Arafura Swamp Rangers

# Healthy Country Plan

## Indigenous Protected Area (IPA) Edition

## 2025–2035

ASRAC

Arafura Swamp Rangers Aboriginal Corporation

*Front cover design element represents the **malargatji** (clan totems) surrounding **Gurruwiling** (the Arafura Swamp).*

Design by
Therese Richie

# Dedication

*We dedicate this plan to our fathers and mothers, our grandfathers and grandmothers, from our fathers' side and our mothers' side. They did whatever they could to protect the animals and look after the Country. Our rangers carry on this work.*

*We are always looking backwards to get a full story. Old people give us everything. We are always thinking who is behind us.*

*Our old people — our mothers and our fathers — brought us to where we are now. Through that connection we know many things. We now look forwards and must give a strong story to our grandchildren.*

*To tell a good story now, we are listening to everyone's story and putting two toolboxes together; two knowledges, ours and Balanda science.*

Warning: This plan may contain images, names of, or references to, deceased Aboriginal people.



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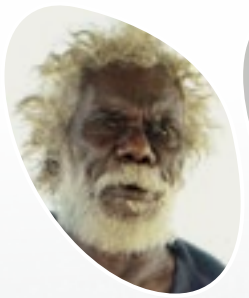
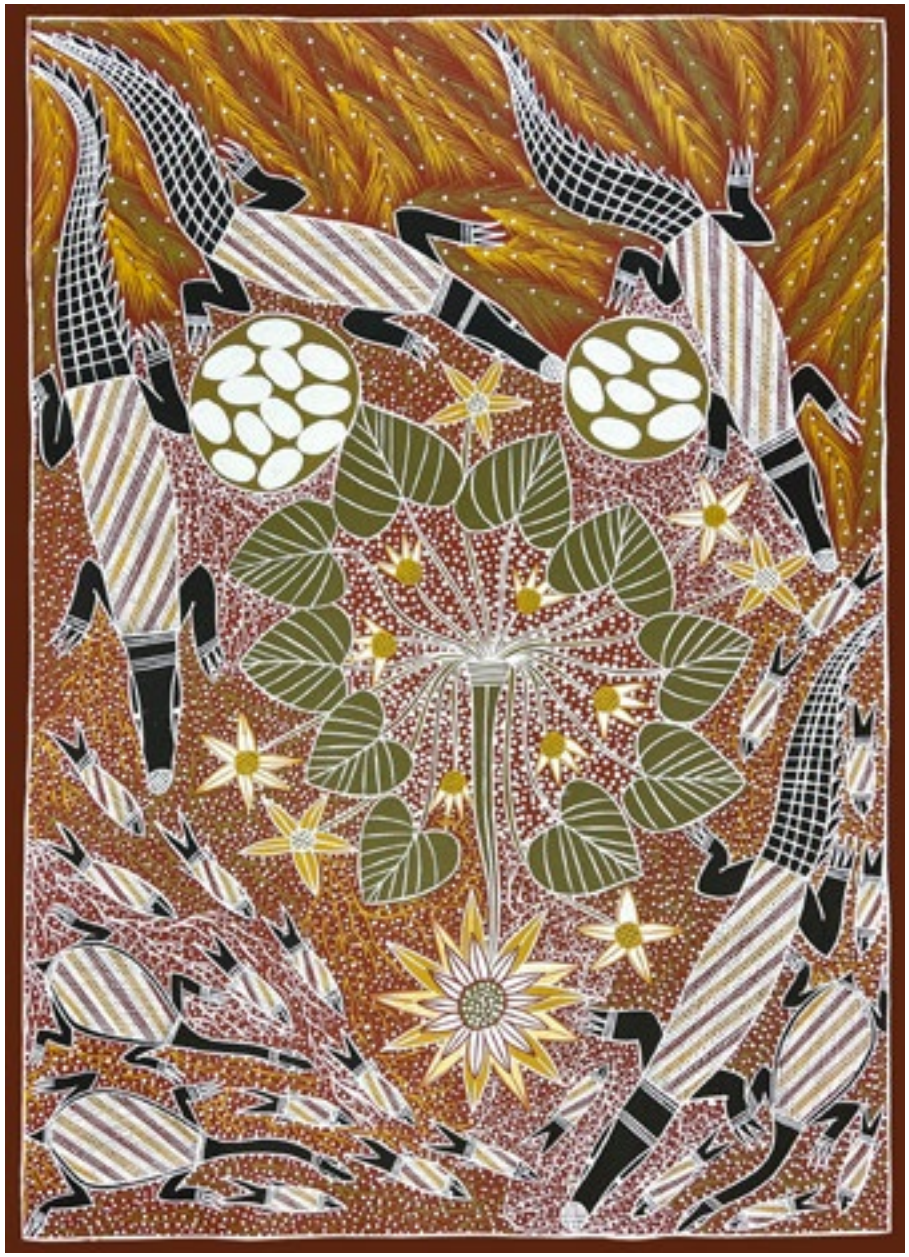


## Special Acknowledgement

We would like to acknowledge the special contributions of Mangay Guyula, Matthew Dhulumburrk and Otto Campion in the making of this plan.

*Photo: Millingimbi Collection*



*Raypiny Dhawu (Fresh Water Story) by Angela Banyawarra Malibirr*

# How our Plan works

Our plan has three parts.

## Part 1 Our Story for Country

Describes our Country, what we value most about it and the issues that threaten its health.

## Part 2 Strategies and Implementation

Details our strategies, which we believe will reduce the threats to increase the health of our Country.

## Part 3 Monitoring and Adapting

A separate strategy for assessing and improving our management over time.

## Appendices

Appendices at the back of our plan hold extra information for IPA managers or others interested in our Country and our work. There are comprehensive lists of the plants and animals found in our IPA as well as additional maps and diagrams. The detailed maps appearing in this plan are available from ASRAC on request as large format files.

## Abbreviations used in this plan

| | |
|---|---|
| **ALFA** | Arnhem Land Fire Abatement (NT) Limited |
| **ALRA** | Aboriginal Land Rights Act (1976) |
| **ASRAC** | Arafura Swamp Rangers Aboriginal Corporation |
| **BHA** | Bush Heritage Australia |
| **CALFA** | Central Arnhem Land Fire Abatement project |
| **DAFF** | Department of Agriculture, Fisheries and Forestry |
| **DCCEEW** | Department of Climate Change, Energy, the Environment and Water |
| **ICIN** | Indigenous Carbon Industry Network |
| **IMEP** | Intercultural Monitoring and Evaluation Program |
| **LDS/EDS** | late dry season/early dry season |
| **LoC** | Learning on Country program |
| **NAFI** | Northern Australian Fire Information |
| **NGO** | Non-government organisation |
| **NLC** | Northern Land Council |
| **SMERF** | Savanna Monitoring and Evaluation Reporting Framework |
| **WONS** | Weed of National Significance |

## Glossary of language terms

| | |
|---|---|
| **Balanda:** | from the word "Hollander" and refers to white people and their culture |
| **Bi:** | (pronounced bee) people who speak Rembarrnga, which is not a Yolŋu Matha language |
| **Djungkayi:** | people with special responsibilities for land, distinct from Traditional Owners |
| **Djungkayi:** | those who have inherited land through their mother's mother |
| **Malargatji:** | totems |
| **Mingirringgi:** | (Traditional Owner) those who have inherited land through their father's father |
| **Ngala Dakku:** | kinship relationship/moiety system for Bi people |
| **Ngarra:** | Yolŋu sacred ceremony business |
| **Right-way fire:** | customary fire management |
| **Rom:** | Yolŋu law |
| **Targets:** | things we value on our land and in our culture, our assets |
| **Threats:** | things that damage our targets |
| **Traditional Owners:** | those who have inherited land through their father's father |
| **Wongarr:** | refers to both ancestral beings and time of creation |
| **Yolŋu:** | a cultural and linguistic bloc in eastern and central Arnhem Land |
| **Yolŋu matha:** | languages shared by the Yolŋu |
| **Yothu Yindi:** | kinship relationship/moiety system within the Yolŋu domain |
| **Yuyung nyanung:** | kinship relationship/moiety system for the Gurruwiling area |

*Photo: Millingimbi Collection*

# Contents


# Part 1

## Our Story for Country

***We know that the land needs its people to care for it and to keep it healthy. We know that caring for the Country keeps us healthy — physically, mentally and spiritually.***

The circle of connection and caring that exists between people and Country is the key to how we approach what is called "land and sea management" in English. In the languages of Yolŋu matha we call the foundation of this relationship between Country and its people Rom.

Rom is a very complex word that has no direct translation equivalent in English. Rom has deep roots that start from the time of creation, extending to the present and into the future. Rom is like a tree, standing firm, not like grass that comes and goes with every season. Rom links our clans, it tells us who we are and how we should relate to one another, it tells us how to perform our ceremonies, how to raise our children to respect people and Country and, importantly, how to respect themselves. Other cultures speak of the law, of religion, of kinship, of intellectual knowledge, of art and science — many separate things. But in our way, all these things and more exist together as Rom.

We are born to a heritage of Rom but we learn it as we grow, layer by layer, listening to our mothers, our uncles, our fathers, acting in the right way until we have the knowledge and experience to finally take our place as the leaders of culture and Rom.

*Photo: Millingimbi Collection*

Many people from many places connected to Gurruwiling have been part of making this plan. We all speak for our own Country and have many different languages including the Yolŋu languages of Ganalbingu, Dhuwal, Djadiwitji and Wagilak as well as Rembarrnga spoken by Bi people located in the west and with strong connections to our neighbours further west.

In some ways we are two different peoples, Yolŋu and Bi, but we are also connected. Everything in our world is connected and divided by two halves (also called moieties) known as Dhuwa and Yirritja. This includes our people, our Country, all the plants, animals, seasons, and languages.

Our responsibility for looking after Country is given to us through our kinship relationships. Balanda might call this land ownership, but it is different for Yolŋu and Bi. Children have rights and responsibilities to their mother's people and Country and to our father's people and Country. In Yolŋu we call this Yothu Yindi. In Rembarrnga it is Ngala Dakku and for the Arafura Swamp it is Yuyung Nyanung. In English it could be something like a mother-child relationship.

Relationships to the Country of our maternal grandparents and maternal great-grandparents are also important and we have names for those connections and the responsibilities that go with them.

# Our Vision

## Djambarrpuyngu ga Dhuwal

*Manymak wänga, Manymak ŋatha, Manymak Yolŋu*

*Nhina ga nhanukal wängangur*

*Waṯaŋu mala ga wänga djäga walalaŋ wäŋaw*

*Marŋgikum ŋäthiliŋu rom yuṯany yolŋuny*

## Ganalbingu

*Latju ngirri, Latju wali, Latju Yolngni Ngani ngirri watangu mala ban djan Wangi ga ban djan*

*Margiyum romwu ga ngirri-wu ga gurrngul wu*

## Rembarrnga

*Dawal Wula, Meh wula*

*Bi yarranurah dawal yarriga Dawal walang yarrnurah*

*Djungurr-na wirridji-gan, bi madjih yang dawal-gan*

## Djadiwitji

*Manymak gorrbeh, Manymak wali, Manymak yulpili Djinini ngirrangi, gorrbi ngarri gorrbi watangu Bamanpe ngurru nangalpi*

*Yulpili lem niyini gurrbuw*

## Wagilak

*Ngamakguli dhala, Ngamakguli ngatha nga limalangu Ngamakguli Yolŋuwadj*

*Ngarr wanga dhala wardangu Maringigoma dhamawadj-na Romngalimala-ngu dalmiridjirri Yolŋuwadj-gu mathayunguna-gu*

## English

*Healthy Country, healthy tucker, healthy families living on our homelands.*

*The right people are speaking for country, passing knowledge from the old to the young.*

*We have strong ceremony, family and language for Country.*

*ASRAC Directors 2021*

# Our Ranger Story

*Our people have been managing this Country since our Ancestral Beings gave us the land, our languages, and the cultural system we call Rom.*

We created ranger groups to help us keep our indigenous knowledge strong and to make sure it is being used to look after Country. But our rangers are also looking to western scientific knowledge as we deal with new problems on Country, problems that have only come to us since Balanda arrived here. To tell a good story now, we are listening to everyone's story and putting two toolboxes together; two knowledges, ours and Balanda science.

Our Indigenous toolbox holds the knowledge that has come to us from our ancestors — how to manage Country with fire, how to live off the land without taking too much, how to read signs that tell us whether Country is healthy and, importantly, how to maintain the ceremonies and Law that keep culture and Country strong. We draw on western science for problems like weeds and feral pests and look to new technologies to help us, like satellite mapping for fire management, helicopters for early dry season burning, GPS and cameras to record and protect our cultural places.

*Southeast Arafura Catchment Rangers*

Our ranger groups started in the 1980s, through our work with anthropologist Dr Neville White. First were Donydji, Ngilpitji, Mirrngatja, Wurrungguyana and Dhupuwamirri Rangers, together known as the Arafura Catchment Management Ranger groups. Later came the Gurruwiling Rangers for the swamp area, and the Wanga Djakamirr for country to its North East. For a time, these groups were supported by the Northern Land Council's Caring for Country Unit but eventually we moved to independence with establishment of the Arafura Swamp Rangers Aboriginal Corporation (ASRAC), and along with this the Bukgurlna Malnyangarnak and Dhipirri Balmawirrey Rangers.

*Only with Rom in our hearts and minds can we manage Country properly.*

Today we have ASRAC rangers looking after the inland stone Country where our rivers begin their journey to the sea, ASRAC rangers on the coast looking after our saltwater Country, and ASRAC rangers working in the jungles and wetlands of the Arafura Swamp. Although each ranger group has special responsibilities in its own area, we all come together under ASRAC to plan, share resources and help each other.

By working as one we have grown strong. We are ready to make our own futures, on our own Country, following in the footsteps of our Old People. We also have the support of our neighbours. We have built strong relationships with the IPAs that surround us and share management responsibilities with our countrymen, united in Rom and linked by the web of kinship. Through ASRAC we also seek partnerships with governments, researchers, private enterprise, and others who are willing to share our vision.

# Arafura Swamp Rangers Aboriginal Corporation (ASRAC)

*We all work together and support each other as ASRAC rangers. We wear the ASRAC badge and the logo of our homelands. We have our ASRAC headquarters in Ramingining and permanent satellite bases throughout our area, as well as seasonal work camps. We have rangers representing our homelands including, in the sea country region (Wanga Djakamirr, Dhipirri), the swamp region (including Gurruwiling, Bukgurlna Malnyangarnak) and the catchment region (Donydji, Mirrngatja, Dhupuwamirri).*

ASRAC is a not-for-profit Aboriginal company. ASRAC is incorporated under the Corporations (Aboriginal and Torres Strait Islander) Act 2006 (CATSI Act), and as such overseen by the Registrar of Aboriginal Corporations (ORIC). As a charitable organisation ASRAC pays no tax on its income. It also enjoys status as a Public Benevolent Institution (PBI).

ASRAC can pay out money as wages to rangers and spend money on operational costs, capital for things like work vehicles and equipment and projects under its Healthy Country Plan. It cannot give money to private individuals. ASRAC can develop sustainable and aligned businesses providing jobs and training for Aboriginal people, but any profits must go back into the objectives of its Healthy Country Plan. ASRAC is governed by its Yolŋu and Bi directors elected by its many members.

**ASRAC Rule Book objectives are:**

- To relieve poverty in the Arafura Swamp Region of Arnhem Land by creation of Indigenous employment opportunities through not-for-profit enterprise focused on sustainably using natural and cultural resources of land and sea.
- Advance Indigenous education (including bursaries, scholarships for vocational training, secondary and tertiary studies) in particular to assist people with customary management responsibilities to increase their capacity to participate in management of the land and gain employment.
- Operate an Indigenous ranger program to work with landowners protecting and enhancing natural and cultural assets and remediating threats to land and culture, recognising that degradation of those assets threatens Indigenous futures with increasing poverty and intransigent development obstacles.
- To provide a range of assistance, other than financial assistance, to landowners seeking to establish family-based businesses utilising land and cultural assets.
- To collaborate and partner with Indigenous and non-indigenous organisations in pursuing the principal objective.
- Raise funds to support the Corporation's objectives through seeking grants, gifts and bequests, undertaking fee-for-service work and participation in land-based commercial projects where those projects support, and do not conflict with, the Corporation's commitment to sustainable land use.

ASRAC
Arafura Swamp Rangers Aboriginal Corporation


*Rangers work to protect assets both cultural and community.*

# Arafura Swamp Indigenous Protected Area

*Our vision for healthy Country, people and culture will be realised through our Ranger Corporation and the framework of an Indigenous Protected Area. Our Healthy Country goals align closely with those of the IPA program. Both aim to look after Country and support Indigenous culture while generating jobs, training and livelihoods for Yolŋu and Bi.*

The Arafura Swamp IPA brings together not only the ideas and ambitions of many Arnhem Land clans, but also those of mainstream Australians who value and wish to protect our nation's unique biodiversity and Aboriginal heritage.

The Arafura Swamp IPA lies in central northern Arnhem Land around 450 kilometres east of Darwin, the Northern Territory's capital. Our IPA covers 13,273 square kilometres, including 12,937 square kilometres of land and 336 square kilometres of sea country. It is bounded by the Djelk IPA to the west, Laynhapuy IPA to the east, Marthakal IPA to the northeast, Crocodile Islands IPA to north, Mimal and South East Arnhem Land IPAs to the south.

The Arafura Swamp IPA contributes an additional 1,081,406 hectares of the Arnhem Land Aboriginal Land Trust to the National Reserve System. This is Inalienable Aboriginal Freehold land granted under the provisions of the Commonwealth Aboriginal Land Rights (Northern Territory) Act (ALRA) 1976.

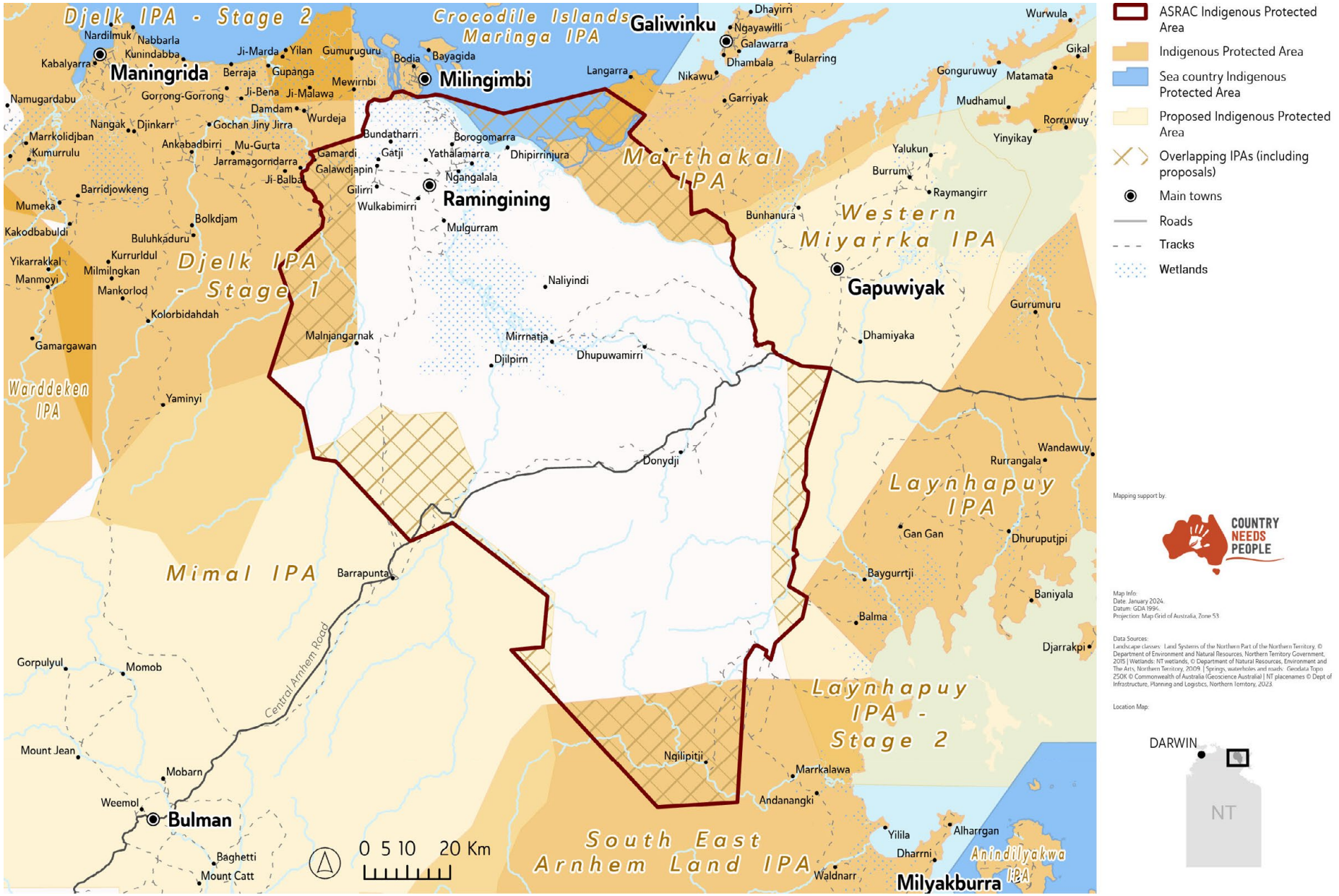
## IPA Dedication

The Arafura Swamp IPA is dedicated as a Category VI Managed Resource Protected Area, consistent with the International Union of the Conservation of Nature (IUCN) definition of an area; conserving ecosystems and habitats, together with associated cultural values and traditional natural resource management systems.

## Shared Management Areas

Dedication of the Arafura Swamp IPA includes agreements with our IPA neighbours. Shared Management Area agreements are in place for all areas where Arafura Swamp IPA overlaps existing or developing IPAs. This includes Djelk, Marthakal, Mimal, SE Arnhem Land, and Crocodile Islands IPAs. The purpose of overlaps between these IPA is to avoid the need for linear boundaries, in recognition of the complexities of traditional land ownership and interwoven responsibilities to Country.

Figure 1. Arafura Swamp IPA, Neighbouring IPA and Shared Management Areas



## IPA Governance

Arafura Swamp Indigenous Protected Area is an initiative of the Traditional Aboriginal Owners of the Arafura Swamp catchment and Castlereagh Bay in NE Arnhem Land. It is one of the largest protected areas to be dedicated within the Arnhem Land Aboriginal Land Trust.

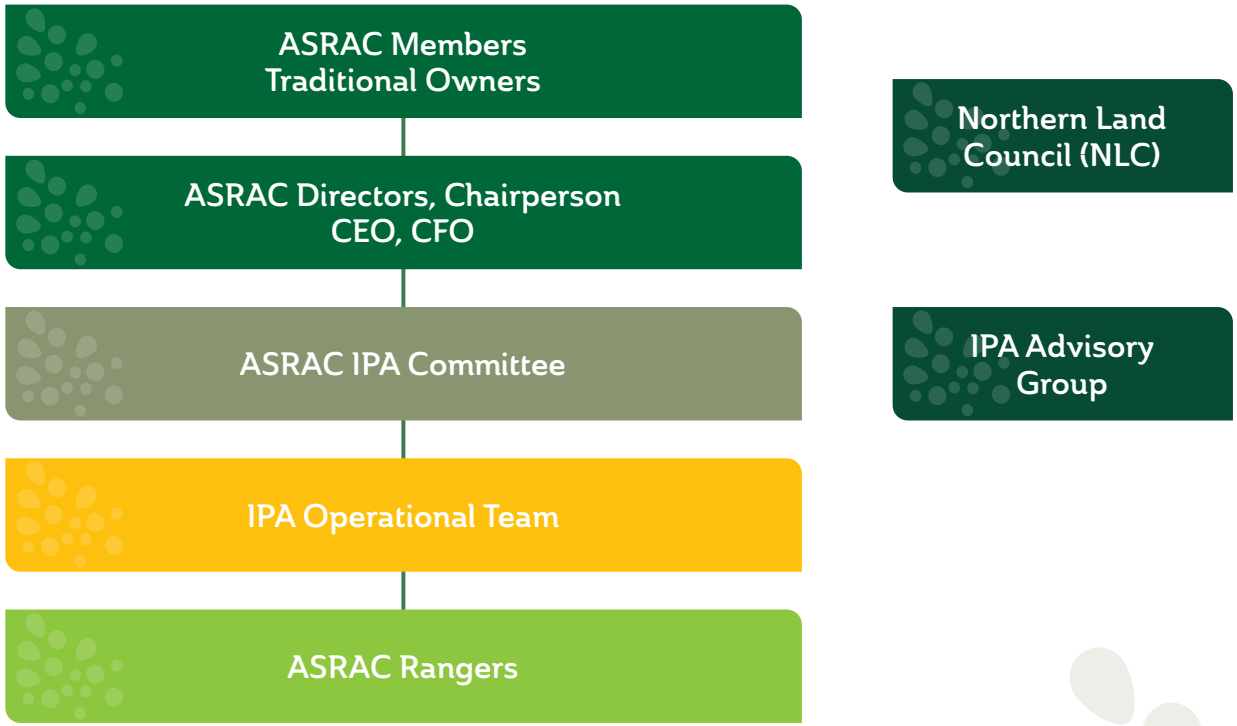
IPA management and administration occurs through the Arafura Swamp Rangers Aboriginal Corporation (ASRAC). ASRAC staff are responsible for implementing the IPA Plan of Management, administering the IPA's finances, and overseeing the project's monitoring, evaluation, reporting and improvement. ASRAC employ an IPA Coordinator to support their rangers' on-ground activities and ensure their work program aligns with Traditional Owners' IPA and the Healthy Country plans.

Landowner representation in IPA governance occurs at two levels. As an ORIC incorporated body ASRAC's Board of Directors is ultimately responsible for the IPA project and its funding. ASRAC's directors are senior Traditional Aboriginal Owners representing Yolŋu and Bi clans within the corporation's membership catchment. However, IPA governance is largely delegated to a committee specifically representative of the traditional estates comprising the IPA. IPA committee members are drawn from each of the IPA's Bäpurru (composite clan groups) and ideally, are paired to spread membership across the three customary decent lines, wanga-watangu, ngamini-watangu and mari-watangu. This structure is designed to embody the concept of Yothu Yindi, where the clans of each moiety (Dhuwa and Yirritja) are balanced and act in harmony.

Once a year, or as necessary, this committee invites partner and agency representatives to attend an IPA meeting. A feature of these larger meetings is the presentation of the years' monitoring results. This provides an opportunity for external stakeholders to have input to the IPA project, contributing their expertise to its evaluation and improvement.

Decisions made by the IPA Committee are passed to ASRAC administration, as advice to action. Depending on the nature this advice, it may be able to be implemented by operational staff or may require the endorsement from ASRAC's Board.

Decisions beyond the scope of ASRAC's corporate authority are referred to the Northern Land Council (NLC), the Commonwealth statutory body administering the Land Trust and representing the interests of its Indigenous Trustees.



# Management Arrangements

Strong Commonwealth Land Rights underpin our management of land and sea Country. Our region falls entirely within the Arnhem Land Aboriginal Land Trust, land held as inalienable freehold a tenure provided to Traditional Aboriginal Owners under the Commonwealth legislation — the Aboriginal Land Rights (Northern Territory) Act 1976 (ALRA). The most secure and comprehensive tenure in Australia, ALRA Land Trusts provide Traditional Owners near sovereign rights to their land and intertidal seas. This tenure gives powers of veto over all activities on or under our Country. And, via the statutory regulator, the NLC, it also ensures Traditional Owners are consulted with regards to any proposal for or affecting their Country.

## Neighbours

Our IPA adjoins four existing protected areas, the Djelk, Marthakal, Crocodile Islands, and South East Arnhem Land IPAs. Two proposed IPAs are also neighbours — Mimal IPA and Stage 2 of Laynhapuy IPA. Unlike Balanda, no fences or hard boundaries divide our Country. Traditional connections to Country take many forms, from inheritance of ownership, or responsibilities to waŋa (clan estates), to spiritual associations through songlines, sites or Dreamings. In recognition of these customary patterns of land 'ownership' the boundaries of Arnhem Land IPAs often intergrade, with regions of overlap subject to shared management arrangements. Shared Management Area (SMA) agreements are in place with all neighboring ranger groups. These agreements simply set out who is responsible for what and how the groups will communicate, and at times collaborate in management. These arrangements ensure management of intersecting areas is not neglected and that landowners' directions are not disregarded.

## Supporting Arrangements

Although a strong statement of Aboriginal landowners' management intent, IPAs have no legal function or effect. They are however a framework to which additional layers of authority may be added. Arafura Swamp IPA already integrates an existing ALRA Section 19 agreement for the commercial production of carbon credits. The IPA also corresponds with ASRAC's ORIC-registered corporate catchment. To further formalise our IPA's role, ASRAC are investigating the utility of a Section 19 land use agreement legally authorising its conservation and cultural heritage activities. Such an agreement would validate the IPA's interest in the land and its management, ensuring ASRAC are consulted regarding proposals likely to interfere with the IPA operations. This would include licences or agreements enabling activities expected to compromise the control of weeds and feral animals, wildfire, protection of cultural heritage, or operation of the ranger program.

## Partnerships

ASRAC partners with a range of other organisations to support their work and staff development. Foremost amongst these is Bush Heritage Australia who have worked with ASRAC over many years towards a shared vision of healthy Country and healthy people. Close collaboration with Milingimbi Outstation Progress Resource Association (MOPRA) allows the Wanga Djakimirr Rangers, Dhipirri Rangers and Crocodile Islands Rangers to jointly manage the sea Country of Castlereagh Bay.

Other important partnerships include those with CSIRO (biological-control research), Charles Darwin University (freshwater turtle research), Territory NRM (funding and technical support for Gamba grass surveys), WHNT (expert advice on crocodile farming), NT Fisheries (enforcement training), and the Dept of Agriculture (service contracts, training, equipment support). ASRAC additionally partners with Ramingining School to the delivery of the Learning on Country program, and with the Country Needs People campaign, who's assistance has helped realise our IPA.

Sharing of knowledge or practices remains as the intellectual property of Traditional Owners and they have protection for the decisions about usage and storage.

*"I'm following my mother and father to show the children."*

Nali Djarrbal

# Conservation Values

## Plants and Animals

Over seven hundred (707) types of vertebrate animals are known from the Arafura Swamp IPA. This includes 291 species of fish, 23 species of frog (1 introduced), 252 bird species, 45 mammal species (including 5 introduced, 1 naturalised) and 96 reptile species (1 introduced).

More than fifteen hundred (1510) plant species are recorded from the IPA, comprising 163 families and 12 Major Vegetation Groups. This is a rich flora compared to surrounding regions and includes a high number of endemic plants (around 60 species only known from the NT). There is also a number of plant species that although found elsewhere, have their major or only NT occurrence in the IPA. Most are associated with the IPA's wetland and rainforest communities.

These high plant and animal tallies reflect the fact that at nearly one and half million hectares, the Arafura Swamp IPA is vast and covers many different types of Country, including fresh and saltwater habitats. Still, these records are likely to be an underestimate. Marine animals for instance are poorly represented in records for the IPA with only one species of coastal dolphin recorded. It is also likely that central eastern Arnhem Land hosts species yet unknown to science as habitats including monsoon forest and sandstone ranges remain little surveyed.

