent determination subject to Blue Mud Bay Native Title rights, the Vernon Islands land claim additionally incorporates intertidal areas. It is intended that a future sea country IPA extension will integrate intertidal areas surrounding Melville and Bathurst Islands.

Dedication

The Tiwi Islands IPA is dedicated as a **Category VI: Protected Area with sustainable use of natural resources**. Consistent with the International Union of the Conservation of Nature (IUCN) definitions, the primary objective of this category is, ***"to protect natural ecosystems and use natural resources sustainably, when conservation and sustainable use can be mutually beneficial."***

Unique amongst the IUCN categories system, Category VI Protected Areas include, *"the sustainable use of natural resources as a means to achieve nature conservation, together and in synergy with other actions more common to the other categories, such as protection".*

Management Framework

Within their customary Law, tuwitiya, Tiwi people's rights to manage and enjoy their land are explicit. Under Australian law Tiwi land rights were recognised in 1978 with the creation of the Tiwi Land Trust. A subsequent land claim, concluded in 2018, awarded Tiwi ownership of the Vernon Islands.

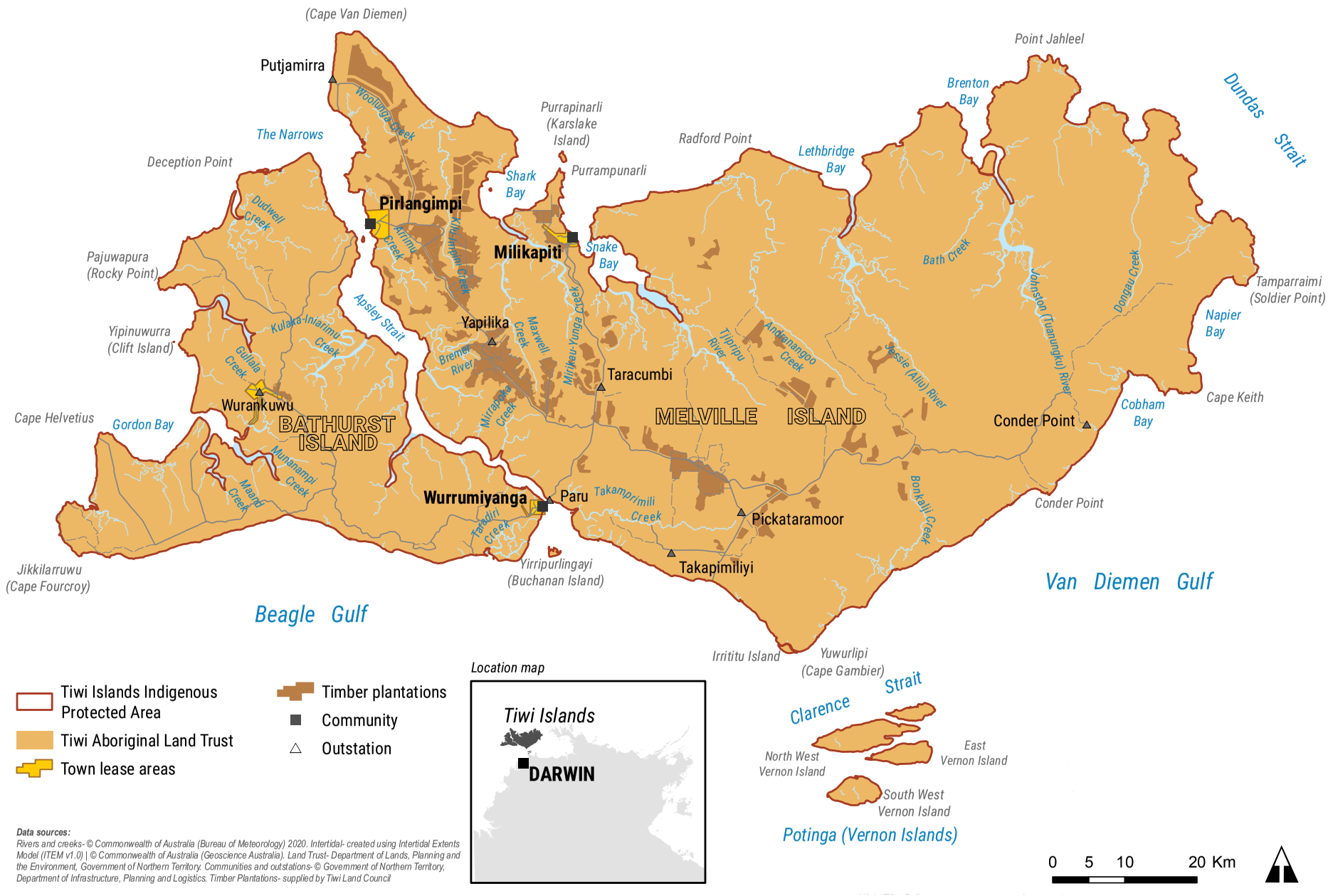
Tiwi Islands IPA is entirely Aboriginal land, to which Tiwi hold inalienable freehold title under provisions of the Commonwealth *Aboriginal Land Rights (Northern Territory) Act 1976* (ALRA).

IPA Exclusions

Areas subject to incompatible ALRA Section 19 lease agreements, such as the of Wurrumiyanga, Milikapiti and Pirlangimpi township leases. Of relevance to the Tiwi Islands IPA is the IUCN stipulation that a Cat VI Protected Area *"…is not designed to accommodate large-scale industrial harvest."* Accordingly, all areas used for commercial forestry are excluded from the IPA.

Lease areas with compatible land uses have been retained within the IPA. These include tourism operations such as safari camps and fishing lodges.

Location of the Tiwi Islands IPA



Data sources:
Rivers and creeks- © Commonwealth of Australia (Bureau of Meteorology) 2020. Intertidal- created using Intertidal Extents Model (ITEM v1.0) | © Commonwealth of Australia (Geoscience Australia). Land Trust- Department of Lands, Planning and the Environment, Government of Northern Territory. Communities and outstations- © Government of Northern Territory, Department of Infrastructure, Planning and Logistics. Timber Plantations- supplied by Tiwi Land Council

IPA Governance

Tiwi Islands IPA is ultimately governed by Tiwi landowners through the authority of the Tiwi Land Council. The IPA project and the Tiwi Ranger Program are administered by Tiwi Resources Pty Ltd. To ensure Traditional Owners are engaged in the IPA's operation and continue to endorse the Ranger Program's work, Tiwi Resources will convene an IPA Committee and an IPA Advisory Group. The IPA Planning Committee has named the IPA Advisory Group Awuta Wumanuwani – which translates as '*that mob helping us*'.

The IPA Committee is comprised of 16 landowners representing the eight Tiwi landowner groups. Meeting twice a year, the Committee's role is to guide the project over time, maintain its links to the broader Tiwi community and ensure it stays relevant, and focused on its stated vision.

The Awuta Wumanuwani (IPA Advisory Group) represents external interests. Meeting once a year, its role is to support the IPA Committee with expert advice on management methods, assist in the review of monitoring, and act as a conduit for IPA-relevant research partnerships and training opportunities.Membership is not fixed and includes individuals with specialist knowledge or experience, and representatives from partner organisations, government agencies and other stakeholder groups.

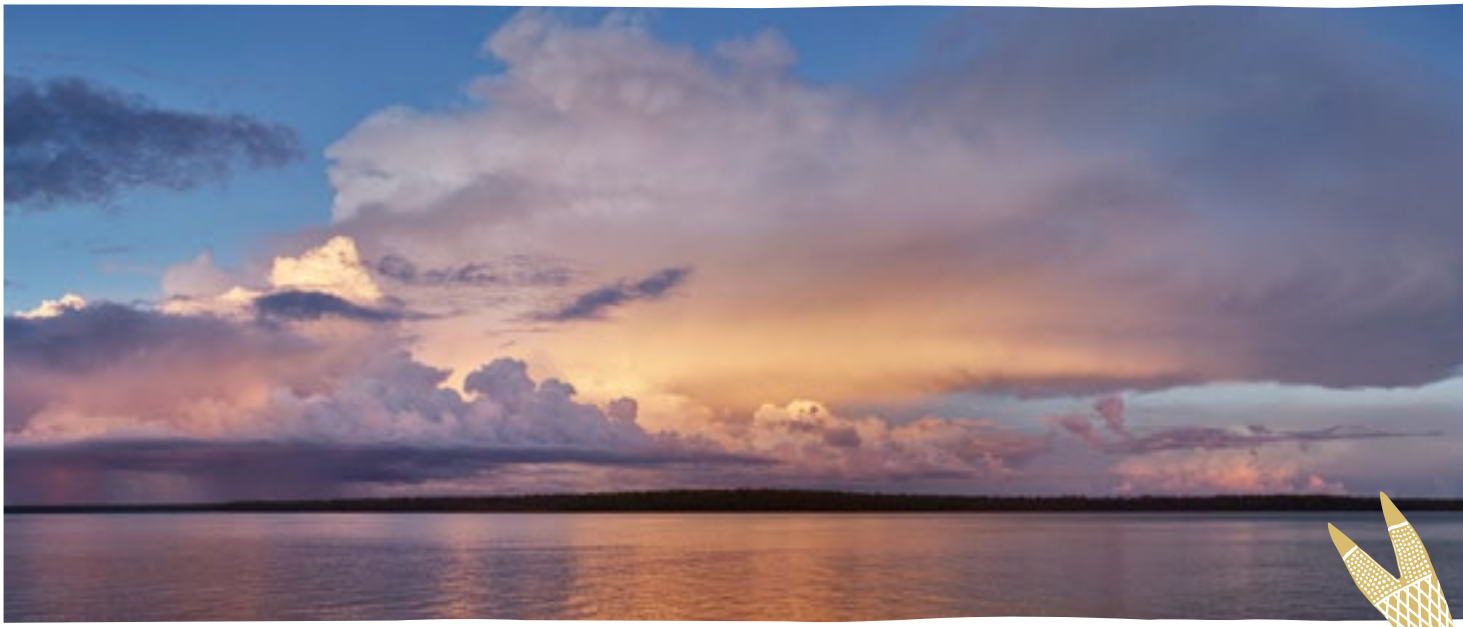
Dispute Resolution

Issues involving commercial considerations, changes to the boundary of the IPA, or disputes arising between parties engaged in facilitating the IPA are the responsibility of the Tiwi Land Council and will be resolved in accordance with provisions of the *Aboriginal Land Rights (Northern Territory) Act 1976*.

IPA Stakeholders

With the diversity of land interests present on the Tiwi Islands many external stakeholders are identified for the IPA. These include the Australian and Northern Territory Governments, the Tiwi Islands Regional Council, the Tiwi Plantations Corporation, the Port Melville Authority, tourism and mining operators, and potential external investors.

In cases where these interests adjoin the IPA, the stakeholder will be notified of the project and its intent. In cases where the IPA overlays the interest, stakeholders will be consulted and invited to attend annual Awuta Wumanuwani (IPA Advisory Group) meetings.



Tiwi Islands IPA Governance Chart

SIGNIFICANCE OF THE TIWI ISLANDS IPA

Significance to Tiwi People

The Tiwi Islands Indigenous Protected Area is highly significant to Tiwi people as it assists in the protection of cultural assets and the conservation of country they consider indivisible from themselves. In addition, the IPA Project has:

- brought landowners together to plan strategically for the future of their Islands and culture.
- resulted in improvements in governance and collaboration between a range of Tiwi bodies and initiatives.
- highlighted to Tiwi people the values that others recognise in their Islands, beyond exploitable resources, and introduced new and compelling ideas for economic development.

Over the next decade the Tiwi Islands IPA will grow to become a significant employment opportunity on the islands and a vehicle for self-determination and the assertion of Tiwi land and sea rights.

National and International Significance

The Tiwi Islands IPA provides national and international benefits; it protects the bulk of the unique and previously unreserved Tiwi Subregion within the Tiwi Cobourg Bioregion, as well as a small proportion of the Darwin Bioregion.

Table 1: Contribution of the Tiwi Islands IPA to bioregional protection

	AREA (ha)			PERCENTAGE (%)		
IBRA REGION	**Tiwi Islands IPA**	**Outside IPA**	**Total**	**Tiwi Islands IPA**	**Outside IPA**	**Total**
Darwin Coastal	3,471	2,842,385	2,845,856	<1%	100%	100%
Tiwi Cobourg	710,167	301,213	1,011,380	**70%**	**30%**	**100%**
Outside bioregions*	4,988	-	4,988	100%	0%	100%
Grand Total	**718,626**	**3,143,599**	**3,862,224**	**-**	**-**	**-**

* Area outside of the bioregions comprises intertidal areas of the Vernon Islands, which fall outside the terrestrial bioregions.

Table 2: Contribution of the Tiwi Islands IPA to subregional protection

		AREA (ha)			PERCENTAGE (%)		
IBRA REGION	**IBRA SUBREGION**	**Tiwi Islands IPA**	**Outside IPA**	**Total**	**Tiwi Islands IPA**	**Outside IPA**	**Total**
Darwin Coastal	Darwin coastal	**3,471**	**2,842,385**	**2,845,856**	**<1%**	**100%**	**100%**
Tiwi Cobourg	Cobourg	0	262,296	**262,296**	**0%**	**100%**	100%
	Tiwi	710,167	38,918	749,085	95%	5%	100%
Tiwi Cobourg Total		**710,167**	**301,213**	**1,011,380**	**70%**	**30%**	**100%**
Outside bioregions*		4,988	-	4,988	1%	0	100%
Grand Total		**718,626**	**3,143,599**	**3,862,224**	**-**	**-**	**-**

The Tiwi Islands are of major importance for biodiversity conservation because they contain:

- at least 1200 plant taxa and 377 vertebrate taxa, with a largely unknown diversity of invertebrates
- 8 plant taxa that are listed as threatened under the national *Environment Protection and Biodiversity Conservation Act*, and a total of 19 that are listed as threatened under the *Territory Parks and Wildlife Conservation Act*
- 25 animal species that are listed as threatened under the under the national *Environment Protection and Biodiversity Conservation Act*
- 28 animal species listed as threatened under the *Territory Parks and Wildlife Conservation Act*
- 11 endemic (restricted to the Tiwi Islands) plant taxa, with a further 17 plant species known in the NT only from the Tiwi Islands
- many endemic animal species - these include 8 bird subspecies, two mammal subspecies, about 10 per cent of the 200 known ant species, and an unknown number of other invertebrates, but known to include some species of butterflies, dragonflies, and snails
- 54 migratory animal species listed for special protection under bilateral and other international treaties
- many plant and animal species with important cultural and subsistence value to Tiwi landowners
- more than 1200 rainforest patches, constituting a higher density of rainforests in the landscape than anywhere else in the NT, and comprising rainforest types of unique floristic composition
- extensive areas of the best developed eucalypt forests in the NT
- vertebrate species composition that is distinctly different to that of the NT mainland, and
- a broad mix of environments including eucalypt open forest and woodlands, wetlands, coastal dune formations, "treeless plains" (a low woodland, almost restricted to the Tiwi Islands), mangroves, grasslands, and *Melaleuca* paperbark forests

The Tiwi Islands in their entirety have been recognised by the Northern Territory Government as a Site of Conservation Significance, with an International Significance rating because of the values described above.

PART B: VALUES AND THREATS

Value

A value is something we want to protect.

Threat

A threat is something that is harming our values.

Strategies and Actions

These are the jobs that need to be done to protect our values and reduce the impact of threats.

> *"Things are changing on the Tiwis. To keep our country healthy and to keep our people healthy we've got to think about doing things in new ways."*
>
> —MR W. RIOLI, TIWI RANGER

OUR TIWI VALUES

Our values represent what is most important to us and will be the focus of our IPA work. The future of our islands and people depends on the health of our values. Our plan covers six cultural, environmental, and social values.

1) Tiwi People and Culture
2) Cultural Places
3) Tiwi Country
4) Plants and Animals
5) Bush Tucker and Medicines
6) Rangers and IPA

Health of our Values

Tiwi IPA Value	Rating			
	POOR	FAIR	GOOD	VERY GOOD
1) Tiwi People and Culture				
2) Cultural Places				
3) Tiwi Country				
4) Plants and Animals				
5) Bush Tucker and Medicines				
6) Rangers and IPA				

Goals

Goals are the outcomes our community are aiming for. Goals for each of our values overlap so that improvements in one area will contribute to progress in another. For example, better fire management will not only help our carbon farming business, but it will also benefit wildlife and help to protect bush foods.

