



COMMONWEALTH OF AUSTRALIA

Environment Protection and Biodiversity Conservation Act 1999

APPROVAL OF THE KAKADU NATIONAL PARK
MANAGEMENT PLAN 2016-2026

I, JAMIE BRIGGS, Minister for Cities and the Built Environment, acting pursuant to section 370 of the *Environment Protection and Biodiversity Conservation Act 1999*, hereby approve the Kakadu National Park Management Plan 2016-2026.

Dated this ...25... day of ...November..., 20 ..15..

JAMIE BRIGGS.....
Jamie Briggs
Minister for Cities and the Built Environment



Australian Government
Director of National Parks



kakadu[™]
NATIONAL PARK
Board of Management

Kakadu National Park

MANAGEMENT PLAN 2016-2026



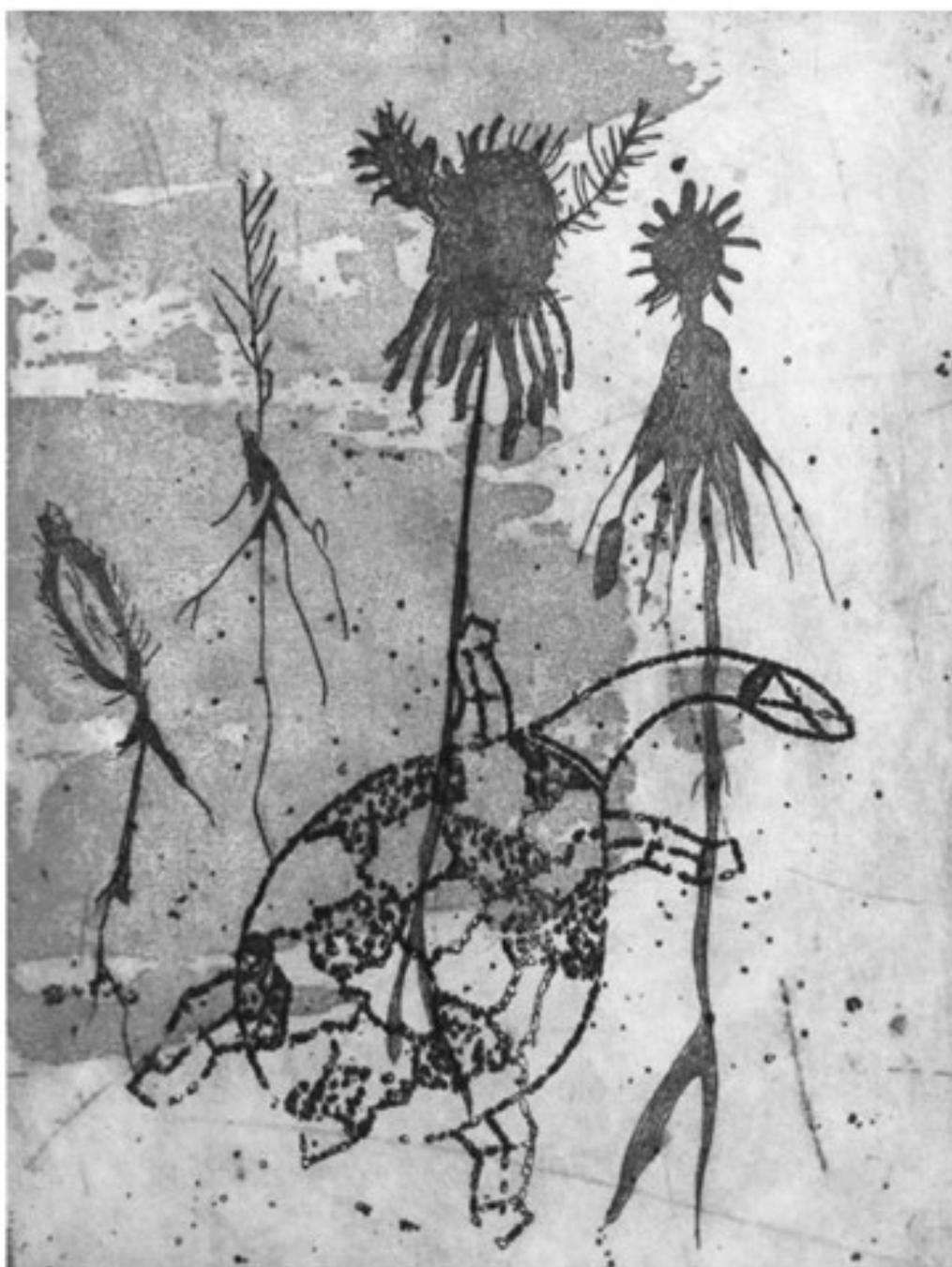
A living cultural landscape

Federal Register of Legislative Instruments F2016L00002

[THIS PAGE IS INTENTIONALLY BLANK – INSIDE COVER]

Kakadu National Park

MANAGEMENT PLAN 2016-2026



A living cultural landscape

The artwork appearing on the cover of this plan was created by Ina Brown ©

Al-mangeyi

'This is a picture of an Al-mangeyi (a long neck turtle).

I go hunting for them with my family in the dry season.

My favourite place to hunt for turtle is the Mamukala wetlands.

We use a crow bar to find them in the mud, then we cook them in the coals.'



The cover artwork was created during Children's Ground printmaking workshops as part of the developing Bininj Kunwaral Arts Enterprise.

ISBN: 978-0-9807460-7-5 (Print)

ISBN: 978-0-9807460-6-8 (Online)

© Director of National Parks 2016

This plan is copyright. Apart from any use permitted under the *Copyright Act 1968*, no part may be reproduced by any process without prior written permission from the Director of National Parks. Requests and inquiries concerning reproduction and rights should be addressed to:

Director of National Parks
GPO Box 787
Canberra ACT 2601

Director of National Parks Australian business number: 13051 694 963

This management plan sets out how it is proposed the park will be managed for the next 10 years.

A copy of this plan is available online at:

www.environment.gov.au/topics/national-parks/parks-australia/publications.

Foreword

Kakadu National Park is, and always has been, Bininj/Mungguy land. The evidence for this is in the World Heritage rock art and archaeological sites throughout the park and Bininj/Mungguy people's traditional connection to their land and culture. The long and continuing history of Bininj/Mungguy custodianship of Kakadu is one of the most important things about the park, recognised in its World Heritage listing.

Traditional owners and managers of Kakadu have strong responsibilities and obligations to care for country and to guide and look after visitors.

From the late 1970s to the time of preparing this plan, about half of the park has been granted as Aboriginal land under the *Aboriginal Land Rights (Northern Territory) Act 1976* and the traditional owners have leased back the land to the Director of National Parks to be managed as part of Kakadu National Park. The remaining half of the park may become Aboriginal land during the life of this plan and will also be leased to the Director of National Parks.

Since the park was declared, it has been managed as if it was all Aboriginal land. Through joint management, Bininj/Mungguy have worked hard with the Director of National Parks and park staff to balance the protection of their culture with making the park an outstanding destination for visitors.

The Kakadu National Park Board of Management wrote this management plan. When writing this plan, the Board worked together to:

- decide on the most important values to recognise and protect in the plan
- decide on the most significant issues impacting those values and to provide instructions on how those issues should be dealt with
- provide ways to make sure Bininj/Mungguy are involved in the implementation of the plan
- provide ways to make sure that the things they have said will be done are done and to measure how well they are done.

The plan sets out how Kakadu National Park is to be managed over the next 10 years.

Kakadu National Park Board of Management



Purpose

Kakadu National Park was established for the following purposes:

- the preservation of the area in its natural condition
- the encouragement and regulation of the appropriate use, appreciation and enjoyment of the area by the public.

Vision

The vision for Kakadu National Park is that it continues to be one of the great World Heritage areas, recognised internationally as a place where:

- the cultural and natural values of the park are protected and Bininj/Mungguy culture is respected
- Bininj/Mungguy guide and are involved in all aspects of managing the park
- knowledge about country and culture is passed on to younger Bininj/Mungguy, and future generations of Bininj/Mungguy have the option to stay in the park to look after country
- world-class visitor experiences are provided, and tourism is conducted in culturally, environmentally, socially and economically sustainable ways
- disturbed areas are rehabilitated and reintegrated into the park
- Bininj/Mungguy gain sustainable social and economic outcomes from the park.

Guiding principles

The guiding principles for the management of Kakadu National Park are that:

- culture, country, sacred places and customary law are one, extend beyond the boundaries of Kakadu, and need to be protected and respected
- Bininj/Mungguy and Balanda keep joint management strong by working together, communicating effectively and sharing decision-making
- consultation with Bininj/Mungguy is conducted appropriately and with the right people for that country
- everyone who lives and works in the park learns from, understands and respects each other
- young Bininj/Mungguy have opportunities to learn about their culture and country
- Bininj/Mungguy and park management maintain and respect each other's obligations and work together to look after the natural and cultural values of the park
- the progress and development of tourism are undertaken in accordance with the wishes of Bininj/Mungguy, and strong partnerships are maintained with the tourism industry
- visitors are provided with opportunities for safe, enriching and memorable experiences.

Acknowledgements

The Kakadu Board of Management is grateful to the many individuals and organisations that contributed to this management plan. In particular they acknowledge Bininj/Mungguy, Parks Australia staff, the Northern Land Council, and the Northern Territory and Australian Government agencies that provided information and assistance or submitted contributions that contributed to the development of this management plan.

Members of the Kakadu Board of Management involved in preparing this plan

Frear Alderson	Murrumburr clan (Deputy member)
Michael Bangalang	Murruwan clan
Sally Barnes	Director of National Parks (from June 2014)
Ryan Baruwei	Wurrkbarbar (Jawoyn) clan (Chair from 2012 to 2014)
Peter Cochrane	Director of National Parks (to December 2013)
Victor Cooper	Minitja clan (Deputy member)
Michael Douglas	Nature conservation (from 2014)
Melanie Elgregbud	Mirarr/Gundjehmi clan (Deputy member)
Joshua Hunter	Wurrkbarbar (Jawoyn) clan (resigned June 2014)
Graham Kenyon	Limilngan clan
Violet Lawson	Murrumburr clan
Jeffrey Lee	Djok clan
Maria Lee	Wurrkbarbar (Jawoyn) clan (Chair from 2014)
Yvonne Margarula	Mirarr/Gundjehmi clan
Mick Markham	Bolmo clan (Jawoyn) (Chair to 2012)
Tony Mayell	Northern Territory Government (from November 2013)
Anna Morgan	Assistant Secretary, Parks Australia
Rick Murray	Tourism industry
Jonathan Nadji	Bunitdj clan (Deputy Chair)
Alfred Nayinggul	Maniligar clan
Denise Williams	Wurrkbarbar (Jawoyn) clan (Deputy member)
Henry Yates	Limilngan clan (Deputy member)

How to read this plan

This management plan takes a different approach to previous management plans for Kakadu National Park. The approach uses the park values statement (see Table 1) to establish the policies and actions needed to protect, present and understand the values of the park over the life of the plan, consistent with the purposes for which the park is established.

This plan also differentiates the actions the Director of National Parks can and will take over the life of the plan to protect, present and understand park values from the rules that apply to activities by park visitors and users; hence it is structured in two discrete parts:

- **Managing Kakadu:** This part of the plan is structured around joint management, protecting the cultural and natural values of the park, developing and promoting Kakadu as a visitor destination, and increasing our understanding of the park's values. It sets out policies that will apply to the Director's activities over the life of the plan as well as describing the actions that will be taken towards achieving the outcomes described in the plan. Any policies relating to provisions of the Environment Protection and Biodiversity Conservation Regulations 2000 (EPBC Regulations) that specifically apply to the activities of the Director in managing the park are also described.
- **Managing use of Kakadu:** This part of the plan is structured around how the Director will enable and manage appropriate visitor and stakeholder activities in the park in accordance with the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and EPBC Regulations. It sets out any policies that apply to park users. Policies include those related to provisions in the EPBC Regulations as well as those that more broadly protect the park values or contribute to the effective management of the park.

This plan takes a more strategic approach than previous plans. To enable this, each section relating to protecting and presenting park values starts with a set of overarching principles which apply to the management of all aspects of that section. More detailed policies and actions relating to a particular issue are then outlined in the relevant subsections.

Some readers of this plan may find that information which was previously in a single section of the plan is now dealt with in a number of sections, or that material which was previously dispersed across the plan is now in a single section. When looking for particular actions or policies, readers should consider whether they are seeking information on what the Director of National Parks will do over the life of the plan or whether they are seeking information about park visitor and user activities.

Bininj/Mungguy

Throughout this plan the term **Bininj/Mungguy** is used to refer to the traditional Aboriginal owners of Aboriginal land in the park (within the meaning of the *Aboriginal Land Rights (Northern Territory) Act 1976*) and other Aboriginals entitled by Aboriginal tradition to use or occupy land in the park (whether or not the traditional entitlement is qualified as to place, time, circumstance, purpose or permission).

Bininj is a Kunwinjku and Gundjeihmi word, pronounced 'bin-ing'. This word is similar to the English word 'man' and can mean man, male, person or Aboriginal people, depending on the context. The word for woman in these languages is *Daluk*. Other languages in Kakadu National Park have other words with these meanings – for example the Jawoyn word for man is **Mungguy** and for woman is *Alumka*, and the Limilngan word for man is *Murlugan* and for woman is *Ugin-j*.

The Kakadu National Park Board of Management has agreed to use the term **Bininj/Mungguy** for the purposes of this management plan.

Contents

Foreword	i
Purpose	iii
Vision	iii
Guiding principles.....	iii
Acknowledgements.....	iv
How to read this plan	v
Bininj/Mungguy.....	v
Part A - Introduction	1
1. A description of Kakadu National Park	2
1.1 Kakadu – a brief description.....	2
1.2 The Aboriginal custodians	2
1.3 Establishment of Kakadu National Park.....	5
1.4 Park values and local, regional, national and international significance	9
1.5 Joint management.....	16
2. Management plan framework	17
2.1 Management planning process.....	17
2.2 The planning framework	18
Part B – General provisions and IUCN Category	23
3. General provisions and IUCN category	24
3.1 Short title.....	24
3.2 Commencement and termination.....	24
3.3 Interpretation	24
3.4 IUCN category.....	24
Part C - Managing Kakadu	27
4. Joint management	28
4.1 Making decisions and working together (Board of Management)	30
4.2 Making decisions and working together (on country)	35
4.3 Bininj/Mungguy training and other opportunities.....	38

5.	Looking after culture and country	41
5.1	Looking after culture	41
5.2	Looking after country	57
5.3	Managing park-wide threats affecting values	75
6.	Kakadu as a visitor experience destination, commercial tourism and promotion	99
6.1	Destination and visitor experience development	101
6.2	Commercial tourism development and management	106
6.3	Promotion and marketing	108
6.4	Visitor information	110
7.	Research and knowledge management	113
7.1	Research and knowledge management	115
8.	Living in the park – Jabiru and outstations	118
8.1	Outstations and living on country	118
8.2	Jabiru	120
9.	Administration and business management	125
9.1	Safety and incident management	125
9.2	Compliance and enforcement	129
9.3	Authorising and managing activities	131
9.4	Capital works and infrastructure	133
9.5	Assessment of proposals	135
9.6	Resource use in park operations.....	140
9.7	Neighbours, stakeholders and partnerships	142
9.8	Revenue and business development	144
9.9	Carrying out and authorising activities not otherwise specified and new ways of authorising activities.....	146
9.10	Implementing and evaluating the plan.....	147

Part D – Managing Use Of Kakadu	151
10. Managing use of Kakadu National Park	152
10.1 Authorisation of allowable activities	153
10.2 General rules for managing use of the park	155
10.3 Living in the park (outstations and Jabiru)	157
10.4 Access	162
10.5 Commercial use of resources.....	165
10.6 Traditional use of land and water	168
10.7 Recreational activities.....	170
10.8 Commercial tourism and accommodation	175
10.9 Filming and photography (and other commercial image capture).....	178
10.10 Commercial fishing	179
10.11 Infrastructure and works	180
10.12 Research and monitoring activities and access to genetic resources.....	181
10.13 Bringing plants, animals and other materials into the park	184
Appendices	187
Appendix A: World Heritage attributes	188
Appendix B: Ramsar criteria	192
Appendix C: International agreements	193
Appendix D: EPBC-listed migratory species recorded in Kakadu National Park	195
Appendix E: Summary of the timeframes and consultation process used in developing this plan.....	198
Appendix F: Glossary and interpretation	201
Appendix G: Legislative context.....	208
Appendix H: IUCN administrative and management principle schedules	216
Appendix I: Provisions of leases	220
Appendix J: Species of conservation concern.....	241
Bibliography	245
Map data sources	248

Tables

Table 1:	Kakadu National Park Values Statement.....	10
Table 2:	Focus of management for the protection of park values.....	21
Table 3:	Guide to decision-making.....	34
Table 4:	Impact assessment process.....	137
Table 5:	Environmental impact assessment matters and considerations.....	138
Table 6:	Key EPBC requirements for access to biological resources as they concern the park	183

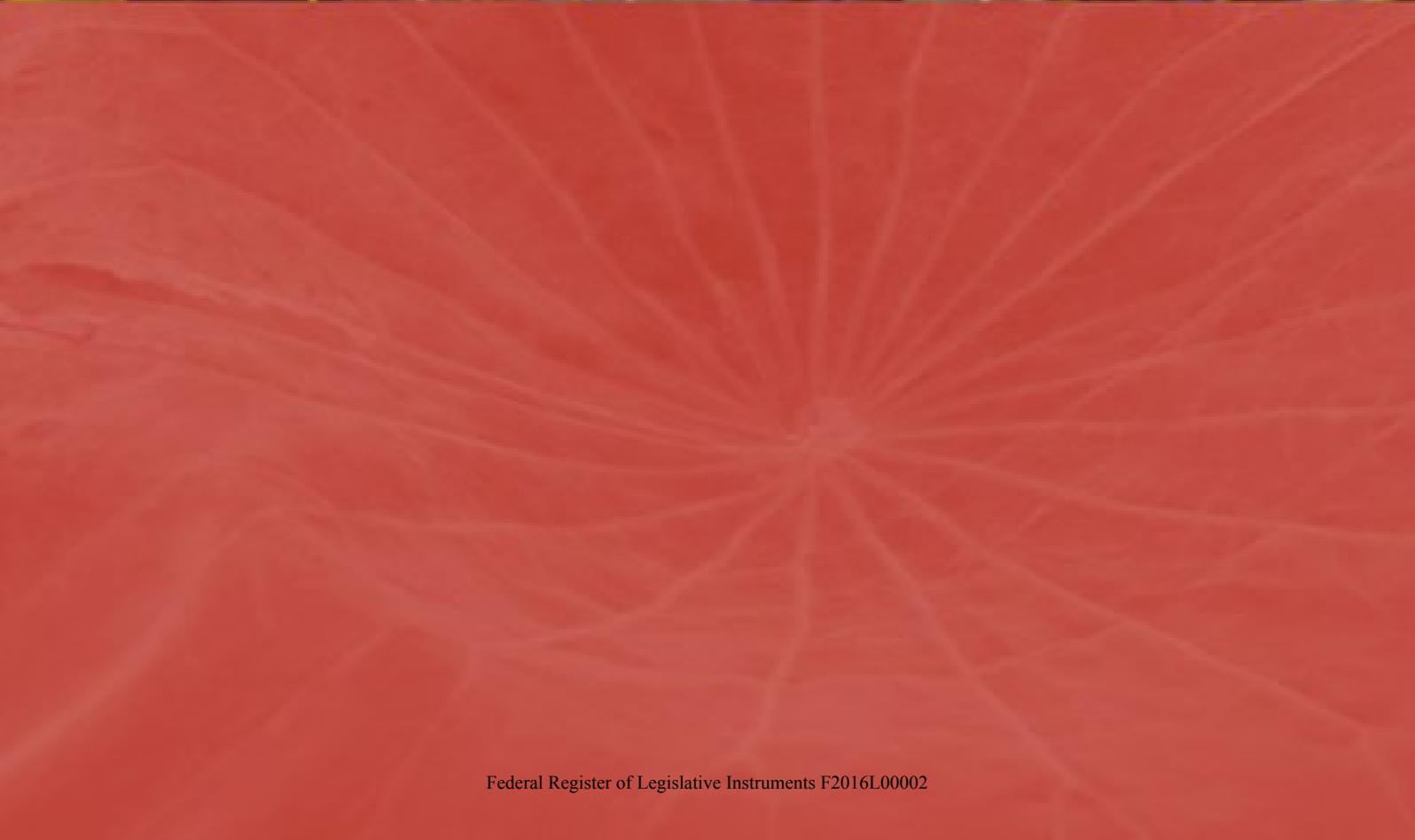
Figures

Figure 1	Location of Kakadu National Park.....	3
Figure 2:	Kakadu National Park	6
Figure 3:	Aboriginal land and land claims in Kakadu National Park as at April 2014.....	8
Figure 4:	Kakadu's major landscapes	14
Figure 5:	Conceptual framework for the structure of this plan.....	20
Figure 6:	Line of sight for Section 4: Joint management.....	29
Figure 7:	Summary of programmes supporting Indigenous employment pathways in Kakadu.....	38
Figure 8:	Line of sight for Section 5.1: Looking after culture	42
Figure 9:	Line of sight for Section 5.2: Looking after country	58
Figure 10:	Endemic plants in the Northern Territory.....	61
Figure 11:	Endemic vertebrates in the Northern Territory.....	62
Figure 12:	Line of sight for Section 5.3: Managing park-wide threats affecting values....	77
Figure 13:	Line of sight for Section 6: Kakadu as a visitor experience.....	100
Figure 14:	Line of sight for Section 7: Research and knowledge management.....	114
Figure 15:	Parks Australia's Management Effectiveness Framework.....	147
Figure 16:	Camping areas in Kakadu.....	172



PART A

Introduction



1 A description of Kakadu National Park

1.1 Kakadu – a brief description

Kakadu National Park covers an area of 19,810 square kilometres within the Alligator Rivers Region of the Northern Territory of Australia. It extends from the coast in the north to the southern hills and basins 150 kilometres to the south, and 120 kilometres from the Arnhem Land sandstone plateau in the east, through wooded lowlands to the western boundary (Figure 1).

Kakadu is a cultural landscape that displays evidence of cultural practices dating back thousands of years and, in many cases, continue to be observed by Bininj/Mungguy in the park today. The park is diverse in language and tradition as it is home to many Aboriginal clan groups. Each clan group has responsibility for looking after and speaking for their own area of country. This responsibility is passed down through generations, along with the knowledge necessary to understand, manage and respect the ancient land. Use and management of the land by past and present generations of Bininj/Mungguy has helped to shape the landscape that we see today.

The park's natural environment is a vast one of exceptional beauty and unique biodiversity. The rugged and ancient stone country provides refuge for a great diversity of native species, and is a hotspot of endemic plants and animals. Extensive floodplains support diverse habitats and a great concentration of waterbirds and other aquatic species. Largely intact woodlands and open forest dominate the lowlands and represent the largest area of savanna within a protected area in the world, while pockets of rainforest provide a cool and shady refuge for many other species.

Both the natural and cultural heritage values of the park have been recognised by its inscription on the World Heritage List under the World Heritage Convention. The park is also listed on the National Heritage List under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), and as a wetland of international importance under the Ramsar Convention. Many species that occur in the park are protected under international agreements including the Bonn Convention for conserving migratory species and Australia's migratory bird protection agreements with China (CAMBA), Japan (JAMBA) and the Republic of Korea (ROKAMBA).

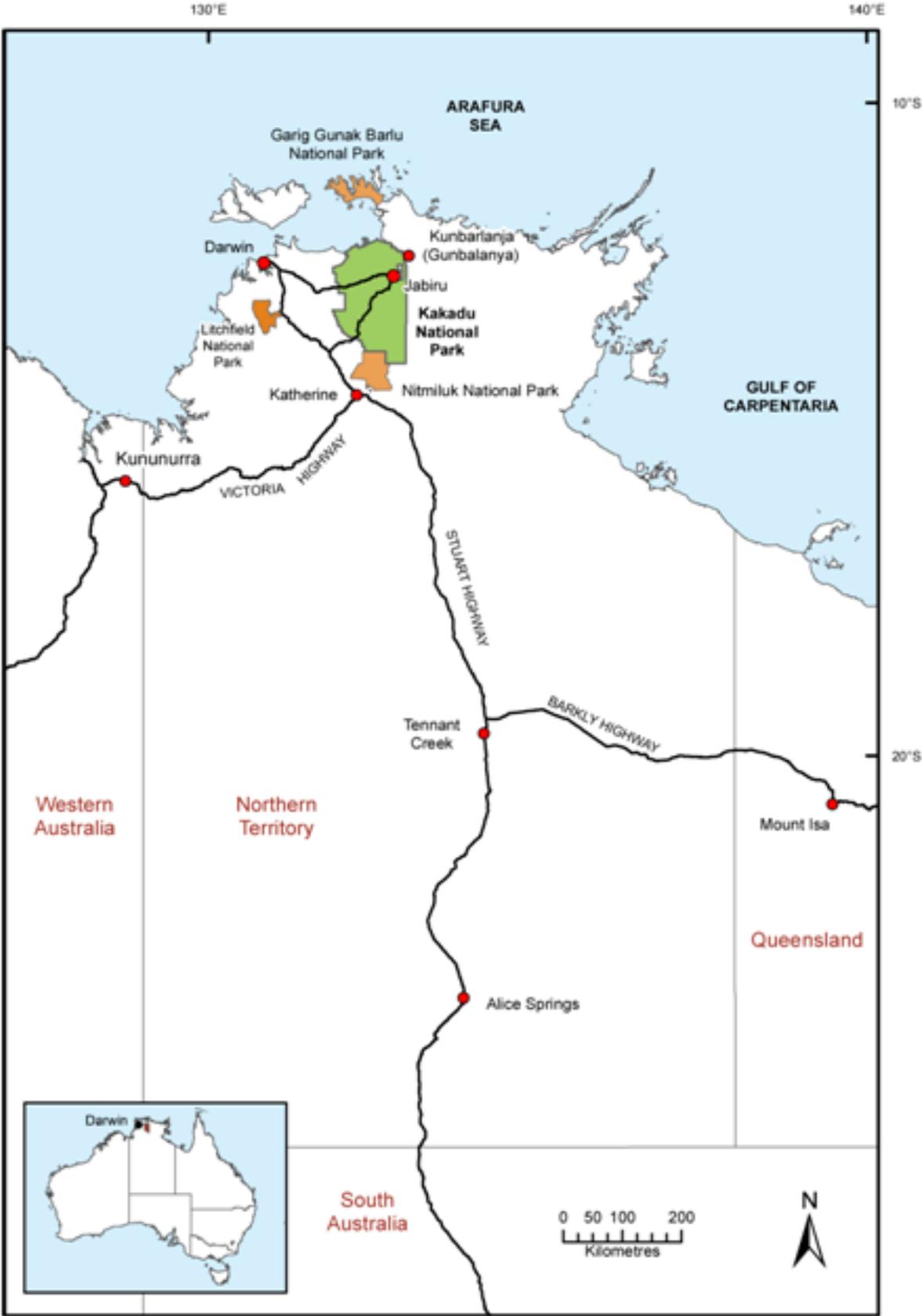
1.2 The Aboriginal custodians

Creation

Every culture has a creation story. Aboriginal people believe that they have been here from the time of the first ancestors, or *Nayuhyunggi* (in the Gundjeihmi language), when landscapes formed, ancestral beings transformed themselves into animals and sacred places were created.

The *Nayuhyunggi* were the first people who formed the landscape, planted foods and left people and language behind. At the completion of their creative activities, they 'sat down' and left their essence in the landscape. The whole landscape is evidence of not only their past activities but also their current presence (Chaloupka 1993).

Figure 1: Location of Kakadu National Park



Creation Ancestors came in many forms. The Rainbow Snake (*Almudj/Alyod* in Gundjeihmi and *Bolung* in Jawoyn) is a spiritual being of great significance in Aboriginal culture in Kakadu. Other ancestral beings include *Bula* (important creator), *Namarrgon* (Lightning Man) and *Warramurrungundji* (Earth Mother). The landscape and its features were left by the Creation Ancestors. They instituted and created ceremonies, rules to live by, laws, plants, animals and people, then they turned into *djang* (dreaming places and their spiritual essence). They taught Aboriginal people how to live with the land, and from then on Aboriginal people became keepers of their country.

'We Aboriginal people have obligations to care for our country, to look after djang, to communicate with our ancestors when on country and to teach all of this to the next generations.'

Combined statement from the Aboriginal members of the
Kakadu National Park Board of Management

Kinship

Every aspect of life and the responsibilities for looking after country is governed by kinship ties. Aboriginal languages have special linguistic features that eloquently express these ties and responsibilities.

Aboriginal society is organised into many kinds of social divisions. All people, plants, animals, places, weather, landscapes and ceremonies are divided into halves or moieties: the patrilineal moieties Duwa and Yirridjdja, and the matrilineal moieties Mardku and Ngarradjku.

Each moiety is subdivided into four pairs of subsections or 'skin groups', and a child's skin group is determined by that of their mother. Skin groups are used in regulating marriages and addressing or referring to Aboriginal people in culturally appropriate ways.

Each clan and moiety has a number of clan totems and emblems. Sacred sites and other special places on each clan estate are the focus of religious life. If the totem is a plant or animal that is relied upon as a food source, then members of the owning clan traditionally had responsibilities to ensure a plentiful supply.

Clan estates and traditional owners

Kakadu includes the traditional lands of a number of Aboriginal clan groups.

'Land and people go together. Every place has a clan name, and every place has a clan.'

Jacob Nayinggul, Manilikar clan

In English the term 'traditional owner' is commonly used to refer to someone who is a member of the clan associated with a particular clan estate. The term has a particular meaning under the *Aboriginal Land Rights (Northern Territory) Act 1976* (Land Rights Act). In the Kakadu area primary responsibility to land is determined according to traditional Aboriginal law and custom and involves making important decisions about the management of country such as protecting resources and sacred sites. While a person belongs to the clan of their father they still have responsibilities to their mother's clan estate. Both men and women may be acknowledged as senior traditional Aboriginal owners.

'These laws need to be explained to non-Aboriginal people in the same way it is taught to children so we can all hold on to it and teach it to children who will grow up learning about their land with this law.'

Jacob Nayinggul, Manilikar clan

Language and language groups

Creation Ancestors were also responsible for the various languages that exist in the Park. These languages are associated with different tracts of land and the people who are the traditional owners. The traditional countries of some language groups are large and divided into distinct estates, others are smaller.

Making decisions about country

Bininj/Mungguy who have cultural responsibilities for management of a clan estate are key people in the planning and management of the park. Everyone who lives, works in or visits Kakadu must respect Bininj/Mungguy rules and it is important that these rules are passed on to young Bininj/Mungguy.

'When I want to do something on country I have to ask the right person. To go and burn country or do weed control I have to ask the right person, traditional way, because there's many important sites there or whatever. This is our way.'

Bessie Coleman, Wurrkbarbar clan

1.3 Establishment of Kakadu National Park

Background

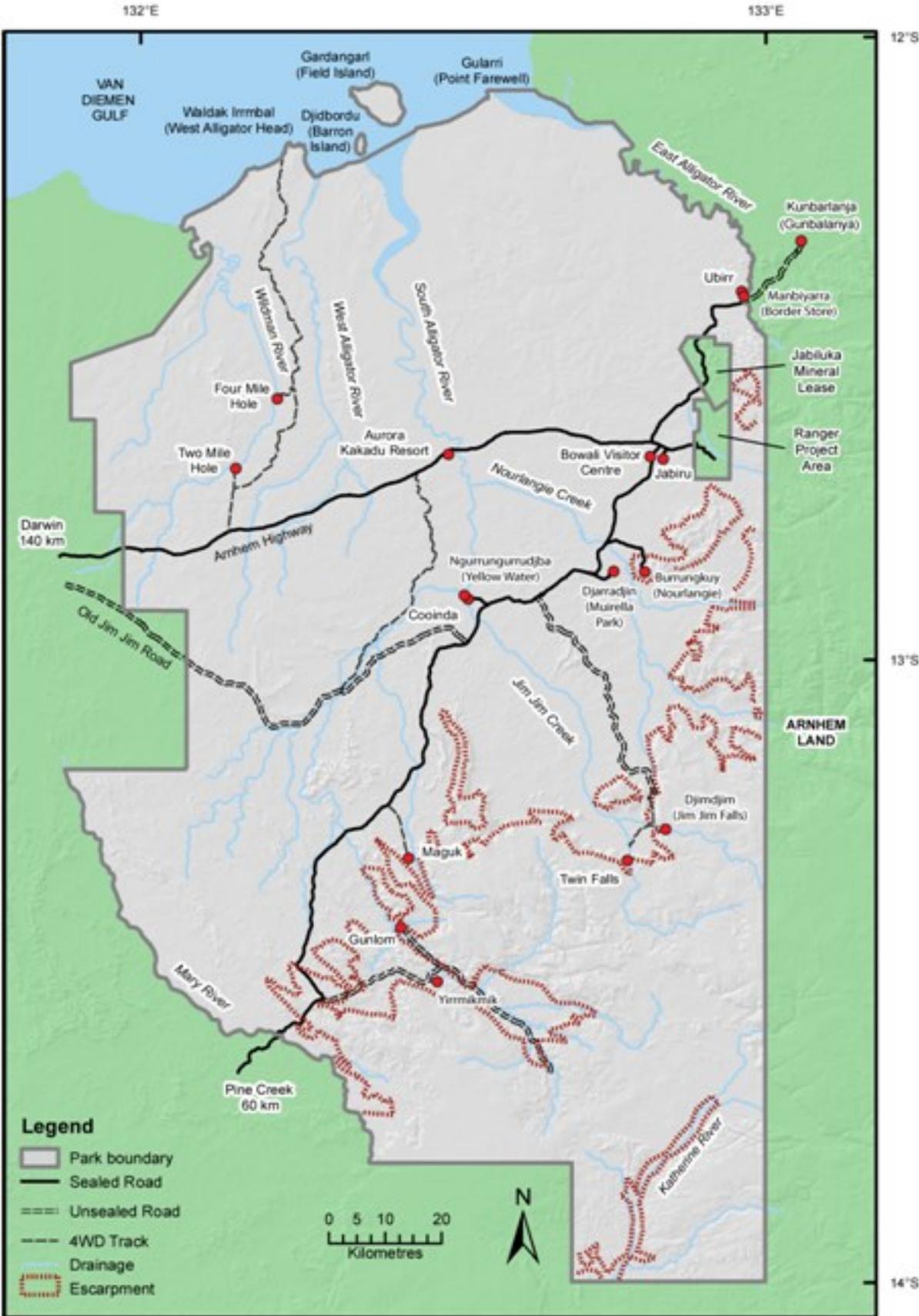
Kakadu National Park (Figure 2) was established at a time when the Australian community was becoming more interested in the declaration of national parks for conservation and in recognising the land interests of Aboriginal people. A national park in the Alligator Rivers Region was first proposed in 1965. Over the next decade several proposals for a major national park in the region were put forward by interested groups and organisations. One of these proposals suggested the name 'Kakadu', after the Gagudju people, for the national park. 'Kakadu' was the original spelling of the word as given by the biologist and anthropologist W Baldwin Spencer in 1912.

In 1973, the Australian Government set up a commission of inquiry into Aboriginal land rights in the Northern Territory. This commission considered how to recognise Aboriginal people's land interests while providing for conservation management of the land. The commissioner in charge of this inquiry, Mr Justice Woodward, concluded: 'It may be that a scheme of Aboriginal title, combined with national park status and joint management would prove acceptable to all interests' (Woodward 1973).

In the early 1970s, significant uranium deposits were discovered in the Alligator Rivers Region at Ranger, Jabiluka and Koongarra. A formal proposal to develop the Ranger deposit was submitted to the Australian Government in 1975. The Government established the Ranger Uranium Environmental Inquiry to investigate the proposal, focusing on environmental issues and the social impact on Aboriginal people.

During the time the inquiry was held, the Land Rights Act was passed by the Commonwealth Parliament. The Act allowed the commission set up to conduct the Ranger Inquiry to determine the merits of a claim to traditional Aboriginal ownership of land in the Alligator Rivers Region. This was the first claim heard under the Land Rights Act.

Figure 2: Kakadu National Park



The Ranger Inquiry tried to work out a compromise between the problems of conflicting and competing land uses, including Aboriginal people living on the land, establishing a national park, uranium mining, tourism and pastoral activities in the Alligator Rivers Region. In August 1977, the Australian Government responded to the recommendations of the Ranger Inquiry. It accepted almost all the recommendations including those about granting Aboriginal title to areas in the Alligator Rivers Region and establishing Kakadu National Park in stages.

An arrangement was made for the traditional owners to lease land granted to them to the Australian Government for management as a national park. Mining would not be permitted in the park but was provided for on areas excluded from the park.

Establishment of the park and the park as Aboriginal land

Kakadu National Park was declared under the *National Parks and Wildlife Conservation Act 1975* (NPWC Act) in three stages between 1979 and 1991. The NPWC Act was replaced by the EPBC Act in 2000. The park continues as a Commonwealth reserve under the EPBC Act pursuant to the *Environmental Reform (Consequential Provisions) Act 1999*, which deems the park to have been declared for the following purposes:

- the preservation of the area in its natural condition
- the encouragement and regulation of the appropriate use, appreciation and enjoyment of the area by the public.

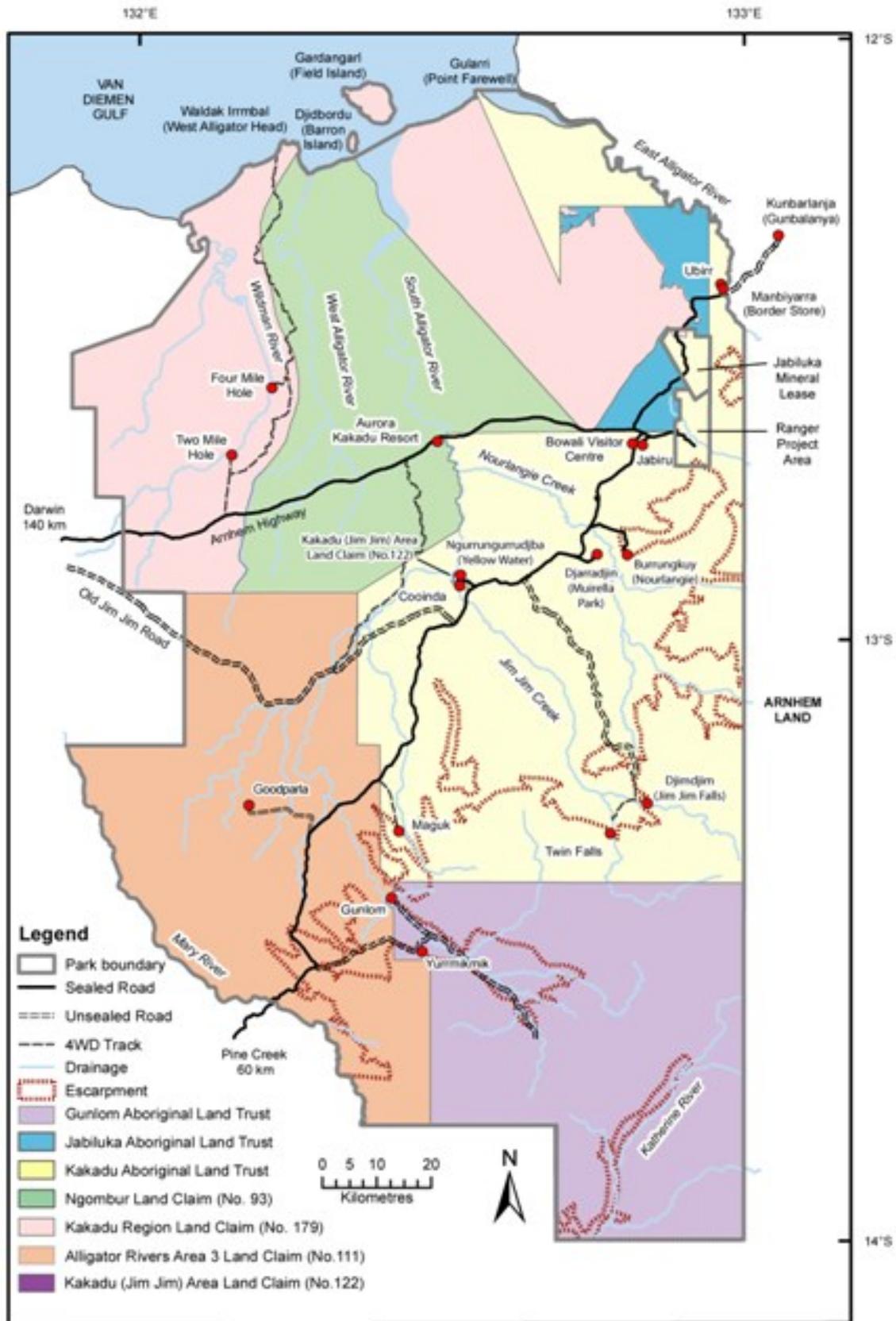
Each stage of the park includes Aboriginal land under the Land Rights Act that is leased to the Director of National Parks (the Director), or land that is subject to a claim to traditional ownership under the Land Rights Act (see Figure 3).

Most of the land that was to become part of Stage One of Kakadu National Park was granted to the Kakadu Aboriginal Land Trust under the Land Rights Act in August 1978 and, in November 1978, the Land Trust and the Director signed a lease agreement for the land to be managed as a national park. Stage One of the park – covering the leased land and land required for the township of Jabiru and some adjoining areas – was declared on 5 April 1979.

Stage Two was declared on 28 February 1984, originally as Kakadu (Stage 2) National Park and later incorporated into Kakadu National Park on 20 December 1985. In March 1978, a land claim was lodged under the Land Rights Act for the land included in Stage Two of Kakadu. The land claim was partly successful and, in 1986, three areas in the eastern part of Stage Two were granted to the Jabiluka Aboriginal Land Trust. A lease between the Land Trust and the Director of National Parks was signed in March 1991. At the time of preparing this plan the rest of Stage Two (except the commercial lease near the South Alligator River) is subject to ‘repeat’ land claims under the Land Rights Act. The land may become Aboriginal land during the life of this plan and will be leased to the Director.

In June 1987, a land claim was lodged for the land in the former Goodparla and Gimbat pastoral leases that were to be included in Stage Three of Kakadu. The other areas to be included in Stage Three – the area known as the Gimbat Resumption and the Waterfall Creek Reserve (formerly known as UDP Falls, UDP standing for Uranium Development Project) – were later added to this land claim. Stage Three of Kakadu National Park was declared progressively on 12 June 1987, 22 November 1989 and 24 June 1991.

Figure 3: Aboriginal land and land claims in Kakadu National Park as at April 2014



The progressive declaration resulted from the debate over whether mining should be allowed at Guratba (Coronation Hill), which is located in the middle of the culturally significant area referred to as the Sickness Country. The traditional owners' wishes were ultimately respected and the Australian Government decided that there would be no mining at Guratba. In 1996 the land in Stage Three, apart from the former Goodparla pastoral lease, was granted to the Gunlom Aboriginal Land Trust and leased to the Director of National Parks to continue being managed as part of Kakadu National Park. At the time of preparing this plan the land claim to the Goodparla area is still ongoing. The land may become Aboriginal land during the life of this plan and will be leased to the Director.

In 1997 the High Court found the Proclamation for Stage Three of Kakadu was invalid in relation to a number of mining leases including Coronation Hill and El Sherana. Following negotiation of a settlement with the holder of the Stage Three mining leases (Newcrest Operations Ltd), all affected areas were eventually incorporated into the park by a proclamation under the EPBC Act in May 2007.

In 1997 the Mirarr people, acknowledged as the traditional owners of the Jabiru township land, made a native title claim under the *Native Title Act 1993* to the township area and two adjoining areas of the park. Agreement to settle the claim was reached in 2009. Under the agreement the claim areas would be granted as Aboriginal land under the Land Rights Act. At the time of preparing this plan the settlement has been partially implemented by the granting of the two areas adjoining the town to the Kakadu Aboriginal Land Trust and leased-back to the Director. The claim over the town area should be resolved during the life of this plan.

The Koongarra Project Area, which had been excluded from the declaration of Stage One of Kakadu in 1979, was incorporated into the park by a proclamation under the EPBC Act in February 2013.

1.4 Park values and local, regional, national and international significance

As well as being important to Bininj/Mungguy, many things about Kakadu are special and important to other people. However, there are some attributes of the park which are fundamental to the park's purpose and significance. These cultural and natural (or country) values are summarised in the park values statement and reflect aspects of the park that are recognised through World Heritage, Commonwealth Heritage and Ramsar listings.

This values statement (Table 1) identifies and separates the cultural and country values of the park because each have distinct threats and management priorities. Identification and separation of the cultural and country values assists in planning and management for them.

For Bininj/Mungguy, there are no local language words that equate exactly with the Western concepts of 'culture' and 'country'. For Bininj/Mungguy the word 'country' not only refers to the landscape but also captures the rich interconnections between land and people – they are inseparable. Professor of Anthropology, Deborah Bird Rose, describes this concept in the following way:

'Indigenous people talk about country in the same way they talk about a person; they speak to country, sing to country, visit country, worry about country, feel sorry for country, and long for country. People say that country knows, hears, smells, takes notice, takes care, is sorry or happy country is a living entity with a yesterday, today and tomorrow, with a consciousness and a will toward life.' (Rose 1996)

Identification and recognition of the park's values ensures a shared understanding about what is most important about the reserve, and the value statement helps to focus management and planning on the important aspects. If the values are allowed to decline the park's purpose and significance would be jeopardised.

The foundation for managing these values and the related threats and management issues includes the protection provided by the EPBC Act. Under the EPBC Act the park is assigned an Australian International Union for Conservation of Nature (IUCN) category (national park) in this management plan, and the park must be managed in accordance with the management principles relevant to the assigned category and the obligations prescribed in the EPBC Regulations, and with regard to World Heritage, National Heritage and Ramsar listings.

Table 1: Kakadu National Park Values Statement



Australian Government
Director of National Parks



Kakadu National Park – Values Statement

Background

Kakadu National Park is Aboriginal land located in the Top End of Australia's Northern Territory. It has been home to Indigenous people for more than 50,000 years. The people of this country, Bininj in the north and Mungguy in the south, have always cared for the land.

Kakadu is an ancient landscape of exceptional beauty and unique biodiversity. It stretches almost 20,000 square kilometres and is located at the convergence of four distinct bioregions: the Arnhem Plateau, Arnhem Coast, Darwin Coast and Pine Creek bioregions. Kakadu includes mangrove-fringed tidal plains in the north, vast floodplains, lowlands and the sandstone cliffs of the Arnhem Land escarpment. These landscapes undergo spectacular changes throughout the year with the passing of each of the six seasons of Kakadu. The park is home to a remarkable variety and concentration of wildlife, and many plants and animals are threatened or found nowhere else in the world.

The park was proclaimed under the *National Parks and Wildlife Conservation Act 1975* in three stages between 1979 and 1991 for the purposes of:

- the preservation of the area in its natural condition
- the encouragement and regulation of the appropriate use, appreciation and enjoyment of the area by the public.

The park is first and foremost home to Bininj/Mungguy. The long and continuing history of Bininj/Mungguy custodianship of Kakadu is one of the most important things about the park. Bininj/Mungguy have leased their land to the Australian Government to be jointly managed as a national park to protect and manage its priceless natural and cultural heritage. The management of the park is subject to a number of competing value systems, with Bininj/Mungguy and park staff working hard through joint management to balance the protection of Bininj/Mungguy culture and the park's natural values with the needs of park visitors and other stakeholders.

International listings

Kakadu National Park was first inscribed on the World Heritage list in 1981 and was subsequently expanded and re-inscribed in 1987 and again in 1992. The Koongarra area was added to the World Heritage Area in June 2011. The park meets five criteria of outstanding universal values as set out in the World Heritage Convention.

The park meets all nine criteria for identifying wetlands of international importance under the Ramsar Convention.

Numerous migratory species that occur in Kakadu are protected under international agreements such as the Bonn convention for conserving migratory species, and Australia's migratory bird protection agreements with China (CAMBA), Japan (JAMBA) and the Republic of Korea (ROKAMBA).

Values

This values statement identifies and separates the cultural and country values of the park. However, it must be remembered that for Bininj/Mungguy the word 'country' not only refers to the landscape but also captures the rich interconnections between land and people – they are inseparable and there are no Bininj/Mungguy words that equate exactly with the Western concepts of 'culture' and 'country'.

Cultural values

The park is an internationally significant cultural landscape inscribed with the signs of an ancient and continuing Bininj/Mungguy presence.

'Bininj culture really strong ... very strong for us Bininj. When I was a girl my grandmother, I learn. Same thing I do with younger generation. You have to look after country, for your grandfather country, like mother country, take care.'

Yvonne Margarula, Mirarr/Gundjeihmi clan

- Stone country in the park protects one of the world's greatest concentrations of rock art sites, estimated to range in age from more than 20,000 years to the recent present, and constituting one of the longest historical records of any group of people in the world.
- The park is a home for Bininj/Mungguy. It represents the oldest **culture** in the world with continuous occupation over 50,000 years, and is a place where Bininj/Mungguy have the opportunity to live and maintain their culture and pass it on to future generations.
- The park protects a rich collection of Bininj/Mungguy **cultural sites**, including sacred and ceremonial sites, and archaeological sites that are some of the oldest occupation sites in Australia.
- The park includes a collection of **historic sites** that tell the important story of the park's recent history and represent a way of life and use of country that no longer exist.

Country values

The park is an internationally significant natural landscape (including landforms and biota of great antiquity) comprising outstanding representation of interconnected ecosystems whose extent, intactness and integrity provides for a distinctive and rich biodiversity including viable populations of threatened, endemic and culturally significant species.

'The park is one big living space ... the stone country is where everything comes from and is connected to the floodplains. It is important for the bush tucker, breeding, but everything is equally important as Kakadu is a living space.'

Jeffrey Lee, Djok clan

The park is a vast and continuous natural environment that comprises four main landscape types, each with distinct natural and cultural values:

- The rugged, ancient and spectacular **stone country** within the park comprises a great diversity of native species, including many threatened species, and at least 160 plant species and many animals that occur nowhere else in the world.
- The **freshwater and saltwater country** within the park encompasses some of the largest and most diverse river systems in northern Australia, including extensive wetlands, floodplains and mangroves that support vast numbers of waterbirds and other aquatic and marine species.
- The vast, largely intact and dominant **lowland woodlands and open forest** in the park represents the largest area of savanna within a protected area in the world and provides habitat for the majority of the park's plants and animals.
- The **rainforest** areas within the park contribute a rich set of very different plant and animal species to those otherwise found in the park, including restricted, threatened and culturally significant species.

As a result of these values, the park has great economic, social, research and regional significance.

How Kakadu is significant locally

To Bininj/Mungguy, Kakadu is of particular importance as it is their home and they have important cultural obligations to look after country. Many Bininj/Mungguy consider that they cannot or should not move to other places to live or work. The park is their traditional homeland and it is important to them that they are able to look after their country and culture and make sure that visitors to their country are safe. Many other people also enjoy the benefits that come from living in the park. For many residents in Jabiru and the Kakadu region, Kakadu is not only a place to live and work but also a place for recreation and a place where they can appreciate and learn about the park's natural and cultural heritage.

How Kakadu is significant regionally

Conservation

The park is both representative and unique. It is representative of the ecosystems of a vast area of northern Australia. It is unique because it incorporates a large drainage basin (the South Alligator River) in its near entirety and all of the major habitat types of the Top End. It is where the Arnhem Land Plateau meets the southern hills and basins and the Alligator Rivers coastal floodplains (see Figure 4).

The stone country in Kakadu is part of the plateau of western Arnhem Land, which is the most significant region in the Northern Territory for biodiversity. It contains the greatest number of endemic and threatened species in the Northern Territory and also supports a high proportion of the Northern Territory's rainforest estate. Kakadu is important for conservation in the region because it is a large area managed as a national park, whereas other areas of Top End habitats are managed primarily for purposes such as pastoralism, mining, or defence force use.

Most of Kakadu is included within two Northern Territory Sites of Conservation Significance, the Western Arnhem Plateau and the Alligator Rivers coastal floodplain, due to the occurrence of large numbers of threatened and endemic species and large aggregations of waterbirds.

Regional economy

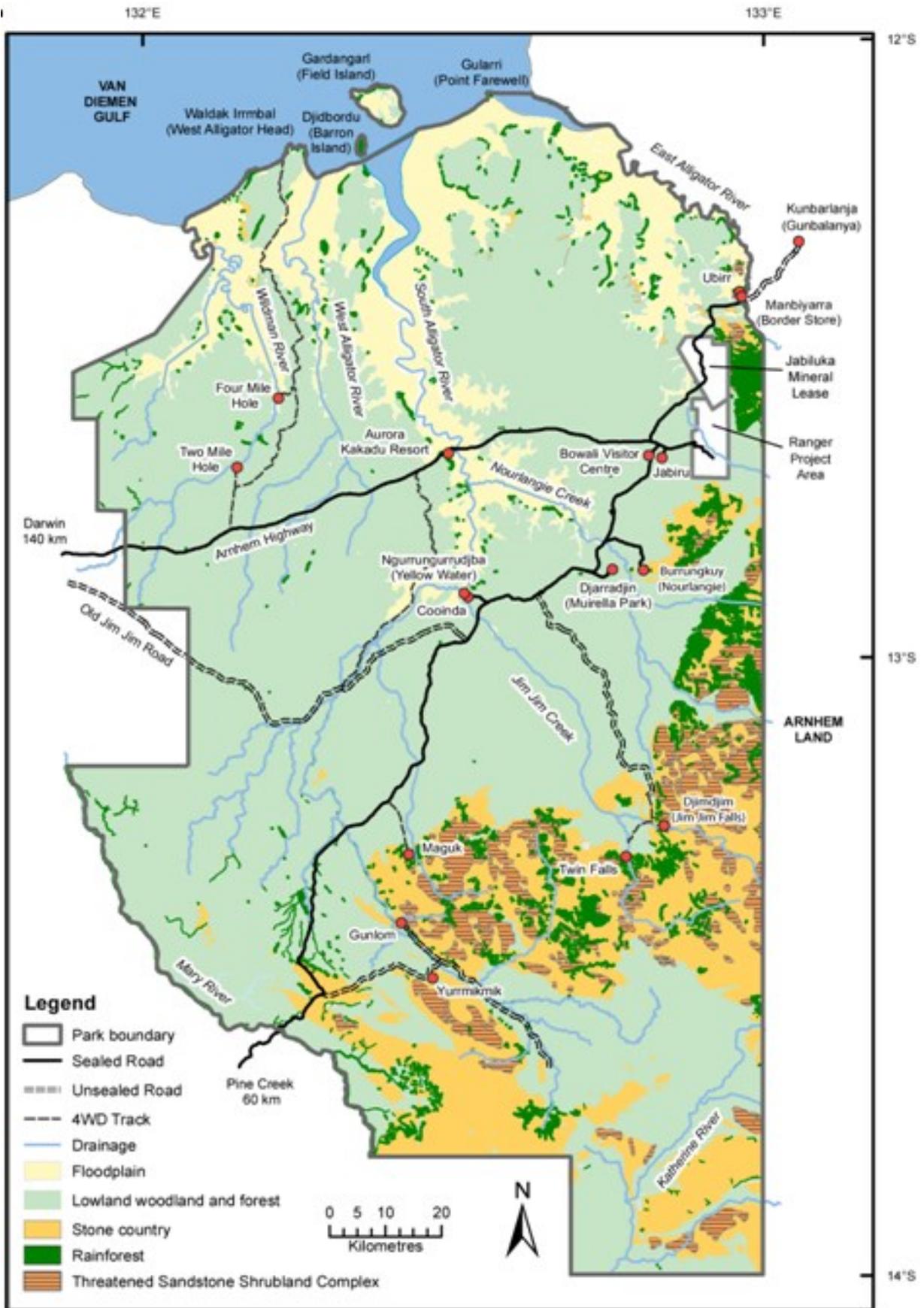
Tourism is very important to the regional economy, particularly in terms of employment. For the financial year 2013–14, Tourism NT reported that the direct value of tourism to the Northern Territory was \$790 million (Tourism NT 2014a) and in the year ending March 2015 the Northern Territory attracted 1.34 million visitors (Tourism NT 2015a). It is estimated that in 2013–14 Kakadu National Park attracted 190,400 visitors. In addition to its significant contribution via the tourism market, the park purchases significant quantities of goods and services from regional suppliers.