Ngathu *(Cycas armstrongii)*

## Threatened Species

Thirty vertebrate species listed as threatened at either national or Territory levels are recorded from the IPA. This includes 8 critical weight range mammals, 7 migratory shore birds, 4 woodland birds, 2 cave-restricted bats, 3 reptiles impacted by cane toads, 1 sea turtle, and 1 NT endemic snake with a highly restricted distribution.

Table 1. Threatened Plants

| Common name | Species name | EPBC status | NT status |
|---|---|---|---|
| White-flowered Wax Plant | *Cynanchum elegans* | Endangered | |
| Cycad | *Cycas cairnsiana* | Vulnerable | |
| Cycad | *Cycas armstrongii* | | Vulnerable |
| Climbing Pandanus | *Freycinetia excelsa* | | Vulnerable |
| Slender Climbing Pandan | *Freycinetia percostata* | | Vulnerable |
| Giant Fern | *Angiopteris evecta* | | Vulnerable |

Table 2. Threatened Animals

| Common name | National status | NT status | Migratory species[1] |
|---|---|---|---|
| Northern Quoll | Endangered | Critically Endangered | |
| Curlew Sandpiper | Critically Endangered | Vulnerable | yes |
| Great Knot | Critically Endangered | Vulnerable | yes |
| Eastern curlew | Critically Endangered | Vulnerable | yes |
| Lesser Sand Plover | Endangered | Vulnerable | yes |
| Red Knot | Endangered | Vulnerable | yes |
| Gouldian Finch | Endangered | Vulnerable | |
| Nabarlek | Endangered | Vulnerable | |
| Black-footed Tree-rat | Endangered | Vulnerable | |
| Pacific Ridley | Endangered | Vulnerable | yes |
| Fawn Antechinus | Vulnerable | Endangered | |
| Brush-tailed Tree-rat | Vulnerable | Endangered | |
| Greater Sand Plover | Vulnerable | Vulnerable | yes |
| Partridge Pigeon (eastern ssp) | Vulnerable | Vulnerable | |
| Grey Falcon | Vulnerable | Vulnerable | |
| Barkly Tableland Death Adder[2] | Vulnerable | Vulnerable | |
| Hawksbill Turtle | Vulnerable | Vulnerable | |
| Bar-tailed Godwit | | Vulnerable | yes |
| Northern Leaf-nosed Bat | | Vulnerable | |
| Pale Field-rat | | Vulnerable | |
| Oenpelli Python[3] | | Vulnerable | |
| Mertens' Water Monitor | | Vulnerable | |
| Yellow-spotted Monitor | | Vulnerable | |
| Northern Shrike-tit | Vulnerable | | |
| Ghost Bat | Vulnerable | | |
| Northern brushtail possum | Vulnerable | | |
| False Water-rat | Vulnerable | | |
| Green Turtle | Vulnerable | | |
| Flatback Turtle | Vulnerable | | |

1 Protected under international conservation agreements including CAMBA, JAMBA, ROKAMBA, BONN.
2 Recorded as *Acanthophis antarcticus*, interpreted here as *Acanthophis hawkei*.
3 Disjunct record – possibly in error.

## Notable Wildlife Records

Single records for the Barkly Tableland death adder, Oenpelli python and Carpentaria snake from the IPA are outside their known distribution suggesting the location data may be in error. However, it is possible these species occur in the IPA given suitable habitat is present. Early (1937) records made by Donald Thompson of the cotton pygmy-goose and striped honeyeater are interesting as although backed by collections, these records represent species outside their current range and not recorded in the region since.

Two declining mammals, the black-footed tree-rat and brush-tailed tree-rat have not been formally recorded from this area for close to a century. For declining bird species, the last records from this area for the hooded parrot, emu, partridge pigeon and Gouldian finch were made over forty years ago. There is also a suite of critical weight-range mammals that have not been recorded from the area since the 1990's. This includes the false water-rat, narbalek, spectacled hare-wallaby, northern brushtail possum, fawn antechinus, pale field rat, northern leaf-nosed bat and northern quoll. Overall, these records emphasise the need for surveys targeting rare and restricted species and the importance of recording incidental sightings whenever they occur.

# Disappearing Wildlife Within the Arafura Swamp IPA

*Top left:*

Black-footed Tree-rat (*Mesembriomys gouldii*).

Image: Anders Zimny.

*Top right:*

Brush-tailed Rabbit-rat (*Conilurus penicillatus*).

Image: Terry Mahney.

*Bottom left:*

Eastern short-eared rock-wallaby *(Petrogale wilkinsi).*

Image: Anders Zimny.

*Bottom right:*

Spectacled Hare-wallaby (*Lagorchestes conspicillatus*).

Image: Mark Sanders.

Partridge pigeon *(Geophaps smithii)*.
Image: Craig Nieminski.

Gouldian finch *(Erythrura gouldiae)*.
Image: Geoff Whalan.

Hooded parrot (*Psephotellus dissimilis*), male and female (at rear).
Image: Etienne and Cara Littlefair.

Ghost bat *(Macroderma gigas)*.
Image: Michael J Barritt.

Figure 2. Biodiversity Highlights of the Arafura Swamp IPA

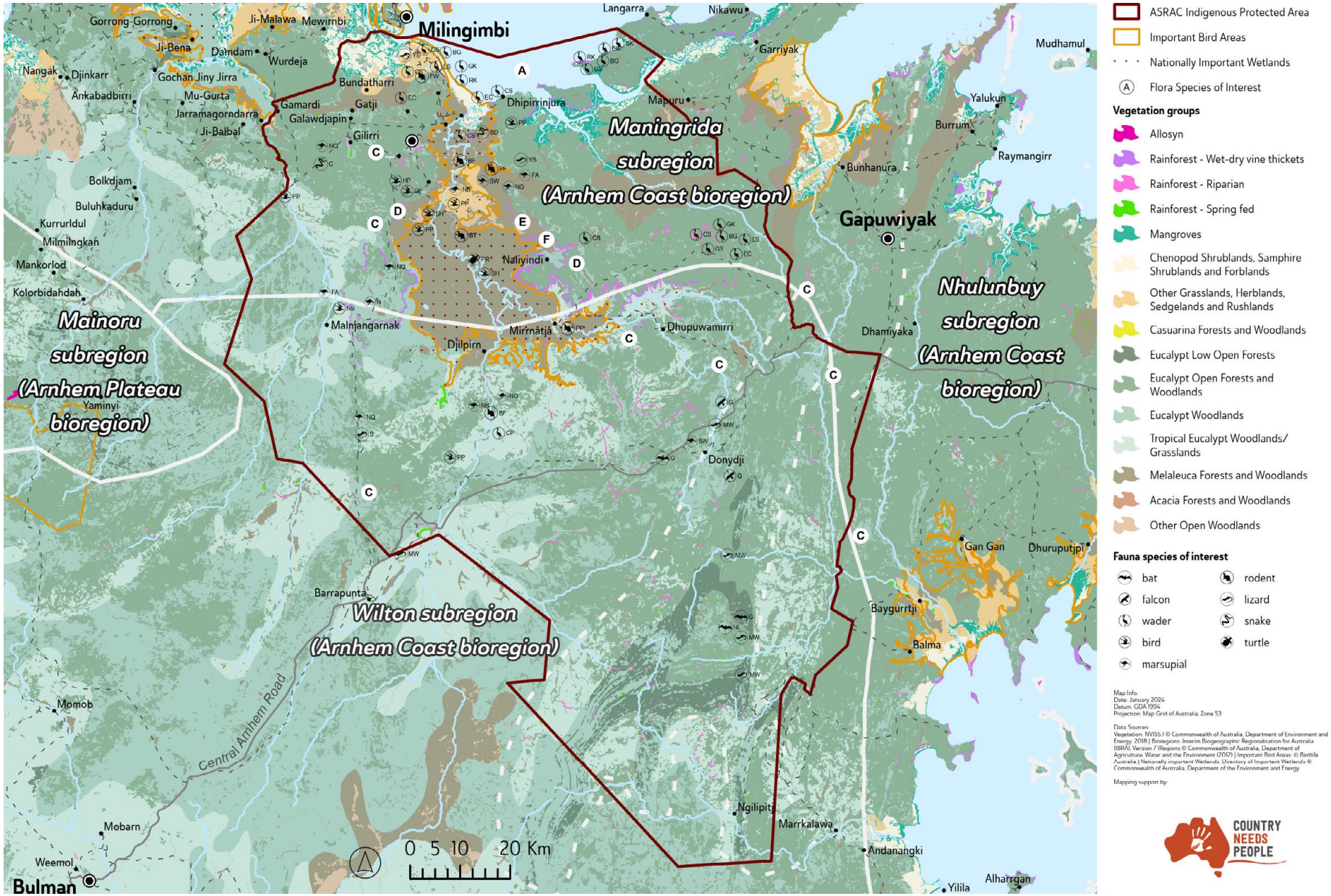
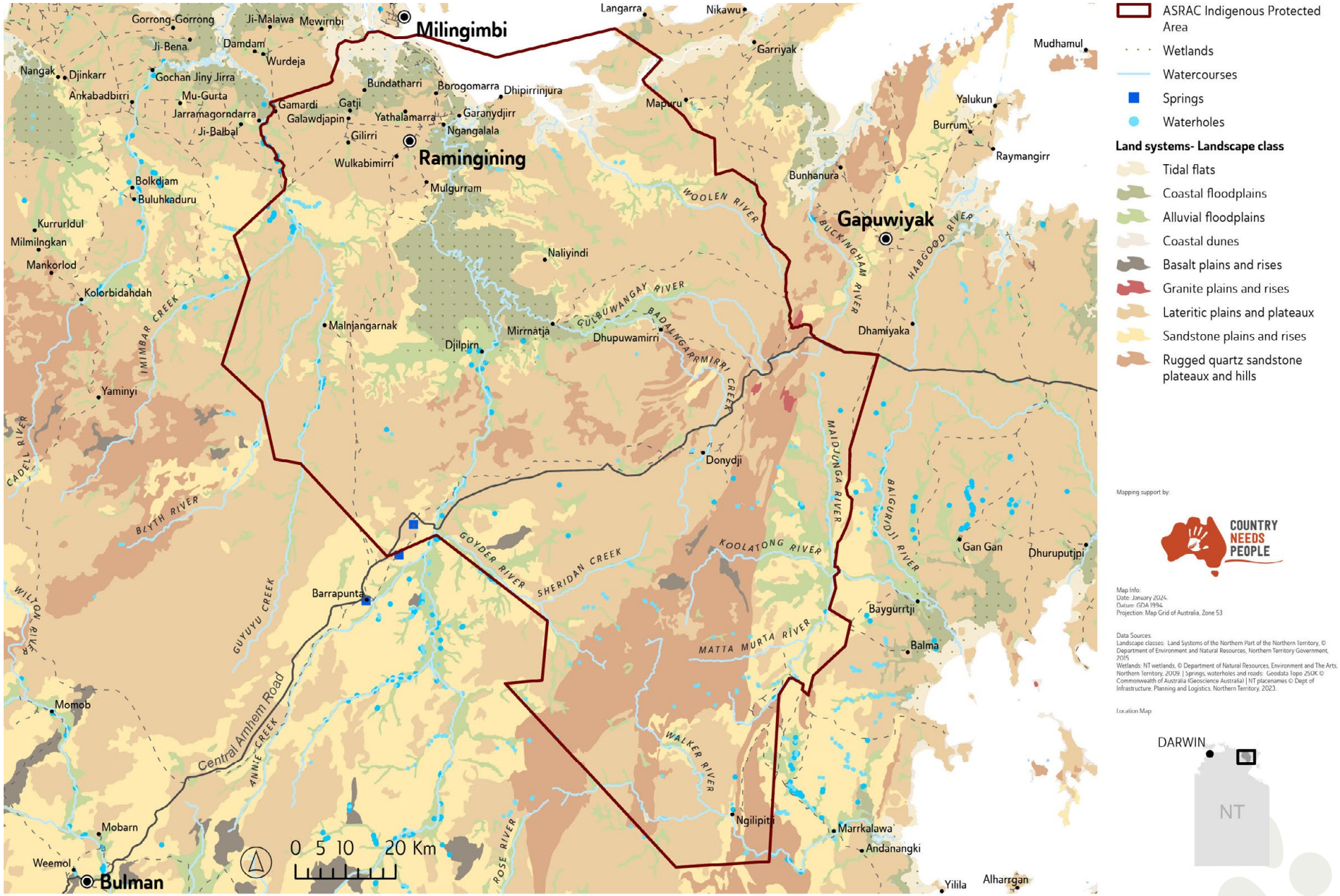


Figure 3. Major Habitats and Waterways of the Arafura Swamp IPA



*Top: Swamp Country, Gurruwiling*
*Above: Savanna woodlands, Ramingining*

## Landscape Values

*The IPA's centerpiece is the vast wetland known to Traditional Owners as Gurruwiling and historically as the Arafura Swamp. Formed within a 700 square kilometre basin, Gurruwiling is thought to be Northern Australia's the largest wooded perennial freshwater swamp.*

It is listed as a Nationally Important Wetland and has been assessed by the Northern Territory Government as eligible for international listing under the RAMSAR Convention as a High Conservation Value Aquatic Ecosystem.

With the inclusion of associated coastal floodplains, the Arafura Swamp is also recognised internationally as a Key Biodiversity Area. In this context it is described as a site "contributing significantly to the global persistence of biodiversity" (BirdLife International 2018). The area supports in excess of 300,000 waterbirds comprising 22 species (Brennan *et al* 2003), hosts several rare or restricted vegetation communities including permanently flooded Hanguana malayana forest, and contains virtually the entire NT population of the giant wetland palm (*Corypha utan*). More than 3000 hectares of complex monsoon rainforest grace the swamp's margins (Russell-Smith 1991) providing habitat for a distinctive Arafuran community that includes many rare or restricted plants, birds, reptiles and invertebrates.

In March 2001 the Arafura Swamp, its Goyder River headwaters and adjacent parts of the Mitchell Range were accepted to the Register of the National Estate in recognition of the area's ancient and unique flora, and continuous customary Indigenous management. Though now expired, the entire extent of this previous National Heritage listing is contained within the Arafura Swamp IPA.

Both the Arafura Swamp and Castlereagh Bay are recognised by the Northern Territory Government as Sites of Conservation Significance with an International Significance rating. The Australian Government considers much of IPA's coastline as Habitat Critical to the Survival of Marine Turtles, and list five species as nesting here — the Hawksbill, Olive Ridley, Green, Flatback and Leatherback Turtles.

To the southeast of Gurruwiling the Mitchell Range runs diagonally through the IPA. This rugged sandstone plateau is part of a broad continuous biogeographic corridor which to the north formed a land bridge between mainland Australia to New Guinea as little as 1,300 years before present. At current sea-levels it is represented by the Wessel Islands chain which lies within the neighboring Marthakal IPA. To the south, this feature links Arnhem Land to sandstone environments of the Gulf of Carpentaria, and as consequence supports a varied mix of wildlife including arid-zone elements such as the Spectacled Hare-wallaby (*Lagorchestes conspicillatus*), Papuan elements such as the Six-toothed Rainbowskink (*Carlia sexdentata*) and NT sandstone endemics such as the Arnhem Land Dtella (*Gehyra pamela*).

*Saltwater Country,*
*Castlereagh Bay coast.*

# Our Targets

*We have grouped the things we value most about our Country and our culture into Targets.*

Around these Targets we have planned strategies and actions to keep them healthy. In the following section we talk about each of our Targets in detail:

1. Cultural Places
2. Stories, Language and Rom
3. People on Country, Jobs on Country
4. Both-way Education and Knowledge
5. Bush Tucker and Native Wildlife
6. Right-way Fire
7. Gurruwiling (the Arafura Swamp)
8. Our Freshwater Country
9. Our Saltwater Country
10. Our Woodland Country
11. Our Jungle Country
12. Our Rock Country

## Health assessment

We did a health check to more clearly define our Targets and be able to say what makes them healthy, how we will monitor them to check to see if our management is working, or if we need to adapt.

We asked a series of questions about each Target:

**Indicators** – What are the things that tell us if the value is healthy? What can we monitor or measure to see if they are getting better or worse?

**Health rank** – How healthy are they now?

**Trend** – Are they getting better or worse?

**Goals** – What do we want to achieve for the Target in the future?

### Health rank

| | |
|---|---|
| Mirrithirri Manymak | VERY GOOD |
| Manymak | GOOD |
| Ganga Manymak | FAIR |
| Yatjkurr | POOR |

### Trend

↑ **Getting better**

↓ **Getting worse**

↔ **Staying the same**

| Our Targets<br>Our really important things | 2022 Assessment<br>Health rank<br>How healthy are they? | 2022 Assessment<br>Trend<br>Are they getting better, worse, or staying the same? | Target Goals<br>How we would like to see our Targets in 10 years' time |
|---|---|---|---|
| 1. Cultural Places | Ganga Manymak | ↑ | Ceremonies are being held by the right people on the right Country and our cultural places are clean, protected and respected by all. |
| 2. Stories, Language and Rom | Ganga Manymak | ↑ | Our knowledge is recorded and accessible to us and kept alive by young people and old people walking and talking on Country. |
| 3. People on Country, Jobs on Country | Ganga Manymak | ↑ | Country is full up with the right people and elders are happy for family who enjoy good lives. |
| 4. Bush Tucker and Native Wildlife | Manymak | ↓ | People are protecting their malargatji (totems) and preparing and sharing food the right way, which is plentiful, fat and tastes good. |
| 5. Both-way Education and Knowledge | Ganga Manymak | ↑ | Everyone respects Rom and we have the skills and knowledge to have professional jobs and our culture. |
| 6. Right-way Fire | Ganga Manymak | ↔ | The right people burning Country at the right time with a strong carbon business, and there are plenty of healthy sugarbag, emu and kangaroo. |
| 7. Gurruwiling | Yatjkurr | ↔ | Families are sharing Gurruwiling, enjoying plenty of water lilies, longneck turtle, fish and magpie geese to eat and we can always dig a hole in the right place to drink clean water. |
| 8. Our Saltwater Country | Ganga Manymak | ↓ | We are working with neighbouring clans and ranger groups to look after our saltwater Country and there are plenty of healthy stingray and oysters. |
| 9. Our Freshwater Country | Yatjkurr | ↔ | Our freshwater places have clear water that smells clean and we can find plenty of water lilies, water chestnut, fish and turtle. |
| 10. Our Woodland Country | Ganga Manymak | ↓ | All the right plants are growing and flowering together in our woodlands so native bees are making plenty of sugar bag, with sugar glider, possum, echidna, night owl and bats nesting in hollow logs. |
| 11. Our Jungle Country | Ganga Manymak | ↔ | Our jungle has lots of tucker, shade and clean water and are the same size as they are today with healthier plants and animals. |
| 12. Our Rock Country | Ganga Manymak | ↔ | All the right animals and plants are healthy, and we have good access to look after our escarpment Country and there is no mining. |

*Our knowledge is recorded and accessible to us and kept alive by young people and old people walking and talking on country.*

## TARGET 1. Cultural Places

*Our sacred places connect us and bring us together.*

Every place has meaning because all the land came from the Wongarr, or ancestral beings, who created it. The power of the Wongarr is still strong in the landscape. Sometimes it might be something we can see — a rock or tree or billabong — but not always, sometimes that power is invisible. We learn as we grow, so we know how to behave properly on country because the power in the land is dangerous if not treated properly. When the wrong people go into our sacred and cultural places they might get sick or the landowners and djungkayi might get sick. When we see our cultural places damaged it is like our body has been wounded.

Our ceremony places are filled with strong power and only the right people can go there to look after the power. Whether the ceremony is happening at the time or not, strict rules apply under our law that defines the roles played by people. As rangers we are often in the middle between our people and Balanda. Some Balanda look to us rangers to give permission to go places. As rangers we don't have the right to talk for other people's country but we do have a responsibility to know who are the right people and to make sure they are the ones who are consulted. The health of our cultural places target is not good. In the section further on we talk more about why and what we will do to make it better. Our cultural places are filled with knowledge and stories. If we know country, we can read the knowledge and stories like Balanda read from a book.

| Health rank | Trend | Goal |
|---|---|---|
| **Ganga Manymak (FAIR)** | ↑ | Ceremonies are being held by the right people on the right Country and our cultural places are clean, protected and respected by all. |

*"Cultural mapping is the backbone of everything. Site protection, registration, sharing connections, mapping, support everyone talking ... cultural mapping is underneath everything ASRAC does."*

Otto Campion

## TARGET 2. Stories, Language and Rom

*Our stories, languages, ceremonies and law direct us in how to carry out our responsibilities, our stories give us meaning and are how we transfer our knowledge and wisdom. As children we begin to learn about our responsibilities and our country from the stories we hear from families. As adults we are the guardians and teachers of those stories.*

Our languages are the code that unlocks everything we need to know about who we are and how to behave. Like husband and wife our Yolŋu Matha languages are married — one is Dhuwa and the other is Yirritja. For example, Djinba language from the Goyder is Dhuwa and married to the Yirritja language Ganhalpuyngu from Gurruwiling. The Goyder River feeds the swamp — they need each other and belong together.

Stories belong to our languages and our languages belong to our stories. Both are kept alive by young and old walking and talking on country. This is the proper way for knowledge to be learned and shared.

But we need to find ways to "back-up" our knowledge as well. Recording our stories and making them accessible to the right people is something we must do in these times when our people are being distracted by television, by movies, by Facebook. We can use some of the technology and knowledge from Balanda to help us keep hold of culture and our own knowledge. Our ceremonies make us strong and we must use that strength to stand by the system of Rom and Ngarra that will always govern our lives as Yolŋu and Bi. To manage for healthy country we must stay within the circle of Rom and the Ngarra.

| Health rank | Trend | Goal |
|---|---|---|
| **Ganga Manymak (FAIR)** | ↑ | Our knowledge is recorded and accessible to us and kept alive by young people and old people walking and talking on Country. |

We see the health of our target of Rom, and all within it, as being ganga manymak, just fair and not good. As rangers we have to work with elders and families to put more strength back into our culture.

***"It's like proper digging for yam, you've got to get the whole yam — don't break it. If you break it, some is left down deep. Same with stories. Must have all of story."***

Marley Djangirr

*As children we begin to learn about our responsibilities and our country from the stories we hear from families.*

*"Djilpin is my Country ... The Country has song lines and relationships. My ancestors speak to me and give me dreams and sometimes the dreams come true. Every year when we go there, it changes. When I walk on Country, the Country gives me more knowledge to understand."* – Nali Djarrbal

# TARGET 3. People on Country, Jobs on Country

*On our homelands we can enjoy a healthy life, eat plenty of bush tucker, feel safe, care for our country and keep our culture strong.*

| Health rank | Trend | Goal |
|---|---|---|
| **Ganga Manymak (FAIR)** | ↑ | Country is full up with the right people and elders are happy for family who enjoy good lives. |

Homelands are important for young people to keep away from alcohol and drugs, to give them a positive outlook on life. We have been losing too many young people. Some run away from the homelands to town and drugs — if there were jobs on the homelands many more would stay and live a clean life.

Building up ASRAC is the first step — making our Aboriginal organisation as strong as it can be. Building our membership, hiring good staff and having an active board of directors representing all clans across our IPA. Growing our ranger program with more young people, more women rangers and more ranger bases on homelands is the next step. Training people up so they have skills they can use for any job, giving them confidence and enjoyment in working on their country.

We also need to make businesses on country, real work for real pay not handouts. We already have our IPA, our carbon project, our crocodile farm, as well as biosecurity and fisheries service contracts. There are many other opportunities including cultural tourism, commercial fishing, selling bush tucker and medicines. Our rangers have many skills. We know our country and we know how to look after it. Healthy country isn't just good for Yolŋu and Bi, it's important for everyone.

Arnhem Land is one of the last places in Australia where Traditional Owners still live on their ancestral homelands. Arafura Swamp IPA is a hotspot in this regard with around 20 homelands including Bundatharri, Galawdjapin, Gattji, Gilirri, Gupulul, Mulgurrum, Walkabamirri, Garanydjirr, Maŋbirri, Naŋgalala, Yathalamara, Buyulkulmirr, Dhipirrinjura, Malnyaŋanak, Mirrngatja, Dhupuwamirri, Donydji, and Ngilipitji.

Homeland outstations are a big part of our IPA. They are where culture, language and customs remain strong and traditional practices persist. In many ways they are the essence of our IPA. A strong IPA can support homelands by encouraging local economies and helping ensure the safety of people living remotely. Remote Ranger base facilities have recently been established at Donydji and Mirrngatja, with planned infrastructure upgrades at Gupulul and Malnyaŋanak next. ASRAC believes these improvements will allow rangers to stay longer in these areas and undertake more effective management. New and sustainable enterprise ideas being considered for homelands in our area include tourism, arts and crafts, sustainable use of wildlife, commercial fishing, mustering, and an abattoir.

ASRAC's Ramingining Crocodile Farm opened in 2021. This facility, to be built in 2 stages, will eventually employ 3 to 4 local people, cleaning and caring for the hatchlings. ASRAC rangers will be seasonally involved, locating nests and harvesting the eggs.

ASRAC have strived to build a strong Women's Ranger program. Around a third of ASRAC's ranger staff are now women, working out of a purpose-built office in Ramingining and out of homelands such as Donydji.

ASRAC have also sought to improve their governance, operational and financial systems through more regular and structured corporation meetings, board member training, engagement of a CFO and Administration Officer, and the appointment of an IPA Coordinator. ASRAC's financial base continues to broaden with increased income from the carbon project, NT NRM and NT Ranger grants, fee-for service biosecurity contacts, and generous donations from organisations including Bush Heritage Australia and Nia Tero.

***When you walk on country, you can feel something special inside. You can feel stories from old people, our fathers and grandfathers, leading us in the right way.***

# TARGET 4. Bush Tucker and Native Wildlife

*The seasons tell us when the time is right for all our bush foods. The country is our calendar, it sends us signals.*

| Health rank | Trend | Goal |
|---|---|---|
| Manymak (GOOD) | ↓ | People are protecting their malargatji (totems) and preparing and sharing food the right way, which is plentiful, fat and tastes good. |

The red flowers of Balgurr tell us when sharks and stingray are fat. When the spear grass is tall and starts to flower, we know that the yams and magpie geese eggs are ready to harvest.

We have six different seasons. Animals tell us when the seasons are changing. The dragonfly and the little yellow butterflies tell us the dry season is just around the corner and food is ready for harvest. In the right seasons animals have plenty of fat, they are abundant and a good size.

This knowledge came to us from the old people and they gave us rules to follow. We must prepare, cook and share our food in the right way and make sure we pass this knowledge to our children. Every part of the meat has a different meaning for different people.

Ngattu or warraga, the strong-smelling damper made from the fruit of the cycad feeds big gatherings of people for ceremony in central Arnhem Land. It has been estimated that cycad country can produce more food per hectare than many cultivated crops. But that food must be prepared properly to take out the poisons before it goes in the ashes. It's the same for cheeky yams - we cook them to soften them, slice them with the shoulder blade of a kangaroo and soak the yam chips in running water to take out the poisons. Only then can we eat them.

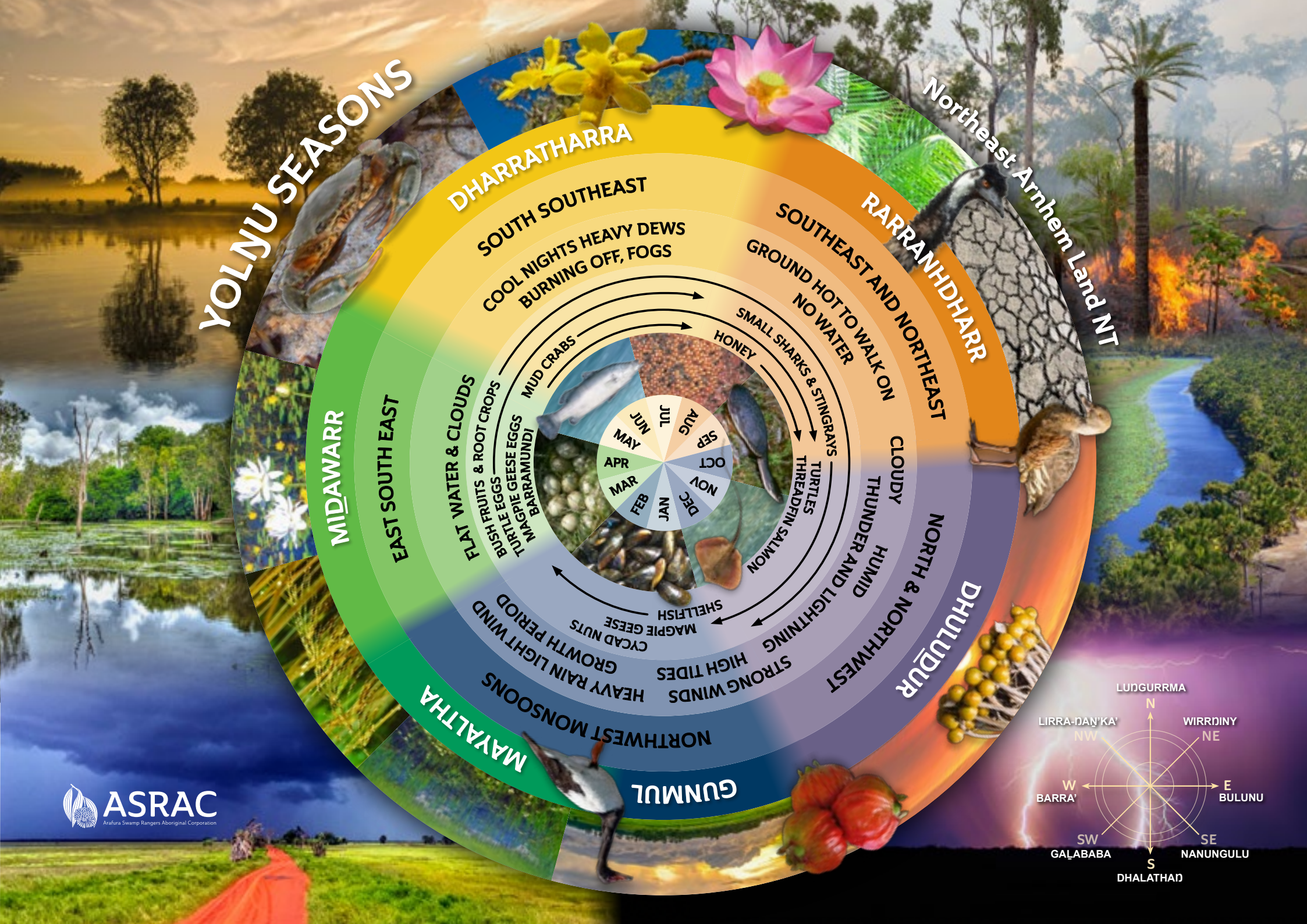
In our culture we must respect the animals and plants that feed us. Our law says "don't take more than you need". We don't go hunting to kill things for fun and we don't do catch-and-release fishing. Many fish die after catch-and-release.