Tiwi IPA Value	Goal
1) TIWI PEOPLE AND CULTURE	Strong men and women and families maintaining and strengthening Tiwi culture, caring for country, respecting Elders, raising strong kids that know their country, language, totems, stories, dreamings, sacred sites and ceremony
2) CULTURAL PLACES	Tiwi cultural places – sacred sites, spiritual places, hunting and camping areas, historic sites, and homelands – are intact, alive, protected, and cared for
3) TIWI COUNTRY	Country is respected, hunting and fishing is good, it's easy to access important food gathering places and there are no feral animals or weeds
4) PLANTS AND ANIMALS	All Tiwi plants and animals are healthy, protected, and abundant, especially the plants and animals we use for food and culture
5) BUSH TUCKER AND MEDICINES	Knowledge and use of Tiwi foods and medicines from land and sea is strong and being passed on
6) RANGERS AND IPA	A Tiwi IPA with strong and committed men, women and Junior Rangers keeping land and sea country healthy and culture alive into the future

1) TIWI PEOPLE AND CULTURE

Value Health Rating: **FAIR**

What's included	Our Goal
Strong men and women	*Strong men and women and families maintaining and strengthening Tiwi culture, caring for country, respecting Elders, raising strong kids that know their country, language, totems, stories, dreamings, sacred sites and ceremony*
Healthy country	
Healthy people	
Kids on country	
Outstations	
Tiwi ceremonies and art	
Animals – totems	

Loss of culture/cultural knowledge

Tiwi cultural knowledge has been passed down orally for thousands of generations and amongst elders there is deep concern about the loss of language and traditional knowledge as older people pass away, and younger people look to Western influences.

"Lots of kids don't know their tribe or skin group, don't know their ancestors."

—TIWI TRADITIONAL OWNER

"Students used to come to the art centres, we used to show them carvings, we teach them, but that's stopped now, they don't come, need to teach them culture."

—TIWI TRADITIONAL OWNER

Loss of Language

Language is at the core of identity for Tiwi people. It provides a continuing bond, strengthened over generations, between people, their families, their country, and culture. Tiwi elders regret the loss of fluency in Tiwi language among the younger generations – they worry that if language is lost, it will be very difficult to recover it.

"Need to maintain our language, our culture, got to do it together. Make it stronger for our kids, our future generations."

—TIWI TRADITIONAL OWNER

Fewer young people participate in important ceremonies such as the annual three-day Kurlama ceremony held at the end of the wet season and knowledge about the collection and preparation of the ceremonial Kurlama yam (*Dioscorea bulbifera*) is being lost. The purpose of the Kurlama ceremony is to heal hurts and express sorrow over events of the previous year, to bestow Tiwi names on children, and to ensure good health and plentiful bush food for the coming year. Burning of country can only commence after Kurlama.

“Kurlama we use is from the bush, bush yam, but some people using the different one, the one from the shop. Not good. Use potato from the shop. But normal Kurlama is out bush. Kids need to know how to collect the normal Kurlama.”

— TIWI TRADITIONAL OWNER

“Kurlama is an important ceremony for us all, keep that ceremony going strong for the next 100 years.”

— TIWI TRADITIONAL OWNER

“People used to do Kurlama everywhere but not now. They used to do it out bush. In olden days it was held on both islands, now it’s just at Wurrumiyanga.”

— TIWI TRADITIONAL OWNER

Elders view the re-engagement of young people with Tiwi spiritual, cultural, and ecological knowledge as being of the highest priority. For them, the revaluing of traditional beliefs and knowledge offers young people a renewed sense of identity and empowerment and the chance to keep Tiwi culture alive.

“Our young ones are our future.”

— TIWI TRADITIONAL OWNER

“We are yesterday people, our kids, they are tomorrow people.”

— TIWI TRADITIONAL OWNER

Tiwi elders expressed strong concern that people expect to be paid to teach culture instead of acknowledging that it is their responsibility, as a Tiwi person, to pass on this knowledge.

“People say if you want me to teach culture pay me money, it’s all about money. It shouldn’t be, it should be for free.”

— TIWI TRADITIONAL OWNER

“Need to teach culture, singing, language, dancing, and ceremony. People say they have to get paid to do this. It shouldn’t be like that.”

— TIWI TRADITIONAL OWNER

They also believe not enough importance is placed on cultural learning in the Tiwi education system. They would like ‘both ways’ learning to be integrated into secondary school curriculums and don’t understand why the Australian Government’s Learning on Country program cannot be rolled out in Tiwi schools.

“Through the clan groups we all give funding to the Tiwi College, that money should go towards teaching culture as well as everything else.”

— TIWI TRADITIONAL OWNER

“Please make that Learning on Country program happen for our kids!”

— TIWI TRADITIONAL OWNER

Lonely country

Tiwi worry that because their country isn't being visited and cared for peoples' health is declining. Elders say that without opportunities to be on country with their families, important cultural knowledge won't be passed on to the next generations. Many important water places are now considered unhealthy; muddy, polluted, or in-filled by erosion. Because people aren't on country regularly, there's less use of the bushfoods and medicines that kept Tiwi strong and healthy. It is difficult for families to get out bush. Unmaintained tracks and roads stop people visiting and using their country and maintaining their cultural connections.

"We can't look after country if we can't get out there."

—TIWI TRADITIONAL OWNER

"I'm 68 now and most of my grandchildren, they don't know the name of that country there, they call them western names. I've got that knowledge for calling them Tiwi names. I've got that knowledge from my uncles. If I die now, that knowledge, those names, they go with me. The problem is transport."

—TIWI TRADITIONAL OWNER

Elders acknowledge Tiwi are avid social media users but worry that people spend too much time on their phones and not enough time learning about culture. They are concerned that young people are too influenced and distracted by social media – time spent social networking can detract from other social relationships or responsibilities. They also worry about the potential negative effects on people's wellbeing, particularly mental health, from using gunja (cannabis).

"At the moment I don't believe that we are proud of our Islands. There are fights every day, every day. Yesterday, today, for gunja, for girlfriend, for putting rubbish on Facebook – all bad for culture."

—TIWI TRADITIONAL OWNER

"Too many people are chained to gunja. They just sit and smoke, then look for money to buy more and get into fights when they can't get any."

—TIWI TRADITIONAL OWNER

Recording knowledge

With the number of senior Tiwi knowledge holders dwindling with each passing year there is an urgency to record traditional ecological knowledge and the locations of cultural sites, and the stories and ceremonies associated with them. Retention of this knowledge is not only critical for current and future generations of Tiwi, but also important for the long-term management of the IPA.

"All the Tiwi names written on the map, but people don't go out on country to learn the names."

— TIWI TRADITIONAL OWNER

"You know that mud mussel shell. We use for making sharp sticks, for making fire sticks, for scaling fish, for a lot of things, that mud mussel shell. That's why I want to show the kids, how we used those shells, we had no knives, we had no forks, these are some of the things I want to teach. We had no blankets, we used paperbark for sleeping, for making shade, for covering cold time."

— TIWI TRADITIONAL OWNER

"When we get these white birds, we make sure we collect the feathers for dancing, to make armbands. Ladies do the bands and in the olden days we collected bush honey wax to join the feathers to the armbands. Same with the head feathers."

— TIWI TRADITIONAL OWNER

"When shoot a big bird we use their wing like a fan. That's why I want to educate the kids, what we used those wings for. How to make ourselves cool – use the wings to fan ourselves. Also burning of fire, use the wings to keep the fire going. Need to teach kids how to start fire and keep it going."

— TIWI TRADITIONAL OWNER

Bush camps not maintained

Bush camps play an important role in keeping Tiwi connected to their country. Clan groups have access to bush camps on their traditional estates and during the COVID 19 pandemic an extra 32 shipping containers were installed across the islands. People stay or visit seasonally and can live traditionally, practice the skills they've learnt as children, and pass this knowledge onto the next generation. Away from the distractions of communities these are places where language is spoken, stories are told, and cultural knowledge is strengthened. Over recent decades a lack of funding, transport and busy town lives have resulted in the decline of bush infrastructure across the Islands.

"We need solar power in those outstations."

— TIWI TRADITIONAL OWNER

"Without access to country people will fight."

— TIWI TRADITIONAL OWNER

Strategies

- *Support Tiwi culture, art, and ceremonies*
- *Help ensure cultural education is available to all young Tiwi*
- *Recognise the importance of bush camps to cultural wellbeing*
- *Protect Tiwi cultural knowledge for future generations*
- *Encourage greater participation of landowners in land and sea management*

2) CULTURAL PLACES

Value Health Rating: POOR

What's included	Our Goal
Ceremony grounds	*Tiwi cultural places – sacred sites, spiritual places, hunting and camping areas, historical sites, and homelands – are intact, alive, protected, and cared for*
Pukumani and other burial sites	
Sacred sites (land and sea)	
Vernon Islands	
Spiritual water places	

The Tiwi landscape provides inspiration that is expressed through ceremonies, art, dance, stories, and song. These are fundamental elements of Tiwi society that reaffirm individual and group roles and positions. Some areas of land and specific sites have high spiritual value determined through Tiwi history and culture. These sacred sites give meaning to the natural landscape. They anchor cultural values and spiritual and kin-based relationships in the land.

> *"We need to educate everybody, especially younger ones about our culture."*
>
> —TIWI TRADITIONAL OWNER

Since 1989 four sacred sites have been registered with the NT's Aboriginal Areas Protection Authority, and another 56 recorded sites of significance including two sites on the NT mainland. In addition, there are sites of shared history that have significance to both Tiwi and non-Tiwi. These include Fort Dundas (listed on the National Estate) and several sawmills and World War II installations.

> *"Kids need to know about heritage sites, Fort Dundas also Karslake, when the Dutch people came, all those Europeans, kids need to know that history."*
>
> —TIWI TRADITIONAL OWNER

The Pukumani, or burial, ceremony is considered the most important ceremony in a Tiwi person's life; it ensures that the spirit of the dead person goes from the living world into the spirit world. Not all Pukumani sites are known, recorded, or mapped. Many are considered archaeological sites, overgrown by jungles, or concealed under sand. This leaves them vulnerable to operations such as mining and exploration.

The Vernon Islands (Potinga) are an important spiritual, hunting and fishing area for Tiwi Islanders. They believe their Islands and adjoining waters, including the Clarence Strait, were created by their ancestor, Murntankala. Tiwi Islanders used the islands as staging posts as they travelled to and from the mainland in canoes to capture mainland women, and for hunting dugong and turtles.

Strategies

- *Ensure the documentation and preservation of cultural places*
- *Protect important coastal places*
- *Protect historical places*

3) Tiwi Country

Value Health Rating: POOR

What's included	Our Goal
Hunting, camping, and fishing places	*Country is respected, hunting and fishing is good, it's easy to access important food gathering places, and there are no feral animals or weeds*
Wetlands, freshwater springs, rivers, and creeks	
Mangroves and Nipa palm forests	
Crocodile nesting areas	
Smaller Islands	

Though today most Tiwi live in communities, strong connections to country are retained – particularly to the places families have visited for generations. These places are highly valued for the resources they contain and their historical usage and include areas such as Goose Creek where there are significant populations of Magpie Geese, Seagull Island, which is significant for Crested Tern eggs, and certain beaches and mangrove communities important for food gathering. They are sometimes referred to as 'dinner camps' – they may be the best place to gather Ngalwak (Mud Mussels) or Yuli (Mangrove Worm), sites where yams and medicines are collected, or a good patch of country for finding possums and sugarbag. They can also simply be peaceful places where women and children can swim and fish in safety. All these places have a name, a story, history, and a season. They are the points in the landscape where Tiwi feel most at home.

"We need to look after country, we need to make sure of that."

— Tiwi Traditional Owner

This spasmodic pattern of land use helped Tiwi conserve their Islands' resources, keeping people and country healthy. By limiting hunting and harvests to culturally prescribed places the remainder was left 'fallow', as a pool from which 'dinner camps' were continually replenished. The dinner camp model also concentrated Tiwi's beneficial practices, such a patch burning, selective harvest, cultivation, and ceremony – where, over generations, they improved the quality and predictability of the resource.

"We need to reconnect back to country, its healing being out on country, healing for everyone."

— Tiwi Traditional Owner

Tiwi elders have witnessed the introduction of feral animals and weeds to their country since Europeans arrived and worry about the impacts on Tiwi environments and traditional food resources.

“We didn’t have cats here before, want to get rid of those cats, they’re destroying our animals, we want the rangers to get rid of cats.”

—Tiwi Traditional Owner

“Pigs carry diseases and worms; we worry that if we eat them, they will make us sick.”

—Tiwi Traditional Owner

On Bathurst Island they are particularly concerned about the impact of feral pigs on turtle populations and the havoc they create in communities.

“Pigs are very bad for turtles. They can smell where those turtle eggs are.”

—Tiwi Traditional Owner

“The shire should make bylaws to control pigs.”

—Tiwi Traditional Owner

“Trustees need to make a decision about pigs in communities and then the rangers can help implement that.”

—Tiwi Traditional Owner

“There’s no community opposition to culling buffalo and pigs.”

—Tiwi Ranger

Controlling the ‘wildlings’ (escaped seedlings) of *Acacia mangium* forestry plantations is a long-term problem. Elders are increasingly concerned about the spread wildlings into surrounding bushland and the impacts on Tiwi plants and animals.

Fire

There is increasing awareness about the contribution Tiwi fires make to national greenhouse gas emissions. Late season fires from August onwards are hotter and create more greenhouse gas than early dry season fires and reduce ecosystem health. The Tiwi Ranger Program has led the development and implementation of a fire management plan that reduces greenhouse gas emissions and, in 2016, the Tiwi Islands Savanna Burning for Greenhouse Gas Abatement Project was registered with the Australian Government’s Emissions Reduction Fund. Since 2018 the project has been earning Australian Carbon Credit Units for Tiwi people.

“Fire is a hunting tool, a cleaning up country tool, moving from one place to another. Now people use fire for carbon to make money.”

—Tiwi Traditional Owner

“There was no such thing as carbon credits, people light fires whenever they wanted to. Now we need to watch that fire. Problem with people lighting fire in campsites.”

—Tiwi Traditional Owner

“It’s good we learn the two-way fire process – the Tiwi way and the science way.”

—Tiwi Ranger

But earning carbon credits is only part of the story – cultural values relating to fire need to be maintained, as do the Islands' exceptional biodiversity values, which are of national significance and remain an integral part of Tiwi cultural heritage.

"People need a clear understanding about fire. Need to teach the kids about fire, need to teach everyone about fire. Tell those rangers to do it the right way."

— TIWI TRADITIONAL OWNER

"Instead of clans getting carbon money, it needs to go to the community, need to spend that money for everyone, to look after country, make better roads, that sort of thing."

— TIWI TRADITIONAL OWNER

"Everyone asks when they're going to get those carbon credit royalties. It's all about the money for them, not country."

— TIWI RANGER

"It's not about the dollars, the carbon money – it's about healthy country. People don't care about country; they only care about money. It really annoys me."

— TIWI RANGER

Trespass

Lack of privacy is a serious issue for many Tiwi. The Islands' tropical beauty and outstanding opportunities for hunting and fishing are big drawcards. Proximity to Darwin, island-based tourism and Tiwi generosity all contribute to high visitor numbers. Tiwi complain of whitefella's 'hitching a ride' with Tiwi, tour operators taking people to places beyond their licence area, visitors arriving by private boat, recreational fishers landing in areas they shouldn't, people hunting without a permit or outside a designated public access area, and illegal commercial fishing inside closure lines or Fish Protection Areas.

Rangers have no access to the permit system – they are not informed about permit holders travelling, working, or fishing on the Tiwis and have no power to enforce permits.

"We have no powers. We need to know who has permits. Need to be able to ask people to see their permits."

— TIWI RANGER

"Need Marine Rangers to have same powers as water police to book people fishing in red zones. We're powerless compared to those rangers in Arnhem Land."

— TIWI RANGER

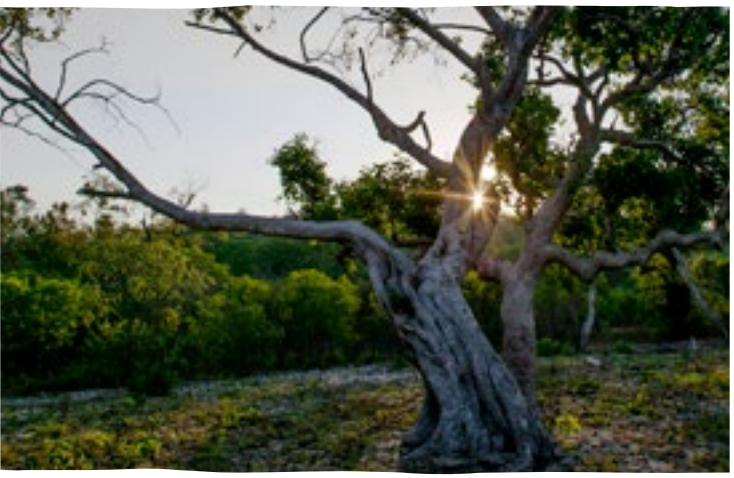
Trespass is seen as eroding Tiwi authority over their land and sea country.

Loss of respect for Country

Tiwi also describe a type of 'cultural trespass', where traditional ownership is either disregarded or is being enforced in whitefella terms. Elders report a lack of respect for country belonging to other clans that some people no longer ask before visiting others' country, overstay their welcome, or behave irresponsibly.

"Need family trees so people know who the owners are, know where they come from."

—TIWI RANGER



Others are claiming sole ownership of land, blocking access and disregarding other families with traditional connections to that country. These things are causing tensions in the community that may worsen as the population grows and people from elsewhere come to live on the Islands.

"Nowadays people are putting up fences!"

