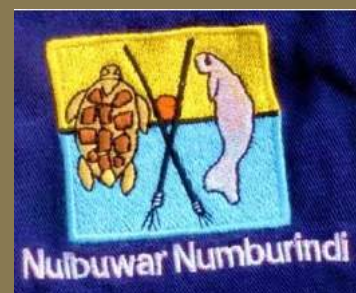


SOUTH EAST ARNHEM LAND INDIGENOUS PROTECTED AREA

Plan of Management 2016 -2021



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PART 1 PEOPLE & PLACE

TRADITIONAL ABORIGINAL OWNERS OF SE ARNHAM LAND

“When we talk about all our countrymen and women in South East Arnhem Land we say ‘Yugul Mangi’. It’s a word for all our people, all our people coming together and speaking as one.” (Cherry Daniels)

Senior Traditional Aboriginal owners and managers for the SE Arnhem Land IPA include: Alan Joshua (snr), Alfred Numumurdirdi, Allan Wilfred, Andrew Robertson, Andy Peters, Annemarie Nundhirribala, Anthony Daniels, Barry Rami, Benjamin Wilfred, Betty Roberts, Bob Jawila, Bobby Mirniyowan, Bobby Nunggumajbarr, Brian Daniels, Bruce Mangurra, Bugardi Nundhirribala, Carmelina Ngalmi, Charlie Ngalmi, Cherold Nundhirribala, Cherry Daniels, Clarry Rogers, David Murrungun, Davis Daniels, Donald Blitner, Doreen Daniels, Edmond Nundhirribala, Edwin Rami, Emery Joshua, Enda Roy, Ernest Daniels, Ernest Numumurdirdi, Ernie



Cherry Daniels: Foundation Yugul Mangi Ranger and Senior Cultural Advisor to the IPA project.

Andrews, Eva Nunggumajbarr, Faye Mungurra, Floyd Rogers, Freyda Roberts, Galiliwa Nunggargalu, Geoff Davey, Gerry Ashley, Gerry Nundhirribala, Gerold Sambo, Godfrey Blitner, Gordon John Forest, Gorkin Markuri, Grace Daniels, Grandie Nundhirribala, Grant Nundhirribala, Henry Huddleston, Henry Jurluba, Henry Nunggumajbarr, Hubert Numumurdirdi, Ivan Ngalmi, Jack Huddleston, Jacob Lanson (dec), Jennifer Ngalmi, Jim Wilfred, Jijila Nundhirribala, John Mangurra, John Murrungun, Johnathon Farrell, Julie Roy, Kathy Huddleston, Kelvin Rogers, Kevin Rogers, Lachlan Harrison, Langayaina Clarence Rami, Mamuna Makuri, Michael Thompson, Mildred Numumurdirdi, Mawungumay Nundhirribala, Moses Silver, Nathurin Markuri, Noel Mangurra, Nelson Hall, Owen Turner, Paul Munurr, Peter Woods, Pollyanne Ponto, Priscilla Dixon, Ralph Thingle, Raymond Mangurra, Reginald Numumurdirdi, Richard Sandy, Robert Roberts, Robin Rogers, Rose Munur, Rose Anne Nundhirribala, Russell Numumurdirdi, Samson Ponto, Samuel Duncan, Sena Roy, Simon Ponto, Trevor Mirnoywen, Valmae Roberts, Wally Wilfred, Walter Rogers, William Hall, William Joshua, Winston Thompson.

Acknowledgements

Special thanks go to the following senior community members for their commitment to land and sea management in South East Arnhem Land and their vital role in developing this IPA; Cherry Daniels, Bobby Nunggumajbarr, Henry Nunggumajbarr, Walter Rogers, Kevin Rogers, Langayaina Rami and Virginia Nundhirribala.

OUR VISION

*“Our Country staying as it has always been; healthy,
rich and strong.”*

*“Our young people growing up to take responsibility,
caring for their Country, as it has always been.”*



Copyright: Gwyneth Blitner, Untitled. Ngukurr Arts 2012

OUR PLAN

This plan captures our ideas, hopes and intentions for good management of our traditional lands. It is a plan for an Indigenous Protected Area. It sets out how we will balance development in our region with improved care of our country, wildlife and cultural heritage.

Our plan is for better management of fire, feral animals, weeds and trespass on our lands. It is a plan to keep our culture strong and gain greater control over our land and sea country. This will ensure a brighter future for all our country and our grandchildren who will inherit it.



Yugul Mangi and Numbulwar Numburindi Rangers collaborated in planning the SE Arnhem Land IPA.



Senior Traditional Owner Virginia Nundhirribala with Numburindi Rangers Samson Ngalmi and Reehan Nundhirribala

OUR COUNTRY



Burrungu ("Ruined City"). Image Courtesy: Antony Lynch 2012

From Blue Mud Bay to the Mouth of the Roper River, our country spans the far western Gulf of Carpentaria. Tidal flats and vast coastal plains including the Roper Valley are backed by rugged sandstone uplands. Rising in these weathered plateaux the Walker, Rose, Phelps, Wilton and Roper Rivers descend through gorges, billabongs, wetlands and estuaries to join the shallow tidal waters of the Gulf. Our ancestral coastal estates extend well out into the Gulf and include the near-shore Yamarlburra (Edwards), Wilipili, Minintirri, Amamarrity, Nungkanangka and Miyaranga Islands, as well as Yilikukuniyanga and Yamarlburra (Low Rock) Islets, and Mayanyjiyanyji reef.

Land Ownership

Our country is divided into estates, each defined by the sacred sites and songlines that lie within or pass through them. Traditional land ownership is a function of one's relationship to these spiritual features and these relationships are determined through descent. For each site or associated area of land there are three types of 'associates'. There are *Mingirringgi* whose cultural inheritance comes through their father's father, *Junggayi* whose inheritance is through their mother's father, and *Darlnyin*

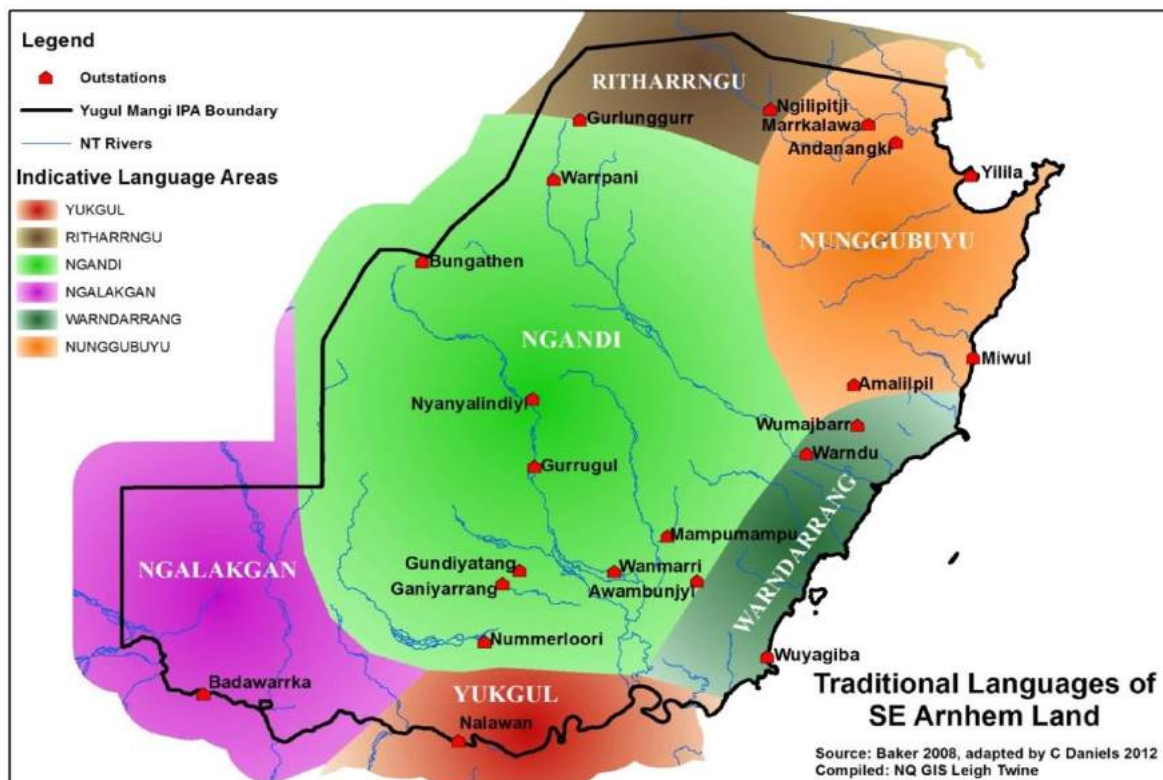


Figure 1: Traditional language areas of S E Arnhem Land

who are connected to country through their maternal grandmother. Each of these groupings has a defined set of responsibilities. A simplified interpretation is that *Mingirringgi* are “boss for”, or owners of a site or an area, while their *Junggayi* are the “policemen” or caretakers responsible for the practical management of the site. *Darhynin* are “helpers”, reminding *Junggayi* of their responsibilities and supporting them in their ritual duties. These classifications are important to land and sea management. Each classification compliments the other. This defines the makeup of our ranger groups and the governance of our IPA. *Mingirringgi*, *Junggayi* and *Darhynin* are all represented in our ranger groups.

Languages

Traditional languages of the IPA are *Ritharrngu*, *Rembarnga* and *Nunggubuyu* in the north, *Ngalakgan* and *Ngandi* in the central areas, *Yukgul* in the south and *Wandarrang* along the coast from around Numbulwar south to the Roper. Today many *Marra* speakers from coastal areas south of the Roper River live in Ngukurr. Sadly many of these languages are in decline. *Yukgul* for instance has never been recorded and is considered to have disappeared in the early 1900's. First-language speakers of *Wandarrang* no longer exist, and *Ngalakgan* and *Ngandi* only survive through less than a handful of speakers. Ngukurr Kriol, a distinctive form of *pidgin* combining traditional languages with English, is now the common language throughout our region.

OUR NEIGHBOURS

Laynhapuy IPA,

Laynhapuy IPA lies to the north of, and in some area's overlaps, the SE Arnhem IPA. A shared management area is being developed along this boundary to accommodate the continuum of traditional land ownership across the two IPA. Laynhapuy IPA is managed by Yirralka Rangers based in Yirrkalá. An agreement between the two IPA is under development to enhance cooperation between the ranger groups in the management of common issues such as feral animals, fire and trespass. The substantive content of this agreement is provided at

Appendix 7.

Mimal Rangers

The Mimal Rangers (Bulman) neighbour our IPA to the west. Their operational area reflects the vast extent of their fire management activities the boundary of which is formalised under a Section 19 Land Use Agreement underpinning the Arnhem Land Fire Abatement Project. Traditionally known as *Wamana*, this area of shared management is largely inaccessible from the east. Accordingly, Yugul Mangi and Numbulwar Numburindi Rangers are happy to support Mimal Rangers' work in in this remote part of the IPA. An agreement between Mimal Land Management Aboriginal Corporation and the IPA is pending. It aims to enhance cooperation between the ranger groups and clearly establish Mimal Ranger's role with respect to fire management the west of the IPA.





Arafura Rangers

To our north-west, beyond Parson's Range, lies the operational area of the Arafura Rangers. This is a composite group including rangers from several communities in the Arafura Catchment. Their administrative centre is Ramingining. No overlap exists between this group's operational area and that of the SE Arnhem Land IPA.

Anindilyakwa IPA

The Anindilyakwa Indigenous Protected Area (IPA) sits to the north east of the South East Arnhem Land IPA taking in the Groote Eylandt Archipelago in the northern Gulf of Carpentaria. It is operated by the Anindilyakwa Rangers who help protect its nearly 3,000 square kilometres of land and sea country. This area also forms the administrative region of Anindilyakwa Land Council. Many Sea Country issues including sea-bed mining, ghostnets and unwanted fishing are shared between the two groups and future collaboration is important to strengthen indigenous interests across these areas.

Marra and Yutpundji-Djindiwirritj Land Trusts

Several separate Aboriginal Land Trusts adjoin the South East Arnhem Land IPA. Marra Land Trust extends from the mouth of the Roper River south along Limmen Bight to the Limmen River mouth. Yutpundji-Djindiwirritj Land Trust abuts McMinn Station and surrounds the popular Roper Bar store and camping area. A small parcel of NT Enhanced Freehold land owned by Yupanalla Aboriginal Corporation lies adjacent to the Urapunga ALT and includes the area of Rittarungu township.

Although there is considerable overlap between the Traditional Owners of the IPA and those of adjacent land trusts, only areas within the Arnhem Land and Urapunga Aboriginal Land Trusts were considered in this IPA consultation project. Size and socio-cultural complexity of the SE portion of Arnhem Land precluded consideration of additional areas of Aboriginal Land.

Limmen National Park

Limmen National Park is a large reserve adjoining the IPA to the south. Following a lengthy consideration of overlapping mining interests this park was finally declared in March 2012. Given the area's considerable cultural values and the unavoidable diminution of Native Title Rights stemming from the necessary tenure change, the NT Government has indicated it will seek to establish joint management of this reserve. This should provide Native Title holders with an executive role in park management and potentially, significant opportunities for direct park employment, or development of associated commercial enterprises. An adjunct declaration, the Limmen Marine Protected Area takes in a large area of sea country extending from the intertidal zone of the Marra Land Trust to Maria Island. Interestingly from a recreational fishing perspective this new marine park may be effectively isolated, by landward inter-tidal zone of the Marra Land Trust and the pending ALRA grant of title over the inter-tidal reef system adjoining Maria Island.