It is important to the Northern Territory Government, Bininj/Mungguy and park management that tourism development in the park complements the tourism marketing strategies and plans for regional tourism development. The park is a significant provider of direct and indirect employment in the regional economy and provides opportunities for Bininj/Mungguy people and organisations through direct employment and outsourcing of services.

Recreation

Many people from Darwin, Katherine and Pine Creek use the park for recreation. Fishing, camping, bushwalking and visiting with relatives and friends are some of the most popular activities. Kakadu offers recreational opportunities that complement those offered in the other parks, reserves and attractions in the region, such as the Mary River National Park, Nitmiluk, Litchfield and Gurig national parks, Fogg Dam, Window on the Wetlands and the Territory Wildlife Park.

Figure 4: Kakadu's major landscapes



How Kakadu is significant nationally

Conservation

Nearly 1,600 plant species have been recorded in Kakadu, including 15 species considered threatened. More than one-third of Australia's bird fauna (271 species) and about one-quarter of Australia's land mammals (77 species) are found in the park, along with 132 species of reptiles and 27 species of frogs. The region is the most species-rich in freshwater fish in Australia, and over 246 species of fish have been recorded in tidal and freshwater areas within the park. Additional species new to western science have also been discovered in the park since its inscription, most recently a gudgeon and a goby fish in 2013.

Kakadu is one of 19 World Heritage places in Australia and is included on the National Heritage List under the EPBC Act. At the time of preparing this plan, Kakadu is on the list of indicative places under consideration for inscription on the Commonwealth Heritage List.

The national park status and effective conservation management of Kakadu contribute significantly to meeting the objectives of a number of Australian national conservation strategies including the National Strategy for the Conservation of Australia's Biological Diversity; the National Strategy for Ecologically Sustainable Development; and the National Forest Policy. The park also plays a major role in protecting representative examples of ecosystems within the Arnhem Plateau and Pine Creek bioregions, and contributing to the National Reserve System's network of protected areas across Australia.

National economy

Tourism is a significant contributor to the Australian economy providing for \$43 billion or 2.7 per cent of the national gross domestic product in 2013-14 (Tourism Research Australia 2014) and is actively encouraged and promoted nationally and internationally by government agencies and tourism industry stakeholders. Along with other places of natural beauty and cultural significance in Australia, such as Uluru-Kata Tjuta National Park and the Great Barrier Reef, Kakadu is a major tourism attraction for domestic and overseas visitors.

Joint management

The management arrangements in the park between Bininj/Mungguy and the Director of National Parks continue to be cited as an example of an innovative cooperative management arrangement. Protected area and land management authorities and groups of Indigenous people interested in joint management from within Australia and overseas regularly visit the park, and the model of joint management used in Kakadu and Uluru-Kata Tjuta National Parks has been a blueprint for joint management more broadly.

How Kakadu is significant internationally

Kakadu is inscribed on the World Heritage List under the World Heritage Convention for its outstanding natural and cultural values. These values are described in the Retrospective Statement of Outstanding Universal Value (UNESCO 2014). Stage One of the park was inscribed on the list in 1981 and Stage Two in 1987. The whole of the park was listed in December 1992. In recognition of its outstanding natural and cultural values, the Koongarra area was added to the Kakadu World Heritage Area by the World Heritage Committee on 27 June 2011. As of 2013 Kakadu was one of only 29 World Heritage sites listed internationally for both natural and cultural heritage.

Appendix A: summarises the World Heritage criteria and attributes of Kakadu.

As a listed World Heritage site Kakadu is recognised internationally for its rock art and archaeological sites which record a living cultural tradition that continues today.

The archaeological sites and rock art sites within the park exhibit great diversity, both in space and through time, yet embody a continuous cultural development. These sites are recognised internationally as preserving a record, not only in the form of archaeological sites but also through rock art, of human responses and adaptation to major environmental change including rising sea levels. Kakadu also contains archaeological sites which are currently some of the oldest dated within Australia.

Kakadu is also listed as a Wetland of International Importance under the Ramsar Convention. The park was previously listed as two separate Ramsar sites. These were Stage One, listed on 12 June 1980 and extended in 1995; and Stage Two, listed on 15 September 1989. On 28 April 2010 the two Ramsar sites were combined to form a single Ramsar site encompassing the entire park. Appendix B summarises the Ramsar criteria of the park.

In March 1996, the parties to the Ramsar Convention agreed to establish an East Asian–Australasian Flyway to protect areas used by migratory shorebirds. The flyway provides for an East Asian–Australasian shorebird reserve network of sites that are critically important to migratory shorebirds. The wetlands of Kakadu are part of this reserve network.

Numerous migratory species that occur in the park are protected under international agreements which include the Bonn Convention for conserving migratory species, and Australia’s migratory bird protection agreements with China (CAMBA), Japan (JAMBA) and the Republic of Korea (ROKAMBA) (Appendix C). Forty of the species listed under the Bonn Convention are found in Kakadu, as are 51 of the birds listed under CAMBA and 46 of the birds listed under JAMBA. Appendix D provides the EPBC Act listed migratory species that occur in the park.

The park encompasses all or most of three contiguous internationally recognised Important Bird Areas (Arnhem Plateau, Kakadu savanna and Alligator Rivers floodplain) substantially due to the presence of large numbers of globally threatened bird species.

1.5 Joint management

Joint management is a partnership between Bininj/Mungguy and government to share the land in Kakadu, and share responsibility for managing the land. Through joint management the partners work to protect the park’s values and share it with the public, bringing together traditional knowledge and modern science, and creating opportunities for Bininj/Mungguy to be involved in park management at all levels, establish businesses and preserve their culture for future generations.

The lease of Aboriginal land associated with the declaration of Stage One of Kakadu National Park in 1979 set out terms for consultation with traditional owners. At the same time the government committed to manage all of the land in the park as if it were Aboriginal land.

This effectively commenced joint management of the park and joint management of protected areas in Australia. Kakadu was also one of the first formally co-managed protected area arrangements in the world (Zurba et al. 2012). Since the commencement of joint management, the relationship between the Director of National Parks and Bininj/Mungguy has matured and evolved to the joint management relationship it is today.

Joint management in Kakadu is formally based on a legal framework set in place by the NPWC Act (continued under the EPBC Act) and the Land Rights Act. The Land Rights Act provides for the granting of land to Aboriginal Land Trusts for the benefit of relevant Aboriginals (the traditional Aboriginal owners and other Aboriginals with rights of use and occupation) and requires land granted in the Alligator Rivers Region to be leased to the Director of National Parks. The EPBC Act provides for the park to be managed by the Director in conjunction with Bininj/Mungguy through the Board of Management. The Director is assisted by Parks Australia, whose staff are employees of the Department of the Environment assigned to the Director (see also Section 9.10: Implementing and evaluating the plan).

2 Management plan framework

2.1 Management planning process

This is the sixth management plan for Kakadu National Park. The fifth plan came into operation on 1 January 2007 and ceased to have effect on 31 December 2013.

Section 366 of the EPBC Act requires that the Director of National Parks and the Board of Management for a Commonwealth reserve prepare management plans for the reserve. In addition to seeking comments from members of the public, the relevant land council and the relevant state or territory government, the Director and the Board of Management are required to take into account the interests of the traditional owners of land in the reserve and of any other Indigenous persons interested in the reserve.

Prior to preparing this plan an audit (DNP 2012) was conducted to review the implementation of the fifth plan and to provide recommendations to assist with the preparation of this plan. For that purpose, nine independent auditors were engaged based on their expertise relevant to different sections of the plan. The auditors were asked to investigate whether the actions and policies in the plan were implemented and whether they successfully met the aims of each section of the plan.

The audit's findings suggest that some aspects of park management could be improved, including:

- monitoring and reporting to provide evidence-based measures of progress
- monitoring and treatment of invasive plants and animals
- addressing threatened species decline
- supporting and improving consultation with Bininj/Mungguy
- assisting with proposals for establishing new living areas within the park
- improving opportunities for:
 - direct employment of Bininj/Mungguy
 - Bininj/Mungguy contracts for park maintenance activities.

The auditors also suggested that there should be a clearer link (or line of sight) between the park's management actions and the desired outcomes and objectives, and that the performance indicators should be able to clearly demonstrate if management of the park is achieving the desired outcomes and objectives.

In February 2012 a notice was published inviting the public and relevant stakeholders to have their say towards the development of this plan. Seven formal submissions were received and the views expressed in those submissions were considered in the development of this plan.

The Kakadu National Park Board of Management (the Board) resolved that consultations be undertaken with Bininj/Mungguy on a clan-by-clan basis to seek comments on issues related to the management of the park. During the drafting stage of this plan, park staff conducted extensive consultations with over 128 Bininj/Mungguy during 14 participatory planning meetings. These meetings covered a range of park management issues including decision-making procedures; natural and cultural resource management; visitor management and park use; and Bininj/Mungguy employment. A number of Board meetings were also conducted to consider the development of the draft management plan and comments made by stakeholders. Appendix E summarises the consultations and planning timeframes undertaken in developing this plan.

Other stakeholder groups and individuals who were consulted during the preparation of this management plan include:

- Kakadu Tourism Consultative Committee (KTCC) members
- Kakadu Research and Management Advisory Committee (KRMAC) members
- external natural and cultural resource management experts including Dr John Woirnaski, Dr Sandy Blair and Dr Sally May
- Northern Land Council and local Aboriginal associations and corporations
- neighbours and residents including the Nitmiluk National Park Board of Management and Energy Resources Australia
- Amateur Fisherman's Association of the Northern Territory and Tourism NT
- park staff.

On 3 December 2014 a draft version of this plan was released and a notice was published seeking comments from the public, relevant stakeholders and anyone with an interest in the park. The public comment period closed on 14 February 2015 and a total of 31 submissions were received. The comments contained in these submissions were considered when finalising this plan.

2.2 The planning framework

The framework of this plan is structured around two discrete elements

Part C. Managing Kakadu: *actions the Director can and will do over the life of this plan.*

- This part of the plan is structured around joint management, protecting the cultural and natural values of the park, developing and promoting Kakadu as a visitor destination, and increasing our understanding of the park's values. It sets out policies which will apply to the Director's activities over the life of the plan as well as describing the actions that will be taken towards achieving the outcomes described in the plan. Any policies relating to provisions of the EPBC Regulations that specifically apply to the activities of the Director in managing the park are also described.

Part D. Managing use of Kakadu: *what park users need to understand about accessing the park.*

- This part of the plan is structured around how the Director will enable and manage appropriate visitor and stakeholder activities in the park in accordance with the EPBC Act and EPBC Regulations. It sets out any policies which apply to park users. Policies include those related to provisions in the EPBC Regulations as well as policies which more broadly protect the park values or contribute to the effective management of the park.

A values-based approach to planning

The essential natural and cultural values of the park identified in Table 1 clearly define what management of the park seeks to protect and present. Planning in the park and the structure of this management plan are based around these values so that the links (or line of sight) between the values, the desirable outcomes and objectives, the management actions and policies, and the performance indicators are visible and understood. Figure 5 illustrates this line-of-sight and simplified line-of-sight diagrams are used throughout this management plan.

Prioritisation

Section 5 of this plan (Looking after culture and country) is about managing the park values and identifies the existing and potential threats to the values. A number of the threats to the values were identified by a range of experts as being of high significance and are the basis for developing management actions to protect the values.

In addition to management focusing on significant threats, priority areas reflecting country values, priority cultural sites and significant species (see Table 2) will also be identified (see Section 7: Research and knowledge management). This acknowledges that in a resource-constrained environment, it may not be possible to manage threats to values across all landscapes or to actively manage all rock art or other cultural sites. Defining priority areas will form part of a broader approach to prioritising actions from the management plan (see Section 9.10: Implementing and evaluating the plan). For example, a site where a ‘highly significant’ threat overlaps a priority area is likely to be prioritised for action before other sites.

The performance monitoring plan (Section 9.10) will further describe which areas, sites, species and threats will be routinely monitored and the methods to be used for monitoring.

For other sections of the management plan – those relating to joint management, tourism, Jabiru and other living areas and business management – a series of management issues are presented rather than threats to values. These issues are not assessed for significance but actions are included to address them unless noted otherwise.

The park’s planning hierarchy

This management plan provides the strategic direction for managing the park over the next 10 years. It refers to management strategies, guidelines, plans and operational protocols that have been developed or will be developed with the explicit purpose of contributing to the achievement of objectives and outcomes described in this plan. These strategies, plans, guidelines and operational protocols will be reviewed and updated in accordance with this management plan and the Parks Australia Management Effectiveness Framework. Development of such documents is guided by relevant policies and actions in this plan; involves consultation with traditional owners, other relevant Aboriginals and other stakeholders; and is subject to final endorsement by the Board of Management. Strategies and guidelines for the implementation of management programmes for the park are often made available on the park website.

Figure 5: Conceptual framework for the structure of this plan

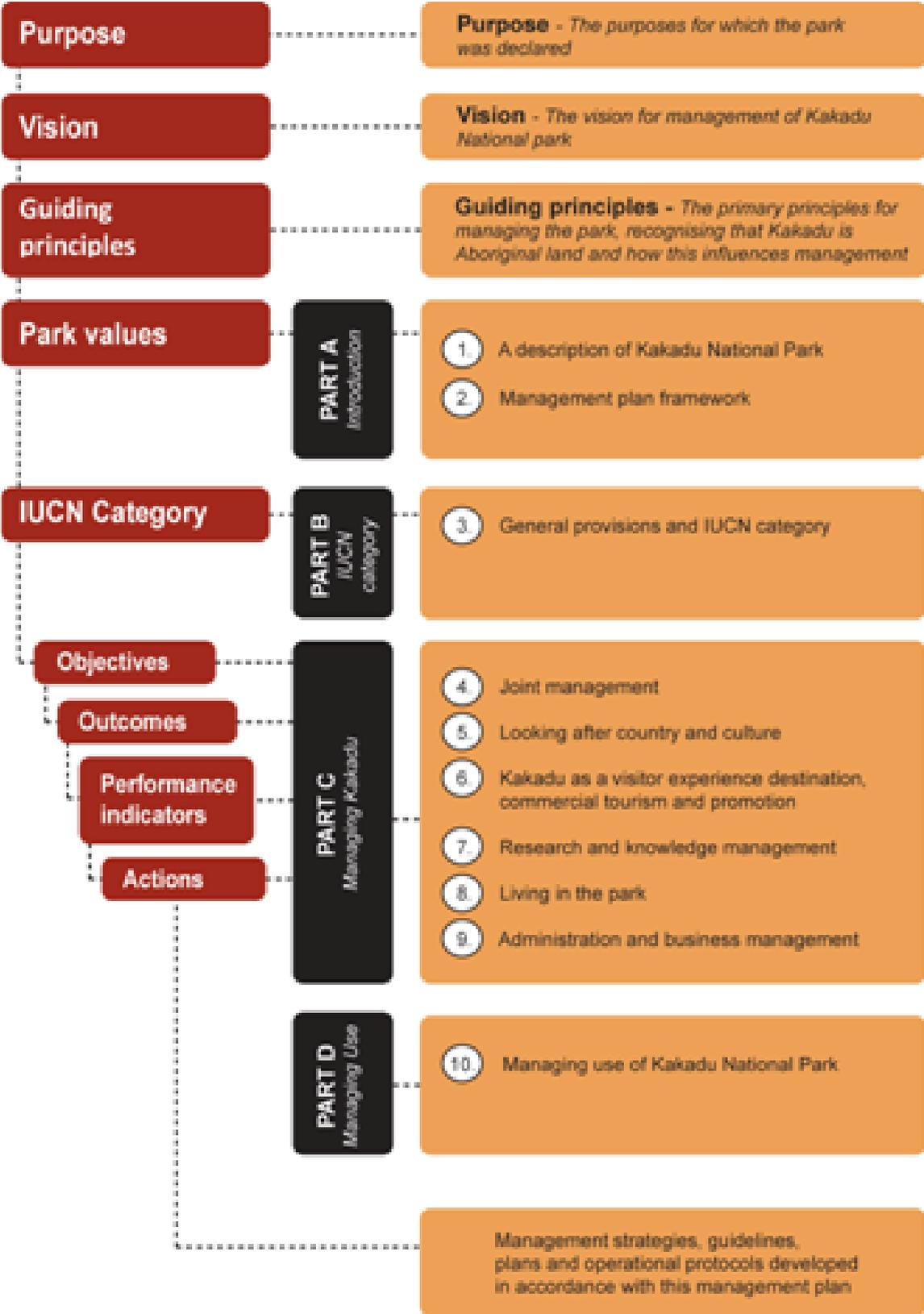


Table 2: Focus of management for the protection of park values

Values	Focus	Comments
Cultural values	Priority sites	Identified sites with high cultural values that are a priority for management and/or monitoring
Country/natural values	Priority areas	Identified areas within the major park landscapes with high natural values that are a priority for management and/or monitoring
Country/natural values	Significant species	Species that are threatened, endemic, have cultural value or are of conservation concern for other reasons (declining, fire sensitive etc.)
Country and cultural values	Significant threats	The threats to values in this plan that are described as 'highly significant' will have actions specifically tailored to address them within the same section of the plan. Actions for threats to values that are identified as being 'moderately significant' or of 'low significance' may be included in the same section of the plan or in Section 5.3: Managing park-wide threats affecting values.



"Snake 2" by Hezekiah Lane ©

PART B
**General provisions
and IUCN category**



3 General provisions and IUCN category

3.1 Short title

This management plan may be cited as the Kakadu National Park Management Plan 2016-2026.

3.2 Commencement and termination

This management plan will come into operation following approval by the Minister under s.370 of the EPBC Act, on a date specified by the Minister or the day after it is registered under the *Legislative Instruments Act 2003*, whichever is later, and will cease to have effect ten years after commencement, unless revoked sooner or replaced with a new plan.

3.3 Interpretation

Definitions of terms, concepts, legislation and acronyms used in this plan are provided in the glossary in Appendix F.

3.4 IUCN category

The EPBC Act requires this management plan assign the park to one of the seven Australian International Union for Conservation of Nature (IUCN) categories. The Australian IUCN categories correspond to the International Union for Conservation of Nature (IUCN) protected area categories. The EPBC Regulations (Schedule 8) prescribe the Australian IUCN management principles for each IUCN category. The Australian management principles for IUCN protected area category II require taking account of the needs and aspirations of traditional owners and other Indigenous people in the park, specifically:

- The needs of Indigenous people including subsistence resource use, to the extent that they do not conflict with the Australian IUCN management principles.
- The aspirations of traditional owners of land within the reserve or zone, their continuing land management practices, the protection and maintenance of cultural heritage and the benefit the traditional owners derive from enterprises, established in the reserve or zone, consistent with Australian IUCN management principles should be recognised and taken into account.

The category to which the park is assigned is guided by the purposes for which the park was declared (see Appendix G: Legislative context). The purposes for which Kakadu National Park was declared are consistent with the characteristics for IUCN protected area category II 'national park'.

Under the IUCN categorisation system (Dudley 2008), it is acknowledged that the primary objective for a protected area should apply to at least three-quarters of the protected area—known as the 75 per cent rule. The IUCN thus recognises that up to 25 per cent of land or water within a protected area can be managed for other purposes so long as these are compatible with the primary objective of the protected area.

Within Kakadu it is estimated that less than one per cent of the park is utilised for residential and visitor accommodation, infrastructure and other uses. Use of the park for these purposes is clearly consistent with the IUCN guidelines for applying protected area management categories (Dudley 2008) and not inconsistent with the Australian IUCN management principles for the National Park category.

Policies

- 3.4.1 The park is assigned to IUCN protected area category II 'national park' and will be managed in accordance with the prescribed management principles in Schedule 8 of the EPBC Regulations for that category and listed in Appendix H (IUCN administrative and management principle schedules).
- 3.4.2 Any areas that may be added to the park during the life of the plan will be managed in accordance with the IUCN protected area category II management principles and relevant policies and actions in this plan.



PART C

Managing Kakadu



What the Director will do to:

- ☑ work with Bininj/Mungguy
- ☑ support the aspirations of Bininj/Mungguy to be actively involved in decision-making and park management
- ☑ protect and present the values of Kakadu
- ☑ ensure effective park management.

4 Joint management

This section sets out the policies for supporting joint management in Kakadu, including any EPBC Act provisions which directly relate to the Director of National Parks (the Director), and the actions the Director will take over the life of the plan to work towards achieving the objective and outcomes of this section.

Objective

The park is managed through a strong and successful partnership between Bininj/Mungguy and the Australian Government (as represented by the Director of National Parks), and Bininj/Mungguy satisfy their aspirations for benefits from land ownership

Joint management is about Bininj/Mungguy and Parks Australia working together and deciding what should be done to manage the park with and on behalf of Bininj/Mungguy and for other interests. The partners work together to solve problems, sharing decision-making responsibilities and exchanging knowledge, skills and information. An important objective of joint management is to ensure that Bininj/Mungguy traditional knowledge and skills associated with looking after culture and country, and cultural rules regarding how decisions are made, continue to be respected and maintained.

Overarching principles for joint management

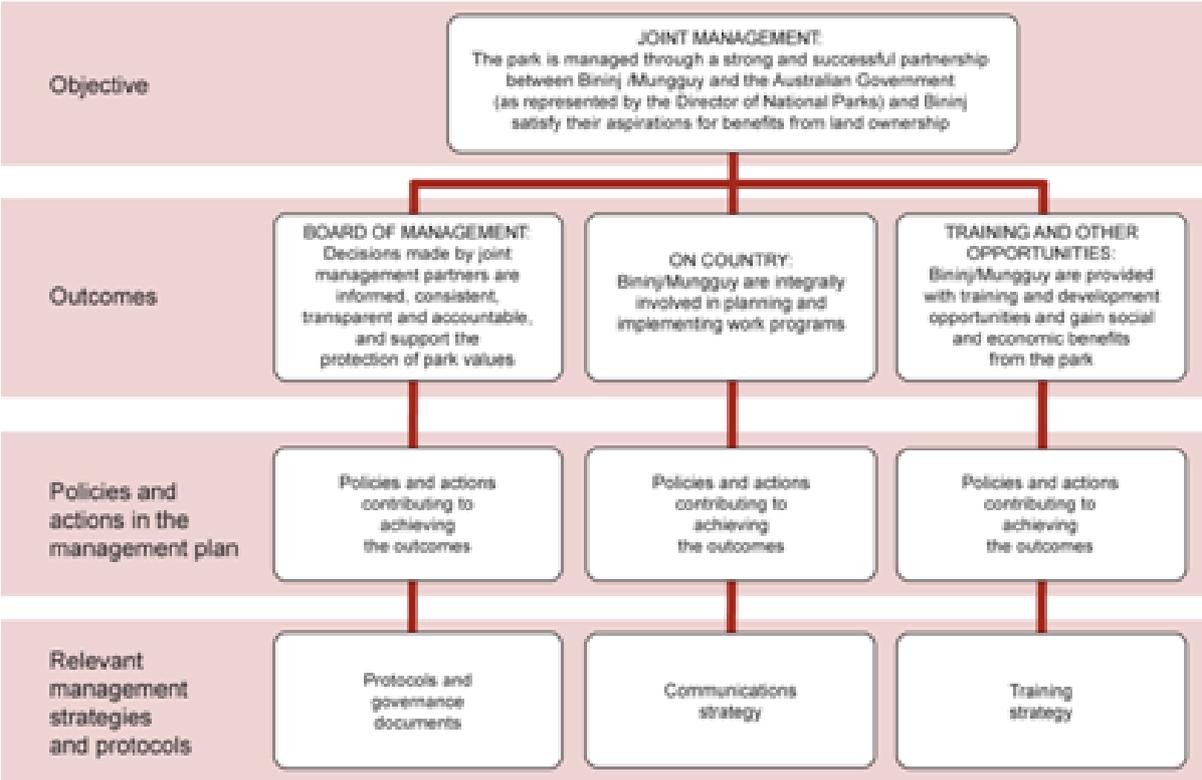
This section of the plan provides the framework for effective joint management processes across all elements of this plan. In jointly managing the park the following overarching principles apply:

- Bininj/Mungguy cultural and traditional knowledge, customs, values and priorities will be respected and will inform management priorities and programmes
- Bininj/Mungguy will be encouraged and supported to guide and actively participate in the development, implementation and review of management programmes and all aspects of park management
- the land management skills and expertise of both joint management partners will be utilised to manage the park
- the joint management partners will share responsibility for decision-making and managing the park.

The joint management relationship in Kakadu has evolved since the lease agreement was signed for Stage One of the park in 1978. The elders who ‘foot walked’ the country and were intimately connected to the land have now passed on. The next generation of Bininj/Mungguy have grown up with the park joint management relationship and have stepped up as the decision makers. Some people have expressed concerns about the pace of change (both Bininj/Mungguy and Balanda changes) and the effects that these changes are having on people’s lives today. It is vitally important that Bininj/Mungguy continue to be involved in park management, and equally important that management of the park continues to actively negotiate a balance that ensures the values of the park are looked after, the aspirations of Bininj/Mungguy are met, and the interests of other stakeholders are accommodated as far as possible. The joint management relationship will continue to change and evolve over the life of this plan and into the future. Ongoing investment in training and other capacity building will help to nurture new leaders, and new opportunities, such as the outsourcing of park tasks, will continue to be identified and further developed.

Figure 6 illustrates the line of sight for this section of the plan.

Figure 6: Line of sight for Section 4: Joint management



4.1 Making decisions and working together (Board of Management)

Outcome

- Decisions made by the joint management partners are informed, consistent, transparent and accountable, and support the protection of park values

Performance indicators

- Board governance processes followed in accordance with the Board of Management meeting rules and handbook
- Board satisfaction with Kakadu Research and Management Advisory Committee and Kakadu Tourism Consultative Committee

Background

As noted in Section 1.5, joint management was established when the lease of land in Stage One of the park was signed between the Kakadu Aboriginal Land Trust and the Director of National Parks in 1978 and the government committed to managing all of the park as if it were Aboriginal land. The lease agreements between the Director and the Kakadu, Jabiluka and Gunlom Aboriginal Land Trusts include obligations on the Director to:

- manage the park to the highest possible standard
- protect the interests of Bininj/Mungguy and areas and things that are important to them
- encourage the maintenance of Bininj/Mungguy traditions
- use traditional skills in park management
- promote Bininj/Mungguy engagement in park management and service delivery
- encourage businesses within the park.

The leases also say the Director will regularly consult the Northern Land Council and Bininj/Mungguy associations about management of the park.

Joint management responsibility for decision-making was formalised when the Board of Management was established (see below). Successful joint management is based on a partnership of trust, commitment, and shared responsibility which involves bringing together Bininj/Mungguy and Balanda knowledge and experience and interweaving the two law systems together in making decisions. Making this work requires Bininj/Mungguy and Balanda learning from each other, respecting each other's culture and bringing together the different approaches. At the core of shared decision-making is open communication and mutual commitment to looking after country and culture.

Shared decision-making in the park requires consultation and active participation in the process from both Bininj/Mungguy and Balanda to ensure decisions respect cultural protocols and meet obligations under the EPBC Act and other relevant Australian laws.

Under Bininj/Mungguy cultural protocols and practices, Bininj/Mungguy are responsible for making decisions about their country and are guided by customary decision-making structures, seniority and kinship obligations.

'Bininj laws must be followed, with Balanda law backing up Bininj law.'

Jonathon Nadji, Bunitj clan

Board of Management

The Board of Management for the park was established in 1989 under the NPWC Act and continued under the EPBC Act. The composition of the Board must be agreed between the Minister (who appoints Board members) and the Northern Land Council, but the Act requires a majority of Board members must be Indigenous persons nominated by the traditional owners of land in the park. Bininj/Mungguy representation on the Board covers the geographic spread of Aboriginal people within the Kakadu region as well as the major language groups, and the Board has determined that the Chairperson be appointed from the Aboriginal members of the Board. Under the EPBC Act, the Board of Management has the functions of preparing the management plan with the Director, making decisions concerning implementation of the plan (including allocation of resources and setting priorities), monitoring management of the park and providing advice to the Minister on all aspects of the future development of the park.

Governance workshops and training were held for Board members in 2010 and 2011 to facilitate and support shared decision-making by the Board within the joint management partnership. This resulted in a number of governance documents being produced including Board meeting rules and member handbook.

Director of National Parks

The EPBC Act gives the Director the function of administering, managing and controlling the park and protecting biodiversity and heritage in the park. The Act and the EPBC Regulations give the Director a number of specific powers to assist in the performance of these functions, for example power to determine park entry and use charges (subject to approval of the Minister), to control certain activities and to issue permits. The Director must carry out these functions and use these powers in accordance with this plan.

As noted above the Director has a number of obligations under the current lease agreements with the Kakadu, Jabiluka and Gunlom Aboriginal Land Trusts to protect Bininj/Mungguy interests and culture. Together with the EPBC Act, the leases are key documents for guiding decision-making and the EPBC Act requires this plan to be consistent with the Director's lease obligations. The full provisions of the leases at the time of preparing this plan are included as Appendix I to this plan. The Park Manager makes day-to-day management decisions and exercises powers on behalf of the Director in accordance with this plan, Board decisions, the EPBC Act and other legislation.

Northern Land Council

The Northern Land Council (NLC), which is established under the Land Rights Act, has broad functions to assist and represent the interests of the traditional Aboriginal owners of land and other Aboriginals. Under the park leases the NLC has a number of specific roles, including to be consulted regularly about the management of the park. Under the EPBC Act the Director is required to consult the NLC about park management generally and in relation to preparation of management plans in particular.

Board consultative committees

To help the Board make informed decisions, it has established the Kakadu Tourism Consultative Committee (KTCC) and the Kakadu Research and Management Advisory Committee (KRMAC). The KTCC provides the Board with advice on tourism issues and the views of tourism stakeholders. The primary purpose of the KRMAC is to provide advice to the Board on research and management issues and priorities for the park. The KRMAC members are researchers with expertise in natural and cultural resource management or tourism, Indigenous economic interests or other areas related to park management.

Management issues

- The Board, Director and park staff need to make decisions and manage the park in accordance with the EPBC Act and Regulations, the leases, this plan, and other Australian laws, but must include Bininj/Mungguy cultural protocols, practices, laws and customs (including clan-based decision-making) to the greatest extent possible.
- At the time of preparing this plan not all the land in the park was Aboriginal land under the Land Rights Act but management to date (including the composition of the Board and previous management plans) has been based on the principle, established when the park was first declared in 1979, of managing the whole park as if it is Aboriginal land.
- Values important to Bininj/Mungguy, as well as other recognised values, need to be understood and protected.
- People involved in decision-making should have equal access to accurate and relevant information.
- Good communication is needed between the joint management partners so that expectations are understood and issues can be resolved.
- The joint management relationship is a dynamic one and changes over time depending on the people involved and their expectations of, and aspirations for, joint management. Regular checks are needed to ensure joint management continues to be successful in the future.
- The Board needs adequate resources to carry out its functions under the EPBC Act.
- Bininj/Mungguy should be consulted appropriately to inform Board decisions.
- Other stakeholders should be consulted in structured and timely ways as far as possible.
- Consultation and decision-making processes need to be clear and consistently followed. Records of consultations and decisions need to be properly kept.

Policies

- 4.1.1 Decision-making in the park will be consistent with:
- (a) the purpose for which the park was declared
 - (b) the reserve management principles for the IUCN category 'national park'
 - (c) the vision and guiding principles (see page iii)
 - (d) the decision-making processes shown in Table 3
 - (e) consultation guidelines developed by the Board and NLC and reviewed from time to time
 - (f) the EPBC Act and other relevant legislation
 - (g) the Director's obligations under leases of Aboriginal land in the park.

- 4.1.2 The Board will be supported through provision of:
- (a) resources reasonably necessary for it to carry out its functions under the EPBC Act
 - (b) regular training on governance and leadership to support Board members in their legal and policy roles and responsibilities
 - (c) relevant and appropriate information to assist in making informed decisions in a timely manner, and in a culturally appropriate format (including with the use of an interpreter where possible).
- 4.1.3 KRMAC and KTCC, established by and operating under terms of reference determined by the Board, will continue their roles until otherwise determined by the Board, and will be provided secretariat support.
- 4.1.4 Where stakeholders' interests are likely to be affected by decisions (including decisions about strategies, plans and other documents that assist in the implementation of this plan), the Board and the Director will, as far as practicable:
- (a) consult with stakeholders in a timely and structured way
 - (b) take the views of stakeholders into account before decisions are made
 - (c) provide the reasons for decisions
 - (d) inform the tourism industry with 12–18 months' notice when significant changes are made to visitor management in the park that will affect tourism products and their promotion, forward contracting and sales (except where immediate action is warranted, such as where public safety is at risk or where requested by Bininj/Mungguy for significant cultural reasons as outlined in the cultural closure protocols (Section 4.2.10)).

See also Sections 9.7 (Neighbours, stakeholders and partnerships) and 6.1 (Destination and visitor experience development).

Actions

- 4.1.5 Review joint management arrangements by midway (five years) through the life of this plan, taking into consideration park lease provisions at the time of the review.
- 4.1.6 Review the terms of reference of KRMAC and KTCC midway (five years) through the life of this plan, or more frequently if required, to ensure they remain closely aligned with park priorities.
- 4.1.7 Consult with the Board and take account of Board decisions early in the development and/or review of Director of National Parks corporate and Parks Australia agency-wide policies and guidelines.
- 4.1.8 Produce a periodic newsletter or other agreed format for distribution to Bininj/Mungguy to communicate key messages and inform them about Board activities and opportunities to participate in park programmes and management.

Table 3: Guide to decision-making

Category	Example	Decision-making process
<p>Routine actions</p> <p>Actions that have no impact, or no more than a negligible impact, on the park’s environment and natural and cultural values; on the interests of Bininj/Mungguy and/or stakeholders; and/or on visitor use or changes to existing facilities and services in the park</p>	<ul style="list-style-type: none"> • Minor capital works e.g. maintenance, replacement, repair or improvement of existing infrastructure in its present form • Regular/routine ongoing operations to implement prescriptions in this plan, e.g. patrols, weed control, fire management • Minor new operations to implement prescriptions in this plan • Seasonal opening/closing of visitor areas • Issuing permits for regular activities in accordance with this plan, e.g. land-based tours, camping and research • Employment for day labour and seasonal programmes 	<ul style="list-style-type: none"> • Process accords with management plan policies, prescriptions and procedures and the park’s manual of procedures • Bininj/Mungguy are consulted where necessary and in accordance with Board/NLC consultation guidelines • Decision is made by an appropriate officer
<p>Non-routine actions</p> <p>Actions that have more than a negligible impact, or have a significant impact, on the park’s environment and natural and cultural values; on the interests of Bininj/Mungguy and stakeholders; and/or on visitor use or changes to existing facilities and services in the Park</p>	<ul style="list-style-type: none"> • Moderate or major capital works, e.g. new infrastructure or expansion/upgrade of existing infrastructure such as outstations, realignment of roads, new campgrounds • Rehabilitation of heavily eroded sites and mines • Major new operations or developments to implement prescriptions in this plan • Developments for approved existing tourism activities that require major works, e.g. safari camps • Major/long-term changes to existing visitor access arrangements • Expansion of the Jabiru township • Tour operator accreditation system • New types of commercial activities • Issuing of leases/licences • Employment of park management staff 	<ul style="list-style-type: none"> • Process accords with management plan policies, prescriptions and procedures • Bininj/Mungguy are consulted where necessary and in accordance with Board/NLC consultation guidelines • KTCC and/or KRMAC are consulted as necessary • Relevant stakeholders are consulted/informed • Decision is made by Board of Management

4.2 Making decisions and working together (on country)

Outcome

- Bininj/Mungguy are integrally involved in planning and implementing work programmes

Performance indicators

- Opportunities for Bininj/Mungguy involvement in park decision-making, planning and implementing work programmes
- Indigenous representation on staff

Background

Bininj/Mungguy have important obligations to care for country and to pass on knowledge to the next generations. The Director also has responsibilities to look after country. Bininj/Mungguy and Balanda looking after country together is one of the most successful expressions of joint management in the park. Bininj/Mungguy involvement in park management is therefore of central importance to successful joint management.

To help ensure that Bininj/Mungguy participate in decision-making related to managing the park, park staff consult with Bininj/Mungguy on a range of issues in accordance with guidelines developed by the Board in collaboration with the NLC. In carrying out consultations with Bininj/Mungguy, assistance may be sought from the NLC and relevant Aboriginal associations to arrange consultations with, and provide information for and from, Bininj/Mungguy.

Bininj/Mungguy are also encouraged to participate in decision-making and planning of park programmes and work plans through a range of other ways including community meetings held in park districts, representation on staff selection panels and working groups. Bininj/Mungguy contribute to the development of cultural protocols which are used in decision-making and when managing country. Protocols such as Indigenous research protocols and those for Sickness Country promote Bininj/Mungguy opportunities, interests and joint management. Development of protocols for temporary closure of parts of the park for cultural reasons has been identified as a priority.

It is important for Bininj/Mungguy to be involved in implementation of natural, cultural and visitor programmes, and opportunities to do this are made available through a range of permanent, contract and flexible employment opportunities in park management, administration and on-ground programmes. As well as direct employment through ongoing or non-ongoing positions, Bininj/ Mungguy are engaged in casual work (day labour). This programme offers flexible work arrangements and helps to fill labour requirements during busy times. Bininj/Mungguy are also engaged through third-party employment and as contractors to provide services in and in relation to the park, for example maintaining campgrounds or conducting interpretative talks.

During the life of the previous plan, the number of Indigenous people employed in the park improved, with almost half (48 per cent) of staff employed on ongoing or non-ongoing contracts identified as Indigenous in 2014. Additionally, half of all staff on casual employment contracts identified as Indigenous, with a large number of these casual opportunities being made available through the National Environmental Research Programme. The Working on Country funded Kakadu Indigenous Ranger Programme has also provided 11 hosted community ranger positions in the park and engaged over 30 Indigenous community rangers since 2008–09.

Bininj/Mungguy traditional knowledge and interests are incorporated in the planning and implementation of all park programmes. Cross-cultural training for staff also helps to facilitate a shared understanding of different cultures and promote Bininj/Mungguy involvement in decision-making and implementing programmes.

Management issues

- Consultation and decision-making processes and protocols need to be clear and consistently followed. Records of consultations and decisions need to be properly kept. It can be time-consuming and resource intensive to determine the right people to consult with and conduct consultations with Bininj/Mungguy spread throughout and outside the park.
- Employment opportunities, consultation opportunities, and other opportunities to participate in decision-making and implementation of the plan are not always taken up or retained by Bininj/Mungguy.
- There is an ongoing need for cross-cultural awareness between park staff and Bininj/Mungguy.

Policies

- 4.2.1 The park will be managed as if all land in the park is Aboriginal land under the Land Rights Act. Where traditional ownership of an area is unclear, consultation will occur with all Bininj/Mungguy who have traditional rights in relation to the area.
- 4.2.2 The consultation guidelines developed by the Board and the NLC that guide when and how Bininj/Mungguy are consulted on routine and non-routine development proposals and actions will be used when consulting with Bininj/Mungguy. The guidelines will be reviewed by the Board (see Section 4.2.8).
- 4.2.3 Bininj/Mungguy cultural protocols and practices will be acknowledged and respected in decision-making and management where consistent with this plan and other legal requirements, including by:
- (a) recognising that clans want to guide decision-making related to the management of their country in the park
 - (b) using documented protocols (such as Sickness Country protocols and Indigenous research protocols) when working on country.
- 4.2.4 Bininj/Mungguy values, traditional practices and knowledge will continue to be recognised and incorporated in park planning, implementation and review of all management programmes, and as important components of staff development.

Actions

- 4.2.5 Encourage and support Bininj/Mungguy to be involved in park decision-making and the development of natural, cultural and visitor programmes and work plans through, but not limited to:
- (a) consultations conducted as per consultation guidelines, including the review of priorities for implementing actions in this plan (see Section 9.10).
 - (b) opportunities to participate in regular community meetings in districts
 - (c) representation on working groups and in staff selection processes.

- 4.2.6 Engage as many Bininj/Mungguy as possible to implement this plan. Ways to do this will include but not be limited to:
- (a) involvement of the Board in decision-making
 - (b) providing Bininj/Mungguy with a range of permanent, contract and flexible employment opportunities and associated learning and development support in park management, administration and on-ground programmes
 - (c) advisory committees established by the Board to provide advice on a particular issue or project
 - (d) providing opportunities to increase outsourcing of park maintenance activities and aspects of park management such as threat abatement and fire management activities to Aboriginal corporations or enterprises where appropriate and where capacity exists
 - (e) encouraging external contractors, consultants, and researchers to partner with or employ Bininj/Mungguy, including providing apprenticeships where practicable
 - (f) school information and development programmes.
- 4.2.7 Negotiate and implement agreements with the NLC and assist the NLC to carry out its statutory functions in the park, commensurate with park resourcing.
- 4.2.8 Review the consultation guidelines midway (five years) through the life of this plan and develop and maintain a central database that records all decisions made in consultation with Bininj/Mungguy.
- 4.2.9 Develop protocols to guide temporary closure of visitor sites and parts of the park for cultural reasons.
- 4.2.10 In consultation with the NLC and the Aboriginal Areas Protection Authority (AAPA), review cultural protocol documents (including Sickness Country protocols and Indigenous research protocols), and consolidate where possible to ensure decision-making and other activities on the ground are guided by appropriate protocols and in a consistent manner.
- 4.2.11 Provide cross-cultural exchange and awareness training, including information on joint management and park governance, for new park staff, both Bininj/Mungguy and Balanda, and all Parks Australia staff involved in policy development relevant to the park to ensure a shared understanding of both Bininj/Mungguy and Balanda approaches.

4.3 Bininj/Mungguy training and other opportunities

Outcome

- Bininj/Mungguy are provided with training and development opportunities and gain social and economic benefits from the park

Performance indicators

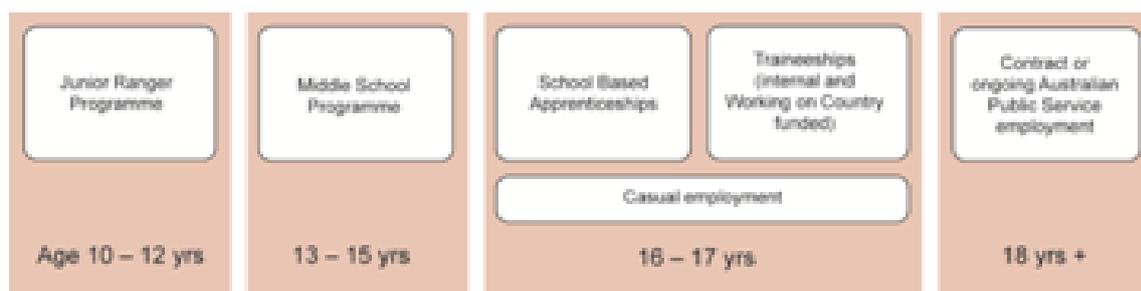
- Training and development opportunities provided for Indigenous staff and Bininj/Mungguy
- Bininj/Mungguy contractors directly or indirectly providing park services
- Bininj/Mungguy businesses created or supported

Background

The park lease agreements (see Appendix I: Provisions of leases) commit the Director to maintaining an investment in training and development of Bininj/Mungguy in park management. In response to this, Parks Australia directly invests in Indigenous engagement, training and employment and has a range of programmes supporting Indigenous employment pathways, including the Junior Ranger Programme, work experience, apprenticeship and trainee programmes. The Junior Ranger Programme activities have been expanded in recent years to include Gunbalanya and Pine Creek schools, and approximately 40 students participate in the programme's activities annually.

Figure 7 highlights some of the programmes supporting Indigenous employment pathways in the park.

Figure 7: Summary of programmes supporting Indigenous employment pathways in Kakadu



Staff training and development is recognised as essential to retaining staff and developing management and leadership capability. Numerous training events are held each year; for example, some 30 different training events were provided for park staff in 2011–12 to assist with developing Indigenous staff and promoting effective joint management. A training strategy was developed in 2010 to guide training programmes. The training committee meets quarterly to make decisions relating to investment in staff learning and development.

Parks Australia also provides training and helps to facilitate the provision of training to build capacity of Bininj/Munggyu to take on contracts to deliver park services, and this is likely to become more important in the future. Other park policy and programme initiatives relating to Indigenous training include the Parks Australia mobility policy and opportunities for staff exchange, and the introduction of mentoring guidelines.

The park receives support from the Department of the Environment in accordance with priorities identified in the Department's Indigenous Employment and Capability Strategy. This includes support for governance and leadership training for elected Indigenous Staff Network members and conference attendance. Significant support for Indigenous employment, training and development is also sourced from external partners including Charles Darwin University, Batchelor Institute of Indigenous Tertiary Education and others that provide training in literacy and numeracy, job-readiness and career pathways.

Bininj/Munggyu receive benefits from commercial tourism in the park. Commercial tourism licence arrangements include a requirement for joint ventures with Bininj/Munggyu, employment and training and in-kind support. Licence arrangements also benefit Bininj/Munggyu commercial operators through discounted fees and, where appropriate, exclusive access arrangements (see also Section 6.2: Commercial tourism).

Management issues

- Bininj/Munggyu want to benefit more from the economic activity associated with the park, either through direct employment or by developing their own or joint enterprises.
- Bininj/Munggyu want to develop the skills they need to work in a range of positions related to the administration, control and management of the park and to ensure that Bininj/Munggyu land management skills are maintained.
- Senior Bininj/Munggyu would like young Bininj/Munggyu to learn about their culture, country and park management so they can be actively involved in the management of the park in the future. There are many social and economic factors outside the control of park management that influence Bininj/Munggyu employment in the park and the benefits that Bininj/Munggyu gain from the park.

Policies

- 4.3.1 The Director will work with Bininj/Munggyu and in collaboration with existing businesses, the broader tourism industry and other park stakeholders to develop partnerships and other ways of increasing opportunities for Bininj/Munggyu, related to implementation of this plan. This may involve linking Bininj/Munggyu with, and providing support for, people who can provide relevant skills development, advice and appropriate development opportunities.
- 4.3.2 The Director will work with Bininj/Munggyu and other stakeholders to promote and facilitate Bininj/Munggyu tourism and other enterprise opportunities and training for them where appropriate (see also Section 6: Kakadu as a visitor experience destination, commercial tourism and promotion).

Actions

- 4.3.3 Implement, review and update the park training strategy to guide training programmes in the park.
- 4.3.4 In conjunction with relevant partners, develop, implement and regularly review Bininj/Mungguy learning and development strategies and outcomes linked to implementing this plan. Where possible strategies will take a collaborative and regional approach and will include provision for:
- (a) accredited training and studies
 - (b) literacy and numeracy development
 - (c) ongoing career development, mentoring and coaching, including supervisory and management skill development
 - (d) learning and development opportunities to assist Bininj/Mungguy in gaining employment, such as writing resumes and job interview skills
 - (e) working with stakeholders to help facilitate Bininj/Mungguy enterprise development
 - (f) linking Bininj/Mungguy with, and providing support for, people and organisations that can provide other relevant skill development, advice and opportunities.
- 4.3.5 Develop and implement career pathway programmes for young Bininj/Mungguy that help teach them about culture, country and park management, and where possible work with other organisations to do this. These programmes may include:
- (a) a junior ranger or similar programme
 - (b) school-to-work transition programmes and traineeships
 - (c) casual work and park management service contract opportunities
 - (d) on-the-job training and development opportunities
 - (e) park career and employment information
 - (f) mentoring, buddy or coaching arrangements
 - (g) work experience opportunities.
- 4.3.6 Maintain a database of training and development opportunities for Bininj/Mungguy in order to review progress and allow evaluation of training programs.
- 4.3.7 Continue to explore options for Bininj/Mungguy to undertake delivery of park services (see also Section 4.2.6).

5 Looking after culture and country

This section sets out the policies for managing the natural and cultural values in Kakadu, including any EPBC Act provisions which directly relate to the Director, and the actions the Director will take over the life of the plan to work towards achieving the objectives and outcomes of this section.

5.1 Looking after culture

Cultural values

The park is an internationally significant cultural landscape inscribed with the signs of an ancient and continuing Bininj/Mungguy presence

Objective

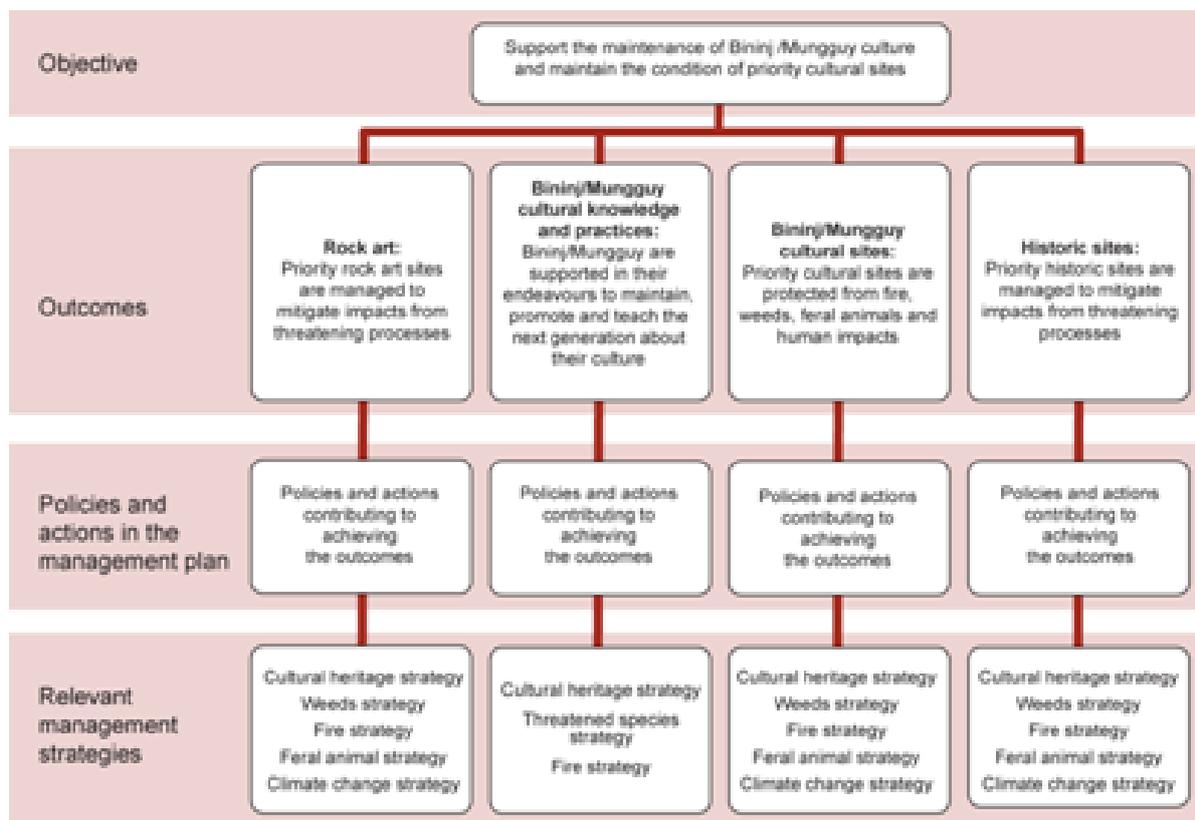
Support the maintenance of Bininj/Mungguy culture and maintain the condition of priority cultural sites

The cultural values of the park are immense. For management purposes they are divided within this plan into rock art, Bininj/Mungguy cultural knowledge and practices, other Bininj/Mungguy cultural sites and historic sites. Each of these groups has distinct values, threats and management priorities. Management of the park's cultural values is guided by the An-garregen (cultural heritage) Strategy developed in 2011 through a participatory process with Bininj/Mungguy, and in consultation with the Kakadu Board of Management. The active participation of Bininj/Mungguy in management of the cultural values is integral to the effective protection of them.

A major symposium on cultural heritage was held in the park in 2011 which brought together over 100 Bininj/Mungguy, researchers and other stakeholders to hear about the park's cultural values and consider priorities for management in the future. A cultural heritage information management system (CHIMS) was also developed during the life of the fifth management plan. Cultural data and information is continuing to be uploaded into it. The system can be used to schedule and prioritise future work as needed.

Figure 8 illustrates the line of sight for this section of the plan.

Figure 8: Line of sight for Section 5.1: Looking after culture



Overarching principles for managing cultural values

When managing the cultural values, the following overarching principles will apply:

- Bininj/Mungguy will continue to be encouraged and supported to guide and actively participate in the development and implementation of cultural heritage management programmes (Section 4: Joint management)
- Bininj/Mungguy cultural and traditional knowledge will be respected and used to inform management priorities and programmes (Section 4: Joint management)
- Conservation work at rock art and other cultural sites will occur in a way that is consistent with this plan and the An-garregen (cultural heritage) Strategy, and will involve Bininj/Mungguy wherever possible (Section 4: Joint management)
- Management of the park's cultural values will be guided by a cultural heritage strategy endorsed by the Board.
- Additional rock art and cultural sites will only be accessible to the public with the consent of Bininj/Mungguy, and access to sites may be further restricted or prohibited at the request of Bininj/Mungguy (Section 10.4: Access).
- External linkages and funding that will assist with management of cultural values will be pursued (Section 9.8: Revenue and business development).

Rock Art

Outcome

- Priority rock art sites are managed to mitigate impacts from threatening processes

Performance indicator

- A reduction in the overall impact of weathering, fire, plants, animals, insects and human activities on priority rock art sites

Background

The stone country of Kakadu holds one of the world's greatest concentrations of rock art sites: over 5,000 rock art sites have been recorded and it is thought there could be 10,000 to 15,000 art sites in total. The images, estimated to range in age from 20,000 years to the recent present, constitute one of the longest historical records of any group of people in the world. They tell a story of a changing environment, changing species and changing lifestyles within the Kakadu region and also illustrate objects, animals and activities familiar to people today, providing an important tangible record of chronological change as well as artistic tradition.

Rock art sites are an important storehouse of traditional knowledge and a place where people can learn about law and other aspects of cultural life, and are highly significant for Bininj/Mungguy. Strong associations exist between these sites and their living traditions and beliefs, and rock art serves as a reminder of the old people that have passed on and the responsibilities for looking after country.

'Through these paintings the old people were teaching the young generation ... and passing on stories.'

Traditional owner

Mimi spirits were the first of the Creation Ancestors to paint on rock. They taught some Bininj/Mungguy how to paint and other Bininj/Mungguy learned by copying Mimi art. At the end of their journeys, some Creation Ancestors put themselves on rock walls as paintings and became *djang* (dreaming places). Some of these paintings are *andjamun* (sacred and dangerous) and can be seen only by senior men or women; others can be seen by all people (Chaloupka 1993).

Public access is provided to three major rock art sites within the park including Burrungkuy (Nourlangie Rock) and Nanguluwurr in the Nourlangie region, and Ubirr in the East Alligator region. Walking tracks, boardwalks and interpretation materials have been provided at these sites.

Values and condition

Rock art within the park:

- represents one of the world's great rock art provinces, containing a vast number of sites, with over 5,000 known sites and possibly 10,000 to 15,000 in total
- represents a continuous tradition over tens of thousands of years
- provides a storehouse of traditional knowledge including stories and law and is a powerful teaching tool for young Bininj/Mungguy
- provides links to ancestors and the landscape and a record of a changing environment and lifestyle over many thousands of years.

- The condition of rock art in the park continues to suffer the impacts of fire, feral animals, weathering and insect damage. There has been no systematic survey of rock art in the park since 1996 and hence the condition of most recorded sites is largely unknown. There is also a lack of knowledge of the condition of sites that have not been formally recorded, particularly in areas that are difficult to access.

Existing threats to values

- ***Loss of traditional knowledge (highly significant)***

There has been a major loss of knowledge relating to rock art sites throughout the park due to insufficient recording and intergenerational transfer of knowledge about these sites. This has impacted on the values of the sites, making active interpretation and management difficult due to a lack of knowledge of appropriate management protocols.

- ***Fire (highly significant)***

Fire can significantly impact on rock art sites, particularly when there is a build-up of native vegetation or weeds close to sites.