—TIWI TRADITIONAL OWNER

Development

There are currently no exploration applications over any part of the Tiwi Islands. All previous exploration applications have been withdrawn. There is only one current exploration licence on the southern coast of Bathurst Island that is held by Tiwi Resources and will be relinquished this year. MBS Oil Pty Ltd have an application over all of the Tiwi Islands and some surrounding waters for oil and gas, however they have made no attempt to commence negotiations towards exploration.

Discussions have been undertaken with landowners about the potential bauxite exploration by Rio Tinto on Melville Island. Some pre-exploration work was completed, and Rio Tinto was keen to seek approval for exploration drilling. However, Tiwi landowners had concerns about the potential impacts of mining and decided not to extend the negotiating period.

"We're worried about the rehab, what happens to the country after mining?"

—TIWI TRADITIONAL OWNER

Future development activities include ecotourism and aquaculture including prawn and oyster farming. A six-pond prawn farm pilot program, undertaken in collaboration with CSIRO, is planned for Ranku and the viability of farming Black-lipped Oysters in the Apsley Strait is being investigated.

Strategies

- *Reduce the number of feral animals and improve community awareness of impacts*
- *Reduce the number of weed infestations and improve community awareness*
- *Improve fire management to protect culture, biodiversity, and property*
- *Improve fire management for carbon abatement*
- *Improve awareness of climate change and understanding of its impacts on the Tiwi Islands*
- *Plan for climate change adaptation*

4) PLANTS AND ANIMALS

Value Health Rating: **GOOD**

What's included	Our Goal
Plants and animals we eat	*All Tiwi plants and animals are healthy, protected, and abundant, especially the plants and animals we use for food and culture*
Plants and animals we don't eat	
Plants used for medicines	
Plants used for weaving and carving	
Threatened species	
Migratory birds	

Separation from the mainland has protected the Tiwi Islands from many of the widespread threats to Australia's unique flora and fauna. This alone makes them a site of national conservation significance. Add to this their size, condition and biodiversity, and their importance as an island ark is easily seen.

Island biogeography predicts a simplified flora and fauna – a subset of mainland communities. The Tiwi Islands do not conform to this trend in several ways. They retain many of small to medium size mammals now in serious decline across northern Australia. They are large enough and stable enough to have generated a number of Tiwi-endemic species. Their unique semi-equatorial climate hosts rainforest plants more typical of southeast Asia and Melanesia.

A long, steady history of care and use by Tiwi traditional owners further distinguishes the Islands as a haven for North Australian plants and animals. Though surrounded by sea country Tiwi traditionally made good use of terrestrial wildlife. Possums, wallabies, bandicoots, pythons, goannas, and jungle fowl where abundant in their woodlands, forests, and jungles. Many of the methods used by Tiwi to hunt or harvest promoted their target species. Complex interactions over eons lead to an equilibrium where Tiwi practices were sustainable and sustaining. Fires were used to generate green pick to attract wallabies during the dry season and removed fuel ahead of the wildfire season. Digging for yams cultivated jungle soils, buried larger tree fruits, and promoted further yam growth. Hunting Carpet Pythons reduced their abundance to the advantage of Northern Brushtail Possums, Northern Brown Bandicoots, and other medium-sized mammals.

Today Tiwi still use and value their Islands' wildlife. Their conservation ethic rests on the continued availability of customary resources and a cultural sense that all species have spiritual significance.

Totems are an important touchstone in this regard as they indicate individual responsibility for specific plants and animals.

"Seagull Island, that's an important place, we've got to make sure we don't take too many eggs. Like the turtles, if we take too many eggs they can't breed up."

—Tiwi Traditional Owner

Decades of collaborative scientific research support the Tiwi peoples' belief that their once abundant wildlife is declining. Mammals such as Northern Brushtail Possums, Northern Brown Bandicoots and Black-footed Tree-rats are becoming harder to find. Populations of some birds may also be declining, including the Tiwi Hooded Robin, which may now be extinct. Disappearing wildlife is linked to unhealthy country. People believe feral cats, pigs and buffalo are largely to blame, and that without effective control native animal populations will continue to decline. There is also concern that country is becoming 'emptier' and not being cared for as well as it used to be.

"Need to put it in the curriculum, those plants and animals, kids need to learn about them, help them to become rangers."

—Tiwi Traditional Owner

Strategies

- *Protect the unique biodiversity of the Tiwi Islands through increased biosecurity awareness and strengthening quarantine*
- *Support conservation measures to protect disappearing wildlife*
- *Use Western and Tiwi knowledge to address environmental challenges facing the Tiwi Islands*

5) Bush Tucker and Medicines

Value Health Rating: **FAIR**

What's included	Our Goal
Bush foods, including mangrove foods	*Knowledge and use of Tiwi foods and medicines from land and sea is strong and being passed on*
Bush medicines	

In the past Tiwi made use of many plants and animals inhabiting their islands. A wealth of knowledge and skills arising over thousands of years enabled this sophisticated economy. Though access to western foods, medicines and practices has reduced reliance on traditional resources, Tiwi still commonly use a wide array of native wildlife for food, medicine, utensils, and art.

The Tiwi harvest more than 100 animal species for food with Anjorra (Agile Wallabies), Wuninga (Northern Brushtail Possums), Kurupurrani (Frilled Lizards), Kipopi (Northern Brown Bandicoots), (Carpet Pythons) and Yingwati (Sugarbag) commonly hunted. These animals are well adapted to the eucalypt forests and woodlands that cover most of the Tiwi Islands.

Wallabies, possums and bandicoots are particularly favoured and are actively sought after as well as taken opportunistically. The bones of Agile Wallabies are also fashioned for fishhooks and weaving hooks. Crested Terns nest on the open sand and their easily accessible eggs are collected in large numbers early in the breeding season. Magpie Geese and their eggs are favoured foods. Parts of the geese are used in ceremonies and the dried wings are used as fans.

> *"To catch birds, people used to climb on top of the tree, wait for them and whack them. It was the only way, because we had no guns, especially for Magpie Geese, creep up while they were feeding and hit them close up, got to make sure there are no crocodiles, chuck a mangrove stick while they were flying, hit them, break their wings, many different ways to catch those birds. People didn't go in the deeper end, they stayed in the shallow end, to avoid the crocodiles, in the olden days people were smart too, they knew where those crocodiles were."*
>
> —Tiwi Traditional Owner

Mangrove communities are recognised as a very important hunting area by Tiwi people. Some of the most favoured and easily obtained saltwater foods include Mangrove Worms, Mud Crabs and various shellfish.

> *"In the mangroves, we wait, the croc hunt in the full tide, and when it's low tide it's our turn to hunt for wurlanga (Mud Crab), for jukwarringa*

(Mud Mussel), piranga (Long Bum), yuwurli (Mangrove Worm), That's our turn! We respect one another. Don't interrupt when those crocs hunt. Then in the low tide we hunt."

— TIWI TRADITIONAL OWNER

Most Tiwi medicinal plants are used as a body wash with fewer medicines being ingested. Prior to colonisation, clean water was very precious. Natural waterholes could be used for bathing if they remained unpolluted, but these waterholes are commonly associated with spirits that can cause sickness if disturbed. They are also sites of sacred rites of passage. Anti-bacterial washes made from plants provided an alternative for keeping clean and healthy. Laboratory testing of many of the medicinal plants used by the Tiwi have found them to have anti-microbial properties. Tiwi medicinal plant knowledge reflects a sophisticated understanding of the use of plants as cleansing agents specific to different conditions such as chest infections, colds, flu, and skin disorders.

"Tiwi Resources already doing kino project, that blood that comes out of the tree, make it into something, medicine we can use for our skin."

— TIWI TRADITIONAL OWNER

"Schools need bush food and bush medicine gardens. We need to make this happen."

— TIWI TRADITIONAL OWNER

Several animals are used medicinally by Tiwi people, including Tarnikini (Black and Little Red Flying-foxes), Wakatapa (Mangrove Worm), Kawarri (Sand Goanna) and Yuwanti (Mertens' Water Monitor).

There are many reasons why Tiwi continue to rely on bush resources. Being freely available bush foods are far cheaper than store-bought alternatives. For instance, as substitution for packaged steak, a single wallaby is worth around $300. For some illnesses traditional treatments are seen as equally effective and more accessible than Western medicines. Bush foods of all kinds are considered healthy alternatives, and even recuperative. Properly prepared bush foods are said to be a strong remedy for many ailments. Beyond

these material benefits, hunting and collecting bush foods remains an important cultural expression for Tiwi, a satisfying and life-affirming activity.

> *"We all used to know how to prepare kwoka (Cycas armstrongii seeds), soaking it, washing it. Now nobody knows how to prepare it."*
>
> —TIWI TRADITIONAL OWNER

Many bushfoods are declining in their abundance due to a combination of threats. The interaction of hot fires, feral herbivores and weeds is reducing the diversity of plant communities, shrinking fire sensitive communities, and reducing the populations of small to medium-sized mammals. The destructive combination of wildfire and feral animals poses the most severe current threat to the health of Tiwi country.

More specific threats to bush resources include predation on marine turtle nests by feral pigs, the collapse of Green Turtle populations across northern Australia (C. Palmer *pers. comm.*) and mangrove damage as a result of more severe cyclones caused by climate change.

Strategies

- *Support the preservation of traditional knowledge of bush tucker and customary medicines*
- *Assess bush tucker and customary medicines enterprise development opportunities*
- *Protect traditionally important plants and animals*

6) RANGERS AND IPA

Value Health Rating: **FAIR**

What's included	Our Goal
Murrakupuni (Land) Rangers – men and women	*A Tiwi IPA with strong and committed Men, Women and Junior Rangers keeping land and sea country healthy and culture alive into the future*
Winga (Marine) Rangers – men and women	
Junior Rangers	
Researchers	
Partners	

Tiwi Rangers work to protect the unique flora and fauna of the Tiwi Islands, control feral animals and invasive weeds, manage the Tiwi Fire and Carbon project, educate the community about burning, act as role models for younger people, support research and protect cultural sites. They combine traditional knowledge with conservation training to protect and manage their land, sea and culture.

Their work is valued highly by Tiwi however they believe the program should engage more effectively with communities and increase engagement with younger people.

There is concern that there are not enough rangers to adequately look after the vast 8,000 square kilometre Tiwi estate.

"It's very important that we provide opportunities for our kids so they can have choices for the future. We include Tiwi students in our work, so they learn more about their country. Hopefully some of them will end up being a ranger like me!"

— TIWI RANGER

Tiwi people want their Ranger Program to be proud, healthy, and strong, provide meaningful employment and promote strong connections to culture and country. They also want to increase the number of women rangers – Tiwi women hold customary knowledge and contemporary roles that are vital to caring for country and culture.

"Women should be rangers too, based in all communities. It's time to start changing!"

— TIWI TRADITIONAL OWNER

"Other mob have women rangers."

— TIWI TRADITIONAL OWNER

There is strong support for the involvement of more Tiwi women and girls in community leadership and decision making, including increasing the representation of women on both the Tiwi Land Council and Executive Management Committee. Until 2021 there were no women on the Tiwi Land Council.

> *"We need ladies on the Land Council. The men, they're not listening to us, they don't share information with us, they only want men on the Land Council, this needs to change."*

— TIWI TRADITIONAL OWNER

Lack of Authority

Senior Traditional Owners are fully supportive of Tiwi rangers, but also believe the program should engage more effectively with communities.

> *"We need those rangers, for looking after country, for culture, for training up young people. We don't know what rangers do. We need to hear more from them about how they're looking after country – not just about fire."*

— TIWI TRADITIONAL OWNER

They also lament a lack of engagement with young people and want the Junior Ranger program reinvigorated.

> *"Kids need to learn how to be a ranger, it's a good pathway for our young people. Training junior rangers needs to happen at Tiwi College."*

— TIWI TRADITIONAL OWNER

“Our young people need training to become rangers. We need a Junior Ranger program, so young ones can become rangers when they leave school.”

—TIWI RANGER

Tiwi rangers feel disconnected from the workings of the Land Council, and consequently uninformed of the TLC’s broader goals and expectations. They want Senior Managers to take more interest in their work and have greater respect for their role and abilities.

“No communication between land council management and rangers on the ground.”

—TIWI RANGER

“We’d love to sit down with management and talk about what we do and ask what they think, what they expect from us.”

—TIWI RANGER

Despite their presence on land and water, Tiwi rangers have no role in policing the Islands’ permit system. They see this as a missed opportunity and worry that no one is undertaking compliance. They are not informed of permit holders travelling, working, or fishing in the area and have no power to enforce permits.

“We have no powers. We need to know who has permits. Need to be able to ask people to see their permits.”

—TIWI RANGER

“Need Marine Rangers to have same powers as water police to book people fishing in red zones.”

—TIWI RANGER

Inadequate Facilities

Inadequate ranger infrastructure is a barrier to effective land and sea management. With no central ‘hub’ ranger base rangers are unable to meet to plan work programs, coordinate weekly activities, undertake training, review programs, access online communication tools (e.g., Zoom, Teams) for meetings, workshops and collaborating with research partners.

Strategies

- *Establish strong governance for the Tiwi Islands IPA*
- *Ensure rangers have the necessary facilities and equipment to implement the Plan of Management*
- *Increase the number of men and women rangers*
- *Establish a Tiwi Junior Ranger Program*
- *Provide ongoing ranger training and education*
- *Maintain a strong working relationship with the Tiwi Land Council*

THREATS

Threats to Tiwi values were identified by the IPA Planning Committee and Rangers. Our Plan of Management focuses on protecting the health of our values and reducing these threats.

"We're isolated, we're a unique place, we're worried about these threats."

—TIWI TRADITIONAL OWNER

Threats to our Values

Threat	Rating			
	TOP THREAT	SERIOUS THREAT	MEDIUM THREAT	LOW THREAT
1) Feral Animals – Buffalo, Pigs and Horses				
2) Introduced Pests – Cats, Ants and Cane Toads				
3) Weeds				
4) Climate Change				
5) Sea Rubbish				
6) Wildfire (Fire not managed properly)				
7) Loss of Culture				
8) Country lonely and not Healthy				
9) Ranger Capacity				
10) Low respect for Tiwi Country and Clans				
11) Modern technology, Gambling and Gunja				
12) Trespass				

Tiwi Threats and Values Matrix

Threats \ Values impacted ⊗	Tiwi Culture and People	Cultural Places	Tiwi Country	Plants and Animals	Bush Tucker and Medicines	Rangers and IPA
1) Feral Animals – Buffalo, Pigs and Horses		⊗	⊗	⊗	⊗	
2) Introduced Pests – Cats, Ants and Cane Toads			⊗	⊗	⊗	
3) Weeds		⊗	⊗	⊗	⊗	
4) Climate Change	⊗	⊗	⊗	⊗	⊗	⊗
5) Sea Rubbish		⊗	⊗			
6) Wildfire (Fire not managed properly)	⊗	⊗	⊗	⊗	⊗	⊗
7) Loss of Culture	⊗	⊗	⊗		⊗	
8) Country lonely and not Healthy	⊗	⊗	⊗	⊗	⊗	
9) Ranger Capacity	⊗	⊗	⊗	⊗	⊗	⊗
10) Low respect for Tiwi Country and Clans	⊗	⊗	⊗			
11) Modern technology, Gambling and Gunja	⊗					
12) Trespass	⊗	⊗	⊗			

"If we all work together, we can make change."

— TIWI TRADITIONAL OWNER

1) Feral animals – buffalo, pigs and horses

Threat Rating: TOP THREAT

Values impacted	Targets
Cultural Places	
Tiwi Country	✓ No feral pigs on the Islands
Plants and Animals	✓ Feral buffalo and horse numbers reduced to agreed levels
Bush Tucker and Medicines	

Water buffalo were introduced from Timor to Melville Island by British colonists in 1826, as a source of milk, meat, and heavy labour. However, large, uncontrolled herds have been an environmental disaster for the Tiwis. Wallows, trails, trampling and disturbance have resulted in soil erosion, channelling of floodwaters, saltwater intrusion into freshwater habitats, degradation of culturally significant sites and destruction of wetland vegetation, directly impacting traditional harvests and livelihoods. Buffalo can also carry serious cattle diseases including Lumpy Skin Disease and Foot-and-Mouth Disease which pose a significant threat to Australia's beef industry. A 2022 survey of buffalo on Melville Island estimated the feral buffalo population to be 7400.

"At Goose Creek, those buffalo they damage the trees, the paperbarks. They let the saltwater in, the saltwater kills. It damages those wetlands."

— Tiwi Traditional Owner

Feral buffalo have been incorporated into Tiwi culture and are now a totem and, although landowners acknowledge the threat buffalo pose to the health of their country, they also view them as a potential economic opportunity.

Feral horses have also become a serious issue on Melville Island - they foul waterholes, damage native vegetation, and spread weeds.

"Big mob of those buffalo and horses. Get rid of them. They're not good for country."

— Tiwi Traditional Owner

"The horses are a problem; they break off taps to get to water and poo everywhere."