Our country is rich country. In the right season the swamp gives us magpie geese and their eggs. There are flying fox in the jungles and wallabies around the edges. In the tall forest and even in the mangroves there is sugarbag honey. We find kangaroos in the open forest and in rocky country.

It's all there for us, but we must protect our bush tucker through managing country properly. Old people told us how to burn for healthy country, how to leave a little piece of yam to grow back.

This time we are mixing tools and knowledge from Balanda with Yolŋu and Bi knowledge and tools for land management. As long as we keep the foundation of our knowledge in the front of our minds, we can bring in these new tools to help us manage country in our own way.

*Photo: Millingimbi Collection*


YOLŊU SEASONS
Northeast Arnhem Land NT
DHARRATHARRA
SOUTH SOUTHEAST
COOL NIGHTS HEAVY DEWS
BURNING OFF, FOGS
RARRANHDHARR
SOUTHEAST AND NORTHEAST
GROUND HOT TO WALK ON
NO WATER
MIDAWARR
EAST SOUTH EAST
FLAT WATER & CLOUDS
BUSH FRUITS & ROOT CROPS
TURTLE EGGS
MAGPIE GEESE EGGS
BARRAMUNDI
MUD CRABS
HONEY
SMALL SHARKS & STINGRAYS
TURTLES
THREADFIN SALMON
CLOUDY
THUNDER AND LIGHTNING
HUMID
DHUWUḎUR
NORTH & NORTHWEST
STRONG WINDS
HIGH TIDES
CYCAD NUTS
MAGPIE GEESE
SHELLFISH
NORTHWEST MONSOONS
HEAVY RAIN LIGHT WIND
GROWTH PERIOD
MAYALTHA
GUNMUL
JAN
FEB
MAR
APR
MAY
JUN
JUL
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BULUNU
SW
GAḶABABA
SE
NANUNGULU
S
DHALATHAŊ
ASRAC
Arafura Swamp Rangers Aboriginal Corporation

Photo: Millingimbi Collection

## *Our law says, "don't take more than you need".*

People and animals have sacred connections. We feel upset when we see bycatch from commercial fishing left to rot, or recreational fishers throwing away the meaty skeletons of barramundi after taking off fillets. This insults our totems, makes us ashamed and unhappy.

Through our clans and in our kinship groups we each have the animals that Balanda call "totems" and we call malargatji.

We represent and become our special animals when we dance for young-man business, for funerals and other ceremonies. We paint their special designs on our bodies and today also on bark and paper to share that special connection between the people and the animals of the land and sea.

When we are hunting we watch birds and animals for signs. Sometimes these are ancestors sending us a message — if we know how to listen.

Animals communicate with us sometimes to warn or alert us. Cockatoos let us know if outsiders are coming. Plants flowering at the wrong time might let us know there is something different with the seasons or if fire is not happening right.

As rangers we are learning new things about our plants and animals from working with botanists and biologists. We are learning that some things in our country are only found here.

There are other plants and animals in our country that are being lost from the landscape in other places. We have special responsibilities to look after endangered and vulnerable species where they are living on our country, both for our people and everyone on Earth.

Photo: Millingimbi Collection

## Disappearing Wildlife

Arnhem Land was once the most biodiverse of Australia's regions, its rich and varied ecosystems supporting a profusion of tropical wildlife. Sadly, altered fire regimes, introduced pests and predators, and the escalating effects of climate change have caused spiralling declines in many native plants and animals, including species that were once mainstays of traditional livelihoods.

ASRAC's work on fire and weed control are resulting in healthier country. There is evidence that declining species such as the northern rosella, yellow-spotted monitor and Gouldian finch are slowly returning. Targeted surveys may be useful in identifying remaining populations of other rare or threatened species, such as emu, rock-wallaby, and hooded parrot, for increased protection through intensive threat mitigation and or habitat enhancement. These remaining populations will be key to recovering biodiversity in the IPA as systemic threats abate and the health of the country improves.

Species listed in ***Table 2*** (excluding migratory birds) are all recommended targets for threatened species surveys.

***We all begin as animals and we all return to our animal spirit when we die."***

Neville Gulaygulay

*Photo: Millingimbi Collection*

# TARGET 5. Both-way Education and Knowledge

*We are standing firm on the ancient ground of our culture and law. We are also modern people living in a modern world.*

We want to have the same rights and opportunities as everybody else. We want our children to be able to pursue their dreams the same as other children in Australia.

We also have new challenges and want to work with others to find new solutions. As land managers we have to deal with problems that have come from outside and which need tools from the "Balanda toolbox" to deal with those things.

To have the power to live our lives as we want to, and to keep ourselves and our country healthy, we need our younger and middle aged people to feel strong and confident when they go into "the mainstream" to get the tools we need for the future.

The education system has failed many of our people. In particular it has put Balanda learning high above our knowledge and who we are. It has tried to teach basic numeracy and literacy but it has failed to link that learning to things we care about.

As land managers we are interested in science and the maths and English that go with it. But the education system has ignored the fact that we are born to look after country and that education should take that into account.

| Health rank | Trend | Goal |
|---|---|---|
| **Ganga Manymak (FAIR)** | ↑ | Everyone respects Rom and we have the skills and knowledge to have professional jobs and our culture. |


*"First, we have to understand Yolŋu knowledge and Balanda knowledge, then we can understand how to bring them together, because we ranger mob are in the middle. In our M&E djäma we've been testing out Yolŋu tools and science tools."*

Solomon O'Ryan

*Fire is our most powerful tool for land management. When we use fire properly it makes the land come alive again.*

# TARGET 6. Right-way Fire

*When the right people burn in the right places, at the right time and in the right way, it protects the country from late dry season wildfires that can cover huge areas.*

Our good early dry season fires are small patchy fires — that don't scorch the canopy but link up to make a pattern of burned fire breaks. There is still plenty of food for animals. Sugarbag bees can find the flowers they need to fill their hives with honey. Green grass comes up after early fires to make kangaroos and wallabies fat.

After bad fires food for animals is gone, nesting hollows for birds, bandicoots and possums are destroyed and trees may take several seasons to recover. Bad fires also harm the whole planet. They produce far more greenhouse gases than our good early dry season fires.

So, we are bringing back traditional fire management, but in a new way, to look after our country and our climate. Today we use helicopters and vehicles to achieve the same outcomes as our ancestors. We have joined with other groups to earn money from Carbon farming. This is making jobs for our people and helping to fund other parts of our IPA work.

Burning country brings people together — rangers must talk to the right people to make our annual fire plans. ASRAC supports fire management by people living on homelands because right-way burning is strong medicine for our country.

| Health rank | Trend | Goal |
|---|---|---|
| **Ganga Manymak (FAIR)** | ↔ | The right people burning Country at the right time with a strong carbon business, and there are plenty of healthy sugarbag, emu and kangaroo. |

## Our Fire Program

The story of fire in northern Australia is tied to the confronting history of colonisation. Even deep within Arnhem Land the frontier wars drove people from their country, forcing them into the 'protection' of mission life. In 1884 the British government sold 2.5 million hectares of Gurruwiling and surrounding country to colonial graziers. Though doomed to fail, the founding of Florida Station marks a brutal chapter in our history, including the theft of our land and the massacre of our people. As those remaining fled their homelands, rampant wildfire soon replaced careful customary burning. Ecologies shaped by Yolŋu and Bi over thousands of generations began to unravel, becoming increasingly fire prone, gradually shedding biodiversity, and their ability to store carbon.

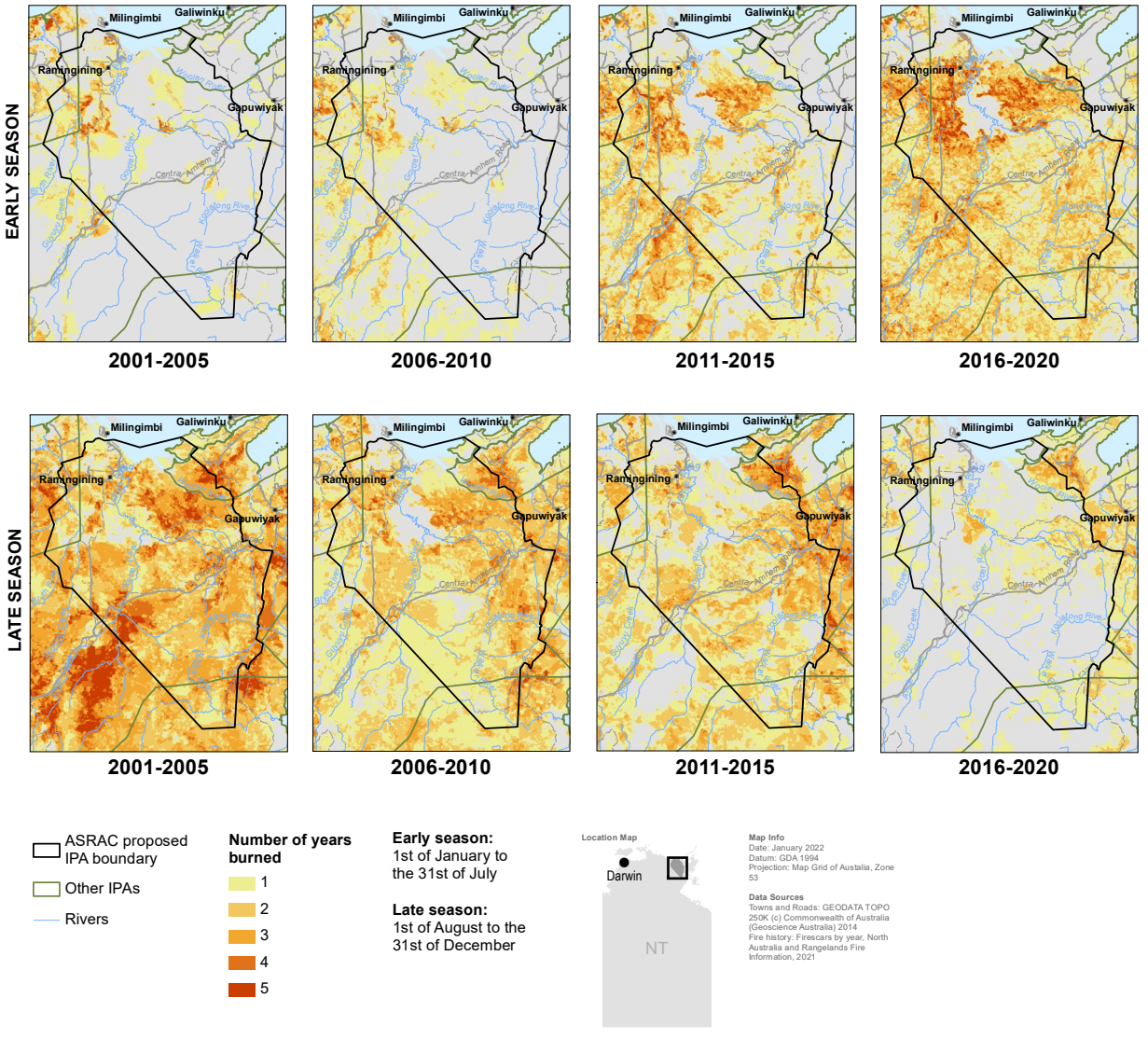
ASRAC's prescribed burning program is adaptive, improving over time with refinements including protection burns around cultural sites and

fire-sensitive communities. Annual fire planning draws not only traditional knowledge but on modern technologies such as satellite imagery and a growing fire history dataset. In future ASRAC plan to monitor the ecological effects of prescribed fire, to better understand it's impacts on fire-adapted species and fire-sensitive communities.

ASRAC's engagement with Central Arnhem Land Fire Abatement (CALFA) project is addressing this complex problem by implementing strategic burning throughout the IPA. Not only does this decrease the prevalence of late season wildfire it significantly reduces greenhouse gas emissions, at a landscape scale. ***Figure 4*** highlights ASRAC's success in shifting a damaging regime of late dry-season fires to one of cooler earlier burns throughout the IPA.

Methodology registered with the Clean Energy Regulator allows the difference between historic (baseline) and current yearly emissions to be accounted in carbon credits (ACCUs), to be sold as carbon off-sets to polluting industries. This is an expanding market, with the value of ACCU's continuing to rise, with Indigenous off-sets attracting premium. The market rewards CALFA off-sets because savanna fire management contributes to indigenous employment, healthier country and the continuation of cultural practices. In good years, our fire project can make a profit, earning more than the cost of operations. ASRAC's Board control the allocation of these untied funds to a range of community benefit projects, including land and sea management.

Figure 4. Improvement in fire regimes across the IPA over a 19 year period, as a result of strategic savanna fire management



*Country holds our history and future.*

# TARGET 7. Gurruwiling (the Arafura Swamp)

*Gurruwiling, also known as the Arafura Swamp, is rich in resources and stories. It is an area shared by many clans. These clans each speak for their particular areas and all of us rely on the swamp for our living.*

| Health rank | Trend | Goal |
|---|---|---|
| Yatjkurr (POOR) | ↔ | Families are sharing Gurruwiling, enjoying plenty of water lilies, longneck turtle, fish and magpie geese to eat and we can always dig a hole in the right place to drink clean water. |

The major totem for Gurruwiling is the crocodile. Our clans have many different totems, mostly associated with animal and plants of the swamp but also connecting to other natural phenomena, like rainbows, the sun and stars as well as spirit beings.

Gurruwiling is the largest freshwater ecosystem in Arnhem Land and the largest paperbark swamp in Australia. The swamp and catchment is listed as an Australian wetland of national importance and much of it is listed on The Register of the National Estate. The swamp is classified as a Key Biodiversity Area (KBA). Gurruwiling is a major breeding area for magpie geese and large numbers of water birds, which occur in internationally significant numbers.

Gurruwiling includes many grassy plains and networks of lagoons full of important food plants like the water lily and water chestnut and important food animals like fish, longnecked turtle and magpie geese. Habitat that sustains magpie geese is declining all across North Australia. This means that Gurruwiling is an increasingly important stronghold for this species. The story of the movie Ten Canoes is built around the importance of magpie geese in our history and our future. We also have the Little Banded Rainbow fish, a species that is only found in the swamp.

Our waterways are lined with the giant palm *Corypha elata*, which we will call Gulwirri or Balangulo. This spectacular plant has sacred symbolism. We have many different paperbarks covering huge areas. We have chosen the leaves and flowers of the paperbark known as *Melaleuca viridiflora* as our Arafura Swamp Rangers symbol. Everyone uses it for many things — like cooking, tools, shelter and washing. The paperbark is not a totem that belongs to any particular ceremonies or clans and it grows on everyone's country. In that way it is a public symbol of us coming together, working towards healthy country.

For many years we have been involved in harvesting crocodile eggs for others to incubate and grow for the meat and skin trade. But now we are stepping up into the industry, building our own facility in Ramingining to grow out hatchlings. Crocodile eggs were always one of our seasonal food sources. But today we gather eggs mostly to build our local economy. The hatchlings from these eggs will be grown on until they are the right size for the skin and meat trade.

The spectacular beauty of the swamp and its wildlife offers opportunities for tourism development for landowners. Our future and that of the swamp are locked together. We must keep the swamp healthy if we are to enjoy spiritual health, physical health and develop a healthy economy.

In the long term a small rise in global sea levels could drive saltwater into the swamp and destroy it. Freshwater and the quality and abundance of that water is the key to the nature of the Arafura Swamp.

The swamp is under pressure. Traditional Owners and rangers have struggled to deal with the potentially catastrophic invasion by the weeds mimosa and olive hymenachne. Feral pigs and buffalo are causing huge damage to the swamp. Pigs are rooting up the waterways and destroying our important foods. There are many, many buffalo on the swamp and their paths are making channels, causing saltwater to intrude into our freshwater swamp.

The Arafura Swamp Rangers are the frontline in helping landowners defend the swamp from natural and man-made threats.

## *Gurruwiling is the pulsing heart of our homelands.*

*The swamp holds our history and our future. We gather our traditional foods there and we look to the swamp for opportunities to create employment for our people into the future.*

*"That sea is not owned by Government. We have sacred site, songline and ceremony. That's what's there in Yolŋu law."*

Matthew Dhulumburrk, 2016

## TARGET 8. Our Saltwater Country

*Since the beginning our old people have looked after saltwater country through ceremony, protecting sacred sites and following our Rom. The sea gives us fish, crabs, oysters, stingray and dugong in the right seasons.*

| Health rank | Trend | Goal |
|---|---|---|
| **Ganga Manymak (FAIR)** | ↓ | We are working with neighbouring clans and ranger groups to look after our saltwater Country and there are plenty of healthy stingray and oysters. |

Our Rom tells us to take only what we need — not too much. But now we no longer control what is taken from our saltwater country and this has affected the health of that country. Commercial fishermen who use nets are taking too much. We know because fish populations are going down. Commercial fishermen come for barramundi (and threadfin salmon) but their nets also kill many tonnes of other sea animals which are left to rot and which change the behaviour of crocodiles and make them more dangerous.

Balanda laws say where and how fishermen can fish — the fishermen sometimes do the right things and sometimes the wrong things and can take too much. We can't stop the Government giving out licences to commercial fishers but we can build a strong saltwater ranger program that watches out for all kinds of illegal behaviour. If fishermen anchor their boats on sacred sites in the sea it's like we are being speared — people can become sick or die. The Aboriginal Areas Protection Authority registered our sites and put out marker buoys. Many of these get dragged around by wind and tide. Fishermen are now obliged to have the positions of our sites marked on their GPS and charts. Our sea rangers are being trained with enforcement skills by the Fisheries Branch so they use cameras and GPS to provide the evidence needed to take fishermen to court and force them to at least stay within the Balanda law.

Our sea rangers now have the skills to produce professional saltwater patrol reports. They are ready for stronger powers to manage what happens in the sea and on the areas where saltwater and freshwater mix. From the deep water beyond the tidal zone, saltwater influence extends past the beach and well inland, south to the narrow entrance of the freshwater basin of the swamp. In the mangrove areas we see small areas of dead mangroves. We know that in the Gulf of Carpentaria huge areas of mangroves are being lost to what is called "die back". We must increase monitoring of our mangrove areas because they are the heart and lungs of our waterways.

We need to make it easier to get our ranger vessel out on patrol and have the resources to maintain our equipment in a harsh working environment. We need better equipment. As well as monitoring the behaviour of fishermen and what is happening with mangroves, our sea rangers want to run a strong monitoring program to watch what is happening with sea turtles and especially see what impact pigs may be having on turtle nests. On Western Cape York this is a huge problem. Our beaches once were clean but now all kind of rubbish drifts onto our shores from passing vessels and even from overseas — not just bottles and other rubbish but ghost nets as well. We want to keep our saltwater country clean and healthy, our sites protected and to get our people out onto country.

### *Yolŋu law is one law... for land and for sea.*

In Yolŋu Rom there is no difference in the law of the land and the law of the sea. On the land our rights are protected by the Aboriginal Land Rights (Northern Territory) Act 1976, we have strong control of what can happen there — who can visit and what they can do.

But Balanda laws for sea country are complex and ever changing. In 2008 Australia's High Court found Yolŋu Traditional Owners of Blue Mud Bay to have exclusive possession native title rights to waters overlying their land. This determination was a big

deal as it gave Aboriginal Traditional Owners the ability to control access to their sea country to the mean low tide mark, which along our coast is often well out to sea. In practice this means that fishers, commercial or recreational, must have our permission to enter tidal waters regardless of government fishing licences or permits. It also means Traditional Owners can control access to, and thereby manage, the rich coastal fisheries along approximately 87% of the NT coast. If we choose to, we can use these rights to our economic advantage, for instance by exchanging access to intertidal fisheries for equity in commercial fishing or crabbing businesses.

However, since the Blue Mud Bay determination, landowners' rights have been put on hold and pressure has mounted for us to waive these rights permanently. After more than a decade of negotiations between the Australian and NT Governments, the NLC, Traditional Owners these issues are beginning to be resolved. A Blue Mud Bay Implementation Action Plan now exists, setting out a range of benefits to be provided to landowners in return for public access to our coast. To make the most of this proposal it is important our people are well informed and properly consulted on matters involving sea country. Self-determination is important to us. We want to decide our own future and use our sea country wisely.

We have other rights to sea country that extend our ability to manage fisheries beyond tidal areas. With our Milingimbi countrymen we were the first people to lodge a claim for control of saltwater country with the Aboriginal Land Commissioner. This historic claim was written 40 years ago by Matthew Dhulumburrk and Mark Dreyfus, each an expert in the law of their own cultures. It, and a later claim, resulted in two adjacent 'sea-closures' registered under the Aboriginal Land Act (1978). The first covering the Crocodile Islands and Glyde River area (1981) and the second covering the Castlereagh Bay and Howard Island area (1988). Extending 2 kilometres seaward of the low tide mark these closures provide exclusive access to Traditional Owners, but with provision for commercial fishing through permits issued by the NLC.

In combination with our intertidal rights, our sea closures present a significant and unique bundle of rights to landowners in our region. This is another reason we must come together and step forward to negotiate the best possible arrangement for our future.

***"That sea is not owned by Government. We have sacred site, songline and ceremony. That's what's there in Yolŋu law"***

Matthew Dhulumburrk, 2016


*Yolŋu law is one law...*
*for land and for sea.*

*Healthy freshwater places give us important bush tucker.*

# TARGET 9. Our Freshwater Country

*A long time ago our freshwater places were much healthier than they are today.*

By the end of the nineteenth century buffalo had spread everywhere in Arnhem Land. In the 1890s Balanda arrived with cattle and guns to establish Florida Station in the swamp. The Balanda eventually left, but buffalo and some scrub cattle stayed. Together with feral pigs (which did not arrive until late in the twentieth century) they are largely responsible for the poor quality of our freshwater places today.

Water is a cultural thing; it is a ceremonial and spiritual thing. Each clan has its own special water places, home of the spirits of the long dead and of the yet unborn. Healthy freshwater places give us important bush tucker — water lilies, the water chestnuts (*Eleocharis dulcis*) and many species of fish, turtles and crayfish are there for us. When our rivers and creeks are healthy the banks are stable and the right trees and bushes are growing there. Strong-flowing healthy springs feed the rivers and creeks and maintain the waters of the swamp through the late dry season. The Goyder River feeds the swamp with freshwater from the catchment and is especially important culturally and spiritually.

Bringing our freshwater places back to health is a big job but we must work towards it because water is life.

| Health rank | Trend | Goal |
|---|---|---|
| Yatjkurr (POOR) | ↔ | Our freshwater places have clear water that smells clean and we can find plenty of water lilies, water chestnut, fish and turtle. |

# TARGET 10. Our Woodland Country

*When we go hunting with our children they always ask for sugarbag. We must keep burning in the right way so we will always be able to make them happy with lots of sugarbag.*

| Health rank | Trend | Goal |
|---|---|---|
| **Ganga Manymak (FAIR)** | ↓ | All the right plants are growing and flowering together in our woodlands so native bees are making plenty of sugar bag, with sugar glider, possum, echidna, night owl and bats nesting in hollow logs. |

Our woodland plant communities are diverse — from the dense paperbarks within the swamp, to open levee *Melaleuca viridiflora* woodland at the margins of the swamp and into the uplands.

Further away from the coast we have some woodlands dominated by *Corymbia latifolia* and far inland we find isolated, dense patches of lancewood in dry savannah country. The cypress pine is very important to us as it shows us where there is underground water. The cypress doesn't like fire and if it dies we worry because it means the water is gone or that there is bad fire.

Most of our area is made up of the taller woodlands of Darwin stringybark and woollybutt. These are very important trees for us. The stringybark is Dhuwa moiety and we call it Gardayka. The woolybutt is Yirritja moiety and we call it Badarr. Badarr bark changes color inside with the seasons and the bark is waterproof so we can always make a fire even in the wet.

But it is the flowering of the forests of Badarr and Gardayka that are most important for many species of sugarbag bees that are celebrated in song and ceremony. When we go hunting with our children they always ask for sugarbag.

To keep the woodlands healthy and feeding the sugarbag we must burn country in the right way, at the right time, keeping the flames away from high in the trees. Very hot fires in the late dry season can badly affect the flowering of the woodland species.

We have rated the health of our woodlands as ganga manymak or fair — but in fact it is going through a slow recovery from one of the strongest cyclones in recent decades.

Animals like glider possums, ringtail possums, many birds, bats and lizards have lost important nesting habitat. Fallen timber everywhere makes it difficult to get into country to manage fire — both for early burning and controlling late dry season wildfire. The money we earn from greenhouse gas emissions abatement work enables us to use helicopters to take fire where it needs to be in the early dry season.

Right-way fire protects our woodland fruit trees so we get good harvests of green plum, billy goat plum and other bush fruits. Right-way fire also protects the native cypress pine which began to suffer from late dry season fires as people were drawn off country during the 20th century into the missions and away from responsibilities controlling fire.

It will be a slow road to recovery but we have the tools and the techniques to lift the woodlands back to being a target that is manymak — in good health.

## Managing our Woodlands

Woodlands and forests cover most of our IPA, more than 85% of its total area. They range from tall eucalypt forests on deeper coastal soils to the low melaleuca or acacia woodlands of heavier-soil plains. A wide variety of open eucalypt woodlands clothe the rises and uplands of the IPA's interior.

Far from open prairies, Australian's northern savannas are in fact sparce woodlands, a trophic balance between grassy understorey and woody emergents. This is a balance long mediated and maintained by Aboriginal fire management, so the plants and animals found here are all, in one way or another, dependant on fire. The demise of customary fire regimes, the introduction of large herbivores and the spread of grassy weeds all threaten the ecology of northern woodlands. Their combined impacts are changing the structure, composition, and function of these seemingly hardy communities.

ASRAC's fire program constitutes frontline woodland management. Prescribed burning associated with our carbon project parallels customary burning throughout the IPA. Fast drying elevated areas are burnt earliest, followed by broader areas carrying higher fuel loads. Final burns occur through July, relying on earlier burns and natural barriers like watercourses to contain the fire's spread. Careful planning and execution results in a landscape-scale fire mosaic. This patchwork not only caters to the varied ecologies of woodland species but greatly reduces the opportunity for broad destructive wildfires.

ASRAC monitors fire outcomes at six established sites. Begun in 2007 during development of the savanna burning methodology, monitoring at these sites occurs quarterly.

As they are implemented, ASRAC's new threat abatement plans for weeds and feral animals will greatly enhance woodland management. Gamba grass in particular poses a huge threat to the integrity of Arnhem Land's woodland and forest communities. Activities such as roadworks and mustering (particularly the transport of hay) are 'high risk' in terms of Gamba grass introductions. ASRAC Rangers regularly monitor for and eradicate Gamba infestations in vulnerable areas such as borrow pits. Our Intercultural Monitoring and Evaluation Program and surveillance by homelands-based rangers are also important preventive measures.

*Figure 2* (page 18) shows the distribution of major woodland types within the IPA.

*Jungle gives us bush tucker and is home for many animals and they shape the jungle we call them Mirningburr.*

# TARGET 11. Our Jungle Country

*Most of the jungle in our area is dry jungle found on the escarpment around Gurruwiling that we call bukul-nah, but we also have wet jungle patches around our springs, wetlands and rivers.*

Jungles provide plenty of shade and plenty of tucker. Inside we can find cool springs, tall banyan trees and plenty of foods. There are many different plants in the jungle that we don't find anywhere else.

Our jungle is especially important for women and they have strong knowledge for these areas, including bush foods, materials and medicines and sacred knowledge. Women visit the jungle to collect yams and fruits. including many different yams, red and orange berries, bush peanut and arenga palm. The jungle gives us as fire sticks, spears (wada wada, makarunga, bodi), Bombax wood for carvings and string from the banyans. We hunt for echidna, python, flying fox, rock wallaby and birds such as pigeon.

The biggest problems for jungle are wildfires, buffalo and pigs, and weeds. Hot fires make our jungles smaller and thinner. Traditional Owners and djungkayi need to do small early season protection burns in the woodlands around our jungles to stop late season wild fires. We also need to manage weeds like mission grass around the edges because they can add fuel for fires. Pigs and buffalo also like jungle and the yams that grow there. They cause a lot of damage to jungle around springs where a lot of our important plants grow.

| Health rank | Trend | Goal |
|---|---|---|
| **Ganga Manymak (FAIR)** | ↔ | Our jungle has lots of tucker, shade and clean water and are the same size as they are today with healthier plants and animals. |

We are also worried about the impacts of cane toads and invasive ants. Cane toads are dangerous for our native animals that eat them. We are concerned about them fouling the spring water and making us sick when we drink it.

We know that our jungle is important for its conservation significance. In our area, nine different animals and four plants are listed as either vulnerable or endangered and another three animals and 41 plants are considered rare. All of the vulnerable plants are found in our jungle.

# TARGET 12. Our Rock Country

*We call the rocky high ground all around Gurruwiling (Arafura Swamp) bukul-nah and larr. It is an important home for rock wallaby, echidna, possum, flying fox, python and blue tongue. There are also plenty of important plants like the spear tree, bush potato and berries and plums.*

| Health rank | Trend | Goal |
|---|---|---|
| **Ganga Manymak (FAIR)** | ↔ | All the right animals and plants are healthy, and we have good access to look after our escarpment Country and there is no mining. |

Most of our escarpment country is found in the catchment area for Gurruwiling and includes the Parsons and Mitchell Ranges. From this high ground our old people were able to look out over the swamp to watch for smoke as signals of people approaching and also showing where people were hunting on country.

From the high ground we are still able to see what is happening in the swamp as it changes with the seasons. Here we find spinifex, some jungle springs and waterfalls. This includes the famous stone quarry of Ngilipidji where for thousands of years Wagilak and Rittharngu craftsmen have made stone tools to be traded over a huge region in this part of north Australia.

Much of the water that feeds our rivers and Gurruwiling comes down from the ranges. But big fires can also start in rough and rugged country where it is hard to control.

Many of the plants in the rock country do not tolerate repeated late hot fire. Old people knew this and controlled burning in the rock country very carefully, regularly reducing fuels by burning small areas as they walked around in the early dry season.

We want to revive the tradition of walking and burning across this upland area from Ngilipidji to Donydji and maybe even as far as Ngukurr to the east and Barrapunta to the west.

Bukul-nah and larr are big areas and hard to get into because much is rough and rugged. We need better access for management so we can visit our country and carry out our cultural responsibilities. We need some roads and tracks so we can burn in the right way and keep an eye on weeds and feral animals. Donkeys and brumbies come in across this country. But we know that roads will open this area up to other threats like the wrong visitors — so while making access easier for our people we must strengthen our control over access by wrong people.

Our biggest worry is the threat of mining. More than 30 years ago Rittharngu and Wagilak people made a short film called "Still You Keep Asking, Asking", saying we were sick from being asked to let mining into our homelands. We still keep saying no to mining but still they keep coming back and asking, asking. If mining ever happens there is a big concern about the impact it will have on all our country.

*Ngilipitji stone spearhead quarry. Jardi Ashley (decd)*

*We must protect stone country and bring people back.*

# Threats to Country and our Vision

*Improving the health of our Targets means fixing the problems that threaten them.*

The things we really care about on country we have called our Targets. We have considered how healthy they currently are — whether they are **manymak (GOOD)**, **ganga manymak (FAIR)** or **yatjkurr (POOR)** — and set Goals, for how they should look in the future. If we succeed in reaching our Goals, we will achieve our Vision for healthy country and people, for knowledge, ceremony and language. But there are challenges.