Wongalara Sanctuary, AWC

On the western edge of the IPA sits the former Wongalara Pastoral Lease. Wongalara is currently owned and operated by the Australian Wildlife Conservancy (AWC) as an independent



**australian
wildlife
conservancy**

sanctuary. AWC are a non-profit conservation organisation with an increasingly large property portfolio in Northern Australia. Though AWC's charter is conservation specific, significant overlap exists between their objectives at Wongalara and those of the SEAL IPA. This presents opportunities for working in unison with AWC on activities such as fire management, weeds, feral animal control and wildlife surveys (i.e. biodiversity of western Gulf sandstone massifs).

Kurrululinya (Maria) Island

Situated approximately 20km off the coast, Kurrululinya, also known as Maria Island, is the largest island in Limmen Bight. Kurrululinya is an area of great importance to the Marra people and affiliated groups but following an unsuccessful land claim¹ the bulk of it remained as Crown Lease in Perpetuity (NT Portion 2373). The island was held by the Northern Territory Land Corporation under this tenure until only recently, when it was declared an NT Reserve as part of the vast Limmen National Park. However, the surrounding reef forming the extensive inter-tidal zone (approximately 560 hectares) was recommended for grant under the ALRA Act in a repeat claim. It now forms part of the Marra ALT. There are indications that the NT Government would consider including Maria Island in an IPA should its Marra traditional owners seek to establish a protected area over the adjacent Marra Aboriginal Land Trust. Kurrululinya was not considered in the South East Arnhem Land IPA planning process.



Kurrululinya (Maria) Island and surrounding reef. Image: Google Earth

Mining Interests

As this plan was being developed several new mining developments were proceeding or signalled in the Roper Valley to the south of the IPA. The most significant are Western Desert Resources' (WDR) *Roper Bar Iron Ore Project* and Sherwin Iron Limited's *Roper River Iron Ore Project*. Both of these projects have long predicted lifespans, large infrastructure requirements and vast tenements; the combined projects covering upwards of 4,000 square kilometres.

¹ Maria Island (land above the inter-tidal zone) originally formed part of the Limmen Bight Land Claim.

South East Arnhem Land Indigenous Protected Area (SEAL IPA) is centred on the point 135.22100 East of Greenwich and -14.16010 South of the equator and covers approximately 19,170 square kilometres of Aboriginal freehold land within the Arnhem Land and Urupunga Aboriginal Land Trusts.

Positioned on the western edge of the Gulf of Carpentaria in the Northern Territory the SEAL IPA includes portions of Central Arnhem, Arnhem Coast, Gulf Coast and Gulf Fall and Uplands bioregions. It extends from the approximate northern watershed of the Walker River to the Roper River in the south. It includes intertidal marine areas and coastal islands from the *Ranjugurr* area of Blue Mud Bay to the mouth of the Roper River. The western boundary of the IPA follows the watershed of the Rose and Phelp Rivers and the cadastral boundary of Wongalara Conservation Reserve. The IPA encompasses all or part of the traditional estates of the *Ngalakgan*, *Ngandi*, *Yugul* and *Wandarrang*, *Nunggubuyu* and *Ritharrngu* language groups.

Figure 2: Location of the SE Arnhem Land IPA

Dedication of the South East Arnhem Land IPA

SEAL IPA is dedicated by its Traditional Aboriginal Owners as a **Category VI Managed Resource Protected Area**, consistent with the International Union of the Conservation of Nature (IUCN) definition of; an “***area containing predominantly unmodified natural systems, managed to ensure long-term protection and maintenance of biological diversity, while providing at the same time a sustainable flow of natural products and services to meet community needs***”.

Management of the SEAL IPA will also be consistent with the other objectives relevant to Category VI protected areas, specifically:

- ✓ To promote sustainable use of natural resources, considering ecological, economic and social dimensions.
- ✓ To promote social and economic benefits to local communities where relevant.
- ✓ To facilitate intergenerational security for local communities’ livelihoods – therefore ensuring that such livelihoods are sustainable.
- ✓ To integrate other cultural approaches, belief systems and world-views within a range of social and economic approaches to nature conservation.
- ✓ To contribute to developing and/or maintaining a more balanced relationship between humans and the rest of nature.
- ✓ To contribute to sustainable development at national, regional and local level (in the last case mainly to local communities and/or indigenous peoples depending on the protected natural resources).
- ✓ To facilitate scientific research and environmental monitoring, mainly related to the conservation and sustainable use of natural resources.
- ✓ To collaborate in the delivery of benefits to people, mostly local communities, living in or near to the designated protected area.
- ✓ To facilitate recreation and appropriate small-scale tourism.

SEAL IPA also qualifies for recognition as part of the National Reserve System (NRS), as it meets the following accession criteria.

1. The land must contribute to the comprehensiveness, adequacy and representativeness (CAR), of the National Reserve System and strategically enhance the protected area network.
 - i. *Comprehensive: the inclusion in the NRS of examples of regional-scale ecosystems in each bioregion*
 - ii. *Adequate: the inclusion of sufficient levels of each ecosystem within the protected area network to provide ecological viability and to maintain the integrity of populations, species and communities*
 - iii. *Representative: the inclusion of areas at a finer scale, to encompass the variability of habitat within ecosystems*
2. The land must be managed to protect and maintain biological diversity according to one of six international classes developed by the IUCN. The six-level system classifies protected areas according to their management objectives, which range from strict nature conservation to multi-use reserves (objectives must not be inconsistent with the primary purpose which is biodiversity conservation)

OUR COUNTRY'S VALUES



Copyright: Jill Daniels, Untitled: Ngukurr Arts 2012

Little known to the outside world, South East Arnhem Land is a vast and ecologically intact northern landscape. A biome fashioned and conserved by its traditional Aboriginal owners over tens of thousands of years, the western Gulf of Carpentaria is an exceptional area, with an abundance and diversity of wildlife far exceeding that of comparable regions in southern Australia. Tropical savanna woodlands, unspoiled rivers, a long and pristine coastline typify the western Gulf of Carpentaria, all held within an arc of remote sandstone uplands at the edge of the Arnhem Plateau.

A rich patina of indigenous culture persists across this landscape; the area largely secured from the outside world through its early reinstatement to Aboriginal owners under Commonwealth Land Rights legislation. This corner of the greater Arnhem Land Aboriginal Land Trust is home to upwards of 2000 indigenous Australian's whose traditional languages, knowledge, skills and culture it sustains. The area dedicated as the South East Arnhem Land Indigenous Protected Area borders the domains of Yanyuwa and Marra people of the southern Gulf, Bininj of western Arnhem Land and Yolngu countrymen of the tropical Arnhem coast. Evidence of the IPA's astounding cultural wealth can be seen in the diversity of traditional languages overlapping across its twenty thousand square kilometres; its ecological riches manifest in the convergence of four distinctive bioregions within this same precinct.

ENVIRONMENTAL VALUES

WILDLIFE

Though little surveyed, at least three hundred and forty (340) different species of native (vertebrate) animals are known from South Eastern Arnhem Land. These include 15 frogs, 76 reptiles, 219 birds, 31 mammals (three marine mammals). Six non-native (introduced) animals occur here. This is a high tally in comparison to other similar areas in northern Australia;



Kakadu National Park (517 native vertebrate species), Nitmiluk National Park (367), Djelk IPA (310), Laynhapuy IPA Stage 1 (277), and Limmen National Park (109).

This biodiversity reflects the large area covered by the IPA and the wide variety of habitats found within it. These range from sandstone uplands through to rolling plains, freshwater floodplains, and salt marshes to coastal islands. Our IPA sits across four bioregions and shares a unique wildlife compliment from each of these.

At least eighteen (18) threatened animal species are recorded from the IPA. Though many of these records are now quite old, we know that some do still occur here and that SE Arnhem Land is an important area for conservation in general. Remote from some threatening processes, the IPA still enjoys a high level of customary land use and care, the coastline is mostly inaccessible, uninhabited and it includes several near-shore islands of high conservation value. Vast inter-tidal mudflats between Wuyagiba and the lower Roper River are among the most important areas for migratory shorebirds in the NT, while the broad adjacent freshwater floodplains support large numbers of water-birds such as brolga, jabiru and magpie geese.

Near-shore Islands of the IPA are of particular importance for conservation management. Their isolation from the mainland not only provides sanctuary for nesting turtles and seabirds, it also often protects island wildlife from threats that are widespread on the mainland. Miyaranga (Sandy Island) is considered a marine turtle rookery of national significance. Species like Brush-tailed Rabbit-rat and Kultarr are remembered by our old people and may still exist on our islands. Certainly we know that the northern brown bandicoot remains common on some. Threats such as cane toads, black rats, feral cats, dogs, tramp ants, some weeds and diseases are often absent from islands. We would like to survey these islands to find out what wildlife they have and how best to protect it.

There are many things we don't know about our IPA. Although there are no formal records, we believe threatened or rare species such as the crested shrike-tit, northern hopping mouse, hooded parrot and red goshawk still occur here. We think that some of the specialist sandstone wildlife such as the Arnhem rock-rat, Oenpelli python, jewelled velvet gecko, Kakadu dunnart and Kakadu pebble-mound mouse might be found in the rugged sandstone country in the west and north west of our IPA. We see these gaps in our knowledge as opportunities for us to get out on country and learn more.

VEGETATION

The vegetation of SE Arnhem Land is diverse, with over one thousand species of plants and 46 vegetation types (as recognised under the National Vegetation Information System) recorded from the area. For the purposes of this plan these have been redefined into twelve greater habitat groups, based on the vegetation, landscape form and soil types. Distribution of these habitats across the IPA is depicted in **Appendix 6**.

The southern half of the IPA has the most complex vegetation pattern, a product of the area's diverse geology. Extensive saline flats flank the lower Roper and Phelps Rivers eventually grading to paperbark swamps and forests above the tidal



influence. Further inland, self-mulching alluvial soils of the broad Roper valley support perennial grasslands interspersed with open woodlands of coolibah, gutta-percha and bauhinia.

These lowlands are bordered by undulating rises supporting silver-leaf box, or where soils are more productive, Darwin box woodlands. Where the rises become hills the vegetation shifts to a mosaic of woodlands growing on a wide variety soil types. Here communities dominated by snappy gum, variable-barked bloodwood or scarlet gum are the most common. Interspersed amongst these are distinctive and extensive lancewood thickets.



In the northern half of the IPA deeper sandy soils predominate and the vegetation shifts to tall eucalypt woodlands and open forests, typically a mix of Darwin stringybark and Darwin woollybutt. Much of the northern IPA is above the 1000mm rainfall isohyet, and riparian and rainforest communities are accordingly more common, better developed and more diverse. In the north and north west, sandstone rises and outcrops support a variety of specialised communities including heaths and mixed low acacia/grevillea shrublands. Along the coast monsoon vine thickets form a near continuous barrier atop the dune systems while extensive and diverse mangrove communities crowd mud flats and estuaries.

Only one threatened plant is recorded from the IPA, the Arenga Palm, listed as Vulnerable at a National level and Data Deficient at NT level. SE Arnhem Land supports many plant species considered endemic to the NT and several that are endemic to Arnhem Land. No plant communities or ecosystems within the IPA are formally defined as threatened or at risk. However several Regional Ecosystems considered threatened in the Queensland have equivalents here. These include river red-gum riparian woodlands and swamp bloodwood woodland in sandstone springs.

Plant Use

Available records detail traditional use of over two hundred species of native plants, though this is likely a large underestimate. Our old peoples' knowledge and necessity would have extended to virtually all of the 1000 or more species occurring in the region. Native plants were and continue to be used for the manufacture of utensils such as fishing nets, baskets, mats and mosquito nets, spears, canoes and rope. Dyes and pigments are extracted from a wide variety of plants as are medicines and remedies for a vast array of ailments.

With harvesting being more predictable than hunting, plants formed the staple of traditional diets. While elaborate preparations were needed to render cheeky yams (*Dioscorea bulbifera*) and poisonous cycad seeds (*Cycas arnhemica*) into edible bulk food, many of the plants in our region could be eaten raw or with minimal cooking. Knowing when and where to harvest particular plants was vital. 'Calendar plants' were used as a guide; a flowering gum in the sandstone might indicate the time to harvest water chestnuts (*Eleocharis spp.*) from the drying floodplains.



Numbulwar weavers mix traditional fibres with contemporary materials, in this case fibre from ghostnets, to produce fine-weave baskets.

Figure 3: Varied habitats of the SE Arnhem Land IPA

Clockwise from top left: Mangrove forest, tall open stringybark forest, lancewood thicket, paperbark woodland, grassland, riparian forest, monsoon vine thicket.



CULTURAL VALUES

Arnhem Land sits as a cultural domain, distinct from the corpus of modern, Europeanised Australia. It is an unmistakably Aboriginal landscape, imbued with the art, antiquity and spirituality of its indigenous owners. The south eastern quarter is the traditional home of at least six distinct language groups. This area remains one of the most remote and culturally intact parts of Australia.



Dancers at the Barunga Festival. Image courtesy: Antony Lynch

SE Arnhem Land contains countless sacred cultural sites, is traversed by innumerable song-lines and overlaid by the ancestral estates of clans that have lived within and shaped the country for millennia. Today a network of outstations mantles the IPA, proclaiming familial tenure across more than two dozen traditional homelands. Ancestral estates here may also stretch well beyond the coastline to include the productive waters of the shallow western Gulf. In particular, *Nunggubuyu* and *Wandarrang* speaking clans are saltwater people, with strong traditional connections to their sea country and in the case of *Nunggubuyu*, close cultural affiliations with countrymen on *Anindilyakwa* (Groote Eylandt) and *Amakahywakba* (Bickerton Island).

These communities, their culture, and their relationships to country are of enormous value to modern Australia. Intrinsically, because they are unique, add diversity, and in many ways define our nation's identity and unity. Practically, because they sustain wisdom and ways that modern western society has either failed to attain, or lost. Tangible examples include the profound and intricate ecological knowledge that has supported sustainable use of northern ecosystems over eons. Or, the hyper-social organisation of traditional law that correlates and inter-obligates every individual within the community, and beyond.