- ***Insect damage (highly significant)***

Wasps and termites damage rock art by building nests and tunnels over it. While some management actions are undertaken to reduce this impact at some sites, damage from insects remains an issue for much of the rock art in the park.

- ***Weathering (highly significant)***

Water flowing over or seeping through the rocks is a common problem. Apart from the water's dissolving action, salts deposited on the rock surface can cover some of the art.

- ***Number and inaccessibility of sites (highly significant)***

The number of rock art sites and their remote and inaccessible nature makes management and monitoring of rock art very difficult.

- ***Feral animals (moderately significant)***

Feral animals (particularly pigs and buffalo) frequently take refuge in the shade of ground level shelters and damage rock art by rubbing on rock faces. This has been a significant cause of degradation of some rock art sites.

- ***Visitor impacts (of low significance)***

Some impacts from tourism are evident at rock art sites, such as dust accumulation on rock faces from roads, and vandalism has occurred at some sites.

Actions

- 5.1.1 Develop and undertake a rock art conservation programme to address issues impacting on the condition of priority rock art sites, focusing on:
- (a) removal of vegetation contributing to the fire fuel load around priority rock art sites
 - (b) reduction in the number of pigs and buffalo in areas where they present a threat to priority rock art sites
 - (c) implementation of measures to minimise weathering and reduce insect damage
 - (d) development of conservation plans for rock art sites in visitor areas to help address potential visitor impacts
 - (e) continued surveillance of rock art sites where there is a high risk of vandalism by visitors
 - (f) research relating to conservation and protection of rock art.
- 5.1.2 Develop and implement a programme to monitor the condition of priority rock art sites and the effectiveness of conservation measures (see also Section 7.1.11d).
- 5.1.3 Assist Bininj/Mungguy to access and record rock art sites and provide opportunities for the intergenerational transfer of cultural knowledge associated with them.
- 5.1.4 Continue to work with the AAPA to increase the registration of sacred and other cultural sites and document information about them.
- 5.1.5 Maintain and update the park register of rock art sites, including information on their condition, conservation works and associated cultural knowledge.

Bininj/Mungguy cultural knowledge and practices

Outcomes

- Bininj/Mungguy are supported in their endeavours to maintain, promote and teach the next generation about their culture

Performance indicators

- Opportunities for Bininj/Mungguy to visit country provided to support the continuity of culture

Background

Kakadu represents a continuing cultural tradition linked to the time of the earliest known occupation of the Australian continent. The different landscapes within the park have been occupied and actively managed by many generations of Bininj/Mungguy, and strong spiritual associations and interactions between Bininj/Mungguy and country continue today.

The tangible aspects of Bininj/Mungguy cultural heritage such as rock art sites, artefacts and other cultural sites are well known. However, Bininj/Mungguy cultural heritage also includes intangible aspects such as traditional knowledge about country and seasons, ancestral stories and beliefs, languages and cultural practices and rituals.

Traditional knowledge of the Kakadu environment is a crucial component of Bininj/Mungguy life today and Kakadu's cultural heritage. This knowledge is used to help keep land, plants, and animals healthy and strong as well as to undertake the right activities at the right time of year. This traditional knowledge is invaluable and a great asset for the management of the park.

'When we go to different places on our country, language and stories of those places come out. You tell stories as you travel to places, you don't leave it til you get there.'

Traditional owner

Bininj/Mungguy traditional cultural practices reflect culturally significant events, ideas and beliefs and include songs and stories, dances, ceremonies, body scarification, the use of particular dialects associated with regions, caring for country, and customary use of the land. It is important that these traditional practices are remembered and kept alive.

At least 12 different languages are thought to have been spoken throughout the Kakadu region prior to European settlement, and this helps to illustrate the great diversity and complexity of Bininj/Mungguy society. Languages are a vital component of cultural identity and it is important they remain strong.

Today, Bininj/Mungguy continue to live, work and hunt on country and this assists them to maintain links to their culture and country and participate in management of the park. The park organises on-country camps with different clan groups, such as Namarrgon and Gunlom camps, to help support the continuation of culture.

A cultural heritage information management system (CHIMS), developed during the life of the fifth plan, is used to store photos, oral histories and other cultural information for Bininj/Mungguy to access and use. An agreement negotiated with the National Archives of Australia in 2010 means it will assist with digitisation and stabilisation of all audio and video cultural information, and this material can also be stored on CHIMS when it is available. Policies and actions in Section 4 (Joint management) relating to recognition of Bininj/Mungguy cultural knowledge and skills and respect for Bininj/Mungguy cultural practices and protocols are also relevant to this section.

Values and condition

Bininj/Mungguy culture:

- is representative of the oldest culture in the world, with continuous occupation over 50,000 years
- is one of great diversity and complexity and includes several languages
- provides a valuable source of traditional ecological knowledge. The ongoing, active management of the landscape through the use of fire has contributed to species diversity and provides an important example of people's interaction with the environment
- continues today with Bininj/Mungguy living, working, hunting, fishing and collecting and using food and other cultural resources in the park.
- Bininj/Mungguy continue to live on country, maintaining cultural practices, but some Bininj/Mungguy are concerned that their culture is getting 'weak'.

'Ours is a living culture and today we have two laws – Bininj and Balanda together. We must continue teaching Bininj way because some things are almost floating away. We're running out of time ...'

Traditional owner

Existing threats to values

Loss of traditional knowledge (highly significant)

During the recent past, many Bininj/Mungguy who had important knowledge about country and culture have passed away. Bininj/Mungguy have expressed concern that much of this knowledge is being lost, with social changes having impacted on the transfer of knowledge to younger generations. This has been exacerbated by fewer people spending time on country learning about country and culture. In some parts of the park there are also limited opportunities to live on country which also contributes to loss of traditional knowledge.

'...so many little things are coming in – headphones, movies. Things are coming in and covering our traditional ways people know the names of the big fish but not the little fish.'

Jacob Nayinggul, Manilikar clan

Social issues (highly significant)

There are significant social issues facing Aboriginal people in Kakadu including employment, education and language difficulties. Alcohol and drug problems and health issues are also significant factors affecting the maintenance of cultural knowledge and practices. Parks Australia can support the maintenance of culture through the provision of resources and programmes; however, many factors that influence culture are outside the control of park management, including participation in cultural management programmes, and intergenerational transfer of sensitive cultural knowledge.

Bininj/Mungguy access to country (low significance)

Bininj/Mungguy access to or use of country is sometimes affected by tourism in visitor areas of the park, and this is managed through temporary closure of areas with timely advice to the tourism industry and the public.

Actions

- 5.1.6 Implement, review and update the An-garregen (cultural heritage) Strategy for management of cultural values in the park.
- 5.1.7 Support the maintenance of Bininj/Mungguy culture through continued:
- (a) provision of cultural activities and programmes including on-country camps and bushwalks, a kids' on-country programme, and women's and men's events
 - (b) provision of an oral history programme to collect knowledge and stories from Bininj/Mungguy, with involvement of young Bininj/Mungguy to help facilitate transfer of knowledge
 - (c) support of Bininj/Mungguy involvement in fieldwork related to cultural programmes
 - (d) support of Bininj/Mungguy staff to fulfil cultural responsibilities
 - (e) incorporation of Bininj/Mungguy cultural knowledge and skills in park natural and cultural heritage management programmes, particularly fire management programmes (see also Section 4: Joint management)
 - (f) provision of support and resources to facilitate Bininj/Mungguy involvement and leadership in these management programmes (see also Section 4: Joint management)
 - (g) recognition of Bininj/Mungguy cultural knowledge and skills as important components of park staff development (see also Section 4: Joint management)
 - (h) promote awareness of and respect for Bininj/Mungguy cultural protocols and practices (see also Section 4: Joint management).
- 5.1.8 Encourage and support the use and preservation of Bininj/Mungguy languages through:
- (a) support for language training for Bininj/Mungguy and park staff
 - (b) replacement of Balanda place names with Bininj/Mungguy place names on park signage, on maps and in visitor publications where appropriate
 - (c) collation of existing language resource materials and development of new resources in language for use by Bininj/Mungguy.
- 5.1.9 Assist Bininj/Mungguy to manage cultural information and material through:
- (a) maintenance of the Cultural Heritage Information Management System (CHIMS) to store cultural information
 - (b) provision of appropriate storage areas for Aboriginal cultural material in Kakadu
 - (c) development of storage, access and usage policies and protocols for cultural information and material held in the park
 - (d) provision of the Kakadu Research Guidelines to researchers collecting and using cultural information and material in the park
 - (e) provision of a Bininj/Mungguy-friendly space that allows Bininj/Mungguy to access to stored cultural information and material in a culturally appropriate way
 - (f) working with other agencies to further the protection of Bininj/Mungguy Indigenous cultural and intellectual property rights
 - (g) supporting the efforts of Bininj/Mungguy to secure the return of Aboriginal cultural material that has been removed from Kakadu.

- 5.1.10 Facilitate Bininj/Mungguy aspirations to live on country through:
- (a) providing support in the outstation approval process
 - (b) liaising with relevant funding and service delivery agencies to assist in providing advice in the set-up and management of outstations (see also Section 8.1.7).
- 5.1.11 Facilitate management of Bininj/Mungguy traditional use of plants and animals through:
- (a) implementation of policies that help ensure only relevant Aboriginal people are hunting in the park (see Section 10.6: Traditional use of land and water)
 - (b) development and implementation of a strategy to promote sustainable customary harvest practices
 - (c) incorporation of knowledge gained from customary use into species and landscape monitoring programmes to determine the conservation status of resources used
 - (d) management of visitor access that may impact on traditional use.

Bininj/Mungguy cultural sites

Outcome

- Priority cultural sites are protected from fire, weeds, feral animals and human impacts

Performance indicator

- Impact of fire, weeds, feral animals and humans on priority cultural sites

Background

In addition to rock art sites, there are several other kinds of sites and areas within the park that are important to Bininj/Mungguy and reflect and express their cultural beliefs and practices. They include areas that relate to the activities that took place during the creation era and the travels of *Nayuhyunggi* (Gundjeihmi language), the first people. They may also include occupation and ceremonial sites, and the walking routes that old people travelled as they moved through country.

For the Jawoyn people in the south of the park, *Buladjang*, or ‘Sickness Country’, is a particularly important area because the essence of *Bula*, a major figure associated with the creation era, is located within it. Sickness Country extends over 2,000 square kilometres and coincides with high concentrations of uranium, thorium, arsenic, mercury, fluorine and radon in the water and air, which are leached from rocks in the region. Jawoyn believe that if *Bula* is disturbed the results will be catastrophic for all.

‘Some of these places are very powerful and dangerous. If they are disturbed bad things can happen.’

Traditional owner

Many sites contain physical evidence of the old people living and working in the area in the distant and recent past such as scatters of stone artefacts, shell middens, earth mounds, scarred trees, grinding grooves, quarries (including ochre quarries), burial sites, and stone and bone arrangements. Research indicates occupation of the region dating from around 50,000 to 60,000 years ago, and archaeological sites provide a record of cultural tradition and reflect how Bininj/Mungguy have managed the country over this time. An Australian National University research project being conducted in 2013–2014 is exploring landscape and cultural change on the South Alligator floodplain.

‘The highest responsibility for Bininj is to look after these sites and it should go down from generation to generation.’

Traditional owner

Under Bininj/Mungguy cultural practices, strict rules and protocols govern access and use of some sites, especially those considered dangerous. Restrictions vary between sites and may be based on a person’s social position and knowledge of ceremonies and rituals relevant to the place. Access to some sites is restricted in accordance with these practices, while access to Sickness Country is governed by the Gunlom Land Trust Sickness Country Protocols.

A register of sites of special significance to Bininj/Mungguy has been established in consultation with Bininj/Mungguy, the AAPA and the Northern Land Council. The Land Rights Act and the *Northern Territory Aboriginal Sacred Sites Act 1989* (Sacred Sites Act) provide formal legal protection for sacred sites, defined as sites that are sacred to Aboriginals or otherwise of significance according to Aboriginal tradition. The Sacred Sites Act applies in relation to Kakadu except to the extent that it is inconsistent with the EPBC Act.

Values and condition

Bininj/Mungguy cultural sites:

- represent a rich collection of sites that are imbued with strong spiritual associations including ceremonial sites, Aboriginal occupation sites, sacred sites, *djang* sites and traditional walking routes
- include a great number of places with spiritual associations relating to creator beings that are connected to the continuing practice of traditional beliefs and religious practices
- include some of the oldest known Aboriginal occupation sites in Australia
- present a highly significant record of human occupation of a landscape that is rarely matched anywhere in the world.
- The location and condition of many cultural sites is unknown. There has been damage to some recorded sites as a result of feral animals and visitor impacts (such as unauthorised entry).

Existing threats to values

Loss of traditional knowledge (highly significant)

There are concerns among Bininj/Mungguy that many of the stories and knowledge of cultural sites are being lost. A breakdown in the transfer of knowledge between generations is contributing to this loss.

Unauthorised access (highly significant)

There are strong concerns among Bininj/Mungguy about unauthorised access to sacred sites. This is particularly the case for *djang* sites and Sickness Country, where there are concerns about bushwalkers and fishers accessing closed sites.

Feral animals (highly significant)

Feral animals can disturb and damage archaeological sites.

Weeds (highly significant)

Weeds and other vegetation growing around and up through cultural sites can have an impact. Additional actions addressing weed and feral animal management are covered in Section 5.3.

Potential threats to values

Climate change (highly significant)

Climate change is likely to impact on cultural sites in coastal and lowland areas through rising sea levels and saltwater inundation.

Actions

- 5.1.12 Assist Bininj/Mungguy to access cultural sites in the park, to record cultural knowledge associated with them, and provide opportunities to pass this knowledge on to younger generations.
- 5.1.13 Maintain and update the register of Bininj/Mungguy cultural sites in the park, including information on their condition, conservation works and associated cultural knowledge.
- 5.1.14 Continue to work closely with the AAPA in park planning processes to increase the protection and registration of sacred and other cultural sites, recording and documenting information about them.
- 5.1.15 In consultation with the AAPA, develop and undertake a programme of activities to address concerns about unauthorised access to cultural sites, including:
- (a) reviewing and improving park protocols on access to cultural sites and the information about them where necessary, and manage sites, including Sickness Country, according to the relevant protocols
 - (b) reviewing and updating visitor guidelines relating to protocols on access to cultural sites
 - (c) installation of signage where appropriate to indicate restricted access
 - (d) identification of cultural sites near or on approved or proposed bushwalking routes
 - (e) development and implementation of a compliance and enforcement strategy to support protection of cultural sites
 - (f) monitoring of cultural sites for unauthorised access (see also Section 9.2: Compliance and enforcement).
- 5.1.16 Identify potential actions to minimise the impact of saltwater intrusion on priority cultural sites and implement them where feasible and cost-effective.
- 5.1.17 Develop and undertake a programme to address issues impacting on the condition of priority cultural sites, focusing on reduction in numbers of pigs and buffalo and removal of weeds and other vegetation.
- 5.1.18 Develop and implement a programme to monitor the condition of priority cultural sites and the effectiveness of conservation measures.

Historic sites

Outcome

- Priority historic sites are managed to mitigate impacts from threatening processes

Performance indicator

- A reduction in the overall impact that fire, plants, animals, insects and human activities can have on priority historic sites

Background

The first documented sustained contact that Aboriginal people from the Alligator Rivers Region had with non-Aboriginal people was with Macassan seafarers between the 17th and 20th centuries. The Dutch also visited the northern coast of Australia in 1623, and in 1644 Abel Tasman mapped the northern opening of Van Diemen's Gulf and was the first person to record European contact with Aboriginal people in the region. The next explorer, British navigator Phillip King, sailed up the South and East Alligator Rivers in 1818. The British later established the settlements of Fort Wellington in 1827 and Port Essington in 1938 on the Cobourg Peninsula. The early explorers Ludwig Leichhardt and John McKinlay passed through the Kakadu region in 1845 and 1866 respectively; however, it was only in the years following the establishment of a settlement at Port Darwin in 1869 that ongoing contact with Balanda began.

The history of the Kakadu region after the mid-1800s is characterised by small-scale ventures such as crocodile and buffalo shooting, logging, pastoralism, mining and prospecting and early tourism ventures, most of which were economically marginal. Many of these ventures involved cooperation between Bininj/Mungguy and Balanda, so historic sites often bring up strong feelings for Bininj/Mungguy about individuals and the past as they represent a way of life and use of country that has now gone.

Uranium mining has had a significant impact on Bininj/Mungguy within the Kakadu region. Activity was focused within the southern region of the park, with the last mining activity in the upper South Alligator Valley and the adjacent section of the Katherine River occurring in the 1950s. These mines ceased production in 1964. A proposal to develop the Ranger uranium deposit in 1975 resulted in the *Ranger Uranium Environmental Inquiry* (Fox et al. 1977) led by the Hon Russel Walter Fox AC QC. The final report provided a range of recommendations that led to granting of Aboriginal title and declaration of Stage 1 of Kakadu National Park. Uranium mining continues adjacent to the park in the northern region near Jabiru, providing some economic support to the area through employment opportunities and support for the retail and accommodation industry within Jabiru.

All of the industries carried out in the park have affected local Aboriginal people and have left a range of post-contact historic sites in the park, many of which are significant for both Bininj/Mungguy and Balanda. Several studies have been undertaken to document the significance of historic sites, and recommendations have been developed regarding future site management. The Australian International Council on Monuments and Sites Burra Charter for the conservation of heritage places forms the basis of the recommended approach for making decisions about heritage sites. Accordingly, cultural significance assessments and conservation plans have been prepared for some historic sites within the park.

'We need to record and share more of the Bininj and Balanda stories about mining and the buffalo and croc hunting days.'

Traditional owner

In 2013, students from the Australian National University came to the park for a week-long intensive course: Physical Conservation of Buildings and Structures. This generated great interest in the park's historic sites and may result in collaborative conservation projects in the future. The value of oral histories in providing an insight into the interactions between people and different perspectives on key historic events and themes was also recognised.

One historic site within the park, Munmalary Homestead, is a declared heritage place under the Northern Territory *Heritage Act 2011* and is listed on the Northern Territory Heritage Register.

Values and condition

Historic sites within the park:

- represent the park's recent history, including early contact between Balanda and Bininj/Mungguy in the region
- comprise intertwined stories of Bininj/Mungguy and Balanda as they came to live and work together, and some sites represent a way of life and use of country that no longer exists
- represent the struggle of Bininj/Mungguy to retain control of their country and their resilience in the face of unprecedented threats to their culture
- are tangible examples of the types of activities that occurred in the recent history of the park and contribute to understanding its human occupation.

To date the majority of historic sites in the park have not been actively managed or maintained and are in poor condition. However, the location of most sites is known, baseline information on their condition and significance has been documented, and conservation plans detailing management priorities exist for some sites.

Existing threats to values

Lack of knowledge and understanding of historic site values (highly significant)

There are often varying perceptions of the significance and value of historic sites among Bininj/Mungguy, park staff and other stakeholders.

Natural weathering, fire and termites (highly significant)

Natural weathering processes, fire and termites have damaged and degraded many of the historic sites within the park. Conservation work may include restricting access to some sites, maintaining protection from fire and working to stabilise existing structures. High costs are associated with implementing conservation work, such as stabilising the structural integrity of old infrastructure, and expertise in building conservation is not always available locally.

Loss of knowledge and stories relating to historic sites (moderately significant)

As older people pass away, many stories about these sites are lost with them.

Potential threats to values

Asbestos removal (highly significant)

Many historic sites contain asbestos products, making work health and safety and public safety important considerations. If not managed sensitively, programmes to remove these products can cause significant damage to the integrity of historic buildings. This potential threat will be responded to during the day-to-day management of the park and does not warrant specific control mechanisms within this plan. The presence of asbestos at historic sites also prevents sites from being opened to the public and reduces the ability to provide interpretation and education to visitors about Kakadu's history.

Vandalism (highly significant)

Some Bininj/Mungguy and people working in the tourism industry would like to see some of the historic sites appropriately promoted as places for visitors, but vandalism remains a potential threat to sites. This is an ongoing issue that will be responded to during the day-to-day management of the park and does not warrant specific control mechanisms within this plan.

Actions

- 5.1.19 Review existing documentation relating to historic sites and reassess the priorities for conservation, management, use and interpretation.
- 5.1.20 Develop and implement conservation management plans for priority historic sites that identify:
 - (a) conservation works required such as stabilisation of structures and actions to protect historic sites from weathering, termites and fire
 - (b) workplace health and safety risks and risk management procedures
 - (c) appropriate future visitor access and use, signage and interpretation, and
 - (d) opportunities to promote the heritage significance of the sites.
- 5.1.21 Maintain and update a register of historic sites and information about them, including their significance, condition and conservation works undertaken.
- 5.1.22 Maintain a programme recording oral histories including those relating to historic sites.
- 5.1.23 Monitor priority historic sites for unauthorised access.
- 5.1.24 Identify historic sites to be managed as ruins and implement measures to help slow natural deterioration of the sites through agreed conservation plans.

5.2 Looking after country

Natural values

The park is an internationally significant natural landscape (including landforms and biota of great antiquity) comprising outstanding representation of interconnected ecosystems whose extent, intactness and integrity provides for a distinctive and rich biodiversity including viable populations of threatened, endemic and culturally significant species

Objective

Maintain the condition of the park's natural values, and support the recovery of threatened species

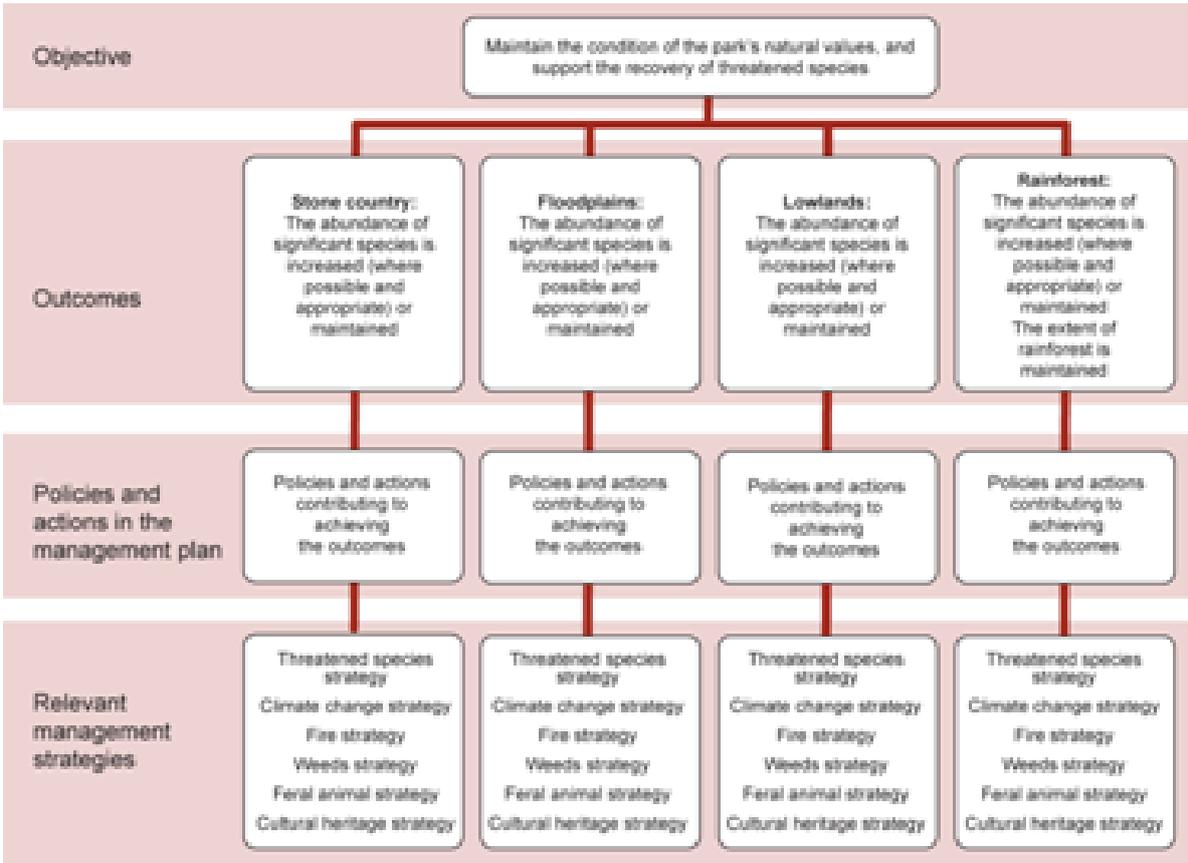
Although much of Kakadu's outstanding value is in its vast and relatively undisturbed continuous natural environment, within the park there are four broad landscapes, each with distinct values, threats and management priorities. Accordingly, this section of the plan describes Kakadu's four main landscape components: the lowland woodlands and forest, occupying more than 75 per cent of the park; the stone country; floodplains (freshwater and saltwater country); and rainforest (Figure 4). However, it is important not to lose sight of the value of the park as one large and integrated environment.

Within these broad landscapes, there is a great diversity of native plants and animals including important populations of migratory species (Appendix D: EPBC-listed migratory species) and many threatened species (Appendix J: Species of conservation concern). Many species found within each of these landscapes also have broadly similar management considerations and hence are effectively considered within this landscape approach.

Under the EPBC Act, the Minister may make or adopt recovery plans for threatened species and threatened ecological communities listed under the Act, and may decide to have a threat abatement plan for a listed key threatening process under the Act. As a Commonwealth agency for the purposes of the Act the Director is required not to take an action that would contravene one of these plans. At the time of preparing this plan there were only a small number of documented recovery plans relevant to Kakadu's threatened species. It is anticipated that additional recovery plans will be developed during the life of this plan.

Figure 9 illustrates the line of sight for this section of the plan.

Figure 9: Line of sight for Section 5.2: Looking after country



Overarching principles for managing natural values

When managing the natural values, the following overarching principles will apply:

- Bininj/Mungguy will continue to be encouraged and supported to guide and participate in the development, implementation and review of natural heritage management programmes (Section 4: Joint management)
- Bininj/Mungguy and Balanda knowledge of and priorities related to the management of native plants and animals and their habitats will be incorporated into management programmes (Section 4: Joint management)
- A regional approach will be taken to managing natural values by liaising and collaborating with neighbours, government agencies and other stakeholders (Section 9.7: Neighbours, stakeholders and partnerships)
- Management of natural values will be considered and planned at a landscape level, but not exclude finer scale approaches as needed, to optimise management outcomes.

Stone country – Kun-warddewardde

Outcome

- The abundance of significant species is increased (where possible and appropriate) or maintained.

Performance indicator

- Abundance of significant species

Background

'The stone country is important, it's where all the rivers start, it's where all the water comes from, it's where everything comes from... it's all connected.'

Jeffrey Lee, Djok clan

The stone country of Kakadu makes up the western edge of the Arnhem Land Plateau, an extensive, rugged and ancient sandstone formation markedly distinct in geology and biodiversity from the surrounding lowlands. It comprises some of the oldest exposed rocks in the world and a spectacular escarpment occurs along its western edge and contributes to its grandeur. Some 140 million years ago, when much of Kakadu is believed to have been under a shallow sea, the plateau formed a flat land above the sea and the prominent escarpment wall formed sea cliffs along the shoreline.

Because of its age and its extraordinary topographic complexity, the stone country has long served as a refuge area for biodiversity. It has sheltered plant and animal species from changes in climate and sea level, and allowed for the persistence of many plant and animal species of extremely ancient lineages, such as the biogeographic relict northern brown pine *Podocarpus grayae*. The stone country has also provided refuge for species that cope poorly with fire. This capacity to provide refugia will become more important under changing climatic conditions.

Due to its large size and isolation from similar environments, the stone country also supports many endemic species (see figures 10 and 11). The rugged topography limits the capacity of some species, such as trigger plants *Stylidium* sp., to disperse easily, and there is a particularly high rate of endemism in this region of the park due to the isolation and protection that the terrain of the stone country provides. Consequently, the stone country is one of Australia's most important sites for the conservation of endemic species, and appropriate management is essential for their survival.

The stone country extends over approximately 25 per cent of the park area and contains sheer escarpments, deep narrow gorges, spectacular waterfalls, and the headwaters of some of the largest river systems in the Northern Territory. While it varies from vertical cliffs in the Jim Jim Falls area to stepped cliffs and isolated outliers in the north, including Ubirr and Burrungkuy (Nourlangie), the highest point is only about 400 metres above sea level. Bininj/Mungguy have a long history of camping in stone country, painting art in rock shelters, burning country and collecting plants and animals for food and medicinal purposes.

Figure 10: Endemic plants in the Northern Territory

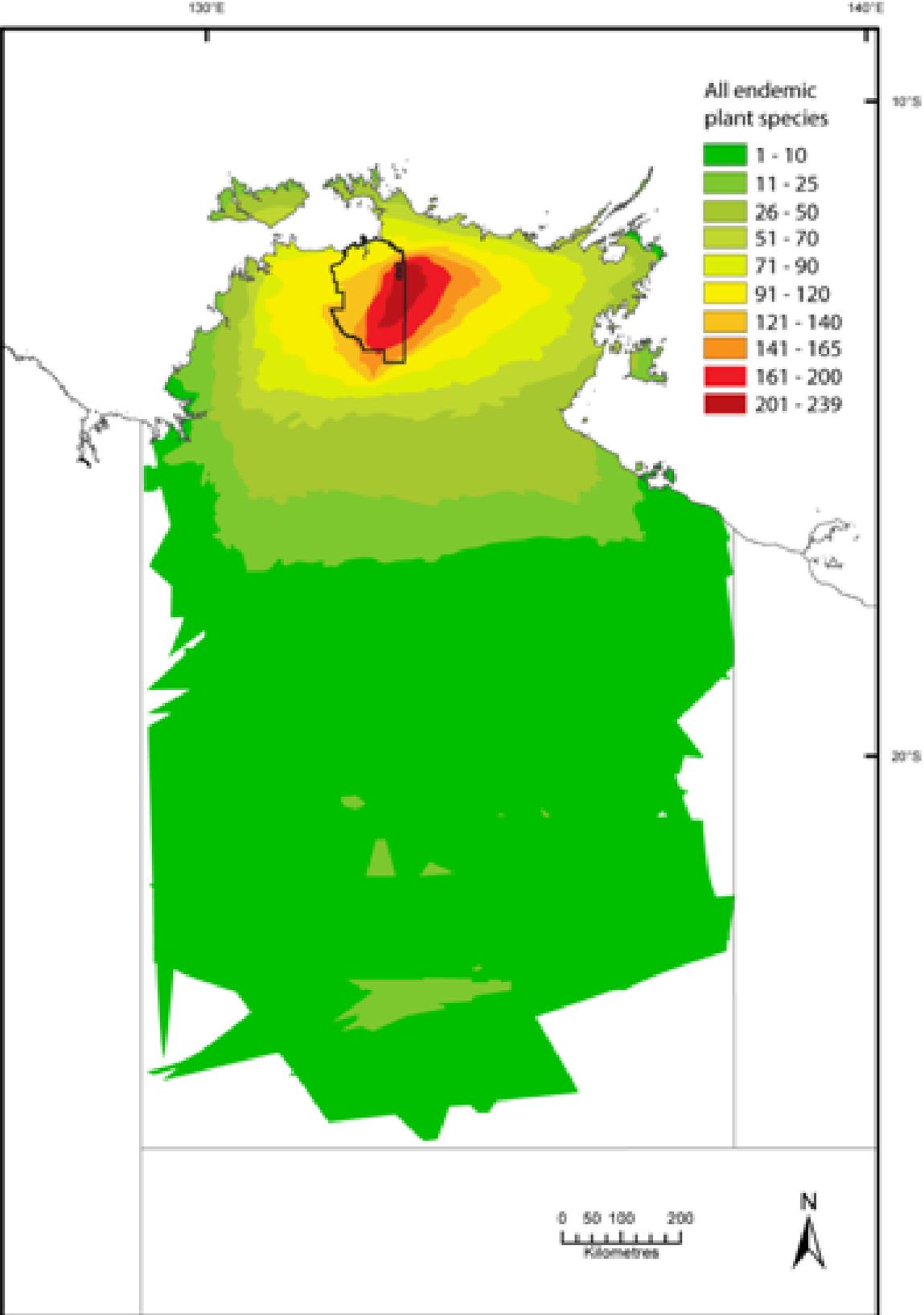
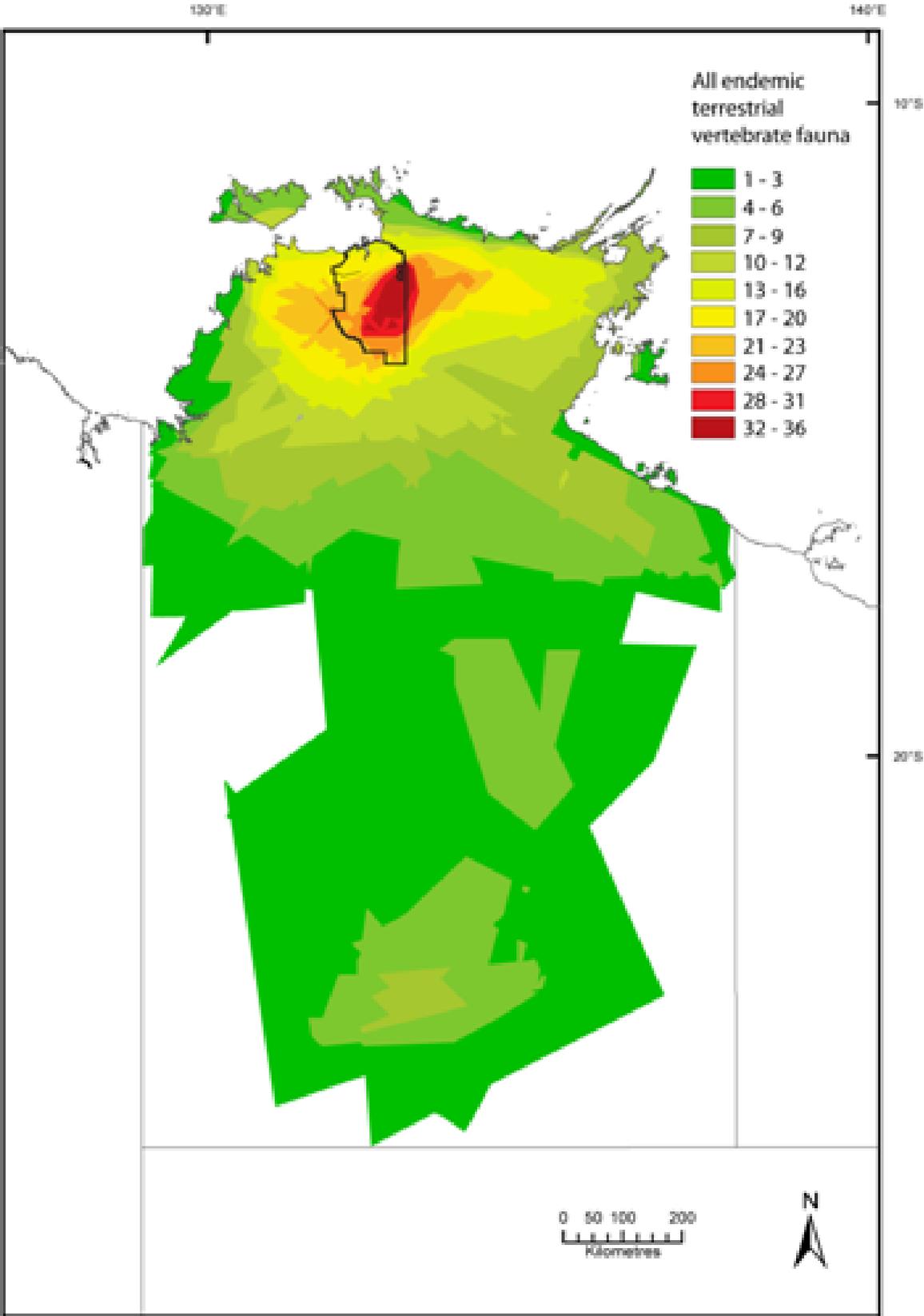


Figure 11: Endemic vertebrates in the Northern Territory



Source: Wolnarski et al 2009

Parts of the stone country are harsh, with exposed rock, little or no soil, and soils with low fertility. As a result, the plants and animals that live in this habitat have many adaptations to assist survival in such conditions. The stone country also provides an extraordinary diversity of landscapes and microclimates, at scales ranging from the shelter offered by boulders and cave systems to the steep-sided gorges and waterfalls that provide specialised environments for many moisture-loving plants, and in which tall rainforest has developed. Water seeping from rock walls and spreading shady trees provide an important micro-environment for plants and animals. Many animals rely on these areas for refuge during the drier months and, over a longer history, during periods of otherwise adverse climate. These conditions have all led to the stone country being an extremely important area for plant and animal endemism and diversity.

Values and condition

The stone country:

- is extremely rich in endemic (restricted) plants and animals, and at least 160 plant species occur nowhere else in the world. Endemic animals include three birds, five mammals (including the black wallaroo, Barrk) and 12 reptiles (including one of Australia's largest snakes, the Oenpelli python, Nawaran)
- comprises a high diversity of species, and some remarkable changes in species composition over very small areas
- contains at least 30 threatened species (10 plants and 20 animals – see Appendix J), including some with only a limited distribution
- has provided habitat for a diverse range of plants and animals secure from fire and changes in climate for millions of years
- contains a large proportion (22.5 per cent) of the nationally endangered Arnhem Plateau Sandstone Shrubland Complex ecological community (see Figure 4)
- is the catchment for the major river systems in the park (and some of the largest river systems in the Northern Territory), feeding the lowlands and floodplains
- is a spectacular and beautiful example of geomorphology that shows examples of important periods of change during the earth's formation.

In broad terms, the stone country is in good to near-pristine condition by most standards, with little development and few weeds. However, many elements of the stone country are in decline. Notably this includes the endangered Arnhem Plateau Sandstone Shrubland Complex community and more than 30 threatened species. Long-term monitoring data indicate that populations of many of these species are continuing to decline. Similar trends are evident for other significant stone country species (keystone species) not yet recognised as threatened, such as *Allosyncarpia* (Anbinik) and *Callitris* (Anlarr). There is a significant lack of knowledge about many stone country species, including their condition.

Existing threats to values

Fire (highly significant)

Frequent, extensive and high-intensity fires are the most significant threat to the stone country environment. While plants and animals in the stone country have evolved with some fire, many species are vulnerable to frequent and intense fires. A stone country fire management programme has been implemented in the park since 2006, and this has been successful in reducing the extent and intensity of fires. However, effective fire management over this remote, rugged and generally inaccessible region remains challenging and expensive.

Feral animals:

- Feral cat (highly significant)

Feral cats are thought to be associated with reductions in native animals, particularly reptiles, birds and ground-dwelling mammals such as the Arnhem rock-rat, but more information is required to understand the population and impacts of feral cats. Actions relating to feral cat management are covered in Section 5.3 (Managing park-wide threats affecting values).

- Cane toad (highly significant)

Some native species in the stone country have declined substantially following colonisation by the cane toad, in particular goannas and the northern quoll, which have suffered local extinctions in some areas. Impacts of toads on the stone country's endemic invertebrate fauna are not known. This threat cannot realistically be humanly controlled and will be monitored to enable an adaptive response to possible impacts.

- Knowledge gaps (moderately significant)

It is highly likely that the stone country harbours many species not yet described. This is so particularly for invertebrates, but is also the case for plants and vertebrates. Many 'undiscovered' invertebrate groups are likely to be of phylogenetic significance (i.e. representing very old lineages). Basic information about the population of many stone country species and the impact of current fire regimes and other potential threats is not available.

Weeds (of low significance)

The incidence of weeds in the stone country is generally low; however, incursions of introduced pasture grasses, such as gamba grass and mission grass, have the potential to exacerbate the impact of fire on stone country flora and fauna, particularly under increasingly warmer conditions. Actions relating to weed management are covered in Section 5.3 (Managing park-wide threats affecting values).

Actions

- 5.2.1 Manage fire in the stone country in accordance with the Policies and Actions in Sections 5.3.17 to 5.3.26 to reduce the impact on plants, animals and habitats, including protection of rainforest patches.
- 5.2.2 Manage native plants and animals in the stone country through:
 - (a) development and implementation of a park strategy for the conservation of threatened species and threatened ecological communities, including, as appropriate, actions in recovery plans for relevant species
 - (b) identification of other significant species (e.g. endemic species, key stone species, indicator species and culturally significant species) and implementation of specific management prescriptions for these species
 - (c) conducting survey and monitoring programmes for significant species.

Floodplains (freshwater country and saltwater country) – An-kabohkabo dja kurrula

Outcome

- The abundance of significant species is increased (where possible and appropriate) or maintained

Performance indicator

- Abundance of significant species

Background

‘There are places where you can find everything. All resources are there like a supermarket.’

Traditional owner

Wetland systems infiltrate and connect all Kakadu landscapes, and Kakadu is particularly notable in encompassing almost the entire catchment and extent of some of the largest and most diverse river systems in northern Australia.

Kakadu’s wetland environments begin in seepages, springs and small rock pools in the stone country. These headwater systems support a diverse range of endemic aquatic invertebrates, many with extremely restricted ranges. The springs and seepages may also support distinctive rainforest and perched swampland environments. From the stone country plateau to the lowlands, many of the river systems form spectacular waterfall systems as they pass over the sandstone escarpment. Some of these waterfall systems provide habitat to specialised plants, such as the threatened fern *Cephalomenes obscurum*.

The floodplains of the Wildman and the East, South and West Alligator rivers and seasonal creeks are vast and extend in almost unbroken tracts to the coast. They are reservoirs for floodwaters during the wet season, when the land is inundated by monsoonal rains. Rivers beginning in the stone country carry wet season floodwaters with nutrients and sand and silt eroded from rock structures to the floodplains each year. This process has been happening for thousands of years and continues today, making the floodplains and wetlands the most productive of Kakadu’s habitats. The vegetation along creek and river channels is composed mainly of paperbark (*Melaleuca quinquenervia*) and water pandanus (*Pandanus aquaticus*). This is an area that was and still is used by Aboriginal people.

The freshwater floodplain environments, composed mainly of aquatic plants such as sedges, grasses and waterlilies, may be under water for many months, and during this time they can support the breeding activity of crocodiles and many waterbirds such as magpie geese. As the floodplains start to dry, crocodiles and vast numbers of waterbirds (sometimes many millions) seek refuge around remaining wetlands such as Yellow Water. Large numbers of migratory shorebirds also occur seasonally in parts of the floodplain. The great diversity of wetland habitats and the abundance of wildlife they support make Kakadu’s floodplains of international significance and are the reason the park is listed as a wetland of international importance under the Ramsar Convention. The Ramsar Information Sheet (DSEWPac 2011) provides more detail on Kakadu as a Ramsar site.

The coastal areas of the park are dominated by salt and mudflats and mostly lined with mangroves, which provide important breeding and nursery areas for a variety of fish including barramundi. The northern boundary of the park follows the low water mark of the 120 kilometre stretch of coastline that separates the park from the shallow waters of the Van Diemen Gulf. Gardangal (Field Island) and Djidborddu (Barron Island) lie near the mouth of the South Alligator River and are included within the park. Field Island has a small beach which regularly supports nesting flatback turtles and is a key site for an annual monitoring programme for this threatened species, and 20 years of survey data is now available for both flatback turtles and saltwater crocodiles.

Marine and riverine environments provide important habitat for a diversity of sedentary and migratory species, many of which are listed under the EPBC Act and international conservation agreements. These include five species of marine turtles, dugong and shorebirds. The park also provides key habitat for one critically endangered and one endangered species of river shark, two vulnerable sawfish species and two inshore dolphin species.

Kakadu wetlands and coastal and marine areas are of great importance to Bininj/Munggyu and numerous sites of significance are located within and adjacent to the park. They provide a vast supply of traditional foods, or bush tucker, such as magpie goose, fish, turtles, and lotus lily; traditional medicines; and wood and fibre for traditional weapons, utensils and weaving. Bininj/Munggyu have a long history of managing the floodplains, particularly through fire management, and customary harvest continues today.

Waldak Irrmbal (West Alligator Head) is the only coastal section of the park readily accessible by land during the dry season and is the focus for a number of recreational activities including boating, fishing and coastal camping. This area is characterised by unpredictable weather, large tides, shifting sandbanks and mudflats, and potentially dangerous wildlife such as crocodiles, stingrays, and box jellyfish. A number of incidents involving boats and vehicles in the Waldak Irrmbal area have required emergency assistance from park staff.

During the last 10 years, there has been a significant increase in recreational boating and fishing activity along the Kakadu coastline. Fishing activity is particularly high during neap tides at Waldak Irrmbal and Gardangal and in neighbouring waters. The West Alligator River and tributaries north of the Kakadu Highway are closed to boating and fishing for the purpose of maintaining a river system free of visitor impacts and protecting fish populations at the headwaters. It is the only river system in the Top End entirely protected from recreational fishing and boating. As a river system free of visitor impacts, the West Alligator River serves as an important refuge for wildlife and as a significant site for scientific research.

Commercial fishing targeting barramundi, salmon and mud crabs occurred within the park until 1989. Commercial fishing has not been allowed in the park since that time. At the time of preparing this plan, six commercial fishing operations were working along the Kakadu coastline, with at least one operation working the area full time during the commercial barramundi season.

A decision by the Northern Territory Government in February 2013 to close the area between Kakadu and the Finniss River to all commercial fishing has reduced the area available for the commercial harvest of barramundi. A proposed closure of waters near Darwin to recreational fishing may place more pressure on Kakadu coastal areas and infrastructure by recreational fishers and fishing tour operators. Incidents of illegal fishing occur in the park. Fishing in marine and coastal areas will be managed in accordance with Sections 10.7 (Recreational activities) and 10.10 (Commercial fishing) of this plan.

Values and condition

Kakadu's freshwater and saltwater country:

- contains near-pristine rivers and creeks, connected from their source in the stone country to the coast
- supports a great diversity of habitats including springs and perched swamps, large rivers, seasonally flooded freshwater floodplains and wetlands and tidally influenced mudflats and mangroves
- provides important habitat and refuge for vast numbers of waterbird species, including records of more than two million Magpie Geese and ducks, and significant numbers of other species such as egrets, ibis, brolga and migratory shorebirds
- provides important habitat for 27 threatened species, including internationally threatened sawfishes, river sharks, marine turtles and dugong, and those with a restricted range such as the yellow chat (Alligator River subspecies) and the plains death adder
- illustrates a highly dynamic and productive ecological system over multiple scales (seasonal to millennia)
- supports intact coastal vegetation, namely mangroves, and largely undisturbed islands, of which there are relatively few protected in the conservation network in the Northern Territory
- represents a long-standing cultural interaction with the landscape through fire management and is culturally significant as a source of food
- supports high freshwater and estuarine fish and aquatic invertebrate diversity;
- supports significant populations of saltwater (*Crocodylus porosus*) and freshwater (*Crocodylus johnstoni*) crocodiles and a population of the pig-nosed turtle.

The condition of wetland areas in the park varies, but is generally very good compared with other wetlands globally. However, large areas of floodplain are being significantly impacted by weeds, and wetlands and springs in the stone country are being degraded by pigs and buffaloes. Popular visitor sites in coastal areas have also experienced some localised degradation associated with unregulated use.

Marine and riverine environments within the park potentially have the best-protected populations of threatened sawfishes and river sharks, but there are a number of threats operating outside the park. Bininj/Mungguy have concerns about the declining population of some bush tucker species, such as turtles and goanna.

Existing threats to values

Weeds (highly significant)

Weeds such as *Mimosa pigra*, *Salvinia molesta* and the introduced pasture species para grass (*Bracharia mutica*) and olive hymenachne (*Hymenachne amplexicaulis*) pose a substantial and ongoing threat to floodplain environments in the park. The floodplain areas are extensive and access can be difficult, making management costly and future eradication unlikely.

Feral animals:

- **Pig and buffalo (highly significant)**

There is localised impact from buffalo and pigs on some spring areas in the stone country and extensive impact in floodplain areas. Pigs predate on several wetland dependent species including frogs and turtles. Bininj/Mungguy are concerned about the decline in numbers of turtles, which may be related to the presence of pigs. Pigs target *Eleocharis* bulbs which are a major food source for magpie geese. The spread of weeds such as mimosa and olive hymenachne by pigs and buffalo through foraging activities is of major concern.

- **Cane toad (highly significant)**

Cane toads have impacted significantly on many species in wetland areas, including goannas, large dragons and elapid snakes. This threat cannot realistically be humanly controlled and will be monitored to enable an adaptive response to possible impacts.

- **Feral cat (highly significant)**

While the extent of impact of cats on floodplain fauna is not fully known, it is clear they are contributing to the decline of some species. Actions addressing feral cat management are covered in Section 5.3 (Managing park-wide threats affecting values).

Climate change (highly significant)

Sea-level rise is expected to result in the replacement of many freshwater wetlands with saline wetlands and will potentially have a major effect on floodplain values. Historic disturbance to natural levees by buffalo allowed entry of salt water into some freshwater areas and impacted on vegetation communities. Artificial dams and levees were built in some places to replace and stabilise damaged levees but have not been maintained and there are limited other options to minimise saltwater intrusion in the park. More extreme weather events associated with climate change are also likely to impact on coastal and riverine areas in Kakadu.

Fire (moderately significant)

In the absence of continued traditional burning practices over generations, extensive areas that were once identifiable as open Aboriginal occupation sites are now obscured by native vegetation, increasing fuel loads and changing the landscape. Traditional fire management of the floodplains saw areas burnt periodically to control the density of aquatic grasses, thereby increasing the extent of open water (favoured by many wetland animals) and of some plant species (such as water chestnut and wild rice) that provide important resources for many animal species, including magpie geese. Introduced pasture species that have extended across the landscape have also increased fuel loads and impacted on wetland fire regimes.

Illegal commercial fishing (moderately significant) and recreational fishing (low significance)

Illegal commercial fishing, and to a lesser extent recreational fishing, has potentially had an impact on dolphins and on threatened species such as sawfish and river sharks. These species are highly vulnerable to gillnet fishing (from commercial fishers operating outside the park or illegally in river mouths of the park). There have been a number of incidents involving commercial fishing operators illegally netting within the park. Actions addressing compliance issues are covered in Section 9.2 (Compliance and enforcement).

Visitor impacts (low significance)

There are localised impacts from unregulated use in high-use coastal visitor areas (Waldak Irrmbal), including overcrowding at camping areas, off-road driving and rubbish. Actions addressing visitor impacts are covered in Section 5.3 (Managing park-wide threats affecting values).

Unauthorised access (low significance)

Regular monitoring and surveillance by park staff is difficult due to the remoteness of the coastal area and there may be significant time delays in responding to incidents. Weeds and fire are often spread by people accessing parts of the park without authorisation. Actions addressing compliance issues are covered in Section 9.2 (Compliance and enforcement).

Development impacts outside the park (highly significant)

Some species that use coastal waters and areas are migratory and also depend on land and waters outside the park where they may be subject to multiple threats such as habitat loss or degradation. These impacts are largely beyond park control.

Actions

- 5.2.3 Manage weeds on the floodplains, prioritising control of ecosystem-transforming weeds (including para grass and olive hymenachne) in priority areas and continued eradication of mimosa.
- 5.2.4 Manage feral animals on the floodplains to reduce the impact of pigs and buffalo in priority areas.
- 5.2.5 Manage fire on the floodplains in accordance with the Policies and Actions in Sections 5.3.17 to 5.3.26 to:
 - (a) replicate the traditional floodplain burning regime
 - (b) reduce cover of *Hymenachne*, para grass and other floodplain weed species and promote *Eleocharis* and other native wetland plant species.
- 5.2.6 Identify actions to limit the impact of saltwater intrusion in priority areas and implement them where practical and cost-effective.
- 5.2.7 Manage native plants and animals in the floodplains, rivers and coastal environments through:
 - (a) development and implementation of a park strategy for the conservation of threatened species and threatened ecological communities, including, as appropriate, actions in recovery plans for relevant species
 - (b) identification of other significant species (e.g. culturally significant species) and implementation of specific management prescriptions for these species
 - (c) conducting survey and monitoring programmes for significant species.
- 5.2.8 Take a lead role in liaising and cooperating with the Northern Territory Government and other relevant stakeholders, including relevant traditional owners, regarding the management of access to marine areas of the park and improved management and protection of adjacent coastal and marine environments.
- 5.2.9 Continue work mapping and defining the northern boundary of the park.

The lowlands – Kukarnhkarndan

Outcome

- The abundance of significant species is increased (where possible and appropriate) or maintained

Performance indicator

- Abundance of significant species

Background

'In the woodlands there are many uses for us, for instance gathering bark for shelters from the stringy-bark trees and also looking for young hollow trees to make didgeridoo. And there are many foods and meat to gather as well. The woodlands are important to gukburlerri from many years ago and from today.'

Yvonne and Nida Gangali, Mirarr/Gundjeihmi clan

Lowland plains stretch over much of the Top End and are the most obvious and widespread landscape in Kakadu, making up over 70 per cent of the park. This gently undulating landscape typically supports eucalypt woodlands and open forests with an understorey of shrubs and tall grasses. Darwin stringybark (*Eucalyptus tetradonta*) and Darwin woollybutt (*Eucalyptus miniata*) are the main trees in the lowlands; they dominate some woodland communities and occur in varying proportions throughout most other woodlands and forests.

Where the woodlands form a riparian fringe to adjoining wetlands a special habitat dominated by Ironwood (*Erythrophleum chlorostachys*) and Scribbly Gum (or Snappy Gum, *Eucalyptus racemosa*) was particularly used for wet season camping by Aboriginal people.

The lowlands adjoining the stone country escarpment are often accessed by stone country bird and mammal species e.g. Chestnut-quilled rock pigeon *Petrophassa rufipennis*, and macropods for feeding forays.

Woodlands typically grow on sandy or lateritic soils, often shallow and gravelly; their trees are low and widely spaced and often lose their leaves in the dry season. The forests tend to grow on deeper soils and have year-round ground moisture available to them, with taller trees which grow closer together. The lowlands are heavily influenced by seasonal factors. The wet season is a period of growth, when plants make the most of the abundant water. The dry season is a more stressful time, and the plants have adapted to cope with this long waterless period.

Lowland woodlands can change significantly within short distances; this is determined by a number of factors such as soil structure, slope and length of flooding during the wet season. The widespread and variable nature of the lowlands, plus its vast expanse, has contributed to making it the richest in plant and animal species of the park landscapes, although (in contrast to the stone country) most species also occur widely beyond Kakadu.

Values and condition

The lowlands within Kakadu:

- are the dominant ecological fabric of the park and the one that connects all the other landscapes
- are largely intact and represent the largest savanna protected within a reserve in the world
- comprise a great diversity of species, with the majority of Kakadu's species existing in this landscape
- are the primary habitat for 20 threatened species, particularly mammals
- are the primary habitat for many culturally significant species such as billy goat plum (*Terminalia ferdinandiana*) and other plants and animals collected for food and materials
- are a nationally significant carbon store.

Compared with other savanna lowlands around the world, the Kakadu lowlands are largely intact but their condition is declining: the extent and impact of weeds, particularly ecosystem transforming grasses, is increasing; large and frequent fires are leading to simplification of the woodland structure; feral animals are impacting on some environments and species; and populations of some threatened species, particularly mammals, are falling rapidly.

Existing threats to values

Fire (highly significant)

Large, hot and frequent fires remain a significant issue in the lowlands, in particular for the maintenance of habitats favoured by some currently declining animal species. The numerous unplanned and unauthorised fires that are lit along major roads and in the park each year by people travelling through and using the park is a major issue.

Feral animals:

- **Cats (highly significant)**

While the extent of impact from cats on the lowlands fauna is not fully known, it is clear they are contributing to the decline of many species, especially small mammals. No fully effective control programme has been demonstrated for feral cats in this environment and management options remain limited.

- **Cane toads (highly significant)**

Cane toads have had a significant impact on many species in the lowlands, including quolls, goannas, large dragons and elapid snakes. This threat cannot realistically be humanly controlled and will be monitored to enable an adaptive response to possible impacts.

- **Feral herbivores (highly significant)**

Feral herbivores such as buffalo, pigs, cattle, horses and donkeys are abundant in neighbouring areas and are increasing in lowland areas of the park. In the lowlands they degrade habitat and spread weeds, and populations will quickly build up if they are not continually controlled.