## Threat assessment

Some threats are serious, some less so. We also understand that there are threats beyond our control. So, to ensure our efforts aren't wasted and that our work is efficient we have identified the key Threats and ranked them. To do this we considered:

**Scope** – The area effected by the threat.

**Severity** – The damage it caused.

**Reversibility** – The difficulty of managing or fixing it.

The Threat table on the opposite page shows the top threats to the health of our Targets and our summary rankings. There is also a Goal statement for how we would like to see each Threat reduced in 10 years' time.

## Threat rank

| | |
|---|---|
| Ganga Manymak | LOW |
| Ganga Yatjkurr | MEDIUM |
| Yatjkurr | HIGH |
| Mirrithirri Yatjkurr | VERY HIGH |

## Trend

↑ **Getting better**

↓ **Getting worse**

↔ **Staying the same**

**Getting better** –
Threat is not as bad as it was 5 years ago.

**Getting worse** –
Threat is worse than it was 5 years ago.

**Staying the same** –
Threat is the same as it was 5 years ago.

In the following pages we summarise the key Threats and discuss each in detail:

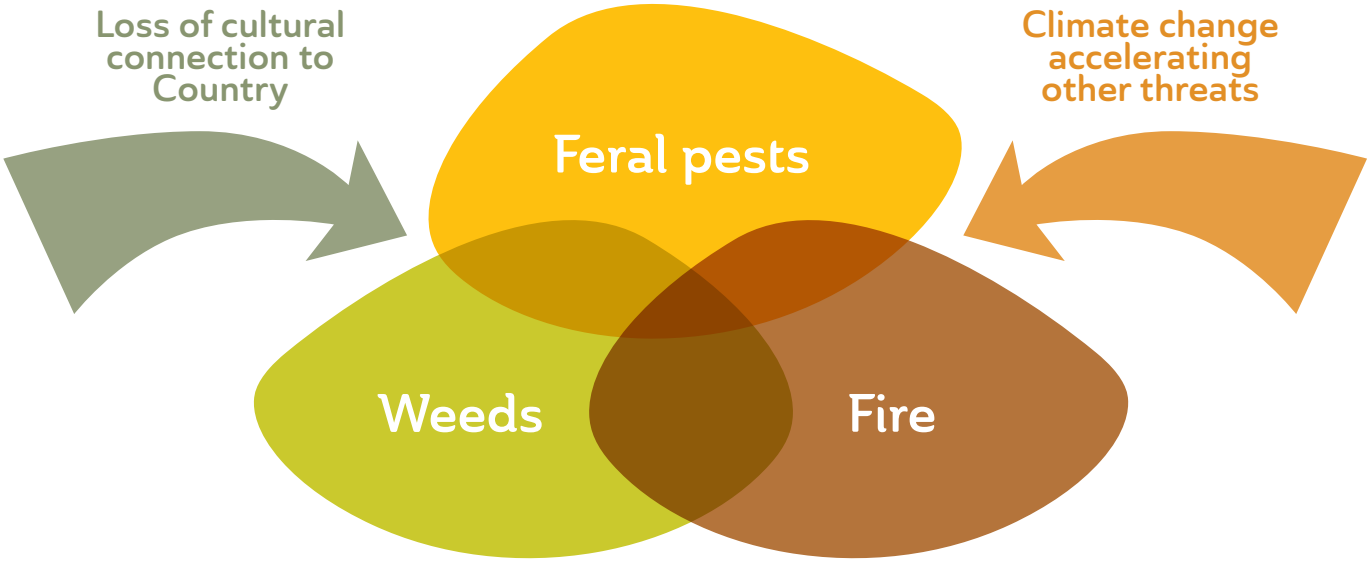
1. Loss of respect for Rom and elders
2. Feral animals
3. Climate change and saltwater intrusion
4. Weeds
5. Mining and other development
6. Wrong people on Country
7. Poor governance
8. Balanda rules always changing
9. Bad fire
10. Empty Country
11. Lack of jobs on Country
12. Commercial fishing

| Top Threats<br>What threatens our Country and Vision | 2022 Assessment<br>Threat rank<br>What is the current threat level? | 2022 Assessment<br>Trend<br>Are they getting better, worse, or staying the same? | Threat Goals<br>How we would like to see our Threats reduced in 10 years' time |
|---|---|---|---|
| 1. Loss of respect for Rom and elders | Mirrithirri Yatjkurr | ↓ | Children respect their country and elders; they are independent, looking after their culture and building strong futures. |
| 2. Feral animals | Mirrithirri Yatjkurr | ↓ | In ten years, we will have reduced the buffalo population by half and our special places (culturally and ecologically) will be protected from pigs. |
| 3. Climate change and saltwater intrusion | Mirrithirri Yatjkurr | ↓ | We have slowed the rate of saltwater intrusion and erosion and have a better understanding of how to manage the impacts of climate change. |
| 4. Weeds | Yatjkurr | ↓ | Mimosa and Olive Hymenachne are no longer taking over Gurruwilling, there are no new problem weeds like gamba on our country and our rangers are keeping on top of other weeds. |
| 5. Mining and other development | Yatjkurr | ↔ | There is no bad mining or development in the Arafura Swamp area because people want healthy country and have good jobs. |
| 6. Wrong people on Country | Yatjkurr | ↑ | Visitors respect Traditional Owners and Rom and comply with our rules and protocols. |
| 7. Poor governance | Yatjkurr | ↑ | ASRAC has good processes, protocols and understandings, so we fairly represent, implement and communicate the aspirations and decision making of Yolŋu and Bi people. |
| 8. Balanda rules always changing | Ganga Yatjkurr | ↑ | ASRAC is strong with good governance, business, partnerships and funding so we can achieve our long-term dreams for country and create good jobs. |
| 9. Bad fire | Ganga Yatjkurr | ↑ | There is no bad fire because we have a strong fire program and people are on country burning the right way. |
| 10. Empty Country | Ganga Yatjkurr | ↑ | Country is full up with the right people and elders are happy for family who enjoy good lives. |
| 11. Lack of jobs on Country | Ganga Yatjkurr | ↑ | Our people are educated, skilled and employed in meaningful jobs and we have our own businesses on country supported by ASRAC. |
| 12. Commercial fishing | Ganga Yatjkurr | ↓ | In ten years, we want to see Yolŋu skippers and our own community commercial fishery licenses, supported by strong sea rangers with enforcement powers. |

*We have to stay on top of weeds to protect country and the right plants will be there.*

# Combined Threats

*Threats to the health of our country interact, and in combination produce more rapid and serious effects.*




For example, late dry-season wildfires remove undergrowth and leaf-litter, kill fruiting shrubs and bring down hollow trees. Native animals rely on these woodland features for food and shelter, while introduced animals like feral cats and cane toads hunt more successfully in burnt open country. As a result, many mammals including rock-wallabies, possums, bandicoots and ground-nesting birds like emu, pigeon and quail are disappearing from our country.

Climate change plays into this too, when warmer temperatures, higher carbon dioxide levels and more severe cyclones combine to increase fuel loads which in turn drives larger, hotter fires. Where weeds like mission grass and Gamba grass take hold late dry-season fuel loads become even greater, stoking wildfires hot enough to kill even large healthy trees. Our jungles, woodlands, and paperbark forests are all damaged by this effect — shrinking in size, becoming less shady, productive and varied.

Large, introduced animals like buffalo, horses and pigs cause similar impacts and scientists believe they are the single biggest threat to Northern Australia's biodiversity (Mihailou & Massaro 2021). Their grazing, rooting and trampling strips vegetation and disturbs soil surfaces leading to accelerated erosion and channelling. Plants of importance to wildlife and people are also targeted by these pests, so eventually disappear. Weeds caught in their hair and hooves are spread widely, while wetlands that once supported, turtles, mussels, filesnakes and fish year-round now dry out early, their banks breached and their lily-pad cover removed by buffalo.

Gurruwiling in particular has suffered this fate. Once a vast perennial swamp perched between the in-flowing Goyder and out-flowing Glyde rivers, much of its expanse is now savanna plains. More than a century of buffalo activity has connected the channels of the Goyder and Glyde rivers and disrupted floating reed beds, allowing the wetland to drain almost as quickly as it fills. Sea level rise will only worsen this situation as the same deepened channel facilitates saltwater flow back into the swamp during high tides or storm surges.

It is obvious and concerning to us that these threats are all worsened by changes to Yolŋu and Bi culture. The movement of people off their land, the ebbing of traditional knowledge, the breakdown of customs and Rom all contribute to unhealthy country. This awareness is backed by the work of scientists (Bowman *et al* 2004. Yibarbuk *et al* 2001) who have shown that country surrounding occupied homelands is healthier.

Where Yolŋu and Bi live on country, patchwork burning occurs, feral animals are hunted, native wildlife is monitored and managed through customs and ceremony. It is our belief that the loss of cultural connections to country is the biggest threat to its wellbeing, and our own.

# THREAT 1. Loss of respect for Rom and elders

*Indigenous people all over the world are struggling to keep their culture alive and we are no different.*

Television, Facebook and many other things in our communities are coming from outside and leading our children and many adults away from our culture — leading them into the middle of nowhere. Drugs are coming into the community. People are heading to Darwin chasing alcohol and not listening to or respecting elders.

We want our children to learn all the skills they need to participate in the mainstream, but they shouldn't have to give up their culture to do that. That's what the government was trying to do to us back when they had policies called "assimilation" in the 1960s.

Our elders should be invited in to bring culture into the school and be paid as experts of knowledge and law. We want our languages to have a place in school. And we want stronger support for two-way learning schools on outstations. Being on the right country connects young people to country in a way that makes respecting elders meaningful.

As rangers we have to think of ways to support culture and Rom outside of school. Our programs can support culture camps, language camps for family groups or right across the community. We can support ceremony in many ways. But perhaps most importantly as rangers we need to be role models to show how to live with two-way knowledge, to value the things from Balanda knowledge systems that can support our vision of having healthy culture on healthy country.

When we are doing our jobs we have to make sure we always act with respect for culture and for law. As role models we can support the struggle to keep law and culture strong.

| Threat rank | Trend | Goal |
|---|---|---|
| Mirrithirri Yatjkurr (VERY HIGH) | ↓ | Children respect their country and elders; they are independent, looking after their culture and building strong futures. |

Photo: Millingimbi Collection

Photo: Millingimbi Collection

*As rangers we have to think of ways to support culture and Rom outside of school. Our programs can support culture camps, language camps for family groups or right across the community.*

*Our biggest feral animal problem is the buffalo. We can see a lot of damage to country, especially our freshwater places. Other major threats include feral pigs, feral cats cane toads and pest ant species.*

## THREAT 2. Feral animals

*Buffalo make dirty wallows and their hard hoofs and "buffalo roads" cause erosion and wash-aways by their impact on topsoil and grasses. Their tracks are creating channels in the swamp that increase saltwater intrusion into freshwater areas.*

| Threat rank | Trend | Goal |
|---|---|---|
| Mirrithirri Yatjkurr (VERY HIGH) | ↓ | In ten years, we will have reduced the buffalo population by half and our special places (culturally and ecologically) will be protected from pigs. |

Buffalo are impacting on the health of our important plants and animals. Crocodiles, barramundi, freshwater turtles and other wildlife are suffering, and many waterbirds, including magpie geese, have had their habitat damaged. We are also very worried about how buffalo are damaging our sacred springs. They have fouled the waters with their trampling and dung. Their rubbing is killing the trees. Buffalo eat a lot of grasses and other plants that native wildlife need to be healthy. Their trampling and disturbance causes weeds to spread through our country. But buffalo are also an important source of food for our communities, so we don't want to get rid of them completely. We need to come up with smart ways to manage the population and their impact on country.

Buffalo are a big problem everywhere but we think pigs are an even bigger threat than buffalo for the swamplands. Not only do they cause damage to our freshwater places, they also root up and eat our important bush food plants such as lilies, water chestnut and yams. The pugging of wet ground damages the plants. Pigs make it hard for us to access our rivers and billabongs for swimming, fishing and fresh drinking water.

Cane toads are a huge worry too, there are so many, and they have spread so quickly though all our waterways and in many places, we can no longer find clean fresh water to drink. We hope scientists will come up with a biological control method, but until then there seems little we can do to control cane toads by ourselves.

There are other feral animals that we need to find out more about. We know that feral cats are a big problem for our native wildlife and we need to find out more about big headed ants, yellow crazy ants and the big impacts they can have on our country.

### Feral buffalo management

ASRAC are unable to control feral buffalo numbers in the Arafura Swamp as most of the IPA is subject to an existing commercial mustering agreement. In particular, the large-scale interventions needed to reduce buffalo impacts on the Gurruwiling wetlands are not currently possible. Our management therefore focuses on mitigating the impact of these introduced pest animals.

ASRAC operates a successful Weed Program that aims to control weeds that are spread and fostered by buffalo in the IPA — in particular, serious environmental weeds like mimosa that threaten all Arnhem Land wetlands. Our weed program is also designed to head off new infestations and avoid the establishment of highly invasive weeds like Gamba grass. Our Fire Program similarly works to reduce the impact of buffalo, by controlling destructive late dry-season fires, the intensity and impact of which are boosted by weeds buffalo promote.

In unison with these activities, ASRAC conducts community education and consultation activities to maintain landowner awareness of the impact of feral pests on their country and cultural heritage. To support this, ASRAC maintain several fenced exclusion sites at freshwater springs and sacred sites. These exclusion sites are monitored to capture change and rejuvenation in the absence of buffalo. But most importantly, these active demonstration sites offer Traditional Owners on-going proof of the benefits of removing buffalo from their land.

ASRAC will continue to explore and campaign for alternative approaches to buffalo management in the Arafura Swamp, approaches that align with Traditional Owners' economic, as well as environmental objectives. Opportunities on the horizon include new methodologies for nature repair markets (biodiversity credits) and greenhouse gas sequestration projects (carbon credits). Future initiatives like this may either replace or complement the current commercial mustering regime, generating community income as well as reducing in buffalo numbers.

# THREAT 3. Climate change and saltwater intrusion

*Climate change is happening but its effects are hard to understand because they happen slowly. Our commitment to our country is forever and so we need to think hard about the things that will impact future generations.*

| Threat rank | Trend | Goal |
|---|---|---|
| Mirrithirri Yatjkurr (VERY HIGH) | ↓ | We have slowed the rate of saltwater intrusion and erosion and have a better understanding of how to manage the impacts of climate change. |

We are really worried about sea level rise and the consequences of saltwater entering our freshwater country. The wetlands of Gurruwiling are a huge food bowl for us and we need to protect them.

Since the 1990s we have been working with scientists to understand this problem and look at ways stop saltwater intrusion. This work with Charles Darwin University and Territory Natural Resources Management has included extensive monitoring and reporting. Part of the work involved scientists Rhys Jones and John Chapell drilling mud cores across the swamp, to look back into it history. Their samples showed that between 8000 to 4000 years ago sea levels were from 1–2 metres higher than today and Gurruwiling was a saline wetland lined with mangroves.

Science also tells us that with only small sea level rises saltwater could again enter the swamp causing serious damage to the freshwater country we rely on. We can't do anything to stop sea levels rising but we can manage some of the impacts and other causes. By controlling buffalo we can reduce the erosion and channelling that is bringing saltwater into freshwater places. By controlling hot, late dry-season fires we can keep the grasses that bind soils and prevent erosion.

In the future, when sea levels seriously threaten Gurruwiling we may need to consider a big engineering solution to protect the swamp. The gap where freshwater leaves the enormous rock-bound basin the swamp sits within is only 2 kilometres wide. It may be possible to build a rock embankment between swamp and saltwater at this point.

Across North Australia coastal plains face a slow general threat from rising sea levels. But the Arafura swamp is perhaps the only major wetland where it may be feasible to control saltwater intrusion. We hope that in our lifetimes the swamp is safe from serious saltwater damage but the movement of tidal creeks and mangroves towards the swamp is something we must monitor and see if there is anything we can do to stabilise those areas. The possibility that elsewhere sea level rise may destroy Top End wetlands makes the health of the swamp more important. The long-term future of many wetland species may depend on our country. This is another reason why we should be supported in making sure the swamp is protected from the effects of climate change that our management can control.

*Buffalo are bringing in saltwater and killing trees.*

# THREAT 4. Weeds

*Weeds do not belong to our country and they are a problem for the plants and animals that do belong to this country.*

| Threat rank | Trend | Goal |
|---|---|---|
| Yatjkurr (HIGH) | ↓ | Mimosa and Olive Hymenachne are no longer taking over Gurruwilling, there are no new problem weeds like gamba on our country and our rangers are keeping on top of other weeds. |

We have weeds in the Northern Territory that can kill country. We already have some very invasive weeds like mimosa, olive hymenachme, mission grass and grader grass. We are working hard to stop them spreading.

Olive hymenachne is one of the worst weeds because it is a water grass that is thick and spreads quickly, taking over whole areas. It was first bought to Murwangi Station as cattle feed and since then it has spread in huge thick patches through our swamp. It is taking over our wetlands and outcompeting our native plants like the water chestnut and the wild rice that the magpie geese need for tucker and which is also one of our favourite bush tuckers.

Mimosa is also a Weed of National significance that has Invaded Gurruwiling. Traditional Owners, rangers and government weeds people have been struggling to control and eradicate it. We work hard and look everywhere to find plants before they make thousands of seeds that can stay alive in the soil for up to 20 years. On the Adelaide River flood plain mimosa has turned beautiful plains country into a wasteland that millions of dollars of government money hasn't been able to save. We haven't got millions of dollars but if we use our eyes carefully and our hands quickly we can stop weeds before they spread.

Other weeds are a problem around disturbed areas but don't spread too much so these are easier to treat and keep an eye on. However, there are a number of weeds that occur in other places nearby that could cause very serious problems if they got into our area.

Gamba grass is a big danger for our country. Our rangers have found a few Gamba grass plants on the road into Ramingining and have quickly eradicated them. But we need to keep a close watch because gamba can destroy country. We can see other places where gamba has spread right through the forest — big stringybark and woollybutt trees are standing dead in a sea of grass. Fruit trees have long gone.

Gamba means terrible fires because it makes so much more fuel than our native grasses. It can burn twice in the same year. We are earning money for land management by our success in reducing greenhouse gas emissions. If gamba spreads through our country we will be producing more greenhouse gas emissions, not less. Gamba grass could cost us millions of dollars a year and take away money for employing Yolŋu and Bi land managers.

There are many dangerous plants coming towards us. There are water weeds that can destroy the wetlands that our geese and crocodiles and fish and turtles depend on. We have roads coming through our country that more and more tourists are using. When they go through creek crossings who knows what weed seeds might wash off from under their vehicles? We must watch and act. We can only watch and work quickly if we are to keep this country from being destroyed by weeds.

***Weed management is now and forever. Never forget this.***

## THREAT 5. Mining and other development

| Threat rank | Trend | Goal |
|---|---|---|
| Yatjkurr (HIGH) | ↔ | There is no bad mining or development in the Arafura Swamp area because people want healthy country and have good jobs. |

*Many things have changed since Balanda came to this country. We are in the modern world and being on country needs things that are part of that modern world. We need to maintain our roads and airstrips to keep access open. We need to find resources to help people who can't access their country find ways to be there — at least some of the time.*

Our right-way burning program can help with this. We must push governments to restore and expand support for people living on country. Helping outstations, including new outstations, operate as satellite ranger bases with paid employment for people caring for country is one important strategic direction for us to take. There are many things that make it hard for people to live on country and be there to care for it. One of the big ones for us is not having schools on our outstations. We will never give up the struggle to have two-way education for children on their country.

We've been watching mining development for a long time and it worries us. What we see is not good. We have seen what happened to the country at the Gove Peninsula and in Kakadu National Park. At Borroloola we see a mountain of waste rock that is burning at the MacArthur River Mine and we know that people are afraid to eat fish from the river because poison is going into the waters. We cannot trust governments and mining companies to make sure mine areas are "rehabilitated". A new report from the Australia Institute says that there are more than 60,000 mines that have been abandoned across Australia. The report says only a handful of mines have ever been fully rehabilitated. So we have good reason to be afraid, afraid for the health of our country and our people, and for the effects on culture that come with mining and royalties and clans fighting over money.

Royalties don't last long but healthy country is forever. Healthy country is our greatest resource. So much of the world's natural environment is going down and what we have here is precious. Yet mining companies keep asking, asking.

*"Make the next generations hungry for country, not sick for money."*

Otto Campion

# THREAT 6. Wrong people on Country

*Wrong people on country is a problem that affects both land and sea country.*

It's a problem that is getting much worse in the south of our management area where every year more and more tourists and other strangers are coming in from Katherine along the Central Arnhem Road. They often travel in convoy. It's 800 kilometres from Katherine to Gove and there are no designated camping areas negotiated with landowners so many tourists just pull up and camp anywhere. We also worry about the ones who try to drive through in one day. That can be dangerous, and we don't want strangers being hurt or killed on our country.

Some visitors show no respect. Some visitors think they can go anywhere. Other strangers come through on the Top Road and down from Ramingining. We find pig shooters and other hunters on our lands with guns and quad bikes. We have illegal safari hunters. Some strangers come because of illegal trade in wildlife. Bird smugglers come stealing eggs of valuable birds and others are looking for fish like rainbow fish and reptiles.

Some Balanda who come to work in our country and live at Ramingining don't show respect for landowners and go places without asking, or they ask the wrong people.

We rangers and landowners need the power to control strangers on our country.

| Threat rank | Trend | Goal |
|---|---|---|
| **Yatjkurr (HIGH)** | ↑ | Visitors respect Traditional Owners and Rom and comply with our rules and protocols. |

In the saltwater we still have problems with commercial fishers — a problem we have been complaining about for more than 40 years. Strangers on country don't know the country and they don't know where our sacred sites are. When they damage our sites they can make us sick, or get sick themselves. Sea closures set up to protect our sites and our new intertidal rights have not solved these problems as they are mostly ignored by fishers and the government.

## THREAT 7. Poor governance

*Good governance is the foundation for good management, so it is key for us to successfully implement this plan for healthy Country.*

| Threat rank | Trend | Goal |
|---|---|---|
| **Yatjkurr (HIGH)** | ↑ | ASRAC has good processes, protocols and understandings, so we fairly represent, implement and communicate the aspirations and decision making of Yolŋu and Bi people. |

Our plan says what clans and community want for Country, and what our rangers will do to achieve this. It is for the Yolŋu and Bi who are related to and have responsibilities for looking after Country in our region — Yuyuŋ Nyanuŋ, Yothu Yindi, Ngala Dakku, Yidjipili Galŋi and Yothu Dhumurru — and who have provided us with their vision for Country.

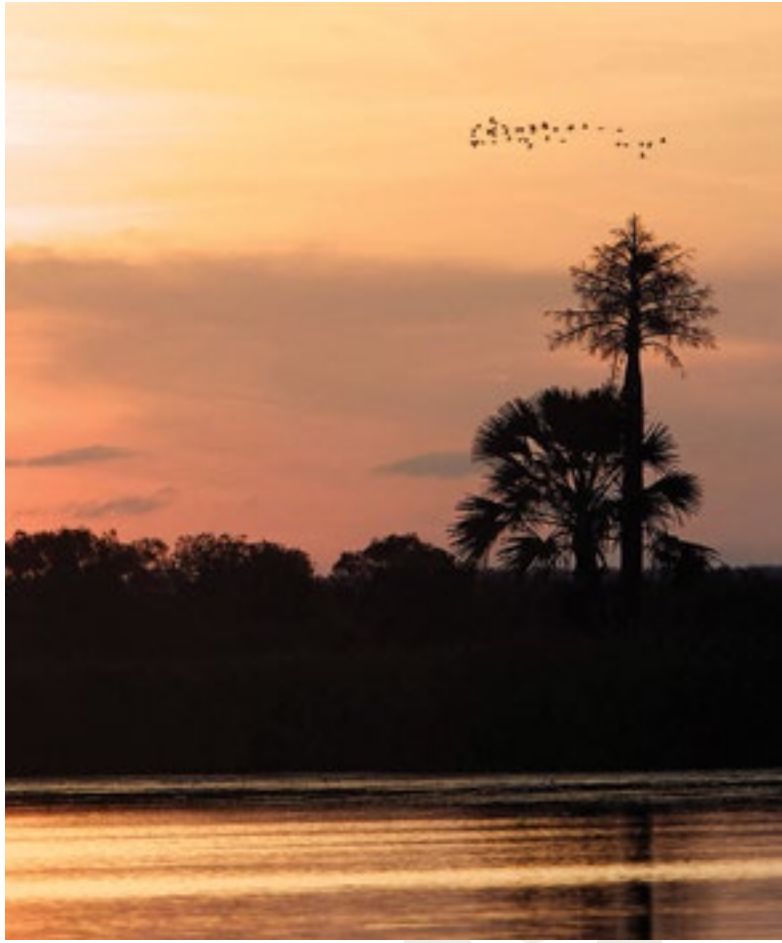
ASRAC is the governance vehicle that will help us to implement the plan and develop processes that strengthen good decision making.

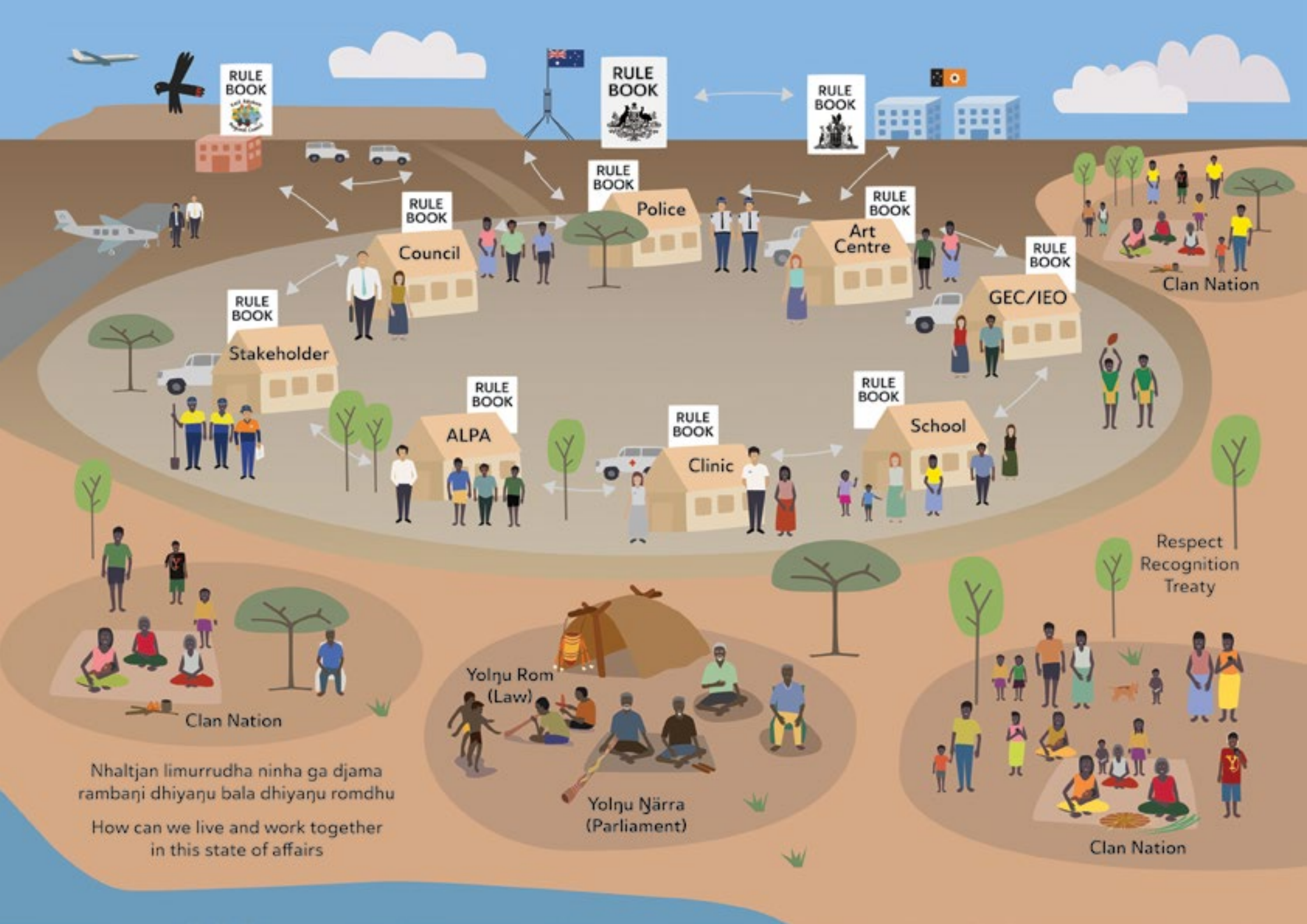
We need to build good governance arrangements that strengthen connections between the management of Arafura Swamp Rangers and the Traditional Owners of this country.

ASRAC can strengthen cultural authority by making existing governance arrangements (structures and processes) more closely aligned to customary or traditional models of decision-making, while appreciating the situational context in which ASRAC must operate — essentially between two very different management paradigms with value in both. To do this we need to build our corporate governance and make sure we have good processes, so we are transparent and accountable and recognised as rightful and competent land and sea managers.

Governance can fail when:

- Membership is not representative of all ASRAC clan areas
- Directors don't turn up and don't provide proxies, so there is no quorum
- Poor meeting practices impact decision making
- Board has limited cultural authority
- Directors are busy with other responsibilities
- Relationships with non-indigenous staff break down
- ORIC governance requirements are not understood
- Board members are untrained in governance
- Meetings are disorganised or poorly run
- Difficult decisions are put off or avoided
- Information is not provided in useful ways or adequately interpreted
- Members' vested interests affect decision making




RULE BOOK
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Police
RULE BOOK
Council
RULE BOOK
Art Centre
RULE BOOK
GEC/IEO
RULE BOOK
Stakeholder
RULE BOOK
ALPA
RULE BOOK
Clinic
RULE BOOK
School
Clan Nation
Respect
Recognition
Treaty
Yolŋu Rom
(Law)
Yolŋu Ŋärra
(Parliament)
Clan Nation
Clan Nation
Nhaltjan limurrudha ninha ga djama
rambaŋi dhiyaŋu bala dhiyaŋu romdhu
How can we live and work together
in this state of affairs

## THREAT 8. Balanda rules always changing

*The Australian government did a good thing when it created the Indigenous Ranger and Indigenous Protected Area programs. These have brought us real jobs, working as conservation managers on our own country.*

These programs have been successful because they respect our connections to country, value Indigenous knowledge and skills, and allow us to work under the guidance of our Elders.

We hope these programs continue. We are looking for long-term commitments from government. We need to know what's coming so we can build on what we have achieved so far. This is perhaps our biggest hope — for continuity of programs such as these; programs that we know, rely on, and are committed to.