Though concern for the demise of traditional knowledge and skills is valid, indigenous culture in SE Arnhem Land is robust. Important ceremonies such as *Gunapipi*, *Jabuduruwa* and *Aragundagunda* remain potent features of life here. Sacred ceremonies see roles and responsibilities tested and reaffirmed through complex patterns of organisation and reciprocation. These long and rolling events command attendance; ensure continuity of traditional law and reinforce many cultural and spiritual aspects of society. All young men are initiated and ceremonies for this purpose are regular and important occasions for the community to unite in the passage of their boys to adulthood.

Cultural cohesion is also apparent in decision-making, underpinned by the communal nature of land ownership. For many years mining has been resolutely excluded from the area by traditional owners. The fight for rights to sea country also reveals a constant and courageous sense of sovereignty within these communities. SE Arnhem Land IPA takes in the southern arc of Blue Mud Bay, an area now synonymous with a landmark court case delivering ownership of more than 85 per cent of the NT intertidal coastline to Traditional Aboriginal Owners. This long legal battle was also significant for the exposure and acknowledgement it gave to indigenous viewpoints. As a result, the Blue Mud Bay decision has led to more respectful relationships between government, fishing interests and traditional owners. It is also likely to result in more considered and sustainable use of the NT's marine resources; a key issue for a people with an intrinsic long-term outlook.



Senior Yugul Mangi Ranger Winston Thompson at Burrunjul cultural site. Image courtesy: Wayne Turner



Senior Ranger Julie Roy and young women rangers work with Elder Cherry Daniels recording her knowledge of the IPA's history, cultural geography and ethno-ecology.

Image courtesy: Emilie Ens

LAND AND SEA MANAGEMENT

Two Indigenous Ranger groups manage the South East Arnhem Land IPA, one based in Ngukurr the other Numbulwar. All the Rangers are employees of the Northern Land Council, via funding from the Australian Government.

YUGUL MANGI LAND AND SEA RANGERS

Yugul Mangi Rangers came together in the late 1990's working on feral pig, weed and dust suppression projects. Today the rangers undertake a broad range of land and sea management activities and in doing so work with many government and scientific agencies.

Yugul Mangi Rangers have a long history of environmental weed control. With support from the Northern Territory Weeds Management Branch they have developed surveillance and response plans for several Weeds of National Significance (WONS) including mimosa, parkinsonia, rubber vine and pond apple. They also have extensive experience in prescribed burning having participated since 2009 in regional greenhouse gas abatement projects. In partnership with the Aboriginal Areas Protection Authority (AAPA) Yugul Mangi Rangers also assist in cultural heritage protection. They recently took part in the survey, documentation and subsequent management of sacred sites in the Roper and Wilton catchments and on near-coastal islands.



As Land and Sea rangers, Yugul Mangi are active on the waters of the Roper River and adjacent IPA coast, north to Wuyagiba. In this capacity they contribute to research into recreational and commercial fisheries, including a long-term telemetric study of fish population behaviour in the Roper River. In addition they provide oversight of recreational and commercial fishing in their area under contract to Department of Primary Industry and Fisheries NT.

Yugul Mangi Rangers have an enduring and productive partnership with researchers from the Macquarie University. This multi-faceted ethno-ecology program has over the past five years supported them to undertake flora

and fauna surveys, monitor wetland health, complete fire-plot monitoring, produce a wealth of ethno-ecology material and regularly participate in scientific conferences and symposia.



Rangers Simon Ponto and Kelvin Rogers survey fire-sensitive wildlife, the rare and Leichardt's Grasshopper. Image courtesy: Emilie Ens

NUMBULWAR NUMBURINDI AMALAHGAYAG INYUNG RANGERS



Based in Numbulwar, at the mouth of the Rose River, Numburindi Rangers identify as a 'saltwater' group. Numburindi Rangers commenced operations over a decade ago and have since maintained a strong interest in marine activities. The rangers' work typically involves coastal surveillance for foreign fishing vessels, irregular arrivals and illegal fishing operations. They also monitor, remove and incinerate ghost nets and other marine debris littering the western Gulf coastline between Blue Mud Bay and Wuyagiba homelands.

Numbulwar Numburindi Rangers' involvement in land-based activities is expanding. In recent years they have participated in strategic control of weeds and feral animals. In partnership with Yugul Mangi Rangers they participate in the Western Arnhem Land Fire Abatement Stage 2 Project (WALFA2). WALFA2 is a commercial carbon farming initiative aimed at mitigating wildfire and thereby reducing greenhouse gas emissions from savanna fires in Arnhem Land.

Both Numbulwar Numburindi and Yugul Mangi Rangers contribute to the Australian Government Department of Agriculture and Water Resources' (DoAWR) North Australian biosecurity program (formerly administered by AQIS). They are trained in feral pig autopsy for early detection of exotic diseases and parasites and surveillance of feral stock for signs of commercially significant diseases such as 'foot and mouth'. They currently provide contract services including surveillance and reporting on exotic vertebrate pests, marine debris and plant health.

Since their inception Numbulwar Numburindi Rangers have been disadvantaged by their remoteness and limited facilities. The NLC continues to seek funding for a dedicated operational base and accommodation for supporting staff for this group. Without these basic facilities they have struggled to recruit and retain coordinators which has led to lengthy suspensions of the ranger group's operations.

Past Coordinator Keith Cavalli and Numburindi Ranger Adam Mangurra on patrol in the Numbulwar area, 2013.

Image: Numbulwar Numburindi Rangers





Top: Yugul Mangi Ranger Edna Roy with Senior Cultural Advisor Cherry Daniels (foreground).

Right: Yugul Mangi Rangers Kelvin Rogers & Winston Thompson.

Below: Numbulwar Numburindi Ranger Esmond Numumurdirdi



Images Courtesy: Yugul Mangi and Numbulwar Numburindi Rangers

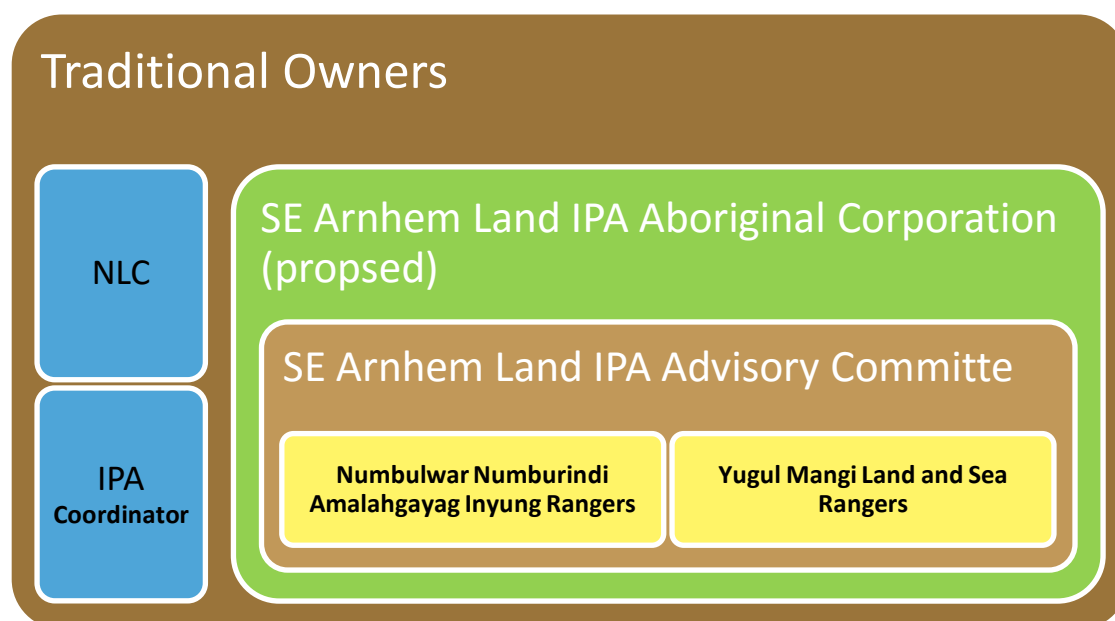
GOVERNANCE

To enhance local decision-making and ensure greater control of our land we have established the South East Arnhem Land IPA Advisory Committee. Our Advisory Committee consists of representatives (male and female) of the traditional landowning clans. The committee meets at least twice yearly and receives regular feedback from both of our Ranger groups. Committee members are predominately *Minggirringi* or *Junggayi* for the Land Trust. Senior rangers and a representative from the IPA funding body (DPM&C) are also invited to sit on this committee.

Additional to our Advisory Committee, an annual general IPA meeting will be held to review, evaluate and contribute to the improvement of IPA operations. This general meeting will be open to the IPA board members, representatives from the Australian and NT Governments, Northern Land Council, partner agencies, and our neighbours. We hope that sharing ideas through this forum will ensure our IPA management methods remain best-practice and in step with regional initiatives on common issues such as wildfire, weeds and feral pests continues.

Looking to the future, we are developing a Indigenous entity to locally host our IPA and ranger programs. The proposed SEAL IPA Aboriginal Corporation would allow us to accept and administer government grants and income generated through commercial initiatives such as WALFA2 Carbon project.

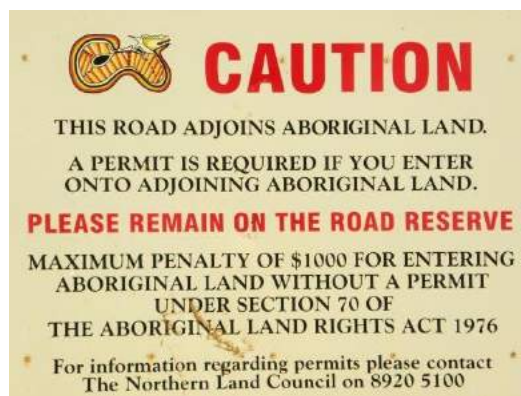
Figure 4: Governance Structure for the SE Arnhem Land IPA



Traditional Owners govern the IPA through the IPA Advisory Committee, as Northern Land Council delegates and via their representation on the board of the proposed SEAL IPA Land & Sea Management Aboriginal Corporation. Both Ranger groups, also including Traditional Owners, are administered by the Northern Land Council with the direction from the IPA Advisory Committee.

THREATS TO OUR COUNTRY

Our country has always been a rich and abundant landscape, sustaining our people through seasons and epochs. But times have changed and the land's resilience is now tested by the combined threats of introduced plants and animals, changed fire regimes and the increasing effects of climate change. Much is now spoilt. This hasn't happened gradually; many of the changes we see are stark and have occurred in our lifetimes. Sadly, the rise of these modern threats corresponds with the passing of our elders and much of the traditional ecological wisdom they held.



WILDFIRE

Fortunately much of our land has been spared the worst of the wildfires that have ravaged Central Arnhem Land in recent decades. Only the rugged sandstone country in the far north west and south west of the IPA have been subject to frequent hot fires. This is evidence of the effectiveness of traditional owners' and our rangers' annual fire work which reduces fuel loads and so limits the chance of late-season wildfires.

Uncontrolled fire affects the health of our country, reducing its richness, leaving behind dusty soils, only the hardiest plants and the toughest of animals. Many native animals have gone from our land; slowly disappearing as these hot fires have taken away their food and shelter. In particular fire is a threat to habitats like wetlands,

billabongs, springs and rainforest patches. These are special places in our country, valued for their shade, coolness and the wealth of plants and animals we use from them. Many of these places are now damaged by fire. Feral animals make this problem worse by opening up closed forests to grasses, and in turn fire. Drier woodlands can also suffer from too much fire. In some places over-burning has bit-by-bit stripped the woodlands of the fruit-bearing shrubs and useful grasses we knew so well. These are valued traditional foods and medicines for us, as well as being important plants for our wildlife.

FERAL ANIMALS

Water Buffalo

Buffalo are common throughout much of our country and they are a growing problem. Their numbers are greatest in and around wetlands, floodplains and paperbark woodlands. After a few good wet seasons their numbers can climb to as many as 30 animals per square kilometre. Each animal lives for about 20 years and cows can have a dozen or more calves in their lifetime. They dig wallows, overgraze and trample native plants, pollute waterholes, spread weeds, destroy stock



fences and generally spoil our country. They can be dangerous for people walking around and they can carry serious diseases like brucellosis and bovine tuberculosis.

We hunt buffalo, less so now than in the past when rifles were easier to come by. These days we mainly let others do the hunting. Commercial safari hunting has operated in SE Arnhem Land for many years now and we occasionally licence pet-meat contractors to take large numbers of buffalo and horses. But neither does much to reduce the number of animals infesting our country.

To get on top of this problem there isn't one answer. We need to hunt more buffalo, muster and sell them when there's a market, support pet-meating in accessible areas and use helicopters to cull them where there are no roads. Our Rangers are responsible for watching this problem and keeping land owners and managers aware of what is happening, year in year out. Buffalo will never go away; they are with us for the long run so we need to be smart about managing them.

Horses, Donkeys and Pigs

Brumbies are also common and widespread in our IPA, especially in the lowlands. Donkeys also occur in high numbers, but in the stony foothills and upland creeks in the west of the IPA. Both



horses and donkeys have a big impact on the health of our country. They travel long distances through the seasons, removing the native ground cover, disturbing the soil and spread weeds. Feral horses and donkeys will be a big problem if we set up commercial grazing or horticulture. The cost of doing nothing with these pest animals will be very clear when we have no grass for our stock and weeds infesting our crops.

There are plenty of feral pigs throughout our country. They cause major damage to our wetlands. They destroy our rich floodplains by rooting up our bushfoods and fouling billabongs. They now threaten our sea turtles with their new habit of digging up nests and eating the eggs. These pests are known to carry serious animal diseases like brucellosis. They threaten people's safety and their enjoyment of their country too.