- **Dogs, invasive ants, feral bees (low significance)**

Feral dogs interbreed with dingoes. They place increased pressure on native animals and also cause safety issues around living areas. Introduced ants and European bees are capable of displacing other invertebrates and alter food availability and habitat for native animals.

Knowledge gaps (moderately significant)

There is significant uncertainty surrounding the cause of decline of many species in the lowlands and the interactions of different threats. In particular, research on the cause of small mammal decline remains inconclusive and it is therefore difficult to develop management solutions with confidence of success. Actions addressing research and knowledge management are covered in Section 7 (Research and knowledge management).

Potential threats to values

Weeds (highly significant)

Highly invasive African pasture grasses such as gamba grass represent a major potential threat to the lowlands. Gamba grass has a higher biomass and cures later in the dry season than native grasses; it causes dramatic increases in the intensity of fires. Climate change related temperature increases are likely to exacerbate these impacts. The great extent of the lowlands makes weed management challenging and resource intensive.

Actions

- 5.2.10 Manage fire in the lowlands in accordance with the Policies and Actions in Sections 5.3.17 to 5.3.26 to reduce impact on plants, animals and habitats.
- 5.2.11 Manage weeds in the lowlands prioritising control of the spread of gamba grass.
- 5.2.12 Manage feral animals in the lowlands through:
 - (a) development of cost-effective strategies for management of feral cats in priority areas
 - (b) management of pigs, horses, donkeys and buffalo, particularly in areas of high density.
- 5.2.13 Manage native plants and animals in the lowlands through:
 - (a) development and implementation of a park strategy for the conservation of threatened species and threatened ecological communities, including actions in recovery plans for relevant species
 - (b) identification of other significant species (e.g. indicator and culturally significant species) and implementation of specific management prescriptions for these species
 - (c) conducting survey and monitoring programmes to address knowledge gaps for significant species.

Rainforest – An-ngarre

Outcomes

- The abundance of significant species is increased (where possible and appropriate) or maintained
- The extent of rainforest is maintained

Performance indicators

- Abundance of significant species
- Area of rainforest

Background

‘We’ve got to stop late fires – protect anbinik.’

Traditional owner

Rainforest in Kakadu occurs in small, isolated patches scattered throughout the park, taking up less than three per cent of the park area, it is distinct from the surrounding savannah woodland and floodplain vegetation. Depending on the availability of water, rainforest may be wet, spring-fed or dry forest. It is structurally diverse, ranging from tall forests over 30 metres in height in the stone country to deciduous thickets often only two or three metres in height in coastal areas.

The stone country supports a high proportion of Kakadu’s rainforest, where it occurs scattered across the gorges and cliffs and often dominated by the large evergreen tree *Allosyncarpia ternata* (Anbinik). This tree has persisted since ancient times and is a primitive relative of our present-day eucalypts. It is found only in Kakadu’s stone country and the Arnhem Land Plateau, where it grows to become the largest tree in those areas. Anbinik forms shady canopies and provides cool refuge for a range of animals. The rugged topography in the stone country has provided micro-environments and areas of refuge from climate change and other impacts, and this has contributed to the high diversity of species found in rainforest there.

Coastal rainforest in Kakadu is relatively drought tolerant and has a patchy distribution around moist places along the coast and river banks and on the margins of floodplains. It comprises a mix of plants from the distant past when northern Australia had a wetter climate and rainforests were widespread, and more recent arrivals from Indo-Malay rainforests during drier periods when sea levels were much lower than today.

Rainforests provide a cool and shady refuge for people and wildlife, and provide many food and other resources of value to Bininj/Mungguy, including yams and fruits such as native plums. Fruit-eating birds and flying foxes play a vital role in linking plants in these isolated pockets by dispersing pollen and seeds.

Values and condition

Rainforest within Kakadu:

- offers a marked ecosystem contrast to Kakadu's spatially dominant landscape, the lowland woodlands, and contributes a set of very different species to the overall biota
- comprises a high diversity of species, including many endemic, restricted, disjunct and specialised species, some from the distant past (e.g. *Allosyncarpia ternata*)
- is the primary habitat for four threatened species including the orchid *Dienia montana* (formerly *Malaxis latifolia*) and many culturally significant species such as yams
- provides a cool and shady refuge for animals during the heat of the late dry season and a source of significant fruit resources for animals
- demonstrates interesting ecological processes and evolutionary history.

The condition of rainforest environments is variable across the park. They are expanding in some lowland areas but declining in other areas because of fire. Some degradation is occurring (e.g. disturbed understorey and erosion on rainforest margins) as a result of fire, pigs and buffalo, and encroaching grassy weeds such as African grasses.

Existing threats to values

Feral animals (highly significant)

Buffalo and pigs affect recruitment of rainforest species, particularly those associated with springs. The decline in yams in the park is likely to be due to pig activity.

Fire (highly significant)

Rainforest is particularly sensitive to fire and comprises many species intolerant of fire. The small and remote nature of rainforest patches in the park also makes management of them difficult and costly.

Knowledge gaps (moderately significant)

The inventory of rainforest patches in the park is substantial but not comprehensive, and the distribution of some threatened species among these patches is poorly known, making management difficult. Surveys and monitoring are expensive but knowledge gaps need to be addressed so that priority areas can be identified and managed. Actions addressing research and knowledge management are covered in Section 7 (Research and knowledge management).

Weeds (low significance, potentially increasing)

Hyptis suaveolens favours disturbed areas and is a major weed in some rainforest patches in the park. Incursions of grassy weeds, particularly those in floodplain areas such as para grass, are increasing the prevalence and intensity of fire on rainforest margins and reducing their viability.

Potential threats to values

Myrtle rust (highly significant)

Myrtle rust has the potential to have a devastating impact on the Myrtaceae family of plants in Australia and the park should it spread here. Myrtaceae in humid environments such as rainforest will be most susceptible, especially those at springs and in riparian areas. Actions addressing plant pathogens are covered in Section 5.3 (Managing park-wide threats affecting values).

Actions

- 5.2.14 Manage feral animals in and around priority rainforest patches, prioritising a reduction in the impact of pigs and buffalo.
- 5.2.15 Manage fire in rainforest patches in accordance with the Policies and Actions in Sections 5.3.17 to 5.3.26 to reduce the impact and threat to priority patches.
- 5.2.16 Manage weeds in and adjacent to priority rainforest patches, prioritising control of species that are contributing to increased intensity of fire on rainforest margins (e.g. para grass).
- 5.2.17 Manage native plants and animals in rainforest environments through:
 - (a) development and implementation of a park strategy for the conservation of threatened species and threatened ecological communities, including, as appropriate, actions in recovery plans for relevant species
 - (b) identification of other significant species (e.g. indicator and culturally significant species) and implementation of specific management prescriptions for these species
 - (c) conducting survey and monitoring programmes for significant species.

5.3 Managing park-wide threats affecting values

Objective

Maintain the condition of the park's internationally significant natural and cultural values

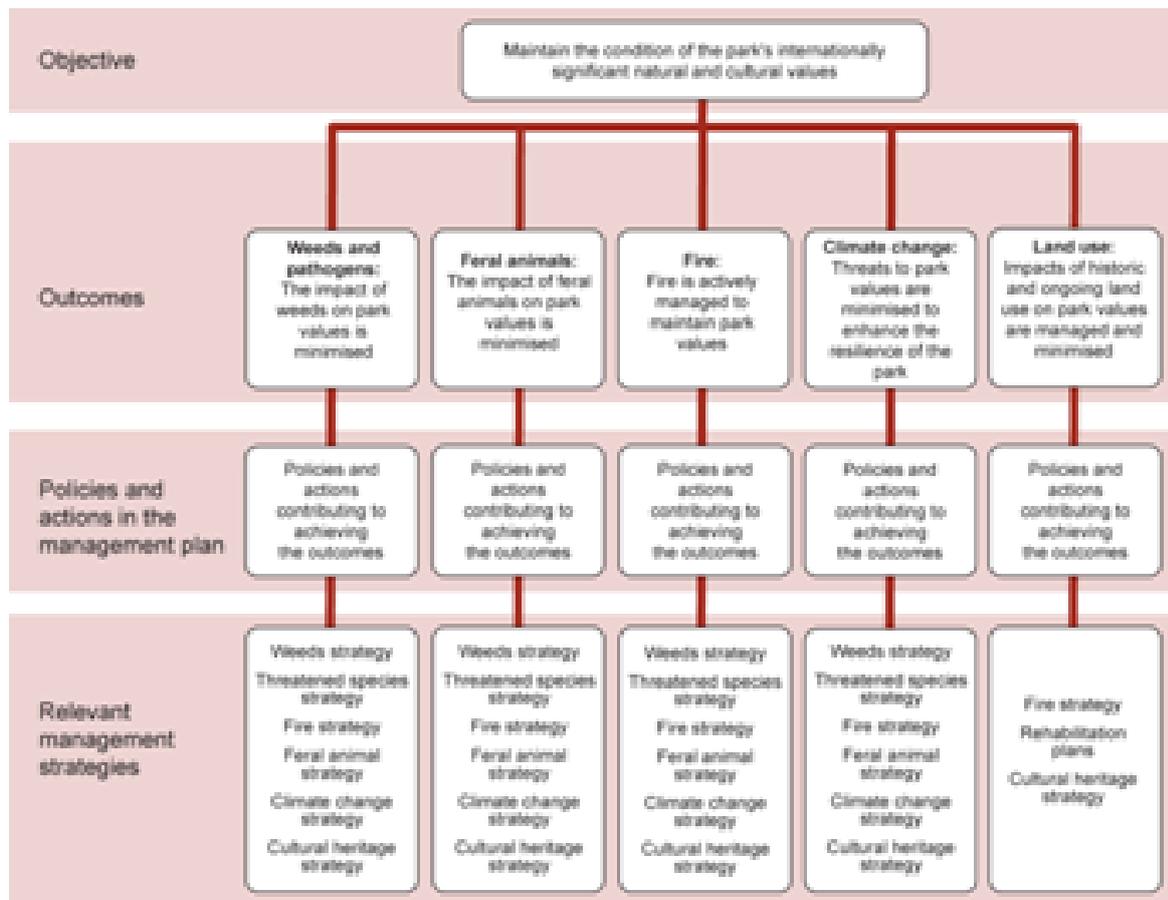
The park's internationally significant natural and cultural values are being affected, mostly detrimentally, by a range of potentially landscape-transforming factors including weeds, feral animals, fire, extreme weather events and climate change. These factors, excluding extreme weather and climate change to some degree, are within the capability of park management to influence. The major objective of this plan is to minimise the impact on the park's values of those factors over which the park has some control, and thereby maintain (and enhance) the condition and integrity of the values through well-directed and well-implemented management actions. Figure 12 illustrates the line of sight for this section of the plan.

Kakadu is a very large park and large parts of it are remote and hard to access, making management expensive and difficult to implement. Management actions for some threats may not be feasible or cost-effective, and there are also information gaps and uncertainty about the impact of other potential threats. Management actions need to be prioritised based on an assessment of the risks of threats to the park's values (see Section 9.10: Implementing and evaluating the plan).

While each of the four major landscapes within the park has distinct values, the relative impacts of the threats also vary with the different landscapes. Weeds, for example, are a much greater issue on the floodplains than in the stone country, where large, hot fires are the main threat. Management of the different threats needs to be prioritised differently in the different landscapes and should focus on the areas of high value, which may be at the expense of other areas. In the following sections significant threats have been identified by park management and external experts to highlight some of the priorities for management response. Each of the issues addressed in this section cannot be treated in isolation, as they can have a significant bearing on the behaviour and impact of other threats.

Since 2007, to help share information and ensure that park management is based on the best available evidence, Parks Australia held a series of symposia on topics including landscape change, fire management, weed management, feral animal management, climate change, cultural heritage and, more recently, threatened species. These fora bring together a range of experts to discuss in detail the issues impacting on park values and make management recommendations which have been incorporated into management programmes.

Figure 12: Line of sight for Section 5.3: Managing park-wide threats affecting values



Overarching principles for managing park-wide threats to natural and cultural values

When managing the issues impacting on the park's values, the following principles apply:

- Bininj/Mungguy will continue to be encouraged and supported to guide and participate in the development, implementation and review of all park management programmes (Section 4: Joint management).
- Bininj/Mungguy traditional knowledge and practices, values and priorities will continue to be respected, used to inform management priorities and incorporated into programmes to manage the issues impacting on park values (Section 4: Joint management).
- A regional approach will be taken to managing threats impacting on park values by liaising and collaborating with neighbours, government agencies, local organisations and other stakeholders in the planning and implementation of management programmes and through involvement with relevant decision-making committees to optimise management outcomes. This may involve park staff assisting neighbours with weed, feral animal or fire management on lands adjacent to Kakadu. Adjoining landholders will be kept informed about any on-ground management operations which may affect them (Section 9.7: Neighbours, stakeholders and partnerships).
- Management of natural values will be considered and planned at a landscape level but will not exclude finer scale approaches as needed to optimise management outcomes.
- The links between weeds, feral animals and fire, such as feral animals assisting the spread of weeds which contribute to larger fires, will be considered in the development of management programmes, and relevant strategies will be developed to ensure that they are complementary and consistent.
- Research on existing and potential issues impacting on park values will be considered and supported where it can be used to inform and improve management (Section 7: Research and knowledge management).
- Comprehensive information on the occurrence of weeds, feral animals and fire and on management inputs and success will be recorded and maintained (and readily accessible) (Section 7: Research and knowledge management).
- Outsourcing of park weed management and feral control functions within a district, clan estate or specific area of the park to Aboriginal corporations or enterprises will be supported and facilitated where there is capacity to do so (Section 4.3: Bininj/Mungguy training and other opportunities).

Weeds and plant pathogens

Outcome

- The impact of weeds on park values is minimised

Performance indicator

- Distribution and abundance of priority weed species

Background

Weeds are one of the most significant threats to the park's natural and cultural values. Although Kakadu currently has a low proportion of weeds, with less than 8 per cent of the 700-plus plant species recorded in the park recognised as weeds (compared with 21 per cent for other national parks in the region), many of the park's landscapes are being significantly impacted by invasive weeds. Many of these weeds were introduced during the pastoral era, while more recently others were introduced both intentionally and accidentally into lease areas within the park.

Weeds compete with native plants, may change the structure of vegetation communities, and impact on food and habitat availability for native animals. Significant impacts on ecosystems and the flora and fauna that they support, particularly waterbirds, could affect Kakadu's World Heritage and Ramsar status.

Some highly invasive weed species such as annual and perennial mission grass occupy large areas of the north-east and central parts of the park and are likely to continue to spread in lowland woodland environments. These species cause dramatic increases in the intensity of fire, and such weed-fuelled high-intensity fires may threaten many natural values. Climate change modelling for the tropical savannas indicates these impacts will worsen under warmer temperatures.

Aquatic grassy weeds such as para grass and olive hymenachne are impacting on hunting areas and fire regimes on the floodplains, and have the potential to invade and alter vast areas if left unchecked. Salvinia is spreading in wetland environments and is now present in the Yellow Water visitor area and adjacent waterways used for recreational fishing. Although mimosa is largely under control due to a huge investment of effort over many years, it remains an ever present threat to floodplain areas. A National Environmental Research Programme project shows that the success of this programme effort is likely to be negated if significant resources are not invested in the control of other exotic invasive grasses such as para grass.

Five invasive pasture grasses found in the park, olive hymenachne, gamba grass, para grass and the perennial and annual mission grasses, are listed as a key threatening process affecting biodiversity in northern Australia under the EPBC Act. A national threat abatement plan (DSEWPac 2012) has been developed to reduce their impacts. Six species found in the park are listed on the Australian Government list of Weeds of National Significance.

Significant resources have been committed to priority weed management programmes, with some notable success such as the early and ongoing control of mimosa. Park staff undertake weed control programmes in accordance with annual weed management plans, and provide support to outstation residents and neighbours in weed control activities. Biological control techniques have been used to help control weeds such as salvinia and sida species, and research undertaken into the ecology and management of several important weed species has improved other control methods. It is important that management of weeds occurs on a landscape scale and across tenures; for this reason park management undertakes ongoing collaborations with neighbours, including Warddeken Indigenous Protected Area and Energy Resources Australia (ERA).

Deliberate introduction of beneficial non-native species (biological control agents)

The Cyrtobagous weevil was introduced into the park in 1983 to aid with salvinia control. Over the years it has worked extremely well in areas like the Magela billabongs but it does not appear to work as well on open floodplains or Melaleuca swamps. The sida leaf-feeding beetle (*Calligrapha pantherina*) has been introduced into the park a number of times. It works well in some areas but appears to die out. No adverse ecological impacts of these agents have been reported. Some mimosa biocontrol agents have been developed but not introduced to Kakadu, as they are only viable where there are extensive stands of mimosa. The risks associated with biocontrol introductions are rigorously assessed and introductions are monitored for effectiveness and unintended impacts.

The EPBC Regulations prohibit bringing plants, soil and other material into the park, or cultivating plants, except in accordance with this plan or a permit from the Director. Jabiru residents and residents of other lease areas may bring in and cultivate plants if they are on the Kakadu National Park Approved Plant List (see Section 10.13: Bringing plants, animals and other materials into the park).

The *Weeds Management Act 2001* (NT) applies to the park in so far as it is not inconsistent with the EPBC Act, this plan or the EPBC Regulations.

Management issues

- **Overall weed threat to park values**

The highly invasive nature of a number of significant weeds present in the Kakadu lowlands and wetlands presents a major challenge for park management. Despite considerable and ongoing investment in management of these species, they are proving difficult to contain. In the face of limited resources, future weed management will need to focus on priority areas of the park.

- **Weed–fire interactions**

Some highly invasive weed species such as mission grass and gamba grass cause dramatic increases in the intensity of fire. Warmer temperatures associated with climate change are likely to accentuate this.

- **Weeds present in the park but not yet well-established**

Some weeds such as gamba grass and belly ache bush are currently present in small and/or isolated patches. Park staff, Bininj/Mungguy and visitors need to take care not to spread weed seed around the park. It is possible that current sleeper weeds, particularly broader-leaved species, may become more invasive under warmer climatic conditions.

- **Potential new weeds**

Highly significant water weeds such as water hyacinth, alligator weed and cabomba would have dire consequences for wetlands if introduced to the park. Park management needs to remain vigilant to ensure new species are not introduced and that, if detected, they are very quickly eradicated through ‘early detection and rapid response’. Vehicle, vessel and equipment hygiene is important and levels of awareness within the community need to be improved to minimise the risk of accidental introduction of weeds.

- **Existing infestations in Jabiru and other lease areas**

There are significant infestations of mission grass in Jabiru and other lease areas, and also several ornamental and garden plants, such as coffee bush (*Senna occidentalis*), with potential to be significant weeds.

- **Myrtle rust**

Myrtle rust is a serious fungal disease that affects plants in the Myrtaceae family and has the potential to have a devastating impact in the park should it spread here. Myrtaceae in any humid environment will be most susceptible, especially Melaleuca and riparian forests and rainforests around springs in the sandstone and lowlands. How much it will affect species in more open woodland environments remains to be seen, but they are likely to be less susceptible.

- **Biosecurity**

There are many other plant pests that could potentially impact on park species. Work needs to continue together with other agencies to develop biosecurity practices that help minimise the risk of them being introduced to the park.

Policies

- 5.3.1 When using poisonous substances in the park to control weeds, the Director will take care to minimise the effects on non-target species.
- 5.3.2 Development proposals within the park are required to include measures to prevent and manage weeds (Section 9.5: Assessment of proposals).
- 5.3.3 The Director may prohibit or restrict access to areas in the park to ensure park values are protected from threats such as weeds, feral animals and fire (Section 10.4: Access).

Actions

- 5.3.4 Implement, review and update a park weed management strategy to minimise the impacts of weeds on the park's values through:
 - (a) assessing risks to park values posed by current and potential weeds
 - (b) prioritising control of invasive species, giving priority to controlling species that pose a high risk of threatening ecosystem function and/or priority areas, and/or are feasible to control, taking into account changing climatic conditions
 - (c) using a range of efficient and cost-effective mechanisms to deliver weed management and control. This may include the introduction of non-native biological control agents where they are likely to pose low or no risk to park values
 - (d) monitoring invasive species spread and effectiveness of control works
 - (e) awareness of potential new weed species and proposing measures to prevent and/or manage them
 - (f) adjusting control strategies in response to an improved understanding of invasive species and control methods.
- 5.3.5 Develop and implement a weed education programme for park residents, staff, contractors, tour operators and visitors – including how to recognise weeds and their impacts, and information on transfer by vehicles, trailers and vessels and the regulations regarding the entry of plant, animal and soil material into the park.
- 5.3.6 Provide training opportunities on weed identification, control and monitoring for park staff, Bininj/Mungguy, neighbouring Indigenous ranger groups and other stakeholders involved in weed management.

- 5.3.7 Midway through the life of this plan, review and update the Approved Plant List for the park, which identifies the plants that residents of lease areas and Jabiru may bring into the park and cultivate within residential areas without a permit (see Section 10.13: Bringing plants, animals and other materials into the park).
- 5.3.8 Work with government agencies to stay informed about potential new biosecurity risks and develop and implement a biosecurity strategy that identifies and considers potential risks and proposes measures to prevent and/or manage them.

Feral animals

Outcome

- The impact of feral animals on park values is minimised

Performance indicator

- Distribution and abundance of priority feral animal species

Background

‘Pigs make a mess digging up the ground. Donkeys might damage country some places. Buffalo can mess up country too but not many here now. Before, there was plenty.’

Steven Nabinardi Madjandi, Mirarr/Gundjeihmi clan

Feral animals can have a significant impact on the park’s cultural and natural values. They impact on native plants and animals and available food resources, and cause erosion, saltwater intrusion and the spread of weeds and disease. Asian water buffalo, cattle, pigs, horses, donkeys, dogs, cats, black rats, European bees, cane toads and introduced ants are present in Kakadu. There are also risks that new species, such as crazy ants, will invade.

Buffalo, cattle, pigs, horses and donkeys present public safety issues. Large animals like buffalo and horses are particularly dangerous along roadways. Buffalo and pigs can also be aggressive to humans.

The cat, pig and cane toad, are identified nationally as key threatening processes impacting on threatened species and ecological communities as listed under the EPBC Act. Threat abatement plans have been developed to reduce the impact of these species (DEH 2005, DEWHA 2008, DSEWPaC 2011).

Bininj place a range of values on some introduced animals which are influenced by the history of association between Bininj and each species over time. They value particular species, such as buffalo, cattle and pigs, as a source of food, and believe in the idea of rights to exist on country. For example, horses were around long before the declaration of the park and some Bininj believe they have a right to continue to live here.

Since completion of the Brucellosis and Tuberculosis Eradication Campaign (BTEC) in 1997, a small herd of buffalo has been kept in a fenced area in the park of approximately 12,000 hectares (known as the Buffalo Farm), to supply meat to Bininj/Mungguy residing in the park to compensate for the significant reduction in numbers during the BTEC programme.

A park-wide feral animal control exercise was conducted in 2008–09. Since then most feral animal control programmes have focused on strategic areas of high risk rather than taking a park-wide approach, due to limited budgets. Aerial survey techniques have also been reviewed and refined. The park is participating in a feral cat research project as part of the National Environmental Research Programme. Two fenced exclosures have been built to exclude feral cats and extensive fauna surveys are being undertaken to improve the evidence base concerning the impacts of feral cats. The park also supports research projects on black rats and disease, and on training northern quolls to avoid cane toads.

The EPBC Regulations prohibit the movement of livestock through the park and bringing in or keeping animals in the park, except in accordance with this plan or a permit issued by the Director. Section 10.13 of this plan sets out the prescriptions concerning bringing plants, animals and other material into the park.

Background on individual species

- **Buffalo and cattle**

Asian water buffalo and cattle impact on all park environments. Freshwater springs are particularly impacted: many change from clear running systems to turbid sediment carrying systems due to buffalo wallowing. Buffalo and cattle also contribute to saltwater intrusion and spread weeds. Buffalo are a major threat to effective management of mimosa, and their rubbing on rock faces impacts on rock art sites. The BTEC removed most buffalo from the park and enabled many disturbed areas to recover. Since then, numbers of buffalo have increased gradually. They are abundant in neighbouring Arnhem Land and pastoral properties, and their numbers are increasing within the park, particularly in the south.

- **Pigs**

Pigs cause noticeable widespread impacts around springs, floodplains and small rainforest patches. As well as digging up plant foods they are known to predate on a range of small native animals, including frogs, lizards and turtles, and on their eggs. The foraging activities of pigs help to spread weeds, such as mimosa and olive hymenachne, and this is a major concern. Pigs breed rapidly, so populations can quickly re-establish following control.

- **Cats**

Feral cats are associated with reductions in native species, particularly reptiles, birds and ground-dwelling mammals such as the brush-tailed rabbit-rat, but more information is required to understand the population and impacts of feral cats. Reasonably broad-scale control activities are now being undertaken by Western Australia Parks and Wildlife in the Pilbara.

- **Cane toads**

Cane toads arrived in the southern regions of Kakadu in 2001 and populations are now well established throughout the park. Cane toads have serious impacts on some wildlife populations. Toads eat a variety of invertebrate and vertebrate native animals (not only impacting on prey species but also reducing food resources for other native animals), and they have toxic defences that can result in the deaths of animals that eat toads. These impacts also affect the availability of some bush foods for Bininj/Munggy. Since the arrival of toads in the park, there has been a notable decline in the numbers of quolls and goannas. Large dragons, elapid snakes, freshwater crocodiles and other species are also likely to be affected. Control of cane toads has not been attempted in the park as at the time of preparing this plan there is no known method to manage populations of cane toads over large areas in high-rainfall zones. However, monitoring programmes related to cane toad distribution and impacts on native animals are in place and the park is participating in collaborative research projects that involve relocation of quolls to toad-free islands and training quolls to be toad adverse.

- **Horses and donkeys**

Horses and donkeys cause erosion around water bodies, carry disease, and aid the spread of weeds such as mission grass, gamba grass and rattlepod. Information is required on seasonal distribution and survey techniques to help develop more effective targeted control programmes.

- **Introduced ants**

Introduced ants are capable of displacing other invertebrates such as green ants, thereby altering food availability for native animals. Introduced ants currently found in the park include the ginger ant, pharaohs ant, Singapore ant, ghost ant and big-headed ant. Major costs have been associated with the control of big-headed ants in Kakadu, Jabiru and lease areas since 2001. The possible introduction of the yellow crazy ant is of major concern. Staff and residents need to be well equipped to quickly and reliably recognise introduced ant species.

- **Dogs**

Feral dogs interbreed with dingoes, and in some locations packs of wild dogs and hybrids place increased pressure on native wildlife within the park. Dogs that are not looked after may pose health and safety risks in Jabiru, park resorts and lease areas, and in Aboriginal outstations.

- **Black rats**

Recent research has shown an increasing abundance and distribution of this non-native rodent across many areas of the Top End, including Kakadu. It can spread disease, compete with native species, predate on native species and also cause considerable economic detriments. A study conducted in Kakadu did not find any diseases that would potentially impact on small mammals, but further research would be advantageous.

- **Exotic aquatic animals**

The introduction of exotic aquatic animals and aquarium plants into waterways within the park would pose significant ecological risks. Exotic marine animals such as the black-striped mussel could pose significant threats to coastal and estuary areas, and introduction of exotic aquatic snails and fish, such as Tilapia, would have serious impacts on populations of native freshwater species.

- **Exotic birds**

Residents and visitors are not allowed to bring in pet birds, as they may introduce diseases and some species may become pests. Eradication of exotic birds is difficult if large populations become established over significant areas. Species accidentally introduced into Darwin, such as tree sparrows and spice finches, could become a problem in Kakadu if they became established more broadly in the Top End.

- **European bees**

European bees may adversely affect native insects and compete with native animals for nectar, pollen and tree hollows. Research is required to determine the abundance and level of impacts of European bees on wildlife within the park. Control by park staff does not presently extend beyond park infrastructure and visitor areas.

Management issues

- **High-priority species**

Pigs, buffalo, feral cats and cane toads have a very significant impact on threatened species and other biodiversity in the park. Pigs and buffalo have a significant impact on yams and cultural heritage sites. Wild dogs and black rats are also likely to be having a significant impact on fauna species.

- **Potential new species**

Yellow crazy ants, mosquito fish and other aquarium and introduced fish such as Tilapia represent a high potential threat to park values. Some introduced bird species could also become pests or transmit disease to wild populations. Preventing introductions of new species is the most important option available for reducing risk of further damage caused by feral animals. Rules regarding restrictions on what animals may be brought into the park are not always followed, either intentionally or accidentally, through lack of knowledge. It is important to provide residents with good information about the potential impacts of introduced animals prior to their arrival in the park.

- **Unattended pets**

Domestic dogs are often left unattended on outstations when people relocate either temporarily or permanently. The dogs are left to fend for themselves; they scavenge for food and may interbreed with dingoes and become a public safety risk especially around residential areas. Similarly cats introduced to outstations are likely to have contributed to the feral cat population. Following two successful desexing programs in 2014, over 90% of the dogs and cats in the Kakadu outstations are now desexed. This means that unless there is recruitment of animals from outside the park, the dog population will progressively reduce. Having a reduced dog and cat population will also help to minimise the adverse impacts of companion animals on native species in the park. This project has been a successful collaboration between AMRRIC (Animal Management in Rural and Remote Indigenous Communities), the Warnbi and Gundjheimi Aboriginal Corporations, and Parks Australia.

- **Disease**

Pigs, buffalo, cattle and horses are known carriers of a range of diseases that have the potential to be transmitted to native species and domestic livestock. Kakadu's location along the northern coastline increases its exposure to potential new diseases, particularly those carried by birds or insects. Cats are also potential vectors of toxoplasmosis, which can affect native mammals.

- **Other pests**

There are many other pests that could potentially impact on native species. The park needs to continue to work with other agencies to develop and implement biosecurity practices that reduce risks of new pest species becoming established.

- **Public safety**

Some feral animal species present a public safety risk – for example horses on public roads – and need to be managed appropriately.

- **Effective use of resources**

It is not possible or feasible to eliminate all feral animals from the park. Agreement is needed between all stakeholders on the acceptable level of impact, and management effort allocated accordingly.

Policies

- 5.3.9 Future proposals regarding the introduction of biological control agents will be subject to rigorous risk assessment, and any use of such agents will be monitored for effectiveness and impacts upon non-target species and habitats.
- 5.3.10 Authorisation may be given for some feral animals to be retained in the park for Bininj/Mungguy cultural reasons – where this does not significantly affect the natural values of the park or significantly impede the effectiveness of park-wide invasive species management.
- 5.3.11 The Director may provide training in control techniques to enable Bininj/Mungguy not employed by the park to obtain required licences to undertake feral animal control.

Actions

- 5.3.12 Implement, review and update the feral animal strategy for the park to minimise the impacts of feral animals on the park's values including by:
 - (a) assessing risks to park values
 - (b) prioritising control of invasive species, giving highest priority to controlling species that are at risk of threatening ecosystem function and/or at risk of threatening priority areas and/or detrimental to threatened species
 - (c) using a range of mechanisms to deliver feral animal management and control
 - (d) monitoring invasive species density and spread and effectiveness of control works
 - (e) considering potential new feral animal species and proposing measures to prevent and/or manage them
 - (f) adjusting control strategies accordingly.
- 5.3.13 Cease operation of the Buffalo Farm when current management arrangements come to an end, and arrange for rehabilitation measures.
- 5.3.14 Provide an education programme on feral animals for residents, contractors, tour operators and visitors – including recognising feral animals and their impacts, and the responsibilities and requirements regarding the entry of plant, animal and soil material into the park.
- 5.3.15 Work with government agencies to stay informed about potential new biosecurity risks and develop and implement a biosecurity strategy that identifies and considers potential risks and proposes measures to prevent and/or manage them.
- 5.3.16 Control feral animals where they present particular health and safety risks to people or otherwise cause a significant nuisance, particularly in key public visitation sites.

Fire

Outcome

- Fire is actively managed to maintain park values

Performance indicators

- Reduction in areas impacted by large fires
- Reduction in the risk and impact of wildfires entering, spreading, or leaving the park
- Reduced frequency of large severe fires
- Reduced average fire patch size

Background

'Fire is respected in our culture. Fire is not just fire, it is something that is sacred and embedded in our culture.'

Joshua Hunter, Wurrkbarbar clan

Fire is an important and recurring element of the savannas of northern Australia and an effective and necessary management tool. Bininj/Mungguy have always used and continue to use fire as an important tool for managing and expressing ownership of country, and this ongoing and active management of the landscape is one of the values for which Kakadu is inscribed on the World Heritage List (see Appendix A: World Heritage attributes).

Traditional fire management created a mosaic of unburnt, early-burnt and late-burnt patches and over many thousands of years supported Bininj/Mungguy use of resources and helped to create the landscapes and diversity of native species found in the park today. However, following the arrival of Balanda and the introduction of pastoralism, traditional patterns of burning country were severely disrupted and large, hot, destructive dry-season wildfires became more common. The introduction of exotic pasture grasses (such as gamba and mission grass) and the reduction in grazing pressure through removal of water buffalo in the 1980s added fuel to the landscape and further contributed to the problem. Large late-season fires also lead to higher loss of carbon and increased levels of greenhouse gas emissions.

Since the proclamation of the park, fire management has attempted to mimic traditional burning practices to look after country and to protect people and park assets. Considerable progress has been made to reduce the high incidence of late dry-season fires but major fires in the stone country of the park in 2004 and 2006 necessitated a review of fire management and prompted a move towards the development of landscape-based fire plans. The Arnhem Land Plateau Fire Management Plan, developed in 2007, focused on the stone country. Evaluations of the implementation of this plan illustrate some success in changing the fire regime to one dominated by early dry-season fires, however there has been little reduction in the overall frequency of fire (Murphy 2013).

Notwithstanding such management, there is now compelling evidence that recent and current fire regimes are a major contributing factor to the decline of many plant and animal species in Kakadu (and elsewhere in northern Australia), and inappropriate fire regime is a major threat to many of Kakadu's threatened species and its threatened ecological community. Many threatened and declining species are associated with or dependent upon relatively long-unburnt areas and the current frequency of fires in some areas is resulting in a decline of suitable habitat. Long-unburnt patches provide the opportunity for tree and shrub regeneration. This contributes to habitat with plants of mixed age, which is important for wildlife. A lack of long-unburnt patches contributes to more uniform habitat.

To maintain the park's landscapes, native species and cultural values, further changes in the way that fire is managed, particularly in the lowland woodlands, are needed. There are many challenges in doing this, including the vast size of the park; the extensive rugged and generally inaccessible regions; unplanned fires that are deliberately lit or caused through lightning or accidental ignition; and the spread of invasive grasses in the lowlands and floodplains. An overall fire management strategy for the park will be developed to guide management. It will include landscape-based fire strategies for the stone country, lowlands and floodplains/wetlands and set explicit targets for fire management in these landscapes. A major priority in the lowlands is to address the numerous unplanned, unauthorised and large severe fires that are lit along major roads and in the park each year by people using or travelling through the park.

The fire history of the park is well documented by Bushfires NT using interpretation of satellite imagery, and flora and fauna surveys are conducted periodically at permanent fire monitoring plots as part of the Three Parks Monitoring Programme, which also involves Nitmiluk and Litchfield national parks. Twenty-five years of monitoring data is now available for more than 120 monitoring plots. The park has also supported a major research project on stone country fires and the role of keystone species such as cypress pine (*Anlarr*) and *Allosyncarpia* (*Anbinik*) conducted by researchers from Charles Darwin University.

In addition to protecting the park's values, it is essential that fire management programmes, including management of wildfires, ensure the protection of life, property and park assets. Fire management for life and property protection is mostly undertaken around Jabiru township, outstations and other infrastructure and does not necessarily conflict with the use of different fire regimes to maintain park values.

The *Bushfires Act* (NT) applies to Kakadu insofar as it is not inconsistent with the EPBC Act, this plan or the EPBC Regulations.

Management issues

- **Invasive grasses**

The spread of grassy weeds into the park, and the associated increase in fire risk, poses a major threat to Kakadu landscapes and biodiversity, particularly the lowland woodlands and patches of rainforest.

- **Unplanned large and severe late-season fires**

These continue to be an issue in some areas of the park, in particular within the stone country where fires may originate from neighbouring areas or be ignited by lightning strike. Each year numerous unplanned and unauthorised fires are ignited along the highways and in the park by people travelling through or using the park. This can negate the effectiveness of planned fire management.

- **Fire regime**

Many threatened and declining plant and animal species (and the threatened ecological community) are detrimentally affected by the current fire regime. More long-unburnt patches are needed to provide the opportunity for tree and shrub regeneration and contribute to habitat with plants of mixed age, which is important for wildlife.

- **Wildfires spreading, entering or leaving the park through park boundaries**

It is important that the boundary areas of the park are well managed to reduce the risk of unplanned fires entering or spreading from the park. Fire management must be considered in a wider regional context, and close liaison with neighbours and regional organisations is essential.

- **Bininj/Mungguy support**

It is important to Bininj/Mungguy that they are involved in the development of fire management programmes to ensure that their views regarding how country should be burnt are incorporated and that they support the programmes. It is also important for Bininj/Mungguy to be actively involved in implementing and reviewing the outcomes of fire management programmes.

- **Climate change effects**

Changing climatic conditions may alter the intensity and extent of fires, and fire management strategies need to take this into account.

- **Knowledge gaps**

Better understanding is required of the role and acceptability of wet-season burning as a tool for reducing native sorghum abundance and promoting development of other understory communities. Actions relating to research and knowledge management are covered in Section 7 (Research and knowledge management).

- **Lack of community understanding and awareness**

Tour operators, visitors and residents need to understand the use of fire as a land management tool and the wise use of fire at campgrounds.

- **Loss of cultural knowledge**

The loss of cultural knowledge related to traditional burning practices poses a threat to the long-term cultural management and use of floodplains.

Policies

- 5.3.17 Fire will be managed to protect park values, in particular from the threats to landscapes identified in Section 5.2.
- 5.3.18 Bininj/Mungguy traditional burning practices will continue to be recognised and incorporated in fire management programmes.
- 5.3.19 Fire management will be carried out in a manner consistent with the Bushfires Act (NT) so far as practicable.
- 5.3.20 The Director may apply for a permit to carry out fire management works under the Bushfires Act (NT).
- 5.3.21 Access to areas in the park may be restricted or prohibited to ensure park values are protected from threats such as fire.

Actions

- 5.3.22 Develop, implement, review and update the park's fire management strategies to minimise the impacts of fire on the park's values including by:
 - (a) assessing risks to park values
 - (b) focusing management of fire in priority areas and/or for the management requirements of significant species and ecological communities
 - (c) using a range of mechanisms to deliver fire management and control programmes
 - (d) using fire history mapping to set annual and ongoing fire management goals
 - (e) monitoring the results of fire management and the effectiveness of management works and adjusting management strategies accordingly.

- 5.3.23 Map important areas for threatened and significant species and threatened ecological communities, and ensure that management protects these areas from unsuitable fire regimes and implements appropriate fire regimes.
- 5.3.24 Develop a set of thresholds and acceptable ranges for fire regimes for all threatened terrestrial animal and plant species for targeted application to relevant habitat, and ensure that fire management at those sites is maintained within that range.
- 5.3.25 Provide training programmes for park staff, Bininj/Mungguy and community members involved in fire management – including the use of equipment such as incendiaries, GIS and database management and monitoring techniques.
- 5.3.26 Collaborate with relevant organisations to develop and implement a fire education and communication programme for residents, contractors, tour operators and park visitors to emphasise the essential part fire plays in the ecology of Kakadu as well as the wise use of fire at campgrounds, impacts of wildfire, and fire control methods and responsibilities.
- 5.3.27 Structure fire management programs to engage resident Bininj/Mungguy and attract their active support for preventing and reporting unplanned ignition.

Climate change

Outcome

- Threats to park values are minimised to enhance the resilience of the park

Performance indicators

- Extent to which strategies for the implementation of management programs and management actions recognise and take into account climate change
- Indicators for managing weeds, feral animals and fire

Background

'We have a lot of floodplain and need to be careful for the wildlife. Salt water will come upstream and mix with freshwater and kill the trees. It might affect the fish like barramundi in the billabongs.'

Sampson Henry, Limilngan clan

In recent years global climate change has emerged as a key issue for biodiversity and environmental management. In 2006 the Director commissioned a study of the potential implications of climate change for managing Commonwealth reserves, including Kakadu (Hyder 2008). The results of this investigation have contributed to an improved understanding of and preparedness for changing conditions in the park.

Climate change projections suggest the park will be exposed to a range of challenges. Predictions for 2030 indicate a warming of 1.3°C, a considerable increase in the number of days above 35°C, sea-level rise of over 17 centimetres, an increase in extreme weather events such as cyclones, and elevated CO₂ levels. Rainfall amounts are not predicted to change considerably, though timing and frequency may. Increased frequency and intensity of fire arising from a drier and hotter climate has particular implications for fire-sensitive vegetation communities. Some invasive species may be favoured by changes in climate, increasing the threats they already pose to native species and their habitats. Elevated CO₂ levels may lead to thickening of some vegetation, and there is some evidence this is already happening.

Other implications for the park are the impact increased temperatures may have on some plant and animal species, particularly endemic species or species with a restricted range. Warmer temperatures and increased CO₂ levels may have both a positive and a negative influence on invasive species, so new species may become priorities for management.

With increased temperatures but no predicted increase in rainfall amounts, shallower wetlands may be at risk of drying earlier, or drying completely, which could have significant implications for species dependent on wetlands. Reducing the impact of invasive species on these areas will be increasingly important.

Saltwater intrusion has already been observed impacting on low-lying coastal plains in the park. This is likely to continue and to displace saltwater-sensitive species, such as Melaleuca, with encroaching mangroves and saline mudflats. These changes will impact on wildlife and traditional food resources found in freshwater wetlands such as magpie geese and freshwater turtles. Access to traditional hunting areas and sacred sites may also be affected by sea-level rises. Increased intensity of extreme weather events as a result of climate change is likely to have a range of impacts including increased incidents of heat-related illness, expansion of mosquito-borne viruses and exacerbation of damage to rock art sites.

The impact of climate change can be lessened by ensuring that all existing threats to the park's integrity are appropriately managed. Management of fire, weeds and pest species may need to be reviewed regularly under changing climatic conditions to assess and address resilience of species or habitats. Climate change may offer some economic benefits to Indigenous communities through participation in carbon trading programmes and employment opportunities in monitoring the impacts of climate change and undertaking remedial and mitigation activities. The park is committed to reducing its carbon footprint and is implementing a range of measures to do this (see Section 9.6: Resource use in park operations).

To assist the park to understand and adapt to changing climatic conditions, a climate change symposium was held in Kakadu in 2008, a climate change strategy was prepared in 2010 and a vulnerability assessment of the South Alligator River catchment was completed in 2011.

NERP researchers working in the park at the time of preparing this plan are developing fine-scale computer models that will assist in identifying priority areas where it might be possible to mitigate impacts of saltwater intrusion.

Management issues

- **Cumulative impact of threats**

Climate change is likely to increase or compound the effects of existing biodiversity threats, such as fire and invasive species, and may affect many other aspects of the park such as visitor use and safety.

- **Knowledge gaps**

Updated and expert information is needed to assess the potential impacts and risks of climate change, and feasible adaptation and mitigation measures.

- **Scale and ability to overcome threats**

Some impacts of climate change cannot be mitigated, while others may not be cost-effective.

- **Threats to human health**

There may be an increase in heat-related illness, expansion of the number of mosquito-borne viruses and an increase in injuries from extreme weather events associated with climate change.

- **Infrastructure costs**

There may be an increase in building and infrastructure maintenance costs due to extreme weather events and a need to relocate infrastructure from high-risk areas.

Policies

5.3.28 The park's response to climate change will focus on four key priorities:

- (a) understanding the implications of climate change
- (b) implementing adaptation measures to maximise the resilience of Kakadu
- (c) working with communities, industries and stakeholders to adapt to climate change
- (d) communicating the implications of, and our management response to, climate change.

- 5.3.29 The Board may approve fire management activities and projects, including projects carried out by Bininj/Mungguy, that:
- (a) contribute to addressing or minimising the impacts of climate change
 - (b) complement fire management carried out in accordance with Sections 5.3.17 to 5.3.26

Actions

- 5.3.30 Implement, review and update the climate change strategy for the park to help minimise the adverse impacts of climate change, maximise the park's resilience by reducing other threats to park values, and minimise carbon loss.
- 5.3.31 Work with research partners to improve understanding of the carbon cycle within the park and how much carbon is stored and released due to different management actions. Use this information to refine all management strategies to reduce the carbon footprint of the park.
- 5.3.32 Work with communities, industries and stakeholders to mitigate and adapt to climate change including through an infrastructure risk assessment to identify assets at risk from climate change impacts.
- 5.3.33 Continue existing long-term monitoring programmes for significant fauna (e.g. flatback turtle and crocodiles) and flora species and communities (e.g. fire plot and mangrove monitoring) that are expected to be impacted by climate change.
- 5.3.34 Liaise and work with health authorities to minimise the human health risks from climate change.
- 5.3.35 Communicate information on the implications of, and the park's management response to, climate change to park residents, contractors, tour operators and visitors.

Land use

Outcome

- Impacts of historic and ongoing land use on park values are managed and minimised to ensure values are maintained and Kakadu is seen as a leading destination to experience these values

Performance indicators

- Incidents of people bringing in plants and seeds not on the Approved Plant List
- Incidents of non-compliance with conditions associated with development approvals

Background

Kakadu has outstanding natural and cultural values and the Director has a responsibility to conserve these values and minimise the potential impacts of human use of the park. Human impacts on park values may occur as a result of new developments in the park, the activities of people living in the park, or the activities of visitors. The processes and prescriptions in this plan are intended to mitigate these potential impacts (Section 9.5: Assessment of proposals; Section 8: Living in the park - Jabiru and outstations; 10: Managing use of Kakadu National Park).

Section 387(1) of the EPBC Act provides that no mining operations be carried out in the park. This does not prevent the activities listed in s.387(2) of the Act, which include development of Jabiru, transportation of minerals along roads and routes specified in the EPBC Regulations, and construction of power lines, pipelines and water supplies.

The Supervising Scientist Division and the Environmental Research Institute of the Supervising Scientist (ERISS), have research and monitoring functions to perform in the park under the *Environment Protection (Alligator Rivers Region) Act 1978*. These functions relate to uranium mining operations in the Alligator Rivers Region and general mining operations in areas that were included in the Kakadu Conservation Zone that existed in the south of the park between 1987 and 1991. The Supervising Scientist Annual Report describes the research and monitoring undertaken to ensure the protection of the Magela floodplain (and associated water bodies) from operations of the Ranger uranium mine, which adjoins the park. To date no off-site ecological impacts associated with the mining operation have been measured.

Previous small-scale uranium mining activity in the central and southern regions of the park prior to its proclamation has left mine shafts, tailings, old tracks, and radiological contamination in some locations. During the life of the previous plan, the South Alligator Valley rehabilitation plan, developed in consultation with Bininj/Mungguy and other stakeholders, was implemented and the rehabilitated areas are now being monitored. A containment facility for low-level waste has been developed in the southern part of the park. This requires ongoing licence renewal under the *Australian Radiation Protection and Nuclear Safety Act 1998* and monitoring of related groundwater and vegetation over the next 10 years to ensure there is no contamination.

The Kakadu Land Rehabilitation Strategy, prepared in 1995, mainly addresses old gravel pits located across the park. It has not yet been fully implemented.

In the past ERISS has undertaken research at plunge pools to determine whether chemicals in sunscreens and insect repellents were adversely affecting water quality. No adverse impacts were noted. Visitation levels and impacts continue to be monitored so that appropriate mitigation approaches can be developed through park area plans if needed.

The *Parks Australia Sustainable Tourism Overview 2011–2016* (DNP 2011a) identifies the principles and objectives that guide management of tourism in Commonwealth terrestrial reserves, including minimising visitor impacts on park values. The Board has approved a Tourism Master Plan to guide future development of tourism in the park to ensure it is culturally appropriate and environmentally sustainable. Education through high-quality interpretation is important to inform and encourage positive behaviour by independent and group travellers.

Information on the environmental impact assessment process applied to any new proposals is provided in Section 9.5 (Assessment of proposals). This process is intended to mitigate any human use impacts on park values.

Management issues

- **Disturbed areas**

A number of sites in the park that have been cleared and disturbed by mining, for roads or, more recently, for gravel pits, have yet to be rehabilitated or revegetated. Gravel pits cause local environmental damage, are costly to rehabilitate and scar the landscape. Erosion at some visitor sites and along roads and tracks requires stabilisation and revegetation. Disturbed areas remain vulnerable to weed establishment and erosion.

- **Cumulative impacts of landscape disturbance**

Many small developments and excavations to source gravel are likely to have a large cumulative impact over time. The park needs to be considered as a whole when planning and managing local developments and activities.

- **Introduction of pests**

If plant material is sourced from outside the park for revegetation purposes there is a potential risk of introducing pests within soil and potting mix or altering local genetic stock (see Section 10.13: Bringing plants, animals and other materials into the park).

- **Ongoing monitoring costs**

Monitoring of the South Alligator low-level waste containment facility and groundwater and vegetation over the next 10 years is a significant annual cost.

- **Direct and indirect visitor impacts**

These may include unauthorised fires, the collection of firewood; unburied waste; noise pollution (e.g. partying groups at campsites); feeding native animals; erosion on walking tracks and roads; vandalism; and dust from roads affecting rock art.

- **Unregulated use of visitor areas**

Coastal areas of the park are popular with some visitors but are remote and can be difficult to access and manage. Overcrowding in camping areas, off-road driving and rubbish are often evident in these areas.

- **Recreational boating and fishing**

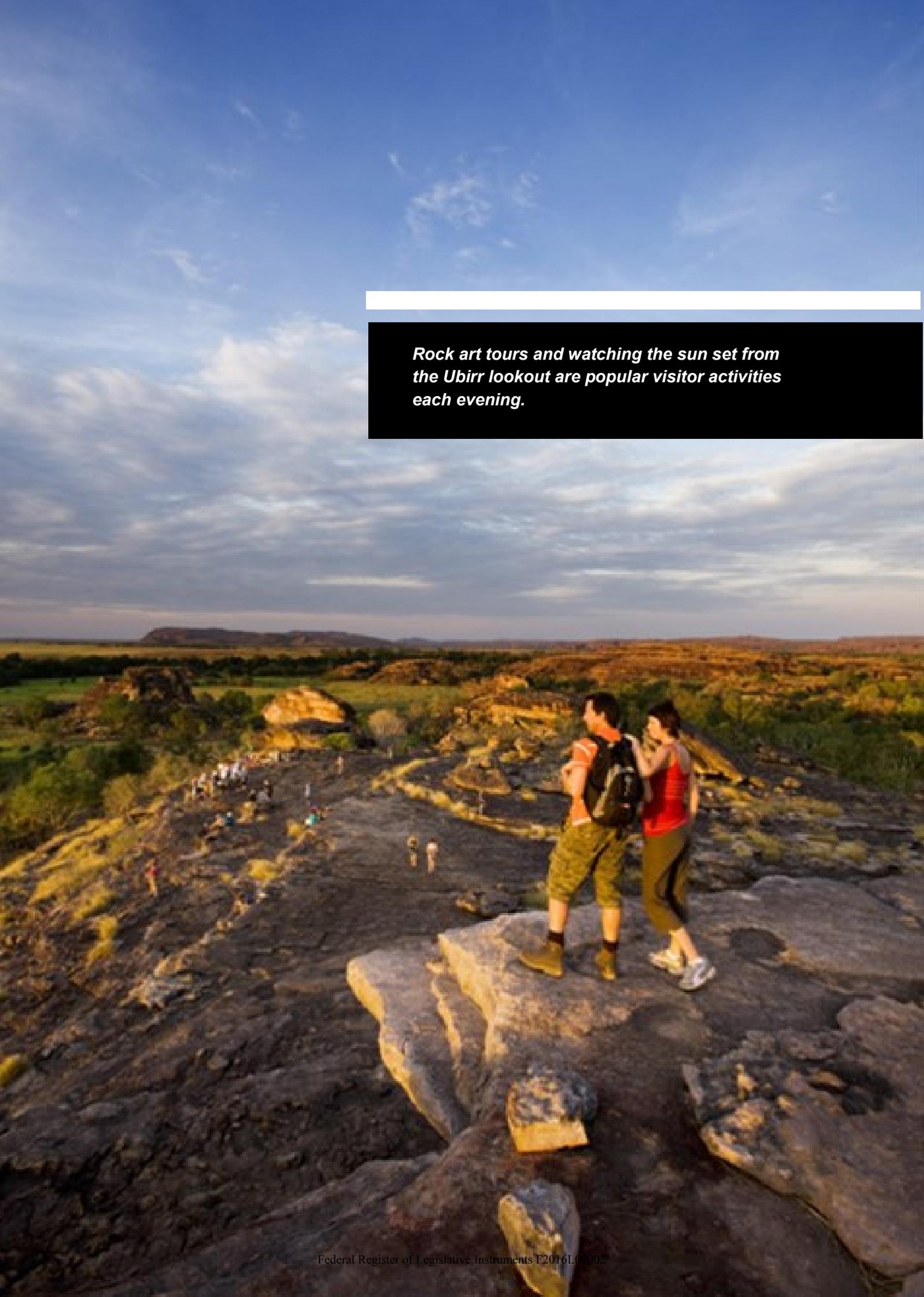
Bininj/Mungguy have concerns about the number of recreational boats using waterways, the speed some boats travel and the associated impacts on erosion of river banks and animals that live in tidal areas. There is also concern that some visitors may be taking more fish than allowed.

Policies

- 5.3.36 Plants and seeds for rehabilitation programmes should be locally sourced where possible.
- 5.3.37 Tourism, recreational opportunities and visitor experiences will be managed to minimise impacts on park values.
- 5.3.38 Reviews of visitor experiences under Section 6.1 (Kakadu as a visitor experience destination, commercial tourism and promotion) will consider visitor impacts and provide recommendations to the Board on future management.

Actions

- 5.3.39 Update the Land Rehabilitation Strategy (Murray 1995) identifying rehabilitation priorities for obsolete gravel pits and other sites (including the Buffalo Farm), and undertake rehabilitation works on priority areas, this will be updated in consultation with users of gravel pits.
- 5.3.40 Continue to work closely with the Supervising Scientist and ERA to stay up to date about the management of mining operations adjacent to the park, particularly in relation to activities that could impact park values.
- 5.3.41 Continue to maintain and monitor the South Alligator low-level waste containment facility and related groundwater and vegetation for contamination.
- 5.3.42 Work with government agencies, research institutions and relevant stakeholders to monitor the impacts of recreational fishing in the park, including the impact of boat traffic on bank erosion (see also Section 6.1.11).
- 5.3.43 Communicate information to park visitors on the direct and indirect visitor impacts on park values to increase awareness and reduce impacts.



Rock art tours and watching the sun set from the Ubirr lookout are popular visitor activities each evening.

6 Kakadu as a visitor experience destination, commercial tourism and promotion

This section sets out the policies the Director of National Parks (the Director) will apply for developing Kakadu as a visitor experience destination, developing and managing commercial tourism, and informing people about the park. It includes any *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provisions which directly relate to the Director, and the actions the Director will take over the life of the plan to work towards achieving the objective and outcomes of this section.

Objective

To increase visitation in a sustainable way and provide opportunities for diverse and enriching visitor experiences which are promoted in an appropriate way

Kakadu National Park is a World Heritage place and people from all over the world visit for its ancient cultural heritage, unique wildlife and magnificent landscapes. Bininj/Mungguy are happy and proud to showcase Kakadu, and would like to be more involved in tourism. With appropriate joint planning, revenue generated through tourism can support conservation activities and enrich local livelihoods through increased social and employment opportunities. This approach will also empower communities by respecting and safeguarding Bininj/Mungguy culture, lifestyle and privacy.

To increase visitation in a sustainable way Parks Australia will continue to maintain a collaborative approach between land owners, land managers, government, commercial operators and other stakeholders of the park. This collaboration ensures that the wishes of Bininj/Mungguy are respected whilst fostering investment that appropriately showcases the uniqueness of Kakadu through existing and new experiences.