— Tiwi Traditional Owner

Pigs were introduced by missionaries to Bathurst Island in the early 1900s and have since spread across Bathurst and to the western part of Melville Island. Their impact on the exceptional biodiversity values of the Tiwis is profound and includes the destruction of habitat and predation of native

species, spreading of weeds, land degradation, and detrimental impacts on wetlands, waterways and water quality. Along coastlines pigs are major predators of eggs and hatchlings from marine turtle nests. They are also an increasing problem for the residents of Wurrumiyanga and Wurankuwu on Bathurst Island.

> *"Now I'm seeing pigs dig up turtle nests at Cape Fourcroy! They suck out the eggs and leave the shells."*
>
> —Tiwi Traditional Owner

> *"We worry about our kids and those pigs everywhere. The pigs fight with our dogs, make big holes, mess up people's yards."*
>
> —Tiwi Traditional Owner

> *"Got to think about doing something about the pigs here in the community, they're everywhere! Just shoot those pigs, get rid of them! I've got a shotgun; I'll shoot them if they come in my yard. But I'll get in trouble!"*
>
> —Tiwi Traditional Owner

> *"Pig bit a lady on the leg, she had to go to hospital. I'm sick and tired of them, tip over bins, rubbish everywhere, big holes everywhere."*
>
> —Tiwi Traditional Owner

> *"The pigs eat our Mud Mussels in the mangroves!"*
>
> —Tiwi Traditional Owner

Feral pigs pose a significant biosecurity risk. They are amplifying hosts of the virus Japanese Encephalitis, which killed a Tiwi Islander in 2021– the first locally acquired human case in Australia since 1998 – and can host African Swine Fever and Foot-And-Mouth Disease, both of which are present in Indonesia and if entered Australia would collectively cost livestock industries over $80 billion.

An on-going, multipronged approach is needed to control feral animals, but management strategies can only proceed with Tiwi landowner approval. Development of species-specific plans based on extensive community consultation will address concerns regarding potential loss of income, cheap meat, and cultural connections. This process commenced for buffalo and pigs in 2023 with funding from the NT Aboriginal Ranger Grants Program.

2) Introduced Pests – Cats, Invasive Ants and Cane Toads

Threat Rating: **TOP THREAT**

Values impacted	Targets
Tiwi Country	✓ Introduced pests eradicated from the Islands
Plants and Animals	✓ No new pests on the Islands
Bush Tucker and Medicines	

Feral cats are a serious threat to the conservation of biodiversity on the Tiwi Islands. They prey on a wide range of animals, including invertebrates, frogs, reptiles, birds, and mammals and have been primary contributors to mammal extinctions on the mainland. They are well established on both islands but are in larger numbers on Melville, where frequent fire and feral animal grazing impacts tend to favour them. They are the same species as domestic cats and can carry infectious diseases which can be transmitted to native animals, domestic livestock, and humans. Tiwi people generally do not keep cats as pets, and there is overwhelming community support for feral cat control.

"Feral cats killing them, killing those animals."

—Tiwi Traditional Owner

Feral cat control techniques currently being trialled on the islands include shooting, trapping, and Felixer poisoning. Other methods such as baiting and exclusion fencing are not considered feasible. However, cats' wariness makes them difficult to trap and shoot on a large scale, while the Islands' size and relative low cat densities (estimated at 1/5km^2, H. F. Davies *pers. comm.*) make the deployment of Felixer grooming traps a costly proposition. In conjunction with trapping and shooting it may, however, be useful to reduce cat numbers in key areas. A predator exclusion compound on the islands for threatened species has been considered but this level of intervention is probably unnecessary given the persistence of small mammal species and the significant establishment and maintenance costs.

A more practical solution may be to focus conservation efforts in one key area. In 2021 the northwest corner of Bathurst Island was considered as a conservation offset for the Darwin Ichthys Liquified Gas project. This area has no feral herbivores, low cat density and healthy populations of mammals and several threatened plant species. It is an area with rich soils, high rainfall, and outstanding habitat diversity. It is also remote and currently undeveloped. As an offset reserve managed to a higher IUCN protection category, this area could generate considerable funding and contribute significantly to the IPA's healthy country goals.

To prevent an increase in the Tiwi feral cat population, community awareness campaigns discouraging cats from being brought to the islands, desexing and keeping cats indoors should be continued.

Cane Toads are currently not on the Tiwi Islands but pose a significant threat to Tiwi biodiversity because they are poisonous, predatory, adaptive, and competitive. These tough, adaptable amphibians are voracious feeders that if, introduced to the Tiwis, would dramatically reduce populations of native insects, frogs, reptiles, and other small creatures. Their skin contains toxic poison that can also kill native predators. They would quickly invade virtually all habitats, impacting favoured bush foods such as goannas, pythons, and freshwater fish.

"We have to think about those Cane Toads. We have to stop them. They would be a very bad thing for our country."

—TIWI TRADITIONAL OWNER

Introduced invasive ants are some of the greatest environmental and economic threats to northern Australia. They can form super colonies that can eliminate many native animal species, seriously disrupt ecological processes, and sting humans and animals, preventing people from enjoying the outdoors. They readily nest in all kinds of materials, from potting mix to packaging, making it very easy for them to be accidentally transported.

The most serious invasive ant species occurring on the Tiwis are Singapore Ants (*Trichomyrmex destructor*), African Big-headed Ants (*Pheidole megacephala*) and Tropical Fire Ants (*Solenopsis geminata*). Ongoing surveys of African Big-headed Ants and Tropical Fire Ants need to be undertaken in all communities and eradication programs implemented.

Development of a biosecurity plan that covers pest animals such as Cane Toads and invasive ants is a high priority for the Tiwi Islands.

3) Weeds

Threat Rating: **TOP THREAT**

Values impacted	Targets
Cultural Places	✓ No Gamba Grass on the Islands
Tiwi Country	✓ No new weeds introduced to the Islands
Plants and Animals	✓ Existing weed infestations controlled and contained
Bush Tucker and Medicines	

Weeds pose the greatest threat to economic development and the natural resources of the Tiwi Islands.

First introduced in the 1960s and 70s as part of government forestry trials, they disrupt ecosystems, out compete native plants, reduce food and shelter for native species, damage waterways and water quality, change fire regimes, create soil erosion, reduce the availability of traditional food resources, and disrupt spiritual and physical connections to country. Weed management is challenging – the islands are large, remote, and difficult to access. Weeds are mostly confined to communities, roadsides and disturbed areas but have the potential to spread right across the islands while increased traffic from the mainland has significantly increased the risk of further introductions.

Weeds of National Significance (WONS) are identified by their invasiveness, potential for spread and environmental, social, and economic impacts. Mimosa (*Mimosa pigra*) Lantana (*Lantana camara*), Rubber Vine (*Cryptostegia* spp.), and Gamba Grass *(Andropogon gayanus*) – all WONS – are found on the Tiwi Islands.

Gamba Grass is of major concern. It grows rapidly to form large tussocks that are taller and denser than native grass species and threatens ecosystems by dramatically altering fire regimes, reducing tree cover, and impacting plant and animal biodiversity. Gamba Grass also poses a significant risk to human life and property in areas it invades as

it radically increases the likelihood of severe fire. It also poses a big economic threat - the Tiwi Fire and Carbon project would not be able to claim Australian Carbon Credit Units (ACCUs) for Gamba Grass infested areas. In 2021, 25 Gamba Grass sites were discovered and eradicated. Ongoing monitoring and surveying are preventing new outbreaks.

> ***"That Gamba Grass is no good for our carbon project – we'll lose our money if we have that on our country."***
>
> — TIWI TRADITIONAL OWNER

Another fast-growing robust weed of concern is *Acacia mangium. T*rial plantings were established as part of forestry operations on the Islands from the 1960s to the 1980s, and in 2001, 30,000 hectares were planted on Melville Island. Wildlings have since spread from plantations to open forest and rainforest communities. They displace native plants, greatly increase biomass and fuel loads, diminish the quality of habitats for native wildlife and impact the amenity of hunting, fishing, and camping areas. In addition to *Acacia mangium* changing native species composition, the potential exists for hybridisation with Jarrikarli (*Acacia auriculiformis*) which occurs naturally on the islands.

> ***"We worry about those wildlings from the forestry. What's going to happen with them in the future, what's going to happen to the country?"***
>
> — TIWI TRADITIONAL OWNER

A five year Weed Management Plan is currently being developed for the Tiwi Islands. Unlike many other areas in the Northern Territory, there is real potential to eradicate many invasive weeds from the Tiwi Islands. Once outbreaks have been controlled, the sea barrier from the mainland combined with improved quarantine infrastructure and procedures, would make it possible to maintain a relatively weed free status.

4) CLIMATE CHANGE

Threat Rating: TOP THREAT

Values impacted	Targets
Tiwi People and Culture	✓ Tiwi community understand climate change and its impacts
Cultural Places	✓ The Tiwi Fire and Carbon Project contributing to global efforts to reduce greenhouse gas emissions
Tiwi Country	✓ Land management adapting to climate change
Plants and Animals	
Bush Tucker and Medicines	
Rangers and IPA	

"Climate change is a top threat!"

— TIWI TRADITIONAL OWNER

The climate of the Tiwi Islands is projected to continue to change over the coming decades. In the future:

- Temperatures will continue to get warmer
- The hottest days will be hotter and more frequent
- Heavy rainfall events will become more intense
- Tropical cyclones are projected to become less frequent but more intense
- Fire weather is projected to become more frequent and harsher
- Mean sea level will continue to rise, and the height of extreme sea levels will increase
- Sea surface temperature will continue to increase, and the number and intensity of marine heatwaves will increase
- The ocean will become more acidic at a rate linked to carbon dioxide concentrations in the atmosphere

"We've seen the changes, the sea is higher, the cliff edges in Milikapiti falling down. We see the water levels have been rising,

creeks flood much further in on high tides, it's all changing now, it's bad."

— TIWI TRADITIONAL OWNER

Over the past 20 years, sea levels in northern Australia have been rising by about 10 mm each year, a far greater rate than southern Australia, and two to three times greater than the global average. Rising sea levels may affect the return of sea turtles to nesting sites, and increased nest temperatures and moisture from rising sea levels may affect the sex and development of hatchlings.

"We went looking for turtle eggs near Seagull Island and we couldn't find any. The old people said they used to be there, turtle eggs everywhere."

— TIWI TRADITIONAL OWNER

Saltwater contamination of coastal freshwater areas as a result of rising sea levels and storm surges will also impact the availability of important wetland food resources such as Magpie Geese, ducks, turtles, lilies and fish. For communities living on the coast, sea-level rise may mean that in the future people will have to move to higher ground while cyclones of higher intensity will have a significant impact on services and infrastructure. In 1998 the Category 5 Cyclone Thelma caused major disruptions to communications and power supplies on the Tiwi Islands, as well as infrastructure damage. Damage to trees in northern regions was significant and extensive.

"Information about climate change needs be for all ages, and they need to learn about it every year, so everyone understands."

— TIWI TRADITIONAL OWNER

In the face of uncertainty, adaptation will be the key to preparing for future scenarios.

"Kids are the future, they need to know about climate change, they need to know what's going to happen, what's going to change. Need to provide information for kids, in Tiwi terms, in a book. We need to be prepared."

— TIWI TRADITIONAL OWNER

"All kids need to know about climate change and they need to be taught about it every year."

— TIWI TRADITIONAL OWNER

5) Sea Rubbish

Threat Rating: TOP THREAT

Values impacted	Targets
Cultural Places	Beaches are free of plastic rubbish
Tiwi Country	No ghost nets in coastal habitats

Marine debris can injure or kill marine and coastal wildlife and damage and degrade habitats. It can impact plankton, invertebrates, fish, cetaceans, sea turtles and seabirds. The Tiwi Islands have over 1000 kilometres of remote beaches, bays, and estuaries, and support nationally significant aggregations of seabirds, shorebirds, and marine turtles. The islands provide important sanctuary for five marine turtle species including Loggerhead, Pacific Ridley, Hawksbill, Flatback and Green Turtles. Turtles can become entangled in fishing nets and plastic packing bands. Derelict fishing gear can also continue to trap fish and other animals, called ghost fishing, after it is out of the control of a fisher.

"There are lots of ghost nets on Vernons, lots of ghost nets everywhere, need to do something about this."

— Tiwi Traditional Owner

Marine debris also impacts Tiwi wildlife through ingestion. Birds and turtles may mistake balloons or plastic bags for prey. As plastic debris breaks up into smaller pieces, it is easier for smaller and smaller species, such as zooplankton, to eat.

"Rubbish is all around the beaches on the whole islands. It's a real problem. Rangers need to help with this, need to look after the sea country. Rangers need to be part of the solution."

— Tiwi Traditional Owner

6) WILDFIRE (FIRE NOT MANAGED PROPERLY)

Threat Rating: **SERIOUS THREAT**

Values impacted	Targets
Tiwi People and Culture	
Cultural Places	✓ No large late dry season wildfires
Tiwi Country	✓ Responsible cultural burning
Plants and Animals	✓ Less fire overall on the Islands
Bush Tucker and Medicines	
Rangers and IPA	

The tropical savannas of northern Australia are among the most fire-prone ecosystems on Earth, with up to half of many savanna landscapes, including the Tiwi Islands, being burnt each year.

Burning is an important cultural expression and land management tool for Tiwi people, but there is growing concern about the potential negative impacts of more intense fires occurring late in the dry season.

"Lot of fire bugs out there!"

—TIWI RANGER

There is also concern about the impacts of too much burning on the ability to earn carbon credits. Most greenhouse gas emissions from burning are generated by fires that sweep through remote areas on the Tiwi Islands from August onwards.

"We set up that carbon program, if we burn that country wrong way, that money goes up in smoke!"

—TIWI TRADITIONAL OWNER

Savannas contain about 30 per cent of Australia's terrestrial carbon stocks. Fire also influences rates of carbon sequestration through its effects on tree growth and survival, litter decomposition and charcoal production.

> *"Keep country clean and healthy – and still make money from carbon. That's what we want to do!"*
>
> —Tiwi Traditional Owner

As well as producing greenhouse gases, fires late in the dry season can threaten biodiversity – they can impact a wide range of plant and animal species and ecosystems, including those that are naturally fire prone such as eucalypt woodlands and those that rarely burn such as monsoon rainforests.

> *"We must bring together our knowledge of the past with the new science. What do the fires do? What's happening with the animals and plants? What's happening underground in the soil?"*
>
> —Tiwi Ranger

Annual fire management planning, led by a dedicated Fire Officer and involving Rangers, Traditional Owners, and key stakeholders, will help to reduce the frequency and extent of late dry season fires, reduce greenhouse gas emissions, and maximise earnings of carbon credits.

> *"People need to get involved in the fire project; young people need to be part of the burning."*
>
> —Tiwi Ranger

Community education and awareness is a key part of managing wildlife – the more people understand what rangers are aiming to achieve through the carbon project, the less likely they are to light fires in the late dry season.

> *"The next generation needs to learn about fire, more training for young people. There should be training at Tiwi College."*
>
> —Tiwi Traditional Owner

7) Loss of Culture

Threat Rating: **MEDIUM THREAT**

Values impacted	Targets
Tiwi People and Culture	✓ Tiwi culture is strong and healthy
Cultural Places	✓ Young Tiwi know their language and culture
Tiwi Country	✓ Young Tiwi respect their elders and are proud of their culture
Bush Tucker and Medicines	

Tiwi language and traditional cultural knowledge is being lost as older people pass away, and younger people look to Western influences. Language is more than just a means to communicate, it is what makes Tiwi unique and plays a central role in their sense of identity. It allows men and women to participate fully in the important ceremonial activities of composing and singing songs, recounting, and retelling stories. For Tiwi, speaking the Tiwi language provides a sense of belonging and empowerment. Being able to pass on language to future generations is central to keeping culture strong.

"Kids don't know their language – too shame to speak Tiwi. They need to know Tiwi to keep culture strong and healthy."

— Tiwi Traditional Owner

"That bilingual program is finished, gone now. Children should be learning Tiwi, they don't have Tiwi books, they're struggling. Lots of Kriol language taking over. Got to maintain Tiwi language forever."

— Tiwi Traditional Owner

"Young women don't know how to weave baskets; young men don't know how to make spears."

— Tiwi Traditional Owner

There is also a decline in customary use, management and traditional knowledge of bush tucker and bush medicines. The Tiwi names for plants and animals are being forgotten.

"Kids need to learn about kwoka, older people, they know, but the young ones don't. Need to teach them."

— Tiwi Traditional Owner

"Make it (learning about bush tucker) happen for the next generation. If we all die what's happening for the next generation."

— Tiwi Traditional Owner

“Kids don’t know the names of things. Bring back the Tiwi literacy program!”

—Tiwi Traditional Owner

“That turtle dreaming project with kids, elders, and rangers, that was a good one. We need to continue that.”

—Tiwi Traditional Owner

“Rangers are keen to get that turtle program going again.”

—Tiwi Ranger

Participation by Tiwi in important ceremonies is under threat. Re-engagement of young people with Tiwi spiritual, cultural, and ecological knowledge is the highest priority of Tiwi elders. The expectation that people should be paid to teach culture instead of acknowledging that it is their responsibility to pass this knowledge on contributes to a cultural decline.