Feral Cats

We rarely see signs of hopping mice, bandicoots or possum anymore. Almost all of our small or medium sized mammals seem to have disappeared. Feral cats might be the guilty one here. There are so many of them in our country now, in all types of country, even on the beach! Native animals are no match for feral cats; they eat anything, mammals, reptiles, birds, frogs and insects, all the same to cats. Scientists have



Common in northern Australia's savannas, feral cats impact heavily on native wildlife. Image courtesy Terry Mahney

told us that cats like to hunt in open country, where fire or grazing has taken away the grass, sticks and shrubs. This makes sense as there's nowhere left for the native animals to hide. So, wrong-way fires, feral horses, pigs, buffalo and cats are all working together, against our native wildlife.

Cane Toads

Since they arrived here in the early 1990's, cane toads have had a big effect on our native wildlife. They quickly took over our rivers and billabongs, and as they did we saw our freshwater turtles and crocodiles, large snakes, goannas and many of our native frogs disappear. Cane toads breed in huge numbers each wet season. We see thousands of toadlets leaving the water and spreading out across our land where they displace and poison our native wildlife. There's no good way



to control cane toads. Luckily some animals, like sand goannas and water goannas are coming back, slowly. It seems that over generations they learn to give cane toads a miss.

WEEDS

Plants that have come to our country from other places can be useful in the garden or for farming, but here, mostly we know them as weeds. We have a lot of different types of weeds growing on our country, at least fifty species are recorded from our IPA. Some we don't notice, others like hyptis and Mossman River grass are a nuisance, but then there are a few that are a real worry for us, weeds like Mimosa and Parkinsonia. Mimosa has been found on the Phelp River floodout, while Parkinsonia is common from Yellow Water Billabong to Nullawan Creek. There's also a group of weeds that are serious potential risks; rubber vine, pond apple, salvinia or cabomba could easily turn up here one day.

Rubber vine is an enormous problem nearby in northern Queensland where it completely smothers native plants along rivers and creeks. As with the pond apple it is a prescribed Weed of National Significance (WONS) and though neither is yet confirmed present in the Northern Territory both pose a significant threat to our lands. Salvina, cabomba and olive hymenachne are highly invasive water-weeds that could have a devastating effect on our wetlands. Both have been found in the Top End and both could be spread by water birds such as magpie geese.

We've recently noticed the spread and increase of 'stranger' grasses throughout our homelands. This is a big concern because grassy weeds are hard to manage and could change our country for the worse. We've noticed that in some areas they are changing the way our country burns. Many of these new grasses dry out late, burn hot and carry fire into special places like rainforest and paperbark forests. Some are starting to choke up our wetlands, spreading out over the water to block out the sun and stop us fishing.



Grader Grass is as serious weed of savanna woodlands. It can easily be mistaken for native kangaroo grass.



Rubber vine has badly infested many river systems in Queensland's Gulf country. Weed surveillance in the IPA will guard against this Weed of National Significance.

LOSS OF LAW AND CULTURE

With the rapid passing of our old people our traditional wisdom and cultural heritage is also receding. As we strive to build our communities, create jobs and prosperity, we move away from the lifestyles of our past. In our modern world there are fewer and fewer occasions where we can use and pass on customary skills and knowledge and so these parts of our culture are being forgotten. They will be lost forever unless we work to reclaim them. Similarly, traditional law is eroding as new responsibilities take up our time and resources. Western culture dilutes our traditions and draws the attention of our youth. Fewer young people are now involved in ceremony and we worry that without strong interest less and less will be passed on. This knowledge, these traditions have been the fabric of our lives for thousands of years. Our culture provides us with unity as a people and distinction in an increasingly globalised world.



Centralisation

Traditionally people lived on their country. Through Law they inherited their ancestral estate, took on strict responsibilities of managing it and lived by its bounty. Homelands are a modern expression of these immutable connections to country. In most cases they exist at a central site within a clan's area and fulfil a wide range of important functions for their owners and their extended families.

Homeland outstations are central to land owners' ability to get out on and care for their country, both in a physical and spiritual sense. Hunting, burning, holding ceremonies and raising children in a healthy, natural and importantly, indigenous setting are just some of the benefits outstation life brings. These days our homelands also serve as staging posts from which our rangers can safely and efficiently carry out their duties. Unfortunately modern government policies driving more centralised delivery of services like health and education have forced most people to move off their homelands into town. With no residents and no effective government support our outstations are rapidly becoming derelict.



Wally Wilfred and Jill Daniels at their outstation

Image courtesy, A. Lynch 2012

Trespass

Unwanted visitors, we call them ‘strays’, regularly come onto our land, both by road and by boat. The popularity of private four-wheel-drive tourism and recreational fishing in the Northern Territory brings a seasonal tide of tourists to our country. We must manage this problem because in it there is opportunity as well. Visitors to our country require a permit issued by the Northern Land Council and permitted tourists are welcome. We are building our capacity to cater for those who come to Arnhem Land with respect for indigenous people. But sadly there remain those who disrespect our ownership and authority over our land and sea. They come uninvited to fish our rich waters, to shoot in our homelands and exploit our cultural sites without our permission. We know them by the rubbish and desecration they leave behind. We worry for our country and we worry for their safety.



Mining

Mining can cause serious damage to our land and seas. Although there are no existing mines on the land trust, proposals for gas and oil extraction across the entire IPA and sea-bed mining along the coast are new and worrying developments. Marine mining particularly concerns us as we have little say over what happens in our ancestral sea country beyond the intertidal-zone. We believe sea bed mining will harm our fisheries and so our long-term livelihoods. We hope that our Native Title Rights to sea country will be respected and that we will be properly consulted about all mining proposals on our traditional country. Specifically, we expect to be fully informed and allowed adequate time to discuss and consider proposals as a community.

Adjacent to our IPA but within our traditional lands there are three new mining ventures. These large operations will have significant impacts on our communities and our IPA, both good and bad. Our main concern is that these operations could result in a large increase the number of people accessing our land and sea country, and with this an increase in wildfire, weeds and trespass. We hope this isn't the case, but if it is we will work with the mining companies to find solutions.

PART 2 CARING FOR COUNTRY & CULTURE



Image courtesy: Antony Lynch

Target Areas

Target Areas are where our values lie and where our IPA work will be done. Our Plan of Management focuses our resources and efforts on the things we think are important, and in the areas we believe we can make a difference.

Goals are the outcomes we are aiming for. Goals in each of these areas generally overlap so that improvements in one are also seen in progress in others. For instance, investment in our youth will ensure they understand and accept their cultural responsibilities for caring for country.

Actions are the things we will do to kick our goals. In many cases these will be part of our Rangers' work programs. Other actions will require organisational input from the Traditional Owners, Yugul Mangi DAC, the NLC, and supporting Government agencies.

Markers are the things we'll be looking out for; clear signs that we are reaching our goals, or indicators that we are not. Where we are failing to make a difference we will need to change actions, do more work or do it differently. These are listed in table at action table at the end of this plan.

1. CULTURE & YOUTH

2. WILDLIFE

3. SEA COUNTRY

4. FRESHWATER

5. FIRE

6. RANGERS & IPA

7. BUSINESS

1. CULTURE & YOUTH

Our Youth are our future; they will take up the land and law that have always been passed down from generation to generation. Our culture is still strong but *munungka* ways and modern lifestyles are pulling against us as we strive to pass on the traditional wisdom, skills and responsibilities we ourselves have taken a lifetime to gain.

Our young people and our country are our main focus. Looking after our sites, performing our ceremonies and at the same time teaching our children who they are and where they belong must all come together if our vision is to be realised.

Goals

More young people working with the Rangers

Greater protection of our Sacred Sites

Greater involvement of young people in caring for country

More opportunities for passing on traditional knowledge



Image courtesy: Antony Lynch

Actions

1. Develop and run 'Culture Camps' out on country for children and young people
2. Establish an Ethno-ecology project to produce products suitable for use in our schools
3. Run "Right-way Fire Workshops" in the early dry season for students and unemployed youth
4. Continue work on a Cultural Values Map for the IPA, in partnership with the Ngukurr Language Centre
5. In partnership with NT Sacred Sites Authority, develop Sacred Site Management Plans for key areas such as Burunju
6. Install signs with Indigenous place names at outstations and other relevant locations throughout the IPA
7. Install IPA and NLC signage throughout the IPA to remind visitors they are on Aboriginal Land and require statutory entry permits

2. WILDLIFE

Healthy native wildlife is important to us. In our lifetimes we've watched many plants and animals become scarce then disappear from our country. We want to protect our native wildlife and ensure our country's health against the threats of feral pests, weeds and climate change. We want plenty of good bush foods growing in our country; good fishing and good hunting. We need to be able to use native plants to keep us healthy; bush medicines make us strong and cure us when we are sick.

It's important that as a community we know what is happening out on our country. This is why country visits and wildlife surveys are an important part of our plan. We also look to our rangers to keep us informed about the health of our country and help us to enforce rules about things like wrong-way fire and over-hunting.

Managing our wildlife is a complex task. So working with experts from outside our community, scientists and researchers who can share their knowledge and help us solve problems is important. As a result of our Rangers' research partnerships to date this IPA plan is based on integrated adaptive management, which simply means working on feral pests, weeds and fire all at the same time, regularly checking on how our wildlife is responding to our efforts and adjusting our work over the years in order to get the best results.



Goals

Healthy country for our wildlife

Plentiful bush foods

Bring lost wildlife back

Know more about our wildlife today

Actions (Wildlife)

1. Habitat specific biodiversity surveys, i.e. for sandstone areas and islands
2. Targeted surveys for threatened species or other wildlife of conservation concern
3. Biodiversity monitoring at key locations, (i.e. wetlands, savanna and woodland sites) to monitor outcomes of prescribed burning
4. Monitoring the health of bush foods and medicines (diversity and density) in key locations
5. Opportunistic monitoring of traditionally hunted species such as turtle, kangaroo, emu, and bustard using Cybertracker or similar technology
6. Active information program for land owners and other community members including regular talks, posters or booklets on key land and sea management issues



Rich coastal wetlands of the SE Arnhem Land support huge numbers of waterbirds and aquatic life. Traditionally the most productive ecosystem in the region, these floodplains are now degraded as a result of high numbers of feral buffalo, pigs and cane toads.

FERAL PESTS

Water buffalo, horses and pigs are threatening the condition of our cultural sites, the health of our country, and our community's planned agricultural enterprises. No single method of control is ideal when it comes to feral animals. So it's best to use all available approaches. To get on top of this problem we plan to draw up long-term **species-specific management plans**. A lot more talking is needed between land owners as people have very different ideas about feral animals. Some see them as valuable, some would like to be rid of them altogether, and some are in-between.



Yugul Mangi Ranger Julie Roy, undertaking research on wetland health and the impacts of feral animals on culturally important billabongs. Image courtesy Emilie Ens

An aerial survey complete by our rangers in mid-2013 showed that there are more than 8000 buffalo, 5000 horses, 5000 cattle, 6000 pigs and 1000 donkeys in the lowlands of our IPA. These survey results will help land owners make better informed decisions about this problem. There will be different approaches in different parts of the IPA and we will develop a special management plan for each pest species.

Water Buffalo

We intend to address this issue in five ways, **raising community awareness** of buffalo numbers and the severity of their impacts; supporting Yugul Mangi Development Aboriginal Corporation to develop **commercial uses** for buffalo, such as pet-meating; **culling to waste** in inaccessible areas; **working with our neighbours** to ensure our methods are complimentary and, setting up **monitoring and evaluation** to ensure our approach is working.

We will respect the requirements of safari hunting but maintaining substantial buffer zones between these operations and buffalo control areas. All buffalo shooting will be carried out efficiently and humanely by suitably trained and licensed rangers or contractors. The work will be conducted under a statutory (NLC) permit or a Section 19 Land Use Agreement and adhere to Northern Territory specific requirements derived from the *Model Code of Practice for the Humane Control of Feral Horses* (Sharp & Saunders 2004).

Feral horses and donkeys

Control of feral horses and donkeys will require a similar multi-pronged approach to that described for buffalo. Where it is economically viable we will make commercial use of feral horses and donkeys but where it is not, we think culling is the best management solution.

Pigs

Control of feral pigs across such a huge area isn't possible and no current commercial opportunities exist for their use. All we can do is hunt, trap or bait pigs at places where we know they are causing the greatest damage. For instance we intend to poison and shoot pigs at culturally or ecologically important places such as billabongs, at springs and in rainforests. Poisoning is currently a risky activity as the 1080 baits are highly toxic to people and native wildlife. New, pig-specific sodium nitrate baits (Hog-Gone®) will soon be available. This should allow us to control feral pigs much more safely and effectively.

Goals

Improved community awareness of feral animals and their impacts

Reduced numbers of feral buffalo, horses, donkeys and pigs on our land

Where practical, use of feral animals for commercial gain

Actions

1. Undertake aerial surveys of feral horse and buffalo in the IPA every 3 years
2. Set up ground-based monitoring of buffalo and horses at key locations in the IPA
3. Conduct an annual review of feral animal control operations across the IPA
4. Employ firearms to cull feral animals
5. Establish feral animal communication plan for land owners and the broader community
6. Plan and attain required accreditation to undertake sodium nitrite baiting of pigs at key locations (impacted wetlands and important turtle-nesting beaches)
7. Investigate the feasibility of a Section 19 Land Use Agreement authorising control of buffalo, horses and donkeys in the southern sector of the IPA (south of the Rose River, east of Urupunga ALT).

WEEDS

Plants from elsewhere are a problem on our country. Each year new types seem to arrive, uninvited and unwelcome. Weeds take hold quickly in soils disturbed by the hooves of buffalo, pigs and horses. Seeds from many weeds are spread by these large animals, both in their fur and in their dung. So things can get out of control fast, and over large areas. We think most of these weeds first come into our IPA on vehicles.