When governments change, policies and programs change. Nobody asks us what we value in policies and programs, what we think is working or not working, or how government can help us get a better future. Not just us, but Aboriginal people all over Australia are saying the same thing. We are caught in the middle between governments as they turn one way and then another. No sooner have we worked out how to engage with a government program or service, than it changes or is taken away.

| Threat rank | Trend | Goal |
|---|---|---|
| **Ganga Yatjkurr (MEDIUM)** | ↑ | ASRAC is strong with good governance, business, partnerships and funding so we can achieve our long-term dreams for country and create good jobs. |

While government support is a good foundation, we need to look for other ways to get ahead. So, for the future we will look to getting support in three ways — from government, from innovative, environmentally sustainable business development, and from non-government organisations. We hear a lot about capacity building but it's hard to build capacity when things keep changing. We need to know that if we succeed through our commitments to our goals that success will be recognised and supported by government and non-government partnerships into the future.

# THREAT 9. Bad fire

| Threat rank | Trend | Goal |
|---|---|---|
| Ganga Yatjkurr (MEDIUM) | ↑ | There is no bad fire because we have a strong fire program and people are on country burning the right way. |

*When we stop burning in the right way, country is going to become sick. Right-way burning, following in the footsteps of our ancestors, is the only way to keep country healthy.*

When we don't do proper early burning every year, grassy fuels build up in a way that when we get late dry season fires — from people or from lightning — it's just about impossible to stop those fires. They burn huge areas and may not stop until the rains come.

These fires are so much hotter than early dry season fires and go right up into the tops of the forest. In very hot fires the small branches are so badly affected that trees have to start putting leaves out just from the trunk. It may take years for the trees to recover. Trees may stop flowering properly for a few years and sugarbag will have no food. The birds that depend on flowering plants will suffer too. Fruit trees stop giving us plenty of fruit at the right time.

Nesting hollows for birds and goannas are destroyed by the late, hot fires. Hollow logs for bandicoots and goannas, snakes and lizards are burned up too. When all the cover is burned it is easy for feral cats to find small mammals and lizards.

And when the country is burned too hard and too late there is very little grass to hold the soil in place when the big rains come. Soil is washed away and creates sheet and gully erosion in some places and the soil starts to fill up our billabongs and creeks. Freshwater habitat for fish and other animals becomes unhealthy.

Bad fire is also bad for greenhouse gas emissions and that's bad for our carbon business. In the swamp, bad fire can destroy grasses that are needed for crocodiles to build their nests. This is bad for our crocodile business.

Good fire makes country come alive again and bad fire kills it. Today we can use two toolboxes for right way burning. We can be out on country walking and burning like old people did. We can also use helicopters to cover long distances quickly to put in our burned breaks and to create the kind of patchy burns that leave tree tops unburned and with plenty of food and safe places for our animals to live.

Right-way burning means following culture. It means always making sure that right people are making the decisions for burning, whether the burning is done by rangers in a helicopter or on the ground. We need to make sure young people learn about right-way burning and that everyone understands that we shouldn't burn unless we have a good reason to burn. Old people did burn in the late dry season to hunt for kangaroo and to thin out scrubby country. But they did it carefully and so must we.

*Right-way burning means following culture. It means always making sure that right people are making the decisions for burning.*

# THREAT 10. Empty Country

*Empty country is lonely and sick without its people. Our old people talked to country. They weren't talking to themselves, they were talking to our ancestors and to the first beings, the Wongarr.*

All these ancestors are still there in the land and the water, in the sacred waterholes and dreaming places. The country is alive. In our belief, the Wongarr send us what we need from the country and keep the country in balance.

When we are not there following our customary management, country is getting out of balance — and so are we. But many new things are putting country out of balance. Things like weeds and feral animals are new and can only be fixed by our hard work and commitment. Without our commitment to the right people being on country at the right time our fire goes out of balance and country gets sick.

Country needs our eyes and ears to watch out for trespassers and activities that are illegal in both Balanda and Yolŋu law.

| Threat rank | Trend | Goal |
|---|---|---|
| **Ganga Yatjkurr (MEDIUM)** | ↑ | Country is full up with the right people and elders are happy for family who enjoy good lives. |

# THREAT 11. Lack of jobs on Country

*Our old people lived off the country — they made everything they needed from it or traded things from their country for things from other places.*

Of course we can't go back to a lifestyle and economy like that. We have to find ways to support ourselves in a modern lifestyle. How can we use our country to make jobs on country for our people?

We don't want mining jobs destroying country, we don't want to chop the timber down for woodchip, we don't want to put so many buffalo and cattle on country that it becomes sick. This is a big problem for all the people in Arnhem Land and other remote communities and there is no easy and quick solution to this big problem.

Firstly we have to protect our country because that will be the foundation for our future development of jobs on healthy country. We have to look to all the ways we can use country for jobs without destroying it.

We have started earning an income in the crocodile industry. We can take this a lot further. We can continue to develop jobs from fire. Currently we make money and jobs from reducing greenhouse gas emissions. In future these carbon opportunities may expand with sequestration — locking up carbon in forests through right-way fire.

| Threat rank | Trend | Goal |
|---|---|---|
| **Ganga Yatjkurr (MEDIUM)** | ↑ | Our people are educated, skilled and employed in meaningful jobs and we have our own businesses on country supported by ASRAC. |

At the moment Balanda are running the tourism on our lands. We need our younger people to get the skills to be able to run tourism businesses and we need support to set up those businesses. There are opportunities in the seas if we could take back the rights to our saltwater resources. Pursuing careers in arts and crafts including music are other possibilities.

We have to go forward, not backward, and that is why it is critically important that the Working on Country program is continued and expanded, not cut back. With those foundation jobs we can protect the country while we develop new ways to live on country and from country.

# THREAT 12. Commercial fishing

*The commercial fishers that use nets are taking too many fish and people in the community are not benefiting.*

We just don't get as many fish when we go fishing for our families. Big boats come and take too much at one time — tonnes and tonnes of fish. Then there is no good fishing for us. We go out fishing and come back empty.

But it's not just the barramundi, jewfish, mackerel and salmon that they take, other animals get wasted. We see catfish, turtle, crocodile and sharks caught in their nets and killed. They just throw them away and waste them.

Over the years we have seen the results of fishers not complying with the NT Fisheries Act. Some have strung nets right across and blocked rivers and creeks with nets killing everything, barramundi, crocodiles, shark, turtle and dugong. This is bad and it is illegal — but it happens, and we don't see the fishers going to court.

Fishermen fillet the fish and throw away the bones and carcass. This is against Yolŋu Rom and upsets our ancestors. We have strict rules about how to cut up an animal including fish. When they throw out the carcasses, this waste causes problems with crocodiles. They get cheeky and can be dangerous for our families.

| Threat rank | Trend | Goal |
|---|---|---|
| **Ganga Yatjkurr (MEDIUM)** | ↓ | In ten years, we want to see Yolŋu skippers and our own community commercial fishery licenses, supported by strong sea rangers with enforcement powers. |

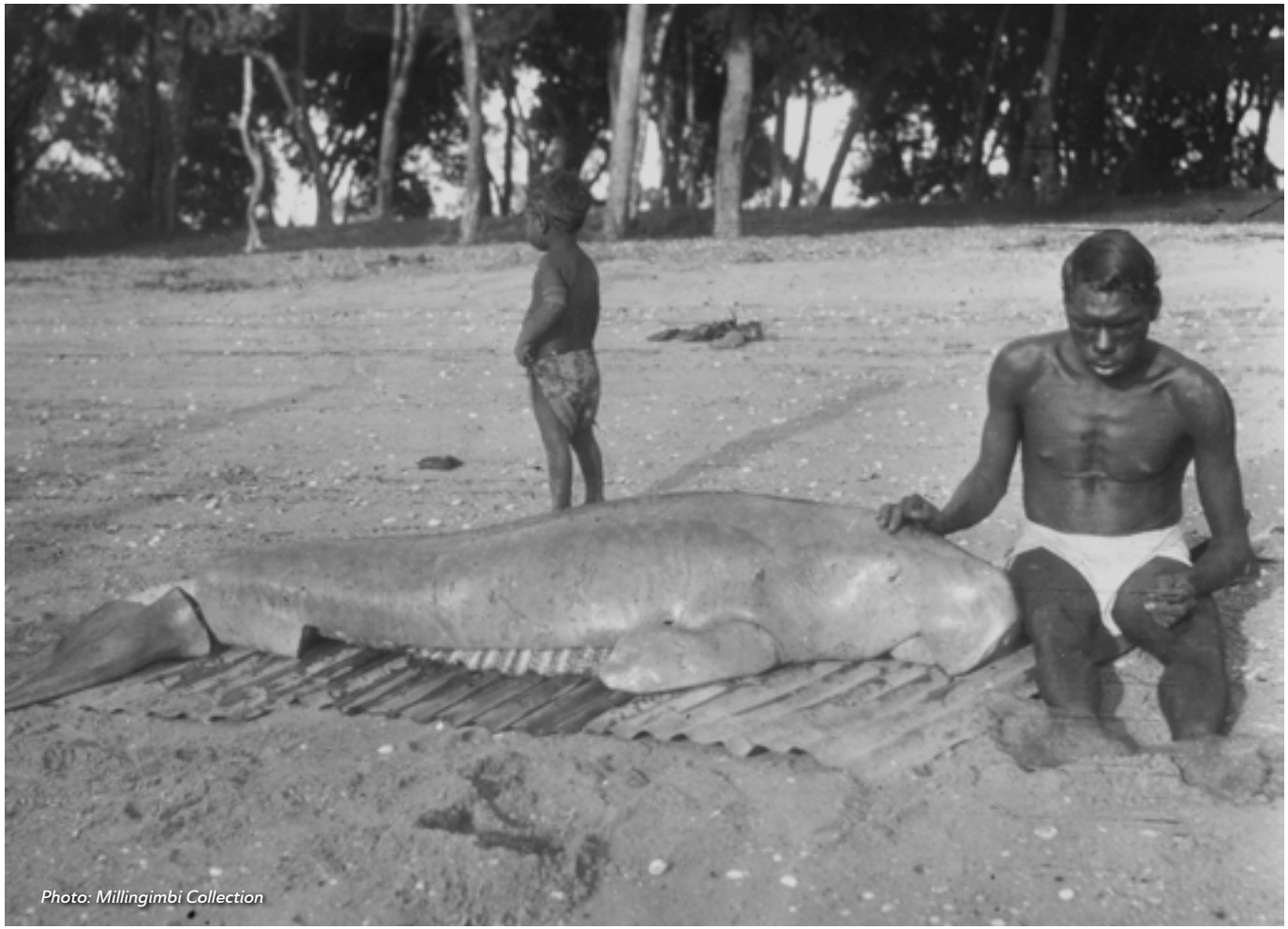


*Photo: Millingimbi Collection*


# Part 2

## Strategies and Implementation

# Strategies and Implementation

## Strategies

*What we are going to do to achieve our Goals to reduce the worst Threats and improve the health of the Values.*

Most Strategies will drive improvements across multiple Targets and help to reduce several Threats. Many of these Strategies are integrated in implementation so we can manage combined threats.

## Actions

*The work we need to do. A list of the management Actions that will be taken to implement the Strategies.*

## Strategy snapshots

We developed our Strategies in 2017 and have been working on implementing them for the past eight years.

In the following pages are snapshots to show how each Strategy is tracking. Each snapshot outlines its Strategy from the table opposite, main Threats reduced and main Targets improved.

## Program logic

# Our Strategies

## We have 17 Strategies that are grouped under three Programs:

### CULTURE AND COMMUNITY

**Cultural Mapping**

Work with clans and partners to record knowledge and map important sites and produce a Knowledge Database and a cultural map with clan estates, sites and connections.

**Cultural Education**

Support a cultural program with activities such as cultural camps at least every year and work with Learning on Country to provide both-way education.

**Community Engagement**

ASRAC Rangers will engage the community and develop an awareness program and materials about key threats to Country and management issues.

### HEALTHY COUNTRY

**Fire Management**

Continue the fire management program consistent with carbon abatement opportunities and cultural priorities.

**Weed Management**

Implement ASRAC's weed management plan and ensure it is accessible to rangers so they can use it.

**Feral Animal Management**

Work with Traditional Owners to implement the ASRAC Feral Animal Management Plan to reduce buffalo and pigs.

**Visitor Management**

Develop a Visitor Management Plan and work with NLC to implement it.

**Sea Country Management**

ASRAC will work with stakeholders to develop a Coastal Management Plan addressing access zoning, patrols and business opportunities.

**Plants and Animals**

Look after our native species and work with Learning on Country (LoC) to make a plants and animals book and record our seasonal knowledge.

**Both-way Science**

With our partners, develop and implement programs using both-way science.

**Indigenous Protected Area**

Establish and operate an Indigenous Protected Area in the ASRAC region.

### GOVERNANCE AND OPERATIONS

**Governance and Operations**

ASRAC will continue to support and get more training in our ORIC governance and operational and financial systems, and strengthen our Yolŋu leadership and cultural authority.

**Business Development**

Continue through ASRAC, to grow our crocodile, carbon and other businesses and support Traditional Owners and homelands with new sustainable enterprises.

**Satellite Ranger Bases**

Provide support, infrastructure and year-round access for new and existing satellite ranger bases, so rangers and their families can operate from them effectively.

**Miyalk Ranger Program**

ASRAC will continue to support a strong women ranger program, in Ramingining and at homelands, and by 2024 half of our rangers will be women who are well supported and trained.

**Career Pathways**

Plan and implement a career pathway program for, and beyond, rangers.

**Research, Monitoring and Evaluation**

Continue to support a both-way monitoring program with relevant partners, and if Traditional Owners request work with scientists to fill knowledge gaps.

CULTURE AND COMMUNITY

# Cultural Mapping Snapshot

# Cultural Mapping

*"Site protection, registration, sharing connections — mapping, support everyone talking — cultural mapping underneath everything ASRAC does. Cultural mapping is the back bone of everything. Him there not moving"*

Otto Campion

Cultural mapping is an important way to strengthen our Yolŋu governance. ASRAC has a dedicated Cultural Mapping Project that is led by Balmara Manager, Otto Campion, and supported by Bush Heritage Australia. BHA support extends to data management system development, training and funding a dedicated Indigenous position within ASRAC.

The cultural mapping team have been working with senior knowledge holders to record cultural places, knowledge and practices. Cultural mapping information in the database consists of cultural sites records, stories about connections and songlines, and recordings of Yolŋu and Bi knowledge about plants and animals, collected by the rangers through custom-built Fulcrum applications. This is resulting in an extensive annotated catalogue of cultural sites throughout the IPA.

## STRATEGY

*Work with clans and partners to record knowledge and map important sites and produce a knowledge database and cultural map with clan estates, sites, and connections.*

## ACTIONS

- *Undertake cultural mapping trips on-country with traditional owners and djungkayito support strong culture, healthy people and deepening connections to country*
- *Work with clans to map sacred sites, songlines, trade routes, hunting and recreational areas, totem story places and other sites of cultural significance*
- *Correct existing information and spelling and ensure places and landscape features have correct Yolŋu names and rangers use them*
- *Support Aboriginal governance arrangements more broadly, strengthening connections between the management of Arafura Swamp Rangers and the Traditional Owners of Country*
- *Employ senior knowledge holders in the position of Balmara Manager/ Cultural Advisor to lead the Cultural Mapping project*
- *Develop cultural mapping data collection and recording tools and consent form, and provide training in sites mapping/survey and cultural heritage database management*
- *Continue to populate the Knowledge Database and ensure monitoring data is regularly updated Provide more support and training in using Fulcrum and the database*
- *Develop protocols and rules for accessing, using and protecting cultural information*
- *Collate anthropological and AAPA sites information for ASRAC area and protect in cultural heritage database*
- *Identify signage and other needs for the protection of significant cultural sites: prioritize and implement*
- *Provide Knowledge Base access at homeland satellite ranger bases*

| Main Threats reduced | Loss of respect for elders and Rom<br>Poor Governance<br>Wrong people on Country |
|---|---|

| Main Targets improved | Cultural Places<br>Stories, Language and Rom<br>Both-way Education and Knowledge |
|---|---|

CULTURE AND COMMUNITY

# Cultural Education Snapshot

# Cultural Education

Learning on Country (LoC) is a government funded program shared between ASRAC and Ramingining School. It provides a more engaging educational environment for students and helps integrate indigenous values and traditional ecological knowledge to the standard curriculum. It also serves as pathway for students to become trainee rangers with ASRAC. LoC has proved an innovative and highly successful program in the community and one which ASRAC strongly supports.

In addition to LoC activities ASRAC supports longer culture camps on Country and annual Balpara camps. Balpara camps are about supporting families to 'walk and talk' Country together, listen to Country and generate knowledge according to Yolŋu principles. Some of this knowledge feeds into the IPA's monitoring and evaluation. ASRAC have supported Balpara camps at Djilpin, Malnyangarnak, Donydji, Dhupawamirri, Garanydjirr and Dhipirri.

## STRATEGY

***Support a cultural program with activities such as cultural camps at least every year and work with Learning on Country to provide both-way education.***

## ACTIONS

- *Support projects and activities within our community that provide opportunities for the transfer of traditional stories, language and Rom from old to young*
- *Create cultural advisor positions within ASRAC and support cultural programs*
- *Plan for annual culture camp and prioritise in work plans*
- *Support more old people (Dhuwa and Yirritja) to participate in culture camps and LoC activities*
- *Support LoC activities to happen 'on-country'*
- *Engage senior women to support women's activities i.e. dillybags, baskets, skirts, dying, digging sticks and bushfoods*
- *Engage senior men to support men's activities i.e. spear and yidaki making*
- *Continue to do knowledge recordings and save them in the Knowledge Base and create more opportunities for young people to access the database*
- *Support our education partners to provide high-quality both-way education at community and homeland schools*

| Main Threats reduced | Loss of respect for elders and Rom |
|---|---|

| Main Targets improved | Stories, Language and Rom<br>Both-way Education and Knowledge |
|---|---|

CULTURE AND COMMUNITY

# Community Engagement Snapshot

# Community Engagement

Our Healthy Country planning and the Intercultural Monitoring and Evaluation Project (IMEP) have involved extensive engagement with Traditional Owners and the community, including large workshops in Ramingining, homeland consults, bush trips and on-Country camps with rangers, landowners, the school and other stakeholders.

Many of the ASRAC rangers have had media training and developed strong communication skills. There has also been training in tools such as iMovie through the IMEP project and the rangers have made a series of videos about Healthy Country work (weed work, rubbish, cultural mapping, monitoring etc) that they share with the community.

Rangers regularly visit the school to present to the children and provide regular on-Country activities through the Learning on Country program.

ASRAC representatives also contribute to broader forums and conversations by sitting on Boards and Committees such as ALFA, KKT, ICIN etc.

## STRATEGY

***ASRAC Rangers will engage the community and develop an awareness program and materials about key threats to Country and management issues.***

## ACTIONS

- *Establish a range of regular engagement processes with community to enable Traditional Owners to input to ASRAC. Tools include annual reports and newsletters, website and online engagement via Facebook, surveys and face to face community meetings in a range of locations*
- *Use language terms in our communication materials*
- *Continue to engage the community in planning and M&E activities*
- *Develop an educational package for community — giving ranger story*
- *Engage more with other communities and neighbours, ranger programs and schools*
- *Attend key forums and conferences and sit on committees and boards to have a voice and be part of conversations*
- *Develop an information package about threats to country*
- *Develop a video about fire and how to change fire behaviour*
- *Ask countrymen to report incidents of trespass, weed sightings and fire*
- *Install signage about rubbish at key sites (Sandy point, barge landing) "Respect your Country"*
- *Develop a cultural awareness program and materials for Balanda working in Ramingining*
- *Work with various service agencies to incorporate cultural awareness training into their induction processes*

| Main Threats reduced | Weeds<br>Bad fire<br>Wrong people on Country |
|---|---|

| Main Targets improved | All Targets |
|---|---|

HEALTHY COUNTRY

# Fire Management Snapshot

# Fire Management

ASRAC's savanna fire management program has successfully shifted a damaging regime of late dry-season (LDS) wildfires to one of cooler early dry season (EDS) burns across the IPA. Reducing the incidence of LDS fires also helps fight climate change by reducing greenhouse gas emissions, at a landscape scale. This in turn allows ASRAC, as a member of the Arnhem Land Fire Abatement (ALFA) initiative, to generate a healthy income from carbon farming. ALFA carbon credits sell for a premium because their production contributes to indigenous employment, healthier country and the continuation of cultural practices.

ASRAC's fire program is adaptive, its efficiency and outcomes improving over time. Annual fire planning draws not only traditional knowledge but on modern technologies such as satellite imagery, fire history datasets, and handy online tools.

Traditional fire remains an important feature of Arnhem Land fire programs. ASRAC works closely with Traditional Owners and their families to do more cultural burning and ensure right-way fire knowledge is passed on.

## STRATEGY

***Continue the fire management program consistent with carbon abatement opportunities and cultural priorities.***

| | |
|---|---|
| **Main Threats reduced** | **Bad fire**<br>**Empty Country**<br>**Loss of respect for elders and Rom** |
| **Main Targets improved** | **Right-way Fire**<br>**Bush Tucker and Native Wildlife**<br>**People on Country**<br>**Cultural Places**<br>**Gurruwiling**<br>**Our Jungle Country**<br>**Our Woodland Country** |

## ACTIONS

- *Work with families to support cultural burning, smoking ceremonies, and the passing on of fire knowledge, including fire-walks and kangaroo fire drives*
- *Work with Traditional Owners to improve ecological outcomes through patchy fire and protective burns around wetlands and jungles*
- *Review ASRAC's Fire Management Plan and procedures every 5 years, ensuring they address protection of infrastructure, cultural sites, fire-sensitive plants, animals and ecosystems*
- *Maintain assets including equipment, access and infrastructure for effective fire management throughout the IPA*
- *Improve telecommunications across the IPA for increased safety and management coordination*
- *Where safe and practical, fight LDS fires (August–Dec)*
- *Keep Traditional Owners well-informed by consulting ahead of the fire season and providing feedback once burning finishes*
- *Lift fire program profitably through improved practices, new methodologies, or linked enterprises such as cultural burning consultancies*
- *Enhance the fire program's ecological outcomes through improved practices, including continuing to reduce the area burnt by LDS fires, and the overall incidence of fire across the IPA*
- *Monitor and report on fire project outcomes, including co-benefits such as Indigenous jobs and healthier country*
- *Foster linkages with fire management partners such as ICIN and neighbouring IPAs*
- *Continue to train ASRAC staff in the use of NAFI, SMERF and other online facilities to plan, monitor, assess and report on fire management in the IPA*

HEALTHY COUNTRY

# Weed Management Snapshot

# Weed Management

Gamba grass poses a huge threat to the health of Arnhem Land's forests and woodlands as well as our carbon farming business. Activities such as roadworks and mustering (transport of hay) are 'high risk' for Gamba grass introductions. The ASRAC rangers have been vigilant in watching for Gamba grass and quick to control outbreaks.

Aquatic and floodplain weeds remain a major threat to the Gurruwiling wetlands. Despite intensive treatment, mimosa infestations continue to spread. Olive Hymenachne is much more widely distributed, difficult and costly to treat. Though it is not currently being controlled, ASRAC is investigating methods and funding to contain this weed and halt its spread to other areas of the swamp. Candle bush (*Senna alata*) is also known from the swamp and is being systematically controlled.

New weed arrivals to the swamp are an ever-present threat. Aquatic weeds can arrive from afar, transported by waterbirds, or vehicles or other equipment. In the vast expanse of the Arafura Swamp new weeds could take hold and spread unchecked for many years. ASRAC recognise this threat and have trained their homelands-based rangers to undertake regular weed surveillance within Gurruwiling.

## STRATEGY

***Implement ASRAC's weed management plan and ensure it is accessible to rangers to follow.***

## ACTIONS

- *Review and refine ASRAC's Weed Management Plan and procedures every 5 years, and ensure it is being integrated to ranger work plans and implemented*
- *Ensure 5-year operational plans for weeds, fire, and feral pests specifically address the protection of cultural and archaeological sites*
- *Develop a Weed Control Operations Manual appropriate to ASRAC staff*
- *Continue to survey, map and regularly monitor existing weed infestations*
- *Continue to control mimosa and Candle Bush infestations with the goal of eradication*
- *Consult Traditional Owners to identify key areas on the swamp to keep free of Hymenachne*
- *Regularly patrol high-risk areas including muster camps, roadworks and roadsides for Gamba grass. Treat outbreaks immediately*
- *Develop weed plans for satellite rangers bases and support their implementation with training and equipment*
- *Increase community awareness of the threat of the weeds through presentations, publications, social media and ranger interactions*
- *Introduce weed prevention measures including signage and wash-down stations at road entry points to the IPA*
- *Use right-way fire to control weeds*

| Main Threats reduced | Weeds<br>Bad fire |
|---|---|

| Main Targets improved | Our Saltwater Country<br>Our Freshwater Country<br>Gurruwiling<br>Bush Tucker and Native Wildlife<br>Right-way Fire |
|---|---|

HEALTHY COUNTRY

# Feral Animal Management Snapshot

# Feral Animal Management

Following aerial surveys, a strategic plan for feral pest control within the IPA was prepared in 2020. Although it recommends the immediate removal of 6000 buffalo from Gurruwiling, many Traditional Owners see these animals as commercially valuable so prefer not to simply cull. A Land Use Agreement for commercial mustering now covers most of the IPA. Under this agreement around 1000 bulls are removed each year. This off-take does not stop the population from growing. It also complicates other control options as higher overall densities benefit musterers.

ASRAC continue to raise community awareness around of feral pests, the damage they cause to country, and acceptable options for their control. Two sacred springs (floodplains and catchment) have been fenced to exclude buffalo. These sites are regularly monitored to see how they are recovering.

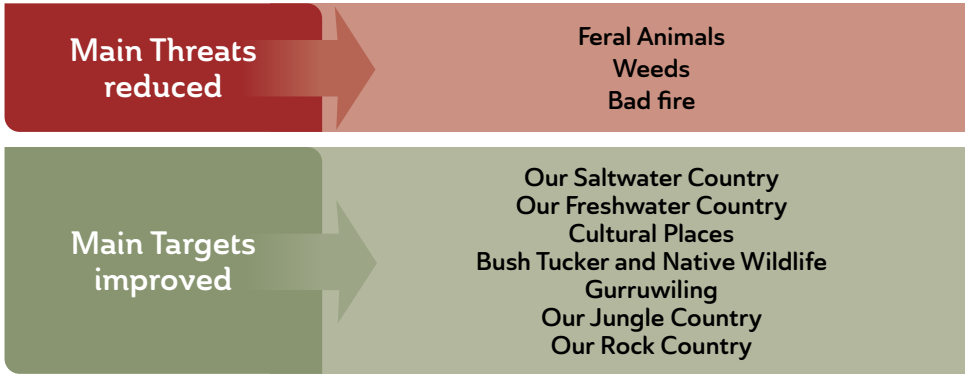
Buffalo impacts are monitored at two other sites, Lungurrma and Mangu where their channelling assists saltwater intrusion to the swamp.

By contrast, broad-scale pig control may be possible. Aerial and ground-based shooting, trapping, and baiting are all suitable methods. Sodium nitrite baits may offer a safe and cost- effective control method.

People are increasingly worried about the spread of the Balanda bee (European honey bee) and it's impact on sugarbag (native bees). ASRAC is seeking research partnerships to investigate this threat.

## STRATEGY

***Work with traditional owners and partners to implement the ASRAC Feral Animal Management Plan.***




## ACTIONS

- *Review and refine ASRAC's Feral Pest Management plan every 5 years, to ensure it is fit for purpose and being implemented*
- *Integrate Feral Pest Management plan to ranger workplans*
- *Ensure feral animal control addresses homelands priorities and is supported by satellite-based rangers*
- *Consult Traditional Owners prior to all feral animal control activities*
- *Continue to raise community awareness of feral animals and their impacts through presentations, publications, social media and ranger interactions*
- *Investigate feasibility of compensating landowners for the removal of buffalo from their land with investment from carbon farming, conservation NGOs, philanthropy or other sources*
- *Trial the use of Hoggone® for feral pig control at key sites and seasons*
- *Continue to seek new acceptable options for feral animal control or minimising their impacts*
- *Where practical and requested, remove feral animals from sacred springs and other vulnerable cultural sites*
- *Provide rangers with training and equipment to control feral animals through ground culling, platform shooting, baiting and trapping*
- *Continue to monitor buffalo channels hastening saltwater intrusion into Gurruwiling*
- *Collect and retain accurate records of feral pest management activities*

HEALTHY COUNTRY

# Non-native Wildlife Snapshot

# Non-native Wildlife

Cats came to Arnhem Land a long time ago. While they have always been a pest they seem to have become more common as traditional fire patterns waned. Feral cats are big hunters of nearly all native wildlife. There is no one method for their control. Shooting, trapping and baiting can help but improving the condition of country through good fire management, feral pest and weed control is the best defence against cats.

Cane toads are a more recent arrival. Invading our country about 20 years ago, they have had a big impact in short time. Many animals including turtles, fish, snakes and birds are poisoned by them, while toads eat anything smaller than themselves. Like cats there's no clear control method but keeping country healthy helps. Toads are happiest in wetlands that are damaged by buffalo and pigs. They have trouble feeding and breeding in areas where the vegetation is thick and healthy.

Exotic ants are a new and alarming threat to native wildlife and ecosystems. Three species of concern have been found in Arnhem Land, the Big-headed Ant, Yellow Crazy Ant and Browsing Ant. Exotic ants are easily spread in soil or vegetation. Once established they are difficult and expensive to eradicate.

People are increasingly worried about the spread of the Balanda bee (European honey bee) and its impact on sugarbag (native bees). ASRAC is seeking research partnerships to investigate this threat.

## ACTIONS

- *Continue to research the impacts of cane toads and cats on native wildlife, particularly Threatened Species and keystone species for traditional owners*
- *Continue to raise community awareness of non-native wildlife and its impacts native animals through presentations, publications, social media and word-of-mouth*
- *Consider new developments in cat and cane toad control, including biological methods and technological solutions such as the Felixer. Implement where feasible*
- *Train to identify and stay vigilant for exotic ant introductions. Where an incursion is suspected notify the NT Government's Wildlife Use and Pest Animal Unit: wildlife.use@nt.gov.au*
- *Partner with the NT Department of Industry, Tourism and Trade (DITT) to learn more about exotic ants and be part of their surveillance program*
- *Look at research partnerships to investigate the Balanda Bee and its impact on sugar bag*

**Main Threats reduced** → **Feral Animals**

**Main Targets improved** → **Our Freshwater Country**
**Bush Tucker and Native Wildlife**

HEALTHY COUNTRY

# Visitor Management Snapshot

# Visitor Management

The permit system is an important way to manage visitation and protect our Country and the privacy of our communities. The Northern Land Council (NLC) manages the permit system on behalf of Traditional Aboriginal Owners. Arnhem Land and other NT Land Trusts granted under the (Commonwealth) Aboriginal Land Rights Act (1976) are private land, belonging to individual families or groups of Aboriginal people. To enter or remain on an Aboriginal Land Trust all non-indigenous visitors must hold a valid NLC permit. The NLC are currently improving this system and now offer limited online permits.

In anticipation of increased visitation, ASRAC will work with the NLC to develop a zoned compliance plan and build our rangers' capacity to police visitation and reduce the incidence of trespass.