“People say they won’t teach culture unless they get paid. There’s no money so no one teaches. Money is what drives them. People should just teach the kids, don’t worry about the money.”

—Tiwi Traditional Owner

“Culture is for free! People shouldn’t be paid to teach culture.”

—Tiwi Traditional Owner

“I want to take kids out, no one comes, only the old ladies. Need to look at that. We’re all in this together, they just worry about pay day. Money comes first. No love anymore, money love only.”

—Tiwi Traditional Owner

Traditional ecological knowledge and the locations of cultural sites, and the stories and ceremonies associated with them must be recorded and preserved for future generations.

“Our stories and knowledge have been passed down for thousands of years. We need to protect those stories for our kids.”

—Tiwi Traditional Owner

“People don’t worry about kids learning now, we all need to help for the sake of the children. We’ve been asking a lot of people for help, no funding, no help, that’s why I think the IPA will help.”

—Tiwi Traditional Owner

8) COUNTRY LONELY AND NOT HEALTHY

Threat Rating: **MEDIUM THREAT**

Values impacted	Targets
Tiwi People and Culture	
Cultural Places	✓ Tiwi are able to visit country and look after it properly
Tiwi Country	
Plants and Animals	✓ Woodlands, jungles, mangroves and wetlands are healthy and supporting healthy Tiwi lifestyles
Bush Tucker and Medicines	

Country is a link between all aspects of Tiwi people's existence – spirituality, culture, language, family, law, and identity. It includes not just the land, but fresh and saltwater places, plants, animals, heritage, and ancestors. Caring for country benefits the cultural, physical, social, and emotional wellbeing of Tiwi people.

"We must listen to Country and what it needs from us."

—TIWI TRADITIONAL OWNER

The benefits of being on country include a healthier diet, more frequent exercise, greater transmission of culture, increased family-time and enhanced spiritual connectedness. However, Tiwi predominantly live in communities and due to lack of transport and bush camp facilities, the opportunities to spend time on country are limited and important cultural knowledge is not passed down. Being on country also allows traditional owners to manage and monitor threats such as feral animals and invasive weeds.

"Young teenagers don't even know where their country is, they don't know where the sacred sites are."

—TIWI TRADITIONAL OWNER

"I like to go out on country but no vehicles. Normally in dry season we go, need vehicles to get to those places."

—TIWI TRADITIONAL OWNER

"No money, no cars to get out on country. It needs us but we can't get there."

—TIWI TRADITIONAL OWNER

"Need to have more opportunities for people to go on country."

—TIWI TRADITIONAL OWNER

“Transport and roads are the main thing to getting people back on country. To get to certain areas, need to make a road to get there, too hard to get funding. Shire have got that money for road, but something has happened with it.”

— TIWI TRADITIONAL OWNER

“We can’t look after country if we have no access. It’s a big threat.”

— TIWI TRADITIONAL OWNER

Tiwi need to have the opportunity to look after their country, allowing them to escape the social problems of the communities, eat healthy traditional bush foods and look after places of cultural significance.

“Too much fighting. That’s the reason why I want to go and live in the bush, away from the fighting.”

— TIWI TRADITIONAL OWNER

“Nobody is going out on their country anymore. Country is lonely, country needs people.”

— TIWI TRADITIONAL OWNER

9) RANGER CAPACITY

Threat Rating: **MEDIUM THREAT**

Values impacted	Targets
Tiwi People and Culture	There are enough rangers to do the job – they have what they need to manage country properly
Cultural Places	Rangers work as a productive team and get the work done
Tiwi Country	Ranger IPA work is safe and enjoyable
Plants and Animals	Facilities and staff accommodation are improved, and a central ranger base is developed on Melville Island
Bush Tucker and Medicines	Rangers have a strong and productive relationship with the Tiwi Land Council
Rangers and IPA	

The Tiwi Islands, Australia's second and fifth largest islands, covering an area of 8000 square kilometres and with more than a thousand kilometres of coastline are managed by only 10 Rangers. It is simply not possible for the Ranger program to meet all the land and sea management requirements of such a vast and remote area.

"We haven't got enough rangers to look after our country."

—TIWI TRADITIONAL OWNER

"We need to support the rangers across the whole islands, need to look at the big picture, not just what's happening now, for our kids, for all of us."

—TIWI TRADITIONAL OWNER

"Those land council members treat us like slaves, that's the only time they talk to us, when they want something, when they're stuck somewhere and need a car!"

—TIWI RANGER

“ The feedback from our rangers is important, we need to listen to them! ”

— TIWI TRADITIONAL OWNER

In addition, inadequate infrastructure is a major barrier to effective land and sea management. There is no proper Ranger base with facilities to accommodate current program activities, or future expansion of the program, and there is no dedicated accommodation for the Islands-based Ranger Operations Coordinator.

“ We need those rangers, for looking after country, for culture, for training up young people.”

— TIWI TRADITIONAL OWNER

Ranger Program facilities need to be upgraded in all communities to ensure Rangers can do their job safely and efficiently. Senior Traditional Owners are fully supportive of rangers, but the program needs to expand significantly to be able to adequately implement the IPA Plan of Management. To ensure ongoing community support, Rangers need to raise community awareness about their work, support a Junior Ranger program and be good role models for all Tiwi.

“ We don’t know what rangers do. We need to hear more from them about how they’re looking after country – not just about fire.”

— TIWI TRADITIONAL OWNER

Rangers are not engaged at all with the Tiwi Land Council permit system – they are not informed about permit holders travelling, working, or fishing and have no power to enforce permits.

“ We have no powers. We need to know who has permits. Need to be able to ask people to see their permits.”

— TIWI RANGER

“ Need Marine Rangers to have same powers as water police to book people fishing in red zones. We’re powerless compared to those rangers in Arnhem Land.”

— TIWI RANGER

10) LOW RESPECT FOR TIWI COUNTRY AND CLANS

Threat Rating: **MEDIUM THREAT**

Values impacted	Targets
Tiwi People and Culture	Tiwi respect traditional ownership and do the right thing when on country
Cultural Places	
Tiwi Country	

Traditionally country was shared through respect and reciprocal arrangements between landowning clans. Resources weren't wasted, country wasn't harmed, and sites were managed in accordance with cultural protocols. However, these protocols have weakened in recent times and some people no longer ask permission to visit other families' country or don't behave respectfully while there.

"Need to ask owners of country to be there, to camp or fish. That's not their country, they need to ask. Me and my kids, we have to clean up the campsites, people leave rubbish, the water is dirty."

— TIWI TRADITIONAL OWNER

"Countrymen are lazy, they're not taking their rubbish with them. Countrymen need to play their part. It's not the rangers' responsibility."

— TIWI RANGER

Other issues include people claiming sole ownership of land, blocking access, or disregarding other families with traditional connections to that country.

"Need to have respect for other people's country. We're all Tiwi but if that's not your land, you need to ask, it does worry us, some of our family don't feel comfortable with this, telling people when they do the wrong thing."

— TIWI RANGER

"People just do what they like, they need to respect other people and their country."

— TIWI TRADITIONAL OWNER

"Need a family tree with owners, if people want to know who owns country, they look at that tree."

— TIWI TRADITIONAL OWNER

As a result, tensions in the community may increase and be exacerbated even further as the population grows and cultural knowledge is not respected or passed down to future generations.

11) MODERN TECHNOLOGY, GAMBLING AND GUNJA

Threat Rating: **MEDIUM THREAT**

Values impacted	Targets
Tiwi People and Culture	✓ Modern technology used for good and no drugs in communities ✓ Tiwi confident and comfortable in both worlds ✓ Cultural programs allow young people to have access to cultural knowledge and on-country education

The availability of smart phones and use of social media and digital technologies has grown rapidly in recent years on the Tiwi Islands. Social media offers many benefits such as providing a way to establish and navigate identity, build, and maintain connections to family and community, and seek and offer mutual support. While these can be positive experiences, social media also has its risks. The time spent social networking can detract from other social relationships or responsibilities.

> *"Kids are too busy on Facebook and Instagram, they're losing culture. They need time on country, they need culture camps so they can learn more about culture and ceremony."*
>
> — TIWI TRADITIONAL OWNER

On social media envy can proliferate much more easily, which can lead to depression and anxiety. Bullying in the form of inflammatory gossip, shaming, and backstabbing can trigger intense feelings and responses, and escalate tension and social unrest in communities.

> *"Mobile phones have taken over culture. Back in the old days there was no technology. Old people passed on knowledge. Now there are mobile phones, and it doesn't happen.*
>
> — TIWI TRADITIONAL OWNER

Gambling is part of the social and cultural fabric of the Tiwis but cultural expectations to gamble and share resources with relatives can result in gambling-related harms that stretch across the Islands.

> *"Gambling is terrible for our culture, it causes money problems, stress, arguments in families."*
>
> — TIWI TRADITIONAL OWNER

Gunja (cannabis) is the most commonly used illicit drug on the Tiwi Islands. There is little evidence that cannabis is grown on the islands, the supply is from Darwin-based dealers. Gunja is a central nervous system depressant; it slows down brain activity and produces feelings of relaxation and drowsiness. However, the side effects - such as memory problems, respiratory tract infections, learning difficulties, mood swings, anxiety, paranoia, psychotic disorders, and depression - harm social, cultural, and emotional wellbeing. It is easy to become dependent on gunja and maintaining a supply can be very expensive with some users spending more than half their weekly income on gunja.

> *"I'm struggling at the moment, there are too many drugs in our communities, that's why I want to concentrate on children, not adults, the children. Create something nice for our young people, I want to continue teaching culture, tell them to be healthy, stay away from the drugs, the only way we can do it is to educate young people, too hard to educate adults."*
>
> — TIWI TRADITIONAL OWNER

12) TRESPASS

Threat Rating: **MEDIUM THREAT**

Values impacted	Targets
Tiwi People and Culture	✓ No unauthorised access to the Islands
Cultural Places	✓ No unwanted activities on the Islands
Tiwi Country	

Bathurst and Melville Islands have a combined coastline of approximately 1000km, the vast majority of which is inaccessible by road. Rangers are based in the communities on the southeast coast of Bathurst Island and the northwest coast of Melville Island and must travel long distances in boats to patrol the Islands. The remoteness of the Tiwi coastline creates significant issues related to uncontrolled access – to both the land and coastal resources.

"Our country (Yimpinari) is big. We've got no idea who's on our land, on that eastern side. No roads, no rangers to look after country out there."

—TIWI TRADITIONAL OWNER

"We have no powers. We need to know who has permits. Need to be able to ask people to see their permits."

—TIWI RANGER

Of major concern is the increasing number of fishers and fishing tour operators from Darwin and the impact this may have on coastal resources, including the inadvertent transport of pest species to the Islands. High fish stocks and close proximity to the mainland has made Tiwi sea country a favoured destination for recreational fishing, especially as fishers access larger vessels with greater ranges.

“A lot more people and boats now come over from the mainland, we worry that more pests and diseases will get on the islands.”

—Tiwi Traditional Owner

“Need the ranger boat to check the coast, check those boats coming from Darwin to fish.”

—Tiwi Traditional Owner

“We don’t want trouble between rangers and those fishermen that come over. We worry about the rangers’ safety.”

—Tiwi Traditional Owner

“Do rangers have the authority to tell people to get out of the red zone? ”

—Tiwi Traditional Owner

“Marine rangers need to have same powers as water police to book people fishing in red zones.”

—Tiwi Ranger

The Vernon Islands are easily accessible by boat from Darwin – Kulangana (Southwest Vernon Island) is less than five kilometres from the NT mainland coast – and receive high visitation from recreational fishers. There are also shipwrecks in the area and the Blue Holes are popular with divers.

“We worry that tour operators are going where they shouldn’t, fishermen are going where they shouldn’t. If we ask people to see their permit, they just tell us to piss off! Rangers need more power; we need to be notified about permits.”

—Tiwi Ranger

Through a program of education and increased marine rangers patrols the Tiwi IPA will assist landowners to reduce illegal access to their islands. Culture, lifestyles, and livelihoods rely on healthy country and effective, vigilant quarantine practices are the first line of defence in protecting the Islands from introduced plants, animals, and diseases.

PART C: MANAGEMENT STRATEGIES AND ACTIONS

STRATEGIES AND ACTIONS FOR OUR TIWI VALUES

1) TIWI PEOPLE AND CULTURE

Strategy	Actions
Support Tiwi culture, art and ceremonies	Appoint IPA Cultural Advisors Provide support for old and young people to participate in important ceremonies such as Kurlama Support the involvement of young people in cultural events and activities
Help ensure cultural education is available to all young Tiwi	Provide support for existing successful cultural programs Seek funding for an island-wide Junior Ranger program incorporating learning on country activities Work with schools and IPA Cultural Advisors to develop new activities focussing on intergenerational knowledge exchange
Recognise the importance of bush camps to cultural wellbeing	Audit current infrastructure and access, and prioritise weed management and fire breaks at bush camps Erect safety (crocodile) and sacred site signage where required

Strategy	Actions
Protect Tiwi cultural knowledge for future generations	Support projects that encourage the use, recovery and recording of Tiwi knowledge of country and culture Develop skills and capacity to record and archive traditional knowledge Develop an integrated data management system – to safely hold information about culture and country Design IPA activities, including monitoring and evaluation, that promote community involvement and intergenerational transfer of Tiwi cultural knowledge
Encourage greater participation of landowners in land and sea management	Provide more casual employment opportunities e.g., during the fire season Involve landowners in IPA monitoring and evaluation Consult relevant Traditional Owners/Trustees regarding projects on their estates

2) CULTURAL PLACES

Strategy	Actions
Ensure the documentation and preservation of cultural places	Support the Tiwi Land Council Anthropology Group's cultural mapping program and registration of sacred sites, including signage and communication materials to raise visitor awareness of sites located in communities Support mapping, registration, and protection of sacred sites across the islands and adjacent sea country, including signage where required In collaboration with the Tiwi Land Council Anthropology Group establish a monitoring program to protect vulnerable sacred sites Develop a weed, fire, and feral animal management and monitoring program addressing impacts on cultural sites and places
Protect important coastal places	Undertake coastal cultural mapping, with Melville Island a priority Review and update the Vernon Islands Conservation Management Plan Review the Tiwi Islands coastal access agreement to ensure zoning continues to protect places of importance to Tiwi Reduce the impacts of marine debris on coastal places including through engagement with the Australian Government's Ghost Nets Initiative
Protect historical places	Register important historical sites with the NT Government – including Fort Dundas and Karslake Protect historical sites by managing fire and weeds and erecting signage

3) Tiwi Country

Strategy	Actions
Reduce the number of feral animals and improve community awareness of impacts	Undertake surveys to determine the density and distribution of buffalo, horses, and pigs Develop species-specific management plans including seeking landowner consent to control feral animals Develop and undertake humane, control programs for feral animals and investigate long-term options Ongoing monitoring of Tropical Fire Ants in Melville Island communities to prevent re-establishment Survey all communities for African Big-headed Ant infestations Be responsive to new feral cat control methods and implement where feasible Develop and deliver a feral animal community awareness and education program
Reduce the number of weed infestations and improve community awareness	Provide ranger training in weed identification and control methods Undertake island-wide weed survey and develop a weed management strategy Increase surveillance and rapid eradication of Gamba Grass infestations Work with Tiwi Plantations to develop practical control options for *Acacia mangium* wildlings Develop a community weed awareness and education program – including identification and mechanisms for reporting
Improve awareness of climate change and understanding of its impacts on the Tiwi Islands	Work with the Tiwi Islands Regional Council and other key Tiwi stakeholders to re-establish and contribute to the Tiwi Climate Change Committee Monitor the impacts of climate change e.g., coastal erosion, saltwater in wetlands, seasonal changes
Plan for climate change adaptation	Keep informed of emerging technologies and programs e.g., Climate Action Beacon program Support collaborative research projects

Strategy	Actions
Improve fire management to protect culture, biodiversity, and property	✓ Monitor and evaluate the impacts of prescribed burning on the Islands' biodiversity ✓ Increase the amount of country left unburnt for at least five years to 30 per cent or more ✓ Support responsible cultural burning by landowners. ✓ Prioritise fire protection for: • infrastructure – communities, outstations, etc • forestry plantations • community recreation areas, e.g., waterholes • significant cultural sites • fire-sensitive plant communities, e.g., rainforests, riparian corridors
Improve fire management for carbon abatement	✓ Decrease the area of eligible vegetation burnt by late dry season fire to 10 per cent or less each year ✓ Integrate the Tiwi Fire and Carbon Project with the Tiwi Islands IPA ✓ Seek increased investment in land and sea management from the Tiwi Fire and Carbon Project ✓ Ensure a well-defined, on-going role for Tiwi Rangers in the Tiwi Fire and Carbon Project ✓ Support a full-time Fire Officer within the IPA ✓ Build capacity to control late dry season fires (August to December) ✓ Develop a Tiwi Fire Management Operational Guide detailing protocols and procedures, including guidelines for late dry season fire suppression activities ✓ Undertake an annual Kimirrakinari (Tiwi Fire and Carbon awareness) campaign for: • Tiwi leaders – Tiwi Land Council and Tiwi Resources Board members • School students • Communities ✓ Collaborate with Tiwi Plantations to ensure IPA fire management goals are met while plantations remain protected