Our rangers have worked with the NT Weeds Branch for many years controlling mimosa, Parkinsonia, bellyache bush and neem outbreaks. They also monitor for other bad weeds like rubber vine and Gamba grass. We'd like more help with controlling weeds on our lands. We don't want to lose our country to rubbish plants. Our Rangers tell us that the big threat is grassy weeds. We are beginning to see stranger grasses, like mission grass, on our country even out bush.



Weed awareness sign installed by Yugul Mangi Rangers

Goals

Keep weeds out of our country

Control weeds that are already here and stop them spreading

Especially look out for and control weeds in our billabongs and wetlands

Actions

1. Undertake strategic weed planning every two years, review activities against the weeds plan annually
2. Increase ranger training in weed identification
3. Ensure rangers are trained in weed control techniques and accredited in herbicide use
4. Establish a standardized weed mapping project using Cybertracker or similar technology
5. Eradicate or control and contain target weed species including mimosa, Parkinsonia, neem, and bellyache bush
6. Establish regular weed patrols in vulnerable areas including sites of past infestations, mining, exploration, tourism and road works sites

3. SEA COUNTRY



Image courtesy: Antony Lynch

Sea Country planning for our IPA is not yet finished. There are many things to think about with sea country management. Most of our ancestral sea country does not belong to us and only limited Native Title rights are recognised. So we have little say over what happens there. We do own some sea country as part of our land trust. This is the inter-tidal zone between low and high tide marks, and including the rivers and creeks flowing over our land. But even in these areas our sea rights are compromised because they are under what is termed a moratorium, *munungka* may legally access and fish these waters. The moratorium stands until we negotiate an agreement with the Northern Territory government. No one asked our permission for this and we don't see it as a fair position to be bargaining from. The new Limmen Marine Park lies off our coast. It is called a 'fishing friendly' park. This attracts more unwanted fishing to our coastline. There are also plans for sea-bed mining along our coast.

Because there are so many issues and so many people we must speak to about sea country management, we have decided to undertake this separately, after we have declared the land areas of our IPA. Throughout our sea country planning we must make sure everyone understands our rights as the traditional owners and managers of these marine areas. They must know that our authority comes from:

A long and unbroken history of use and reliance on sea country and marine life in the western Gulf

Co-existing rights via Native Title to marine waters in the Northern Territory

Authority via the Commonwealth Land Rights Act to control all landings and access to creeks, rivers and the inter-tidal zone associated within our land trust

Legal authority over access to marine areas registered under Northern Territory Sacred Sites legislation, via the Aboriginal Areas Protection Authority

Customary rights providing authority within our community and with respect to traditional resources and access

Authorities or responsibilities arising from contractual arrangements with government agencies; including the provision of services to the Australian Department of Agriculture and Water Resources and NT Department of Primary Industry and Fisheries.

Goals

Our Indigenous rights to Sea Country known and respected

Sea Country included in the SE Arnhem Land IPA

Greater control over all fishing in the western Gulf of Carpentaria

A bigger role for our rangers in marine management in the western Gulf of Carpentaria



Image courtesy: Antony Lynch

Actions

1. With assistance from the Northern Territory Sacred Sites Authority, locate and register off-shore sacred sites in the western Gulf
2. Increase surveillance of intertidal areas of the land trust to discourage trespass including unwanted fishing
3. With the support NT Fisheries, continue to participate in monitoring of recreational and commercial fisheries
4. With NLC assistance, request that the Northern Territory Government negotiate a Special Area Agreement for recreational fishing in intertidal areas of the IPA
5. Continue supported sea country planning for better management of natural and cultural resources in marine areas

4. FRESHWATER



The Roper River at Ngukurr Image courtesy: Antony Lynch

Rivers, floodplains, billabongs and other wetlands are included in this target. In recent years we have gained ownership and management rights to waters flowing over our land. Most of the rivers flowing through our IPA also have their headwaters in our country. Because of this we are well placed to look after them, making sure they stay clean and full of life. The main management issues we see are the damage caused by feral animals, and the challenge of climate change.

Pigs, buffalo and horses are causing a lot of damage to our floodplains and billabongs. Too many of these once rich places in our country are now shallow and muddy, no longer any good for traditional foods like fish, long-neck turtle and water-lilies. Climate change is having an increasing effect on these places too. We have noticed our billabongs drying out earlier and with this a decrease in the wildlife they support and the quality of their water.

The Roper River forms the southern boundary of our IPA yet we have no influence over the use, or misuse, of its waters. Current proposals exist to extract vast volumes of water from the river for regional mining and there is potential for pollution or contamination from this and other developments in the catchment.

An increasing problem for people using billabongs and waterholes is nuisance crocodiles. We think there are too many large crocodiles in our rivers and billabongs now. As their numbers climb without hunting we no longer feel safe going near the water to collect water-lilies or even sitting on the bank fishing. The management of cheeky crocodiles is a job for our Rangers.

We already work on research projects looking at the impact of feral animals on our billabongs. There are other opportunities to work with researchers, on green sawfish and commercial fisheries such as barramundi. We would also like to be involved in monitoring ground water quality at mine sites in our region.

Goals

Clean, healthy billabongs, creeks and rivers

Ample freshwater for our agricultural developments

Better control of water resources, particularly the Roper River

Healthy freshwater wildlife

No nuisance crocodiles

Actions

1. Continue healthy wetlands monitoring project, including aquatic flora and fauna surveys
2. Continue to monitor the impact of feral animals, and link this to the broader feral animal control project
3. Undertake water quality monitoring at outstations and select wetlands
4. Further develop climate change monitoring as an aspect of the Healthy Wetlands project
5. Participate in ground-water monitoring in partnership with regional mining interests, within and nearby our IPA
6. Continue and expand crocodile control: trapping and relocation to crocodile farms or licenced shooting for sale of products



Water lily bulbs are a nutritious bush food found in large quantities in healthy billabongs where brumbies, buffalo and pigs have been fenced out. Image courtesy: Emilie Ens.

5. FIRE

Always a part of our lives, fire is an important tool that must be used wisely. In the savannas of the wet-dry tropics fire can keep country fresh and new, or it can turn the land to ashes. As responsible land owners we want to manage fire by keeping our fuel loads down, maintaining our fire-breaks and working against wildfire. Our Rangers fight fire with fire. Early dry season burns around outstations and rainforests, along fences and creek lines help to limit the damage wildfire can do. Early burns break the country up so late dry-season fires can't spread. Cool season burns also help with climate change by lessening the amount of smoke going up into the sky each year. Now that we mostly live in town rather than on our homelands we need a plan to get out and do burning.



We plan to achieve many of our fire goals by participating in a commercial carbon project. We have recently become partners in the Arnhem

Land Fire Abatement 2 Project (WALFA 2). We are hopeful this initiative will provide enough income for our rangers to continue proper management of fire throughout our IPA.

Burning for profit is a smart idea but we need to be careful that this doesn't distract us from caring for the special places in our country. Regional fire plans must be backed-up by local planning that considers sacred sites, bush tucker areas and fire-sensitive communities like monsoon forests. And some Traditional Owners still like to burn their own country for hunting at particular times. These important features of our local landscape need to be protected through fine-scale fire management.

Carbon Projects - the Money Story

Greenhouse gases don't only come from industry. Each year wildfires across north Australia put thousands of tons of greenhouse gasses up into the air as smoke. Traditional Aboriginal burning is known to reduce the amount of fire and limit the amount of smoke because it typically happens early in the dry season. Importantly, these cool and patchy burns limit the chances of big hot fires getting up later in the year.

Some industries are now looking to pay indigenous landowners to keep burning proper-way. They do this by buying "offsets" from Aboriginal Ranger groups. These are also known as carbon credits and they represent the smoke that didn't go up as a result of good burning practices.

This is a great opportunity for indigenous land managers. With help from the Darwin Centre for Bushfire Research and CSIRO many indigenous Ranger groups have banded together, set up fire projects and now produce valuable carbon credits using methods licenced by the Australian Government. Fortunately, carbon credits from indigenous fire projects tend to be worth more because companies that buy them are also contributing to Aboriginal community economies and supporting work that is keeping country healthy.

Goals

Reduce the frequency and severity of uncontrolled fires

Protect people, sacred sites, buildings and enterprises such as cattle and agricultural developments

Limit fire damage to sensitive habitats like rainforests, creek lines, paperbark forests and swamps

Continue to develop our Carbon Farming enterprise and maximise our marketable carbon credits

Actions

1. Continue to undertake annual regional fire planning with WALFA2 stakeholders with support from Darwin Centre for Bushfire Research, Bushfires NT and the NLC
2. Continue to undertake aerial and ground-based control burning in consultation, and with the assistance of, Traditional Owners
3. Continue to work with Traditional Owners to fine-tune prescribed burning within the IPA to avoid fire damage to sacred sites, sensitive plant communities and traditional resources
4. Improve GIS capture of fire data through greater use of CyberTracker or similar technology
5. Work with ALFA partners to complete greenhouse gas accounting, including co-benefit benchmarking for areas above the 1000mm rainfall isohyet
6. Work with WALFA2 partners in the development and registration of CFI methodology for lower (600mm) annual rainfall areas
7. Continue to be part of the WALFA2 governance structure

6. RANGERS & IPA



Numbulwar Numburindi Ranger, Adam Manggurra with his children

Image courtesy Numbulwar Numburindi Rangers

Land and sea management is much more than just a job for Yugul Mangi and Numbulwar Numburindi Rangers. Their work is an important part of our community's on-going relationship with country. The rangers have greater access, more resources and better training than any other local group. They are able to keep a close eye on the health of our land and waters and share their knowledge with their community. This keeps everyone informed and leads to better decisions sooner.

Day to day operation of our IPA will rely heavily on the Yugul Mangi and Numbulwar Numburindi Rangers. This plan will guide their work throughout the year. They will be required to undertake the activities outlined within it as well as monitor, review and improve their outcomes over time. However, we will only achieve our goals and grow our IPA through participation of our community, good governance and strong ranger groups. Responsibility for meeting the plan's goals is shared between the IPA Advisory Committee, the Rangers and partners including the Australian Government.

Managing an IPA is a complex and physically demanding task and our ranger groups will need sustained support to meet this challenge. We hope future growth of the SE Arnhem Land ranger programs will occur as a result of the dedication of IPA. Already the NLC's strong support for the SE Arnhem Land IPA has resulted in the reinstatement of the Numbulwar Numburindi Rangers, deployment of a coordinator, a new work space and staff accommodation. Planning for a Ranger Station upgrade is underway for Yugul Mangi Rangers and both groups now have access to a reasonable array tools and equipment, including vehicles and boats.

Our underlying ambition for the IPA is to gain greater authority over our land and seas; through better local decision-making and by bringing our ranger groups back under local control. We have begun to take the necessary steps including registration of a Land and Sea Management Aboriginal Corporation capable of accepting and administering funds, upskilling of our IPA Advisory Committee and considering the appointment of an IPA Officer to assist with project management and administration. These initiatives highlight our commitment to improving the way we use and care for the country we belong to.

Goals

Decisions about country made locally by Traditional Owners and Managers

Our community working together for good land and sea management outcomes

Increased capacity for both Ranger groups

All Ranger staff receiving appropriate wages and working in a safe, friendly and supportive environment

All Ranger staff having access to appropriate, accredited training

Ranger's traditional and customary knowledge properly recognised and adequately valued in their work

Rangers' tools, equipment and transport are safe, regularly serviced and well suited to their purpose

Partnerships & funding are long-lasting and mutually beneficial

Actions

1. Maintain an effective IPA Management Committee representing the IPA's Traditional Owners
2. Hold at least three IPA meetings per year, alternatively in Ngukurr and Numbulwar
3. Develop an IPA Coordinator position to assist administration of IPA related projects, partnerships, facilities and training
4. Re-establish local management of Yugul Mangi and Numbulwar Numburindi ranger groups
5. Establish clear practical framework for Ranger employment; including policies in appropriate formats covering work health and safety, human resource management and standard operational procedures
6. Increase the number of casual ranger positions to allow greater flexibility in staffing; to engage youth, landowners, and meet peak labour demands
7. Establish a suitable service and replacement schedule for Rangers' tools, equipment, vehicles and boats
8. Identify options for new or improved ranger facilities in both Ngukurr and Numbulwar
9. Develop a Partnership Guide setting protocols for working on Aboriginal land and emphasising the rangers' skills, relationships to country and indigenous ecological knowledge
10. Ensure rangers have appropriate training, including accreditation for the use of herbicides, pest baits and firearms
11. Review ranger groups' work program annually to ensure;
 - a) It is relevant to IPA plan of management
 - b) Their work is having the desired outcomes
 - c) That their funding is adequate and secure
 - d) There is a enough variety in the work
 - e) There is enough work with land owner and managers
 - f) That suitable partnerships are in place or being sought

PART 3 MONITORING & EVALUATION

Adaptive Management is a core objective of this plan because the environment dynamic and people's aspirations evolve. As management is implemented, outcomes on the ground must be measured, assessed, and if necessary adjusted. The following details all Actions from this plan, the Goals that drive them and markers that may be used to monitor and track management progress.

Goals and associated activities considered to be good general indicators of the success of the IPA project over time are highlighted. These seven measures were chosen by the rangers and cover issues they believe are relevant to their community and the Australian Government.

MONITORING EVALUATION, REPORTING AND IMPROVEMENT

Trends or milestones for the following seven Markers will be used to evaluate report on, and guide improvement in management of the SE Arnhem Land IPA.