Information on visitor numbers and usage of the park is collected through traffic counts, ticket sales and visitor surveys. These data collections provide useful information on tourism trends, market segments, visitor use and satisfaction, requirements for planning and developing visitor facilities and new visitor opportunities, and the economic impacts and benefits of tourism.

Visitation to the park started to decline around 2009 due to a number of factors including the after effects of the global financial crisis. However, this trend appears to have been arrested with visitation to the park increasing since early 2014, particularly from the domestic market. Park management has and will continue to look for ways to grow visitation, help and encourage visitors to enjoy Kakadu throughout all its seasons, support opportunities for Bininj/Mungguy to benefit from tourism, and support the tourism industry. This will be achieved through Bininj/Mungguy, Parks Australia, Northern Territory Government, the tourism industry and park user groups working together.

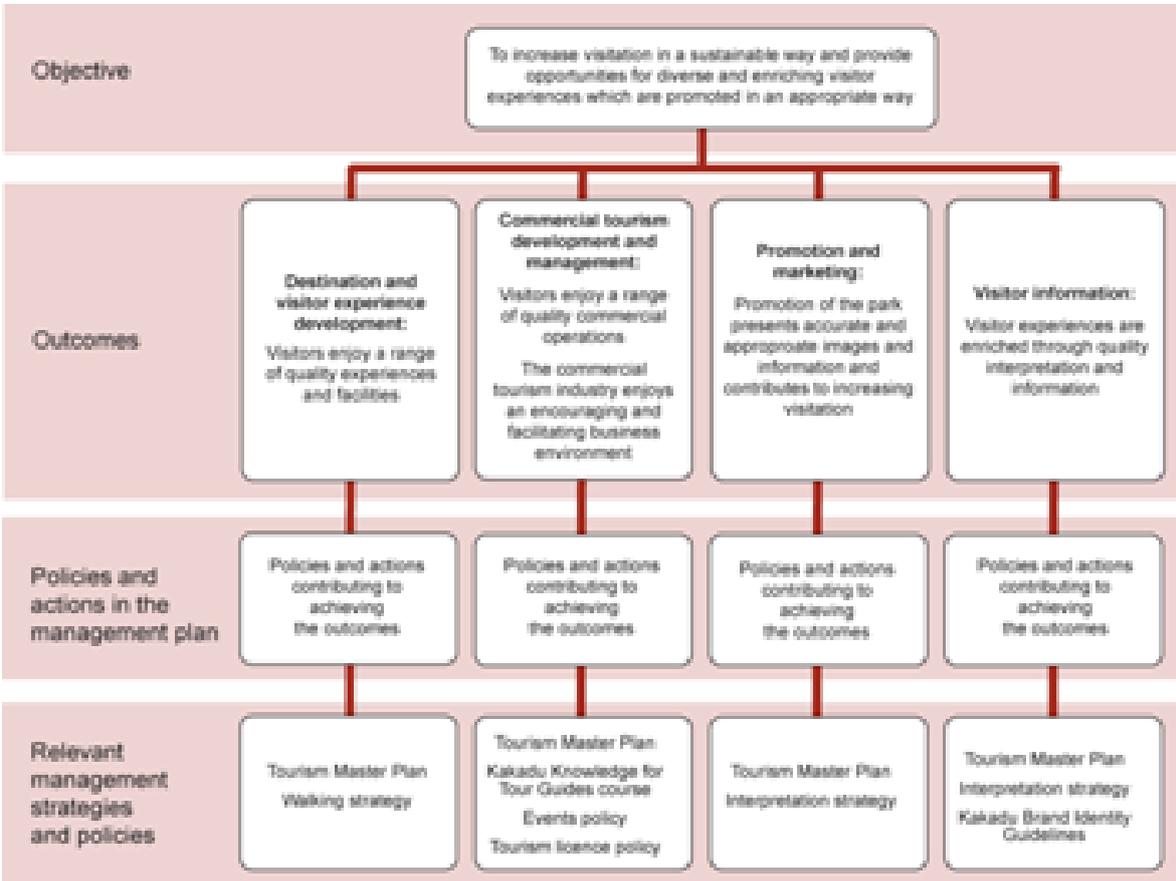
While the natural and cultural values of the park are the core of the park’s foundation, these values also have significance to visitors:

- the park has a diverse natural and cultural environment that provides a diversity of visitor experiences
- the park is a place to learn about and appreciate an ancient culture
- the park is a scenic landscape that offers inspiration and enrichment.

This section should be read in conjunction with Section 9.3 (Authorising and managing activities), Section 9.8 (Revenue and business development) and Section 10.8 (Commercial tourism and accommodation).

Figure 13 illustrates the line of sight for this section of the plan.

Figure 13: Line of sight for Section 6: Kakadu as a visitor experience destination, commercial tourism and promotion



6.1 Destination and visitor experience development

Outcome

- Visitors enjoy a range of quality experiences and facilities

Performance indicators

- Visitor satisfaction with the range and quality of park experiences
- Visitor satisfaction with the range and quality of park facilities

Background

'People need to come here and relax, sit on the country, feel the spirits of this country, and go home and feel the same way.'

Natasha Nadji, Bunitj clan

In May 2004, the Director of National Parks, on behalf of the Board of Management and the Australian and Northern Territory governments, commissioned the development of a shared tourism vision for the Park.

This extensive consultation and analysis process undertaken by John Morse, John King and Jennifer Bartlett resulted in the report: *Kakadu – Walking to the future together – A shared vision for tourism in Kakadu National Park* (Morse et al. 2005). The report provided a range of recommendations that primarily support:

- increased Aboriginal involvement and benefits
- organisational change to support tourism development and facilitation
- brand development and promotion
- improved visitor information and interpretation
- development of visitor experiences

At the core of the report were ten key principles for respecting country and people in the development of tourism, now known as the Shared Vision Principles. The Board of Management adopted these principles in the fifth plan of management as a guide to balance the primary importance of Kakadu's natural and cultural values with the development of a strategic approach to tourism.

To facilitate development of visitor experiences consistent with the Shared Vision, the Tourism Master Plan (DNP 2009) was developed to provide a strategic framework for ensuring visitor experiences are established which are culturally appropriate, environmentally sustainable and match the desires of the target market for Kakadu.

The Tourism Master Plan includes sections on visitor experiences, facilities, access, commercial opportunities, protection of Kakadu from adverse tourism impacts, and the ways in which tourism can promote and appreciate the values of the park and be consistent with the aspirations of Bininj/Mungguy.

The development of experiences and opportunities for visitors under the Tourism Master Plan and individual visitor experience plans—to be developed for each of the visitor precincts in the park— will take into account a range of traveller types, including:

- **Group inclusive travellers** who pre-purchase the bulk of their holiday through a travel agent or specialist commercial operator.
- **Free and independent travellers**, including 4WD touring and grey nomads, who tend to like the freedom of planning their own arrangements.
- **Partially packaged travellers** who have aspects of their travel pre-booked, such as airfares and accommodation, and arrange commercial or self-guided tours after they arrive.
- **Visitors to friends and relatives** who will be similar to the independent traveller, but will be dependent upon their hosts to inform experience in the park.
- **Backpackers** who are the ultimate free and independent travellers who prefer a highly independent and unstructured approach towards travel and will look for opportunities to experience more adventurous and less commercial activities.
- **Business travellers** who are generally regarded as one of the highest yielding inbound segments because of their high spend per person. Kakadu is not on the conference circuit, but does benefit from delegates that take the opportunity to have a side trip to Kakadu when in Darwin.
- **Education travellers** who are usually students travelling as part of a structured educational excursion, either specifically to the park or as part of a tour of destinations within the Northern Territory or Australia more broadly.

Kakadu is part of Australia's Timeless North National Landscape, a partnership between conservation and tourism aiming to provide new and engaging visitor experiences within this remarkable natural landscape. The Australia's Timeless North Experience Development Action Plan (EC3 Global and Middle Star 2013) identifies the current and needed products, infrastructure and experiences required to meet and exceed visitor expectations of the region, including Kakadu.

To encourage greater levels of visitation it is important to not only maintain the existing experiences but to also refocus promotion and develop new visitor experiences including multi-day and repeat stays.

Existing experiences that are popular within the park include:

- **Bushwalking**
Kakadu provides a range of opportunities that enable visitors to undertake day walks and overnight bushwalks and is sought after as one of the major bushwalking destinations in the Top End. A draft Kakadu walking strategy developed in 2013 conducted an audit of walks in the park, provided suggestions on grading of walks, and aims to promote walking as an activity in the park.
- **Camping**
Visitors to Kakadu seek different camping opportunities, from quiet and remote places where campers are self-sufficient to more accessible places where facilities are provided.

- **Recreational fishing and boating**

Fishing is a major recreational activity in the Top End of the Northern Territory, and Kakadu includes some of the prime recreational fishing areas. Most fishing in the park is undertaken by boat, though opportunities are also taken to fish from river and creek banks. The catch and release method of fishing is encouraged and supported in the park and is commonly practised by recreational fishers.

- **4WD touring**

For visitors who enjoy taking the road less travelled, there are a range of visitor sites that are only accessible by 4WD vehicle. Jim Jim Falls and Twin Falls are only accessible by 4WD and travellers enjoy the remoteness of West Alligator Head. Camping opportunities at these sites and at Gunlom are ideal for the 4WD enthusiast.

- **Swimming**

In the hot, tropical climate of the Top End swimming is an enjoyable activity. However, there are a number of potential risks and impacts associated with swimming or entering waters for other purposes, particularly below the escarpment (Section 9.1: Safety and incident management).

- **Viewing rock art**

Many visitors enjoy viewing rock art in the park, and public access is provided to three art sites: Burrungkuy (Nourlangie Rock) and Nanguluwurr (in the Nourlangie region) and Ubirr (in the East Alligator region). Walking tracks, boardwalks and interpretative materials are provided to offer the best possible controlled experience for visitors at these sites, to provide accurate interpretation and to reduce visitor impacts.

- **Cultural experiences**

Many people come to Kakadu to learn more about Aboriginal culture and to have interactions with Aboriginal people. Visitors to Kakadu can do this by participating in the ranger walks and talks, engaging a Bininj/Mungguy guide or joining a Bininj/Mungguy tour where there are opportunities to hear traditional stories and learn about the living Indigenous culture in the park.

- **Wildlife watching**

Kakadu offers many opportunities to see some of Australia's most iconic species, as well as an extraordinary diversity and abundance of birdlife. A Kakadu Birds iPhone application has been developed to assist visitors to identify common birds in the park.

- **New visitor experiences**

Access to some visitor experiences is managed via the use of permits and licences. Over the life of the plan new experiences to encourage new and repeat visitation will be considered consistent with this plan, the Shared Vision Principles and processes in this plan for the assessment of new proposals (Section 9.5: Assessment of proposals).

Management issues

- With changing markets and visitor needs, new experiences are needed to improve the number, diversity and quality of experiences on offer in the park.
- Enhancing existing experiences and developing new experiences can be constrained by funding, environmental and cultural considerations.
- Much of the visitor infrastructure in the park is ageing, in need of constant maintenance and needs refreshing.

- Fluctuating visitor numbers have had an impact on park revenue and therefore the ability to maintain facilities and services in the park.
- There is a need to monitor market trends against visitor needs/expectations to ensure the experiences on offer are meeting market demands and visitor expectations.
- Exceptional experiences need to be available to visitors, so that they will become ambassadors for the park, telling positive stories when they return home, helping to promote the park and its values.
- There is a need for ongoing education, both within the park and more broadly, on where fishing can legally occur within the park, the type of equipment that may be used for recreational fishing and fishing bag limits.

Policies

- 6.1.1 Tourism and recreational opportunities in the park will be managed in accordance with this plan and the Shared Vision Principles.
- 6.1.2 Visitor experiences in the park will be as safe as reasonably practicable, be consistent with and have minimal impact on park values and provide opportunities for both independent travellers and commercial tour groups.
- 6.1.3 A range of diverse experiences will be offered in the park that present, communicate, and protect the park values and meet the needs of the target markets.
- 6.1.4 Infrastructure development will be managed consistent with Section 9.4 (Capital works and infrastructure) and Section 9.5 (Assessment of proposals).

Actions

- 6.1.5 Take all practicable measures to ensure that a diverse range of experiences are available to visitors and that they present, communicate, and protect the park values and meet the needs of a range of target markets.
- 6.1.6 Review the Tourism Master Plan in the first and sixth years of this plan and progressively implement its recommendations.
- 6.1.7 Prepare precinct plans for key visitor areas in accordance with the Tourism Master Plan.
- 6.1.8 Investigate, develop and implement strategies (consistent with the Shared Vision Principles and Tourism Master Plan) to enhance Indigenous business opportunities and increase annual visitor numbers to the park, including the spread of visitor numbers across the seasons and the average length of stay in the park.
- 6.1.9 Continue to monitor visitor needs to inform decisions about investment and upgrade opportunities for visitor facilities and experiences in the park, from small quiet areas with few or no facilities to developed campgrounds with facilities for larger numbers of people. Where appropriate, consideration will be given to support investment and upgrade opportunities for existing and new experiences within the facilities.
- 6.1.10 In consultation with Bininj/Mungguy, develop, implement and progressively review a strategy for walking in the park that provides for a range of day and overnight walking opportunities and describes prescribed walking routes and permit conditions. Restrictions on the number of participants may be required for some walking routes to mitigate impacts on park values.

- 6.1.11 Undertake a review of fishing and boating in the park to provide recommendations to the Board on future management options and implement supported recommendations as appropriate (see also Section 5.3.42).
- 6.1.12 Continue to proactively engage with and advise visitors on which areas in the park are open to recreational fishing and which areas are sensitive and should be avoided, such as bird rookeries in and adjacent to the East Alligator and South Alligator rivers.
- 6.1.13 Continue to encourage and support (in collaboration with recreational fishing organisations) the use of sustainable fishing practices such as catch and release, including fish handling and other actions that may increase the survival of released fish.
- 6.1.14 Manage access to visitor sites using permits, commercial activity licences and leases (including subleases and occupation licences), and booking systems in addition to temporary or permanent closures of sites under the EPBC Regulations (see also Section 9.3: Authorising and managing activities).
- 6.1.15 Regularly review park use, facility and service fees, permit fees, and lease/licence fees for visitor experiences to ensure that they reflect current market rates and appropriate contribution to the cost of delivery (see also Section 9.8: Revenue and business development). This review must also take into account the importance of encouraging repeat and new visitation.
- 6.1.16 Continue to consider, plan for, manage and promote appropriate public gatherings consistent with the events policy for the park (see also Section 9.8: Revenue and business development).
- 6.1.17 Use best endeavours to ensure that public areas are open for as long as possible, particularly early in each year.
- 6.1.18 Consider implementing staged opening of sites over the shoulder season and providing exclusive use or access to sites.
- 6.1.19 Continue to monitor numbers and trends in visitation and feedback from visitors and the tourism industry, and consider alternative and more cost-effective means of data collection and analysis. Investigate opportunities to work with stakeholders or form partnerships to assist with this analysis.
- 6.1.20 Consider possible development of bicycle riding tracks in and around major population areas that travel through areas of natural beauty to provide an attractive option to visitors. [Note: Use of bicycles is restricted by Section 10.7.6 to vehicle access roads and vehicle access tracks unless other tracks for bike riding are provided by the Director in accordance with that Section].

6.2 Commercial tourism development and management

Outcomes

- Visitors enjoy a range of quality commercial operations
- The commercial tourism industry enjoys an encouraging and facilitating business environment

Performance indicators

- Visitor satisfaction with the range and quality of commercial operations
- Commercial tourism industry members are satisfied the business environment enables delivery of quality experiences in the park

Background

'Walking is good. You follow track ... you sleep, wake in morning to birds, maybe kookaburra. You feel country.'

Bill Neidjie, Bunitj clan

Well-managed commercial tour operations help visitors to experience, enjoy and learn about the park in a sustainable manner while providing an important contribution to the local and regional economies. Approximately 40 per cent of visitors to Kakadu, depending on the season, visit the park with commercial tour operators. The majority of these visitors are international. In addition, many independent travellers participate in boat cruises, scenic flights and other commercial tours while in Kakadu.

Commercial tours available in the park at the time of preparing the plan include standard land-based tours (coach tours and budget to luxury four-wheel drive tours), boat tours, fishing tours, safari camps, cultural activities, bushwalking tours, and tours to limited-access or exclusive-use areas. Depending on the type of tour, commercial operators are required to apply for either a permit or licence. Approximately 100 standard land-based tour operator permits are issued in the park annually. A number of commercial tour activities are also undertaken by Bininj/Mungguy and Bininj/Mungguy organisations (see also Section 4.3: Bininj/Mungguy training and other opportunities).

The park lease agreements between the Director and traditional owners require the Director to implement an induction scheme for tour operators and their guides. In 2005, the Board introduced compulsory entry-level Knowledge for Tour Guides training (facilitated by Charles Darwin University and co-funded by the Northern Territory Government) that can be delivered flexibly – e.g. through e-learning. The training is based on core competencies related to the interpretation of cultural and natural values, minimising visitor impact, understanding permit and licence conditions and cross-cultural awareness. Over 800 guides have completed the training since its inception.

A review of commercial tourism management in terrestrial Commonwealth reserves led to the development of a commercial activity licensing policy under which permits may be replaced by licences for 'exclusive/unique or restricted' activities or new commercial activities. At the time of preparing this plan 32 such licences were in place in Kakadu. To give greater certainty to commercial operators, a new three-year permit opportunity was also introduced for accredited operators.

Management issues

- More opportunities are needed for Bininj/Mungguy to engage in and benefit from the tourism industry.
- Given the importance of the park to tourism and the regional economy, new tourism opportunities are often being sought. Opportunities for appropriate and responsible commercial tourism products need to be facilitated in the park, that are environmentally, culturally and commercially sustainable.

Policies

- 6.2.1 Commercial tourism operators will be promoted and encouraged to provide new visitor experiences in the park consistent with Sections 6.1.17 and 6.1.18.
- 6.2.2 Authorisation of commercial tourism, including use of permits, leases (including subleases and occupation licences) and commercial activity licences will be managed in accordance with Section 9.3 (Authorising and managing activities).
- 6.2.3 Bininj/Mungguy will be actively encouraged to be involved in commercial tourism via Bininj/Mungguy or joint enterprises, tour guiding, filming and photography services, and other means. (See also Section 4.3: Bininj/Mungguy training and other opportunities.)
- 6.2.4 Commercial tourism leasing and licencing arrangements will assist to grow visitation and facilitate benefits to Bininj/Mungguy by including a requirement for joint ventures, employment and training and in-kind support in accordance with the Parks Australia Commercial Tourism Licence Policy and Commercial Leasing Policy.
- 6.2.5 Commercial tourism leasing and licencing arrangements will support Bininj/Mungguy enterprises through negotiation of appropriate discounted fees and, where appropriate, reserving the provision of particular experiences for Bininj/Mungguy enterprises, in accordance with the Parks Australia Commercial Tourism Licence Policy and Commercial Leasing Policy.
- 6.2.6 Consistent with Section 4.1.4, the Director will, as far as practicable, inform the tourism industry with 12 to 18 months' notice when changes are made to visitor management in the park that will significantly affect commercial tourism activities.

Actions

- 6.2.7 Provide incentives, including through the length of commercial activity licences, to improve the quality and variety of tourism experiences available in the park.
- 6.2.8 Create partnerships with new and established tour operators who may wish to extend their operations to and within the park.
- 6.2.9 Continue to provide up-to-date information to the tourism industry through regular industry updates, road reports, workshops and other knowledge-sharing opportunities.
- 6.2.10 Engage local industry through the relevant Northern Territory government agencies, Tourism NT and the Australia's Timeless North National Landscape steering committee. Through these conduits hold tourism industry forums or seminars to enable tour operators, guides and other stakeholders from the tourism industry to discuss and learn about park values, management issues and practices, and for industry to share opportunities, ideas and issues related to the park.
- 6.2.11 Review course content, mode of delivery and service arrangements for the Kakadu Knowledge for Tour Guides course as required.
- 6.2.12 Investigate opportunities for optional cross-cultural sharing in Kakadu as further training for tour guides and operators.

6.3 Promotion and marketing

Outcome

- Promotion of the park presents accurate and appropriate images and information and contributes to increasing visitation

Performance indicators

- Visitor numbers and length of stay
- Kakadu website use
- Compliance of commercial tour operator promotional material with the filming and photography guidelines for the park

Background

'I want visitors to feel something they'll never forget – and have in their heart and mind forever.'

Bessie Coleman, Wurrkbarbar clan

Promotion, marketing and media coverage of the park can influence visitor awareness levels, numbers, length of stay and levels of satisfaction. Accurate promotion through various media also helps to give people realistic expectations of their visit and is often their first introduction to the park. Promotion and media coverage can help the Board to communicate its messages to park visitors and the general public and assist with gaining public support for the park and, more generally, for the conservation of natural and cultural values.

The size and diversity of the park and the natural and cultural experiences available are best appreciated through multi-day visits at different times of the year. Appropriate promotion and marketing assist this understanding and can lead to increased and more rewarding visitation (longer stays, repeat visits).

Tourism NT, regional tourism associations and other members of the tourism industry are significant promoters and marketers of Kakadu as a major visitor destination and have contributed to the huge role that Kakadu now plays in attracting people to Australia from around the world. Conservation groups, researchers, professional photographers and filmmakers have also contributed to the name and images of Kakadu and aspects of the park's natural and cultural values being well known nationally and internationally.

Implementation of the Shared Vision Principles led to the development of a new logo and branding for the park that was rolled out in 2008 and has contributed to raising the profile of the park as a unique visitor destination.

The park hosts over 100 commercial film and media projects per annum including the award-winning *Kakadu* documentary in 2013. Several accolades from the tourism industry – such as the best bird-watching destination in Australia (Australian Geographic), sixth-best sunset destination, and fourth best visitor destination – also provide invaluable promotion and marketing for the park. A commercial image capture survey was conducted early in 2015 and the findings of this survey will be used to develop guidelines and improve processes for commercial image capture in the park.

The increasing range and affordability of camera equipment and rapidly expanding use of social media makes it more challenging to ensure accurate and positive images of the park are taken and disseminated by visitors.

Management issues

- Promotion and marketing material produced by Parks Australia and the tourism industry should be accurate, high quality and consistent with Bininj/Mungguy cultural protocols and contribute to increased visitation and safe and rewarding visitor experiences.
- Commercial filmmakers and photographers require access to clear information and guidance material to ensure that their work accurately interprets and promotes the park values and is consistent with Bininj/Mungguy cultural protocols.
- Image capture and dissemination – e.g. via social media by park visitors – should contribute to positive and accurate promotion of the park.

Policies

- 6.3.1 The park will be promoted and marketed in accordance with the Shared Vision Principles, the following key messages, and other messages as determined by the Board:
- (a) Kakadu is an Aboriginal place and a cultural landscape
 - (b) the cultural and natural values of the park are of World Heritage significance and the park is listed as a Wetland of International Importance
 - (c) Kakadu is jointly managed by Bininj/Mungguy and the Director through the Kakadu Board of Management
 - (d) Bininj/Mungguy welcome visitors to their country and encourage visitors to learn about the cultural and natural values and joint management of the park
 - (e) Bininj/Mungguy and the Director care about visitor safety and would like all visitors and tour guides to take good care of their own and other people's safety while they are in Kakadu: your safety is our concern and your responsibility
 - (f) If Bininj/Mungguy sites are closed for reasons of cultural significance, the closure will be announced in order to demonstrate and reinforce that the area is a significant living cultural area
 - (g) Kakadu changes greatly though the seasons and offers unique and different experiences in each season.

Actions

- 6.3.2 Liaise with the tourism industry to ensure that promotion of the park helps to create appropriate visitor expectations about all activities, including swimming, and understanding of the associated risks. This will include awareness and understanding of seasonal changes and unique opportunities for visitors and commercial interests throughout the year.
- 6.3.3 Develop and implement a cooperative promotion and marketing strategy with the tourism industry and the Australian and Northern Territory governments and other stakeholder groups including Tourism NT and the Australia's Timeless North National Landscape Steering Committee.
- 6.3.4 Develop information and guidance material (to be approved by the Board) to attract and assist commercial filmmakers and photographers to work in the park to meet their needs, promote the park and respect cultural protocols.
- 6.3.5 Continue to promote appropriate image capture and use by visitors, including the need to respect cultural protocols.

6.4 Visitor information

Outcome

- Visitor experiences are enriched through quality interpretation and information

Performance indicator

- Visitor satisfaction with the quality of park interpretation and information

Background

‘We need to make sure people are getting the right stories about country.’

Traditional owner

Well-prepared and accessible information enables visitors to understand the unique values of Kakadu and to plan their visit and enjoy Kakadu in a safe and appropriate way. Information and interpretation provided for visitors to the park generally relate to information on the values of the park, safety and the risks involved in visiting the park, and rules about visitor activities and sustainable tourism.

The park presents a significant opportunity to increase awareness and understanding of the oldest culture on earth. This is a key reason people want to visit the park, and the Board and Bininj/Mungguy are keen to provide visitors with information to assist in this understanding. The park also presents an opportunity to learn about the joint management arrangements.

Visitors are able to learn about the park from:

- pre-visit information through publications, the tourism industry, Parks Australia’s website, and digital and social media
- Bowali and Warradjan cultural centres
- park brochures and publications
- guided activities presented by park staff and Bininj/Mungguy
- commercial tour operations
- interpretative and regulatory signage
- displays, videos and face-to-face contact with park staff.

The Bowali Visitor Centre located near Jabiru introduces visitors to Kakadu’s landscapes, plants and animals, as well as Bininj/Mungguy culture. Warradjan Cultural Centre at Coinda focuses on Bininj/Mungguy culture, with displays of artefacts and information on traditional practices and resource use. The information available to visitors at Bowali and Warradjan complement each other and visitors are encouraged to visit both centres to enhance their experience and understanding of the park and its values.

Updates to tour operators, visitor centres, visitors and other stakeholders are provided through regular newsletters, workshops, forums, daily road reports and Facebook to keep people up to date with the latest information and activities.

A record number of visitors (53,000 in 2013) attended the free interpretative ranger activities presented as part of the park seasonal ranger programme. Many Bininj/Mungguy are involved in providing these talks and activities for park visitors and are employed by the park on a casual basis or work with Indigenous owned and operated businesses. Also during the life of the fifth plan the Kakadu Visitor Guide and park notes were updated to reflect the new park branding, the website was upgraded and a project to update signage across the park commenced.

Management issues

- It is important that visitors are able to access accurate information about the park values, management of the park and safe behaviours via a range of tools before a visit and while in the park.
- Visitor awareness of seasonal changes affecting access and experiences, particularly during the wet season, is important, and information on access and safety requires ongoing updating.
- It is important to continue to provide regular updates to visitor centres both within and outside the park so that accurate and high-quality information is available for visitors at every point of contact.
- Many visitors do not visit Bowali Visitor Centre; the benefits of visiting the centre need to be promoted.
- Information technology is changing rapidly and the services provided from within the park need to keep up to date with developments in the provision of information and interpretation services and, where possible, facilitate visitors accessing information via a range of technologies.
- Comprehensive mobile phone coverage is not available in the park. It is important to continue work with communication providers to improve mobile phone reception across the park so visitors can access high quality information and to provide emergency communications if required. (see also Section 9.1: Safety and incident management).

Policies

- 6.4.1 The Director may support the development of new interpretation products and media, including licensed products, subject to Board approval.
- 6.4.2 Signage in the park will enhance the visitor experience and be in accordance with the Kakadu Brand Identity Guidelines (2009), and conform with the signage manual for the park, and all Northern Territory and applicable signage standards and policies, where appropriate and relevant. Consistency will be maintained across all collateral, including marketing material, business naming, building names, road signage and directional signage.

Actions

- 6.4.3 Consistent with the key messages in Section 6.3.1, develop, implement and review an interpretation strategy for the park to ensure pre-visit, on-site and post-visit information accurately represents and upholds the park values and Bininj/Mungguy aspirations.
- 6.4.4 Continue to provide up-to-date information to visitors using a variety of means, including social media, the website, the tourism industry, visitor information providers, visitor guides and park notes.

- 6.4.5 Continue to provide a range of on-site and spoken interpretation programmes and interpretation via commercial tour guides, including Bininj/Mungguy guides.
- 6.4.6 Investigate and implement ways to attract more people to visit the Bowali Visitor Centre and Warradjan Cultural Centre during their stay, including incentives for commercial tours to include the centres in their itinerary.
- 6.4.7 Review the operation of the Bowali Visitor Centre and Warradjan Cultural Centre, including considering the possibility of different management arrangements.
- 6.4.8 Continue to provide and update interpretation through the Bowali Visitor Centre and Warradjan Cultural Centre.
- 6.4.9 Provide accurate information to visitor information providers through regular inductions and updates by staff, and maintain active relationships with these providers.
- 6.4.10 Continue to implement the signage project for the park, and review and update signage as needed.
- 6.4.11 Work with the tourism industry to ensure commercial tour guides are providing accurate and appropriate information to visitors, including correct interpretation of Bininj/Mungguy stories.

7 Research and knowledge management

This section sets out the policies the Director of National Parks (the Director) will apply to carry out and manage research and monitoring, and the knowledge gained, to inform park management and improve understanding of the park. It includes any *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provisions which directly relate to the Director, and the actions the Director will take over the life of the plan to work towards achieving the objective and outcomes of this section.

Objective

Management of the park's natural and cultural values is evidence based, and practices are routinely refined through adaptive management processes

Background

Knowledge is the basis of good management. Knowledge is needed to:

- define what plant and animal species and environments are present in the park
- ascribe significance and priority to those values
- identify threats to the park's values
- inform and refine management goals and objectives
- formulate effective mechanisms to conserve values and control threats
- inform visitors and residents about the park so their experience is enhanced
- measure the effectiveness of management actions
- report to various stakeholders on the park's condition.

Knowledge derives from:

- targeted and highly specific scientific investigation
- law and experience handed down over countless generations by Indigenous and other landowners
- the experience of rangers and managers
- ongoing monitoring of changes in species' abundance and environmental condition
- the sharing of information among neighbours
- sophisticated but increasingly accessible remote sensing.

As noted in Section 4.1 (Making decisions and working together), the Kakadu Research and Management Advisory Committee (KRMAC) provides advice to the Board of Management on research and management issues and priorities.

Consistent with recognised best practice, most research in the park has been undertaken using a collaborative approach. This approach has seen Bininj/Mungguy and Parks Australia work with researchers from government and non-government agencies across Australia and internationally.

As described in Section 5.3 (Managing park-wide threats affecting park values), the Supervising Scientist and ERISS have research and monitoring functions to perform in the park which relate to uranium mining operations. ERISS has an additional function to conduct research on environmental matters for other persons on a commercial basis. The Supervising Scientist and ERISS carry out their functions in accordance with protocols developed and agreed by the Director and the Supervising Scientist.

Research activities contribute to implementing the Parks Australia Management Effectiveness Framework, including adaptive management to take account of the latest information (see Section 9.10: Implementing and evaluating the plan). It is also important that Bininj/Mungguy and other stakeholders are kept informed of the results, outcomes and adoption of research. To allow this to happen, a range of approaches are used including Board of Management updates, community meetings, workshops and symposia, subsidiary strategies, media releases, publications and park reporting.

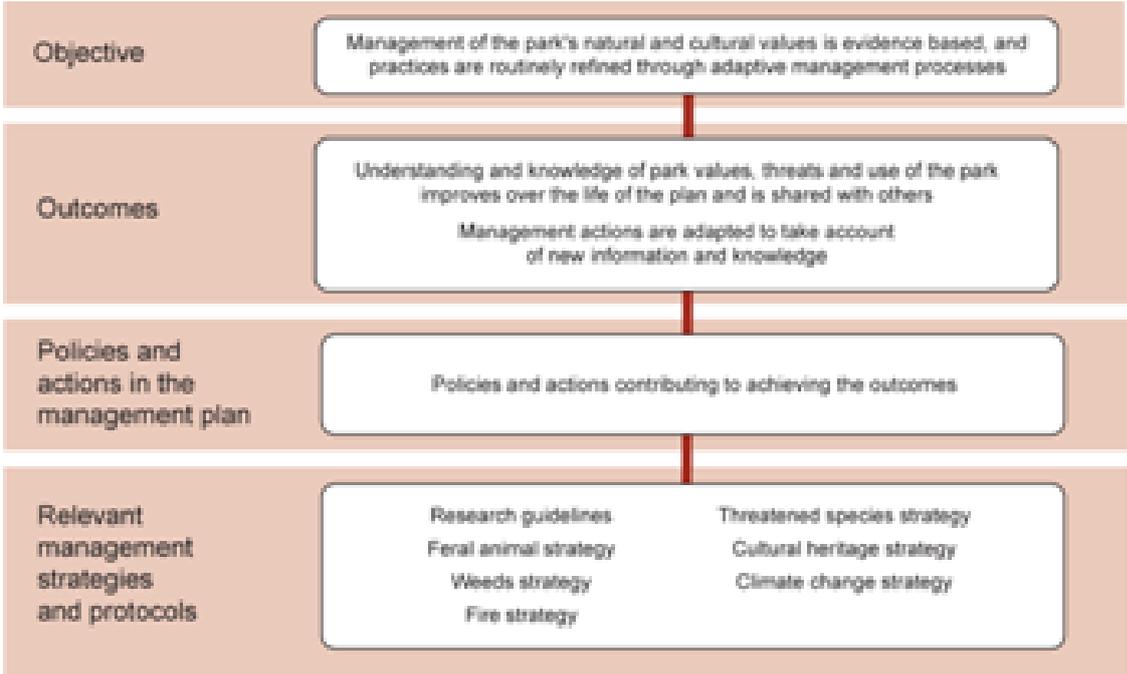
Part 13 of the EPBC Act provides for the conservation of biodiversity including listed threatened species and ecological communities, listed migratory species, cetaceans, and listed marine species. Actions in the park that affect individual members of protected species and communities require a Part 13 permit under the Act unless done in accordance with this management plan.

Part 13A of the EPBC Act and Part 9A of the EPBC Regulations prohibit and/or regulate the international movement of wildlife specimens for scientific purposes.

Section 10.12 (Research and monitoring activities and access to genetic resources) sets out the prescriptions for authorising and managing research and monitoring activities by other persons.

Figure 14 illustrates the line of sight for this section of the plan.

Figure 14: Line of sight for Section 7: Research and knowledge management



7.1 Research and knowledge management

Outcomes

- Understanding and knowledge of park values, threats and use of the park improve over the life of the plan and is shared with others
- Management actions are adapted to take account of new information and knowledge

Performance indicators

- Extent to which priority knowledge gaps identified in the park research strategy are researched and filled where possible
- Extent to which strategies for the implementation of management programs and management actions change as a result of research

Background

Projects related to researching and monitoring the natural and cultural values of the park prior to this plan, including six major research projects being conducted under the National Environmental Research Programme, included monitoring the impacts of cane toads on northern quolls and selected goanna species; ongoing monitoring of the status of threatened species including marine turtles; public rock art site monitoring; assessing potential impacts of climate change on natural and cultural values; monitoring the current and potential impacts of invasive plants; the development and adoption of risk management decision support tools; and ongoing fire plot monitoring.

Where possible all research and monitoring projects conducted in the park involve Bininj/Mungguy and incorporate their knowledge of country. The Board of Management has approved research guidelines developed by park staff and KRMAC that outline how Bininj/Mungguy want to work with researchers. These guidelines are incorporated in all relevant research undertaken in the park.

Management issues

- There are many important knowledge gaps. Research and monitoring needs to be prioritised and planned and should provide information that contributes to the effective management of the park.
- Research and monitoring activities in a park as large as Kakadu are expensive to undertake and partnerships and collaborations with others are important to help address resource constraints and knowledge gaps.
- Some key information gaps, such as the implications of climate change for the park, may not be able to be addressed.
- Effective methods for storing, managing and retrieving park data and information are required.
- Resources for assessing and processing research permits are finite and research applications need to be prioritised to ensure identified knowledge gaps are filled.
- The results of research and monitoring need to be clearly communicated to park staff and Bininj/Mungguy and, if appropriate, visitors and the general public.

- Bininj/Mungguy interests and traditional knowledge play a fundamental part in understanding changes in and condition of park values and need to be incorporated into research projects.
- Effective working relationships with the Supervising Scientist, ERISS and other key partners and stakeholders are essential.

Policies

- 7.1.1 The priorities for research will be directed to:
- (a) ensure that the park's management is based on the best available evidence
 - (b) fill the most important gaps in knowledge (those that most impede good management and achieving the objectives of this plan)
 - (c) ensure that the best available knowledge is widely and appropriately available, accessible and applied, particularly to those implementing management (and that there are systematic and effective mechanisms for the storage and access of knowledge)
 - (d) ensure that appropriate monitoring programmes provide accurate measurement of park management performance, and that such information is publicly available
 - (e) establish or enhance research collaborations that facilitate significant, cost-effective research and ensure that knowledge and tools developed are shared among the neighbours of the park and other stakeholders
 - (f) ensure Bininj/Mungguy and staff have opportunities to participate and receive training in research and to develop research and/or land management skills.
- 7.1.2 The Director may carry out research and monitoring that involves actions covered by ss.354 and 354A and Part 13 of the EPBC Act that are consistent with the objectives of this plan and helps improve management of the park.
- 7.1.3 The Director and the Board will consult and seek advice from the KRMAC as necessary (see also Section 4: Joint management).
- 7.1.4 Partnerships with institutions and organisations will be developed and maintained to ensure that the research priorities determined by the Board in consultation with the KRMAC are funded and addressed.
- 7.1.5 Research activities will be conducted in accordance with the research guidelines approved by the Board.
- 7.1.6 Research activities will contribute to implementing the Parks Australia Management Effectiveness Framework including adaptive management to take account of the latest information (see 9.10: Implementing and evaluating the plan).
- 7.1.7 Bininj/Mungguy will be consulted about research and monitoring activities in accordance with the research guidelines approved by the Board and Indigenous research protocols developed under Section 7.1.10.
- 7.1.8 Research and monitoring activities will be undertaken in collaboration with neighbours, regional agencies and others where possible so information, costs and outcomes can be shared.

Actions

- 7.1.9 In consultation with KRMAC, develop, implement, review and update a Research and Monitoring Strategy that:
- (a) identifies research and monitoring priorities and contributes to a strategic, evidence-based approach to research
 - (b) contributes to the understanding of park values, use and management issues
 - (c) provides for ongoing monitoring and reporting of park values, use and management issues (see Section 9.10: Implementing and evaluating the plan).
- 7.1.10 In consultation with the AAPA and traditional owners, develop Indigenous research protocols and review them along with ERISS research protocols, the research guidelines approved by the Board and conditions as needed. The Indigenous research protocols will ensure research:
- (a) incorporates Bininj/Mungguy knowledge and perspectives
 - (b) reflects consultation with Bininj/Mungguy depending on expected level of impact
 - (c) engages with and provides opportunities for collaboration with and employment for Bininj/Mungguy
 - (d) is in accordance with the EPBC Act and this plan.
- 7.1.11 Develop, implement and review a knowledge management framework that prioritises:
- (a) protection of Bininj/Mungguy sensitive information.
 - (b) adoption of standards and protocols for managing ecological, biophysical, cultural and demographic data collected within the park
 - (c) recording information where management actions are implemented
 - (d) access to the latest data, information and information management systems (currently spatial systems) at appropriate scales by park management and other relevant staff
 - (e) mapping of priority areas for natural and cultural values for each key park landscape to inform management priorities
- 7.1.12 Promote opportunities for citizen science in the park.

8 Living in the park – Jabiru and outstations

This section sets out the policies for Jabiru, outstations and living in the park, including any *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provisions which directly relate to the Director of National Parks (the Director), and the actions the Director will take over the life of the plan. Residents of the park should refer to Section 10.3 for policies relating to living in the park.

8.1 Outstations and living on country

Background

Bininj/Mungguy outstations have been established in some areas of the park, and it is likely that Bininj/Mungguy will want to establish more over the life of this plan. The Kakadu Board of Management believes it is important for Bininj/Mungguy to be able to set up outstations to live in and maintain connection to country and culture. It is also important that outstations are set up by people with the right connection to the area; people or organisations who set up outstations make sure they are properly managed and resourced; and the impact of outstations on park values is minimised.

Establishment, maintenance and resourcing of outstations is the responsibility of the individuals or organisations concerned. It is not the role of the Director or the Board to commit resources to establish and maintain outstations, although non-financial assistance may be provided from time to time in response to specific requests – e.g. to help with grading an access track – subject to available resources and other park management requirements.

A guide to developing outstations was approved by the Board in 2014 to assist Bininj/Mungguy understand the process for establishing outstations, funding considerations and the role of the Board and Director. Advice is required from the Northern Land Council on the traditional rights of the proponents and proposed residents to establish outstations, and on the views of traditional owners and other relevant Bininj/Mungguy in relation to outstation proposals.

Management issues

- Outstations in existence prior to the declaration of the park do not require a sublease; however, this may impact residents ability to seek funding to invest in outstation development.
- Expansion of existing outstations may result in additional impact on the local environment and require consideration and assessment.

Policies

- 8.1.1 Development of new outstations will require approval of the Board, and approval may be given subject to conditions.
- 8.1.2 Outstations approved by the Board will be authorised by the Director by a sublease or licence (for outstations on Aboriginal land), or a permit or agreement (for outstations on other areas) that will be converted to a sublease or licence when the area becomes Aboriginal land.

- 8.1.3 Proposals to develop new outstations will be dealt with as outlined in the Outstations Guide to Development (2014) approved by the Board and summarised as follows:
- (a) the proposal will be referred to the Board to decide whether to give in-principle approval
 - (b) if the Board gives in-principle approval the proposal will be referred by the Director to the NLC for advice as to the traditional rights of the proponent and proposed residents to reside at the place chosen
 - (c) following consultation with the NLC, the impacts of the proposal will be assessed in accordance with Section 9.5 (Assessment of proposals)
 - (d) the proposal is referred to the Board to decide whether to give final approval
 - (e) if the proposal is approved by the Board, the Director will authorise the outstation in the manner provided by Section 8.1.2.
- 8.1.4 Residents of outstations that are on Aboriginal land that were either established before the proclamation of the park, or have been established since that date with the permission of the Board, for which a sublease has not been granted, may continue to reside at those places without a sublease but may request a sublease be granted. Where a request is received a sublease will be granted, subject to the Director obtaining consent of the relevant Aboriginal Land Trust.
- 8.1.5 Expansion of existing outstations which will increase the footprint of the outstation will require an assessment of the environmental impact of the proposal in accordance with Section 9.5 (Assessment of proposals) and Board approval.

Actions

- 8.1.6 Work with outstation residents to help minimise the impacts of outstations on park values, and to ensure compliance with approval conditions.
- 8.1.7 Provide information to Bininj/Mungguy to assist development of outstation proposals, including potential sources of financial and other assistance; and liaise and, where appropriate, work with relevant organisations (including funding and service delivery agencies) in relation to outstation development and management.

8.2 Jabiru

Background

Jabiru is located in the north-east of Kakadu. The town was established in line with recommendations of the Ranger Uranium Environmental Inquiry (1976–1977) as a closed town to provide housing for people directly or indirectly associated with uranium mining in the Alligator Rivers Region and for government employees. However, from the mid-1980s it has developed a key role as a service hub for the tourism industry and visitors, which use it as a base from which to explore the region, and more recently as a regional administrative centre. At the time of preparing this plan the majority of residents continue to be associated with the Ranger mine, with the rest of the population made up of those who work in the park, the tourism industry, Aboriginal organisations, government services and local businesses, and their dependents.

The town is part of the West Arnhem Regional Council Local Government Area Shire established under the *Local Government Act* (NT). Municipal services are provided in the town by the West Arnhem Regional Council.

Construction of Jabiru was primarily funded by the Ranger mine operator, Energy Resources Australia (ERA), and the Northern Territory Government, which entered into a cost-sharing agreement to provide mechanisms for each to recoup their costs from ‘new entrants’. At the time of preparing this plan there have been no new entrants and ERA maintains a significant proportion of the town’s essential services infrastructure, including the supply of electricity. It also maintains and provides access to the Jabiru airport within the Ranger project area, and has constructed a number of community facilities in Jabiru.

At the time of preparing this plan ERA’s authority to conduct the Ranger mine under the *Atomic Energy Act 1953* requires mining operations to cease in 2021 and the site to be rehabilitated by 2026.

Jabiru is located within an area leased by the Director of National Parks to the Jabiru Town Development Authority (JTDA) in 1981. The majority of subleases granted by the JTDA in the town are held by ERA and government. Others are held by local businesses and organisations (including bodies owned by and representing the Mirarr traditional owners and other Bininj). The town lease and therefore all subleases will expire on 30 June 2021.

Under the town lease the Director may grant licences over land outside the lease area for roads and related works, the discharge of water, sewerage and water supply facilities, and electricity and telecommunications facilities reasonably needed for use in connection with the town. Some essential services infrastructure, such as power and water, is established in these areas. The Director may also grant licences for recreational use of areas by residents of the town. The Jabiru Gun Club is situated on land outside the lease and parts of the Jabiru Golf Course extend beyond the lease, although licences have not been formally granted.

The Mirarr people are acknowledged as the traditional Aboriginal owners of the Jabiru land and surrounding areas under Aboriginal tradition, and this was recognised by the Ranger Uranium Environmental Inquiry. However, in line with the recommendations of the inquiry the town lease area was excluded from the land scheduled and granted as Aboriginal land under *Land Rights Act in 1978*. As town land the area could not subsequently be claimed under that Act. In 1997 the Mirarr applied for a determination of native title under the *Native Title Act 1993* over the Jabiru lease area and two other adjoining areas of the park excluded from the grant, and are the registered native title claimants.

In 2009 an agreement was reached to settle the native title claim. Under the settlement the claim areas would be granted as Aboriginal land under the Land Rights Act and leased by the relevant Aboriginal Land Trust to a suitable lessee for the purposes of continued use as a town, and a new town plan would be made. At the time of preparing this plan the two claim areas adjoining the town lease area have been granted as Aboriginal land and leased back to the Director of National Parks by the Kakadu Aboriginal Land Trust. The settlement as it relates to the town lease area has not yet been finalised.

The establishment of Jabiru has resulted in a number of impacts on the environment within the town and surrounding areas of the park, such as the introduction of dogs, cats and weeds. Activities in Jabiru have the potential to cause other significant adverse environmental impacts including water and soil contamination. Jabiru has had a significant impact on Aboriginal people, lifestyles and traditions in the region; but also provides significant benefits as the commercial and social services hub for the region, including retail, financial, tourism and government services.

Under the previous management plan the Pets in Jabiru Policy was made to clarify and improve the management of allowable domestic animals in the town.

Under the EPBC Act (s.388) land in the town must be used and developed in accordance with park management plans and a town plan approved by the Director of National Parks. Management plans must include provisions for and in relation to the use and development of the township. A town plan must provide for the use and development of the township, and must include any matters specified in management plans or the EPBC Regulations. The town plan may apply, adopt or incorporate (with or without modification) the provisions of Northern Territory laws or other instruments as in force at a specified time or from time to time (EPBC Act s.389).

The Jabiru Town Plan was made by the Northern Territory Government under the *Planning Act* (NT) and approved by the Director of National Parks in 1981. Under the town plan all use and development of land that is not prohibited by the town plan requires a development permit from the development consent authority under the Planning Act. Under the Act as in force at the time of preparing this plan, development permit applications must be made or consented to by the landowner – i.e., for Jabiru, the Director.

The town plan will cease to have effect on 1 April 2019 under the *Legislative Instruments Act 2003*.

At the time of preparing this plan discussions were under way to develop a new planning scheme for Jabiru as part of the Jabiru native title claim settlement. The discussions included proposals that the planning scheme would be based on the general Northern Territory Planning Scheme; would provide a range of land uses and developments that could be allowed to proceed without the need for a development permit, generally in the town or in particular zones established by the scheme; and would introduce some possible changes to land use zones under the 1981 town plan.

Management issues

- Ensuring impacts on the environment in and around Jabiru are minimised, including appropriately managing weeds, domestic animals, feral animals, sewage, waste, chemicals, fire and water, is necessary for maintaining the park's values.
- The impacts of the town on Aboriginal people, lifestyles and traditions need to be minimised while the benefits of the town for Aboriginal people are maximised.
- The cessation of mining operations at Ranger is likely to have an impact on Jabiru and services to the park and park visitors.

- The town lease and all subleases expire in 2021 and new long-term tenure arrangements need to be in place before the lease expires.
- The Jabiru Town Plan ceases to have effect on 1 April 2019 and a new town plan is required under the EPBC Act to ensure development occurs in an appropriate manner.
- The town should not impact on the Director's resources to the potential detriment of other areas of the park.
- The interests of other stakeholders in the town, such as residents and local businesses, and regional interests need to be considered. See also Section 9.7 (Neighbours, stakeholders and partnerships)

Note: The Policies and Actions in this Section of the plan need to be read in conjunction with the Policies and Actions in Section 10.3 (Living in the park) relating to Jabiru.

Policies

- 8.2.1 The Board and Director recognise the Mirrar people are the traditional Aboriginal owners of the land in and around Jabiru.
- 8.2.2 The Director will work with other parties to the Jabiru native title claim settlement to finalise the settlement as soon as possible.
- 8.2.3 Long-term tenure arrangements for the town should be put in place, if possible, before the lease from the Director to the Jabiru Town Development Authority expires on 30 June 2021.
- 8.2.4 The terms and conditions of any new lease or leases relating to the town must be consistent with the park's values and minimising impacts on the environment, and include relevant obligations on the leaseholder(s).
- 8.2.5 A new town plan should be prepared to come into effect when the current town plan expires on 1 April 2019. The new town plan should include provisions to:
- (a) simplify development and approval processes, including allowing appropriate minor land use and development proposals to proceed without the need for development consent
 - (b) ensure that potential impacts on the values of Kakadu and the environment around the town are considered in development consent applications and appropriate conditions are included where necessary to ensure impacts are minimised.
- 8.2.6 Subject to any changes implemented during the life of this plan:
- (a) Jabiru may continue to be developed in accordance with this plan and the 1981 town plan
 - (b) the terms and conditions of the town lease will be maintained
 - (c) the location and purposes of zones in the town will be as specified in the existing town plan.
- 8.2.7 The Director may, with the approval of the Board, agree new tenure arrangements for the town, and approve a new town Planning Scheme prepared by the Northern Territory Government.

- 8.2.8 Before making any decisions under Section 8.2.7 the Director will:
- (a) consult and, if possible, reach agreement with the Mirarr people
 - (b) consult with and have regard to the views of other relevant Bininj/Mungguy and the NLC
 - (c) consult with the JTDA and the West Arnhem Regional Council (or their successors)
 - (d) refer the proposal to the Board for consideration and advice
- and will only approve or proceed with a proposed action if it will provide more benefits than costs to the natural and cultural environment of the park, to Bininj/Mungguy, and to the appropriate use, appreciation and enjoyment of the park by the public.
- 8.2.9 The Director may, with the approval of the Board, issue permits and licences authorising recreational activities by Jabiru residents in areas adjoining the town.
- 8.2.10 In making decisions about liquor permits the Director will consult and have regard to the views of Bininj/Mungguy, the NLC, local Aboriginal associations and the body known as the Gunbang Action Group (or its successor).
- 8.2.11 The Director may take actions covered by ss.354 and 354A of the EPBC Act in Jabiru where they are necessary for preserving or protecting the park (or part of the park) and its values, or protecting or conserving biodiversity or heritage, protecting persons or property, or addressing non-compliance with the town lease(s).

Actions

- 8.2.12 Take all reasonable steps to support and finalise the Jabiru native title settlement.
- 8.2.13 Engage in initiatives aimed at developing beneficial outcomes for Aboriginal people, lifestyles, economic aspirations and traditions and minimising the adverse social impacts of Jabiru.
- 8.2.14 Delegate appropriate functions and powers of the Director under the EPBC Regulations to the West Arnhem Regional Council (or any successor to the functions of the council).
- 8.2.15 Provide information to Jabiru residents to encourage them not to introduce animals to the park, not to introduce weeds or allow them to spread, and to plant and cultivate only local native plant species.
- 8.2.16 Prohibit activities, or classes of activities, relating to native and non-native species pursuant to r.12.23A where it is necessary to protect the safety of persons or property or the environment.
- 8.2.17 Take all reasonable steps to:
- (a) have environment protection and waste management measures undertaken in Jabiru to a high standard
 - (b) have an environmental management plan for Jabiru developed, implemented and regularly reviewed
 - (c) ensure regular environmental monitoring of Jabiru and its immediate surroundings
 - (d) have sewage and waste management in Jabiru reviewed, and necessary changes implemented as soon as possible
 - (e) ensure weed and feral animal management in the sewage irrigation area and waste dumps is properly addressed.

- 8.2.18 Take actions to control other feral animals, such as wild dog and dingo cross-breeds, cats, and buffaloes in the town, if not effectively controlled by Northern Territory Government agencies.
- 8.2.19 Maintain and regularly review lists of plants:
- (a) under r.12.20 that may be taken into and kept in Jabiru
 - (b) under r.12.21 that may be cultivated or propagated in Jabiru.
- These lists may form part of lists kept in accordance with Section 5.3.7.
- 8.2.20 Seek, as far as practicable, to have the actions in Section 5.3 of this plan relating to weeds implemented in and in relation to Jabiru.

9 Administration and business management

This section sets out the policies for administering Kakadu, including any *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provisions which directly relate to the Director of National Parks (the Director), and the actions the Director will take over the life of the plan.

9.1 Safety and incident management

Background

Bininj/Mungguy feel a sense of responsibility for all people visiting their country, and feel distressed if a visitor is injured or dies.

The Director has a duty to take reasonable care for the safety of park visitors under both the common law and the *Work Health and Safety Act 2011*, and this is an important consideration in managing the park.

A range of measures are adopted in the park to reduce risks to visitors, including:

- maintaining roads, tracks and visitor facilities in a safe condition
- providing educational materials for visitors on safety risks and safe behaviour
- controlling feral animals in the vicinity of roads and visitor sites
- managing estuarine crocodiles in accordance with the park's crocodile management strategy
- planning and implementing fire management programmes to ensure protection of life, property and park assets
- closure of sites which are considered to pose an unacceptable risk to human safety (e.g. under extreme weather conditions)
- providing an emergency communication network in remote areas of the park
- incident response in conjunction with the police and other emergency services.

All visitor safety incidents are reported, recorded and reviewed regularly. Using this information, the Director has compiled a Risk Watch List for the park that identifies and rates a range of risks, including risks to visitor safety. The Risk Watch List also specifies risk management measures that are carried out as required. The list is reviewed and updated regularly.

Both estuarine and fresh water crocodiles inhabit Kakadu National Park, and incidents resulting from human–crocodile interactions can occur. In such cases the risk of major injury or death is high. Crocodile hunting ceased in the 1970s and the population has been steadily increasing since then towards a normal carrying capacity for the area. Crocodiles are now moving back into waters they once inhabited prior to hunting. Since the late 1990s, crocodiles have been located in plunge pools at the base of the Arnhem Land escarpment each wet season.

Due to the potential interaction of visitors with crocodiles, the risks of swimming in the park are actively communicated through prominent signs near water bodies and warnings in information provided to park visitors. Visitors are encouraged to use the public swimming pool at Jabiru or pools provided at hotels and other commercial accommodation. A crocodile management strategy for the park was developed in 2004 and will be reviewed early in the life of this plan.

While the Director makes every effort to ensure visitor safety, there are occasions when incidents occur in the park that affect life, property and the environment. These include car accidents, slips, falls and injuries in remote areas that require search and rescue operations, bushfires, extreme weather events (flooding and cyclones) and chemical spills.

As noted elsewhere in this plan, the Director has the function under the EPBC Act of administering, managing and controlling the park. This gives the Director responsibility in relation to incidents in the park.

The Northern Territory Fire and Rescue Service (NT FRS) has the role under the *Fire and Emergency Act* (NT) of responding to fires and emergencies in an 'emergency response area'. At the time of preparing this plan an emergency response area is established for the Jabiru township. The NT FRS may also contribute to extinguishing or controlling fires or dealing with emergencies in other areas of the park if requested by the Director or the police. Jabiru members of the NT FRS respond to hazardous materials spills and road accident rescues along the Arnhem Highway and Kakadu Highway. In relation to bushfires, the *Bushfires Act* (NT) is also relevant.