4) PLANTS AND ANIMALS

Strategy	Actions
Protect the unique biodiversity of the Tiwi Islands through increased biosecurity awareness and strengthening quarantine	Support a quarantine awareness and community education campaign targeting: • transport companies (e.g., SeaLink, Fly Tiwi) • contractors, service providers, etc • people moving to the Tiwi Islands to work Source funding for a quarantine inspection service at Tiwi barge terminals Investigate funding opportunities for a Darwin-based Quarantine Officer and Cane Toad detection dog for Tiwi freight Review Tiwi Land Council authorisation for the introduction of plants and animals by residents Develop a prohibited plant and animal species list for the Tiwi Islands Review of current coastal surveillance and quarantine monitoring activities along the Tiwi coastline
Support conservation measures to protect disappearing wildlife	Develop a monitoring program for threatened species Work with ecologists to develop threat abatement strategies Investigate management options for threatened species e.g., critical management zones Plan the establishment of a high conservation zone within the IPA (IUCN Cat 1b) for offer as an environmental offset for regional developments.
Use Western and Tiwi knowledge to address environmental challenges facing the Tiwi Islands	Collaborate with the Awuta Wumanuwani (IPA Advisory Group), the Ngawurraluwajirri Ngirramini (Tiwi Science Reference Committee), government agencies and research organisations to identify knowledge gaps and develop research projects Support collaborative environmental research that identifies relevant issues, finds solutions, integrates Tiwi knowledge, and provides work or training for Rangers

5) Bush Tucker and Medicines

Strategy	Actions
Support the preservation of traditional knowledge of bush tucker and customary medicines	Produce information resources for students and the broader community documenting traditional ecological knowledge about food resources and customary medicines Facilitate intergenerational transfer of knowledge via programs such as Junior Rangers and Learning on Country, and culture camps Record traditional knowledge of bush tucker and medicines and incorporate in the IPA's integrated data management system Support the establishment of bush tucker and medicinal plant nursery
Assess bush tucker and customary medicines enterprise development opportunities	Support Tiwi-owned and driven enterprises based on bush tucker or medicines Support external proposals that appropriately engage and remunerate Tiwi Develop protocols and protect Tiwi intellectual property rights – for recording, storing or publication of Tiwi traditional knowledge
Protect traditionally important plants and animals	Ensure Tiwi use of customary resources is addressed in the assessment of land-use proposals. Research the impact of feral animals and weeds on customary resources

6) RANGERS AND IPA

Strategy	Actions
Establish strong governance for the Tiwi Islands IPA	Create an IPA Management Committee with members from each landowning group committed to protecting Tiwi country and culture Provide governance, leadership, and communication skills training Establish the Awuta Wumanuwani (IPA Advisory Group) – comprising research partner and agency representatives Build the IPA as a hub for Tiwi environmental services - including the Tiwi Fire and Carbon Project Build the IPA as a foundation for the promotion and protection of Tiwi culture Apply for a Tiwi Sea Country IPA in the next round of Federal Government funding Investigate the feasibility of a Land Use Agreement (section 19) formalising the IPA's role in land and sea management

Strategy	Actions
Ensure rangers have the necessary facilities and equipment to implement the Plan of Management	Develop Three Ways on Melville Island as a Ranger Program base for work planning, meetings, and training with adequate meeting room and workshop facilities, vehicle and equipment storage, and accommodation Upgrade Ranger Program facilities in Wurrumiyanga, Milikapiti and Pirlangimpi – to support Rangers to implement the IPA Plan of Management Develop new Ranger Program facilities at Wurankuwu on Bathurst Island and on Yimpinari country on Melville Island
Increase the number of women and men Rangers	Appoint at least five women rangers by 2025, with a view to the Ranger Program being 50 per cent women by 2028 Increase the size of the Ranger Program from 10 to 30 by 2028
Establish a Tiwi Junior Ranger Program	Work with Tiwi College and Xavier College to establish and maintain a Junior Ranger Program for senior students Create pathways and support training opportunities for young Tiwi to become rangers
Provide ongoing Ranger training and education	Provide support for training including VET Conservation and Ecosystem Management and Coxswains.
Maintain a strong working relationship with the Tiwi Land Council	Ensure regular communication between the Tiwi Land Council Environment and Anthropology Programs, Tiwi Rangers, and IPA staff Provide IPA and Ranger Program updates at Tiwi Land Council Executive Management Committee and full Land Council meetings The Tiwi Land Council to seek the IPA Committee's advice on the cultural and environmental impacts of development proposals Improve the development, regulation, and enforcement of Land Use Agreements (section 19), including consideration of IPA objectives Increase the involvement of rangers in the operation of the Tiwi Land Council permit system – including greater patrol and compliance roles

MONITORING, EVALUATION, REPORTING AND IMPROVEMENT (MERI) STRATEGY

Key Strategy	Indicator	Monitoring Method	Metric	Desired Trend	Note
1) TIWI PEOPLE AND CULTURE					
Support Tiwi culture, art and ceremonies	Ranger support for key cultural events	IPA Manager – record of events: annual total	Number of supported activities	Increasing	Or, adequate and consistent year to year
Support cultural knowledge education	More Tiwi youth involved in cultural activities facilitated by the IPA	IPA Manager – record of supported attendees	Number of young people involved	Increasing	Or, adequate and consistent year to year
Bush camps important for culture	People feel safe on country	IPA Manager – record of signage installed	Number of signs installed and maintained	Cumulative, increasing	Crocodile awareness and sacred site signs
2) CULTURAL PLACES					
Protect cultural places	Tiwi sites and places mapped, and attributes recorded	Record of activities: annual total	Number of Cultural Mapping trips undertaken	Cumulative, increasing	Adequate and consistent year to year
Protect historical places	Historical sites maintained	Record of works: annual total	Number of sites cared for	Stable	Adequate year to year
3) TIWI COUNTRY					
Better fire management – more ACCUs	Profits from carbon farming (excluding project operating costs)	Tiwi Fire and carbon project income audit	Annual allocation to IPA	Increasing	
Better fire management – less wildfire	Amount of country burnt by Late Dry Season fire	SMERF Dashboard report: Common Metric, Yearly Fire Seasonality report	% Eligible Vegetation burnt from August to December	Decreasing	Ideally 10% or less

Key Strategy	Indicator	Monitoring Method	Metric	Desired Trend	Note
Better fire management – healthy country	Amount of country left unburnt for 5 years or more	SMERF Dashboard report: Other Metrics, Unburnt More Than 5 Years	% Eligible Vegetation left unburnt < 5 years	Increasing	Stabilising above 30%. Average baseline (2012–2021) c. 20%
Better fire management – community awareness	Annual delivery of Fire Awareness Campaign	Record of attendance	Number of Fire-awareness Roadshows	Stable	Annually, one per community
Better fire management – consultations	Annual landowner group consultations prior to burning	Record of meetings	Number of landowning groups consulted	Stable	Covering all eight landowning groups
Better fire management – community responsibility	Less humbug fires being lit	NAFI Hotspots dataset	Annual number of significant ignitions from August to December	Decreasing	Remove lightning strike ignitions from calculation
Feral pest control – buffalo, pigs and horses	Density of major feral animal populations	Aerial survey and estimate of buffalo, horses, pigs – every 5 years	Average no. of animals/10km^2	Decreasing	
Feral pest control – buffalo, pigs and horses	Buffalo, pig, and horse numbers not increasing	Tally of animals removed annually – by all methods	Recorded number of each species removed	Increasing or stable	
Feral pest control – invasive ants	Tropical Fire ants and African Big-headed ant infestations not increasing	Strategic survey results	Infestation status	Decreasing or zero	Ideally eradicate
Feral pest and weed control – community awareness	Weed and feral pest awareness campaign delivered regularly	IPA Manager – record of events	Number of communities by number of events	Increasing	Until comprehensive
Weed control – invasive grasses	No new Gamba grass infestations	Ranger Operations Coordinator – compilation of ranger geo-records	Number of new Gamba grass infestations detected annually	Decreasing	Or stable, as some arrivals may be windborne
Weed control – Weeds of National Significance (WONS)	Known infestations monitored and treated annually	Ranger Operations Coordinator – compilation of ranger geo-records	Number of mapped infestations of WONS species	Decreasing or stable	Ideally eradicate

Key Strategy	Indicator	Monitoring Method	Metric	Desired Trend	Note
4) PLANTS AND ANIMALS					
Biosecurity/ quarantine – Cane Toads	No Cane Toads on the Islands	Tiwi Land Council records of Cane Toad arrivals	Number of individual arrivals annually	Declining	Ideally none
Disappearing wildlife	No plant or animal species in decline	Collaborative scientific surveys of threatened species	Species population trends	Increasing	Or stabilised
5) BUSH TUCKER AND MEDICINES					
Bush tucker and medicines education – intergenerational knowledge transfer	Adequate Traditional Ecological Knowledge (TEK) products generated by IPA	IPA Manager – record of products	Number of TEK related products produced by IPA annually	Increasing	Or adequate
Bush tucker and medicines education – intergenerational knowledge transfer	Adequate opportunities for cultural engagement with Elders	IPA Manager – record of cultural engagement events	Number of events undertaken annually	Increasing	Or adequate
Bush tucker and medicines education – TEK archive	Tiwi TEK recorded, stored, and protected	IPA Manager – record of entries to IPA database	Number of entries	Increasing	Cumulative
6) RANGERS AND IPA					
IPA Governance – cultural authority	Governance is landowner representative	Record of membership	All landowner groups have representatives	Stable	Ideally, two representatives (male and female) and two proxies per landowner group
IPA Governance – operations	Meetings are efficient and effective	Minutes of meetings	Quorum attained	Stable	At least two meetings per year

Key Strategy	Indicator	Monitoring Method	Metric	Desired Trend	Note
IPA Governance – Awuta Wumanuwani (Advisory Group)	Awuta Wumanuwani supporting the IPA committee	Minutes of meeting showing Awuta Wumanuwani convened	Number of Awuta Wumanuwani members present	Stable or increasing	At least one meeting per year
Rangers – improve ranger facilities	Rangers have the necessary facilities to service the islands	IPA Manager – record of building renovation and construction	Number of facilities built	Increasing	Until adequate
Rangers – increase numbers	Enough full-time rangers to service the Islands	Refer to Indigenous Ranger Program reporting	Number of full-time rangers employed	Increasing	Until adequate
Rangers – Junior Ranger Program	Youth pathway to ranger employment	IPA Manager – record of program participation	Number of trainee rangers	Increasing	Until adequate
Rangers – training	Rangers well trained in necessary skills	IPA Manager – record of training undertaken	Number of rangers trained per accredited course	Increasing	Until adequate
IPA – work with Tiwi Land Council	Rangers increasingly involved in permit policing	Ranger Operations Coordinator – GPS record of activities	Number of land patrols, total distance travelled	Increasing	Until adequate
IPA – work with Tiwi Land Council	Good communication between the Tiwi Land Council and the IPA.	IPA Manager – record of Tiwi Land Council interactions	Number of IPA/ Ranger Program presentations to Tiwi Land Council meetings	Increasing	Or adequate

APPENDICES

APPENDIX 1: MONITORING, EVALUATION, REPORTING AND IMPROVEMENT (MERI) STRATEGY REPORTING TEMPLATE

				Assessment				Trend
Key Strategy	**Metric**	**Desired Trend**	**Note**	**Very Good**	**Good**	**Fair**	**Poor**	↓ ↑ ⟷
1) TIWI PEOPLE AND CULTURE								
Support Tiwi culture, art, and ceremonies	Number of supported cultural activities	Increasing	Or, adequate and consistent year to year					
Support cultural education	Number of young people involved	Increasing	Or, adequate and consistent year to year					
Bush camps important for culture	Number of signs installed and maintained	Cumulative, increasing	Crocodile awareness and sacred site signs					
2) CULTURAL PLACES								
Protect cultural places	Number of Cultural Mapping trips undertaken	Cumulative, increasing	Adequate and consistent year to year					
Protect historical places	Number of sites cared for	Stable	Adequate year to year					

				Assessment				Trend
Key Strategy	**Metric**	**Desired Trend**	**Note**	**Very Good**	**Good**	**Fair**	**Poor**	↓ ↑ ⟷
3) TIWI COUNTRY								
Better fire management – more ACCUs	Annual allocation to IPA	Increasing						
Better fire management – less wildfire	% Eligible Vegetation burnt from August to December	Decreasing	Ideally 10% or less					
Better fire management – healthy country	% Eligible Vegetation left unburnt <5 years	Increasing	Stabilising above 30%. Average baseline (2012–2021) c. 20%					
Better fire management – community awareness	Number of Fire-awareness Roadshows	Stable	Annually, one per community					
Better fire management – consultations	Number of landowning groups consulted	Stable	Covering all eight landowning groups					
Better fire management – community responsibility	Annual number of significant ignitions from August to December	Decreasing	Remove lightning strike ignitions from calculation					
Feral pest control – buffalo, pigs and horses	Average no. of animals/10km^2	Decreasing						
Feral pest control – buffalo, pigs and horses	Recorded number of each species removed	Increasing or stable						
Feral pest control – invasive ants	Infestation status	Decreasing or zero	Ideally eradicate					
Feral pest and weed control – community awareness	Number of communities by number of events	Increasing	Until comprehensive					

				Assessment				Trend
Key Strategy	**Metric**	**Desired Trend**	**Note**	**Very Good**	**Good**	**Fair**	**Poor**	↓ ↑ ⟷
Weed control – invasive grasses	Number of new Gamba Grass infestations detected annually	Decreasing	Or stable, as some arrivals may be windborne					
Weed control – Weeds of National Significance (WONS)	Number of mapped infestations of WONS species	Decreasing or stable	Ideally eradicate					
4) PLANTS AND ANIMALS								
Biosecurity/ quarantine – Cane Toads	Number of individual arrivals annually	Declining	Ideally none					
Disappearing wildlife	Species population trends	Increasing	Or stabilised					
5) BUSH TUCKER AND MEDICINES								
Bush tucker and medicines education – intergenerational knowledge transfer	Number of TEK related products – books, videos, posters, etc produced by IPA annually	Increasing	Or adequate					
Bush tucker and medicines education – intergenerational knowledge transfer	Number of events, annually	Increasing	Or adequate					
Bush tucker and medicines education – TEK archive	Number of entries	Increasing	Cumulative					

				Assessment				Trend
Key Strategy	**Metric**	**Desired Trend**	**Note**	**Very Good**	**Good**	**Fair**	**Poor**	↓ ↑ ⟷
6) RANGERS AND IPA								
IPA Governance – cultural authority	All landowner groups have representatives	Stable	Ideally, two representatives (male and female) and two proxies per landowner group					
IPA Governance – operations	Quorum attained	Stable	At least two meetings per year					
IPA Governance – Awuta Wumanuwani (Advisory Group)	Number of Awuta Wumanuwani members present	Stable or increasing	At least one meeting per year					
Rangers – improve ranger facilities	Number of facilities built	Increasing	Until adequate					
Rangers – increase numbers	Number of full-time rangers employed	Increasing	Until adequate					
Rangers – Junior Ranger Program	Number of trainee rangers	Increasing	Until adequate					
Rangers – training	Number of rangers trained per accredited course	Increasing	Until adequate					
IPA – work with Tiwi Land Council	Number of land patrols, total distance travelled	Increasing	Until adequate					
IPA – work with Tiwi Land Council	Number of IPA/ Ranger Program presentations to Tiwi Land Council meetings	Increasing	Or adequate					

APPENDIX 2:
THREATENED ANIMALS AND PLANTS OF THE TIWI ISLANDS

The table below shows listed threatened species that occur on the Tiwi Islands in the Northern Territory. The Map Index column provides an index to the species labels in the map on page 90.