- Number of young people annually involved in Ranger activities – trends positive or at least stable over time
- Results of annual biodiversity monitoring (fire plots) - trends positive or at least stable over time
- Number of locations where Weeds of National Significance occur versus the number of sites where they are either eradicated or controlled – stable or decreasing number
- Indigenous marine management recognised and traditional Sea Country integrated to the IPA milestones include: maintaining management presence in Sea Country, commencement and completion of Sea Country planning, registration of marine sacred sites, attaining agreement with NT Government over intertidal zone, incorporation of marine areas to IPA
- Continued successful, relevant partnerships with researchers – number of partners and number of collaborative projects stable or increasing over time
- Aerial and ground-based control burning completed for at least 70% of the plan-prescribed areas in any year – achieving or bettering target
- Rangers are managed by a local Aboriginal organisation – milestones include: ORIC registration of local IPA corporation, achieving functional representative governance, gaining financial independence, auspice of various IPA related functions, administering government funding

Table 1 Markers of success for the SE Arnhem Land IPA

Culture & Youth		
Goals	Actions	Markers
<i>More young people working with the Rangers</i>	1. Develop and run 'Culture Camps' out on country for children and young people	✓ Number of casual ranger days/year
	2. Establish an Ethno-ecology project to produce products suitable for use in our schools	✓ Number of young people annually involved in Ranger activities
<i>Greater protection of our Sacred Sites</i>	3. Run "Right-way Fire Workshops" in early dry season for students and unemployed youth	✓ Number of land and sea management projects involving traditional owners
	4. Continue work on a Cultural Values Map for the IPA, in partnership with the Ngukurr Language Centre	
<i>Greater interest of young people in caring for country</i>	5. In partnership with NT Sacred Sites Authority develop Sacred Site Management Plans for key areas, such a <i>Burunju</i>	✓ Number of sites visited and maintained
	6. Install signs with Indigenous place names at outstations and other relevant locations throughout the IPA	✓ Cultural site registration proceeding
<i>More opportunities for passing on traditional knowledge</i>	7. Install IPA and NLC signage throughout the IPA to remind visitors they are on Aboriginal Land and require statutory entry permits	✓ Number of signs installed
Wildlife		
<i>Healthy country for our wildlife</i>	1. Habitat specific biodiversity surveys, i.e. for sandstone areas and islands	✓ At least one collaborative wildlife survey conducted every year
	2. Targeted surveys for threatened species or other wildlife of conservation concern	✓ Targeted surveys/ monitoring for significant species undertaken annually and with land owner involvement
<i>Plentiful bush foods</i>	3. Biodiversity monitoring at key locations, (i.e. wetlands, savanna and woodland sites) to monitor outcomes of prescribed burning	
<i>Bring lost wildlife back, to our islands</i>	4. Monitoring the health of bush foods and medicines (diversity and density) in key locations	✓ Trends in biodiversity monitoring sites positive or at least stable over time
	5. Opportunistic monitoring of traditionally hunted species such as turtle, kangaroo, emu, and bustard using Cybertracker or similar technology	✓ Monitored trends for bush foods and medicine plants positive or at least stable over time
<i>Know more about our wildlife today</i>	6. Active information program for land owners and other community members including regular talks, posters or booklets on key land and sea management issues	✓ Positive feedback on ranger work from landowners increasing

Feral Pests

Goals	Actions	Markers
<i>Improved community awareness of feral animals and their impacts</i>	<ol style="list-style-type: none"> 1. Undertake aerial surveys of feral horse and buffalo in the IPA every 3 years 2. Set up ground-based monitoring of buffalo and horses at key locations in the IPA 3. Conduct an annual review of feral animal control operations across the IPA 4. Employ firearms to cull feral animals 	<ul style="list-style-type: none"> ✓ Feral buffalo, pig and feral horse numbers consistently trending down at most ground monitoring sites ✓ Land owners continue to support shooting or baiting feral buffalo, horses and pigs where necessary ✓ Commercial use of feral species occurring
<i>Reduced numbers of feral buffalo, horses, donkeys and pigs on our land</i>	<ol style="list-style-type: none"> 5. Establish feral animal communication plan for land owners and the broader community 6. Plan and attain required accreditation to undertake sodium nitrite baiting of pigs at key locations (impacted wetlands and important turtle-nesting beaches) 	<ul style="list-style-type: none"> ✓ Annual targets for feral animal control made on review of monitoring results ✓ Two or more rangers from each group hold current Shooters Licences
<i>Where practical, utilisation of feral animals for commercial gain</i>	<ol style="list-style-type: none"> 7. Investigate the feasibility of a Section 19 Land Use Agreement authorising control of buffalo, horses and donkeys in the southern sector of the IPA (south of the Rose River, east of Urapunga ALT) 	<ul style="list-style-type: none"> ✓ One feral animal workshop for all stakeholders held per year

Weeds

<i>Keep weeds out of our country</i>	<ol style="list-style-type: none"> 1. Undertake strategic weed planning every two years, review activities against the weeds plan annually 2. Increase ranger training in weed identification 	<ul style="list-style-type: none"> ✓ Number of serious weed species (types) found on the IPA ✓ Percentage of rangers holding ChemCert accreditation
<i>Control weeds that are already here and stop them spreading</i>	<ol style="list-style-type: none"> 3. Ensure rangers are trained in weed control techniques and accredited in herbicide use 4. Establish a standardized weed mapping project using Cybertracker or similar tools 	<ul style="list-style-type: none"> ✓ Number of outstations with Neem trees (or other group 5 weeds) present ✓ Number of locations where significant weeds have been eradicated or controlled
<i>Especially look out for and control weeds in our billabongs and wetlands</i>	<ol style="list-style-type: none"> 5. Eradicate or control and contain target weed species including mimosa, Parkinsonia, neem, and bellyache bush 6. Establish regular weed patrols in vulnerable areas including sites of past infestations, mining, exploration, tourism and road works sites 	<ul style="list-style-type: none"> ✓ Number of weed patrols undertaken each year

Sea Country

Goals	Actions	Markers
<i>Indigenous rights to Sea Country known and respected</i>	1. With assistance from Northern Territory Sacred Sites Authority, locate and register off-shore sacred sites in the western Gulf	✓ Increase in the number of AAPA registered marine sacred sites in or adjacent to the IPA
<i>Sea Country included in the SE Arnhem Land IPA</i>	2. Increase surveillance of intertidal areas of the land trust to discourage trespass including unwanted fishing	✓ Reduced number of sightings of unauthorised, illegal or unwanted fishing within the intertidal zone (including rivers) in the IPA,
<i>Greater control over all fishing in the western Gulf</i>	3. With the support of NT Fisheries, continue to participate in monitoring of fisheries	✓ Special Area Agreement (providing for public recreational fishing in the intertidal zone) in place and including adequate compensation.
<i>A bigger role for our rangers in marine management in the western Gulf</i>	4. With NLC assistance, request that the Northern Territory Government negotiate a Special Area Agreement for recreational fishing in intertidal areas of the IPA	✓ Indigenous marine management recognised and traditional Sea Country integrated into the IPA
	5. Continue supported sea country planning for better management of natural and cultural resources in marine areas	

Freshwater

<i>Clean, healthy billabongs, creeks and rivers</i>	1. Continue healthy wetlands monitoring project, including aquatic/amphibian flora and fauna surveys	✓ Water quality at monitoring sites consistently improving
<i>Ample freshwater for our agricultural developments</i>	2. Continue to monitor the impact of feral animals, and link to broader feral animal control project	✓ Freshwater biodiversity stable or improving
<i>Better control of water resources, particularly the Roper River</i>	3. Undertake water quality monitoring at outstations and select wetlands	✓ Exclusion fencing at three (3) or more billabongs maintained
<i>Healthy freshwater wildlife</i>	4. Further develop climate change monitoring as an aspect of the Healthy Wetlands project	✓ Continued successful, relevant partnerships with researchers
<i>Nuisance crocodiles controlled</i>	5. Participate in ground-water monitoring in partnership with regional mining interests, both in and nearby our IPA	✓ Better understanding of how mining may affect groundwater and in turn rivers our area
	6. Continue and expand crocodile control: trapping and relocation to crocodile farms or licenced shooting for sale of products	✓ Number of crocodiles removed from key areas

Fire

Goals	Actions	Markers
<i>Reduce the frequency and severity of uncontrolled fires</i>	1. Continue to undertake annual regional fire planning with WALFA2 stakeholders with support from Bushfires NT and the NLC	✓ Two standardised fire plans completed for the IPA (i.e. northern and southern sectors) by December each year.
<i>Protect people, sacred sites, buildings and enterprises such as cattle and cropping</i>	2. Continue to undertake aerial and ground-based control burning in consultation, and with the assistance of, Traditional Owners	✓ Aerial and ground-based control burning completed for at least 70% of the plan-prescribed areas for any year.
<i>Limit fire damage to sensitive habitats like rainforests, creek lines, paperbark forests and swamps</i>	3. Continue to work with Traditional Owners to fine-tune prescribed burning within the IPA to avoid fire damage to sacred sites, sensitive plant communities and traditional resources	✓ Consistent uploading of accurate ground data to the North Australian Fire Information (NAFI) website
	4. Improve GIS capture of fire data through greater use of CyberTracker or similar technology	✓ With WALFA2 partners assistance, completed biodiversity study benchmarking conservation benefits of the fire work
<i>Develop a Carbon Farming enterprise and maximise our marketable carbon credits</i>	5. Work with WALFA2 partners to complete greenhouse gas accounting, including co-benefit benchmarking for areas above the 1000mm rainfall isohyet	✓ With WALFA2 partners' assistance, annual monitoring of fire plots completed.
	6. Work with WALFA2 partners in the development and registration of CFI methodology for lower (600mm) annual rainfall areas	✓ Membership and regular attendance of WALFA2 Steering Committee by at least two SE Arnhem Land IPA representatives
	7. Continue to be part of the WALFA2 governance structure	

Rangers & IPA

Goals	Actions	Markers
<i>Decisions made locally, by Traditional Owners and Managers</i>	1. Maintain an effective IPA Management Committee representing the IPA's Traditional Owners	✓ Rangers are managed by a local Aboriginal organisation
<i>Our community working together for good land and sea management outcomes</i>	2. Hold at least three IPA meetings per year, alternatively in Ngukurr and Numbulwar	✓ Ranger staff believe the type and variety of projects they undertake are appropriate
<i>Increased Ranger group's capacity</i>	3. Develop an IPA Coordinator position to assist administration of IPA related projects, partnerships, facilities and training	✓ Ranger staff believe their conditions have improved overall through implementation of the IPA Plan of Management
<i>All Ranger staff receiving appropriate wages and work in a safe, friendly and supportive environment</i>	4. Re-establish local management of Yugul Mangi and Numbulwar Numburindi ranger groups	✓ Number of ranger staff is increasing and includes part time and trainee rangers
<i>All Ranger staff having access to appropriate, accredited training</i>	5. Establish clear practical framework for Ranger employment; including policies in appropriate formats covering work health and safety, human resource management and standard operational procedures	✓ Rangers agree the type and condition of their equipment and transport is adequate to the work they perform
<i>Ranger's traditional and customary knowledge properly recognised and adequately valued in their work</i>	6. Increase the number of casual ranger positions to allow greater flexibility in staffing; to engage youth, landowners, and meet peak labour demands	✓ Multiple, beneficial partnerships are occurring with government agencies, research institutes and neighbours
<i>Rangers' tools, equipment and transport are safe, regularly serviced and well suited to their purpose</i>	7. Establish a suitable service and replacement schedule for Rangers' tools, vehicles and boats	✓ Rangers feel respected and valued by their community and as partners in joint projects
<i>Partnerships & funding are long-lasting and mutually beneficial</i>	8. Identify options for new or improved ranger facilities in both Ngukurr and Numbulwar	
	9. Develop a Partnership Guide setting protocols for working on Aboriginal land and emphasising the rangers' skills, relationships to country and indigenous ecological knowledge	
	10. Ensure rangers have appropriate training, including accreditation for the use of herbicides, pest baits and firearms	
	11. Review ranger groups' work program annually to ensure that it is relevant to the IPA plan of management, achieving desired outcomes, meeting funding criteria, adequate in its variety, inclusive of Traditional Owners, and suitable partnerships are in place or being sought	

APPENDIX 1: THREATENED WILDLIFE OF THE SE ARNHEM LAND IPA

Common name	Scientific name	NT Conservation status (2007)	National Conservation Status (2007)
Northern Quoll	<i>Dasyurus hallucatus</i>	Critically Endangered	Endangered
Gouldian Finch	<i>Erythrura gouldiae</i>	Endangered	Endangered
Brush-tailed Rabbit-rat	<i>Conilurus penicillatus</i>	Vulnerable	Vulnerable
Partridge Pigeon	<i>Geophaps smithii</i>	Vulnerable	Vulnerable
Masked Owl (mainland Top End)	<i>Tyto novaehollandiae kimberli</i>	Vulnerable	Vulnerable
Floodplain Monitor	<i>Varanus panoptes</i>	Vulnerable	-
Australian Bustard	<i>Ardeotis australis</i>	Vulnerable	-
Green Turtle	<i>Chelonia mydas</i>	Least Concern	Vulnerable
Flatback Turtle	<i>Natator depressus</i>	Data Deficient	Vulnerable
Dugong	<i>Dugong dugon</i>	Near Threatened	
Bush Stone-curlew	<i>Burhinus grallarius</i>	Near Threatened	
Buff-sided Robin	<i>Poecilodryas cerviniventris</i>	Near Threatened	
Spectacled Hare-wallaby	<i>Lagorchestes conspicillatus</i>	Near Threatened	
Northern Nailtail Wallaby	<i>Onychogalea unguifera</i>	Near Threatened	
Kultarr	<i>Antechinomys laniger</i>	Near Threatened	
Western Chestnut Mouse	<i>Pseudomys nanus</i>	Near Threatened	
Orange Leaf-nosed bat	<i>Rhinonictis aurantia</i>	Near Threatened	
Ghost Bat	<i>Macroderma gigas</i>	Near Threatened	
Wood Sandpiper	<i>Tringa glareola</i>	Near Endangered	
Indo-Pacific Bottlenose Dolphin	<i>Tursiops aduncus</i>	Near Endangered	

APPENDIX 2: WEEDS OF THE SE ARNHEM LAND IPA

This table shows whether a species is a declared **Weed of National Significance** (WONS), a **Declared Weed** in the Northern Territory and for those gives relevant NT categories: **A** (*To be eradicated*), **B** (*Growth and spread to be controlled*), and **C** (*Not to be introduced to the Territory*). Ratings under Smith refer to a report by Dr Nick Smith (2001) that investigated how particular weeds affect Indigenous communities in the Northern Territory.