## STRATEGY

***Work with Northern Land Council to establish ASRAC Rangers' role and authority in the supervision of visitors to the Arafura Swamp IPA.***

## ACTIONS

- *Prepare for increased visitation and greater control resulting from NLC's revised permit system*
- *Work with NLC to develop permit Compliance Plan for the IPA*
- *Work with NLC to train, equip and support rangers to implement the IPA's Compliance Plan and police NLC issued permits*
- *Ensure the IPA's Compliance Plan includes access restrictions to protect significant cultural sites, on land and sea country*
- *Prepare a Coastal Management plan addressing intertidal access for recreational and commercial fishing*
- *Install IPA and NLC signage at all key entry points, and at turn-offs to outstations or other areas where unauthorised visitation is unwanted*
- *Install camera surveillance at key sites or significant areas*
- *Include patrol activities in the ranger workplan and develop patrol teams*
- *Consult with Traditional Owners about rules for visitors to Country*
- *Develop a Visitor Information booklet for permit holders outlining rules and guidelines, including how to avoid key threats to the IPA such transporting weeds, or starting bushfires*

| Main Threats reduced | Wrong people on Country<br>Weeds<br>Bad fire |
|---|---|

| Main Targets improved | Cultural Places<br>Right-way Fire<br>Our Saltwater Country<br>Our Freshwater Country |
|---|---|

HEALTHY COUNTRY

# Sea Country Management Snapshot

# Sea Country Management

The Arafura Swamp IPA overlaps with the Crocodile Islands and Marthakal IPAs and our rangers collaborate on marine management. Wanga Djakamirr and Balmawirrey Dhipirri Rangers work closely with Maringa Sea Rangers to manage sea country of Castlereagh Bay. Through these associations ASRAC rangers are involved in coastal patrols, NT Fisheries compliance and biosecurity surveillance.

Implications of the Blue Mud Bay native title determination are beginning to emerge. The Blue Mud Bay Implementation Action Plan has to date resulted in amendments to the NT Fisheries Act and the establishment of the Aboriginal Sea Company. These initiatives provide opportunities for Yolŋu and Bi involvement in the commercial fishing industry, as well as effective policies for sustainable management of fisheries along our coast.

## STRATEGY

***ASRAC will work with stakeholders to develop a Coastal Management Plan addressing access zoning, patrols, and business opportunities.***

| | |
|---|---|
| **Main Threats reduced** | **Commercial fishing**<br>**Wrong people on Country**<br>**Lack of jobs on Country** |
| **Main Targets improved** | **Our Saltwater Country**<br>**Both-way Eduction and Knowledge** |

## ACTIONS

- *In consultation with saltwater Traditional Owners, work with all stakeholders to develop a coastal management strategy including a zoning system for public and commercial fishing access*
- *Work with NLC to develop codes of conduct and protocols for patrolling, signage, surveillance and compliance in intertidal areas*
- *Engage with Aboriginal Sea Company to explore options for fishing enterprises including Aboriginal Coastal Licences, joint and wholly-owned commercial ventures, purchase and lease arrangements*
- *Investigate commercial opportunities for Blue Carbon sequestration*
- *Conduct regular Sea Country patrols and collect, map and save data about marine debris*
- *Support permanent positions for Dhipirri Rangers*
- *Work with partners to design and implement a monitoring and evaluation program for Sea Country*
- *Partner with scientists and Maringa Rangers to monitor and protect sea turtle nesting and inter-nesting areas along our coast*
- *Partner with scientists and Maringa Rangers to monitor and protect shore and migratory birds along our coast*
- *Continue to work with scientists to better understand environmental impacts of climate change on our coast and explore management solutions and adaptations*

HEALTHY COUNTRY

# Plants and Animals Snapshot

# Plants and Animals

People have noticed that some plants and animals are not as healthy and abundant as they used to be. Within living memory Arnhem Land's varied and productive ecosystems have deteriorated greatly. A combination of bad fire, feral animals, exotic pests, and the increasing effects of climate change has taken a heavy toll on the region's native plants and animals. Many that where once relied upon are now hard to find or have disappeared.

ASRAC's work, in particular fire and weed control, are resulting in healthier country and there is evidence that some threatened species including the yellow-spotted monitor and emu are slowly returning. Targeted surveys may be useful in identifying remanent populations of other threatened species such as rock-wallaby, Gouldian finch and hooded parrot for increased protection through intensive threat mitigation and or habitat enhancement. These remaining populations will be key to recovering biodiversity in the IPA as threats are mitigated and the health of the country improves.

We have developed useful products such as our seasonal calendar documenting traditional patterns of resource use through the year. A Plants and Animals book is also underway, recording the names, moieties, uses, stories, songs and cultural significance of the many different species in our region.

## STRATEGY

***Look after our native species and work with Learning on Country to make a plants and animals book and record our seasonal knowledge.***


## ACTIONS

- *Finalise and publish the ASRAC Plants and Animals book, including adding more knowledge about what makes bush tucker healthy such as good fire*
- *Continue to update and expand the ASRAC plants and animals database and online ethno-ecological records*
- *Support different language groups to produce seasonal calendars*
- *Support a cultural program with activities such as on-country camps and both-ways surveys, to better understand the wildlife of our Rock Country and Jungles*
- *Look at potential climate change projects and work with traditional owners to identify and monitor seasonal changes that may be related to climate change*

HEALTHY COUNTRY

# Both-way Science Snapshot

# Both-way Science

The depth of Yolŋu knowledge of country means there are many opportunities for Both-way science, where indigenous and non-indigenous knowledge systems contribute to greater ecological understanding. Research collaborations are an important training ground for our rangers who use the skills and experience they gain to further their careers as land and sea managers. Working with scientists can also help Traditional Owners come to grips with modern threats like feral pests or climate change, the effects of which are big but may take generations to emerge.

Over the years ASRAC rangers have been involved in numerous research projects, including the Intercultural Monitoring and Evaluation Project which developed a Yolŋu and Bi-led M&E system and our Dillybag Book. Projects on the horizon include a collaborative wetlands study investigating the impacts of fire and feral animals on freshwater turtles and other species of importance to Yolŋu and Bi.

## STRATEGY

*With our partners, develop and implement programs using both-way science.*

## ACTIONS

- *Work with partners to develop strategies to increase populations of plants and animals of customary importance (for example, captive rearing and reintroduction, seed collection, and revegetation)*
- *Support research on the ecology of keystone wetland species in the Arafura Swamp*
- *Using both-way science, develop and implement a monitoring program for important jungle patches*
- *Using both-way science develop a survey project to locate, monitor and recover disappearing wildlife, especially in our Woodland Country*
- *Work with scientists to understand the best ways to reduce the impacts of feral cats, cane toads, pest ants and honey bees on native animals*

**Main Threats reduced**

**Loss of respect for elders & Rom**
**Climate change**
**Bad fire**

**Main Targets improved**

**Bush Tucker and Native Wildlife**
**Both-way Education and Knowledge**
**Our Jungle Country**
**Our Woodland Country**
**Our Rock Country**

HEALTHY COUNTRY

# Indigenous Protected Area Snapshot

# Indigenous Protected Area

ASRAC gained entry to the federal government's IPA program in 2019 and has since worked with Traditional Owners and neighbours to dedicate the Arafura Swamp IPA. This large Protected Area provides an operational precinct for ASRAC's rangers and a focus for their work.

Nested within the Healthy Country plan the Arafura Swamp IPA initiative underpins ASRAC's commitment to the conservation of biodiversity and the protection of cultural heritage on Aboriginal lands. As part of the National Reserve System, Arafura Swamp IPA will benefit local landowners and the nation as the area it protects is an exceptional example of Northern Australia's living Indigenous landscapes.

## STRATEGY

***Establish and operate an Indigenous Protected Area in the ASRAC region.***


## ACTIONS

- *Employ an IPA Coordinator, with responsibility for implementing IPA-related strategies and actions within this plan*
- *Establish an IPA Committee (IPA Mala) to represent landholders and support ASRAC's operation of the Arafura Swamp IPA*
- *Establish an IPA Advisory Group representing external stakeholders and supporting ASRAC's operation of the Arafura Swamp IPA*
- *Undertake monitoring and evaluation as set out in the IPA's MERI plan, to ensure efficient, adaptive management and demonstrate its benefits at local, regional and national levels*
- *Collaborate with neighbouring IPA in management of shared areas, and in addressing common issues*
- *Strive to enhance land, sea and cultural heritage management through targeted training, collaborative research and productive partnerships*
- *Build the Arafura Swamp IPA as an internationally recognised brand, through promotional media and representation at key fora*
- *Investigate the potential for a Section 19 Land Use Agreement to further formalise ASRAC's land and sea management role within the IPA*
- *Review and refine the IPA's management and MERI plans every 5 years, reissue every 10 years*
- *Maintain productive relationships with relevant government agencies, regional bodies including the Northern Land Council*

GOVERNANCE AND OPERATIONS

# Governance Snapshot

# Governance

We've worked hard to develop good governance to help us make good, strong decisions we all understand. In the past 5 years ASRAC has grown into a large organisation with capacity to manage large funding agreements, businesses and a large workforce. ASRAC have improved our governance, operational and financial systems through more regular and structured corporation meetings, engagement of a CFO and Administration Officer, and the appointment of an IPA Coordinator.

ASRAC partners with a range of other organisations to support their work and staff development. Bush Heritage Australia have worked with ASRAC over many years towards a shared vision of healthy country and healthy people. Other important partnerships include those with CSIRO (biological-control research), Charles Darwin University (freshwater turtle research), Territory NRM (funding and technical support for Gamba grass surveys), Arnhem Land Progress Association (formal pathway for RJCP participants to become rangers), WHNT (expert advice on crocodile farming), NT Fisheries (enforcement training), Department of Agriculture (service contracts, training, equipment support).

## STRATEGY

***ASRAC will continue to build good governance through training in corporate management, operational and financial systems, and by strengthening our Yolŋu leadership and cultural authority.***

## ACTIONS

- *Continue to improve ASRAC's cultural authority through a sound Yolŋu/Bi governance structure representative of the IPA's Traditional Owners*
- *Work with Traditional Owners and Directors to develop Guiding Principles that ensure Rom and cultural governance are embedded in our decision making and organisational processes*
- *Create pathways for Yolŋu and Bi to take up leadership/management roles within ASRAC and the Arafura Swamp IPA*
- *Further support women in our governance and operations and involve young people in training and planning processes led by the Directors*
- *Ensure ASRAC Rangers and IPA staff provide regular updates/reports to the Board*
- *Build ASRAC membership and communicate regularly with members and the broader community*
- *Strengthen ASRAC financial systems and reporting*
- *Develop funding proposals and grant applications to secure resources to implement Healthy Country strategies not covered by our IPA project*
- *Maintain and seek funding partnerships, including the government and philanthropic sector, and prioritise long-term and untied funding*

| Main Threats reduced | Poor governance<br>Balanda rules always changing<br>All Threats are managed more effectively |
|---|---|

| Main Targets improved | All Targets |
|---|---|


# ASRAC Members and Staff

ASRAC are focused on improving the way our Board operates and our directors and members participate. The relationship between directors and non-indigenous staff is also important to ASRAC. Capacity in these areas has been built through governance training and mentoring in methods and courtesies that make for good meetings and more productive interactions with our staff and partners.

ASRAC will continue to provide regular training and support to directors and staff, including in areas such as good governance, communications, corporate regulations, dispute resolution and project management. We believe that in unison with a strong cultural foundation, these skills will allow ASRAC to better represent our members and achieve more for our community and country.

## ACTIONS

- *Ensure all members have nominated proxies*
- *Ensure sitting members, or their proxies, are paid*
- *Work with the Board to develop a Rule Book to defining rules for membership, meeting procedures and guidelines for decision-making*
- *Present information to directors and members in clear appropriate formats, including in Annual and Financial Reports*
- *Use interpreters where necessary (English – Yolŋu Matha – English)*
- *Encourage non-indigenous staff to learn basic Yolŋu Matha*
- *Provide governance training and mentoring to ASRAC Directors, supporting their corporate roles, responsibilities, and financial literacy*
- *Undertake an ORIC health check every 3 years*
- *Review ASRAC's Charter every 5 years to ensure it is supported, realistic and being realised*
- *Identify a designated, impartial ombudsman to resolve disputes between ASRAC directors and non-indigenous staff*


*Culture is back bone to everything, it is how we connect to country.*

GOVERNANCE AND OPERATIONS

# Satellite Ranger Bases Snapshot

# Satellite Ranger Bases

Arnhem Land is one of the last places in Australia where Traditional Owners still live on their ancestral homelands. Arafura Swamp IPA is a hotspot in this regard with around 20 homelands including Bundatharri, Galawdjapin, Gattji, Gilirri, Gupulul, Mulgurrum, Walkabamirri, Garanydjirr, Maŋbirri, Naŋgalala, Yathalamara, Buyulkulmirr, Dhipirrinjura, Malnyaŋanak, Mirrngatja, Dhupuwamirri, Donydji, and Ngilipitji, home to many families.

Homeland outstations are a big part of our IPA. They are where culture, language and customs remain strong and traditional practices persist. In many ways they are the essence of our IPA. A strong IPA can support homelands by encouraging local economies and helping ensure the safety of people living remotely. Remote Ranger base facilities have recently been established at Donydji and Mirrngatja, with planned infrastructure upgrades at Gupulul and Malnyaŋanak next. ASRAC believes these improvements will allow rangers to stay longer in these areas and undertake more effective management.

## STRATEGY

***Provide support, infrastructure and year-round access for new and existing satellite ranger bases, so rangers and their families can operateand communicate from them effectively and safely.***

## ACTIONS

- *Repair, upgrade and maintain communication infrastructure (internet and radio) and ensure there is appropriate communications at satellite bases for people to live safely on Country*
- *Establish office space, equipment, and chemical storage with fencing for all ranger bases*
- *Develop ranger base infrastructure and year-round access at Mirrngatja, Doyndji, Malnyangarnak and Dhipirri*
- *Build infrastructure for a camp-base at Djilpin*
- *Rationalise the road network so priority access roads and tracks are well maintained*
- *Provide training and licensing for satellite rangers*
- *Develop a safety system to support remote bases and operations*
- *Aim for 50% of full-time rangers at satellite bases*
- *Ensure there is balanced investment between ASRAC headquarters and satellite bases*
- *Develop budgets and fundraising strategy for satellite ranger base projects and activities*
- *Investigate new sustainable businesses for homelands*
- *Investigate market for bushfoods and medicines*
- *Support arts and crafts businesses*
- *Support cultural tourism and build homelands' capacity to deliver tourism experiences*

| | |
|---|---|
| **Main Threats reduced** | **All Threats are managed more effectively** |

| | |
|---|---|
| **Main Targets improved** | **All Targets** |

GOVERNANCE AND OPERATIONS

# Business Development Snapshot

# Business Development

New and sustainable enterprise ideas being considered for homelands our area include tourism, arts and crafts, sustainable use of wildlife, commercial fishing, mustering, and an abattoir. ASRAC's Ramingining Crocodile Farm opened in 2021. This facility, to be built in 2 stages, will eventually employ 3 to 4 local people, cleaning and caring for the hatchlings. ASRAC rangers will be seasonally involved, locating nests and harvesting the eggs.

ASRAC's financial base continues to broaden with increased income from the carbon project, NT NRM and NT Ranger grants, fee-for service biosecurity contacts, and generous donations from philanthropic organisations including Bush Heritage Australia and Nia Tero.

## STRATEGY

***Continue through ASRAC, to grow our crocodile, carbon and other businesses and support Traditional Owners and homelands with new sustainable enterprises.***

## ACTIONS

- *Continue to grow our crocodile farm, formalise supply agreements and increase our capacity and employment, including supporting homelands to derive income through supplying buffalo meat etc.*
- *Continue to grow our Carbon Farming business through improved methods and innovative marketing*
- *Watch for new opportunities in Carbon Farming methodology, including Green and Blue Carbon sequestration*
- *Support community development projects with Carbon project funds*
- *Develop templates for contracts and supply agreements that protect ASRAC and Traditional Owner interests*
- *Protect our intellectual Property (including ICIP) and ownership of copyright*
- *Engage with the Aboriginal Sea Company to look at options for commercial fishing enterprises including Aboriginal Coastal Licences, joint and wholly owned commercial ventures*
- *Investigate new sustainable businesses such as tourism, arts and crafts, wildlife enterprise, commercial fishing, mustering, and an abattoir*
- *Continue to investigate other enterprise opportunities as requested by Traditional Owners*
- *Develop a fully costed building infrastructure plan, including for satellite ranger bases*
- *Seek Payment for Environmental Services (PES) opportunities for Djungan rangers and businesses*

| Main Threats reduced | Balanda rules always changing<br>Lack of jobs on Country |
|---|---|

| Main Targets improved | People on Country<br>Both-way Education and Knowledge |
|---|---|

GOVERNANCE AND OPERATIONS

# Career Pathways Snapshot

# Career Pathways

We were very proud to see Dr Otto Campion, awarded an Honorary Doctorate from CDU in 2021. This recognises his significant contributions to the management of country, both in Australia and overseas, over the past three decades. Otto holds a management position at ASRAC as the Balmara Manager, and he is an important role model for our rangers.

As ASRAC has grown, there have been more jobs for Yolŋu and Bi, with more permanent ranger positions, more casual work opportunities and increased jobs for women and at homelands. We support our staff to undertake both their professional and cultural responsibilities.

In 2019/2020 we received a large training grant from the Commonwealth government. This has allowed ASRAC rangers to gain experience and accreditation in many useful skills.

## STRATEGY

***Plan and implement a career pathway program for, and beyond, rangers.***

## ACTIONS

- *Increase ranger positions — with a focus on women, homelands, and permanent positions*
- *Increase supervisor capacity for weeds, ferals and fire programs*
- *Continue to provide training opportunities for rangers, and seek more fit-for-purpose training*
- *Develop a Skills Register for rangers (and other community members) and provide work-based learning opportunities to build on learnt skills*
- *Mentor youth and emerging leaders by linking them with people that can provide advice in specific areas of knowledge and skillset that they wish to develop*
- *Provide all rangers with generic skills training such as literacy and numeracy*
- *Create pathways and build the skills and competencies for Yolŋu and Bi to step into coordinator and management positions*
- *Support leaderships skills such as learning how to manage people, plan projects, talk to government and funders, and support other rangers*
- *Identify core management functions, and the duties and capabilities required, to implement the Healthy Country/IPA Plan*
- *Map a Career Pathway Plan with each ASRAC staff member and identify training and professional development needs for each person to ensure successful career progression towards their aspirations*
- *Develop a Workforce Capacity Building Plan for ASRAC*


GOVERNANCE AND OPERATIONS

# Miyalk Ranger Program Snapshot

# Miyalk Ranger Program

ASRAC have strived to build a strong women's ranger program. Currently, around a third of ASRAC's ranger staff are now women, working out of a purpose-built office in Ramingining and out of homelands such Dhipirri, Doyndji, Mirngatja.

Our miyalk rangers are passionate about sharing their knowledge and experience. They have taken a lead with plants and animal recordings and seasonal calendar work, and they are strongly engaged in Learning on Country activities. They are also communicating strongly with the broader community — attending and presenting at women forums, and speaking at conferences, partner events and in the media.

## STRATEGY

***ASRAC will continue to support a strong women ranger program, in Ramingining and at homelands, and by 2024 half of our rangers will be women who are well supported and trained.***

## ACTIONS

- *Prioritise miyalk rangers for salary positions as ranger jobs become available*
- *Aim for a balance of saltwater and freshwater women rangers*
- *Support more jobs and training for miyalk at homelands*
- *Strengthen leadership, for example create a job description for Senior Woman Ranger*
- *Engage a Miyalk Ranger Coordinator and/or women's project support officer*
- *Develop project funding proposals for women's activities such as Bush Tucker and Medicine project, sacred sites, weeds work and monitoring*
- *Engage more with old ladies in the community*
- *Provide available facilities, vehicles and equipment for women*
- *Support women to get driving licences*
- *Continue to provide training — needs include literacy, computer skills, emergency services, first aid, boat patrol, monitoring and wildlife survey, leadership and supervisor training*
- *Share our story with community, media, partners and potential funders*
- *Provide ranger exchange opportunities for women at homelands and headquarters*
- *Foster relationships with other women ranger groups and networks and attend forums and meetings*

| | |
|---|---|
| **Main Threats reduced** | **All Threats are managed more effectively** |
| **Main Targets improved** | **People on Country**<br>**Both-way Education and Knowledge**<br>**Stories, Language and Rom** |

GOVERNANCE AND OPERATIONS

# Research, Monitoring and Evaluation Snapshot

# Research, Monitoring and Evaluation

Yolŋu and Bi knowledge and governance systems contain our own distinctive approaches to ongoing learning and improvement. We are always monitoring while caring for Country. We also work with partners to mobilise both our Indigenous knowledge and Western science in pursuit of the Healthy Country Plan.

In recent years ASRAC has worked with partners Bush Heritage, the Stockholm Resilience Centre, Charles Darwin University and Environmental Systems Solutions to develop of an Indigenous monitoring and evaluation program (IMEP) and an associated M&E Committee. While IMEP draws on customary skills and knowledge to design and undertake monitoring for adaptive management, the Knowledge Base provides an archive for the community's cultural and ecological material.

This work has resulted in an M&E Dillybag that can be used to guide monitoring work and provides a set of tools that support Country-based, indigenous-led knowledge production.

## STRATEGY

***Continue to support a both-way monitoring program with relevant partners, and, if Traditional Owners request, work with scientists to fill knowledge gaps.***

## ACTIONS

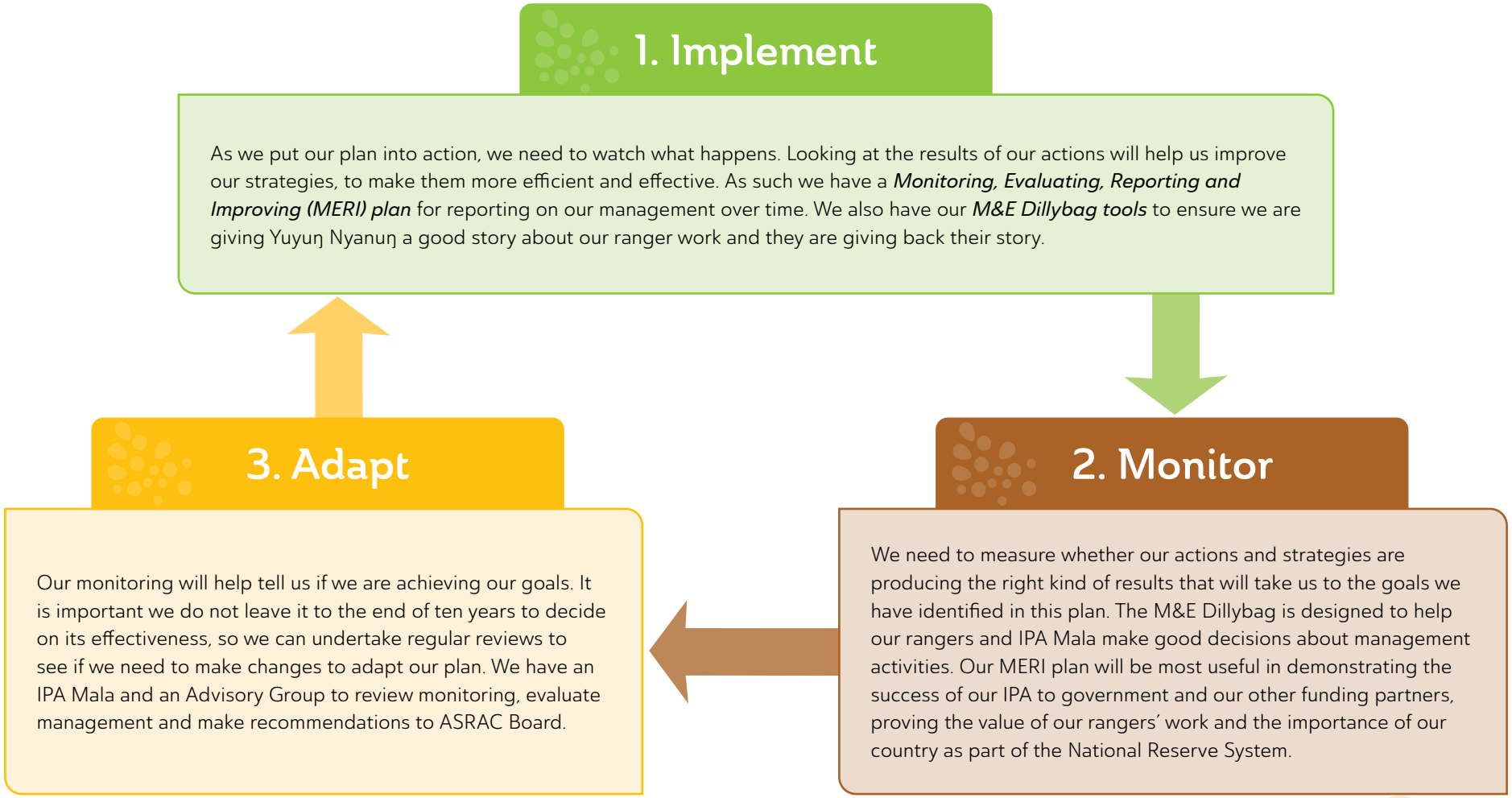
- *Use the MERI plan to monitor, evaluate, reporting on and improve on our IPA management over time*
- *Continue to work with Traditional Owners to monitor Country using our M&E Dillybag and tools*
- *Convene an annual IPA Mala meeting to review monitoring, evaluate management and make recommendations to ASRAC Board*
- *Identify research priorities and seek appropriate research collaborations (supported by IPA Advisory Group)*
- *Develop protocols for research partnerships that ensure results come back to the community in appropriate formats and guarantee Indigenous Intellectual Property Rights*
- *Ensure all monitoring and evaluation data is input to our Knowledge Base*
- *Continue to build our ranger and Traditional Owner research skills (i.e. ARPNet training)*
- *Seek research and evaluation fee-for-service opportunities*
- *Continue to work with scientists to survey and better understand environmental threats such as weeds, pests and climate change to and investigate potential solutions*
- *Support an ongoing Wildlife Survey and Culture Camp program for the Mitchell Ranges, to maintain cultural connection to this remote area and to better understand our Rock Country wildlife*

| | |
|---|---|
| **Main Threats reduced** | **All Threats are managed more effectively** |
| **Main Targets improved** | **All Targets** |

# Part 3

## Monitoring and Adapting

# Monitoring and Adapting



# Arafura Swamp IPA MERI Plan

| Government IPA Program Target | ASRAC IPA Target(s) | Strategy | Key Performance Indicators |
|---|---|---|---|
| | **CULTURE AND COMMUNITY PROGRAM** | | |
| ***Cultural and Natural Heritage Management*** | **Cultural Places** | Cultural Mapping | Number of ASRAC Rangers trained in data collection/entry (cumulative) |
| | | | Number of cultural mapping trips involving Traditional Owners and families |
| | **Stories, Language and Rom** | Knowledge Database | ASRAC Data Management System (Knowledge Base) is operational and being used |
| | **Both-way Education and Knowledge** | Cultural Education Program | Number of LoC culture camps held with ASRAC ranger involvement |
| | | | Numbers of Yolŋu and Bi students attending LOC activities supported by ASRAC rangers |
| | | Research, Monitoring and Evaluation | Number of Balpara camps and Dillybag activities |
| | | | Number of active research collaborations |
| | **People on Country** | Governance and Landowner Support | IPA committee is culturally constituted and representative of all areas within the IPA |
| | | | Number of IPA Committee meetings held each year |
| | | | Number of IPA meetings (annually) where a quorum is achieved |
| | **GOVERNANCE AND OPERATIONS PROGRAM** | | |
| ***Education, Training and Development*** | **Stories, Language and Rom** | Women Rangers Career Pathways | Number of Women Rangers employed, as % of ASRAC workforce |
| | | | Number of Yolŋu and Bi women in leadership/management positions |
| | | Satellite Ranger Bases | Number of operational satellite ranger bases |
| ***Consultation and Planning*** | **Both-way Education and Knowledge** | Community Engagement | Balpara camp held annually |
| ***Monitoring and Evaluation Program*** | | Research, Monitoring and Evaluation | Number of active research partnerships/projects |
| | | | Number of Traditional Owners and Djuŋgayi' regularly participating in M&E meetings |
| ***Economic Development*** | **People on Country, Jobs on Country** | Business Development | Proportion of government versus non-government income received by ASRAC (financial year, and multi-year trend) |
| | | | Number of fee-for service contracts carried out by ASRAC rangers |
| | | Career Pathways | Number of Yolŋu and Bi women in leadership/management positions |

| Government IPA Program Target | ASRAC IPA Target(s) | Strategy | Key Performance Indicators |
|---|---|---|---|
| | **HEALTHY COUNTRY PROGRAM** | | |
| ***Native Plants and Animals*** | **Our Woodland Country** | Research, Monitoring and Evaluation | Woodland vegetation health (composite, trend) via Bushfire photo-point monitoring |
| | | | Number of surveys for declining woodland birds and or mammal species undertaken |
| | **Our Jungle Country** | Research, Monitoring and Evaluation | Health of monitored jungle patches (overall trend), via Balparra methodologies |
| | **Our Rock Country** | | Health of Rock Country (ranked and trend), using Balparra methodologies from M&E Dillybag |
| ***Threatened species and communities*** | **Bush Tucker and Native Wildlife** | Plants and Animals | Number of species under active research or recovery programs |
| | | | Crocodile Monitoring results (as overall no. and population trend) |
| ***Fire Management*** | **Right-way Fire** | Savanna Fire Management | Total area burnt, early and late dry season fires (annual). |
| | | | Proportion of area cool burnt (early dry-season) versus hot burnt (late dry-season). Data available via SMERF Dashboard Report: Common Metric, Yearly Fire Seasonality report |
| | | | Proportion of fire project area left unburnt for 5 years or longer (annual figure, and trend). Data available via SMERF Dashboard Report: Other Metrics, Unburnt More Than 5 Years |
| ***Feral Animal Management*** | **Our Freshwater Country**<br>**Our Saltwater Country**<br>**Our Jungle Country**<br>**Gurruwiling**<br>**Our Woodlands**<br>**Our Rock Country** | Feral Animal Management | Estimated number of feral buffalo in Gurruwiling wetlands (by aerial survey every 3-5 years) |
| | | | Number of feral animals removed from IPA by any method, including commercial mustering (annually, by species) |
| ***Weed Management*** | | Weed Management | 5 year Weed Management Plan reviewed and adopted or updated |
| | | | Number of serious weeds actively treated (sites treated per species, annually), e.g., mimosa, Candle bush, Hymenachne etc |
| | | | Number of new weed infestations located within the IPA and under active control (# of species and # of loci), e.g., Gamba grass outbreaks. |
| ***Freshwater Management*** | **Our Freshwater Country** | Research, Monitoring and Evaluation | Water quality (trend, via Indigenous expert qualitative assessment at established sites). Methods outlined in Dillybag M&E document |
| | **Gurruwiling** | Research, Monitoring and Evaluation | Extent of saltwater intrusion into the swamp detectable via satellite imagery |
| | | | Extent of buffalo damage to seaward levee of Arafura Swamp (via buffalo channel monitoring) |
| | | | 3-5 yearly aerial wet season waterbird survey of Gurruwiling |
| ***Sea Country Management*** | **Our Saltwater Country** | Sea Country Management | Number of staff trained in NT Fisheries compliance (cumulative) |
| | | | Number of fisheries patrols undertaken annually |
| ***Visitor Site Management*** | **Cultural Places** | Visitor Management | Number of Staff trained in NLC permit compliance (cumulative) |
| | | | Number of signs installed and maintained (cumulative) |