Northern Territory Police is the lead agency for search and rescue operations and when a fatality occurs. Under an intergovernmental agreement, in complex rescues the police officer in charge controls the incident in liaison with representatives from each agency involved, including Parks Australia, fire and rescue and emergency services. The police officer in charge has powers to draw on available resources, wherever they are and whoever controls them. The local police also chair the Local Counter Disaster Planning Committee under the *Disasters Act* (NT), of which Parks Australia is a member, and is responsible for the overall control of counter disaster operations affecting the district in accordance with the local counter disaster plan.

When incidents occur in the park anywhere other than in or near Jabiru, park staff often reach the site before other emergency response agencies. Park staff are also often more familiar with remote areas of the park and may have more experience in responding to some types of incidents. As a consequence, park staff often have an important incident management role and may provide considerable operational support to the lead agency. To help manage incidents, a park emergency contingency plan and incident management procedures have been developed.

Management issues

- Bininj/Mungguy feel considerable responsibility for the welfare of visitors and this features significantly in their responsibilities for looking after country. Cultural considerations are also a significant factor in making decisions about swimming in the park and access in remote areas in the park.
- A number of the activities popular in the park involve a level of risk to visitors. Although the park makes information available, some visitors still appear unaware of or indifferent to potential risks.
- Kakadu is subject to extremes in weather. Visitors need to keep themselves hydrated particularly in August to October each year and be aware of the risks that storms and floods can bring during the monsoon season.
- The potential for interaction between visitors and residents and crocodiles is increasing as the crocodile population expands, and park visitors continually need to be reminded of the associated risks.
- Cahill's Crossing on the East Alligator River is extremely hazardous: there is a risk of being washed off the causeway at certain times and/or of crocodile attack.

- Responding to incidents can be costly. While the Director has not sought reimbursement or contributions towards costs from persons involved in incidents prior to the implementation of this plan (e.g. for search and rescue operations), this may be considered during the life of the plan.
- In a remote national park covering a large geographic area, response times to incidents can be lengthy due to difficult terrain, communications and mobilisation of experienced and equipped staff. Mobile phone coverage in the park is limited and needs to be improved.
- Visitors are provided with a range of information on appropriate behaviour; however, some visitors inadvertently breach regulations through lack of awareness. Ongoing compliance needs to be supported by a range of communication tools and an improved understanding of the common risks.
- Feral animals can pose a risk to residents and visitors (see Section 5.3: Managing park-wide threats affecting park values).
- Given the location and size of the park and the high number of migratory species and park visitors, there is a need to be able to respond to potential large-scale incidents such as infectious diseases that may be transmitted by humans, wildlife or feral animal populations, for example bird flu. In these instances, park staff would cooperate with relevant Northern Territory and Australian Government agencies and follow agreed protocols. (See Section 5.3: Managing park-wide threats affecting park values).

Policies

- 9.1.1 The Director will comply with all relevant workplace health and safety legislation, including ensuring all staff are trained to deal with incident response.
- 9.1.2 The Director will continue to participate in the Local Counter Disaster Planning Committee and liaise with the Northern Territory Police, Northern Territory Fire and Rescue Service, and other relevant agencies and stakeholders about incident response procedures, including responsibilities, personnel, training and resources.
- 9.1.3 Access to sites subject to seasonal closure within the park will be assessed and considered safe before being opened to visitors and residents.
- 9.1.4 Crocodiles will be managed in accordance with the crocodile management strategy for the park to minimise the risks of crocodiles to people while ensuring protection of the natural abundance of crocodile populations through the following measures:
- (a) educating and warning visitors, residents and tour operators about crocodiles and associated risks
 - (b) maintaining data on crocodile numbers, size and behaviour, particularly in waterways frequented by park residents and visitors
 - (c) assessing risks posed by crocodiles to people at public sites
 - (d) implementing procedures to detect and remove estuarine crocodiles from any location where swimming is to be allowed
 - (e) managing individual crocodiles in these and other locations that present a serious threat to human life
 - (f) closing water bodies temporarily, seasonally or permanently if crocodiles present a serious threat to human life
 - (g) ensuring that all staff involved in crocodile management are appropriately trained and experienced to carry out crocodile management activities
 - (h) working with the Northern Territory Government conservation and land management agencies on interagency collaboration on crocodile management.

- 9.1.5 The Director will take all practicable steps to ensure appropriate park-wide communication is available for operational and emergency use, including key visitor sites have an operational emergency communication device.
- 9.1.6 Visitor safety will be a primary consideration in decisions about site access and in park interpretation material and visitor information.
- 9.1.7 Subject to legal requirements, the Director may seek reimbursement or contributions for the cost of responding to incidents, in particular search and rescue operations, in accordance with guidelines approved by the Kakadu National Park Board of Management.

Actions

- 9.1.8 Regularly review and update the Risk Watch List or similar risk monitoring and management systems, and prepare risk assessments of visitor sites and facilities, in addition to specific monitoring triggered by incident reports.
- (a) Based on the Risk Watch List and risk assessments, implement management measures to remove or minimise visitor risk.
 - (b) Priority risks will include water crossings and priority sites will include Cahill's Crossing and the Magela Creek crossing.
- 9.1.9 Continue to review, update, implement and communicate information about park incident management procedures, addressing in particular:
- (a) the roles and responsibilities of the Director and emergency response agencies
 - (b) procedures for managing common and potential incidents that may affect life, property and the environment, including hazardous spills
 - (c) legislative, training, reporting, record-keeping, debriefing and counselling requirements.
- 9.1.10 Continue to assess and communicate to visitors and park residents the risks associated with bushwalking, fishing, swimming and boating in the park, and camping both on land and on boats.
- 9.1.11 Provide appropriate safety information to visitors, such as keeping hydrated, staying on track, walking in the company of others, wearing appropriate clothing, applying sun screen, taking care when crossing waterways in vehicles and being crocodile aware around waterways.
- 9.1.12 Continue to implement the crocodile management strategy for the park, and review and update it early in the life of this plan.
- 9.1.13 Work with government and non-government agencies and other stakeholders to improve mobile phone coverage in the park.

9.2 Compliance and enforcement

Background

Encouraging compliance with relevant legislation is an important strategy for the protection of park values, park infrastructure, people's safety and the interests of Bininj/Mungguy. In particular, the Director is required to comply with provisions of the EPBC Act, this plan, other relevant legislation and government policies, and the leases of Aboriginal land in the park. In 2003, the Director endorsed the Parks Australia Compliance and Enforcement Manual, which sets out the broad guidelines and procedures for managing compliance issues in Commonwealth reserves. In 2012 the compliance and enforcement strategy (2012–15) for the park was developed and it is being implemented.

A well-developed education and risk-based enforcement programme tailored to people who use the park is critical for effective management. Compliance with this plan will be promoted by increasing users' understanding of the conservation values of the park and the objectives of this plan. Effective enforcement is supported through risk-based planning, incorporating targeted monitoring and surveillance, and the collection of intelligence from other sources. In this regard, strong links with Commonwealth and state enforcement agencies to share information and cooperate in joint enforcement activities are important.

The EPBC Act sets out civil and criminal penalties for breaches, and the EPBC Regulations set out criminal penalties. Administrative remedies, such as the issuing of infringement notices, may also be used in appropriate circumstances. Part 17 of the EPBC Regulations provides for permits to be issued, subject to conditions, for activities that are otherwise prohibited.

Staff may be appointed by the Minister under the EPBC Act as rangers or wardens, and exercise the powers and functions conferred on them by the Act and the Regulations. In addition, all members and special members of the Australian Federal Police are *ex officio* wardens, and officers or employees of other Australian, state or territory government agencies may be appointed by the Minister as rangers or wardens. The Australian Government requires that investigating officers be trained to standards prescribed in the Commonwealth Fraud Control Guidelines. Rangers and wardens conduct monitoring and enforcement operations while on routine patrols and during specific, targeted programmes. Park staff not appointed as wardens and rangers cannot exercise these powers but can encourage compliance with legislation through education to raise public awareness of appropriate behaviour.

Northern Territory laws apply in the park to the extent that they can operate concurrently with the EPBC Act and Regulations and this plan.

Management issues

- Effective compliance and enforcement requires appropriate resources and a strategic approach based on risk management principles.
- Exercise of enforcement powers by park staff must comply with Australian Government policies, standards and guidelines.
- Establishing and maintaining working relationships with other relevant compliance agencies can improve management of compliance issues that are of shared concern.

Policies

- 9.2.1 Park compliance and enforcement strategies will be based on the Parks Australia Compliance and Enforcement Manual, other Parks Australia policies, Australian Government standards, legal requirements, risk management principles, and Board priorities.

Actions

- 9.2.2 Continue to implement, review and update the compliance and enforcement strategy for the park and procedures to promote and encourage the protection of park values using complementary approaches, including:
- (a) informed self-regulation through education and communication programmes
 - (b) assisted self-regulation, such as through verbal and written advice and warnings
 - (c) application of administrative powers, such as issuing infringement notices and suspending permits
 - (d) civil and criminal court proceedings.
- 9.2.3 Liaise and, where appropriate, collaborate with other relevant agencies involved in compliance and enforcement. This may include entering into agreements and making arrangements for wardens to be appointed as law enforcement officers under relevant Northern Territory legislation and for Northern Territory Government officers to be appointed as wardens or rangers under the EPBC Act.
- 9.2.4 Monitor the effectiveness of the EPBC Act and Regulations in relation to the park and recommend amendments to the Minister if required.
- 9.2.5 Provide ongoing compliance and law enforcement skills development and assessment for staff appointed, or likely to be appointed, as rangers and wardens. Provide training on the basics of park compliance and enforcement for new staff and relevant stakeholders.

9.3 Authorising and managing activities

Background

The values of Kakadu attract a wide range of researchers, visitors and commercial operators interested in learning about and experiencing Kakadu's unique landscape and habitats. To ensure the park values are protected, the EPBC Act and this plan require that a range of recreational, commercial, research and day-to-day activities can only be undertaken in the park if authorised in accordance with this plan. Authorisation may be given in a number of ways: permits under Part 17 of the EPBC Regulations; approvals issued by the Director of National Parks; activity licence agreements; licences to occupy and use land; and leases (of non-Aboriginal land not under claim) or subleases (of Aboriginal land).

Following a review of commercial tourism in Commonwealth reserves, Parks Australia developed and implemented the Parks Australia Commercial Tourism Licence Policy for certain types of tourism operations in place of permits. At the time of preparing this plan 32 commercial activity licences were in place. Licences, which run for a minimum of five years (but can be longer depending on the circumstances), provide greater security for operators and increase revenue to support park management while ensuring park values remain protected.

Section 10 (Managing use of Kakadu National Park) sets out the overarching policies for activities covered by the EPBC Act and Regulations, including whether the activity can be carried on and the form of any required authorisation. Management of authorisations is a key function of park staff.

Management issues

- Continued improvement in administrative processes for issuing and managing authorisations can reduce the burden on users and the administrative costs. For example, some application processes for permits and commercial activity licences are manual and would be improved by the development of suitable online systems.
- Adequate resources are required to effectively monitor and manage authorisations.

Policies

- 9.3.1 Commercial activity licences, occupation licences, subleases and leases will be offered and used in accordance with the Parks Australia Commercial Tourism Licence Policy and Commercial Leasing Policy to authorise tourism activities that are exclusive or require restricted access or significant capital investment in infrastructure. Subleases and leases will be offered for periods necessary to provide security of tenure to attract and support the level of investment required for tourism activities and developments.
- 9.3.2 A panel that includes independent and tourism industry members will be used to assess applications for activity licences, occupation licences, subleases and leases and make recommendations on whether to issue a licence.
- 9.3.3 Fees for authorisations will be reviewed as required in accordance with Section 9.8 (Revenue and business development).

Actions

- 9.3.4 Review and, where possible, improve systems for the processing, administration and management of permits, licences and leases/subleases. This may include investigating the feasibility of developing an online system for self-generating permits and bookings for bushwalking, camping and special-access sites.
- 9.3.5 Continue to provide up-to-date information on the Department of the Environment's website on permits and licences, the application and assessment processes, and relevant standard conditions.
- 9.3.6 Review the standard conditions for non-commercial permits at least every two years.
- 9.3.7 Develop a range of ecologically sensitive practices to be included in authorisation conditions to assist in the appreciation and protection of park values.
- 9.3.8 Consistent with the compliance and enforcement strategy for the park, ensure that permit holders fulfil all permit conditions, including provision of data and reports for research permits.
- 9.3.9 Review standard conditions for commercial tour permits annually and in consultation with the Kakadu Tourism Consultative Committee.
- 9.3.10 Review, as required, the number of commercial permits and activity licences available to be issued to ensure visitation levels for specific visitor activities and/or sites are sustainable.

9.4 Capital works and infrastructure

Background

Capital and infrastructure within the park includes management facilities (such as access roads and tracks, staff housing, bores, radio repeaters, district ranger stations, workshops and park headquarters) and visitor facilities (such as roads, walking tracks, campgrounds, signs, boat ramps, day use areas and visitor centres). Most of the capital works and infrastructure developments during the life of the fifth plan were associated with upgrading, maintaining or replacing these facilities. Asbestos removal was undertaken on a large number of park buildings and other infrastructure in 2013.

Infrastructure is also established and maintained by government agencies, Aboriginal associations, and businesses in Jabiru. Section 10.11 (Infrastructure and works), sets out how activities of these users will be managed.

The Northern Territory Government has responsibility for the care, control and management of the arterial road network in the park, being the Arnhem Highway, the Kakadu Highway, the Old Jim Jim Road and the Oenpelli Road, as well as the Coinda Road and Gimbat Road up to the Koolpin Gate. The Director has responsibility for the care, control and management of other roads and tracks as necessary for visitor access and park management purposes. Aboriginal organisations are responsible for the maintenance of outstation roads and tracks, and lessees of areas within the park are responsible for maintaining roads and tracks in lease areas.

At the time of preparing this plan, a road management strategy for the construction and maintenance of roads and tracks in the park was under development by Parks Australia.

To maintain gravel roads and tracks, the Director has regularly extracted sand and gravel from gravel pits within the park. This reduces the risk of introducing weeds, pests and pathogens and is less costly than importing sand and gravel. Sterile crushed rock from quarries outside the park has been used for road works when required.

Prior to the establishment of the park, airstrips were constructed for a variety of purposes at a number of locations that are now part of the park. They supported pastoral activities, mining activities, tourism and research and provided transport for residents in the wet season. The main airstrips are located at Jabiru and Coinda, which are not part of the park. A number of decommissioned airstrips are maintained to enable helicopter access for emergency and management purposes. Others have been closed and the land rehabilitated.

Management issues

- Infrastructure in the park needs to be established and maintained in accordance with Australian Standards and with minimum levels of impact on park values.
- Maintenance programmes and schedules for infrastructure and capital works need to be developed, costed and implemented across the park in a timely and cost-effective manner.
- Park staff housing is expensive to maintain and depreciation of these assets forms a significant expense in the budget.
- There is a serious shortage of gravel in some areas of the park.
- Energy efficiency and reducing the carbon footprint of management operations should be a consideration in new capital works and infrastructure (see Section 9.6: Resource use in park operations).

Policies

- 9.4.1 The Director may carry on an excavation, erect a building or other structure, or carry out works in the park.
- 9.4.2 Sand, gravel and other earth materials may be extracted for park management purposes in accordance with guidelines for the operation of gravel pits, to ensure minimal impact to park values and the rehabilitation of affected areas.
- 9.4.3 The Director may bring inert treated crushed rock into the park for the purpose of road works.
- 9.4.4 New capital works and infrastructure and upgrades to existing infrastructure, will:
- (a) as far as practicable incorporate cost-effective environmental design, including efficient resource use and low-maintenance designs and materials
 - (b) comply with all relevant laws, standards, and codes of practice and be consistent with other park policies and strategies
 - (c) as far as practicable provide access for all members of the public, including the physically impaired.
- 9.4.5 Timber, including preservative-treated pine, may be brought into the park and used for park management construction purposes, subject to assessment in accordance with Section 9.5 (Assessment of proposals).
- 9.4.6 The Director may maintain landing areas, including helipads and airstrips, for management or emergency purposes or for other purposes as approved by the Board.
- 9.4.7 Where practicable the Director will offer road maintenance and other construction and maintenance contracts to local Aboriginal organisations in the first instance (consistent with lease agreements and procurement requirements of the Australian Government and the Director) (see also Section 4.3: Bininj/Mungguy training and other opportunities).
- 9.4.8 When and if required, the Director may commission the development of new bore sites to address water quality issues.

Actions

- 9.4.9 Coordinate road infrastructure management and maintenance with the Northern Territory Government to ensure timely and safe access to and within the park.
- 9.4.10 Maintain roads and tracks that are not the responsibility of the Northern Territory Government or Aboriginal organisations to a standard that provides for safe use by residents and visitors and for management purposes.
- 9.4.11 Develop a Memorandum of Understanding (MoU) with the Northern Territory Government regarding the management of roads in the park and work with them to develop and implement a road management strategy for the park.
- 9.4.12 Work with the commercial tourism industry to ensure infrastructure developments support commercial tourism activities.
- 9.4.13 Develop and implement a capital works and infrastructure management and maintenance system. The system will aim to extend the cost-effective life of assets, improve and maintain asset performance, and maintain infrastructure assets to a reasonable and safe standard.

9.5 Assessment of proposals

Background

Many activities proposed to be undertaken in the park by the Director, Bininj/Mungguy and external stakeholders such as the tourism industry and business people need to have their potential impacts assessed before a decision can be made on whether the activity should go ahead. Impacts that need to be considered include impacts on the park's values and on Bininj/Mungguy.

Some activities proposed to be undertaken in the park may be 'controlled actions' (see Appendix G: Legislative context) and require assessment and approval by the Minister under the EPBC Act because they are likely to have a significant impact on a matter of national environmental significance (such as the World Heritage or Ramsar wetland values of the park) or the environment generally.

The EPBC Act defines the 'environment' as including:

- (a) ecosystems and their constituent parts, including people and communities
- (b) natural and physical resources
- (c) the qualities and characteristics of locations, places and areas
- (d) heritage values of places
- (e) the social, economic and cultural aspects of a thing mentioned in paragraph (a), (b) or (c).

Proposed actions that do not trigger the assessment and approval provisions of the EPBC Act may still have impacts that require assessment before a decision can be made on whether the action should go ahead. Environmental Impact Assessment Guidelines were developed in 2008 for proponents to outline the environmental impact assessment process in the park. Proposed actions of a routine nature that are authorised by or under prescriptions (i.e. policies and actions) in this plan generally do not require impact assessment.

The Director and the Board make decisions on whether proposals should be approved using the environmental impact assessment process for the park. Decisions regarding proposals and activities in the park are also subject to the process outlined in Section 4.1 (Making decisions and working together (Board of Management)).

Policies

- 9.5.1 The potential impacts of all proposed actions under this plan will be considered, and where necessary assessed, in accordance with Table 4 (Impact assessment process), the assessment matters and considerations outlined in Table 5 (Environmental impact assessment matters and considerations), and the following policies. Where a proposed action requires approval or advice from the Board of Management, the Board will be advised of the outcome of that consideration and any assessment.
- 9.5.2 Proposed actions that are considered likely to have more than a negligible impact but are not controlled actions under the EPBC Act will be assessed in accordance with the impact assessment procedures for the park.

- 9.5.3 Assessment of proposed activities that are not controlled actions may be carried out by Parks Australia, proponents of the proposed activity, or independent experts, depending on the nature of the activity, with the appropriate assessment being determined by Parks Australia.
- 9.5.4 Subject to the EPBC Act, the Director will recover from proponents the costs associated with administering, assessing and managing proposals.
- 9.5.5 Depending on the nature of the application, the Director may request that a proponent seek an independent Environmental Impact Assessment at their own cost.

Action

- 9.5.6 As a matter of priority, review the Environmental Impact Assessment guidelines for assessment of proposals to ensure adequate protection of the park's values. A review of the guidelines will include consideration of the need to seek public comment on certain classes of proposals, such as those which have more than a negligible impact to park values and are likely to be of public interest.

Table 4: Impact assessment process

Category	Example	Impact assessment requirements
<p>Category 1 Actions considered likely to have no impact, or no more than a negligible impact, on the park's environment and natural and cultural values, and on Bininj/Mungguy</p>	<ul style="list-style-type: none"> • Minor capital works e.g. maintenance, replacement, repairing or improving existing infrastructure in its present form • Regular/routine ongoing operations to implement prescriptions in this plan e.g. patrols, weed control, fire management • Seasonal opening/closing of visitor areas • Issuing permits for regular activities in accordance with this plan, e.g. land-based tours, camping, research 	<ul style="list-style-type: none"> • Preliminary assessment only required • Use minimal impact work practices when implementing actions
<p>Category 2 Actions considered likely to have more than a negligible impact, but not a significant impact, on the park's environment and natural and cultural values, and on Bininj/Mungguy</p>	<ul style="list-style-type: none"> • Moderate capital works, e.g. new infrastructure or moderate expansion/upgrade of existing infrastructure • Rehabilitation of heavily eroded sites • Developments for approved existing tourism activities that do not require major works, e.g. small safari camps • Minor new operations or developments to implement prescriptions in this plan 	<ul style="list-style-type: none"> • Assessment by park staff, proponent or independent expert • Assessment in accordance with procedures outlined in Table 5 and approved by Director and Board • An Authority Certificate from the AAPA under the NTASS Act is required where the action has potential impact upon a sacred site.
<p>Category 3 Actions considered likely to have a significant impact on the park's environment and natural and cultural values, and on Bininj/Mungguy</p>	<ul style="list-style-type: none"> • Major capital works, e.g. new major infrastructure or major expansion/upgrade of existing infrastructure • Major new operations or developments to implement prescriptions in this plan • Major/long-term changes to existing visitor access arrangements • Large-scale mine rehabilitation • Expansion of the Jabiru township • New types of commercial activities • New or major expansion of Bininj/Mungguy living areas 	<ul style="list-style-type: none"> • Director will consider whether action should be referred for consideration as a 'controlled action' under the EPBC Act • If action is referred and Minister decides it is a controlled action, no assessment is required by Park staff • If action is not referred, or it is referred and the Minister decides it is not a controlled action, assessment as for Category 2 • An Authority Certificate from the AAPA under the NTASS Act is required where the action has potential impact upon a sacred site.

Table 5: Environmental impact assessment matters and considerations

Matters for assessment	Considerations include but are not limited to
1. Environmental context	
(a) What are the components or features of the environment in the area where the action will take place?	<ul style="list-style-type: none"> • Species and ecological communities in the park-wide and regional context • Matters of national environmental significance • Cultural features • Heritage features • Socio-economic values including Bininj/Mungguy uses and interests • Tourism and recreational values • Aesthetic/landscape values • Scientific reference areas
(b) Which components or features of the environment are likely to be impacted?	<ul style="list-style-type: none"> • Short- and long-term impacts on and off site
(c) Is the environment which is likely to be impacted, or elements of it, sensitive or vulnerable to impacts?	<ul style="list-style-type: none"> • Species and ecological communities, • Matters of national environmental significance • Cultural values (including sacred sites) • Heritage values • Tourism and visitor experience • Bininj/Mungguy interests, in particular relevant lease conditions • Cumulative impacts from a range of activities across the park on the environment or its elements • Uniqueness of elements within the park-wide and regional context
(d) What is the history, current use and condition of the environment which is likely to be impacted?	<ul style="list-style-type: none"> • Comparison with condition of similar sites elsewhere in the park

Matters for assessment	Considerations include but are not limited to
2. Potential impacts	
<p>(a) What are the components of the action?</p> <p>(b) What are the predicted adverse impacts associated with the action, including indirect consequences?</p> <p>(c) How severe are the potential impacts?</p> <p>(d) What is the extent of uncertainty about potential impacts?</p>	<ul style="list-style-type: none"> • Include associated infrastructure and stages • Include indirect and off-site impacts • Consider scale, intensity, timing, duration and frequency
3. Impact avoidance and mitigation	
<p>(a) Will any measures to avoid or mitigate impacts ensure, with a high degree of certainty, that impacts are not significant?</p> <p>(b) What certainty is there that avoidance mitigation measures will be implemented and sustained?</p>	<ul style="list-style-type: none"> • Include whether there are any alternative sites for proposal
4. Significance of impacts	
<p>(a) Considering all the matters above, is the action likely to have a significant impact on the environment?</p>	<ul style="list-style-type: none"> • If yes, the Director will consider whether action should be referred for Ministerial consideration under the EPBC Act

Note: this is a guide only, and is subject to change – the detailed environmental impact assessment process is included in the park Environmental Impact Assessment Guidelines.

9.6 Resource use in park operations

Background

The Director supports environmental best practice principles in regard to the use of resources and management of waste products in the park. These principles are applied in matters such as the use of solar power for hot water heating in park houses and powering of bores, and building designs that minimise energy use for cooling. Environmental best practice principles are consistent with the need for conserving the park's natural and cultural values and Kakadu's status as a World Heritage area, and minimising the potential impacts associated with waste management practices.

An energy audit completed in 2009 (McMahon 2009) examined the park's energy consumption and identified opportunities for more efficient use of energy in park operations. A number of other strategies are being undertaken to help ensure visitor and other human impacts and uses of the park are sustainable (see Section 5.3: Managing park-wide threats affecting park values). Visitors, tour operators and commercial accommodation providers also need to be encouraged to use resources such as water and power more efficiently and to reduce waste.

Parks Australia is committed to reducing the carbon footprint of park operations and is working with research partners to improve understanding of the carbon cycle and how much carbon is stored and released due to different management actions. This information will be used to refine all park management policies and practices to minimise the carbon footprint of the park (see Section 5.3: Managing park-wide threats affecting park values).

Having people camp, stay and live in the park requires the provision of a range of basic services, including sustainable potable water supplies. Parks Australia undertakes regular water quality monitoring at ranger stations and camping areas. In addition, the West Arnhem Regional Council monitors groundwater quality and consumption within Jabiru (see Section 8.2: Jabiru).

Management issues

- Within the park and the Kakadu region there is potential to improve waste management practices and the environmentally responsible use of resources.
- Some groundwater resources are unsuitable or of limited use for people due to naturally occurring contaminants including uranium, arsenic, radon and high salt levels. The availability of suitable potable water supplies is an issue at some ranger stations and campgrounds. Groundwater could become contaminated over time due to leaching from rubbish dumps and from pit, composting and septic toilets if these are not properly managed. Groundwater can be depleted through heavy use, causing localised impacts on wildlife populations.

Policies

- 9.6.1 Recycled and renewable resources and technologies will be used within the park where practicable to reduce the environmental impact of park operations.
- 9.6.2 Where possible, renewable energy will be used in supporting park infrastructure.

Actions

- 9.6.3 Undertake a review of the environmental performance of park operations, taking into account the energy audit of park operations undertaken in 2009. Based on the findings of the review, develop and implement an environmental management plan for the park.
- 9.6.4 Continue to implement, review and update the integrated waste management strategy for the park.
- 9.6.5 Comply with relevant government policy and legislation, including toxic and hazardous waste disposal requirements.
- 9.6.6 Encourage commercial tourism operators and accommodation providers to use recycled and renewable resources.
- 9.6.7 Continue to monitor the quality and quantity of groundwater and surface water used for human consumption in the park.

9.7 Neighbours, stakeholders and partnerships

Background

Kakadu plays an important role in the broader region and there are many people who have an interest in its management. It is important to have good working relations with these people and organisations for the effective management of the park, and to assist in ensuring stakeholders and the broader community understand and protect the park values. In short, while management plans recognise boundaries (natural and manmade) most of the species that live in Kakadu and the issues that threaten the species and/or values do not recognise boundaries. Effective management therefore needs to occur across boundaries with neighbours and in conjunction with other land managers.

Strong partnerships and effective relationships with stakeholders and neighbours significantly contribute to improved knowledge and understanding of park values, use and management. The Board of Management includes representatives from the Northern Territory Government and the tourism industry and research sectors. Board advisory committees such as the Kakadu Research and Management Advisory Committee and the Kakadu Tourism Consultative Committee also provide essential contributions to park management (see Section 4.1: Making decisions and working together (Board of Management)).

Stakeholders

Regional stakeholders include (but are not limited to) the relevant Aboriginal associations and regional communities; non-government organisations; Australian, Northern Territory and local government departments and agencies, including the Jabiru Town Development Authority; community groups and organisations; recreational users and the tourism industry; and local leaseholders. The Director liaises and works with these stakeholders on issues of common interest. Examples are park membership of the West Arnhem Bushfire Committee, the Northern Territory Weed Advisory Committee, Australia's Timeless North Steering Committee, the Jawoyn Land Management Advisory Committee, and Tourism Top End; and working with Northern Territory Government emergency services in relation to incident management operations such as search and rescue.

Neighbours

Parks Australia works closely with park neighbours, including Energy Resources Australia, Warddeken Indigenous Protected Area, Nitmiluk National Park, Mt Bundy Military Reserve and pastoral properties to manage a range of common issues including weed, feral animal and fire management. Parks Australia also collaborates with neighbours on incident management and joint training. The Kakadu Board of Management has a representative on the Nitmiluk National Park Board of Management.

Partnerships

Parks Australia has cooperative relationships with a range of agencies based outside the Kakadu region including non-government organisations such as universities and other research organisations. Many of these agencies have interests in and/or skills and knowledge that can contribute to the management of the park. As a consequence, these partners play an essential role in the effective management of the park. At the time of preparing the plan, partnerships included the National Environmental Research Programme, Conservation Volunteers Australia, the Institute of Professional Practice in Heritage at the Australian National University, Charles Darwin University, the Supervising Scientist and the Commonwealth Scientific and Industrial Research Organisation (CSIRO) Climate Adaptation Flagship.

Management issues

- Maintaining good relationships and networks is essential to effective park management
- Particular attention needs to be paid to working with neighbours on all park boundaries in the management of fire, feral animals and weeds.
- Mining operations at the Ranger uranium mine may conclude during the life of this plan with processing operations currently scheduled to continue until 2021, and rehabilitation to be completed by 2026. While closure of the mine is not expected to directly impact park operations, there will be a potential reduction in size of Jabiru and potentially significant impacts on services and support available in the town. The lease area may be incorporated back into the park at some point after the closure. Prior to incorporating the mine area into the park a number of issues need to be resolved and agreed regarding ongoing management responsibilities.

Policies

- 9.7.1 The Director will further develop and maintain good working relationships with park stakeholders, neighbours and other organisations and individuals who have an interest in the park.
- 9.7.2 To help facilitate participation of appropriate stakeholders in park management, the Board may:
- (a) seek representation on relevant advisory, project and steering committees (see Section 4.1: Making decisions and working together (Board of Management))
 - (b) establish additional advisory, management and consultative committees
 - (c) contribute to regional programmes and assist neighbours and stakeholders in a manner consistent with this plan.
- 9.7.3 Consistent with Section 4.1.4, the Director will, as far as practicable, consult with stakeholders where their interests are likely to be significantly affected by the development of strategies, guiding documents and determinations/decisions made by the Board and/or the Director.
- 9.7.4 The Director will work with relevant agencies and stakeholders to minimise potential adverse impacts on the park arising from the reduction or cessation of mining operations in the neighbouring Ranger project area.

Actions

- 9.7.5 Develop, implement, review and update a park communications strategy that identifies stakeholders and how the park does and can interact with them to ensure park-related information is communicated in an effective and integrated manner.
- 9.7.6 Work with stakeholders and neighbours to promote a regional and partnership approach to issues affecting the management of the park and the Kakadu region, particularly in relation to weeds and fire management operations.
- 9.7.7 In conjunction with Airservices Australia and local flight operators, promote the Fly Neighbourly Agreement among providers of air transport services and review regularly as required. (See also Section 10.4: Access)
- 9.7.8 Foster and encourage relationships with volunteer organisations, groups and individuals that participate in and support park activities.

9.8 Revenue and business development

Background

The sources of revenue of the Director of National Parks, in addition to funding from annual government budget appropriations, can include permit fees prescribed by the EPBC Regulations; park use and service fees approved by the Minister under the EPBC Act (s.356A); contracts; leases; gifts; and sponsorships.

At the time of preparing this plan the majority of operational funding for management of the park came from annual appropriations provided by the Australian Government, supplemented by entry and camping fees, fees for some permits, and fees from commercial activity licences and commercial tenancies in the park. These funding sources cover basic operational costs and some capital works. To enable continued growth of park services there is a need to recognise and encourage appropriate commercial business opportunities and partnerships that will provide additional income and resources and develop and promote the values of the park and the Kakadu brand.

Grants, bursaries and other co-funding arrangements can support a range of research and development work, contributing to increasing the knowledge of park values and appropriate management techniques.

Commercial operations within the park support both visitors and residents through the provision of accommodation, tours, souvenirs, food and a range of other consumables and services. While many businesses operate under permit, sublease or licence within the park and are guided by the policies for commercial operations, the Director and Parks Australia have not entered into any formal commercial income-sharing arrangements or provided any substantial commercial or retail operations.

The Kakadu Tourism Master Plan and the Australia's Timeless North Experience Development Action Plan (EC3 2012) seek the establishment of new and improved accommodation facilities and the development of new experiences within the park. Other opportunities for partnership and generating income for the management of the park during the life of this plan may include hosting functions and events, commercial tourism licences, merchandising, downloadable e-applications (e.g. park guides), strategic investments and subleasing.

To date, marketing of Kakadu has generally been unfunded by Parks Australia, instead delivered by external agencies such as Tourism NT and Tourism Australia. As a consequence cooperative arrangements that publicise the park are also of benefit, such as tourism advertising, books and brochures, scientific documentaries and commercial film production.

Any partnership, sponsorship or investment needs to be in harmony with and support the values of the park, not be in conflict with the public interest, not evoke a perception that the Australian Government is endorsing a particular product, and not damage or disadvantage any relationship with any other stakeholder.

This section should be read in conjunction with Section 6 (Kakadu as a visitor experience destination, commercial tourism and promotion).

Management issues

- Over the life of the fifth plan, declining visitor numbers as well as abolition of park use fees in the period 2005–2010, led to a reduction in revenue from entry fees. In addition to increasing visitor numbers and promoting the park (see Section 6: Kakadu as a visitor experience destination, commercial tourism and promotion) there is a need to consider alternative ways to generate revenue to support management of park values and provision of visitor services.
- Specialist marketing and business skills and expertise are required to develop this area of park management.

Policies

- 9.8.1 Gifts, donations or bequests received for a specific purpose will be used for that purpose or another purpose approved by the donor.

Actions

- 9.8.2 Investigate and develop a sustainable business model that may include alternative funding and business arrangements such as business partnerships; grants; events, exhibitions and performances; merchandising; retail and accommodation facilities; philanthropic support; donations, contributions, sponsorship and bequests; smartphone applications; licensing; subleasing; not-for-profit partnerships; and support groups such as a 'Friends of Kakadu'.
- 9.8.3 Develop a business prospectus for proposed developments and projects within the park and implement strategies to secure appropriate funding for such developments and projects.
- 9.8.4 Encourage and support opportunities for promoting the park through external stakeholders, for example through the development of indirect marketing material such as scientific documentaries and commercial film production (see also Section 6: Kakadu as a visitor experience destination, commercial tourism and promotion).
- 9.8.5 Work collaboratively with key stakeholders with specialist marketing and business expertise to identify and develop new revenue and business opportunities.
- 9.8.6 Subject to legal requirements broaden the fee base for provision of park services, including staff support at events, processing permit applications, staff support for media and film crews, and delivery of education services.
- 9.8.7 Consider alternative methods for collecting entry fees and ways to encourage visitors to purchase a park pass, while minimising the cost of administering and enforcing the purchase of park passes.
- 9.8.8 Review park use, camping and other charges determined under s.356A of the EPBC Act (see also Section 6: Kakadu as a visitor experience destination, commercial tourism and promotion).
- 9.8.9 Review permit fees prescribed by the EPBC Regulations and, if appropriate, seek changes to the fees.

9.9 Carrying out and authorising activities not otherwise specified and new ways of authorising activities

Background

As noted in Appendix G (Legislative context) and other sections in this part of the plan, a range of actions and activities are prohibited or may be controlled by the Director in Commonwealth reserves under the EPBC Act and Regulations, and certain actions may only be taken by the Director in accordance with this plan. Actions affecting species protected under Part 13 of the Act may be taken in accordance with this plan.

This plan sets out how the park will be managed for a period of 10 years. During that time, circumstances may arise or proposals be brought forward for actions which were not known at the time the plan was prepared and are not covered by specific prescriptions in the plan. It is possible also that during the life of the plan new and better ways of authorising activities may be identified.

Policies

- 9.9.1 The Director may take actions that are not covered by specific prescriptions in this plan, including actions prohibited by ss.354 and 354A of the EPBC Act.
- 9.9.2 The Director may authorise (whether by permit, contract, sublease or licence) actions by other persons that are not covered by specific prescriptions in this plan, including actions prohibited by ss.354 and 354A of the EPBC Act.
- 9.9.3 Except in cases of emergency, the decision-making and impact assessment processes prescribed in Sections 4.1 (Making decisions and working together (Board of Management)) and 9.5 (Assessment of proposals) of this plan apply to actions under this Section.
- 9.9.4 The Director may, with the approval of the Board, grant new authorisations (approvals, permits or usage rights) in place of existing authorisations provided for by prescriptions in this plan, to reduce burdens on users and administrative costs.

9.10 Implementing and evaluating the plan

Background

One of the main functions of the Board of Management is to make decisions relating to the management of the park consistent with this plan and to monitor the management of the park. Parks Australia's Management Effectiveness Framework is used to help monitor and improve the management of Commonwealth reserves.

The prescriptions contained in this plan are based on protecting and presenting the values of the park, and achieving desired objectives for park management and government legislative requirements (including the EPBC Act and the Director's lease obligations) that deal with specific attributes and issues related to the management of the park. While Section 10 (Managing use of Kakadu National Park) provides a basis for park users undertaking activities, this section provides the Director with the power under ss.354 and 354A of the EPBC Act to carry out actions required to implement this plan.

Management Effectiveness Framework and implementation of the management plan

The Parks Australia Management Effectiveness Framework (Figure 15) is used to monitor and report on the management of Commonwealth reserves. This framework is based on maintaining the values of each reserve. The policies and actions contained in this plan have been developed to achieve a set of objectives and outcomes directly relating to managing for these values and communicating and understanding the values. This line of sight is a critical element of the Management Effectiveness Framework, as is reporting against the indicators described in this plan which illustrate how management of the park is tracking against the outcomes. Regular review against these indicators over the life of the plan will enable the Director, Board and stakeholders to be confident that the plan is effectively managing the threats and issues affecting the values of the park.

Figure 15: Parks Australia's Management Effectiveness Framework



At the core of the Management Effectiveness Framework is adaptive management. Reviewing priorities and approaches based on new knowledge, outcomes and changing environments is essential in ensuring that Kakadu is well managed and the park values are maintained. To facilitate this there is a need to develop and review timeframes and priorities for implementing this plan, and to review and update the strategies and plans that support this management plan.

This plan does not set specific measures for performance indicators, instead it provides for the development of a Performance Monitoring Plan that will determine suitable measures for each performance indicator and thresholds for evaluating performance (see Section 9.10.9). The managers of the park will be required to report against the Performance Monitoring Plan on an annual basis and it may be reviewed in light of an improved understanding of the values of the park and potential threatening processes.

Management issues

- To effectively monitor, evaluate and make informed decisions about prioritisation and the allocation of funding and resources, the Board needs to be provided with clear, accurate and regular information regarding implementation of this plan. To enable this, the collection and management of performance information in the park needs to be adequately resourced.
- The ability to implement the plan is constrained by available resources.

Policies

- 9.10.1 The Director may take actions covered by ss.354 and 354A of the EPBC Act, including actions related to species listed under Part 13 of the EPBC Act, that are otherwise prohibited by the EPBC Act where they are necessary to implement policies and actions in this plan, or where they are otherwise necessary for preserving or protecting the park, protecting or conserving biodiversity, or protecting persons or property in the park.
- 9.10.2 Except in the case of emergency, the decision-making and evaluation of proposals prescribed in Sections 4.1 (Making decisions and working together) and 10 (Managing use of Kakadu) of this plan will apply to actions under Section 9.10.1.
- 9.10.3 Priorities for implementation of the actions in this plan will be determined consistent with the Parks Australia Management Effectiveness Framework and by the need to:
- (a) manage, communicate and understand the park's values
 - (b) ensure visitor safety
 - (c) provide opportunities for Bininj/Mungguy and respect Bininj/Mungguy aspirations
 - (d) work within the resources available
 - (e) ensure cost-effectiveness.
- 9.10.4 Other plans and strategies developed for use in the park will be reviewed and updated at least every five years.
- 9.10.5 Park work programmes, expenditure, staff learning and development plans, staff training and activities will be linked to implementing this plan and any other priorities as determined by the Board.
- 9.10.6 The Park Manager will report quarterly to the Board on the implementation of this plan, park expenditure and performance indicators in a manner requested by the Board and consistent with any Parks Australia and government requirements.
- 9.10.7 Information on performance monitoring in the park will be reported in the Director of National Park's annual report.

Actions

- 9.10.8 Develop an implementation plan within the first 12 months of the release of this plan outlining the timeframes and priorities for implementing actions based on available resources and risk. Review the implementation plan in the fourth and eighth years of this plan, including progress of implementation and priorities, taking into account new knowledge and information.
- 9.10.9 Within the first 12 months of this plan, prepare a Performance Monitoring Plan that specifies the measures that will be used to monitor performance indicators in the plan.
- 9.10.10 Ensure the capacity to carry out the monitoring and reporting against performance indicators is reflected in the park staffing structure and staff work plans.
- 9.10.11 Undertake a formal review of the plan in the eighth year of the plan. This review will be conducted by external reviewers and publically released. The purpose will be to:
- (a) evaluate the effectiveness of the plan in managing the park's values and contributing to achieving the objectives and outcomes of the plan
 - (b) review progress against performance indicators over the life of the plan
 - (c) report on any prescribed policy or action that was not implemented, or which failed to achieve the desired aim(s) and determine the cause of any failures
 - (d) contribute to the development of the next plan through considering options for improving management of the park.



PART D

Managing use of Kakadu



What park users need to know
about accessing and using the park

10 Managing use of Kakadu National Park

This section sets out general policies for the use of the park and provisions of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) that apply to park users, including recreational activities, commercial activities, research and other park uses.

Background

Kakadu National Park offers a range of experiences for visitors and residents across the park, providing opportunities to appreciate the unique natural and cultural values. Some activities may be restricted and access to some areas in the park may be limited to ensure that the values of the park are conserved, that activities are conducted in a safe manner, and that other users of the park are not disturbed through the actions of others.

The EPBC Act (ss.354/354A and 355/355A) prohibits certain actions being taken in Commonwealth reserves except in accordance with a management plan (Appendix G). These actions include killing, injuring, taking, trading, keeping or moving members of native species, actions for commercial purposes and mining operations. The Environment Protection and Biodiversity Conservation Regulations 2000 (EPBC Regulations) control, or allow the Director of National Parks to control, a range of activities in Commonwealth reserves such as access, use of vessels, waste disposal, commercial fishing, recreational activities and research.

In accordance with s.359A of the EPBC Act, this plan does not prevent Bininj/Mungguy and traditional owners from continuing, in accordance with the law, the traditional use of an area for non-commercial hunting or food-gathering, and for ceremonial and religious purposes. Section 8 of the EPBC Act also provides that the Act does not affect the operation of the *Native Title Act 1993*, which also includes provisions that preserve customary rights to use of land and waters.

This section of the plan sets out how activities in the park that are covered by provisions of the EPBC Act and Regulations relating to Commonwealth reserves will be managed in Kakadu. While the actions and policies in Sections 4 to 9 of this plan set out how the Director will work to deliver the objectives of the plan, the prescriptions in this section set out how activities of users of the park will be managed.

Section 10.1 provides general power for the Director to issue authorisations (permits, licences etc.) for activities where this is provided for by Sections 10.3 to 10.13.

Section 10.2 provides for the Director to make and change prohibitions, restrictions, and determinations under a number of provisions of the EPBC Regulations to regulate activities where it is necessary for the protection of park values, cultural reasons, or public safety.

Sections 10.3 to 10.13 set out the rules that will apply to the operation of the EPBC Act and Regulations on activities in the park. Where these sections allow an activity that is otherwise prohibited by the Act or Regulations to be authorised, the relevant authorisation will be issued in accordance with Section 10.1, will be subject to necessary conditions, and may be varied, suspended or cancelled where such conditions have not been fulfilled or considered necessary to protect the values of the park.

10.1 Authorisation of allowable activities

Background

As noted in the background of Section 10 this plan provides for certain activities that are otherwise prohibited in the park by the EPBC Act or Regulations to be carried out in accordance with a permit, approval, commercial activity licence, occupation licence, sublease, or lease issued by the Director ('allowable activities').

Part 17 of the EPBC Regulations contains provisions for issuing and managing permits, including permit applications; preconditions to permits being issued; and the content of permits. Part 17 also allows for varying, suspending and cancelling permits. These provisions are applied to permits authorised by this plan.

This Section authorises the Director, with approval from the Board of Management, to replace permits for a class of activities or class or persons where it will lead to greater efficiencies while maintaining protection of park values.

Commercial activity licences, occupation licences and subleases or leases may be used to authorise a range of commercial activities, where this is more appropriate than the use of permits.

Decision-making about authorisation of allowable activities will be consistent with the objectives of this plan, the IUCN category assigned to the park by this plan, the purpose for which the park was declared and the actions required for assessment of proposals and decision-making prescribed in Section 4.1 (Making decisions and working together (Board of Management)).

A person who has applied for or who holds a permit under the EPBC Regulations may seek review of decisions about their application or permit in accordance with the Regulations.

Note: See also Section 6 (Kakadu as a visitor experience destination, commercial tourism and promotion) and Section 9.3 (Authorising and managing activities).

Policies

- 10.1.1 The Director may, with approval of the Board, grant commercial activity licences, occupation licences, subleases and leases for commercial operations in accordance with Section 10.8.
- 10.1.2 A permit may be issued where provided for by Sections 10.3 to 10.13 of this plan, in accordance with Part 17 of the EPBC Regulations, subject to the prescriptions (if any) in the section of this plan relating to the particular activity.
- 10.1.3 A permit may be suspended or cancelled and permit conditions may be varied or revoked in accordance with Part 17 of the EPBC Regulations
- 10.1.4 An approval may be issued for allowable activities where provided for by Sections 10.3 to 10.13 of this plan.
- 10.1.5 With the approval of the Board, the Director may issue an approval for allowable activities for which a permit is otherwise required under Sections 10.3 to 10.13. An approval may be issued to a single person (an 'individual approval') or to a class of persons for a particular activity or for a class of activities (a 'class approval').

- 10.1.6 An approval may be issued subject to conditions, and may be suspended or cancelled, and approval conditions may be varied or revoked, with approval of the Board, in the same manner and subject to the same conditions that apply to permits under Part 17 of the EPBC Regulations. A class approval may also be varied to remove a person from the class of approved persons if the Director is satisfied the person has breached a condition of the approval.
- 10.1.7 In assessing an application for an authorisation, the Director may ask the applicant for more information if the Director considers there is insufficient information to decide whether to issue the authorisation.
- 10.1.8 Decisions about authorisations will be made in accordance with Section 4.1 (Making decisions and working together), including taking into account the impact assessment of the proposal under Section 9.5 (Assessment of proposals).

10.2 General rules for managing use of the park

Background

As noted in the background to section 10 and Appendix G (Legislative context), the EPBC Act and Regulations control or enable the Director to control a range of activities in Commonwealth reserves. Some provisions apply to particular activities; others relate to activities generally and include provisions enabling the Director to:

- determine areas where waste may be disposed of (r.12.14B)
- prohibit or restrict access or activities (rr.12.23 and 12.23A)
- determine adventurous activities and areas where adventurous activities may be done (r.12.26)
- determine camping areas and camping sites and associated use conditions (r.12.28)
- make determinations about use of fireplaces approved by the Director (r.12.30)
- prohibit or restrict use of vehicle access roads and vehicle access tracks (r.12.42)
- prohibit or restrict walking or riding on roads and tracks (r.12.55)
- make determinations about use of vessels, including to prohibit use, control anchoring and mooring, and set speed limits (r.12.56)
- make determinations about use of aircraft in and over reserves (r.12.58).

At the time of preparing this plan the EPBC Regulations (r.12.26) prohibit certain adventurous activities in the park other than in accordance with a permit from the Director, or in an area approved by the Director. To protect park values and in the interest of public safety these activities, which include climbing, abseiling and jumping from cliffs and rock faces, will not be allowed (see Section 10.7: Recreational activities). Where necessary, the Regulations (r.12.23A) also enable the Director to restrict or prohibit other activities from occurring in all or part of the park.

The EPBC Regulations (r.12.23) further enable the Director to prohibit or restrict all or some people from entering or remaining in the park, or parts of the park at all times or certain times. Access restrictions in the park are normally used to protect park values or are utilised in the interest of public safety. See also Section 10.4 (Access).

Policies

- 10.2.1 The Director may make, amend and revoke prohibitions, restrictions and determinations under the EPBC Regulations where it is necessary:
- (a) to protect and conserve natural and cultural values of the park
 - (b) to ensure human safety or visitor amenity
 - (c) to give effect to this plan
 - (d) to enable an activity that would otherwise be prohibited by a current instrument.
- 10.2.2 This section applies to all activities covered by Sections 10.3 to 10.13 except to the extent it is inconsistent with a specific prescription in those sections regarding prohibitions, restrictions and determinations.
- 10.2.3 Except in cases of emergency, decisions under Section 10.2.1 will be made in accordance with Section 4.1 (Making decisions and working together (Board of Management)).

10.2.4 In the event that the park or part of the park is closed at very short notice for operational, safety, environmental protection or cultural reasons, every effort will be made to notify the tourism industry, the public and other stakeholders as soon as possible (see also Sections 4.1: Making decisions and working together (Board of Management) and 9.7: Neighbours, stakeholders and partnerships).

10.3 Living in the park (outstations and Jabiru)

Background

Bininj/Mungguy living on outstations, and park staff and residents of Jabiru all live within the park. Living within a World Heritage National Park requires all residents to contribute to protecting the park's values. This includes restrictions on the types and numbers of pets residents can have and the types of plants residents can bring into the park for their gardens.

Residents of the park should also note that other policies in this plan also relate to them – including but not restricted to Sections 10.4 (Access), 10.7 (Recreational activities), 10.11 (Infrastructure and works) and 10.13 (Bringing plants, animals and other materials into the park). Information on what the Director will do over the life of this plan in Jabiru and to support outstations is in Section 8 (Living in the park).

Outstations

Establishment and maintenance of outstation living areas involves the carrying out of works and, under sections 354(1) and 354A of the EPBC Act, can only be done in accordance with this plan. Outstations on Aboriginal land in the park can be authorised by a sublease granted by the Director, which can only be granted in accordance with this plan (s.358 EPBC Act).

The Kakadu, Jabiluka and Gunlom leases provide that Bininj/Mungguy are entitled to reside on land in the lease areas, subject to rules in park management plans and decisions of the Board:

- at places they were residing when the leases commenced:
 - 1978 – Kakadu Land Trust
 - 1991 – Jabiluka Land Trust
 - 1995 – Gunlom Land Trust
- at other locations specified in management plans.

Rather than specify places where outstations can be located, the management plan takes the approach of outlining a process for applications to be considered. The Guide to Establishing Outstations approved by the Board provides Bininj/Mungguy with advice as to the process for applying for a new outstation.

Policies

- 10.3.1 Bininj/Mungguy wishing to establish a new outstation will need to seek the Board's approval in accordance with Section 8.1 of this plan.
- 10.3.2 Residents of pre-existing outstations on Aboriginal land for which a sublease has not been granted may request a sublease in accordance with Section 8.1.4.
- 10.3.3 Expansion of existing outstations which will increase the footprint of the outstation will require an assessment and approval of the Board in accordance with Section 8.1.5.
- 10.3.4 Except as otherwise provided by Section 8.1 or authorised by the Director under that Section, general Policies in this plan apply to outstation areas and residents in the same manner as elsewhere in the park (see for example Section 10.13 - Bringing in plants, animals and other materials in the park).

Jabiru

As Jabiru is part of Kakadu National Park, activities in the town are also subject to the provisions of the EPBC Act and Regulations that apply elsewhere in the park, except to the extent that the Act or Regulations or management plans specify they do not apply. These provisions are:

- Sections 354 and 354A – prohibiting certain actions except in accordance with a management plan, including actions that affect members of native species, damaging heritage, carrying on an excavation or building or other works, and commercial activities
- Section 358(2) that the Director only grant leases, subleases and licences of land in accordance with a management plan
- Division 12.2 of the EPBC Regulations – provisions regulating a range of activities in the park.

Not all of the EPBC Regulations apply in Jabiru. Regulation 12.07 prescribes a number that do not apply. The Regulations that do apply in the town at the time of preparing this plan include:

- r.12.15 prohibits the use or introduction of a pesticide, herbicide or other poisonous substance, except reasonable use for a domestic purpose
- r.12.19 prohibits taking animals into Commonwealth reserves
- r.12.19A prohibits actions affecting non-native species
- r.12.19C prohibits actions affecting native species
- r.12.20 prohibits plants (other than food) being taken into or possessed in the park unless they are on a list established by the Director
- r.12.21 prohibits cultivating or propagating a plant unless it is a native plant included on a list established by the Director
- r.12.23A allows the Director to prohibit or restrict activities or types of activities in Commonwealth reserves
- r.12.37 prohibits the sale of liquor in the park.

At the time of preparing this plan the Director had delegated to certain officers of the West Arnhem Regional Council the powers and functions of the Director to issue permits for the purposes of r.12.19 to keep dogs in Jabiru, and to give directions under r.12.22 to remove plants being cultivated or propagated contrary to r.12.21.

An action (such as a new development) in Jabiru that is likely to have a significant impact on a matter protected by Part 3 of the EPBC Act (including Kakadu's World Heritage values, threatened species or the environment) will require assessment and approval under parts 7 and 9 of the Act.

- Notes:
- (a) The Policies in this Section need to be read in conjunction with the Policies and Actions in Section 8.2 (Jabiru).
 - (b) The Policies in Section 10.13 (Bringing plants, animals and other materials into the park) apply to Jabiru.

Policies

- 10.3.5 Unless the Board approves otherwise a person other than the Director may only kill, injure, take, trade, keep or move a member of a native species in Jabiru in accordance with a permit issued by the Director under the EPBC Regulations. This Policy does not apply to actions by the Northern Territory or West Arnhem Regional Council (or its successor) in accordance with Section 10.3.26.
- 10.3.6 Subject to other policies in this Section, Policies in Section 8.2, and other relevant policies in this plan, land may be used and developed in Jabiru in accordance with the town lease(s) and a town plan approved by the Director.
- 10.3.7 Until a new town plan is approved by the Director and in effect, the following actions require the Director's approval, which may be given subject to conditions:
- (a) all applications for consent for development under the *Planning Act* (NT), except where the application for consent falls within a class of applications that the Director, with the approval of the Board, has consented to generally and permitted another person to make, such applications under the Planning Act being a class or classes of land use or development
 - (b) any changes in land use of subleases e.g. from residential to commercial
 - (c) significant construction or expansion of existing tourism or other commercial or community infrastructure developments.
- 10.3.8 Decisions under Section 10.3.7 will be taken in accordance with the consultation procedures in Section 8.2.9.
- 10.3.9 Unless the Board approves otherwise a person other than the Director may only damage heritage in Jabiru in accordance with a permit issued by the Director under the EPBC Regulations.
- 10.3.10 While the 1981 town plan is in effect a person may carry on an excavation, erect a building or other structure, or carry out other works ('the works') in the town in accordance with the town plan and other relevant laws, provided that:
- (a) the works do not require a development permit under the town plan
 - (b) the works are carried on as part of routine gardening activities, routine infrastructure maintenance (e.g. sewerage, storm water, telecommunication cables) but are not other excavations, including drilling bores, which may only be carried on in accordance with a permit issued by the Director under the EPBC Regulations
 - (c) the Board may determine that works, other than erecting a building or other structure, require a permit (because of their potential impacts).
- 10.3.11 When the new town plan is approved by the Director and in effect in accordance with Section 8.2, a person may carry on an excavation, erect a building or other structure, or carry out other works in the town in accordance with the town plan and other relevant laws, unless:
- (a) the Board determines the action should be referred to the Board for approval
 - (b) the action is in a class of actions the Board has determined should be referred to the Board for approval, because the Board is satisfied the action or class of actions may be likely to have unacceptable impacts on Kakadu's World Heritage values or the environment in and around Jabiru.