Common Name	Scientific Name	National Status	NT Status	Smith	Actions/notes
Mimosa	<i>Mimosa pigra</i>	WONS	Class A, B and C	High	Surveillance, monitor, contain, eradicate
Bellyache Bush	<i>Jatropha gossypifolia</i>	WONS	Class A, B and C	High	Surveillance, monitor, contain or where possible eradicate
Parkinsonia	<i>Parkinsonia aculeata</i>	WONS	B & C	High	Surveillance, monitor contain and control
Para Grass	<i>Urochloa mutica</i>		not declared	High	Surveillance, report, monitor, avoid use as pasture species, eradicate where possible
Chinee Apple	<i>Ziziphus mauritiana</i>		A/C	High	Surveillance, monitor, eradicate where possible
Neem	<i>Azadirachta indica</i>		not declared	High	Surveillance, monitor, eradicate where possible
Rubber Bush	<i>Calotropis procera</i>		Class B and C	High	Surveillance, monitor contain and control
Candle Bush	<i>Senna alata</i>		B & C	High	Monitor, eradicate where possible
Coffee Senna	<i>Senna occidentalis</i>		Class B/C	High	Monitor, eradicate outside town
Mission Grass Annual	<i>Pennisetum polystachion</i>		B & C	High	Monitor
Mission Grass Annual	<i>Pennisetum pedicellatus</i>		not declared	High	
Hyptis	<i>Hyptis suaveolens</i>		B	High	
Noogoora Burr	<i>Xanthium occidentale & X. strumarium</i>		B & C	High	
Spinyhead Sida	<i>Sida acuta</i>		B	High	
Snake Weeds	<i>Stachytarpheta</i> species		B	High	
Ornamental Rubber Vine	<i>Cryptostegia madagascariensis</i>		A & C	Medium	Surveillance, report, monitor, eradicate

Appendix 2: Weeds of the SE Arnhem Land IPA continued					
Common Name	Scientific Name	National Status	NT Status	Smith	Actions/notes
African Mahogany	<i>Khaya senegalensis</i>		not declared	Medium	Monitor
White Teak	<i>Gmelina arborea</i>		Not declared	-	Monitor, eradicate outside town
Mossman River Grass	<i>Cenchrus echinatus</i>		B	Medium	
Sida	<i>Sida cordifolia</i> & <i>S. rhombifolia</i>		not declared	Medium	
Couch grass	<i>Cynodon dactylon</i>		not declared	Medium	
Purpletop Rhodes grass	<i>Chloris inflata</i>		not declared	Medium	
Itch Grass	<i>Rottboellia exaltata</i>		not declared	-	

APPENDIX 3: PRIORITY WEEDS OF THE WESTERN GULF

1. Grassy weeds

Introduced grasses are the biggest weed problem at the moment in this region. Most are grasses brought into Australia for cattle. These include Gamba grass, grader grass and mission grass which are now taking over most northern savanna country. Gamba grass forms tall thick stands, pushing out native grasses and building up huge, late-curing fuel loads for fires. Hot wildfires caused by Gamba grass really increase the risk to lives and property in affected areas. Wetlands in SE Arnhem Land are also at risk from stranger grasses. Semi-aquatic (water loving) grasses like para grass and olive hymenachne grow strong and fast across still freshwater like billabongs and floodplains. They change the way these wetlands work and smother important habitats for fish, turtles, frogs, waterbirds and other water animals. Other grassy weeds recorded from the IPA include buffel grass, grader grass, Mossman River grass, Guinea grass, red natal grass and itch grass.

2. Woody weeds

Hardy introduced shrubs like mimosa, parkinsonia, prickly acacia, coffee senna, bellyache bush and castor oil plant can be a big problem on good soils, especially where they are disturbed by feral animals. These are known as ‘woody weeds’ and most are hard to get rid of. They spread fast and form thickets that keep native plants and wildlife out. Some woody weeds are killed by fire so proper burning can help to keep them under control.

3. Threatening weeds

There are a group of very bad weeds that pose a big risk to our Country. These are listed by the government either as *Weeds of National Significance* (WONS) or weeds on the *NT Current Alert List*, or *National Alert List for Environmental Weeds*. Most haven’t been found in SE Arnhem Land so far, but some like mimosa have. These mimosa outbreaks seem to have been eradicated but monitoring to make sure they don’t come back is really important.

4. Water weeds

A number of fast-growing introduced water-weeds including pond apple, water hyacinth, cabomba, water lettuce, salvinia, water mimosa and alligator weed (considered one of the world’s worst weeds) pose a big threat to the wetlands of SE Arnhem Land. Finding these early and cleaning them up may be the only way of controlling these nasty weeds. To keep an eye out for them we must know what they look like and where they are likely to turn up.

5. Shrubby weeds

Like the larger woody weeds, low shrubs like noogoora burr, hyptis, lions tail, mexican poppy, baleria and snake weed can be an issue as they are spread by feral animals and wrong-way fire. These weeds are a threat to native plant communities. They reduce the potential of land for commercial uses such as horticulture and grazing and they are nuisance to people. Controlling them is often difficult because although shrubby weeds are usually widespread they are usually quite spread out. So spraying isn’t a good control method.

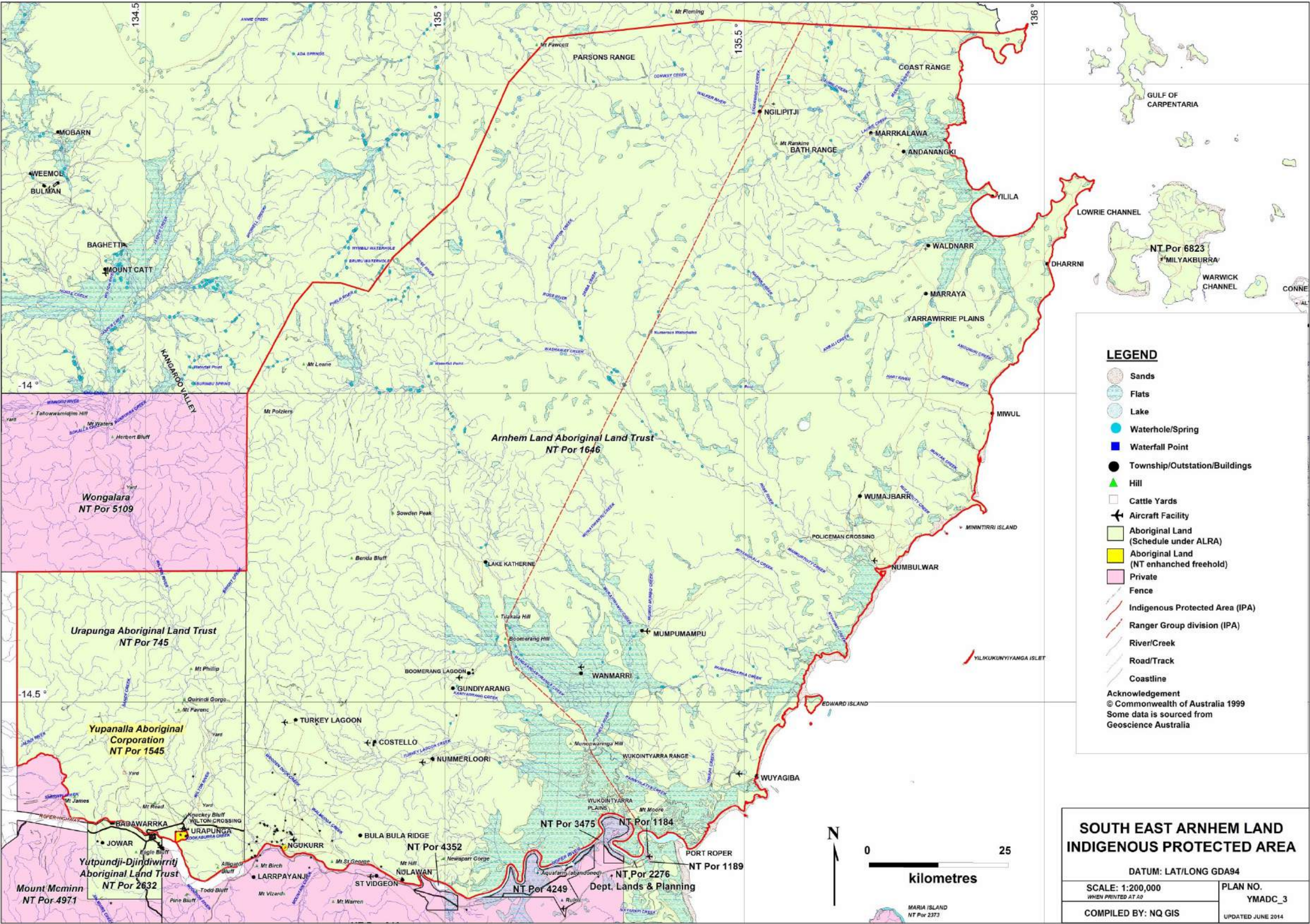
6. Plants that can “jump the fence”

Plants grown in community streets and gardens for decoration or shade can sometimes “jump the fence” and become weeds. Examples from this group found in Ngukurr and Numbulwar include the neem tree and chinee apple, athel pine, Singapore daisy, ornamental rubber vine, coffee bush, lantana and yellow oleander. These plants are OK if they stay in the garden but they need to be cleaned up if they are found out bush or even at outstations.

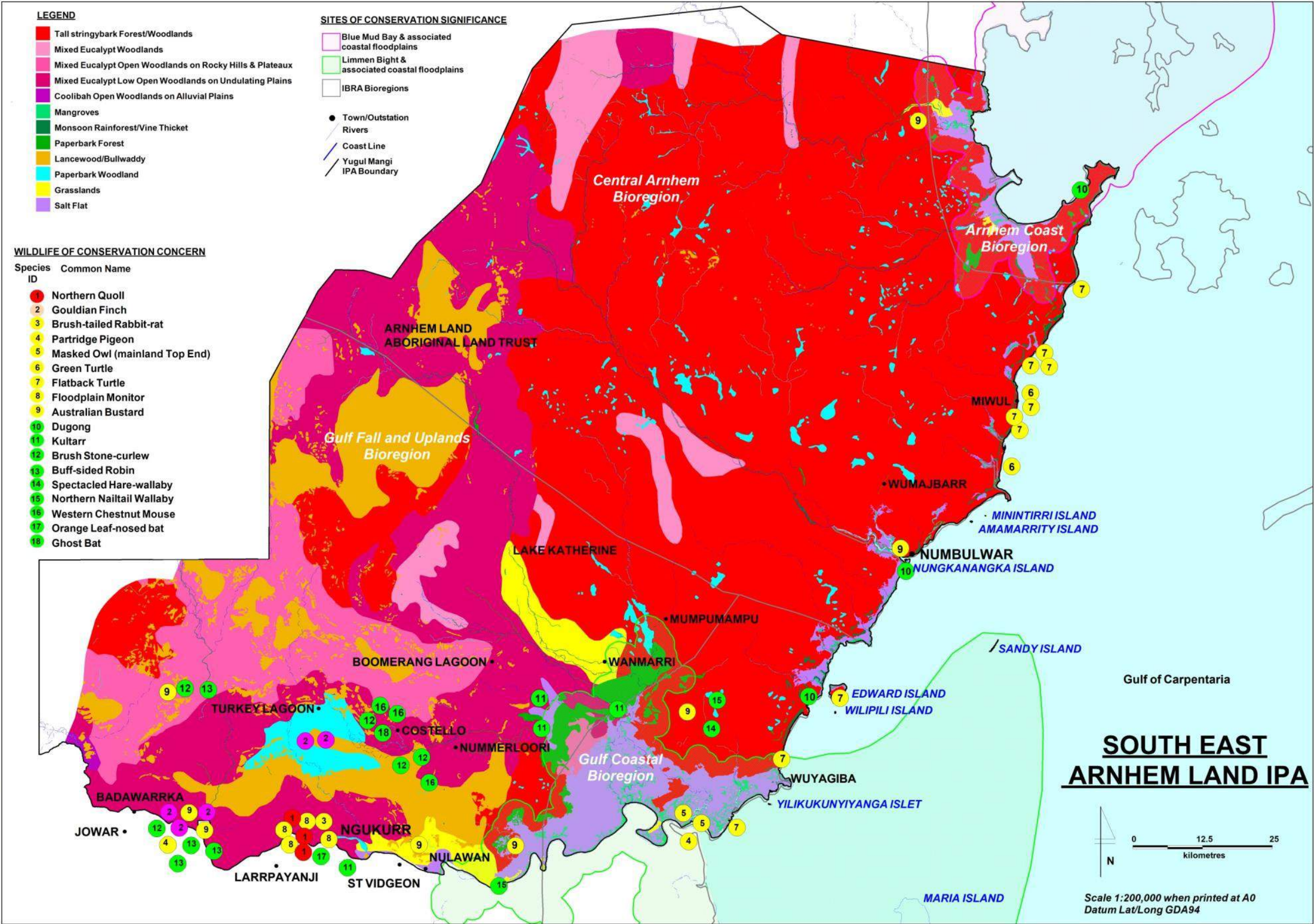
APPENDIX 4: WEEDS TO WATCH OUT FOR – THOSE WITH POTENTIAL TO INVADe THE SE ARNHem LAND IPA