# MERI Reporting Template

| Strategy | Metric | Aim | Assessment | | | | Trend | Management Note |
|---|---|---|---|---|---|---|---|---|
| | | | Very Good | Good | Fair | Poor | ↑↓ ↔ | |
| Cultural Mapping | Number of ASRAC Rangers trained in data collection/ entry (cumulative) | Increasing number | | | | | | |
| | Number of cultural mapping trips involving Traditional Owners and families | 2 or more | | | | | | |
| Knowledge Database | ASRAC Data Management System (Knowledge Base) is operational and being used | Yes | | | | | | |
| Cultural Education Program | Number of LoC culture camps held with ASRAC ranger involvement | 1 or more | | | | | | |
| | Numbers of Yolŋu and Bi students attending LOC activities supported by ASRAC rangers | Satisfactory number | | | | | | |
| Both-way Education: Research, M&E | Number of Balpara camps and Dillybag activities | At least 1 | | | | | | |
| | Number of active research collaborations | Increasing number | | | | | | |
| Governance and Landowner Support | IPA committee is culturally constituted and representative of all areas within the IPA | Level of satisfaction | | | | | | |
| | Number of IPA Committee meetings held each year | At least 2 | | | | | | |
| | Number of IPA Committee meetings (annually) where a quorum is achieved | 1 or more | | | | | | |
| Women Rangers Career Pathways | Number of Women Rangers employed, as % of ASRAC workforce | At least 50% | | | | | | |
| | Number of Yolŋu and Bi women in leadership/ management positions | Increasing number | | | | | | |
| Satellite Ranger Bases | Number of operational satellite ranger bases | 4 or more | | | | | | |
| Community Engagement | Balparra camp held annually | At least 1 | | | | | | |
| Research, Monitoring and Evaluation | Number of active research partnerships/projects | Satisfactory number | | | | | | |
| | Number of Traditional Owners and Djuŋgayi' regularly participating in M&E meetings | Satisfactory number | | | | | | |
| Business Development | Proportion of government versus non-government income received by ASRAC (financial year, and multi-year trend) | Satisfactory percentage | | | | | | |
| | Number of fee-for service contracts carried out by ASRAC rangers | Satisfactory number | | | | | | |
| Career Pathways | Number of Yolŋu and Bi women in leadership/ management positions | Satisfactory number | | | | | | |

| Strategy | Metric | Aim | Assessment: Very Good | Assessment: Good | Assessment: Fair | Assessment: Poor | Trend: ↑↓↔ | Management Note |
|---|---|---|---|---|---|---|---|---|
| Woodlands: Research, M&E | Woodland vegetation health (trend) via Bushfire photo-point monitoring | Improving | | | | | | |
| | Number of surveys for declining woodland birds and or mammal species undertaken | Satisfactory number | | | | | | |
| Jungles: Research, M&E | Health of monitored jungle patches (overall trend), via Balparra methodologies from M&E Dillybag | Improving | | | | | | |
| | Health of Rock Country | Improving | | | | | | |
| Plants and Animals | Number of species under active research or recovery programs | Satisfactory number | | | | | | |
| | Crocodile Monitoring results (population trend) | Satisfactory number | | | | | | |
| Savanna Fire Management | Total area burnt, early and late dry season fires | 30% or better | | | | | | |
| | Proportion of area burnt in LDS | 5% or less | | | | | | |
| | Proportion of fire project area left unburnt for 5 years or longer | 30% or greater | | | | | | |
| Feral Animal Management | Estimated number of feral buffalo in Gurruwiling | Number decreasing | | | | | | |
| | Number of feral animals removed from IPA | Increasing number | | | | | | |
| Weed Management | 5 year Weed Management Plan reviewed and adopted or updated | Yes | | | | | | |
| | Number of serious weeds actively treated (sites/ species) | Decreasing number | | | | | | |
| | Number of new weed infestations located within the IPA and under active control | Satisfactory number | | | | | | |
| Freshwater: Research, M&E | Water quality | Improving | | | | | | |
| Gurruwiling: Research, M&E | Extent of saltwater intrusion into the swamp detectable via satellite imagery | Stable or abated | | | | | | |
| | Extent of buffalo damage to seaward levee of Arafura Swamp (via buffalo channel monitoring) | Decreasing | | | | | | |
| | 3-5 yearly aerial wet season waterbird survey of Gurruwiling | Numbers increasing | | | | | | |
| Sea Country Management | Number of staff trained in NT Fisheries compliance (cumulative) | Increasing number | | | | | | |
| | Number of fisheries patrols undertaken annually | Meeting contract | | | | | | |
| Visitor Management | Number of staff trained in NLC permit compliance (cumulative) | Increasing number | | | | | | |
| | Number of signs installed and maintained (cumulative) | Increasing number | | | | | | |

# Program Logic

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Vision** | *Healthy Country, healthy tucker, healthy families living on our homelands. The right people are speaking for country, passing knowledge from the old to the young. We have strong ceremony, family, and language for Country.* | | | | | | | | | |
| **Goals** | Healthy Yolŋu and Bi People | Self-governance | Healthy Country | Best-practice IL&SM | Healthy Bushtucker and Native wildlife | Stories, language and Rom | People on Country | Jobs on Country | Economic Development | Realise ASRAC Vision |
| **Long-term Outcomes** | Indigenous Sovereignty | Grow ASRAC membership | Feral Animal Control | Long-term M&E | Recover Threatened Species | Cultural Archive | Viable Homelands Communities | Junior Ranger Pathway | Nature Repair Market | Philanthropic Trust |
| **Intermediate Outcomes** | IPA s19 Land Use Agreement | Governance training/ mentoring | Weed Control | Both-way Science | Address regional L&SM issues | Ethno-ecological Media | Satellite Ranger Bases | Miyalk Ranger Program | Commercial Contracts | Broad-based IL&SM funding |
| **Immediate Outcomes** | More Local Decision-making | Improved Administration and Supervision | Savanna Fire Management | Community Engagement | Cooperative Management | Cultural Mapping | Homelands Rangers | Learning on Country (LoC) | Crocodile Farm | Government Support |
| **Foundations** | ALRA Land Rights | Arafura Swamp Rangers Aboriginal Corp. | Indigenous Skills and Knowledge | Arafura Swamp IPA | Neighbouring IPA and Ranger groups | Traditional Owners | Homelands and Outstations | Indigenous Rangers | Ranger Base, Vehicles and Equipment | Healthy Partnerships |

# Using our M&E Dillybag

Our M&E Dillybag contains a range of tools, methods and activities that draw on Yolŋu and Bi knowledge, skills and perspectives to assess the health of country and a range of biocultural targets and goals set out by the families and clans of the ASRAC management region.

Adaptive management in our IPA will be supported by the Dillybag we developed through the Intercultural Monitoring and Evaluation Project and this is a sister document to our Healthy Country Plan. This will also guide our MERI Plan.


## Strategies & Actions
*Monitoring our work*

We check our ***Roadmaps*** (p. 14-47) to see if we are on track with our workplans and our **Strategies** are being implemented. This helps us to monitor our outputs and effort as we go about our work, week to week.

## Threats
*Monitoring our threats*

As well as checking work activity, we need to check if we are getting the right outcomes and if our Strategies are effective in reducing the **Threats**. We can use our ***Dillybag Tools*** (p. 78-86) and ***Threat Ranking*** table to see if our Threats are getting less, or do we need to change our Strategies and try some different work?

## Values
*Monitoring our values*

We have identified the 12 ***Targets*** that we want our plan to protect and improve. We also identified ***Health Indicators*** that help tell us if our important **Values** are healthy (p. 52-76). To know if they are getting healthier, we have developed ***Dillybag Tools*** to monitor these Health Indicators (p. 78-86). This will help tell us if our Plan is achieving the ***Goals*** we set out by Yuyuŋ Nyanuŋ. We can check along the way to see if Country is getting healthier, and if we on track to achieve the Goals for healthier Values.

# How our Plan was made

The ASRAC original Healthy Country Plan, facilitated by Emma Ignjic of Bush Heritage Australia (BHA), was completed with Yolŋu and Bi clans and families in 2017. It is a foundational document holding the vision and instructions of the Traditional Aboriginal Owners of the land and sea country connected to Gurruwiling (the Arafura Swamp).

In 2019 ASRAC gained entry to the Australian Government's Indigenous Protected Area (IPA) Program and with it, funding to develop the Arafura Swamp IPA. This involved consulting the IPA's many landowning clans, negotiating boundaries with neighbouring IPAs, and redrafting our Healthy Country Plan.

This second edition (2025-2035) of the ASRAC Healthy Country Plan incorporates the management prescription for the Arafura Swamp Indigenous Protected Area (IPA). It integrates updates arising from a 5-year review undertaken by ASRAC and BHA, and facilitated by Emma Ignjic in 2022, as well as IPA material provided by Nic Gambold of Tamarind Planning.

This version of our Healthy Country plan is shared with the Australian Government and includes additional information on our IPA. We have added detailed maps and descriptions of our IPA's values — the plants, animals, culture and country that make it such a special and important place. We have also updated several of our Strategies, to reflect the actions we are taking and our progress to date. This version of our plan is intended as a guide to our IPA managers and to our partners, including the Australian Government's National Indigenous Australians Agency and Department of Climate Change, Energy, the Environment and Water (DCCEEW).

***We are connected to country. We keep culture and language strong wherever our homelands are. By keeping culture and stories then we can pass it on to children. Not only our story, but healthy country too."***

Bobby Bunungurr

*We are working with neighbouring clans and ranger groups to look after our saltwater country and there are plenty of healthy stingray and oysters.*

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Special gratitude is extended to Bush Heritage Australia whose generous support and remarkable staff were instrumental in development of the Healthy Country Plan that unpins our IPA initiative. In particular we'd like to thank Emma Ignjic, Katie Degnian, Kelly Retief, Beau Austin and Simon West.

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# Appendices

**Appendix 1. Vertebrate species lists for the Arafura Swamp IPA**

**Appendix 2. NRS Analysis for the Arafura Swamp IPA**

**Appendix 3. Flora species list for the Arafura Swamp IPA** (available on request).

# Appendix 1. Vertebrate species lists for the Arafura Swamp IPA

Table 3. Reptiles

| Common name | Species | EPBC status | NT status |
|---|---|---|---|
| Northern Snake-necked Turtle | *Chelodina oblonga* | | |
| Northern Snapping Turtle | *Elseya dentata* | | |
| Jardine River Turtle | *Emydura subglobosa* | | |
| Worrell's turtle | *Emydura subglobosa worrelli* | | |
| Pacific Ridley | *Lepidochelys olivacea* | Endangered | Vulnerable |
| Hawksbill Turtle | *Eretmochelys imbricata* | Vulnerable | Vulnerable |
| Green Turtle | *Chelonia mydas* | Vulnerable | |
| Flatback Turtle | *Natator depressus* | Vulnerable | |
| Arafura file snake | *Acrochordus arafurae* | | |
| Two-lined Dragon | *Diporiphora bilineata* | | |
| Yellow-sided Two-line Dragon | *Diporiphora magna* | | |
| Northern Savannah Two-pored Dragon | *Diporiphora sobria* | | |
| Robust Two-line Dragon | *Diporiphora bennettii* | | |
| Gilbert's Dragon | *Lophognathus gilberti* | | |
| Swamplands Lashtail | *Tropicagama temporalis* | | |
| Brown Tree Snake | *Boiga irregularis* | | |
| Common Tree Snake | *Dendrelaphis punctulatus* | | |
| White-bellied Mangrove Snake | *Fordonia leucobalia* | | |
| Slaty-grey Snake | *Stegonotus cucullatus* | | |
| Freshwater Snake | *Tropidonophis mairii* | | |
| Macleay's Water Snake | *Pseudoferania polylepis* | | |
| Richardson's Mangrove Snake | *Myron richardsonii* | | |
| Australian Bockadam | *Cerberus australis* | | |
| Zigzag Velvet Gecko | *Amalosia rhombifer* | | |
| Marbled Velvet Gecko | *Oedura marmorata* | | |
| Pale-striped Ground Gecko | *Lucasium immaculatum* | | |
| Fat-tailed Diplodactylus | *Diplodactylus conspicillatus* | | |
| Western Beaked Gecko | *Rhynchoedura ornata* | | |
| Olive Whipsnake | *Demansia olivacea* | | |
| Black Whipsnake | *Demansia vestigiata* | | |
| Greater Black Whipsnake | *Demansia papuensis* | | |
| Black-ringed Mangrove Snake | *Hydrelaps darwiniensis* | | |
| Elegant Seasnake | *Hydrophis elegans* | | |
| Small-headed Seasnake | *Hydrophis macdowelli* | | |
| King Brown Snake | *Pseudechis australis* | | |
| Intermediate Bandy-bandy | *Vermicella intermedia* | | |
| Northern Mangrove Sea Snake | *Parahydrophis mertoni* | | |
| Orange-naped Snake | *Furina ornata* | | |
| Arnhem Shovel-nosed Snake | *Brachyurophis morrisi* | | |
| Northern Brown Snake | *Pseudonaja nuchalis* | | |
| Top End Death Adder | *Acanthophis rugosus* | | |
| Barkly Tableland Death Adder | *Acanthophis hawkei* | Vulnerable | Vulnerable |
| Carpentaria Snake | *Cryptophis boschmai* | | |
| Northern Dtella | *Gehyra australis* | | |
| Northern Spotted Rock Dtella | *Gehyra nana* | | |
| House Gecko | *Hemidactylus frenatus* | | |
| Bynoe's Gecko | *Heteronotia binoei* | | |
| Rusty-topped Delma | *Delma borea* | | |
| Excitable Delma | *Delma tincta* | | |
| Burton's Snake-lizard | *Lialis burtonis* | | |
| Northern Hooded Scaly-foot | *Pygopus steelescotti* | | |
| Simalia oenpelliensis | *Simalia oenpelliensis* | | Vulnerable |
| Children's Python | *Antaresia childreni* | | |
| Water Python | *Liasis fuscus* | | |
| Olive Python | *Liasis olivaceus* | | |
| Slender Rainbow-skink | *Carlia gracilis* | | |
| Shaded-litter Rainbow-skink | *Carlia munda* | | |
| Desert Rainbow-skink | *Carlia triacantha* | | |

| Common name | Species | EPBC status | NT status |
|---|---|---|---|
| Six-toothed rainbow-skink | *Carlia sexdentata* | | |
| Bauxite Rainbow-skink | *Carlia amax* | | |
| Swansons Snake-eyed Skink | *Cryptoblepharus cygnatus* | | |
| Metallic Snake-eyed Skink | *Cryptoblepharus metallicus* | | |
| Tawny Snake-Eyed Skink | *Cryptoblepharus ruber* | | |
| Port Essington Ctenotus | *Ctenotus essingtonii* | | |
| Bar-shouldered Ctenotus | *Ctenotus inornatus* | | |
| Arnhem land Ctenotus | *Ctenotus quirinus* | | |
| Robust Ctenotus | *Ctenotus robustus* | | |
| Scant-striped Ctenotus | *Ctenotus vertebralis* | | |
| Clay-soil Ctenotus | *Ctenotus helenae* | | |
| Orange-sided Bar-lipped Skink | *Eremiascincus douglasi* | | |
| Northern Bar-lipped Skink | *Eremiascincus isolepis* | | |
| Northern Mulch-skink | *Glaphyromorphus darwiniensis* | | |
| Common Dwarf Skink | *Menetia greyii* | | |
| Northern Dwarf Skink | *Menetia maini* | | |
| Lined Firetail Skink | *Morethia ruficauda* | | |
| Top End Firetail Skink | *Morethia storri* | | |
| West Coast Morethia Skink | *Morethia lineoocellata* | | |
| Ornate Soil-crevice Skink | *Notoscincus ornatus wotjulum* | | |
| Eastern Blue-tongue | *Tiliqua scincoides* | | |
| Northern Blue-tongued Skink | *Tiliqua scincoides intermedia* | | |
| Lesser Robust Fine-lined Slider | *Lerista karlschmidti* | | |
| Northern Soil-crevice Skink | *Proablepharus tenuis* | | |
| Northern Blind Snake | *Anilios diversus* | | |
| Darwin Blind Snake | *Anilios tovelli* | | |
| Groote Dwarf Blind Snake | *Anilios minimus* | | |
| Flowerpot Blind Snake | *Indotyphlops braminus* | | |
| Mertens' Water Monitor | *Varanus mertensi* | | Vulnerable |
| Yellow-spotted Monitor | *Varanus panoptes* | | Vulnerable |
| Gould's Goanna | *Varanus gouldii* | | |
| Mangrove Monitor | *Varanus indicus* | | |
| Spotted Tree Monitor | *Varanus scalaris* | | |
| Black-headed Monitor | *Varanus tristis* | | |
| Black-spotted Spiny-tailed Monitor | *Varanus baritji* | | |
| Black-palmed Monitor | *Varanus glebopalma* | | |
| Saltwater Crocodile | *Crocodylus porosus* | | |
| Freshwater crocodile | *Crocodylus johnstoni* | | |

## Table 4. Mammals

| Common name | Species | EPBC status | NT status |
|---|---|---|---|
| Short-beaked Echidna | *Tachyglossus aculeatus* | | |
| Ghost Bat | *Macroderma gigas* | Vulnerable | |
| Dusky Leafnosed-bat | *Hipposideros ater* | | |
| Common Sheathtail-bat | *Taphozous georgianus* | | |
| Hoary Wattled Bat | *Chalinolobus nigrogriseus* | | |
| Arnhem Long-eared Bat | *Nyctophilus arnhemensis* | | |
| Pallid Long-eared Bat | *Nyctophilus daedalus* | | |
| Pygmy Long-eared Bat | *Nyctophilus walkeri* | | |
| Cape York Pipistrelle | *Pipistrellus adamsi* | | |
| Little Broad-nosed Bat | *Scotorepens greyii* | | |
| Northern Cave Bat | *Vespadelus caurinus* | | |
| Black Flying-fox | *Pteropus alecto* | | |
| Little Red Flying-fox | *Pteropus scapulatus* | | |
| Rock Ringtail Possum | *Petropseudes dahli* | | |
| Northern brushtail possum | *Trichosurus vulpecula arnhemensis* | Vulnerable | |
| Northern Glider | *Petaurus breviceps ariel* | | |
| Northern Brown Bandicoot | *Isoodon macrourus* | | |
| Brush-tailed Tree-rat | *Conilurus penicillatus* | Vulnerable | Endangered |
| Black-footed Tree-rat | *Mesembriomys gouldii gouldii* | Endangered | Vulnerable |
| Pale Field-rat | *Rattus tunneyi* | | Vulnerable |
| False Water-rat | *Xeromys myoides* | Vulnerable | |
| Grassland Melomys | *Melomys burtoni* | | |
| Delicate Mouse | *Pseudomys delicatulus* | | |
| Western Chestnut Mouse | *Pseudomys nanus* | | |
| Black Rat | *Rattus rattus* | | |
| Dusky Rat | *Rattus colletti* | | |

| Common name | Species | EPBC status | NT status |
|---|---|---|---|
| Water-rat | *Hydromys chrysogaster* | | |
| Common Rock-rat | *Zyzomys argurus* | | |
| Nabarlek | *Petrogale concinna* | Endangered | Vulnerable |
| Agile Wallaby | *Notamacropus agilis* | | |
| Common Wallaroo | *Osphranter robustus* | | |
| Antilopine Wallaroo | *Osphranter antilopinus* | | |
| Eastern Short-eared Rock-wallaby | *Petrogale wilkinsi* | | |
| Spectacled Hare-wallaby | *Lagorchestes conspicillatus* | | |
| Northern Leaf-nosed Bat | *Hipposideros stenotis* | | Vulnerable |
| Northern Quoll | *Dasyurus hallucatus* | Endangered | Critically Endangered |
| Fawn Antechinus | *Antechinus bellus* | Vulnerable | Endangered |
| Red-cheeked Dunnart | *Sminthopsis virginiae* | | |
| Bottle-nosed Dolphin | *Tursiops truncatus* | | |
| Dingo | *Canis familiaris* | | |
| Horse | *Equus caballus* | | |
| European Cattle | *Bos taurus* | | |
| Swamp Buffalo | *Bubalus bubalis* | | |
| Pig | *Sus scrofa* | | |
| Cat | *Felis catus* | | |

## Table 5. Frogs

| Common name | Species | EPBC status | NT status |
|---|---|---|---|
| Giant Frog | *Cyclorana australis* | | |
| Long-footed Frog | *Cyclorana longipes* | | |
| Northern Dwarf Tree Frog | *Litoria bicolor* | | |
| Green Tree Frog | *Litoria caerulea* | | |
| Peters' Frog | *Litoria inermis* | | |
| Javelin Frog | *Litoria microbelos* | | |
| Rocket Frog | *Litoria nasuta* | | |
| Roth's Tree Frog | *Litoria rothii* | | |
| Red Tree Frog | *Litoria rubella* | | |
| Tornier's Frog | *Litoria tornieri* | | |
| Pale Frog | *Litoria pallida* | | |
| Wotjulum Frog | *Litoria watjulumensis* | | |
| Copland's Rock Frog | *Litoria coplandi* | | |
| Marbled Frog | *Limnodynastes convexiusculus* | | |
| Carpenter Frog | *Limnodynastes lignarius* | | |
| Northern Spadefoot | *Notaden melanoscaphus* | | |
| Ornate Burrowing Frog | *Platyplectrum ornatum* | | |
| Bilingual Frog | *Crinia bilingua* | | |
| Remote Froglet | *Crinia remota* | | |
| Desert Froglet | *Crinia deserticola* | | |
| Floodplain Toadlet | *Uperoleia inundata* | | |
| Stonemason Toadlet | *Uperoleia lithomoda* | | |
| Cane Toad | *Rhinella marina* | | |

## Table 6. Birds

| Common name | Species | EPBC status | NT status | Migratory species (*) |
|---|---|---|---|---|
| Green-backed Gerygone | *Gerygone chloronota* | | | |
| Mangrove Gerygone | *Gerygone levigaster* | | | |
| Large-billed Gerygone | *Gerygone magnirostris* | | | |
| White-throated Gerygone | *Gerygone olivacea olivacea* | | | |
| Weebill | *Smicrornis brevirostris* | | | |
| Chestnut-rumped Thornbill | *Acanthiza uropygialis* | | | |
| Collared Sparrowhawk | *Accipiter cirrocephalus* | | | |
| Brown Goshawk | *Accipiter fasciatus* | | | |
| Wedge-tailed Eagle | *Aquila audax* | | | |
| White-bellied Sea-eagle | *Haliaeetus leucogaster* | | | |
| Brahminy Kite | *Haliastur indus* | | | |
| Whistling Kite | *Haliastur sphenurus* | | | |
| Black Kite | *Milvus migrans affinis* | | | |
| Eastern Osprey | *Pandion cristatus* | | | |
| Black-breasted Buzzard | *Hamirostra melanosternon* | | | |
| Swamp Harrier | *Circus approximans* | | | |
| Spotted Harrier | *Circus assimilis* | | | |
| Black-shouldered Kite | *Elanus axillaris* | | | |

| Common name | Species | EPBC status | NT status | Migratory species (*) |
|---|---|---|---|---|
| Pacific Baza | *Aviceda subcristata* | | | |
| Little Eagle | *Hieraaetus morphnoides* | | | |
| Australian Reed Warbler | *Acrocephalus australis* | | | |
| Australian Owlet-nightjar | *Aegotheles cristatus* | | | |
| Horsfield's Bushlark | *Mirafra javanica* | | | |
| Azure Kingfisher | *Ceyx azureus* | | | |
| Little Kingfisher | *Ceyx pusilla* | | | |
| Blue-winged Kookaburra | *Dacelo leachii* | | | |
| Collared Kingfisher | *Todiramphus chloris* | | | |
| Forest Kingfisher | *Todiramphus macleayii* | | | |
| Red-backed Kingfisher | *Todiramphus pyrrhopygius* | | | |
| Sacred Kingfisher | *Todiramphus sanctus* | | | |
| Grey Teal | *Anas gracilis* | | | |
| Grey Duck | *Anas superciliosa* | | | |
| Hardhead | *Aythya australis* | | | |
| Whistling Duck | *Dendrocygna arcuata* | | | |
| Grey Whistler | *Dendrocygna eytoni* | | | |
| Green Pygmy-goose | *Nettapus pulchellus* | | | |
| Cotton Pygmy-goose | *Nettapus coromandelianus albipennis* | | | |
| White-headed Shelduck | *Tadorna radjah* | | | |
| Pink-ear | *Malacorhynchus membranaceus* | | | |
| Australasian Darter | *Anhinga novaehollandiae* | | | |
| Darter | *Anhinga melanogaster* | | | |
| Magpie Goose | *Anseranas semipalmata* | | | |
| Fork-tailed swift | *Apus pacificus* | | | * |
| Great Egret | *Ardea alba* | | | |
| Cattle Egret | *Ardea ibis* | | | |
| Intermediate Egret | *Ardea intermedia* | | | |
| Eastern Great Egret | *Ardea modesta* | | | |
| White-necked Heron | *Ardea pacifica* | | | |
| Great-billed Heron | *Ardea sumatrana* | | | |

| Common name | Species | EPBC status | NT status | Migratory species (*) |
|---|---|---|---|---|
| Eastern Striated Heron | *Butorides striatus macrorhyncha* | | | |
| Little Egret | *Egretta garzetta* | | | |
| White-faced Heron | *Egretta novaehollandiae* | | | |
| Eastern Reef Egret | *Egretta sacra* | | | |
| Pied Heron | *Egretta picata* | | | |
| Black Bittern | *Ixobrychus flavicollis australis* | | | |
| Nankeen night heron | *Nycticorax caledonicus* | | | |
| White-breasted Woodswallow | *Artamus leucorynchus* | | | |
| Little Woodswallow | *Artamus minor* | | | |
| Masked Woodswallow | *Artamus personatus* | | | |
| Black-faced Woodswallow | *Artamus cinereus* | | | |
| Pied Butcherbird | *Cracticus nigrogularis* | | | |
| Grey Butcherbird | *Cracticus torquatus* | | | |
| Silver-backed butcherbird | *Cracticus argenteus* | | | |
| Black Butcherbird | *Melloria quoyi* | | | |
| Australian Magpie | *Gymnorhina tibicen* | | | |
| Bush Stone-curlew | *Burhinus grallarius* | | | |
| Beach Stone-curlew | *Esacus magnirostris* | | | |
| Sulphur-crested Cockatoo | *Cacatua galerita* | | | |
| Little Corella | *Cacatua sanguinea* | | | |
| Red-tailed Black Cockatoo | *Calyptorhynchus banksii macrorhynchus* | | | |
| Galah | *Eolophus roseicapilla* | | | |
| Cockatiel | *Nymphicus hollandicus* | | | |
| Black-faced cuckoo-shrike | *Coracina novaehollandiae* | | | |
| White-bellied Cuckoo-shrike | *Coracina papuensis* | | | |
| Cicadabird | *Coracina tenuirostris* | | | |
| Varied Triller | *Lalage leucomela* | | | |
| White-winged Triller | *Lalage sueurii* | | | |
| Large-tailed Nightjar | *Caprimulgus macrurus* | | | |
| Spotted Nightjar | *Eurostopodus argus* | | | |

| Common name | Species | EPBC status | NT status | Migratory species (*) |
|---|---|---|---|---|
| Emu | *Dromaius novaehollandiae novaehollandiae* | | | |
| Pheasant Coucal | *Centropus phasianinus* | | | |
| Lesser Sand Plover | *Charadrius mongolus* | Endangered | Vulnerable | * |
| Greater Sand Plover | *Charadrius leschenaultii* | Vulnerable | Vulnerable | * |
| Red-capped Dotterel | *Charadrius ruficapillus* | | | |
| Oriental Plover | *Charadrius veredus* | | | * |
| Pacific golden plover | *Pluvialis fulva* | | | * |
| Grey plover | *Pluvialis squatarola* | | | * |
| Masked Lapwing | *Vanellus miles miles* | | | |
| Red-kneed Dotterel | *Erythrogonys cinctus* | | | |
| Black-fronted Dotterel | *Elseyornis melanops* | | | |
| Black-necked Stork | *Ephippiorhynchus asiaticus* | | | |
| Golden-headed Cisticola | *Cisticola exilis lineocapilla* | | | |
| Zitting Cisticola | *Cisticola juncidis* | | | |
| Black-tailed Treecreeper | *Climacteris melanura* | | | |
| Partridge Pigeon (eastern Ssp) | *Geophaps smithii smithii* | Vulnerable | Vulnerable | |
| Emerald Dove | *Chalcophaps indica longirostris* | | | |
| Pied Imperial-pigeon | *Ducula bicolor* | | | |
| Bar-shouldered Dove | *Geopelia humeralis inexpectata* | | | |
| Peaceful Dove | *Geopelia striata placida* | | | |
| Diamond Dove | *Geopelia cuneata* | | | |
| Common Bronzewing | *Phaps chalcoptera* | | | |
| Rose-crowned Fruit-dove | *Ptilinopus regina* | | | |
| Dollarbird | *Eurystomus orientalis* | | | |
| Torresian Crow | *Corvus orru* | | | |
| Pallid Cuckoo | *Cacomantis pallidus* | | | |
| Brush Cuckoo | *Cacomantis variolosus* | | | |
| Little Bronze-cuckoo | *Chalcites minutillus minutillus* | | | |
| Horsfield's Bronze-cuckoo | *Chalcites basalis* | | | |

| Common name | Species | EPBC status | NT status | Migratory species (*) |
|---|---|---|---|---|
| Pacific Koel | *Eudynamys orientalis* | | | |
| Channel-billed Cuckoo | *Scythrops novaehollandiae* | | | |
| Spangled Drongo | *Dicrurus bracteatus* | | | |
| Gouldian Finch | *Erythrura gouldiae* | Endangered | Vulnerable | |
| Chestnut-breasted Munia | *Lonchura castaneothorax* | | | |
| Crimson Finch | *Neochmia phaeton* | | | |
| Long-tailed Finch | *Poephila acuticauda* | | | |
| Masked Finch | *Poephila personata* | | | |
| Double-barred Finch | *Stizoptera bichenovii* | | | |
| Grey Falcon | *Falco hypoleucos* | Vulnerable | Vulnerable | |
| Brown Falcon | *Falco berigora* | | | |
| Nankeen Kestrel | *Falco cenchroides* | | | |
| Australian Hobby | *Falco longipennis* | | | |
| Peregrine Falcon | *Falco peregrinus* | | | |
| Black Falcon | *Falco subniger* | | | |
| Australian Pratincole | *Stiltia isabella* | | | |
| Brolga | *Grus rubicunda* | | | |
| Sooty Oystercatcher | *Haematopus fuliginosus* | | | |
| Australian Pied Oystercatcher | *Haematopus longirostris* | | | |
| Fairy Martin | *Petrochelidon ariel* | | | |
| Tree Martin | *Petrochelidon nigricans* | | | |
| Comb-crested Jacana | *Irediparra gallinacea* | | | |
| Whiskered Tern | *Chlidonias hybrida* | | | |
| White-winged Black Tern | *Chlidonias leucopterus* | | | * |
| Silver Gull | *Chroicocephalus novaehollandiae* | | | |
| Gull-billed Tern | *Gelochelidon nilotica* | | | * |
| Caspian Tern | *Hydroprogne caspia* | | | * |
| Little Tern | *Sternula albifrons* | | | * |
| Crested Tern | *Thalasseus bergii* | | | * |
| Red-backed Fairy-wren | *Malurus melanocephalus* | | | |
| Tawny Grassbird | *Megalurus timoriensis* | | | |
| Orange-footed Scrubfowl | *Megapodius reinwardt* | | | |