Abbreviations used in the table are:

National Status – Status of species listed under the *Environment Protection and Biodiversity Conservation Act* (EPBC Act)

NT Status – Status of species listed under the *Territory Parks and Wildlife Conservation Act*

CR – Species listed as Critically Endangered

EN – Species listed as Endangered

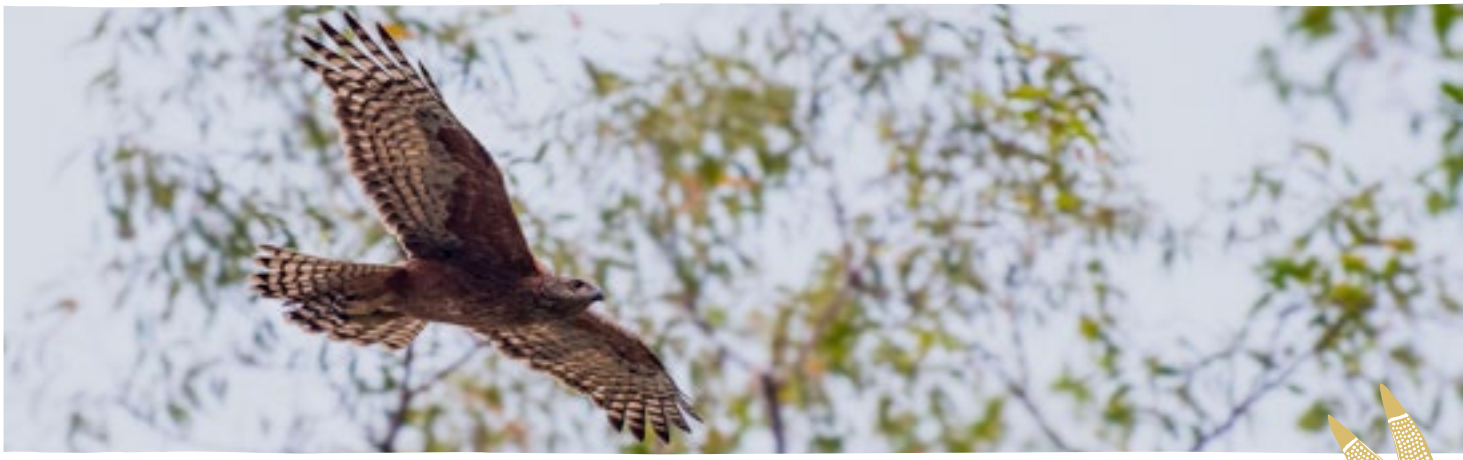
VU – Species listed as Vulnerable

TE – Species is Endemic to the Tiwi Islands

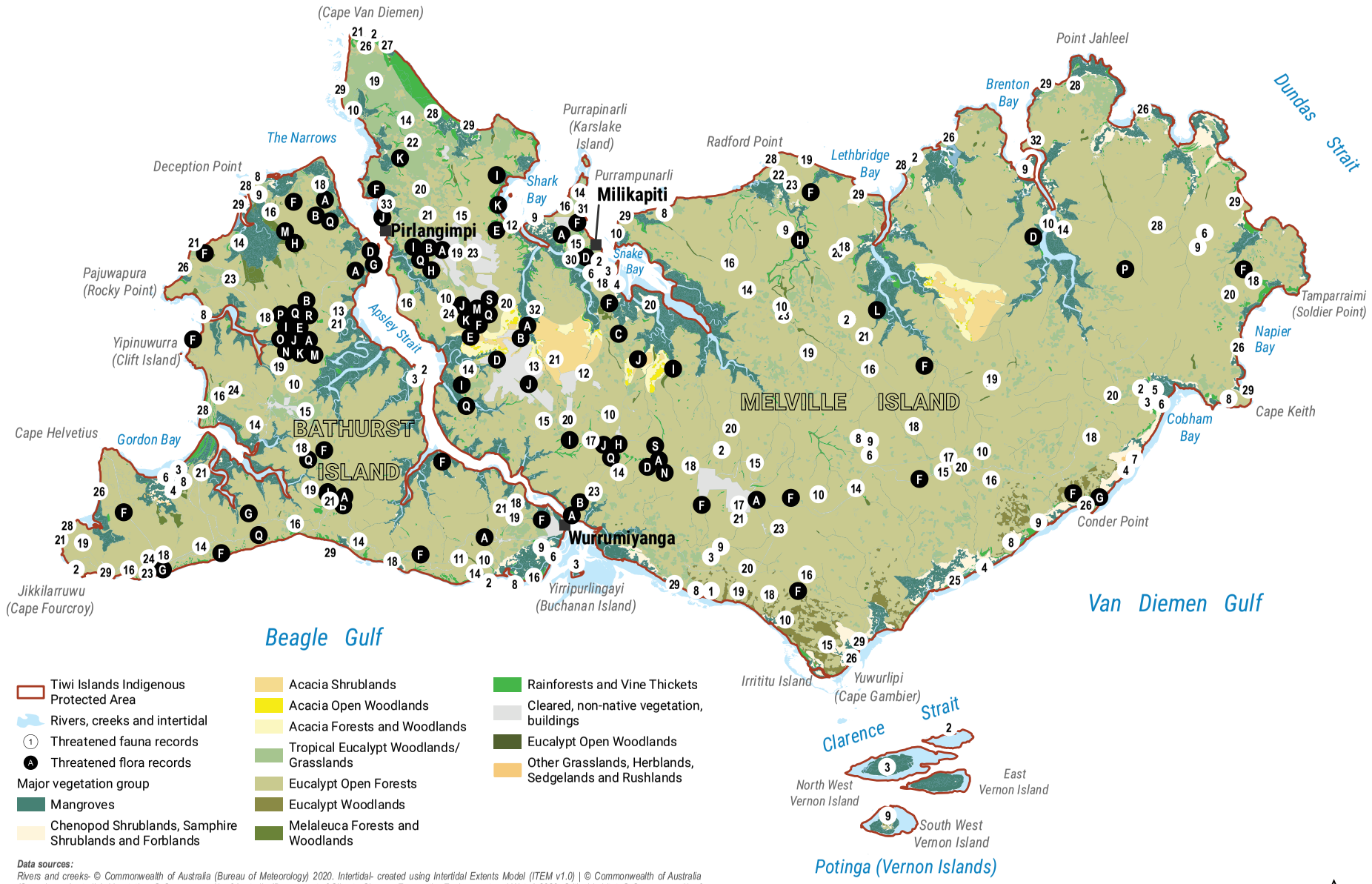
M – Migratory species protected under one of more various international treaties

Map Index	Common name	Species name	National Status	NT Status	Migratory	Tiwi Endemic
1	White-throated Needletail	*Hirundapus caudacutus*	VU			
2	Greater Sand Plover	*Charadrius leschenaultii*	VU	VU	M	
3	Lesser Sand Plover	*Charadrius mongolus mongolus*	EN	VU	M	
4	Red Knot	*Calidris canutus*	EN	VU	M	
5	Curlew Sandpiper	*Calidris ferruginea*	CR	VU	M	
6	Great Knot	*Calidris tenuirostris*	CR	VU	M	
7	Asian Dowitcher	*Limnodromus semipalmatus*		VU	M	
8	Bar-tailed Godwit	*Limosa lapponica*		VU	M	
9	Far Eastern Curlew	*Numenius madagascariensis*	CR	VU	M	
10	Partridge Pidgeon (eastern)	*Geophaps smithii smithii*	VU	VU		
11	Grey Falcon	*Falco hypoleucos*	VU	VU		
12	Horsfield's Bushlark (Tiwi)	*Mirafra javanica melvillensis*	VU	VU		TE
13	Hooded Robin (Tiwi)	*Melanodryas cucullata melvillensis*	CR	CR		TE
14	Masked Owl (Tiwi)	*Tyto novaehollandiae melvillensis*	EN	EN		TE
15	Red Goshawk	*Erythrotriorchis radiatus*	EN	VU		
16	Butler's Dunnart	*Sminthopsis butleri*	VU	VU		
17	Northern Brush-tailed Phascogale	*Phascogale pirata*	VU	EN		
18	Northern Brushtail Possum	*Trichosurus vulpecula arnhemensis*	EN			
19	Brush-tailed Rabbit-rat (Tiwi)	*Conilurus penicillatus melibius*	VU	EN		TE
20	Black-footed Tree-rat (Melville Island)	*Mesembriomys gouldii melvillensis*	VU			TE
21	Pale Field-rat	*Rattus tunneyi tunneyi*		VU		
22	Water Mouse	*Xeromys myoides*	VU			
23	Mertens' Water Monitor	*Varanus mertensi*		VU		
24	Yellow-spotted Monitor	*Varanus panoptes*		VU		

Map Index	Common name	Species name	National Status	NT Status	Migratory	Tiwi Endemic
25	Loggerhead Turtle	*Caretta caretta*	EN	VU	M	
26	Green Turtle	*Chelonia mydas*	VU			
27	Hawksbill Turtle	*Eretmochelys imbricata*	VU	VU	M	
28	Olive Ridley	*Lepidochelys olivacea*	EN	VU	M	
29	Flatback Turtle	*Natator depressus*	VU			
30	Tiwi Islands Treesnail	*Amphidromus cognatus*		VU		
31	Melville Squat-keeled Snail	*Trochomorpha melvillensis*		VU		TE
32	Atlas Moth	*Attacus wardi*		VU		
33	Dodd's Azure Butterfly	*Ogyris iphis doddi*		EN		
A	herb	*Typhonium jonesii*	EN	EN		TE
B	herb	*Typhonium mirabile*	EN	EN		TE
C	Blue Beards	*Calochilus caeruleus*		VU		
D	Arboreal orchid	*Luisia corrugata*		VU		
E	herb	*Thrixspermum congestum*		VU		
F	Zamia Palm	*Cycas armstrongii*		VU		
G	vine	*Hoya australis oramicola*	VU	VU		TE
H	shrub	*Tarennoidea wallichii*	EN	EN		
I	tree	*Endiandra limnophila*		VU		
J	vine	*Mitrella tiwiensis*	VU	VU		TE
K	shrub	*Xylopia monosperma*	EN	EN		TE
L	Warren's Mangosteen	*Garcinia warrenii*		EN		
M	tree	*Elaeocarpus miegei*	EN	CR		
N	Pandanus Vine	*Freycinetia excelsa*		VU		
O	Veiny Climbing-pandan	*Freycinetia percostata*		VU		
P	sedge	*Mapania macrocephala*		VU		
Q	Climbing Mistletoe	*Dendromyza reinwardtiana*		VU		
R	herb	*Burmannia* sp. Bathurst Island	EN	EN		TE
S	fern	*Abrodictyum obscurum*		EN		



Biodiversity Highlights of the Tiwi IPA



Data sources:

Rivers and creeks- © Commonwealth of Australia (Bureau of Meteorology) 2020. Intertidal- created using Intertidal Extents Model (ITEM v1.0) | © Commonwealth of Australia (Geoscience Australia). Vegetation- © Commonwealth of Australia (Department of Climate Change, Energy, the Environment and Water) 2020. Critical habitat- © Commonwealth of Australia, Australian Government Department of Climate Change, Energy, the Environment and Water, 2020. Species records- Atlas of Living Australia occurrence download at https://doi.org/10.26197/ala.679132b3-91b6-41a0-afa1-776c44906ad3. Accessed 24 April 2023.

APPENDIX 3: WILDLIFE (TERRESTRIAL VERTEBRATES) RECORDED FROM THE TIWI ISLANDS IPA

The tables below show all vertebrate species recorded from the Tiwi Islands in the Northern Territory. Species have been excluded from these lists where there are very few Tiwi records, the records are outside the species known range, and/or are likely to be misidentified.

Birds

Common name	Species name
Grey Teal	*Anas gracilis*
Pacific Black Duck	*Anas superciliosa*
Hardhead	*Aythya australis*
Wandering Whistling-duck	*Dendrocygna arcuata*
Plumed Whistling-duck	*Dendrocygna eytoni*
Green Pygmy Goose	*Nettapus pulchellus*
Rajah Shelduck	*Tadorna radjah*
Magpie Goose	*Anseranas semipalmata*
Australian Owlet-nightjar	*Aegotheles cristatus*
Fork-tailed Swift	*Apus pacificus*
White-throated Needletail	*Hirundapus caudacutus*
Large-tailed Nightjar	*Caprimulgus macrurus*
Spotted Nightjar	*Eurostopodus argus*
Tawny Frogmouth	*Podargus strigoides*
Bush Stone-curlew	*Burhinus grallarius*
Beach Stone-curlew	*Esacus magnirostris*
Greater Sand Plover	*Charadrius leschenaultii*
Lesser Sand Plover	*Charadrius mongolus*
Red-capped Plover	*Charadrius ruficapillus*
Pacific Golden Plover	*Pluvialis fulva*
Grey Plover	*Pluvialis squatarola*
Masked Plover	*Vanellus miles*
Oriental Pratincole	*Glareola maldivarum*
Australian Pratincole	*Stiltia isabella*
Sooty Oystercatcher	*Haematopus fuliginosus*
Pied Oystercatcher	*Haematopus longirostris*
Comb-crested Jacana	*Irediparra gallinacea*
Whiskered Tern	*Chlidonias hybrida*
White-winged Tern	*Chlidonias leucopterus*
Silver Gull	*Chroicocephalus novaehollandiae*
Gull-billed Tern	*Gelochelidon nilotica*
Caspian Tern	*Hydroprogne caspia*
Roseate Tern	*Sterna dougallii*

Common name	Species name
Common Tern	*Sterna hirundo*
Black-naped Tern	*Sterna sumatrana*
Little Tern	*Sternula albifrons*
Lesser Crested Tern	*Thalasseus bengalensis*
Crested Tern	*Thalasseus bergii*
Australasian Pied Stilt	*Himantopus himantopus leucocephalus*
Common Sandpiper	*Actitis hypoleucos*
Ruddy Turnstone	*Arenaria interpres*
Sharp-tailed Sandpiper	*Calidris acuminata*
Sanderling	*Calidris alba*
Red Knot	*Calidris canutus*
Curlew Sandpiper	*Calidris ferruginea*
Red-necked Stint	*Calidris ruficollis*
Great Knot	*Calidris tenuirostris*
Broad-billed Sandpiper	*Calidris falcinellus*
Asian Dowitcher	*Limnodromus semipalmatus*
Bar-tailed Godwit	*Limosa lapponica*
Black-tailed Godwit	*Limosa limosa*
Far Eastern Curlew	*Numenius madagascariensis*
Little Whimbrel	*Numenius minutus*
Whimbrel	*Numenius phaeopus*
Grey-tailed Tattler	*Tringa brevipes*
Wood Sandpiper	*Tringa glareola*
Greenshank	*Tringa nebularia*
Marsh Sandpiper	*Tringa stagnatilis*
Terek Sandpiper	*Xenus cinereus*
Pin-tailed Snipe	*Gallinago stenura*
Swinhoe's Snipe	*Gallinago megala*
Eastern Great Egret	*Ardea alba modesta*
Intermediate Egret	*Ardea intermedia*
White-necked Heron	*Ardea pacifica*
Great-billed Heron	*Ardea sumatrana*
Striated Heron	*Butorides striata stagnatilis*

Birds (continued)

Common name	Species name
Lesser Egret	*Egretta garzetta*
White-faced Heron	*Egretta novaehollandiae*
Pacific Reef-Heron	*Egretta sacra*
Pied Egret	*Egretta picata*
Black Bittern	*Ixobrychus flavicollis*
Nankeen Night-heron	*Nycticorax caledonicus*
Cattle Egret	*Bubulcus ibis*
Jabiru	*Ephippiorhynchus asiaticus*
Yellow-legged Spoonbill	*Platalea flavipes*
Royal Spoonbill	*Platalea regia*
Glossy Ibis	*Plegadis falcinellus*
Black-necked Ibis	*Threskiornis moluccus*
Straw-necked Ibis	*Threskiornis spinicollis*
Emerald Dove	*Chalcophaps longirostris*
Torresian Imperial pigeon	*Ducula spilorrhoa*
Bar-shouldered Dove	*Geopelia humeralis*
Peaceful Dove	*Geopelia placida*
Partridge Pidgeon (eastern)	*Geophaps smithii smithii*
Common Bronzewing	*Phaps chalcoptera*
Rose-crowned Fruit-dove	*Ptilinopus regina*
Azure Kingfisher	*Ceyx azureus*
Little Kingfisher	*Ceyx pusillus*
Blue-winged Kookaburra	*Dacelo leachii*
Collared Kingfisher	*Todiramphus chloris*
Forest Kingfisher	*Todiramphus macleayii*
Red-backed Kingfisher	*Todiramphus pyrrhopygius*
Sacred Kingfisher	*Todiramphus sanctus*
Dollarbird	*Eurystomus orientalis*
Rainbow Bee-eater	*Merops ornatus*
Brush Cuckoo	*Cacomantis variolosus*
Fan-tailed Cuckoo	*Cacomantis flabelliformis*
Pheasant Coucal	*Centropus phasianinus*
Little Bronze-cuckoo	*Chalcites minutillus*
Horsfield's Bronze-cuckoo	*Chalcites basalis*
Horsfield's Cuckoo	*Cuculus optatus*
Eastern Koel	*Eudynamys orientalis*
Pallid Cuckoo	*Heteroscenes pallidus*
Channel-billed Cuckoo	*Scythrops novaehollandiae*
Brown Falcon	*Falco berigora*
Nankeen Kestrel	*Falco cenchroides*
Australian Hobby	*Falco longipennis*
Peregrine Falcon	*Falco peregrinus*
Grey Falcon	*Falco hypoleucos*
Black Falcon	*Falco subniger*