Common Name	Scientific Name	NT Status	National Status	Smith (2001)	Notes
Siam Weed	<i>Chromolaena odorata</i>	C	WONS	-	Very serious pan-tropical weed, low potential for outbreak, invasion only likely from overseas
Rubber Vine	<i>Cryptostegia grandiflora</i>	C	WONS	High	Serious weed, common in north Qld, surveillance recommended , spreads easily – rapid control advised
Olive Hymenachne	<i>Hymenachne amplexicaulis</i>	B/C	WONS	High	Serious weed of wetlands, high potential for outbreaks, surveillance recommended, spreads easily – rapid control advised
Mesquite	<i>Prosopis limensis</i>	A/C	WONS	High	Slow to spread, easily recognised, low potential for outbreaks
Lantana, Common & Creeping	<i>Lantana spp.</i>	Class B and C	WONS	Medium	Easily recognised, low potential for outbreaks
Prickly Acacia	<i>Acacia nilotica</i>	A		High	Easily recognised, low potential for outbreaks
Gamba Grass	<i>Andropogon gayanus</i>	A/C		High	Easily recognised, very serious threat, high potential for outbreaks, surveillance recommended, spreads easily – rapid control advised
Grader Grass	<i>Themeda quadrivalvis</i>	B		High	Not easily recognised, high potential for outbreaks, surveillance recommended
Buffel Grass	<i>Cenchrus ciliaris</i>	not declared		High	Fairly easily recognised, potential for outbreaks, surveillance recommended
Guinea Grass	<i>Panicum maximum</i>	not declared		High	Fairly easily recognised, potential for outbreaks, surveillance recommended- rapid control advised
Lions Tail	<i>Leonotis nepetifolia</i>	B		High	Fairly easily recognised, potential for outbreaks, surveillance recommended
Coffee Bush	<i>Leucaena leucocephala</i>	not declared		High	Easily recognised, some potential for outbreaks, surveillance recommended, spreads – on-going control advised
Castor Oil Plant	<i>Ricinus communis</i>	B/C		High	Easily recognised, some potential for outbreaks, surveillance recommended
Mexican Poppy	<i>Argemone ochroleuca</i>	B		High	Easily recognised, low potential for outbreaks, surveillance recommended ,on-going control advised
Sicklepod	<i>Senna obtusifolia</i>	B		High	
Mossman River Grass	<i>Cenchrus echinatus</i>	B		Medium	
Red Natal Grass	<i>Melinis repens</i>	not declared		Medium	
Common Sensitive Plant	<i>Mimosa pudica</i>	B/C		Medium	
Milk Weed	<i>Euphorbia heterophylla</i>	not declared		Medium	
Barleria (AKA Hophead)	<i>Barleria lupulina</i>	not declared		Medium	as <i>B. prunotis</i>
Saffron Thistle	<i>Carthamus lanatus</i>	not declared		Medium	
Sesame	<i>Sesamum indicum</i>	not declared		Medium	
Flannel Weed	<i>Sida cordifolia</i>	B		Medium	
Paddys Lucerne	<i>Sida rhombifolia</i>	B		Medium	
Singapore Daisy	<i>Sphagneticola trilobata</i>	not declared		Medium	
Centipede Grass	<i>Ischaemum timorense</i>	not declared		-	
Sprangletop	<i>Leptochloa panicea</i>	C		-	
Creeping sensitive plant	<i>Mimosa invisa</i>	A/C		-	
Yellow Oleander	<i>Casbebel thevita</i>	not declared		-	
Spiked Pepper	<i>Piper aduncum</i>	not declared		-	

APPENDIX 5: BOUNDARY OF, AND EXCLUSIONS FROM, THE SE ARNHEM LAND IPA



APPENDIX 6: MAJOR HABITATS AND BIODIVERSITY FEATURES OF THE SE ARNHEM LAND IPA



APPENDIX 7: SHARED MANAGEMENT ARRANGEMENTS

Indigenous connections to country do not readily translate as lines on a map. Traditional rights, and responsibilities may be vested in many individuals and relate to a variety of aspects of the land; both its spiritual and physical elements. In deference to ancestral patterns of land ownership the boundary of our IPA features two Shared Management Areas (SMA); regions where culturally mediated overlap exists between SE Arnhem Land IPA and operational areas of neighboring Indigenous land management groups. Memoranda of Understanding covering these areas have been developed with Yirralka Rangers (Laynhapuy IPA) and Mimal Rangers. Their practical purpose is to ensure cooperation in management of these SMA and where commercial activities are involved, that these are not adversely impacted by declaration of SE Arnhem Land IPA. These MoU stipulate; a) the extend of the SMA, b) the issues or activities each group are responsible for within the SMA, c) agreed protocols for communication between the groups, and, d) dispute resolution procedures.

The substantive content of these MoU are provided here.

Principles Underpinning this MoU

- Both parties agree to openly liaise in developing work plans and protocols for operations within the SMA,
- All agreements or plans arising from this MoU should be concise and written in plain English,
- Good two-way communication at all levels is essential and everyone's responsibility,
- Priorities from each group's strategic plan(s) will be respected and each group retains the right to plan and undertake activities within the context of their existing strategic plans.

Purpose of the MoU

The intent of this Memorandum of Understanding (MoU) is to;

- a) Acknowledge the on-going operation of (neighbouring) Rangers within the SE Arnhem Land IPA,
- b) Establish roles, responsibilities and protocols for the two ranger groups in relation to land and sea management activities within the identified Shared Management Area.

This MoU is intended to work under the auspices of Indigenous cultural protocols, and in doing so enhance the existing collaborative relationship between the two ranger groups. In this way the MoU aims to ensure clear and effective management within the SMA as well as accountability and responsibility from the respective partners.

The following points have been identified as critical to the MoU and are expanded in this document.

- Establish the presence of an agreed area of shared management between the two ranger groups' operational areas;
- Ensure each group's activities are communicated, supported, and facilitated in areas where a continuum of cultural responsibilities are shared by the traditional Aboriginal owners;
- Document and define processes for determining the specific management arrangements (planning and operations) for the SMA;
- Describe protocols for communications, joint planning, monitoring, reporting and evaluation of

management activities within the SMA;

- Set provisions for dispute resolution;
- Provide an imperative to maintain good two-way communication.

Operations under this MoU

Conduct of the collaborative relationship between the two ranger groups is central to the effective land and sea management in the SMA. The signatories are responsible for maintaining good two-way communication between the respective ranger groups, traditional Aboriginal owners and their management boards.

Specifically, they shall:

- Initiate and facilitate an **annual joint meeting** (between February and April) to allow joint pre-dry season planning, post-wet season debriefing and the development of collaborative projects in areas including but not limited to: commercial or semi-commercial activities (i.e. prescribed burning, crocodile egg harvesting, fee-for service contracts), weed spraying, feral animal control, cultural site protection, Learning on Country or similar projects.
- Provide at least **one month's** notice of significant or strategic activities within the SMA, including: weed spraying, feral animal control, wildlife survey or cultural site management.
- Provide **timely** notification of general activities or emergency operations within the SMA, including but not limited to: marine debris patrols, general surveillance, wildfire control, search and rescue, border control or fisheries compliance operations.
- **Monitor the effectiveness** of this MoU and report findings annually to their respective governing bodies.
- Undertake a **review and revise** the MoU at any time deemed necessary by one or both the parties, or at least every 5 years.
- **Append** updated MoU to any new strategic management plans.

Oversight Responsibilities

This MoU applies for the groups' strategic management plans. During this period, the operation of the MoU will be overseen by the two ranger groups' respective Manager/Coordinator (the Managers), who will hold overall responsibility for facilitating planning and operations, including coordinated, efficient, and effective monitoring.

The Managers will comprise appropriate nominated representatives from each of the IPA governance bodies and/or the ranger groups. The Managers are expected to meet at least once annually, and are responsible for ensuring commitments are met. The Managers are also required to organise and attend the annual SMA planning meeting.

Resourcing and Accountability

Financial arrangements remain the individual responsibility of signatories to this MOU. However, either party may request financial disclosure, but only in relation to joint activities within the SMA where joint funding for an activity is planned/ received to enable equitable investment within the SMA. In all other instances finances will be each group's responsibility.

The resourcing of joint operations within each SMA will need to be negotiated during the planning (not through funding contracts). Consideration will need to be given to complement and share specialist skills, equipment, and resources to tasks within SMAs but each group will ultimately be guided by their own strategic plan objectives and priorities. Each Ranger group will be responsible for their own staff, work health and safety arrangements, equipment, wages and transport, as per the provisions of their management and work plans.

Communication Protocols

The Managers will have the major responsibility for facilitating effective communication between the partners to this MoU. The managers, senior traditional Aboriginal owners and ranger staff will meet at the commencement of the year to review operations and establish agreed future planned activities and operations. The Managers will be responsible for informing their respective ranger groups of any issues as they arise, and assisting in their resolution. Each organisation will report to its respective Board as the activities progress.

Dispute Resolution Mechanisms

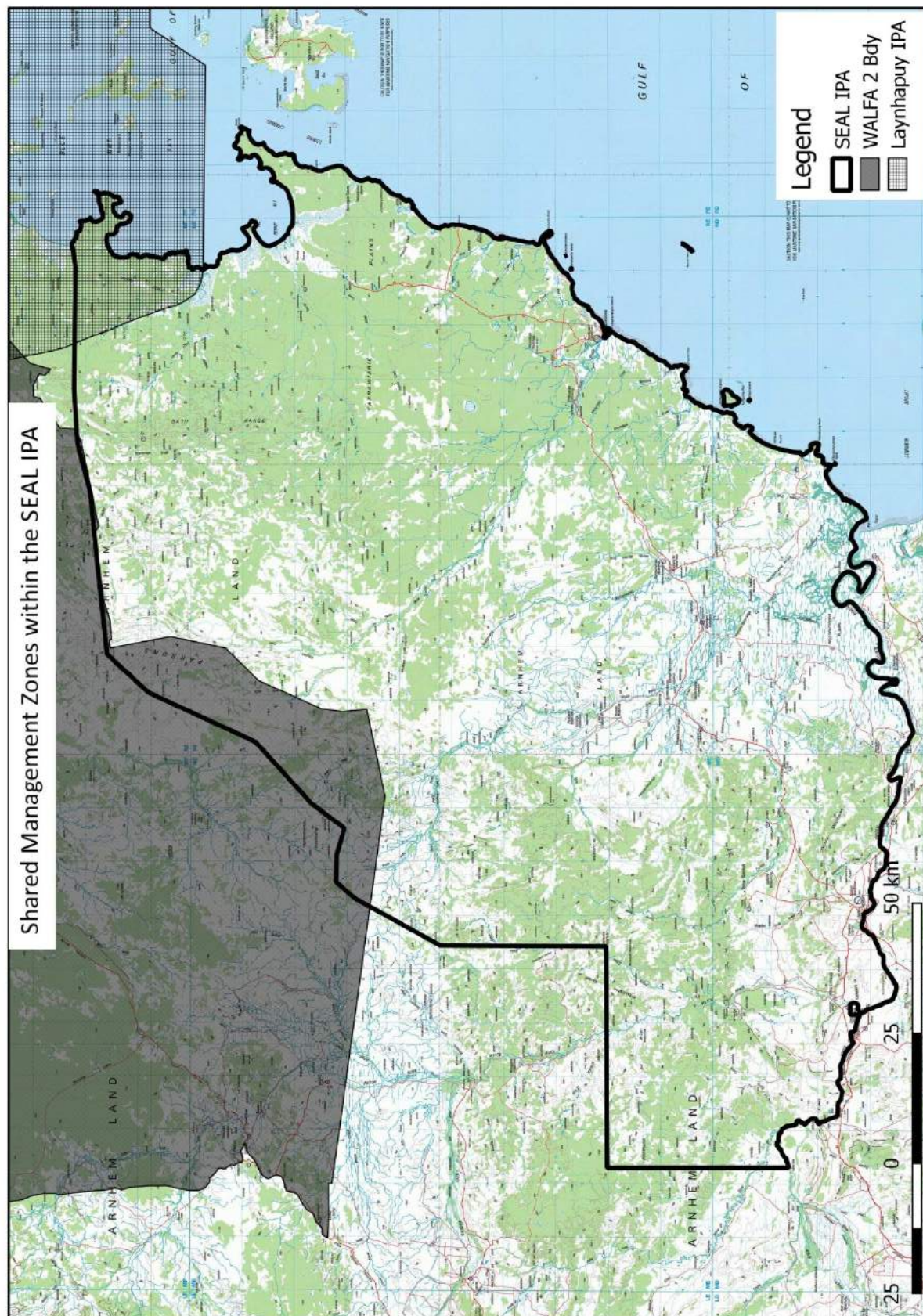
Should one or the other party believe the other is not fulfilling its responsibilities as outlined in this MoU a three stage dispute resolution process is stipulated.

1. In the first instance the Managers will be expected to mediate a resolution.
2. In the second instance managers shall nominate an independent facilitator to convene a dispute resolution meeting between the two ranger groups and or where appropriate IPA Board members.
3. Should this be unsuccessful, it will be necessary to seek assistance of the Northern Land Council to consult the relevant traditional Aboriginal owners with regards to the project or activity the disagreement is centred on.

Monitoring and Evaluation

The Managers will be responsible for monitoring and evaluation of work in the SMA via their respective strategic plans. Results of such monitoring and evaluation should be presented annually to each groups' governance body. As a provision of this MOU each Ranger group shall invite the neighbouring group to attend a governance body meeting and where appropriate contribute to the presentation and evaluation of results.

Figure 5: Shared Management Areas within the SE Arnhem Land IPA



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Numbulwar Numburindi