- 10.3.12 Approval by the Board may be given subject to conditions, and may require a permit to be issued by the Director.
- 10.3.13 Commercial activities, except sale of liquor, may be carried on in Jabiru in accordance with the town lease, town plan and relevant laws without a permit or other approval from the Director.
- 10.3.14 Unless the Director approves otherwise a person may only introduce or use pesticides, herbicides, or other poisonous substances in accordance with a permit issued by the Director. A permit will not be issued if the Director considers that the proposed activity is likely to have an adverse impact on the environment and/or human health.
- Note: The prohibition in r.12.15 of the EPBC Regulations does not apply to reasonable use by a person for domestic purposes.*
- 10.3.15 Dogs may be brought into and kept in Jabiru:
- (a) in accordance with approval issued by the Director under Section 10.13.10
 - (b) the Jabiru Town Development (Control of Dogs) By-laws (or any laws that amend or replace those by-laws), so far as capable of operating concurrently with this plan
 - (c) provided that a maximum of two dogs may be kept at any residence.
- Note: Policies in Section 10.13 apply to bringing in and keeping other animals.*
- 10.3.16 Unless otherwise approved by the Director, or another prescription (i.e. policy or action) in this plan, the following activities may only be carried on in the town in accordance with a permit issued by the Director under the EPBC Regulations:
- (a) r.12.10 – scientific research
 - (b) r.12.16 – introduction or removal of earth materials, and fossicking
 - (c) r.12.26 – adventurous activities
 - (d) r.12.58 – landing and taking off of aircraft.
- 10.3.17 Any other activities carried on in the town that are covered by the EPBC Regulations and not covered by another prescription in this plan may be carried on in accordance with applicable laws and will not require a permit from the Director.

Policies relating to the sale of liquor in Jabiru

- 10.3.18 Liquor must not be sold in the town except in accordance with a permit issued by the Director under the EPBC Regulations and the *Liquor Act* (NT).
- 10.3.19 Permits to sell liquor will not be issued by the Director unless the proposed permittee holds a licence under the Liquor Act.
- 10.3.20 A permit holder must not apply to vary a licence under the *Liquor Act* (NT), or to vary the licence conditions, without first having obtained the approval of the Director.
- 10.3.21 Decisions regarding liquor permits will be taken in accordance with Section 8.2.11.

Policies relating to the roles and responsibilities of the Northern Territory Government and the West Arnhem Regional Council

- 10.3.22 West Arnhem Regional Council (or successor to this function) should regularly monitor waste water discharges in and from the town, and water supply quality, and provide reports to the Director.
- 10.3.23 As far as possible, West Arnhem Regional Council (or successor to its functions) should ensure municipal environment protection measures, including waste management, are observed and implemented to a high standard.
- 10.3.24 Laws of the Northern Territory relating to the town should be reviewed by the relevant agency where necessary to address any inconsistencies with the EPBC Act, EPBC Regulations and this management plan to avoid unintended inconsistencies in management.
- 10.3.25 The Northern Territory Government or West Arnhem Regional Council (or any successor to the Council's functions) will be responsible for catching and controlling escaped domestic dogs and other animals in the town.
- 10.3.26 The Northern Territory Government or West Arnhem Regional Council (or its successor) may take actions otherwise prohibited by the EPBC Act or Regulations in relation to native and non-native species in accordance with laws of the Northern Territory where necessary to protect persons or property or the environment.
- 10.3.27 The delegation by the Director to the West Arnhem Regional Council in effect at the commencement of this plan to issue permits for the purposes of r.12.19 to keep dogs in Jabiru will continue, subject to review and amendment or revocation by the Director.

10.4 Access

Site access

Background

Appreciation, enjoyment and understanding of the park's values are core elements of the purpose for which the park was declared. Providing for a range of visitors and activities in a manner that ensures a safe and rewarding experience for the visitor while maintaining the natural and cultural values of the park is a major focus of management.

To ensure conservation of the park's natural and cultural values, there are areas within the park that are not accessible to the public, either on a permanent or a temporary basis. During the wet season there are a number of key visitor sites and roads and walking tracks which become unsafe for public use and are seasonally closed until floodwaters subside and the roads and tracks are made safe again for public use. Late rainfall in the wet season may delay the reopening of certain visitor sites.

From time to time, roads and tracks also need to be temporarily closed to facilitate park management operations or at the request of Bininj/Mungguy for cultural reasons. Such closures need to be clearly communicated to visitors and other park users. Park management will work with the relevant Territory government agency(ies) to ensure road and track closures occur outside the peak visitor season where possible.

The Director's lease obligations require compliance with any reasonable request from traditional owners, undertaken through the Northern Land Council (NLC), to restrict access to areas of the park for the purpose of Aboriginal use. These include Bininj/Mungguy living areas, areas that are set aside to enable Bininj/Mungguy to exercise their traditional rights associated with ceremonial activities and hunting, and areas where Bininj/Mungguy carry out their own commercial operations.

In addition, the Director may be required to implement temporary or long-term closures of visitor areas if an activity has the potential to impact on park values or poses a risk to public safety. In other cases, visitor access to sites may be limited to protect visitor experiences, park values, or Bininj/Mungguy interests. In such cases, access is managed through permit and booking systems. Details of vehicle roads and tracks in the park and tracks for walking and riding are provided in the park visitor guide.

The EPBC Regulations enable the Director to restrict or prohibit entry to areas either by all or by some people, at all times or certain times, and to all or part of the park.

Policies

- 10.4.1 The Director may restrict or prohibit access under Section 10.2 (General rules for managing use of the park) of this plan for cultural, environmental or safety reasons.
- 10.4.2 Decisions regarding short- and long-term changes to access will be made in accordance with Section 4.1 (Making decisions and working together (Board of Management)), and procedures approved by the Board.
- 10.4.3 Permits and booking systems may be used to regulate access to certain areas of the park.
- 10.4.4 Access to cultural sites, or other parts of the park when required for cultural reasons, may be restricted at the request of Bininj/Mungguy and the Board in accordance with any protocols approved by the Board under Section 4.2.9 (Section 4.2: Making decisions and working together (on country)).

Road access

Background

Most visitors to Kakadu arrive and travel within the park by road. Visitors and residents are able to travel through the park on an extensive range of sealed and unsealed roads and tracks and marked walking tracks. The main roads into the park are the Arnhem Highway from Darwin and the Kakadu Highway from Pine Creek. The park can also be accessed via the Old Jim Jim and Oenpelli Roads. The Oenpelli Road provides dry-season access to Arnhem Land. This road becomes impassable at times during the wet season at the East Alligator River and Magela Creek crossings. Roads and tracks within the park will be maintained for as long as practicable into the wet season, and opened as soon as practicable after the wet season to provide residents and visitors access to the park.

All roads and tracks in the park are part of the park and subject to the EPBC Act and Regulations. Northern Territory laws also apply to the extent those laws can operate concurrently with the EPBC Act and Regulations. The EPBC Regulations (rr.12.41, 12.42 and 12.43) provide for roads and tracks to be designated as either available for public use or not. The Director may also place restrictions on the persons or types of vehicles that may use a particular road or track, and may impose certain other controls including speed limits.

From time to time the Northern Territory Government may also place controls on the major roads that it maintains, such as weight limits or seasonal closures to protect the road surface and provide for people's safety.

Road construction and maintenance works are actions covered by ss.354 and 354A of the EPBC Act and can only be carried on in accordance with this plan. Policies and actions relating to road maintenance activities undertaken by the Director are in Section 9.4 (Capital works and infrastructure). Section 10.11 sets out rules for these works by other persons.

Policies

- 10.4.5 Public roads and tracks will be managed in accordance with a road management strategy for the park and will be maintained to a safe standard but may be closed from time to time to ensure public safety (including seasonal closures due to rain and flood damage) and environmental protection and for cultural and management purposes.
- 10.4.6 Motor vehicles will be restricted to vehicle access roads and vehicle access tracks unless authorised by the Director.
- 10.4.7 The Director may restrict or prohibit the use of vehicle access roads and vehicle access tracks by motor vehicles or a class of motor vehicles (e.g. vehicle weight and size). Such closures will be indicated by appropriate signage at a point or points where a vehicle would ordinarily enter the road or track.

Air access

Background

Bininj/Mungguy use aircraft for wet-season access to isolated communities and outstations and to remote areas for ceremonies. Visitors, commercial interests and service providers also use aircraft to access the park and to undertake a range of activities such as scenic flights, image capture and research. Aircraft, both fixed wing and helicopters, are used by park staff as necessary for management purposes and responding to emergencies.

To balance the interests of visitors on scenic flights and those on the ground, and to protect the peace and privacy of park residents, the Director, in consultation with the then civil aviation regulator (now Airservices Australia) and local scenic flight operators, developed a Fly Neighbourly Advice (FNA) in 1996, and updated it in 2010 in consultation with industry. The FNA (also known as a Fly Neighbourly Agreement or Policy) describes recommended routes and height and lateral separations for flights over the park, and is included in the En-Route Supplement Australia issued for pilots by Airservices Australia.

Under the EPBC Regulations (r.12.36) commercial flights operated over the park up to 3,000 metres above sea level (other than flights on approved flight paths to or from an airport) are deemed to be carried on in the park and need to be authorised by a permit or this plan. The Regulations (r.12.58) also prohibit landing and take-off of aircraft in the park except in areas that the Director determines may be used for that purpose (or in an emergency). The definition of 'aircraft' in the EPBC Act includes any apparatus that can derive support in the atmosphere from the reactions of the air, such as gliders, hang-gliders, para-sailers, parachutes and similar equipment. Further policies and actions relating to these activities are in Section 10.7 (Recreational activities).

Policies

- 10.4.8 Aircraft engaged in regular commercial and service delivery activities such as passenger transport, charter operations and medical transport to and from Jabiru or Cooina airfields may be operated in the airspace over the park up to 3,000 metres above mean sea level without a permit from the Director.
- 10.4.9 Aircraft may be operated for other commercial purposes (such as scenic flights) in the airspace over the park up to 3,000 metres above mean sea level without a permit issued by the Director provided the activity is undertaken in accordance with the Fly Neighbourly Agreement.
- 10.4.10 The Fly Neighbourly Agreement will provide details about the appropriate flying routes and use of aircraft over the park.
- 10.4.11 Permits may be issued for the landing, take-off and operation of aircraft in the park, following consultation with Bininj/Mungguy, for the following purposes:
- (a) authorised research
 - (b) authorised image capture
 - (c) authorised Bininj/Mungguy commercial activities
 - (d) commercial bushwalking tours or heli-touring ventures
 - (e) other Bininj/Mungguy activities, including access to isolated outstations and access to remote areas for ceremonies
 - (f) community events in Jabiru and the park
 - (g) servicing of telecommunications (consideration may be given to long-term permits)
 - (h) other purposes as approved by the Board.

10.5 Commercial use of resources

Background

The knowledge, use and management of plants and animals are central to Bininj/Mungguy culture. Hunting and gathering enables Bininj/Mungguy to be out on country and to maintain customary traditions. Bininj/Mungguy have been collecting small amounts of native wildlife for commercial return for many years. Various forms of artwork such as paintings, didgeridoos and weavings have been made from plant materials and the production of artwork has become an important industry for Aboriginal people in the Kakadu region.

Kakadu National Park includes the estate and the resource base of a number of Aboriginal clan groups and families and the park is a major contributor to their economic future. The ability for Bininj/Mungguy to derive benefit from enterprises established in the park is recognised in the IUCN management principles for the park (see Section 3: General provisions and IUCN category).

Bininj/Mungguy, as well as Balanda from outside the park, have shown interest in other types of commercial use of plants and animals. Proposals have included harvesting bush tucker for sale, harvesting crocodile eggs for sale to crocodile farms, and capturing live fish for captive breeding and sale to aquariums and pet shops.

Aboriginal cultural practices related to the management and use of wildlife determine who should be asked for permission to take plants and animals in each area and include rules about how much can be taken and at what times of year.

The Board of Management, while actively supporting Bininj/Mungguy in being able to benefit economically from Kakadu, has emphasised that protection and appropriate presentation of the natural and cultural values of Kakadu in accordance with Australian IUCN protected area category 'national park' is paramount, and that all commercial activities would be considered within this context.

Under ss.354 and 354A of the EPBC Act, commercial taking or harvesting of wildlife may only be carried on in accordance with this plan. The taking of animals and plants protected by Part 13 of the Act must also be in accordance with applicable provisions of Part 13. Activities that involve 'access to biological resources' are subject to provisions of the EPBC Act and Regulations dealing with that activity.

Policies

- 10.5.1 Proposals for commercial take or harvest of native plants and animals will only be considered if they satisfy the following criteria:
- (a) The proposal will not adversely affect the conservation status of the species or native plants and animals or an ecological community.
 - (b) The proposal must be consistent with Bininj/Mungguy cultural practices, including:
 - (i) rules for looking after country properly, making sure the harvest is sustainable, and making sure that people are safe
 - (ii) avoiding adverse impacts on use of wildlife by Bininj/Mungguy for food, ceremonial and religious purposes.
 - (c) The proposal must be consulted on and agreed with the relevant Bininj/Mungguy.

- (d) The proposed activities must be carried out by Bininj/Mungguy or Bininj/Mungguy organisations:
 - (i) acting alone, or
 - (ii) in partnership with other people under a contract that includes provisions setting the respective roles and responsibilities of the partners and provides for reasonable benefit sharing.
- (e) The proposed activities must be approved by the Board, or be in a class of activities approved by the Board (see Section 10.5.2).

10.5.2 Proposals for commercial use of native plants and animals will be considered under one of two categories.

Category A: Small-scale activities or classes of activities. At the commencement of this plan, these activities are:

- (i) small amounts of pandanus for activities such as basket making
- (ii) small amounts of wood and plant materials for artefacts
- (iii) bush tucker collection for interpretation activities
- (iv) other similar activities or classes of similar activities determined by the Board and permitted by the Director.

Category B: Any other activities or classes of activities that may only be carried on in accordance with a permit issued by the Director, subject to Board approval.

The Board may amend the list of Category A activities from time to time by amending or deleting activities or classes of activities. Category A activities may be carried on in accordance with harvest levels and conditions determined by the Board and will not require a permit from the Director.

10.5.3 In addition to the requirements set out in Policies 10.5.1 and 10.5.2 in considering harvest levels and conditions for Category A activities, and proposals for Category B activities, the Board will consider:

- (a) consistency of the activity with the conservation of park values (Section 1.4)
- (b) consistency of the activity with Australian IUCN Management principles for a national park (Appendix H)
- (c) consistency of the activity with principles of ecologically sustainable use
- (d) likely impacts on species protected under the EPBC Act or Northern Territory laws
- (e) harvest methods, location, extent, timing and frequency of the activity
- (f) end use of the resource and consistency of presentation of Kakadu National Park as Aboriginal land and a national park of World Heritage status
- (g) visitor and other safety issues
- (h) the extent to which the activity will provide opportunities for Bininj/Mungguy
- (i) the costs to the Director of managing and monitoring the activity.

10.5.4 In addition to Section 10.5.3, before making a decision in relation to Category B proposals the Board will require:

- (a) the preparation of an Environmental Impact Assessment
- (b) the proposal to be made available for public comment.

- 10.5.5 The Board may also require:
- (a) the preparation of a wildlife management plan by the proponent
 - (b) the proponent to seek approval from an independent Animal Ethics Committee or be required to demonstrate that proposed activities are consistent with animal welfare legislation. For example where a proposal involves activities that may cause stress to an animal such approval will be required,
- 10.5.6 The Board will determine harvest levels and conditions for Category A activities, and may review these from time to time.
- 10.5.7 Where the Board agrees that a permit may be issued by the Director under Category B, permit conditions will include the requirement for the proponent to record and report on the species and quantities being collected.

10.6 Traditional use of land and water

Background

Bininj/Mungguy have used the land and its resources for many generations and continue to use many of the park's natural resources for a wide variety of customary uses. These include the use of plants and animals for food, art and craft and other cultural purposes. The contemporary collection and use of plant and animal resources by Bininj/Mungguy involves using a combination of traditional and contemporary methods and knowledge.

The deceased remains of traditional Aboriginal owners and long-term Aboriginal residents are often buried in the park. Parks Australia is guided by the views of traditional owners in relation to burials of Aboriginal people. From time to time, non-Aboriginal people request permission to bury or scatter the ashes of a deceased relative in the park. Usually the person has either previously lived here for a long time, has been a regular visitor, or has died while in Kakadu.

Section 359A of the EPBC Act states that the provisions of the Act and Regulations dealing with activities in Commonwealth reserves do not prevent traditional use of land by an Aboriginal person for non-commercial hunting or gathering, provided it is done in accordance with other applicable laws. More generally, s.8 of the Act provides that the Act does not affect the operation of s.211 of the *Native Title Act 1993* and s.71 of the Land Rights Act, which provide for traditional use of land, including non-commercial hunting, fishing and gathering, by Aboriginal people.

Bininj/Mungguy are concerned that from time to time Aboriginals who do not have traditional rights and have not been authorised under Bininj/Mungguy cultural protocols and practices carry on hunting and gathering in the park. Policies and actions relating to activities being undertaken by the joint management partners to address this are in Section 5.1 (Looking after culture).

Hunting in the park by Aboriginal people continued to be a major issue during the life of the fifth plan, and one issue of concern continues to be the use of lead shot. Lead is a toxic substance that can harm humans, wildlife and the environment. The most common lead poisoning in wildlife is considered to be the result of ingestion of spent lead shot.

Possession and use of firearms (and other types of hunting equipment) are prohibited by Regulation 12.18 of the EPBC Regulations unless authorised by this plan or a permit issued by the Director (or where another exemption prescribed by r.12.06 applies).

Commercial use of resources by Bininj/Mungguy is dealt with in Section 10.5 (Commercial use of resources) of this plan.

Northern Territory laws, including firearms laws, apply in the park in so far as they can operate consistently with the EPBC Act and Regulations.

Policies

- 10.6.1 Bininj/Mungguy traditional owners and other relevant Aboriginals for land in Kakadu may, in accordance with law (e.g. Northern Territory firearms laws), continue traditional use of areas in the park for hunting and food gathering.
- 10.6.2 All persons authorised to possess and use a firearm within the park must possess a valid firearms licence under the *Firearms Act (NT)* and comply with relevant Northern Territory requirements for the safe use of firearms.

- 10.6.3 Lead shot must not be used in the park.
- 10.6.4 Bininj/Mungguy may continue to use areas in the park for burials (including scattering of ashes) in accordance with their traditional rights. Other Aboriginal people or non-Aboriginal long-term residents of the park may be buried in the park with the approval of traditional owners.

10.7 Recreational activities

Background

A diversity of recreational activities will be fostered and encouraged in the park that present and promote understanding and experience of park values.

At the time of preparing this plan there are five commercially operated camping areas in and adjacent to Kakadu. The Director operates a further five managed campgrounds, as well as unmanaged and remote campsites across the park with varying levels of facilities. A nightly fee is charged for the use of park-operated campgrounds with facilities. Bush campgrounds don't have any facilities and are free of charge. During the life of the fifth Plan, four of the commercially operated campgrounds were open in the wet season, but only one of the Director's managed campgrounds was accessible and usable at this time (see also Section 10.8: Commercial tourism and accommodation).

The EPBC Regulations (r.12.28) prohibit camping in any area of the park other than camping areas determined by the Director, unless authorised by a permit or otherwise done in accordance with this plan. The camping areas in Kakadu as at 2015 are shown in Figure 16. To enhance visitor satisfaction and to protect park values, a range of measures such as setting limits on numbers of people, introducing booking and permit systems, and setting areas aside for the exclusive use of independent travellers or commercial tour groups may be considered. Policies and actions relating to activities being undertaken by the Director to manage visitor experiences are in Section 6 (Kakadu as a visitor experience destination, commercial tourism and promotion) and Section 5.3 (Managing park-wide threats affecting values). Fees for use of camping areas are determined by the Director under the EPBC Act (s.356A).

For some visitors, campfires are an inherent part of the camping experience. During the life of the fifth plan, research into the impacts of firewood collection found that most campground areas are depleted of on-ground wood to a radius of 50 metres and found damage to trees and other plants. Under the EPBC Regulations (r.12.30A), fires may only be lit or used in a portable barbecue or stove, a fireplace provided by the Director or a fireplace of a kind provided by the Director, or a place approved by the Director.

Marked walking tracks in the park vary in duration from half an hour to whole-day walks, are of varying difficulty and are located in a range of landscapes including rainforest, lowland woodlands, wetlands, and stone country. Opportunities for overnight bushwalks are provided in the stone country of the park. These are undertaken along unmarked routes that have been identified by Bininj/Mungguy. Due to seasonal flooding, many day walks and overnight bushwalks are inaccessible during the wet season.

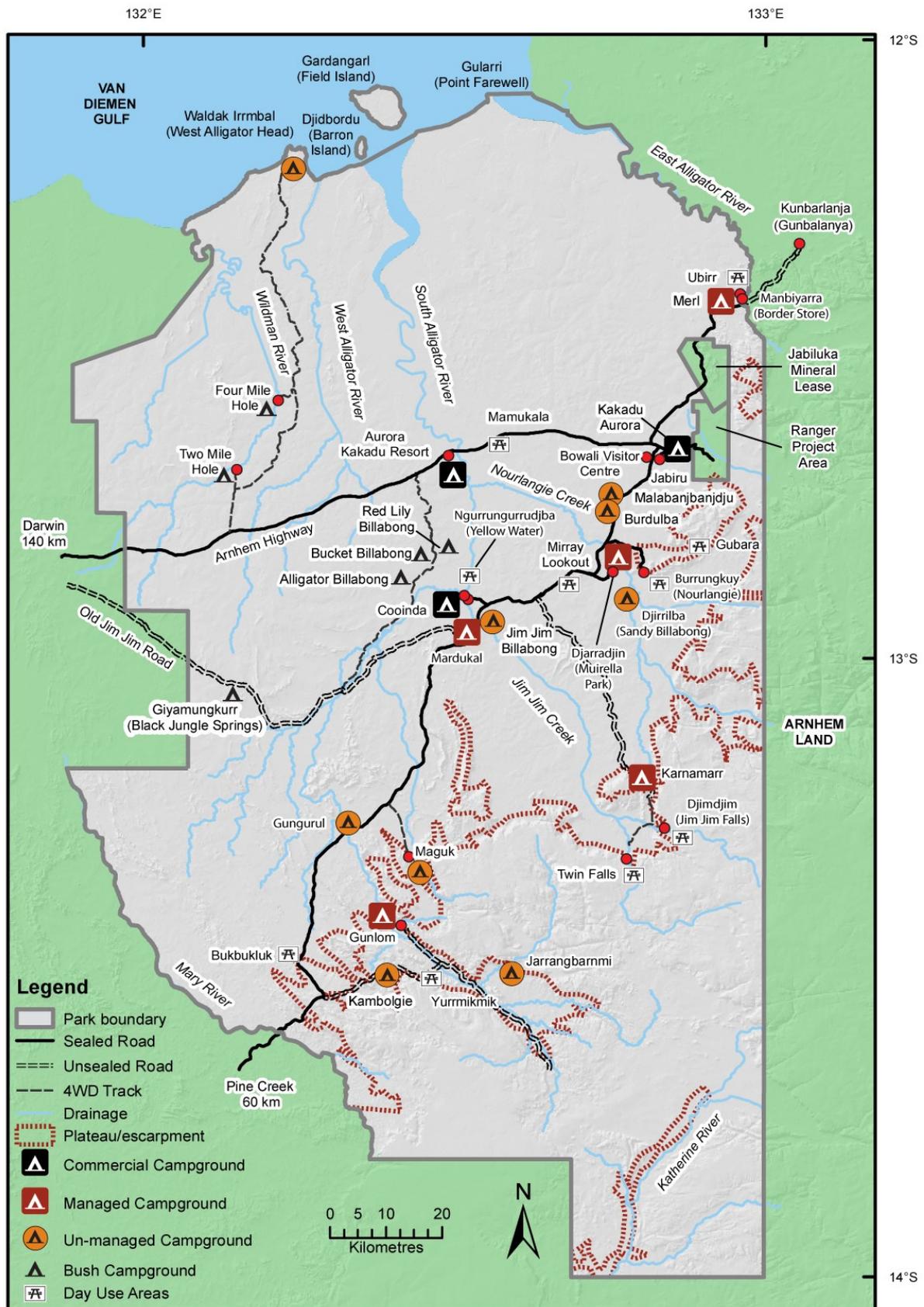
Under the EPBC Regulations, walking off a public road or track is prohibited. During the life of the fifth plan, permits were required for all overnight walks. Daily and/or monthly limits apply on the number of bushwalkers for each of the overnight bushwalking routes.

Policies

- 10.7.1 People may camp (without a permit) at the campgrounds identified in Figure 16 and other campgrounds established under this plan subject to any access restrictions under Section 10.2 (General rules for managing use of the park).
- 10.7.2 The Director may make determinations under the EPBC Regulations to allow campfires in campgrounds, subject to specified conditions.

- 10.7.3 Park visitors may only walk on a vehicle access road or vehicle access track or a track for walking provided by the Director, and subject to any prohibitions or restrictions specified in the Regulations or in an instrument issued by the Director under Section 10.2 (General rules for managing use of the park).
- 10.7.4 Permits may be issued for overnight bushwalking activities using prescribed routes in the park, subject to a range of permit conditions that protect the health and safety of visitors and the natural and cultural values of the park.
- 10.7.5 Permits may be issued to light a fire in areas other than a fireplace provided by the Director when associated with other activities such as bushwalking.
- 10.7.6 Bicycles may only be ridden on vehicle access roads and vehicle access tracks or any track for riding that may be provided by the Director, and subject to any prohibitions or restrictions by the Director under Section 10.2 (General rules for managing use of the park).
- 10.7.7 The following recreational activities may be only be carried on by persons taking part in authorised activities (and instruments will be made as required under Section 10.2 (General rules for managing use of the park) to restrict their use):
- (a) gliders, ultralight aircraft, hot air balloons and other recreational light aircraft
 - (b) airboats, amphibious vehicles and hovercraft
 - (c) non-motorised vessels.
- 10.7.8 The following activities are prohibited by the Regulations, and permits will not be authorised to be done under this plan:
- (a) climbing, abseiling on, or jumping from rock faces
 - (b) bungee jumping and BASE jumping
 - (c) hang-gliding, paragliding, and similar activities
 - (d) recreational shooting and archery. (Note: These activities are allowed at authorised clubs near Jabiru.)
- 10.7.9 Scuba diving is prohibited in the park pursuant to r.12.23A of the EPBC Regulations.
- 10.7.10 Subject to the Regulations, other recreational activities may be prohibited in all or parts of the park if considered to pose an unacceptable risk to public safety or park values.
- 10.7.11 Any water bodies in the park that are downstream of the Arnhem Land escarpment that are considered to pose an unacceptable risk to visitors of attack by estuarine crocodiles will be closed to swimming (which includes entering the water) under the EPBC Regulations.
- 10.7.12 Swimming may be prohibited in other areas of the park if impacts to park values or risks to swimmers are considered to be unacceptable.
- 10.7.13 Visitors will be discouraged from disturbing native animals at night, for example by spotlighting.

Figure 16: Camping areas in Kakadu



Recreational fishing and boating

Background

Fishing is a major recreational activity in the Top End of the Northern Territory, and Kakadu includes some of the prime recreational fishing areas. Most fishing in the park is undertaken by boat, though opportunities are also taken to fish from the river and creek banks. The catch and release method of fishing is commonly practiced in the park.

Under ss.354 and 354A of the EPBC Act fishing is an action that can only be carried on in accordance with this plan.

Regulation 12.35 of the EPBC Regulations (which operates subject to ss.354 and 354A of the Act and this plan) allows the Director to make determinations regulating recreational fishing in the park. In addition, other parts of r.12.35 and other Regulations prohibit certain fishing practices. EPBC Regulation 12.35(4) prohibits taking fish by any method other than with a hook or a lure. As a result, it is not legal to catch fish with a net in Kakadu, including small fish for bait. Hand-held landing nets are permitted in the park under 12.35(4) provided that they are only used to land a fish caught on a hook or fishing lure attached to a line.

Regulation 12.35(5) prohibits the use of a live animal as bait for fishing, and the use of any native species as bait except fish. Regulation 12.19 prohibits bringing an animal into a Commonwealth reserve, dead or alive, which means that it is not legal to bring fish or other animals into Kakadu for use as bait. Regulation 12.35 prohibits the cleaning of fish within 50 metres of any waterway within the park. Fish cleaning facilities are provided at a safe distance from the water's edge at the South Alligator River and East Alligator River boat ramps, mainly to reduce the risk of crocodiles being attracted to these boat ramp areas.

Regulation 12.18 prohibits the use in Commonwealth reserves of spear guns and other weapons and devices, including any device that can be used, or is designed, for taking an animal other than a hook and a line for catching a fish or a hand-held net designed to land a fish caught on a hook and a line.

Northern Territory laws, including laws regulating fishing, apply in the park in so far as they can operate consistently with the EPBC Act and Regulations and this plan.

Regulation 12.56 enables the Director to control the use of vessels in the park including where vessels can and cannot be used, speed of vessels, number of vessels, and where vessels may be launched, anchored or moored.

Policies and actions relating to activities being undertaken by the Director to manage recreational fishing are in Section 6.1 (Kakadu as a visitor experience destination).

Policies

- 10.7.14 Determinations may be made to prohibit or regulate recreational fishing in areas of the park.
- 10.7.15 Determinations may be made to prohibit or regulate the use of vessels in the park including, but not limited to:
- (a) speed limits
 - (b) maximum number and classes of vessels allowed in an area of water
 - (c) areas of water where a vessel or class of vessels is prohibited
 - (d) requirements to use designated mooring or launching sites.

- 10.7.16 Determinations in effect at the commencement of the plan that relate to recreational fishing and/or the use of vessels in the park will continue to apply unless varied by a future determination.
- 10.7.17 Subject to:
- (a) any decision by the Board under Section 10.7.18;
 - (b) the conditions specified in Sections 10.7.19 and 10.7.21;
 - (c) any determination made by the Director under r.12.35 of the EPBC Regulations; or
 - (d) any licensing system that may be introduced to manage recreational fishing in the park,
- recreational fishing may be carried out in accordance with:
- (e) Northern Territory fisheries laws (at the time of preparation of this plan the, *Fisheries Act*), including possession and size limits (to the extent capable of operating concurrently with this plan); and
 - (f) Northern Territory possession and size limits in the Daly and Mary rivers (to the extent capable of operating concurrently with this plan)
- 10.7.18 If the Board considers it is necessary to more closely manage the impact of recreational fishing the activity will require a permit or other authorisation from the Director.
- 10.7.19 Recreational fishing activities must be carried on in accordance with the following conditions:
- (a) processed bait may be transported through the park but must not be used in the park
 - (b) crabs must not be taken
 - (c) recreational fishing competitions may be held in accordance with a permit or licence issued by the Director under the park events policy.
- 10.7.20 Recreational boating and commercial sports fishing tour operations may be carried on in the park in accordance with the Policies relevant to those activities.
- 10.7.21 Nets, traps and pots used lawfully for recreational fishing outside the park, and any fish (this does not include crabs) caught lawfully outside the park may be transported into or through the park along the Oenpelli Road, Old Jim Jim Road, Arnhem Highway and Kakadu Highway, or the South or East Alligator rivers downstream of boat access, if securely stowed, covered and not ready for use; and may be allowed in other areas of the park in accordance with a permit issued by the Director, subject to conditions approved by the Board (and following consultation with recreational fishing stakeholders).

10.8 Commercial tourism and accommodation

Commercial tourism

Background

Well-managed commercial tour operations help visitors to experience, enjoy and learn about the park while providing an important contribution to the local and regional economies. Between 40 and 60 per cent of visitors to Kakadu, depending on the season, visit the park with commercial tour operators. The majority of these visitors are from overseas. In addition, many independent travellers participate in boat cruises, scenic flights and other commercial tours while in Kakadu.

A number of commercial tour activities are also undertaken by Bininj/Mungguy and Bininj/Mungguy organisations. The Regulations generally provide for exemption from permit fees for such permit holders.

Specific management guidelines have been introduced or proposed for some visitor destinations that are relatively small and environmentally or culturally sensitive. These guidelines include setting limits on the number of visitors or tour operators that can access or camp in these areas. Some areas have been set aside for the use of independent travellers. During the life of the fifth plan, a number of sites were not available for use by commercial tours and others had restricted access. A small number of local tour operators have negotiated benefit-sharing agreements with Bininj/Mungguy through the NLC, under which tour groups gain access to areas that are generally not open to the public.

Tour guide training and business accreditation continue to be an important element of managing commercial tourism in the park. In 2006 compulsory training was introduced for tour guides to gain certification to operate in Kakadu. The training is based on core competencies related to the interpretation of cultural and natural values, minimising visitor impact and understanding permit conditions, and is delivered flexibly via online learning or face-to-face. Industry-based accreditation has also been introduced as a requirement for tour operators with a tourism licence for unique and exclusive commercial activities. Other tour operators are encouraged to undertake voluntary accreditation through provision of incentives such as extended tenure for permits.

Under ss.354 and 354A of the EPBC Act commercial operations can only be carried on in accordance with a management plan. Commercial tour operators in Kakadu must also comply with relevant Northern Territory legislation – e.g. licensing of fishing tour operators and registration of tour vehicles. Fees for commercial tour permits required by this plan are set out in the EPBC Regulations. Under the fifth plan, permits for standard land-based tours were issued on an annual basis. Permit and licence conditions were substantially revised during the life of the fifth plan in consultation with the Kakadu Tourism Consultative Committee.

For commercial tourism in particular, the decision on whether a permit, sublease or licence is most appropriate for any proposed new activity application will be based on the following principles:

- A commercial tourism activity will require a permit if it is a routine or standard activity in areas of the park that are generally open to the public without a limit on numbers.
- If a tourism activity is limited by type, location or number of operators or involves exclusive use of a site, or the nature of activity has potential environmental impacts, then the activity will operate under a tourism licence. Licences are usually issued with a minimum five-year term.

- If long-term use of a building or area of land is required then it is likely that a licence to occupy or sublease will be required.

Policies and actions relating to activities being undertaken by the Director to manage commercial tourism are in Sections 5.3 (Managing park-wide threats affecting values – Land use), 6.2 (Commercial tourism development and management) and 9.3 (Authorising and managing activities).

Policies

- 10.8.1 Commercial tour operations may be undertaken in the park in accordance with a permit, commercial activity licence, occupation licence, sublease or lease issued by the Director.
- 10.8.2 A commercial tourism activity will be authorised by a permit if it is a routine or standard activity in or to areas of the park that are generally open to the public without a limit on numbers. If a tourism activity is limited by type, location or number of operators or involves exclusive use of a site then the activity will be authorised by a commercial activity licence. If an operation requires long-term use of a building or area it may be authorised by a licence to occupy, sublease or lease as appropriate to the circumstances.
- 10.8.3 Some commercial tourism authorisations will be reserved for enterprises that Bininj/Mungguy own or part-own or where legally binding employment and/or benefit-sharing arrangements are in place between the enterprise and Bininj/Mungguy. Some areas in the park may also be reserved for enterprises owned or part-owned by Bininj/Mungguy.
- 10.8.4 If approved by the Board, use of motherships for commercial fishing tours may be authorised by a commercial activity licence arrangement.
- 10.8.5 Night-time boat tours will generally not be allowed unless approved by the Board.
- 10.8.6 Land-based spotlighting activities will generally not be allowed unless approved by the Board.
- 10.8.7 Event licences may be issued for public gatherings of more than 15 persons, subject to consultation with Bininj/Mungguy where required.
- 10.8.8 All tour guides operating in Kakadu will be required to complete the Kakadu Knowledge for Tour Guides course (or its successor).
- 10.8.9 It will continue to be compulsory to have industry-based accreditation to conduct tour operations, except for standard tours conducted under a one-year permit. All tour operators will continue to be encouraged to take up industry-based accreditation through incentives.

Commercial accommodation

Background

Darwin and Katherine are the major population centres in the vicinity of Kakadu. Within the park, Jabiru, South Alligator and Cooida are the main visitor accommodation hubs, offering various types of accommodation and suiting a range of budgets. Camping facilities are also available within the park (see Section 10.7: Recreational activities). Three Aboriginal organisations currently own or have interests in commercial accommodation in or adjacent to Kakadu.

Consistent with the environmentally sustainable development of the park and region, there are opportunities to develop and improve commercial accommodation within the park. All new commercial accommodation proposals should aim for good environmental design including efficient resource use, meet workplace health and safety requirements and relevant building codes and take account of access for all members of the public, including those with disabilities.

The Director may grant leases, subleases and licences to use and occupy land in the park for the purpose of commercial accommodation only in accordance with this plan (s.358 EPBC Act).

Policies

10.8.10 Commercial accommodation facilities may be established and operated in the park on areas occupied under a lease, sublease or occupation licence granted by the Director with the approval of the Board and consistent with Section 9.5 (Assessment of proposals).

10.9 Filming and photography (and other commercial image capture)

Background

Each year many people from Australia and overseas seek to carry out commercial filming, photography and audio recording in Kakadu. Imagery and sound materials are used for the production of documentaries about the cultural and natural significance of the park, tourism and travel promotion materials, reference books and other publications. In addition, commercial media use images and sound in news reports about the park.

Under ss.354 and 354A of the EPBC Act commercial filming, photography and audio recording can only be carried on in accordance with this plan. The increasing use of social media presents a more challenging environment to regulate compared with traditional media of commercial filming and photography.

Policies

- 10.9.1 Commercial filming, photography and other image capture, including artwork, and audio recording may be carried on in the park and images of the park may be used for commercial gain:
- (a) in accordance with
 - (i) any information or guidance material approved by the Board under Section 6.3.4
 - (ii) a permit issued by the Director or other authorisation arrangements approved by the Board
 - (iii) payment of applicable fees
 - (b) where the activity is consistent with the protection and/or promotion of the park's values and/or promotes the park in a positive manner as a World Heritage listed visitor destination.
- 10.9.2 Members of the media and media organisations will not require a permit for the commercial capture of images or sound recording in connection with reporting news/events of the day but will require approval from the Director. In issuing approvals the Director will consider the number of crews that can be accommodated in the park at any one time, taking into account cultural and environmental sensitivities.

10.10 Commercial fishing

Background

Commercial fishing and crabbing have not been allowed in the park since 1990. Limited transport through the park of crabs caught by commercial crabbers outside the boundaries of the park was allowed during the life of the fifth plan.

Under s.354 and 354A of the EPBC Act fishing and commercial activities are actions that can only be carried on in accordance with this plan. Northern Territory laws, including laws regulating fishing, apply in the park in so far as they can operate consistently with the EPBC Act and Regulations and this plan.

Recreational fishing in the park is dealt with in Section 10.7 (Recreational activities).

Regulation 12.56 enables the Director to control the use of vessels in the park including where vessels can and cannot be used, speed of vessels, number of vessels, and where vessels may be launched, anchored or moored. See Section 10.7.14.

Policies

- 10.10.1 Subject to Sections 10.10.2 and 10.10.3 commercial fishing (including crabbing) activities are not allowed in the park and commercial fishing vessels may enter the park for emergency purposes only.
- 10.10.2 Commercial fishing vessels authorised under Northern Territory fisheries laws to operate in Cooper Creek (Arnhem Land) may transit the park on the East Alligator River between the mouth of the river and the mouth of Cooper Creek in accordance with a permit issued by the Director. Permit conditions will include:
 - (a) fish, crabs, nets, traps, dinghies and other equipment may be transported provided they are securely stowed (covered and not ready for use) in the mothership at all times while in the park
 - (b) tenders must be towed behind motherships and not be used for the transport of fish products, nets and other equipment.
- 10.10.3 Fish and crabs caught for commercial purposes outside the park, and nets, traps and other equipment used for the purposes of commercial fishing, may be transported into or through the park along the Oenpelli Road, Arnhem Highway and Kakadu Highway, in accordance with a permit issued by the Director.

10.11 Infrastructure and works

Background

Policies and actions relating to activities being undertaken by the Director to manage park infrastructure and capital works are in Section 9.4 (Capital works and infrastructure).

Some infrastructure within the park is established and maintained by other Government agencies, Aboriginal associations, and commercial operations.

Sections 354 and 354A of the EPBC Act prohibits the Director and other persons carrying on an excavation, erecting a building or other structure, or carrying out works in the park except in accordance with this plan.

Policies

- 10.11.1 Proposals from third parties relating to works etc. on new and existing infrastructure will be assessed in accordance with Section 9.5 (Assessment of proposals).
- 10.11.2 The Northern Territory Government and Aboriginal organisations carrying out authorised road works may, for the purposes of those works:
- (a) extract sand, gravel and other earth materials
 - (b) bring inert treated crushed rock into the park
- in accordance with an agreement with the Director or authorisation issued by the Director.
- 10.11.3 Excavation of sand, gravel and other earth materials from within the park will be allowable for infrastructure development purposes in accordance with a permit issued by the Director and assessed through Section 9.5 (Assessment of proposals), ensuring minimal impact to park values and the rehabilitation of these areas following extraction.
- 10.11.4 A person may carry on an excavation, erect a building or other structure, or carry out works in the park to develop and maintain capital works and infrastructure in accordance with other parts of Section 9 of this plan, and:
- (a) in accordance with a sublease or licence granted by the Director (see Section 10.1: Authorisation of allowable activities)
 - (b) in connection with Jabiru (see Section 8.2: Jabiru)
 - (c) in connection with Bininj/Mungguy living areas (see Section 8.1: Outstations and living on country)
 - (d) in accordance with a permit or approval issued by the Director.
- 10.11.5 Timber, including preservative treated pine, may be brought into the park and used for authorised capital works and infrastructure projects.
- 10.11.6 Third parties who undertake capital works and infrastructure development and other works must meet the costs of any rehabilitation required as a result of the works.

10.12 Research and monitoring activities and access to genetic resources

Background

Research and monitoring activities in Kakadu National Park are prohibited by r.12.10 of the EPBC Regulations unless authorised by this plan. Research and monitoring that involves actions which affect members of native species or is undertaken for commercial purposes is prohibited by ss.354 and 354A of the EPBC Act unless done in accordance with this plan. Actions that affect species protected by Part 13 of the Act may be authorised by this plan and will not need further authorisation under Part 13.

Research that involves access to biological resources in Commonwealth areas (taking biological resources for research and development on their genetic or biochemical components), is covered by provisions of the EPBC Act and Regulations relating to that activity (at the time of preparing this plan, Part 8A of the EPBC Regulations). Under those provisions, which operate subject to this plan, a permit is required for the activity. Table 6 sets out the key requirements of the provisions as they relate to the park.

The prescriptions in this section enable research and monitoring activities to be undertaken, and the continuation of any research involving the taking of native species that was previously approved under s.359B of the EPBC Act.

Parks Australia and the Kakadu Research and Management Advisory Committee have developed research guidelines that outline how Bininj/Mungguy want to work with researchers. These guidelines serve as a basis for all future research conducted in the park as part of the research permitting process followed by Parks Australia. Indigenous research protocols are also being developed to ensure research incorporates Bininj/Mungguy knowledge and perspectives and provides opportunities for collaboration with and employment for Bininj/Mungguy.

Policies and actions relating to activities being undertaken by the Director to manage research and monitoring are in Section 7 (Research and knowledge management).

Policies

- 10.12.1 A person may carry out research and monitoring, including taking actions covered by the EPBC Act ss.354 and 354A and Part 13 of the EPBC Act, under an agreement with the Director or in accordance with a permit issued by the Director, and in accordance with the other prescriptions in this Section.
- 10.12.2 All research conducted in Kakadu must have ethics approval where relevant, be undertaken in accordance with research guidelines approved by the Board, and be consistent with the Indigenous research protocols for the park, which includes protocols for Bininj/Mungguy engagement in research.
- 10.12.3 In considering research proposals, consideration will be given to the nature and potential impacts of the actions, the aim of the project, ethical issues and how knowledge from the project might benefit the understanding and management of park values.
- 10.12.4 Research and monitoring will focus on filling strategic knowledge gaps, and alignment with the research priorities for the park will be a key consideration in assessing research proposals.
- 10.12.5 The Supervising Scientist and ERISS may carry out research and monitoring, including actions covered by ss.354 and 354A and Part 13 of the EPBC Act, in accordance with protocols agreed with the Director and approved by the Board.

- 10.12.6 Research and monitoring may only be carried out for commercial purposes if approved by the Board (generally or in relation to a particular research and monitoring activity) and under a permit from the Director.
- 10.12.7 Research and monitoring may be authorised if the Director is satisfied:
- (a) the project activities will not have an unacceptable impact on park values
 - (b) the project will be conducted in a manner not inconsistent with achieving the objectives of this management plan.
- 10.12.8 Persons carrying out research and monitoring under agreement with or permit from the Director must make data and results of research and monitoring available to the Director, including progress reports for longer-term research, in a specified format including plain English summaries for Bininj/Mungguy and staff. The Director may make such information available to park users and other interested parties.
- 10.12.9 Extractive research and monitoring activities (collection of rock and soil samples) may be authorised if the Director is satisfied:
- (a) the activities are not inconsistent with the other prescriptions in this Section
 - (b) the research is not for the purpose of mining operations.
- 10.12.10 A person may have access to biological resources in accordance with the relevant provisions of the EPBC Act and Regulations relating to the activity, in addition to the other applicable Policies in this Section.

Table 6: Key EPBC requirements for access to biological resources as they concern the park

<p>1. Any person who wants to access biological resources must obtain a permit from the Minister for the Environment.</p>
<p>2. The ‘access provider’ must agree to the taking of biological resources. The access provider for Aboriginal land in Kakadu is the relevant land trust, and for non-Aboriginal land it is the Director.</p>
<p>3. Where access is sought for commercial purposes or potential commercial purposes:</p> <ul style="list-style-type: none"> (i) there must be a benefit-sharing agreement with the relevant access provider (ii) the benefit-sharing agreement must provide for reasonable benefit-sharing arrangements, including protection for, recognition of, and valuing of any Indigenous people’s knowledge that is to be used (iii) where access is sought to Aboriginal land in the park the relevant land trust must give ‘informed consent’ to the benefit-sharing agreement, after the traditional owners of the land have been consulted and the views of the NLC obtained.
<p>4. Where access is sought for non-commercial purposes:</p> <ul style="list-style-type: none"> (i) written permission must be obtained from the relevant access provider (ii) a statutory declaration must be given to the access provider declaring, among other things, that any biological resources taken are not intended to be used for commercial purposes; that a written report will be given to the access provider on the results of any research into the biological resources; that samples will not be given to other people (other than a specified research institution) without permission of the access provider; and that the person(s) given access will not carry out, or allow others to carry out, commercial research or development unless a benefit-sharing agreement is in place with the access provider.
<p>5. There must be an assessment of the environmental impact of the proposed access if it is likely to have more than negligible environmental impact.</p>

10.13 Bringing plants, animals and other materials into the park

Background

The natural and cultural values of Kakadu are important to Bininj/Mungguy, visitors and other stakeholders, and ensuring the park's values are well managed and healthy is a key aspect of this plan. The introduction of new plants and animals into the park has the potential to seriously impact these values if not appropriately managed.

Under ss.354 and 354A of the EPBC Act, a person may not kill, injure, take, trade, keep or move a member of a native species except in accordance with a management plan. The EPBC Regulations also prohibit bringing animals and plants into the park and cultivating plants in the park, except with the approval of the Director.

Regulation 12.19 of the EPBC Regulations prohibits bringing into or keeping animals in the park, except in accordance with this plan or a permit issued by the Director. This prohibition does not apply to guide dogs for the blind, hearing dogs for the deaf, and other assistance animals for people with disabilities.

Regulations 12.20 and 12.21 prohibit bringing plants into the park or cultivating plants, except in accordance with this plan or a permit from the Director, or in an area held under lease, sublease or occupation licence from the Director. Jabiru residents may bring in and cultivate plants if they are on the Approved Plant List determined by the Director.

Policies

- 10.13.1 Rock, soil, sand, mulch or other similar materials may be brought into or transported through the park in accordance with a permit issued by the Director. Import of sterilised potting mix for non-commercial purposes will not require a permit, and import for commercial purposes may occur with the approval of the Director.
- 10.13.2 The Director may approve others (through licence, contract or other form of approval) to bring inert treated crushed rock into the park for the purpose of road works.
- 10.13.3 In accordance with EPBC Regulations, bringing in firewood from outside the park is not permitted. The Director may put in place alternative arrangements for collecting firewood in and transporting firewood through the park.
- 10.13.4 Plants and seeds may be brought into Jabiru without a permit provided they are on the Approved Plant List for the park as maintained by the Director (see also Section 7: Living in the park). A permit may be issued by the Director to bring plants or seeds into Jabiru where the relevant species does not appear on the Approved Plant List.
- 10.13.5 Plants and seeds may be brought into other areas of the park without a permit or other authorisation provided they are on the Approved Plant List for the park.
- 10.13.6 Native animals may be brought into the park or transported through the park in accordance with a permit issued by the Director.
- 10.13.7 Non-native animals may be brought into or taken through the park in accordance with a permit issued by the Director.

- 10.13.8 The entry of dogs to the park with visitors will be restricted to guide dogs for the vision and hearing impaired, or an assistance animal used by a person with a disability. Permits to bring dogs in for other purposes will only be considered in exceptional circumstances or as otherwise approved by the Board.
- 10.13.9 Cats must not be brought into or kept in the park, including in Jabiru or at outstations, under any circumstances, and permits will not be issued.
- 10.13.10 Park staff and residents (including in Jabiru) may keep dogs in accordance with general approval issued by the Director.

Note: Additional requirements apply under Section 10.3.15 in relation to keeping dogs in Jabiru.

- 10.13.11 Park staff, Jabiru residents and residents within lease areas will only be permitted to keep fish native to and collected from the Magela Creek system in home aquariums and ponds. Permits may be issued to collect specimens for this purpose within sustainable limits, and fish must not be sold or traded.
- 10.13.12 No other animals (native or non-native) are allowed to be brought into or kept in the park, including in Jabiru, except in accordance with a permit issued by the Director, which will only be issued in exceptional circumstances or as otherwise approved by the Board.
- 10.13.13 Registered wildlife carers may keep native animals caught in the park only for the purposes of rehabilitation and release back into their natural habitat.
- 10.13.14 To minimise the risk of introducing diseases into the park, injured or orphaned animals that are taken out of the park will not be allowed to be returned to the park except with the Director's approval.



'Magpie Geese' by © Tyrone Taylor ©

Appendices



Appendix A

World Heritage attributes of Kakadu National Park

The Convention Concerning the Protection of the World Cultural and Natural Heritage 1972 (World Heritage Convention) is concerned with identifying, protecting and conserving cultural or natural features of outstanding universal value. Kakadu is listed as a World Heritage area under the following cultural and natural criteria.

Cultural criteria

Criterion (i) Masterpiece of human creative genius

The rock art sites of Kakadu National Park represent a unique artistic achievement, spanning a continuum tens of thousands of years to the present and continuing to maintain an important function in the cultural and social aspects of contemporary Indigenous communities. The World Heritage values include rock art sites which:

- in themselves represent a unique artistic achievement and which comprise one of the greatest concentrations of rock art in the world;
- are of great antiquity and which represent a continuous temporal span from the Pleistocene Epoch to the present;
- exhibit great diversity, both in space and through time, yet embody a continuous cultural development; and
- demonstrate in the record of the art sites a living cultural tradition which continues today.

Criterion (vi) Directly associated with events or living traditions

Kakadu National Park is associated with events, ideas and beliefs of outstanding universal significance. The World Heritage values include cultural sites which:

- form a rich collection of places imbued with strong spiritual associations relating to creator beings and are connected to the continuing practice of traditional beliefs and practices;
- demonstrate in the art and the archaeological record a living cultural tradition that continues today;
- are of great antiquity and represent a continuous temporal span from the Pleistocene Epoch to the present;
- include archaeological sites which are currently some of the oldest dated within Australia;
- exhibit great diversity, both in space and through time, yet embody a continuous cultural development;
- preserve a record, not only in the form of archaeological sites but also through rock art, of human responses and adaptation to major environmental change including rising sea levels; and
- preserve fragile items of material culture not commonly found within other archaeological sites.

Natural criteria

Criterion (vii) Contains superlative natural phenomena

Kakadu National Park has features of exceptional natural beauty and aesthetic importance and contains superlative natural phenomena. The World Heritage values include:

- the expansive and varied natural landscapes which include coastal areas, lowlands, wetlands, floodplains, plateau complexes, escarpments and outliers;
- the exceptional natural beauty of viewfields;
- the relatively undisturbed nature of the landscape;
- the unusual mix and diversity of habitats found in close proximity; and
- the large scale of undisturbed landscape.

Criterion (ix) Outstanding examples of ongoing evolution

Kakadu National Park is an outstanding example representing significant ongoing geological processes, particularly associated with the effects of sea-level change in northern Australia, biological evolution and people's interaction with their natural environment. The World Heritage values include:

- the coastal riverine and estuarine flood plains of the South Alligator, West Alligator, East Alligator, and Wildman rivers, which include freshwater flood plains with tidal river channels;
- the relatively undisturbed nature of the river systems and their associated catchments;
- the mangrove swamps, including remnants of more extensive swamps which formed between 6,500 and 7,000 years ago on the coastal fringe and plains;
- the spatial zonation of the coastal and floodplain vegetation which exemplifies a vegetation succession linked to processes of sea-level change and sedimentation and extends from lower intertidal mangroves to estuarine mangroves to floodplain vegetation;
- the range of the environmental gradients and contiguous, diverse landscapes, extending from the sandstone plateaus and escarpments through lowland areas and wetlands to the coast, which have contributed to the evolution of high levels of endemism and species diversity;
- the scale and integrity of the landscapes and environments with extensive and relatively unmodified vegetation cover and largely intact faunal composition which are important in relation to ongoing evolutionary processes in an intact landscape;
- the high spatial heterogeneity of habitats;
- the high diversity and abundance of plant and animal species, many of which are adapted to low-nutrient conditions (including more than 1,600 plant species, over one-quarter of Australia's known terrestrial mammal, about one-third of the total bird fauna and freshwater fish species, about 15 per cent of Australia reptile and amphibian species and a high diversity of insect species);

- the Aboriginal archaeological remains and rock art which represent an outstanding example of people's interaction with the natural environment and bear remarkable and valuable witness to past environments in northern Australia and to the interaction of people with these environments;
- the ongoing, active management of the landscapes by Aboriginal people through the use of fire, including fire-assisted hunting and the creation of environmental mosaics which contribute to species diversity, provide an important example of people's interaction with the environment: and
- the diverse range of habitats and vegetation types including:
 - open forest and woodlands
 - lowland and sandstone (*Allosyncarpa ternata* closed forest) rainforests
 - shrubland and heath
 - wetland, riverine, and coastal environments
 - mangroves and floodplains.

Criterion (x) Important habitats for conservation of biological diversity

Kakadu National Park's large size, its diversity of habitats and its position in an area of northern Australia subjected to considerably less disturbance by European settlement than many other parts of the continent have resulted in the protection and conservation of many significant habitats, including those where threatened species of plants and animals of outstanding universal value from the point of view of science and conservation still survive.