Common name	Species name
Orange-footed Scrubfowl	*Megapodius reinwardt*
Brown Quail	*Synoicus ypsilophora*
Brolga	*Grus rubicunda*
White-browed Crake	*Amaurornis cinerea*
Chestnut Rail	*Eulabeornis castaneoventris*
Spotless Crake	*Porzana tabuensis*
Australian Bustard	*Ardeotis australis*
Green-backed Gerygone	*Gerygone chloronota*
Mangrove Gerygone	*Gerygone levigaster*
Large-billed Gerygone	*Gerygone magnirostris*
White-throated Gerygone	*Gerygone olivacea*
Brown Weebill	*Smicrornis brevirostris*
Horsfield's Bushlark (Tiwi)	*Mirafra javanica melvillensis*
Little Woodswallow	*Artamus minor*
Masked Woodswallow	*Artamus personatus*
Pied Butcherbird	*Cracticus nigrogularis*
Silver-backed Butcherbird	*Cracticus argenteus*
Black Butcherbird	*Melloria quoyi*
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*
White-bellied Cuckoo-shrike	*Coracina papuensis*
Varied Triller	*Lalage leucomela*
Australian White-winged Triller	*Lalage tricolor*
Golden-headed Cisticola	*Cisticola exilis*
Torresian Crow	*Corvus orru*
Spangled Drongo	*Dicrurus bracteatus*
Chestnut-breasted Mannikin	*Lonchura castaneothorax*
Double-barred Finch	*Stizoptera bichenovii*
Crimson Finch	*Neochmia phaeton*
Fairy Martin	*Petrochelidon ariel*
Tree Martin	*Petrochelidon nigricans*
Welcome Swallow	*Hirundo neoxena*
Red-backed Fairy-wren	*Malurus melanocephalus*
Variegated Fairy-wren	*Malurus lamberti*
Rufous-banded Honeyeater	*Conopophila albogularis*
Rufous-throated Honeyeater	*Conopophila rufogularis*
Blue-faced Honeyeater	*Entomyzon cyanotis*
Singing Honeyeater	*Gavicalis virescens*
Brown Honeyeater	*Lichmera indistincta*
Yellow-throated Miner	*Manorina flavigula*
White-throated Honeyeater	*Melithreptus albogularis*
Red-headed Honeyeater	*Myzomela erythrocephala*
Dusky Honeyeater	*Myzomela obscura*
Silver-crowned Friarbird	*Philemon argenticeps*

Birds (continued)

Common name	Species name
Helmeted Friarbird	*Philemon buceroides*
Little Friarbird	*Philemon citreogularis*
Yellow-tinted Honeyeater	*Ptilotula flavescens*
Bar-breasted Honeyeater	*Ramsayornis fasciatus*
White-gaped Honeyeater	*Stomiopera unicolor*
Magpie-lark	*Grallina cyanoleuca*
Shining Flycatcher	*Myiagra alecto*
Leaden Flycatcher	*Myiagra rubecula*
Broad-billed Flycatcher	*Myiagra ruficollis*
Paperbark Flycatcher	*Myiagra nana*
Australian Pipit	*Anthus novaeseelandiae*
Eastern Yellow Wagtail	*Motacilla tschutschensis*
White-winged Sittella	*Daphoenositta chrysoptera leucoptera*
Yellow Oriole	*Oriolus flavocinctus*
Olive-backed Oriole	*Oriolus sagittatus*
Australasian Figbird	*Sphecotheres vieilloti*
Grey Shrike-thrush	*Colluricincla harmonica*
Little Shrike-thrush	*Colluricincla megarhyncha parvula*
White-breasted Whistler	*Pachycephala lanioides*
Mangrove Golden Whistler	*Pachycephala melanura*
Rufous Whistler	*Pachycephala rufiventris*
Grey Whistler	*Pachycephala simplex*
Striated Pardalote	*Pardalotus striatus melvillensis*
Lemon-bellied Flycatcher	*Microeca flavigaster*
Mangrove Robin	*Peneothello pulverulenta*
Hooded Robin (Tiwi)	*Melanodryas cucullata melvillensis*
Rainbow Pitta	*Pitta iris*
Grey-crowned Babbler	*Pomatostomus temporalis*
Great Bowerbird	*Chlamydera nuchalis*
Grey Fantail	*Rhipidura albiscapa*
Arafura Fantail	*Rhipidura dryas*
Willie Wagtail	*Rhipidura leucophrys*
Mangrove Grey Fantail	*Rhipidura phasiana*
Northern Fantail	*Rhipidura rufiventris*
Mistletoebird	*Dicaeum hirundinaceum*
Yellow White-eye	*Zosterops luteus*
Oriental Reed-warbler	*Acrocephalus orientalis*
Tawny Grassbird	*Cincloramphus timoriensis*
Rufous Songlark	*Cincloramphus mathewsi*
Black-tailed Treecreeper	*Climacteris melanurus*

Common name	Species name
Australasian Darter	*Anhinga novaehollandiae*
Lesser Frigatebird	*Fregata ariel*
Australian Pelican	*Pelecanus conspicillatus*
Little Cormorant	*Microcarbo melanoleucos*
Little Black Cormorant	*Phalacrocorax sulcirostris*
Pied Cormorant	*Phalacrocorax varius*
Brown Booby	*Sula leucogaster*
Australian Grebe	*Tachybaptus novaehollandiae*
Sulphur-crested Cockatoo	*Cacatua galerita fitzroyi*
Little Corella	*Cacatua sanguinea*
Red-tailed Black Cockatoo	*Calyptorhynchus banksia macrorhynchus*
Galah	*Eolophus roseicapilla*
Red-winged Parrot	*Aprosmictus erythropterus coccineopterus*
Northern Rosella	*Platycercus venustus*
Varied Lorikeet	*Psitteuteles versicolor*
Rainbow Lorikeet	*Trichoglossus haematodus rubritorquis*
Barking Owl	*Ninox connivens*
Boobook Owl	*Ninox boobook*
Eastern Barn Owl	*Tyto javanica delicatula*
Masked Owl (Tiwi)	*Tyto novaehollandiae melvillensis*
Chestnut-backed Button-quail	*Turnix castanotus*
Red-backed Button-quail	*Turnix maculosus*
Red-chested Button-quail	*Turnix pyrrhothorax*
Collared Sparrowhawk	*Accipiter cirrocephalus*
Brown Goshawk	*Accipiter fasciatus*
Grey Goshawk	*Accipiter novaehollandiae*
Wedge-tailed Eagle	*Aquila audax*
Red Goshawk	*Erythrotriorchis radiatus*
White-bellied Sea-eagle	*Haliaeetus leucogaster*
Brahminy Kite	*Haliastur indus*
Whistling Kite	*Haliastur sphenurus*
Black Kite	*Milvus migrans*
Osprey	*Pandion haliaetus*
Black-shouldered Kite	*Elanus axillaris*
Black-breasted Buzzard	*Hamirostra melanosternon*
Little Eagle	*Hieraaetus morphnoides*
Pacific Baza	*Aviceda subcristata*
Tahiti Petrel	*Pseudobulweria rostrata*
Wilson's Storm Petrel	*Oceanites oceanicus*

Reptiles

Common name	Species name
Little Filesnake	*Acrochordus granulatus*
Frilled Lizard	*Chlamydosaurus kingii*
Two-lined Dragon	*Diporiphora bilineata*
Swamplands Lashtail	*Tropicagama temporalis*
Northern Snake-necked Turtle	*Chelodina rugosa*
Northern Yellow-faced Turtle	*Emydura tanybaraga*
Loggerhead Turtle	*Caretta caretta*
Green Turtle	*Chelonia mydas*
Hawksbill Turtle	*Eretmochelys imbricata*
Olive Ridley Turtle	*Lepidochelys olivacea*
Flatback Turtle	*Natator depressus*
Brown Tree Snake	*Boiga irregularis*
Australian Bockadam	*Cerberus australis*
Green Tree Snake	*Dendrelaphis punctulatus*
Slaty-grey Snake	*Stegonotus cucullatus*
White-bellied Mangrove Snake	*Fordonia leucobalia*
Macleay's Water Snake	*Pseudoferania polylepis*
Freshwater Snake	*Tropidonophis mairii*
Richardson's Mangrove Snake	*Myron richardsonii*
Saltwater Crocodile	*Crocodylus porosus*
Zigzag Velvet Gecko	*Amalosia rhombifer*
Rough-scaled Death Adder	*Acanthophis rugosus*
Olive Seasnake	*Aipysurus laevis*
Northern Shovel-nosed Snake	*Brachyurophis roperi*
Northern Small-eyed Snake	*Cryptophis pallidiceps*
Marble-headed Whipsnake	*Demansia olivacea*
Greater Black Whipsnake	*Demansia papuensis*
Grey Whipsnake	*Demansia simplex*
Lesser Black Whipsnake	*Demansia vestigiata*
Orange-naped Snake	*Furina ornata*
Black-ringed Mangrove Seasnake	*Hydrelaps darwiniensis*
Black-headed Seasnake	*Hydrophis atriceps*
Spine-bellied Seasnake	*Hydrophis curtus*
Elegant Seasnake	*Hydrophis elegans*
Olive-headed Seasnake	*Hydrophis major*
Spotted Seasnake	*Hydrophis ocellatus*
Stokes's Seasnake	*Hydrophis stokesii*
Coastal Taipan	*Oxyuranus scutellatus*
King Brown Snake	*Pseudechis australis*
Northern Brown Snake	*Pseudonaja nuchalis*
Intermediate Bandy-bandy	*Vermicella intermedia*

Common name	Species name
Northern Bandy-bandy	*Vermicella multifasciata*
Northern Dtella	*Gehyra australis*
House Gecko	*Hemidactylus frenatus*
Bynoe's Gecko	*Heteronotia binoei*
Rusty-topped Delma	*Delma borea*
Burton's Snake-lizard	*Lialis burtonis*
Children's Python	*Antaresia childreni*
Black-headed Python	*Aspidites melanocephalus*
Water Python	*Liasis fuscus*
Carpet Python	*Morelia spilota variegata*
Bauxite Rainbow-skink	*Carlia amax*
Slender Rainbow-skink	*Carlia gracilis*
Shaded-litter Rainbow-skink	*Carlia munda*
Red-sided Rainbow-skink	*Carlia rufilatus*
Desert Rainbow-skink	*Carlia triacantha*
Swanson's Snake-eyed Skink	*Cryptoblepharus cygnatus*
White-faced Ctenotus	*Ctenotus borealis*
Port Essington Ctenotus	*Ctenotus essingtonii*
Hill's Ctenotus	*Ctenotus hilli*
Bar-shouldered Ctenotus	*Ctenotus inornatus*
Scant-striped Ctenotus	*Ctenotus vertebralis*
Orange-sided Bar-lipped Skink	*Eremiascincus douglasi*
Northern Bar-lipped Skink	*Eremiascincus isolepis*
Darwin Skink	*Glaphyromorphus darwiniensis*
Translucent Litter-skink	*Lygisaurus macfarlani*
Top End Dwarf Skink	*Menetia alanae*
Common Dwarf Skink	*Menetia greyii*
Lined Firetail Skink	*Morethia ruficauda*
Top End Firetail Skink	*Morethia storri*
Ornate Snake-eyed Skink	*Notoscincus ornatus*
Northern Soil-crevice Skink	*Proablepharus tenuis*
Northern Blue-tongued Skink	*Tiliqua scincoides intermedia*
Northern Blind Snake	*Anilios diversus*

Reptiles (continued)

Common name	Species name
Robust Blind Snake	*Anilios ligatus*
Darwin Blind Snake	*Anilios tovelli*
Claw-snouted Blind Snake	*Anilios unguirostris*
Flowerpot Blind Snake	*Indotyphlops braminus*
Black-spotted Ridge-tailed Monitor	*Varanus insulanicus*
Gould's Goanna	*Varanus gouldii*
Mangrove Monitor	*Varanus chlorostigma*
Mertens' Water Monitor	*Varanus mertensi*
Spotted Tree Monitor	*Varanus scalaris*
Black-headed Monitor	*Varanus tristis*

Frogs

Common name	Species name
Giant Frog	*Cyclorana australis*
Northern Dwarf Tree Frog	*Litoria bicolor*
Green Tree Frog	*Litoria caerulea*
Peters' Frog	*Litoria inermis*
Javelin Frog	*Litoria microbelos*
Rocket Frog	*Litoria nasuta*
Pale Frog	*Litoria pallida*
Northern Laughing Tree Frog	*Litoria rothii*
Desert Tree Frog	*Litoria rubella*
Black-shinned Rocket Frog	*Litoria tornieri*
Marbled Frog	*Limnodynastes convexiusculus*
Northern Spadefoot	*Notaden melanoscaphus*
Ornate Burrowing Frog	*Platyplectrum ornatum*
Northern Territory Frog	*Austrochaperina adelphe*
Bilingual Froglet	*Crinia bilingua*
Remote Froglet	*Crinia remota*
Fat Toadlet	*Uperoleia crassa*
Stonemason Toadlet	*Uperoleia lithomoda*

Mammals

Common name	Species name
Northern Blossom-bat	*Macroglossus minimus*
Black Flying-fox	*Pteropus alecto*
Little Red Flying-fox	*Pteropus scapulatus*
Gould's Wattled Bat	*Chalinolobus gouldii*
Hoary Wattled Bat	*Chalinolobus nigrogriseus*
Arnhem Long-eared Bat	*Nyctophilus arnhemensis*
Pallid Long-eared Bat	*Nyctophilus daedalus*
Cape York Pipistrelle	*Pipistrellus adamsi*
Northern Pipistrelle	*Pipistrellus westralis*
Little Broad-nosed Bat	*Scotorepens greyii*
Northern Cave Bat	*Vespadelus caurinus*
Southern Myotis	*Myotis macropus*
Northern Mastiff Bat	*Chaerephon jobensis*
North-western Free-tailed Bat	*Ozimops cobourgianus*
Northern Free-tailed Bat	*Ozimops lumsdenae*
Yellow-bellied Sheathtail Bat	*Saccolaimus flaviventris*
Butler's Dunnart	*Sminthopsis butleri*
Red-cheeked Dunnart	*Sminthopsis virginiae*
Fawn Antechinus	*Antechinus bellus*
Northern Brush-tailed Phascogale	*Phascogale pirata*
Agile Wallaby	*Notamacropus agilis*
Savanna Sugar Glider	*Petaurus breviceps ariel*
Northern Brushtail Possum	*Trichosurus arnhemensis*
Northern Brown Bandicoot	*Isoodon macrourus*
Brush-tailed Rabbit-rat (Tiwi)	*Conilurus penicillatus melibius*
Grassland Melomys	*Melomys burtoni*
Black-footed Tree-rat (Melville Island)	*Mesembriomys gouldii melvillensis*
Delicate Mouse	*Pseudomys delicatulus*
Western Chestnut Mouse	*Pseudomys nanus*
Pale Field-rat	*Rattus tunneyi*
Dusky Rat	*Rattus colletti*
Water Mouse	*Xeromys myoides*
Rakali	*Hydromys chrysogaster*
Dingo	*Canis dingo*
*Black Rat	*Rattus rattus*
*Swamp Buffalo	*Bubalus bubalis*
*Pig	*Sus scrofa*
*Domestic Dog	*Canis familiaris*
*Horse	*Equus caballus*
*Cat	*Felis catus*

*Introduced species

APPENDIX 4:
TIWI HABITATS AND VEGETATION TYPES

Name	Description
Rapatinga	Sand dune areas with little or no vegetation
Kurlimipiti	Sand dune covered with grass
Mirriparinga, Pamparinga	Mangrove areas
Yawurlama	Monsoon vine forest, jungle
Yirringarni	Billabong, swamp, waterhole
Turringiya	Open plains, grassy areas
Turrungini	Open area with no plants
Warta	Eucalypt forest and woodland
Tingata	Beach areas
Murinyini	Shrubby vegetation to about 2 to 3 metres high

APPENDIX 5:
CONTRIBUTORS TO THE TIWI ISLANDS IPA PLAN OF MANAGEMENT

We thank the following people for their invaluable input to the development of this plan and their ongoing support and commitment to establishing the Tiwi Islands Indigenous Protected Area.

Tiwi IPA Planning Committee

Landowner Group	Representatives
Jikilaruwu	Ms AM. Munkara* James Darren Puantulura
Mantiyupwi	Tina Patlas Walter Kerinaiua Cyril James Kerinaiua
Wurankuwu	Jacinta Tipungwuti Regina Kantilla Ron Poantimilui
Malawu	Jane Puautjimi Richard Puruntatameri

Landowner Group	Representatives
Munupi	Nikita Puruntatameri Richard Tungatalum Gerry Heenan
Wulirankuwu	Wendy Miller Gerry Mungatopi Karen Tipiloura
Yimpinari	John Wilson Marilyn Kerinaiua Patrick Grant
Marrikawuyanga	Pamela Brooks Adonis Wommatakimmi

*deceased

The inaugural November 2020 meeting of the Tiwi Islands IPA Planning Committee – with consultants Nic Gambold and Barbara McKaige, and Tiwi Ranger Program Manager Dominique Michel.

Tiwi Islands IPA Senior Cultural Advisors

John Wilson

Jacinta Tipungwuti

Tiwi Rangers

Mr W. Rioli*
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Tiwi Resources and Tiwi Land Council Staff

Yvonne Kelly
Catherine Whitehead
Luke Ford
Dominique Michel
Murray Knyvett
Leslie Pyne

The Tiwi Ranger Program made a significant contribution to the IPA planning process.

Developing the Tiwi IPA Plan of Management – Planning Committee Workshops

APPENDIX 6: BIBLIOGRAPHY

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NT Threatened Plants https://nt.gov.au/environment/native-plants/threatened-plants

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