| Common name | Species | EPBC status | NT status | Migratory species (*) |
|---|---|---|---|---|
| Rufous-banded Honeyeater | *Conopophila albogularis* | | | |
| Rufous-throated Honeyeater | *Conopophila rufogularis* | | | |
| Blue-faced Honeyeater | *Entomyzon cyanotis* | | | |
| Singing Honeyeater | *Gavicalis virescens* | | | |
| Varied Honeyeater | *Gavicalis versicolor* | | | |
| Brown Honeyeater | *Lichmera indistincta indistincta* | | | |
| Yellow-throated Miner | *Manorina flavigula* | | | |
| White-throated Honeyeater | *Melithreptus albogularis* | | | |
| Black-chinned Honeyeater | *Melithreptus gularis* | | | |
| Red-headed Honeyeater | *Myzomela erythrocephala* | | | |
| Dusky Honeyeater | *Myzomela obscura* | | | |
| Silver-crowned Friarbird | *Philemon argenticeps* | | | |
| Helmeted Friarbird | *Philemon buceroides* | | | |
| Little Friarbird | *Philemon citreogularis* | | | |
| Yellow-tinted Honeyeater | *Ptilotula flavescens* | | | |
| Bar-breasted Honeyeater | *Ramsayornis fasciatus* | | | |
| White-gaped Honeyeater | *Stomiopera unicolor* | | | |
| Banded Honeyeater | *Certhionyx pectoralis* | | | |
| Striped Honeyeater | *Plectorhyncha lanceolata* | | | |
| Rainbow Bee-eater | *Merops ornatus* | | | |
| Magpie-lark | *Grallina cyanoleuca* | | | |
| Shining Flycatcher | *Myiagra alecto* | | | |
| Leaden Flycatcher | *Myiagra rubecula* | | | |
| Broad-billed Flycatcher | *Myiagra ruficollis* | | | |
| Restless Flycatcher | *Myiagra inquieta* | | | |
| Australian Pipit | *Anthus novaeseelandiae* | | | |
| Mistletoebird | *Dicaeum hirundinaceum* | | | |
| Varied Sittella | *Daphoenositta chrysoptera* | | | |
| Yellow Oriole | *Oriolus flavocinctus* | | | |
| Olive-backed Oriole | *Oriolus sagittatus* | | | |
| Australasian Figbird | *Sphecotheres vieilloti* | | | |
| Australian Bustard | *Ardeotis australis* | | | |
| Northern Shrike-tit | *Falcunculus frontatus whitei* | Vulnerable | | |
| Grey Shrike-thrush | *Colluricincla harmonica* | | | |
| Little Shrike-thrush | *Colluricincla megarhyncha parvula* | | | |
| Mangrove Golden Whistler | *Pachycephala melanura robusta* | | | |
| Rufous Whistler | *Pachycephala rufiventris* | | | |
| Grey Whistler | *Pachycephala simplex simplex* | | | |
| Striated Pardalote | *Pardalotus striatus* | | | |
| Australian pelican | *Pelecanus conspicillatus* | | | |
| Lemon-bellied Flycatcher | *Microeca flavigaster* | | | |
| Jacky Winter | *Microeca fascinans* | | | |
| Hooded Robin | *Melanodryas cucullata picata* | | | |
| White-browed Robin | *Poecilodryas superciliosa* | | | |
| Little Pied Cormorant | *Microcarbo melanoleucos* | | | |
| Little Black Cormorant | *Phalacrocorax sulcirostris* | | | |
| Pied Cormorant | *Phalacrocorax varius hypoleucos* | | | |
| Great Cormorant | *Phalacrocorax carbo* | | | |
| Swamp Quail | *Coturnix ypsilophora* | | | |
| King Quail | *Excalfactoria chinensis* | | | |
| Rainbow Pitta | *Pitta iris* | | | |
| Tawny Frogmouth | *Podargus strigoides* | | | |
| Australasian Little Grebe | *Tachybaptus novaehollandiae* | | | |
| Grey-crowned Babbler | *Pomatostomus temporalis* | | | |
| Red-winged Parrot | *Aprosmictus erythropterus* | | | |

| Common name | Species | EPBC status | NT status | Migratory species (*) |
|---|---|---|---|---|
| Northern Rosella | *Platycercus venustus* | | | |
| Varied Lorikeet | *Psitteuteles versicolor* | | | |
| Red-collared Lorikeet | *Trichoglossus haematodus rubritorquis* | | | |
| Hooded Parrot | *Psephotus dissimilis* | | | |
| Great Bowerbird | *Ptilonorhynchus nuchalis* | | | |
| White-browed Crake | *Amaurornis cinerea* | | | |
| Chestnut Rail | *Eulabeornis castaneoventris* | | | |
| Buff-banded Rail | *Gallirallus philippensis* | | | |
| Eurasian Coot | *Fulica atra* | | | |
| Purple Swamphen | *Porphyrio porphyrio* | | | |
| Spotless Crake | *Porzana tabuensis* | | | |
| Australasian pied stilt | *Himantopus himantopus leucocephalus* | | | |
| Red-necked Avocet | *Recurvirostra novaehollandiae* | | | |
| Grey Fantail | *Rhipidura albiscapa* | | | |
| Arafura Fantail | *Rhipidura dryas* | | | |
| Willie Wagtail | *Rhipidura leucophrys* | | | |
| Northern Fantail | *Rhipidura rufiventris* | | | |
| Rufous Fantail | *Rhipidura rufifrons* | | | * |
| Curlew Sandpiper | *Calidris ferruginea* | Critically Endangered | Vulnerable | * |
| Great Knot | *Calidris tenuirostris* | Critically Endangered | Vulnerable | * |
| Eastern curlew | *Numenius madagascariensis* | Critically Endangered | Vulnerable | * |
| Red Knot | *Calidris canutus* | Endangered | Vulnerable | * |
| Bar-tailed Godwit | *Limosa lapponica* | | Vulnerable | * |
| Common Sandpiper | *Actitis hypoleucos* | | | * |
| Turnstone | *Arenaria interpres* | | | * |
| Sharp-tailed Sandpiper | *Calidris acuminata* | | | * |
| Red-necked Stint | *Calidris ruficollis* | | | * |
| White-rumped Sandpiper | *Calidris fusicollis* | | | |
| Black-tailed Godwit | *Limosa limosa* | | | * |

| Common name | Species | EPBC status | NT status | Migratory species (*) |
|---|---|---|---|---|
| Little Curlew | *Numenius minutus* | | | * |
| Whimbrel | *Numenius phaeopus* | | | * |
| Grey-tailed Tattler | *Tringa brevipes* | | | * |
| Greenshank | *Tringa nebularia* | | | * |
| Marsh sandpiper | *Tringa stagnatilis* | | | * |
| Terek Sandpiper | *Xenus cinereus* | | | * |
| Swinhoe's Snipe | *Gallinago megala* | | | * |
| Barking Owl | *Ninox connivens* | | | |
| Southern Boobook | *Ninox novaeseelandiae boobook* | | | |
| Rufous Owl | *Ninox rufa* | | | |
| Yellow-billed Spoonbill | *Platalea flavipes* | | | |
| Royal Spoonbill | *Platalea regia* | | | |
| Glossy Ibis | *Plegadis falcinellus* | | | * |
| Australian White Ibis | *Threskiornis moluccus* | | | |
| Straw-necked Ibis | *Threskiornis spinicollis* | | | |
| Yellow White-eye | *Zosterops luteus* | | | |
| Chestnut-backed Button-quail | *Turnix castanotus* | | | |
| Red-backed Button-quail | *Turnix maculosus melanotus* | | | |
| Red-chested Button-quail | *Turnix pyrrhothorax* | | | |
| Eastern Barn Owl | *Tyto javanica* | | | |
| Masked Owl | *Tyto novaehollandiae* | | | |
| Australian Barn Owl | *Tyto alba delicatula* | | | |

# Appendix 2. NRS Analysis for the Arafura Swamp IPA

Table 7A. Contribution of the Arafura Swamp IPA to national bioregional protection

| | AREA (ha) | | | | | | PERCENTAGE (%) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bioregion | Pre-European extent | Current vegetation extent | Existing protection* outside ASRAC IPA | Existing protection overlapping ASRAC IPA | New protection from proposed ASRAC IPA | No protection | Intact vegetation remaining | Existing protection* outside ASRAC IPA | Existing protection overlapping ASRAC IPA | New protection from proposed ASRAC IPA | No protection |
| Arnhem Coast | 3,318,418 | 3,306,721 | 1,683,164 | 111,151 | 328,910 | 1,183,497 | 99.6% | 51% | 3% | 10% | 36% |
| Central Arnhem | 3,442,655 | 3,440,203 | 1,078,188 | 100,298 | 749,643 | 1,512,074 | 99.9% | 31% | 3% | 22% | 44% |
| **Grand Total** | **6,761,073** | **6,746,925** | **2,761,351** | **211,449** | **1,078,553** | **2,695,571** | **99.8%** | **41%** | **3%** | **16%** | **40%** |

Table 7B. Contribution of the Arafura Swamp IPA to national subregional protection

| | | AREA (ha) | | | | | | PERCENTAGE (%) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bioregion | Subregion | Pre-European extent | Current vegetation extent | Existing protection* outside ASRAC IPA | Existing protection overlapping ASRAC IPA | New protection from proposed ASRAC IPA | No protection | Intact vegetation remaining | Existing protection* outside ASRAC IPA | Existing protection overlapping ASRAC IPA | New protection from proposed ASRAC IPA | No protection |
| Arnhem Coast | Groote | 268,293 | 265,536 | 257,873 | - | - | 7,663 | 99% | 96% | 0% | 0% | 3% |
| Arnhem Coast | Maningrida | 1,733,053 | 1,730,141 | 645,853 | 111,151 | 320,358 | 652,780 | 100% | 37% | 6% | 18% | 38% |
| Arnhem Coast | Murgenella | 111,396 | 111,283 | - | - | - | 111,283 | 100% | 0% | 0% | 0% | 100% |
| Arnhem Coast | Nhulunbuy | 1,153,238 | 1,147,323 | 727,000 | - | 8,553 | 411,771 | 99% | 63% | 0% | 1% | 36% |
| Arnhem Coast | Wessels | 52,438 | 52,438 | 52,438 | - | - | - | 100% | 100% | 0% | 0% | 0% |
| Central Arnhem | Parson | 324,462 | 324,187 | 53,224 | 49,946 | 208,473 | 12,545 | 100% | 16% | 15% | 64% | 4% |
| Central Arnhem | Wilton | 3,118,193 | 3,116,016 | 1,024,964 | 50,353 | 541,170 | 1,499,529 | 100% | 33% | 2% | 17% | 48% |
| **Grand Total** | | **6,761,073** | **6,746,925** | **2,761,351** | **211,449** | **1,078,553** | **2,695,571** | **100%** | **41%** | **3%** | **16%** | **40%** |

*Note: Surrounding Djelk, Marthakal, Crocodile Islands, Laynhapuy and SE Arnhem IPAs provide existing protection in these two bioregions.

*‡ Figures show bioregion and subregion protection of remaining vegetation, not including cleared lands.*

## Table 7C. Protection for Major Vegetation Groups (Bioregions) from Arafura Swamp IPA

| | | AREA (ha) | | | | | | PERCENTAGE (%) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bioregion | Major Vegetation Group (MVG) | Pre-European extent | Current vegetation extent | Existing protection* outside ASRAC IPA | Existing protection overlapping ASRAC IPA | New protection from proposed ASRAC IPA | No protection | Intact vegetation remaining | Existing protection* outside ASRAC IPA | Existing protection overlapping ASRAC IPA | New protection from proposed ASRAC IPA | No protection |
| Arnhem Coast | Casuarina Forests and Woodlands | 40,525 | 40,507 | 40,161 | - | - | 346 | 100% | 99% | 0% | 0% | 1% |
| Arnhem Coast | Chenopod Shrublands, Samphire Shrublands and Forblands | 88,027 | 87,993 | 55,067 | 2,513 | 10,404 | 20,009 | 100% | 63% | 3% | 12% | 23% |
| Arnhem Coast | Eucalypt Open Forests | 1,868,893 | 1,861,445 | 924,363 | 63,572 | 151,297 | 722,213 | 100% | 49% | 3% | 8% | 39% |
| Arnhem Coast | Eucalypt Open Woodlands | 56,922 | 56,895 | 38,697 | 0 | 72 | 18,125 | 100% | 68% | 0% | 0% | 32% |
| Arnhem Coast | Eucalypt Woodlands | 473,584 | 470,046 | 263,792 | 18,854 | 29,046 | 158,354 | 99% | 56% | 4% | 6% | 33% |
| Arnhem Coast | Mangroves | 95,252 | 95,249 | 53,313 | 5,292 | 6,309 | 30,335 | 100% | 56% | 6% | 7% | 32% |
| Arnhem Coast | Melaleuca Forests and Woodlands | 266,823 | 266,556 | 90,229 | 13,443 | 105,273 | 57,611 | 100% | 34% | 5% | 39% | 22% |
| Arnhem Coast | Other Grasslands, Herblands, Sedgelands and Rushlands | 79,892 | 79,837 | 65,062 | 179 | 11,402 | 3,194 | 100% | 81% | 0% | 14% | 4% |
| Arnhem Coast | Other Open Woodlands | 25,523 | 25,496 | 18,823 | 478 | 3,700 | 2,496 | 100% | 74% | 2% | 14% | 10% |
| Arnhem Coast | Rainforests and Vine Thickets | 52,710 | 52,644 | 36,706 | 536 | 4,118 | 11,284 | 100% | 70% | 1% | 8% | 21% |
| Arnhem Coast | Tropical Eucalypt Woodlands/ Grasslands | 210,555 | 210,357 | 53,588 | 6,273 | 7,288 | 143,209 | 100% | 25% | 3% | 3% | 68% |
| Central Arnhem | Acacia Forests and Woodlands | 5,642 | 5,642 | 4,959 | - | - | 683 | 100% | 88% | 0% | 0% | 12% |
| Central Arnhem | Eucalypt Open Forests | 1,198,417 | 1,197,691 | 413,823 | 38,140 | 341,118 | 404,611 | 100% | 35% | 3% | 28% | 34% |
| Central Arnhem | Eucalypt Open Woodlands | 28,897 | 28,897 | 5,580 | 151 | 2,412 | 20,755 | 100% | 19% | 1% | 8% | 72% |
| Central Arnhem | Eucalypt Woodlands | 1,268,540 | 1,267,552 | 480,830 | 30,189 | 180,834 | 575,698 | 100% | 38% | 2% | 14% | 45% |
| Central Arnhem | Mangroves | 1,166 | 1,166 | 1,166 | - | - | 0 | 100% | 100% | 0% | 0% | 0% |
| Central Arnhem | Melaleuca Forests and Woodlands | 101,591 | 101,547 | 20,632 | 865 | 32,999 | 47,052 | 100% | 20% | 1% | 32% | 46% |
| Central Arnhem | Other Open Woodlands | 7,098 | 7,098 | 90 | - | 141 | 6,866 | 100% | 1% | 0% | 2% | 97% |
| Central Arnhem | Tropical Eucalypt Woodlands/ Grasslands | 767,183 | 766,500 | 136,006 | 26,394 | 150,805 | 453,294 | 100% | 18% | 3% | 20% | 59% |
| Central Arnhem | Unknown/no data | 16 | 16 | 16 | - | - | - | 100% | 100% | 0% | 0% | 0% |
| **Grand Total** | | **6,761,071** | **6,746,923** | **2,761,350** | **211,449** | **1,078,553** | **2,695,571** | **100%** | **41%** | **3%** | **16%** | **40%** |

*Note: Surrounding Djelk, Marthakal, Crocodile Islands, Laynhapuy and SE Arnhem IPAs provide existing protection in these two bioregions.

*‡ Figures show bioregion and subregion protection of remaining vegetation, not including cleared lands.*

## Table 7D. Protection for Major Vegetation Groups (Biological subregions) from Arafura Swamp IPA

| | | | AREA (ha) | | | | | | PERCENTAGE (%) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bioregion | Subregion | Major Vegetation Group (MVG) | Pre-European extent | Current vegetation extent | Existing protection* outside ASRAC IPA | Existing protection overlapping ASRAC IPA | New protection from proposed ASRAC IPA | No protection | Intact vegetation remaining | Existing protection* outside ASRAC IPA | Existing protection overlapping ASRAC IPA | New protection from proposed ASRAC IPA | No protection |
| Arnhem Coast | Maningrida | Casuarina Forests and Woodlands | 1,376 | 1,375 | 1,325 | - | - | 50 | 100% | 96% | 0% | 0% | 4% |
| Arnhem Coast | Maningrida | Chenopod Shrublands, Samphire Shrublands and Forblands | 51,388 | 51,358 | 32,470 | 2,513 | 10,404 | 5,971 | 100% | 63% | 5% | 20% | 12% |
| Arnhem Coast | Maningrida | Eucalypt Low Open Forests | 19,451 | 19,444 | 3,141 | 11 | - | 16,293 | 100% | 16% | 0% | 0% | 84% |
| Arnhem Coast | Maningrida | Eucalypt Open Forests | 795,714 | 794,178 | 279,149 | 63,572 | 143,713 | 307,745 | 100% | 35% | 8% | 18% | 39% |
| Arnhem Coast | Maningrida | Eucalypt Open Woodlands | 19,612 | 19,612 | 1,717 | 0 | 72 | 17,822 | 100% | 9% | 0% | 0% | 91% |
| Arnhem Coast | Maningrida | Eucalypt Woodlands | 329,204 | 328,239 | 142,596 | 18,854 | 28,315 | 138,475 | 100% | 43% | 6% | 9% | 42% |
| Arnhem Coast | Maningrida | Mangroves | 51,977 | 51,975 | 32,612 | 5,292 | 6,309 | 7,762 | 100% | 63% | 10% | 12% | 15% |
| Arnhem Coast | Maningrida | Melaleuca Forests and Woodlands | 194,007 | 193,880 | 45,530 | 13,443 | 105,121 | 29,786 | 100% | 23% | 7% | 54% | 15% |
| Arnhem Coast | Maningrida | Other Grasslands, Herblands, Sedgelands and Rushlands | 45,540 | 45,514 | 31,779 | 179 | 11,402 | 2,154 | 100% | 70% | 0% | 25% | 5% |
| Arnhem Coast | Maningrida | Other Open Woodlands | 23,316 | 23,291 | 17,263 | 478 | 3,700 | 1,849 | 100% | 74% | 2% | 16% | 8% |
| Arnhem Coast | Maningrida | Rainforests and Vine Thickets | 18,074 | 18,068 | 8,809 | 536 | 4,118 | 4,605 | 100% | 49% | 3% | 23% | 25% |
| Arnhem Coast | Maningrida | Tropical Eucalypt Woodlands/ Grasslands | 183,394 | 183,207 | 49,464 | 6,273 | 7,203 | 120,268 | 100% | 27% | 3% | 4% | 66% |
| Arnhem Coast | Nhulunbuy | Casuarina Forests and Woodlands | 16,108 | 16,091 | 16,091 | - | - | 0 | 100% | 100% | 0% | 0% | 0% |
| Arnhem Coast | Nhulunbuy | Chenopod Shrublands, Samphire Shrublands and Forblands | 32,951 | 32,947 | 22,207 | - | - | 10,740 | 100% | 67% | 0% | 0% | 33% |
| Arnhem Coast | Nhulunbuy | Eucalypt Open Forests | 885,770 | 881,128 | 539,684 | - | 7,584 | 333,859 | 99% | 61% | 0% | 1% | 38% |
| Arnhem Coast | Nhulunbuy | Eucalypt Open Woodlands | 45 | 20 | 18 | - | - | 2 | 44% | 41% | 0% | 0% | 4% |
| Arnhem Coast | Nhulunbuy | Eucalypt Woodlands | 50,193 | 49,113 | 35,159 | - | 732 | 13,222 | 98% | 70% | 0% | 1% | 26% |
| Arnhem Coast | Nhulunbuy | Mangroves | 32,427 | 32,426 | 18,217 | - | - | 14,208 | 100% | 56% | 0% | 0% | 44% |
| Arnhem Coast | Nhulunbuy | Melaleuca Forests and Woodlands | 61,499 | 61,403 | 41,207 | - | 152 | 20,044 | 100% | 67% | 0% | 0% | 33% |
| Arnhem Coast | Nhulunbuy | Other Grasslands, Herblands, Sedgelands and Rushlands | 34,353 | 34,323 | 33,283 | - | - | 1,040 | 100% | 97% | 0% | 0% | 3% |
| Arnhem Coast | Nhulunbuy | Other Open Woodlands | 1,716 | 1,716 | 1,449 | - | - | 266 | 100% | 84% | 0% | 0% | 16% |
| Arnhem Coast | Nhulunbuy | Rainforests and Vine Thickets | 19,218 | 19,199 | 15,559 | - | - | 3,641 | 100% | 81% | 0% | 0% | 19% |
| Arnhem Coast | Nhulunbuy | Tropical Eucalypt Woodlands/ Grasslands | 18,959 | 18,957 | 4,124 | - | 85 | 14,748 | 100% | 22% | 0% | 0% | 78% |

| | | | AREA (ha) | | | | | | PERCENTAGE (%) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bioregion | Subregion | Major Vegetation Group (MVG) | Pre-European extent | Current vegetation extent | Existing protection* outside ASRAC IPA | Existing protection overlapping ASRAC IPA | New protection from proposed ASRAC IPA | No protection | Intact vegetation remaining | Existing protection* outside ASRAC IPA | Existing protection overlapping ASRAC IPA | New protection from proposed ASRAC IPA | No protection |
| Central Arnhem | Parson | Acacia Forests and Woodlands | 39 | 39 | - | - | - | 39 | 100% | 0% | 0% | 0% | 100% |
| Central Arnhem | Parson | Eucalypt Low Open Forests | 46,701 | 46,701 | 4,016 | 4,420 | 38,189 | 76 | 100% | 9% | 9% | 82% | 0% |
| Central Arnhem | Parson | Eucalypt Open Forests | 129,278 | 129,136 | 11,020 | 18,396 | 96,094 | 3,626 | 100% | 9% | 14% | 74% | 3% |
| Central Arnhem | Parson | Eucalypt Open Woodlands | 876 | 876 | 201 | 146 | 476 | 54 | 100% | 23% | 17% | 54% | 6% |
| Central Arnhem | Parson | Eucalypt Woodlands | 91,534 | 91,418 | 31,482 | 10,818 | 44,097 | 5,022 | 100% | 34% | 12% | 48% | 5% |
| Central Arnhem | Parson | Melaleuca Forests and Woodlands | 4,084 | 4,083 | 753 | 305 | 2,866 | 159 | 100% | 18% | 7% | 70% | 4% |
| Central Arnhem | Parson | Rainforests and Vine Thickets | 152 | 152 | 5 | 84 | 50 | 13 | 100% | 3% | 55% | 33% | 9% |
| Central Arnhem | Parson | Tropical Eucalypt Woodlands/ Grasslands | 51,797 | 51,781 | 5,747 | 15,777 | 26,700 | 3,557 | 100% | 11% | 30% | 52% | 7% |
| Central Arnhem | Wilton | Acacia Forests and Woodlands | 5,603 | 5,603 | 4,959 | - | - | 644 | 100% | 88% | 0% | 0% | 12% |
| Central Arnhem | Wilton | Chenopod Shrublands, Samphire Shrublands and Forblands | 5,092 | 5,092 | 5,092 | - | - | 0 | 100% | 100% | 0% | 0% | 0% |
| Central Arnhem | Wilton | Eucalypt Low Open Forests | 7,653 | 7,645 | 3,931 | 55 | 726 | 2,932 | 100% | 51% | 1% | 9% | 38% |
| Central Arnhem | Wilton | Eucalypt Open Forests | 1,069,139 | 1,068,555 | 402,803 | 19,743 | 245,024 | 400,984 | 100% | 38% | 2% | 23% | 38% |
| Central Arnhem | Wilton | Eucalypt Open Woodlands | 28,021 | 28,021 | 5,380 | 4 | 1,936 | 20,701 | 100% | 19% | 0% | 7% | 74% |
| Central Arnhem | Wilton | Eucalypt Woodlands | 1,177,006 | 1,176,134 | 449,349 | 19,371 | 136,737 | 570,676 | 100% | 38% | 2% | 12% | 48% |
| Central Arnhem | Wilton | Mangroves | 1,166 | 1,166 | 1,166 | - | - | 0 | 100% | 100% | 0% | 0% | 0% |
| Central Arnhem | Wilton | Melaleuca Forests and Woodlands | 97,507 | 97,465 | 19,879 | 561 | 30,132 | 46,893 | 100% | 20% | 1% | 31% | 48% |
| Central Arnhem | Wilton | Other Grasslands, Herblands, Sedgelands and Rushlands | 122 | 122 | 122 | - | - | - | 99% | 99% | 0% | 0% | 0% |
| Central Arnhem | Wilton | Other Open Woodlands | 7,098 | 7,098 | 90 | - | 141 | 6,866 | 100% | 1% | 0% | 2% | 97% |
| Central Arnhem | Wilton | Rainforests and Vine Thickets | 4,382 | 4,381 | 1,919 | - | 2,368 | 94 | 100% | 44% | 0% | 54% | 2% |
| Central Arnhem | Wilton | Tropical Eucalypt Woodlands/ Grasslands | 715,387 | 714,718 | 130,259 | 10,618 | 124,105 | 449,737 | 100% | 18% | 1% | 17% | 63% |
| Central Arnhem | Wilton | Unknown/no data | 16 | 16 | 16 | - | - | - | 100% | 100% | 0% | 0% | 0% |

*Note: Surrounding Djelk, Marthakal, Crocodile Islands, Laynhapuy and SE Arnhem IPAs provide existing protection in these two bioregions.

*‡ Figures show bioregion and subregion protection of remaining vegetation, not including cleared lands.*

## Table 7E. Protection for rainforest (Bioregions) from Arafura Swamp IPA

| | | AREA (ha) | | | | | PERCENTAGE (%) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Bioregion | Rainforest type | Current vegetation extent | Existing protection* outside ASRAC IPA | Existing protection overlapping ASRAC IPA | New protection from proposed ASRAC IPA | No protection | Intact vegetation remaining | Existing protection* outside ASRAC IPA | Existing protection overlapping ASRAC IPA | New protection from proposed ASRAC IPA |
| Arnhem Coast | Allosyn | 788 | 5 | - | - | 784 | 1% | 0% | 0% | 99% |
| Arnhem Coast | Dry | 49,759 | 35,331 | 505 | 4,043 | 9,880 | 71% | 1% | 8% | 20% |
| Arnhem Coast | Riparian | 2,427 | 1,503 | 5 | 166 | 753 | 62% | 0% | 7% | 31% |
| Arnhem Coast | Spring | 1,677 | 1,159 | 30 | 69 | 419 | 69% | 2% | 4% | 25% |
| **Arnhem Coast Total** | | **54,651** | **37,997** | **540** | **4,278** | **11,837** | **70%** | **1%** | **8%** | **22%** |
| Central Arnhem | Dry | 4,019 | 1,899 | 64 | 2,054 | 1 | 47% | 2% | 51% | 0% |
| Central Arnhem | Riparian | 639 | 45 | 22 | 436 | 136 | 7% | 3% | 68% | 21% |
| Central Arnhem | Spring | 511 | 23 | 20 | 366 | 102 | 5% | 4% | 72% | 20% |
| **Central Arnhem Total** | | **5,169** | **1,968** | **106** | **2,856** | **239** | **38%** | **2%** | **55%** | **5%** |

*Note: Surrounding Djelk, Marthakal, Crocodile Islands, Laynhapuy and SE Arnhem IPAs provide existing protection in these two bioregions.

*‡ Figures show bioregion and subregion protection of remaining vegetation, not including cleared lands.*

Table 7F. Protection for rainforest (Biological subregions) from Arafura Swamp IPA

| | | | AREA (ha) | | | | | PERCENTAGE (%) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bioregion | Subregion | Rainforest type | Current vegetation extent | Existing protection* outside ASRAC IPA | Existing protection overlapping ASRAC IPA | New protection from proposed ASRAC IPA | No protection | Intact vegetation remaining | Existing protection* outside ASRAC IPA | Existing protection overlapping ASRAC IPA | New protection from proposed ASRAC IPA |
| Arnhem Coast | Maningrida | Allosyn | 788 | 5 | - | - | 784 | 1% | 0% | 0% | 99% |
| Arnhem Coast | Maningrida | Dry | 16,667 | 8,432 | 505 | 4,043 | 3,687 | 51% | 3% | 24% | 22% |
| Arnhem Coast | Maningrida | Riparian | 625 | 114 | 5 | 166 | 340 | 18% | 1% | 27% | 54% |
| Arnhem Coast | Maningrida | Spring | 372 | 136 | 30 | 69 | 137 | 37% | 8% | 18% | 37% |
| **Arnhem Coast** | **Maningrida Total** | | **18,452** | **8,687** | **540** | **4,278** | **4,947** | **47%** | **3%** | **23%** | **27%** |
| Central Arnhem | Parson | Dry | 69 | 5 | 64 | - | - | 7% | 93% | 0% | 0% |
| Central Arnhem | Parson | Riparian | 113 | 12 | 6 | 90 | 6 | 10% | 5% | 79% | 6% |
| Central Arnhem | Parson | Spring | 83 | - | 20 | 50 | 13 | 0% | 24% | 61% | 16% |
| **Central Arnhem** | **Parson Total** | | **265** | **16** | **90** | **140** | **19** | **6%** | **34%** | **53%** | **7%** |
| Central Arnhem | Wilton | Dry | 3,950 | 1,895 | - | 2,054 | 1 | 48% | 0% | 52% | 0% |
| Central Arnhem | Wilton | Riparian | 526 | 34 | 16 | 346 | 130 | 6% | 3% | 66% | 25% |
| Central Arnhem | Wilton | Spring | 428 | 23 | - | 316 | 89 | 5% | 0% | 74% | 21% |
| **Central Arnhem** | **Wilton Total** | | **4,904** | **1,952** | **16** | **2,716** | **220** | **40%** | **0%** | **55%** | **4%** |

*Note: Surrounding Djelk, Marthakal, Crocodile Islands, Laynhapuy and SE Arnhem IPAs provide existing protection in these two bioregions.

*‡ Figures show bioregion and subregion protection of remaining vegetation, not including cleared lands.*

ASRAC

Arafura Swamp Rangers Aboriginal Corporation