The World Heritage values include:

- the wide range of natural habitats, including:
 - open forest and woodlands
 - monsoon rainforest areas
 - heaths and shrublands
 - freshwater wetlands
 - mangrove and estuarine areas
 - foreshore and beach areas.
- significant plant associations, including those associated with *Eucalyptus koolpinensis*, the heath vegetation on the margins of the Marrawal Plateau, and woodland containing *Terminalia platyptera* on Snake Plains;
- plant species of conservation significance (including endemic species and relict species) such as *Arthrochilus byrnessii*, *Cycas conferta*, *Desmodium* sp. 2, *Eucalyptus koolpinensis*, *Hildegardia australiensis*, *Micraira* spp., *Neobyrnesia suberosa*, *Pityrodia* spp., *Plectrachne aristiglumis*, *Triodia radonensis*, *Typhonium russell-smithii*;

- animal species of conservation significance, including:
 - mammals (such as Calaby's mouse *Pseudomys calabyi*, Kakadu dunnart *Sminthopsis* sp. Nov., nabarlek *Petrogale concinna*, false water rat *Xeromys myoides*, golden backed tree rat *Mesembriomys macrurus*, and ghost bat *Macroderma gigas*);
 - reptiles (such as the pig-nosed turtle *Carettochelys insculpta*, Pacific or olive ridley turtle *Lepidochelys olivacea*, green turtle *Chelonia mydas*, loggerhead turtle *Caretta caretta*, saltwater crocodile *Crocodylus porosus* and freshwater crocodile *C. johnstoni*);
 - birds (such as the Gouldian finch *Erythrura gouldiae*, partridge pigeon *Geophaps smithii*, hooded parrot *Psephotus dissimilis*, little tern *Sterna albifrons*, masked owl - northern subspecies *Tyto novaehollandiae kimberli* and red goshawk *Erythrotriorchis radiatus*);
 - invertebrates (such as crustaceans of the plateau and escarpment streams, especially the families Amphisopodidae, Atyidae and Palaemonidae);
 - fish (such as two newly discovered taxa of goby, including the new genus *Cryptocentrus*, and a speartooth shark *Gyphis* sp);
- species which have experienced range reductions (such as the magpie goose *Anseranas semipalmata*, Gouldian finch *Erythrura gouldiae*, partridge pigeon *Petrophassa smithii*, pale field rat *Rattus tunneyi* and Leichhardt's grasshopper *Petasida ehippiger*); and
- endemic species and relict species (including the ghost bat *Macroderma gigas*, the orange horseshoe bat *Rhinonictis aurantius*, saltwater crocodile *Crocodylus porosus*, freshwater crocodile *C. johnstoni*, and the pig-nosed turtle *Carettochelys insculpta*).

Appendix B

Ramsar criteria

The whole of Kakadu National Park is listed as a Wetland of International Importance under the Ramsar Convention. The Kakadu National Park Ramsar site meets all nine of the listing criteria.

Criterion 1: The wetland types occurring within the Ramsar site are representative of types found in the bioregion. In particular, the floodplains are outstanding examples of their types in the Timor Sea Drainage Division of the monsoon tropics. Field Island is also particularly notable as it represents a remarkably high level of habitat diversity within a relatively small area.

Criterion 2: Kakadu National Park supports numerous nationally threatened species, notably the yellow chat, pig-nosed turtle, speartooth shark, northern river shark and flatback turtle.

Criterion 3: The Ramsar site has a rich biological diversity representative of the region. In particular, 59 fish species are known from the wetland, including eight with narrowly restricted ranges. Sixty-one mammal species and 105 reptile species have been recorded in the Ramsar site. Kakadu National Park also supports four regionally endemic wetland-dependent flora species and four regionally endemic fish species.

Criterion 4: Large numbers of waterbirds breed within Kakadu National Park. Significant breeding groups of magpie geese occur throughout the floodplains of the site, with the South Alligator floodplains regarded as the third most important area of nesting habitat after the Mary–Adelaide and Daly River floodplains. Additionally, the permanent wetlands within the site (particularly billabongs) provide a dry season refuge for a variety of species including waterbirds, reptiles such as crocodiles and freshwater turtle, and freshwater fish.

Criterion 5: Between August and October up to 2.5 million waterbirds accumulate on the floodplains of Kakadu National Park. In particular, large concentrations of magpie geese and wandering whistling-duck occur in the Ramsar site in places such as the Nourlangie floodplain.

Criterion 6: Kakadu National Park supports more than one per cent of the East Asian–Australasian Flyway population, of the following waterbirds: magpie goose, wandering whistling-duck, plumed whistling-duck, Radjah shelduck, pacific black duck, grey teal, brolga, black-necked stork, marsh sandpiper, little curlew, common sandpiper, Australian pratincole and sharp-tailed sandpiper.

Criterion 7: Fifty-nine freshwater fish species have been recorded in Kakadu National Park. This represents approximately 20 per cent of the total number of fish species found in Australian freshwaters and is the highest species richness of any catchment in the Timor Sea Drainage Division

Criterion 8: Kakadu National Park provides important habitats, feeding areas, dispersal and migratory pathways, and spawning sites for numerous fish species of direct and indirect fisheries significance.

Criterion 9: The Ramsar site supports one per cent of the population of the following species: northern river shark, speartooth shark, pig-nosed turtle and saltwater crocodile.

Further information regarding Kakadu National Park's Ramsar values can be found in the site Ramsar Information Sheet and Ecological Character Description, available from www.environment.gov.au/water/wetlands/ramsar.

Appendix C

International agreements

This management plan takes into account Australia's obligations under international agreements that are relevant to Kakadu National Park.

United Nations Declaration on the Rights of Indigenous Peoples

On 3 April 2009 the Australian Government announced its support for the UN Declaration on the Rights of Indigenous Peoples. Although the Declaration is non-binding and does not affect existing Australian law, it does set important international principles for nations to aspire to, and many of its provisions are grounded in the core human rights treaties to which Australia is a party.

Convention on Biological Diversity

Australia is a signatory to the Convention on Biological Diversity (CBD), which requires parties to pursue the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources. Article 8 of the convention identifies that parties should 'establish a system of protected areas or areas where special measures need to be taken to conserve biodiversity'. The establishment and management of the Kakadu National Park contributes to meeting Australia's obligations under the CBD.

The Nagoya Protocol

In October 2010 the Conference of Parties to the Convention on Biological Diversity adopted the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization. Australia signed the protocol in January 2012, and is committed to its full implementation and ratification.

The protocol establishes an internationally recognised framework for access to genetic resources and associated traditional knowledge for research activities and sharing the benefits from their use. Access to biological resources in Commonwealth areas such as the park is regulated under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and EPBC Regulations 2000 (see also 8.11: Research and monitoring activities and access to genetic resources).

World Heritage Convention

Australia is a party to the World Heritage Convention, which aims to promote cooperation among nations to protect heritage that is of such outstanding universal value that its conservation is important for current and future generations. The convention's primary mission is to define and conserve the world's heritage by drawing up a list of sites whose outstanding values should be preserved for all humanity and to ensure their protection through a closer cooperation among nations.

Parties to the convention undertake to identify, protect, conserve, present and transmit to future generations the World Heritage listed sites on their territory. The operational guidelines for implementing the World Heritage Convention include requirements that each World Heritage area should have a management plan and should have adequate long-term legislative protection.

Stage One of the park was inscribed on the World Heritage List in 1981 and Stage Two in 1987. The whole of the park was listed in December 1992. Kakadu is one of the few sites that are listed under the World Heritage Convention for both cultural and natural values. Appendix A to this plan summarises the features of Kakadu that meet the cultural and natural World Heritage criteria.

World Heritage management principles are prescribed by the EPBC Regulations (Schedule 5). An extract from the principles is at Appendix A to this plan.

Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971 (Ramsar Convention)

This international agreement is more commonly known as the Ramsar Convention on Wetlands, and originally aimed to conserve and wisely use wetlands primarily as habitat for waterbirds. Over the years, the Ramsar Convention's scope has broadened to cover all aspects of wetland conservation and wise use, recognising that wetland ecosystems are important for both biodiversity conservation and the well-being of human communities.

To achieve its aims, the Ramsar Convention requires international cooperation, policy making, capacity building and technology transfer from its members. All wetlands listed under the Ramsar Convention are recognised as matters of national environmental significance under the EPBC Act. As such, approval is required for actions that will have, or are likely to have a significant impact on the ecological character of a Ramsar-listed wetland.

Sites are selected for the List of Wetlands of International Importance under the Ramsar Convention because of ecological, botanical, zoological, limnological or hydrological importance.

Kakadu National Park was previously two separate Ramsar sites. The wetlands of Stage 1 of Kakadu were first listed in June 1980 and the Ramsar site was later extended to include the wetlands of Stage 3 of the park that fall within the South Alligator River catchment in 1996. The wetlands in Stage 2 of the park were first listed as a Wetland of International Importance in September 1989. On 28 April 2010 the two Ramsar sites were combined to form a single Ramsar site encompassing the entire National Park. The Ramsar criteria under which Kakadu National Park is recognised are listed in Appendix B.

Australian Ramsar management principles are prescribed by the EPBC Regulations (Schedule 6). An extract from the principles is at Appendix B to this plan.

Convention on the Conservation of Migratory Species of Wild Animals

The Convention on the Conservation of Migratory Species of Wild Animals (CMS or Bonn Convention) aims to conserve terrestrial, marine and avian migratory species throughout their range. As a party to the Bonn Convention, Australia has agreed to protect migratory species and to negotiate and implement agreements for the conservation and management of migratory species with other range states, including cooperation and support of research relating to migratory species:

- The agreement between the Government of Australia and the Government of Japan for the Protection of Migratory Birds in Danger of Extinction and their Environment 1974 (JAMBA).
- The agreement between the Government of Australia and the Government of the People's Republic of China for the Protection of Migratory Birds in Danger of Extinction and their Environment 1986 (CAMBA).
- The agreement between the Government of Australia and the Government of the Republic of Korea for the Protection of Migratory Birds 2007 (ROKAMBA).

Appendix D to this plan lists species found in the park that are listed in or under the Bonn Convention, CAMBA, JAMBA and ROKAMBA.

Appendix D

EPBC-listed migratory species recorded in Kakadu National Park

Common name	Scientific name	Bonn	CAMBA	JAMBA	ROKAMBA
Birds		▪	▪	▪	▪
Garganey	<i>Anas querquedula</i>	✓	✓	✓	✓
Brown booby	<i>Sula leucogaster</i>		✓	✓	✓
Great frigatebird	<i>Fregata minor</i>		✓	✓	
Lesser frigatebird	<i>Fregata ariel</i>		✓	✓	✓
Eastern reef egret	<i>Egretta sacra</i>		✓		
Great egret	<i>Ardea alba</i>		✓	✓	
Cattle egret	<i>Ardea ibis</i>		✓	✓	
Glossy ibis	<i>Plegadis falcinellus</i>	✓	✓		
Eastern Osprey	<i>Pandion cristatus</i>	✓			
White-bellied sea-eagle	<i>Haliaeetus leucogaster</i>		✓		
Sarus crane	<i>Grus antigone</i>		✓		
Latham's snipe	<i>Gallinago hardwickii</i>	✓	✓	✓	✓
Swinhoe's snipe	<i>Gallinago megala</i>	✓	✓	✓	✓
Black-tailed godwit	<i>Limosa limosa</i>	✓	✓	✓	✓
Bar-tailed godwit	<i>Limosa lapponica</i>	✓	✓	✓	✓
Little curlew	<i>Numenius minutus</i>	✓	✓	✓	✓
Whimbrel	<i>Numenius phaeopus</i>	✓	✓	✓	✓
Eastern curlew	<i>Numenius madagascariensis</i>	✓	✓	✓	✓
Marsh sandpiper	<i>Tringa stagnatilis</i>	✓	✓	✓	✓
Common greenshank	<i>Tringa nebularia</i>	✓	✓	✓	✓
Wood sandpiper	<i>Tringa glareola</i>	✓	✓	✓	✓

Common name	Scientific name	Bonn	CAMBA	JAMBA	ROKAMBA
Terek sandpiper	<i>Xenus cinereus</i>	✓	✓	✓	✓
Common sandpiper	<i>Actitis hypoleucos</i>	✓	✓	✓	✓
Grey-tailed tattler	<i>Tringa brevipes</i>	✓	✓	✓	✓
Ruddy turnstone	<i>Arenaria interpres</i>	✓	✓	✓	✓
Great knot	<i>Calidris tenuirostris</i>	✓	✓	✓	✓
Red knot	<i>Calidris canutus</i>	✓	✓	✓	✓
Sanderling	<i>Calidris alba</i>	✓	✓	✓	✓
Red-necked stint	<i>Calidris ruficollis</i>	✓	✓	✓	✓
Pectoral sandpiper	<i>Calidris melanotos</i>	✓		✓	✓
Sharp-tailed sandpiper	<i>Calidris acuminata</i>	✓	✓	✓	✓
Curlew sandpiper	<i>Calidris ferruginea</i>	✓	✓	✓	✓
Broad-billed sandpiper	<i>Limicola falcinellus</i>	✓	✓	✓	✓
Grey plover	<i>Pluvialis squatarola</i>	✓	✓	✓	✓
Little ringed plover	<i>Charadrius dubius</i>		✓		✓
Lesser sand plover	<i>Charadrius mongolus</i>	✓	✓	✓	✓
Greater sand plover	<i>Charadrius leschenaultii</i>	✓	✓	✓	✓
Oriental plover	<i>Charadrius veredus</i>	✓		✓	✓
Australian Painted Snipe	<i>Rostratula australis</i>		✓		
Pacific Golden Plover	<i>Pluvialis fulva</i>	✓	✓	✓	✓
Oriental pratincole	<i>Glareola maldivarum</i>		✓	✓	✓
Caspian tern	<i>Sterna caspia</i>		✓	✓	
Lesser crested tern	<i>Sterna bengalensis</i>		✓		
Black-naped tern	<i>Sterna sumatrana</i>		✓	✓	
Common tern	<i>Sterna hirundo</i>		✓	✓	✓

Common name	Scientific name	Bonn	CAMBA	JAMBA	ROKAMBA
Little tern	<i>Sterna albifrons</i>	✓	✓	✓	✓
Bridled tern	<i>Sterna anaethetus</i>		✓	✓	
White-winged tern	<i>Chlidonias leucopterus</i>		✓	✓	✓
Oriental cuckoo	<i>Cuculus saturatus</i>		✓	✓	✓
White-throated needletail	<i>Hirundapus caudacutus</i>		✓	✓	✓
Fork-tailed swift	<i>Apus pacificus</i>		✓	✓	✓
Rainbow bee-eater	<i>Merops ornatus</i>			✓	
Yellow wagtail	<i>Motacilla flava</i>		✓	✓	✓
Grey wagtail	<i>Motacilla cinerea</i>		✓		✓
Barn swallow	<i>Hirundo rustica</i>		✓	✓	✓
Australian reed-warbler	<i>Acrocephalus australis</i>	✓			
Mammals					
Dugong	<i>Dugong dugon</i>	✓			
Indo-Pacific humpback dolphin	<i>Sousa sp.</i>	✓			
Australian snubfin dolphin	<i>Orcaella heinsohni</i>	✓			
Reptiles					
Saltwater crocodile	<i>Crocodylus porosus</i>	✓			
Loggerhead turtle	<i>Caretta caretta</i>	✓			
Green turtle	<i>Chelonia mydas</i>	✓			
Olive Ridley turtle	<i>Lepidochelys olivacea</i>	✓			
Flatback turtle	<i>Natator depressus</i>	✓			

Source: Northern Territory Department of Land Resources Management and Australian Government Department of Environment Species Profiles and Threats database

Appendix E

Summary of the timeframes and consultation process used in developing this plan

In preparing this management plan, the Kakadu National Park Board of Management followed the process outlined in Section 368 of the *Environment Protection and Biodiversity Conservation Act 1999*. The actual steps taken by the Board, and the timing of each step, are shown below.



In undertaking these steps, nine Board meetings, four Board working group meetings and four rounds of Bininj/Mungguy consultation were held. These consultations have involved a total of 128 Bininj/Mungguy (including Board and Working Group members and staff) to date. The details of each of these meetings are outlined below.

Year	Month	Type of meeting	Details
2011	December	Board meeting	Reviewed the audit process and EPBC requirements for a management plan
2012	March	Board meeting	Determined the planning and consultation process to be used
	April	Traditional owner and staff consultations	Five community meetings held across the park and in neighbouring centres and a staff meeting held on the planning process and the outcomes of the audit and Have Your Say process
		Board management plan working group	Reviewed the traditional owner consultations to provide feedback for the next community meetings
	June	Board meeting	Considered park values and reviewed outcomes of the technical audit of the fifth management plan and Have Your Say process
	September	Board meeting	Considered vision and guiding principles, outcomes and objectives for plan sections, and policies and actions for living on country
		Board management plan working group	Considered policies and actions for looking after culture
	October	Traditional owner and staff consultations	Three community meetings and a staff meeting held to discuss looking after country
	December	Board management plan working group	Considered policies and actions for threats to values and landscapes
2013	February	Traditional owner consultations	Three community meetings and a held to discuss tourism
		Traditional owner consultations	Three community meetings held to discuss joint management
		Staff consultations	Staff meeting held to discuss tourism and joint management
	March	Traditional owner consultations	Traditional owners met with the Director of National Parks to further discuss joint management
	October	Board meeting	Considered draft policies and actions on looking after country and culture, business management and joint management

Year	Month	Type of meeting	Details
	November	Board management plan working group	Considered draft policies and actions on tourism
	December	Board meeting	Considered draft policies and actions on managing use of the park
2014	March	Board meeting	Considered draft policies and actions on Jabiru and outstations
	June	Board meeting	Considered draft policies and actions on Jabiru and performance indicators
	September	Board meeting	Endorsed the draft plan for release for public comment.
2015	June	Board meeting	Considered some of the issues raised in the public comments in submissions on the draft management plan.
	August	Board meeting	Considered the remaining public comments in submissions on the draft management plan and approved the final plan subject to any further changes recommended and agreed to by the sub-committee.
	September	Board management plan sub-committee	Considered additional comments on draft plan provided by a Kakadu Board member and approved the management plan (with some changes) on behalf of the Board.

Appendix F

Glossary and interpretation

AAPA	means the Aboriginal Areas Protection Authority established under the <i>Northern Territory Aboriginal Sacred Sites Act</i> and includes any agency that may succeed to its functions under the Act
Aboriginal	means a person who is a member of the Aboriginal race of Australia
Aboriginal land	means land held by an Aboriginal Land Trust for an estate in fee simple under the <i>Aboriginal Land Rights (Northern Territory) Act 1976</i>
Aboriginal tradition	means the body of traditions, observances, customs and beliefs of Aboriginals generally or of a particular group of Aboriginals; and includes those traditions, observances, customs and beliefs as applied in relation to particular persons, sites, areas of Kakadu National Park, things and relationships
Action	means activities that will be undertaken during the life of the plan that assist in the delivery of outcomes
AFANT	means the Amateur Fishermen’s Association of the Northern Territory
Area plan	means an operational plan for a visitor site which sets out the natural, cultural and recreational values, identifies objectives based on these values, and sets out a management strategy to achieve them and to ensure that visitor activities are sustainable
Australian Government	means the Government of the Commonwealth of Australia
Balanda	means non-Aboriginal people
BFC	means the Bushfires Council established by the <i>Bushfires Act</i> (NT)
Bininj/Mungguy	<p>means the traditional Aboriginal owners of land in the park (within the meaning of the <i>Aboriginal Land Rights (Northern Territory) Act 1976</i>), and other Aboriginals entitled by Aboriginal tradition to use or occupy land in the park (whether or not the traditional entitlement is qualified as to place, time, circumstance, purpose or permission)</p> <p>Note: <i>Bininj</i> is a Kunwinjku and Gundjeihmi word, pronounced ‘bin-ing’. This word is similar to the English word ‘man’ and can mean man, male, person or Aboriginal people, depending on the context. Other languages in Kakadu National Park have other words with these meanings – for example the Jawoyn word is <i>Mungguy</i> and the Limilngan word is <i>Murlugan</i>. In this plan, the words <i>Bininj/Mungguy</i> are used to refer to Aboriginal people who have rights and interests in relation to Kakadu National Park.</p>
Board of Management or Board	means the Board of Management established for the park under the EPBC Act

Bonn Convention	means the Convention on the Conservation of Migratory Species of Wild Animals
Bushfires NT	means an area within the Northern Territory government agency of Land Resource Management responsible for implementing the <i>Bushfires Act</i> and supporting landholders with fire mitigation
CAMBA	means the Agreement between the Government of Australia and the Government of the People’s Republic of China for the Protection of Migratory Birds and their Environment
Capture of images	means recording an image by artistic representation or on film, videotape or electronic medium
Citizen science	means the systematic collection of biodiversity data by amateur or non-professional scientists
Clan estate	means the entitlement to property of a group of people united by actual or perceived kinship and descent
Commercial activity	means the carrying out of an activity with intent of a reward – i.e. money, merchandise or services – or the possibility of future reward (if done for financial reward or commercial gain, under contract or consignment for another person, and/or with a view to being sold or hired out, or for promotion/advertising of a product or service)
CITES	means the Convention on International Trade in Endangered Species of Wild Fauna and Flora
Commonwealth reserve	means a reserve established under Division 4 of Part 15 of the EPBC Act
Department of the Environment	means the Australian Government Department responsible for the administration of the EPBC Act
District	means one of five specific geographic management areas of the park each managed by a dedicated team of staff
Director	means the Director of National Parks under s.514A of the EPBC Act, and includes Parks Australia and any person to whom the Director has delegated powers and functions under the EPBC Act in relation to Kakadu National Park
Djang site	means Bininj/Mungguy dreaming places – these places represent belief systems and are powerful and sacred
EPARR Act	means the <i>Environment Protection (Alligator Rivers Region) Act 1978</i>
EPBC Act	means the <i>Environment Protection and Biodiversity Conservation Act 1999</i> , including Regulations under the Act, and includes reference to any Act amending, repealing or replacing the EPBC Act

EPBC Regulations or the Regulations	means the Environment Protection and Biodiversity Conservation Regulations 2000 and includes reference to any Regulations amending, repealing or replacing the EPBC Regulations
ERA	means Energy Resources Australia
ERISS	means the Environmental Research Institute of the Supervising Scientist
FNA	means the Fly Neighbourly Advice, also known as the Fly Neighbourly Agreement or Policy
Feral animal/species	means a domestic animal that has escaped into the wild and now lives there; in this plan it also includes wild populations of non-native animals
Gazette	means the <i>Commonwealth of Australia Gazette</i>
GIS	means geographic information system
IUCN	means the International Union for Conservation of Nature
Indicator	means the measures that will be used to indicate the level of achievement of the outcomes Collectively, indicators should demonstrate achievement of the outcome and objective.
JAMBA	means the Agreement between the Government of Australia and the Government of Japan for the Protection of Migratory Birds and Birds in Danger of Extinction and their Environment
JTDA	means the Jabiru Town Development Authority, or its successor
Kakadu National Park or the park or Kakadu	means the area that was declared as a park by that name under the NPWC Act and continues as a Commonwealth reserve under the EPBC Act by the <i>Environmental Reform (Consequential Provisions) Act 1999</i>
Keystone species	means a species that has a disproportionately large effect on its environment relative to its abundance and plays a critical role in maintaining the structure of an ecological community
KRMAC	means the Kakadu Research and Management Advisory Committee – as noted earlier KRMAC
KTCC	means the Kakadu Tourism Consultative Committee
Land Rights Act	means the <i>Aboriginal Land Rights (Northern Territory) Act 1976</i>
Lease agreements	means lease agreements between Aboriginal Land Trusts and the Director in respect of Aboriginal land in the park
Line of sight	means the direct and evident relationship/ linkages between actions, outcomes and objectives Management actions should directly contribute to achievement of the desired outcomes and objectives.

Management Effectiveness Framework	means the systematic approach to assessing and demonstrating how well Parks Australia is managing Commonwealth reserves, and the health of their associated ecosystems The framework will link together our various management and assessment tools and use the information gathered through monitoring to adapt and improve future management programmes.
Management plan or plan	means this management plan for Kakadu National Park, unless otherwise stated
Management principles	means the Australian IUCN reserve management principles set out in Schedule 8 of the EPBC Regulations
Mining operations	means mining operations as defined by the EPBC Act
Minister	means the Minister administering the EPBC Act
News of the day	means the reporting by newspaper, television, radio or other media of unanticipated events of the day that happen in the park from time to time, such as fires and rescue events. The term does not include general items about the park itself or planned events.
NLC	means the Northern Land Council
NPWC Act	means the former <i>National Parks and Wildlife Conservation Act 1975</i> and the Regulations under that Act (repealed and replaced by the EPBC Act in 2000)
NT	means the Northern Territory of Australia
NTASS Act	means the <i>Northern Territory Aboriginal Sacred Sites Act 1989</i>
NTFRS	means the Northern Territory Fire and Rescue Service
Objective	means the aim or goal for a section of the plan Objectives are directly associated with the conservation and management of the values of the park.
Outcome	means the measurable benefit sought from the achievement of the actions The delivery of outcomes contributes to the achievement of objectives.
Park or the park	means the area that was declared as a Kakadu National Park under the NPWC Act and continues as a Commonwealth reserve under the EPBC Act by the <i>Environmental Reform (Consequential Provisions) Act 1999</i>
Parks Australia	means the part of the Department of the Environment that assists the Director in performing the Director's functions under the EPBC Act
Performance indicator	means the measures that will be used to measure progress towards the delivery of outcomes

Performance measure	means the metric or measure used for measuring the level of performance of a performance indicator
Policy	means statements in the plan that prescribe how a matter will be dealt with during the life of the plan Policies will often include the 'rules' of the park, indicating what activities will be allowed or permitted and how park management will respond if a situation occurs. Policies assist in the delivery of outcomes.
Possession limit in the park	means what a person possesses at any one time in the park irrespective of where it was caught or found
Precinct plan	means an operational document that plans for the provision of visitor facilities and services within a defined geographical setting that has interrelated sites, attractions and visitor experiences
Priority area	means an identified area within the park that is a priority for management and/or monitoring
Priority site	means an identified site within the park that is a priority for management and/or monitoring
Priority weed species	means weed species that will be considered a management priority for the park
Priority feral animal	means feral animal species that will be considered a management priority for the park
Ramsar Convention	means the Convention on Wetlands of International Importance
Ranger Inquiry	means the Ranger Uranium Environmental Inquiry, also known as the Fox Inquiry
Relevant Aboriginals	means all the traditional Aboriginal owners of land in the Park and the Aboriginals entitled to enter upon or use or occupy the Park in accordance with Aboriginal tradition governing the rights of that Aboriginal or group of Aboriginals with respect to the Park whether or not those rights are qualified as to place, time, circumstances, purpose, permission or any other factor and the Aboriginals permitted by them to reside in the Park
Ride	means to ride a non-motorised vehicle such as a pedal-powered bicycle
Rock face	means a cliff face or sheer rock face
ROKAMBA	means the Agreement between the Government of Australia and the Government of the Republic of Korea for the Protection of Migratory Birds and their Environment
Sacred site	means a site that is sacred to Aboriginals or is otherwise of significance according to Aboriginal tradition, and includes any land that, under a law of the Northern Territory, is declared to be sacred to Aboriginals or of significance according to Aboriginal tradition

Sacred Sites Act	means the <i>Northern Territory Aboriginal Sacred Sites Act 1989</i>
Securely stowed	means collapsible traps are collapsed; traps are unbaited; float lines are disconnected from traps; nets are out of sight and contained
Significant species	means species that are listed as threatened (under the EPBC Act, TPWC Act or the IUCN Red List of Threatened Species), are endemic to the Kakadu region, have particular cultural value or are of conservation concern for other reasons (declining, fire sensitive); they may also be a good indicator of other species
Significant threat	means something that is likely to cause harm to the park's values
Highly significant threat	means something that is likely to cause irreversible harm to the park's values
Moderately significant threat	means something that is likely to cause some harm to the park's values
Low significance threat	means something that may cause some harm to the park's values
Stakeholder	means a person, group or organisation that has interest or concern in, is affected by or can affect the management of the park
Strategy	means a form of operational strategy, plan or document that assists in the implementation of this management plan.
Supervising Scientist	means the Office of the Supervising Scientist
TPWC Act	means the <i>Territory Parks and Wildlife Conservation Act (NT) 2006</i> including Regulations under the Act, and includes reference to any Act amending, repealing or replacing the TPWC Act
Track for walking or riding	means a track for walking or riding that has been provided by the Director in accordance with EPBC subregulation 12.55(2)
Top End	means the geographical region encompassing the northernmost section of the Northern Territory
Tourism NT	means the Northern Territory Government agency responsible for tourism
Traditional owners	means the traditional Aboriginal owners of land in the park as defined in the Land Rights Act
Weed	means a plant considered undesirable, unattractive, or troublesome, especially one that grows where it is not wanted and often grows or spreads fast or takes the place of desired plants.
West Arnhem Regional Council	means the local government authority responsible for the provision of local government services in the West Arnhem Region including those areas within the boundaries of Kakadu National Park

Value or park values	means the attributes of a park or reserve that are fundamental to the reserve's purpose and significance
Vehicle access road	means a road in a Commonwealth reserve that: <ul style="list-style-type: none"> (a) is a sealed road; and (b) does not have a sign displayed on or near it indicating that it is prohibited to use motor vehicles on the road at that time
Vehicle access track	means a road in a Commonwealth reserve that: <ul style="list-style-type: none"> (a) is an unsealed road; and (b) has a sign, erected by the Director, with the words 'Vehicle Access Track' displayed at the point or points where motor vehicles would normally access the track; and (c) has no signs displayed on the track indicating that it is prohibited to use motor vehicles on the track at that time
Wildlife	means native plants and animals
World Heritage Convention	means the Convention Concerning the Protection of the World Cultural and Natural Heritage

Appendix G

Legislative context

Land Rights Act and park leases

At the time of preparation of this plan, approximately 50 per cent of Kakadu National Park is Aboriginal land under the *Aboriginal Land Rights (Northern Territory) Act 1976* (Land Rights Act). Most of the remaining area of land is under claim by Aboriginal people. Title to Aboriginal land in the park is held by the Kakadu Aboriginal Land Trust, the Jabiluka Aboriginal Land Trust and the Gunlom Aboriginal Land Trust. These land trusts have leased their land to the Director of National Parks in accordance with the Land Rights Act for the purpose of being managed as a Commonwealth reserve. Land in the park that is not Aboriginal land is vested in the Director.

The lease agreements reserve the right of Aboriginals to enter and use the leased land in accordance with Aboriginal tradition and outline the Director's obligations in regard to the management of Aboriginal land declared under the Land Rights Act.

The lease agreement with the Gunlom Aboriginal Land Trust includes special provisions about managing and protecting sacred sites, particularly the Sickness Country, rehabilitation of old mine workings in the Gunlom Land Trust area, and control of Aboriginal cultural material.

Section 367(1)(d) of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) requires that the plan must be consistent with the lease agreements.

The full provisions of the leases at the time of preparation of this plan are included as Appendix I: Provisions of leases.

Establishment of the park

The park was proclaimed under the *National Parks and Wildlife Conservation Act 1975* (NPWC Act) progressively between 1979 and 1991. Stage One of the park was initially established in 1979, Stage Two in 1984, and Stage Three between 1987 and 1991. The NPWC Act was replaced by the EPBC Act in July 2000. The park continues as a Commonwealth reserve under the EPBC Act pursuant to the *Environmental Reform (Consequential Provisions) Act 1999*, which deems the park to have been declared for the following purposes:

- the preservation of the area in its natural condition
- the encouragement and regulation of the appropriate use, appreciation and enjoyment of the area by the public.

Amendments to the boundaries of the park were made under s.350(1) of the EPBC Act in 2007 and 2013 to incorporate a number of ex-mining leases and Koongarra into the park.

The EPBC Act and the Environment Protection and Biodiversity Conservation Regulations 2000 (EPBC Regulations) under the Act provide the legal basis and framework for management of the park reserves. Other laws referred to in this appendix may also be relevant to activities in the park. A number of international agreements relevant to management of the park are also described.

Objectives of the EPBC Act

The objectives of the EPBC Act as set out in Part 1 of the Act are:

- (a) to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance; and
- (b) to promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources; and
- (c) to promote the conservation of biodiversity; and
- (ca) to provide for the protection and conservation of heritage; and
- (d) to promote a co-operative approach to the protection and management of the environment involving governments, the community, land-holders and Indigenous peoples; and
- (e) to assist in the co-operative implementation of Australia's international environmental responsibilities; and
- (f) to recognise the role of Indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity; and
- (g) to promote the use of Indigenous people's knowledge of biodiversity with the involvement of, and in cooperation with, the owners of the knowledge.

Director of National Parks

The Director is a corporation under the EPBC Act (s.514A). The corporation is controlled by the person appointed by the Governor-General to the office that is called the Director of National Parks (s.514F of the EPBC Act).

The functions of the Director (s.514B) include the administration, management and control of Commonwealth reserves established under the Act. The Director generally has power to do all things necessary or convenient for performing the Director's functions (s.514C). The Director has a number of specified powers under the EPBC Act and EPBC Regulations, including to prohibit or control some activities, and to issue permits for activities that are otherwise prohibited. The Director performs functions and exercises powers in accordance with this plan and relevant decisions of the Kakadu National Park Board of Management.

Kakadu Board of Management

The Kakadu Board of Management was established under the NPWC Act in 1989 and continues under the EPBC Act. A majority of board members must be Indigenous persons nominated by the traditional Aboriginal owners of land in the park. The functions of the Board under s.376 of the EPBC Act are:

- (a) to make decisions relating to the management of the park that are consistent with the management plan in operation for the park; and
- (b) in conjunction with the Director, to:
 - (i) prepare management plans for the park; and
 - (ii) monitor the management of the park; and
 - (iii) advise the Minister on all aspects of the future development of the park.

Management plans

The purpose of a management plan is to describe the philosophy and direction for the management of the park for the next 10 years in accordance with the EPBC Act. This plan outlines and identifies the park's values and how they are to be protected, conserved, presented, promoted and further described. It enables management to proceed in an orderly way, provides a framework for management decisions and reconciling competing interests, and identifies priorities for the allocation of available resources.

The EPBC Act requires the Board of Management to prepare a management plan for the park in conjunction with the Director. When prepared, a plan is given to the Minister administering the EPBC Act for approval. A management plan is a 'legislative instrument' for the purposes of the *Legislative Instruments Act 2003* and must be registered under that Act. Following registration, the plan is tabled in each house of the Commonwealth Parliament and may be disallowed by either house on a motion moved within 15 sitting days of the house after tabling.

A management plan for a Commonwealth reserve has effect for 10 years, subject to being revoked or amended earlier by another management plan for the reserve. The Director must give effect to a management plan in operation for a Commonwealth reserve. The Commonwealth and Commonwealth agencies must also not perform functions or exercise powers in relation to the reserve inconsistently with the plan (s.362).

Matters to be taken into account in a management plan

Under the EPBC Act (s.367) a management plan for a Commonwealth reserve must provide for the protection and conservation of the reserve. In particular, each management plan must:

- assign the reserve to an IUCN protected area category (whether or not a proclamation has assigned the reserve or a zone of the reserve to that IUCN category); and
- state how the reserve, or each zone of the reserve, is to be managed; and
- state how the natural features of the reserve, or of each zone of the reserve, are to be protected and conserved; and
- if the Director holds land or seabed included in the reserve under lease – be consistent with the Director's obligations under the lease; and
- specify any limitation or prohibition on the exercise of a power, or performance of a function, under the EPBC Act in or in relation to the reserve; and
- specify any mining operation, major excavation or other works that may be carried on in the reserve, and the conditions under which it may be carried on; and
- specify any other operation or activity that may be carried on in the reserve; and
- indicate generally the activities that are to be prohibited or regulated in the reserve, and the means of prohibiting or regulating them; and
- indicate how the plan takes account of Australia's obligations under each agreement with one or more other countries that is relevant to the reserve (including World Heritage Convention and the Ramsar Convention, if appropriate); and
- if the reserve includes a National Heritage place:
 - (i) not be inconsistent with the National Heritage management principles; and
 - (ii) address the matters prescribed by regulations made for the purposes of paragraph 324S(4)(a); and

- if the reserve includes a Commonwealth Heritage place:
 - (i) not be inconsistent with the Commonwealth Heritage management principles; and
 - (ii) address the matters prescribed by regulations made for the purposes of paragraph 341S(4)(a).
- In preparing a management plan the EPBC Act (s.368) requires account to be taken of various matters. In relation to the Kakadu these matters include:
 - (i) the regulation of the use of the park for the purpose for which it was declared
 - (ii) the interests of:
 - (iii) the traditional owners of the park
 - (iv) any other Indigenous persons interested in the park
 - (v) any person who has a usage right relating to land, sea or seabed in the park that existed (or is derived from a usage right that existed) immediately before the park was declared
- the protection of the special features of the park, including objects and sites of biological, historical, paleontological, archaeological, geological and geographical interest
- the protection, conservation and management of biodiversity and heritage within the park
- the protection of the park against damage
- Australia's obligations under agreements between Australia and one or more other countries relevant to the protection and conservation of biodiversity and heritage.

Control of actions in Commonwealth reserves

The EPBC Act (ss.354 and 354A) prohibits certain actions being taken in Commonwealth reserves except in accordance with a management plan. These actions are:

- kill, injure, take trade, keep or move a member of a native species; or
- damage heritage; or
- carry out an excavation; or
- erect a building or other structure; or
- carry out works; or
- take an action for commercial purposes.

The EPBC Regulations control, or allow the Director to control, a range of activities in Commonwealth reserves, such as camping, use of vehicles and vessels, littering, commercial activities and research. The Director applies the Regulations subject to and in accordance with the EPBC Act and management plans. The Regulations do not apply to the Director or to wardens or rangers appointed under the EPBC Act. Activities that are prohibited or restricted by the EPBC Regulations may be carried on if they are authorised by a permit issued by the Director and/or they are carried on in accordance with a management plan or if another exception prescribed by r.12.06(1) of the Regulations applies.

The EPBC Act does not affect the operation of the *Native Title Act 1993* and s.211 in particular, which in certain circumstances allows native title holders to hunt (and undertake other activities) in the exercise of native title rights without a permit or licence (s.8 EPBC Act). Prohibitions and other provisions of the EPBC Act and EPBC Regulations dealing with activities in Commonwealth reserves do not prevent Indigenous people from continuing their traditional use of an area in a reserve for hunting or gathering (except for purposes of sale), or for ceremonial and religious purposes, in accordance with the EPBC Act s.359A.

Section 358 allows the Director to grant a lease or a licence relating to land or seabed in a Commonwealth reserve in accordance with a management plan.

Access to biological resources in Commonwealth areas is regulated under Part 8A of the EPBC Regulations. Access to biological resources is also covered by ss.354 and 354A of the EPBC Act if the resources are members of a native species and/or if access is for commercial purposes.

Mining operations are prohibited in Kakadu National Park by the EPBC Act (s.387).

Actions that may require additional approval under the EPBC Act

Environmental impact assessment

Actions that are likely to have a significant impact on ‘matters of national environmental significance’ are subject to the referral, assessment and approval provisions of chapters 2 to 4 of the EPBC Act (irrespective of where the action is taken).

At the time of preparing this plan, the matters of national environmental significance identified in the EPBC Act are:

World Heritage listed properties

- National Heritage listed places
- Ramsar wetlands of international importance
- nationally listed threatened species and ecological communities
- listed migratory species
- nuclear actions (including uranium mining)
- Commonwealth marine areas
- Great Barrier Reef Marine Park.

Places on the Commonwealth Heritage List and Register of the National Estate are defined as forming part of the environment for the purposes of the EPBC Act.

The referral, assessment and approval provisions also apply to actions on Commonwealth land that are likely to have a significant impact on the environment and to actions taken outside Commonwealth land that are likely to have a significant impact on the environment on Commonwealth land. The park is Commonwealth land for the purposes of the EPBC Act.

Responsibility for compliance with the assessment and approval provisions of the EPBC Act lies with persons taking relevant ‘controlled’ actions. A person proposing to take an action that the person thinks may be or is a controlled action should refer the proposal to the Minister for the Minister’s decision whether the action is a controlled action. The Director of National Parks may also refer proposed actions to the Minister.

Wildlife protection

Part 13 of the EPBC Act contains provisions that prohibit and regulate actions in relation to listed threatened species and ecological communities, listed migratory species, cetaceans (whales and dolphins) and listed marine species. Appendix J to this plan identifies species in the park that are listed as threatened under the EPBC Act at the time of preparing this plan. Appendix D identifies migratory and marine species that are listed under the EPBC Act and under international conventions, treaties and agreements at the time of preparing this plan.

Actions taken in a Commonwealth reserve in accordance with a management plan that is in operation in relation to members of species listed under Part 13 of the EPBC Act are exempt from prohibitions that would otherwise apply under Part 13.

Part 9 of the EPBC Regulations provides for the protection and conservation of biodiversity in Commonwealth areas outside the park (i.e. all land outside the park), and prohibits and/or regulates actions affecting members of native species specified in Schedule 12 to the Regulations, and their habitat.

Migratory species listed under the EPBC Act are species listed under international agreements (to which Australia is a signatory) as species whose protection requires, or would significantly benefit from, international cooperation. These international agreements are discussed in more detail in Appendix C.

In relation to threatened species and communities, the EPBC Act also provides for the identification and listing of key threatening processes and the preparation of threat abatement plans and species recovery plans.

Access to biological resources

At the time of preparing this plan, access to biological resources in Commonwealth areas is regulated under the EPBC Regulations Part 8A, and a permit from the Minister is required. Access to biological resources is defined in the EPBC Regulations; it broadly means the taking of biological resources of native species for research and development on any genetic resources, or biochemical compounds, comprising or contained in the biological resources. Biological resources are defined by the EPBC Act as genetic resources, organisms, parts of organisms, populations and any other biotic component of an ecosystem with actual or potential use or value for humanity. Genetic resources are defined by the EPBC Act as any material of plant, animal, microbial or other origin that contains functional units of heredity, and that has actual or potential value for humanity.

Heritage protection

As noted above, the listed World Heritage, National Heritage and Commonwealth Heritage values of the park are protected under the EPBC Act.

Sections 313 to 324 of the EPBC Act provide for the protection of World Heritage properties, including the protection of values and the requirements for management, including the preparation of management plans. As required by the Act, Australia's obligations in relation to the park under the World Heritage Convention have been taken into account in preparation of this management plan for the park.

In addition to the protection provided to the park by the EPBC Act as a World Heritage property, the park is listed on both the National Heritage List and the Commonwealth Heritage List under the EPBC Act. At the time of preparing this plan, some sites in the park are 'indicative places' for the purposes of potential inclusion in either the National Heritage List or Commonwealth Heritage List under the EPBC Act.

In terms of National Heritage and Commonwealth Heritage listed places, the EPBC Act heritage protection provisions (ss.324A to 324ZC and ss.341A to 341ZH) relevantly provide:

- for the establishment and maintenance of a National Heritage List and a Commonwealth Heritage List, criteria and values for inclusion of places in either list and management principles for places that are included in the two lists
- that Commonwealth agencies must not take an action that is likely to have an adverse impact on the heritage values of a place included in either list unless there is no feasible and prudent alternative to taking the action, and all measures that can reasonably be taken to mitigate the impact of the action on those values are taken
- that Commonwealth agencies that own or control places must:
 - (i) make a written plan to protect and manage the Commonwealth Heritage values of each of its Commonwealth Heritage places
 - (ii) prepare a written heritage strategy for managing those places to protect and conserve their Commonwealth Heritage values, addressing any matters required by the EPBC Regulations, and consistent with the Commonwealth Heritage management principles
 - (iii) identify Commonwealth Heritage values for each place, and produce a register that sets out the Commonwealth Heritage values (if any) for each place (and do so within the timeframe set out in the agency's heritage strategy).

The prescriptions within this management plan are consistent with World Heritage, National Heritage and Commonwealth Heritage management principles and other relevant obligations under the EPBC Act for protecting and conserving the heritage values for which the park has been listed.

Wetlands of international importance

The EPBC Act management of wetlands of international importance provisions (ss.325 to 336) relevantly provide:

- The Commonwealth may designate a wetland for inclusion in the List of Wetlands of International Importance kept under the Ramsar Convention only after seeking the agreement of relevant states, self-governing territories and landholders.
- The Minister must make plans for managing wetlands listed under the Ramsar Convention that are entirely in Commonwealth areas. The Commonwealth and Commonwealth agencies must not contravene such plans. In the case of Commonwealth reserves, a management plan must be prepared (s.328(6)).
- The Commonwealth must try to prepare and implement management plans for other wetlands listed under the Ramsar Convention, in cooperation with the relevant states and self-governing territories.
- The Commonwealth and Commonwealth agencies have duties relating to declared Ramsar wetlands in states and territories.
- The Commonwealth can provide assistance for the protection or conservation of declared Ramsar wetlands.

All wetlands listed under the Ramsar Convention are recognised as matters of national environmental significance under the EPBC Act. As such, approval is required for actions that will have, or are likely to have, a significant impact on the ecological character of a Ramsar-listed wetland.

The prescriptions within this plan are consistent with the Australian Ramsar management principles described in Schedule 6 of the EPBC Act and other relevant obligations under the EPBC Act for the management of wetlands included in the List of Wetlands of International Importance kept under the Ramsar Convention.

Further information on wetlands listed under the Ramsar Convention, including access to Ramsar information sheets and ecological character descriptions for Australian Ramsar sites, is available via the Australian Wetlands Database.

Penalties

Civil and/or criminal penalties may be imposed for breaches of the EPBC Act.

Appendix H

IUCN administrative and management principle schedules

General administrative principles

The International Union for the Conservation of Nature (IUCN) sets out guidelines for categorising protected areas, which Australia and many other countries have adopted as a national standard. Part 1 of Schedule 8 sets out general administrative principles applicable to all Commonwealth reserves. These principles underpin management approaches with regard to:

- **community participation** – management arrangements should, to the extent practicable, provide for broad and meaningful participation by the community, public organisations and private interests in designing and carrying out the functions of a reserve or zone
- **effective and adaptive management** – management arrangements should be effective and appropriate to the biodiversity objectives and the socio-economic context of the reserve or zone. They should be adaptive in character to ensure a capacity to respond to uncertainty and change
- **the precautionary principle** – a lack of full scientific certainty should not be used as a reason for postponing measures to prevent degradation of the natural and cultural heritage of a reserve or zone where there is a threat of serious or irreversible damage
- **minimising impacts** – the integrity of a reserve or zone is best conserved by protecting it from disturbance and threatening processes. Potential adverse impacts on the natural, cultural and social environment and surrounding communities should be minimised as far as practicable
- **ecologically sustainable use** – if resource use is consistent with the management principles that apply to a reserve or zone, it should be based on the principle (the principle of ecologically sustainable use) that:
 - natural resources should only be used within their capacity to sustain natural processes while maintaining the life-support systems of nature, and
 - the benefit of the use to the present generation should not diminish the potential of the reserve or zone to meet the needs and aspirations of future generations
- **transparency of decision-making** – the framework and processes for decision-making for management of the reserve or zone should be transparent. The reason for making decisions should be publicly available, except to the extent that information, including information that is culturally sensitive or commercial-in-confidence, needs to be treated as confidential
- **joint management** – if the reserve or zone is wholly or partly owned by Aboriginal people, continuing traditional use of the reserve or zone by resident Indigenous people, including the protection and maintenance of cultural heritage, should be recognised.

IUCN category and management principles

The EPBC Act requires Commonwealth reserves, and any zones into which a reserve is divided, to be assigned to one of the seven IUCN categories prescribed by the EPBC Regulations (r.10.03H), which correspond to the protected area management categories identified by the IUCN:

IUCN category number	Protected area category
Ia	Strict nature reserve
Ib	Wilderness area
II	National park
III	Natural monument
IV	Habitat/species management area
V	Protected landscape/seascape
VI	Managed resource protected area

Reserve management must be consistent with the relevant Australian IUCN reserve management principles prescribed for each category by Schedule 8 to the EPBC Regulations and described below.

The principles provide guidance on the purposes for which an area should be used and the general types of activities that may be conducted. They underpin decisions and prescriptions for each IUCN category.

Having been designated a national park (IUCN category II) under Section 3 of this plan, the park should be protected and managed to preserve its natural condition according to the following Australian IUCN management principles:

- Natural and scenic areas of national and international significance should be protected for spiritual, scientific, educational, and recreational or tourist purposes
- Representative examples of physiographic regions, biotic communities, genetic resources and native species should be perpetuated in as natural a state as possible to provide ecological stability and diversity
- Visitor use should be managed for inspirational, educational, cultural and recreational purposes at a level that will maintain the reserve or zone in a natural or near-natural state
- Management should seek to ensure that exploitation or occupation inconsistent with these principles does not occur
- Respect should be maintained for the ecological, geomorphologic, sacred and aesthetic attributes for which the reserve or zone was assigned to this category
- The needs of Indigenous people should be taken into account, including subsistence resource use, to the extent that they do not conflict with these principles
- The aspirations of traditional owners of land within the reserve or zone, their continuing land management practices, the protection and maintenance of cultural heritage and the benefit the traditional owners derive from enterprises, established in the reserve or zone, consistent with these principles should be recognised and taken into account.

EPBC Regulations schedules and management principles	Sections of management plan that address principles
<p><i>Schedule 8 – Australian IUCN reserve management principles</i></p> <p><i>Part 1 – General administrative principles</i></p>	
<p>1 Community participation</p> <p>Management arrangements should, to the extent practicable, provide for broad and meaningful participation by the community, public organisations and private interests in designing and carrying out the functions of the reserve or zone.</p>	4.1, 9.7
<p>2 Effective and adaptive management</p> <p>Management arrangements should be effective and appropriate to the biodiversity objectives and the socio-economic context of the reserve or zone. They should be adaptive in character to ensure a capacity to respond to uncertainty and change.</p>	4.3, 5.1, 5.2, 5.3, 7, 9.5, 9.9
<p>3 Precautionary principle</p> <p>A lack of full scientific certainty should not be used as a reason for postponing measures to prevent degradation of the natural and cultural heritage of a reserve or zone where there is a threat of serious or irreversible damage.</p>	5.2, 5.3, 9.5
<p>4 Minimum impact</p> <p>The integrity of a reserve or zone is best conserved by protecting it from disturbance and threatening processes. Potential adverse impacts on the natural, cultural and social environment and surrounding communities should be minimised as far as practicable.</p>	5.2, 5.3, 6, 9.2
<p>5 Ecologically sustainable use</p> <p>If resource use is consistent with the management principles that apply to a reserve or zone, it should (if it is carried out) be based on the principle (the principle of ecologically sustainable use) that:</p> <ul style="list-style-type: none"> a) natural resources should only be used within their capacity to sustain natural processes while maintaining the life-support systems of nature; and b) the benefit of the use to the present generation should not diminish the potential of the reserve or zone to meet the needs and aspirations of future generations. 	10.5, 10.6
<p>6 Transparency of decision-making</p> <p>The framework and processes for decision-making for management of the reserve or zone should be transparent. The reasons for making decisions should be publicly available, except to the extent that information, including information that is culturally sensitive or commercial-in-confidence, needs to be treated as confidential.</p>	4.1, 6

EPBC Regulations schedules and management principles	Sections of management plan that address principles
<p>7 Joint management</p> <p>If the reserve or zone of wholly or partly owned, by Aboriginal people, continuing traditional use of the reserve or zone by resident Indigenous people, including the protection and maintenance of cultural heritage, should be recognised.</p>	4.1, 4.2, 4.3, 5.1, 5.2, 5.3
<p><i>Part 2 – Principles for each IUCN category</i></p> <p>3 National park (category II)</p>	
<p>3.01 The reserve or zone should be protected and managed to preserve its natural condition according to the following principles.</p>	
<p>3.02 Natural and scenic areas of national and international significance should be protected for spiritual, scientific, educational, recreational or tourist purposes.</p>	5.2, 6, 7, 9.2, 9.5
<p>3.03 Representative examples of physiographic regions, biotic communities, genetic resources, and native species should be perpetuated in as natural a state as possible to provide ecological stability and diversity.</p>	5.2, 5.3, 7
<p>3.04 Visitor use should be managed for inspirational, educational, cultural and recreational purposes at a level that will maintain the reserve or zone in a natural or near natural state.</p>	6
<p>3.05 Management should seek to ensure that exploitation or occupation inconsistent with these principles does not occur.</p>	10
<p>3.06 Respect should be maintained for the ecological, geomorphologic, sacred and aesthetic attributes for which the reserve or zone was assigned to this category.</p>	5.1, 5.2
<p>3.07 The needs of Indigenous people should be taken into account, including subsistence resource use, to the extent that they do not conflict with these principles.</p>	4.1, 4.2, 4.3, 10.6
<p>3.08 The aspirations of traditional owners of land within the reserve or zone, their continuing land management practices, the protection and maintenance of cultural heritage and the benefit the traditional owners derive from enterprises, established in the reserve or zone, consistent with these principles should be recognised and taken into account.</p>	4.1, 4.2, 4.3, 5.1, 5.2, 5.3, 6

Appendix I

Provisions of leases

KAKADU NATIONAL PARK

THE NORTHERN TERRITORY OF AUSTRALIA

MEMORANDUM OF LEASE

KAKADU / JABILUKA / GUNLOM ABORIGINAL LAND TRUST (“the Lessor”) being a Land Trust established pursuant to sub-section 4(1) of the Aboriginal Land Rights Northern Territory) Act 1976 (“the Land Rights Act”) BEING registered as the proprietor of an estate in fee simple, in

ALL THAT piece or parcel of land in the Northern Territory of Australia (“the Leased Area”) being part of NT Portion 1662 / 2374, 2375 & 2376 / 4774 more particularly shown on plan CP 19 / S84/198, S84/199 & S84/203 / S95/212, which has been deposited at the Land Titles Office, Darwin BEING the whole of the land comprised in the Grant Registered Volume 19 Folio 165 / Volume 167 Folio 018 / Volume 477 Folio 049, and

HAVING received a direction from the Northern Land Council pursuant to the provisions of the Land Rights Act, that direction having been given by the Land Council on its being satisfied that:

- A. the Traditional Aboriginal Owners of the Park understand the nature and purpose of this Lease, and as a group, consent to it;
- B. the Aboriginal communities and groups which may be affected by this Lease have been consulted and have had adequate opportunity to express their views to the Land Council;
and
- C. the terms and conditions of this Lease are reasonable,

HEREBY GRANTS a lease of the said Part of NT Portion 1662 / 2374, 2375 & 2376 / 4774 to the DIRECTOR OF NATIONAL PARKS & WILDLIFE (“the Lessee”), a corporation established by the National Parks and Wildlife Conservation Act 1975 (“the Act”) to be held by the Lessee for the purposes of the Act, subject to and in accordance with the following reservations, provisions, covenants and conditions.

PART 1 – RESERVATIONS

Reservation of Right of Entry and Inspection

- 1 The Lessor reserves a right in favour of the Chairman of the Land Council or any person authorised in writing by the Land Council, at all reasonable times and in any reasonable manner, to enter upon the Park or any part of it and to inspect the Park and any improvements on the Park.

Reservations of Traditional Rights to Use and Occupy

- 2 (1) An Aboriginal or group of Aboriginals is entitled to enter upon the Park and use or occupy the Park to the extent that that entry occupation or use is in accordance with Aboriginal tradition governing the rights of that Aboriginal or group of Aboriginals with respect to that land, whether or not those rights are qualified as to place, time, circumstances, purpose, permission or any other factor.
- (2) Without limiting the generality of sub-clause 2 (1) the Lessor reserves in favour of Relevant Aboriginals and groups of Relevant Aboriginals the following rights, which shall operate subject to the directions or decisions of the Board with respect to health, safety or privacy –
 - (a) the right to continue, in accordance with law, the traditional use of any area of the Park for hunting or food gathering (otherwise than for purposes of sale);
 - (b) the right to continue the traditional use of any area of the Park for ceremonial and religious purposes; and
 - (c) subject also to such reasonable constraints as may be contained in the plan of Management for reasons of safety, security, privacy or protection of the Park, the right to reside within the Park at such places at which such Aboriginals are residing at the commencement of this Lease and at such other locations as may be specified in the Plan of Management, together with rights of access and residence for their families, employees, staff, invitees and agents.

Reservation of requirements to sublet part of the Park

- 3 The Lessor reserves the right to require the Lessee to sub-let any reasonable part of the Park with the consent of the Lessee, which consent shall not be unreasonably or capriciously withheld, as requested in writing by the Board to the Lessor in accordance with the Act and the Land Rights Act and the Plan of Management.

PART II – PROVISIONS

Commencement

- 4 This lease shall commence on the 1st day of January 1991 (Kakadu & Jabiluka) / 14th day of January 1996 (Gunlom).

Determination and surrender of former lease (Kakadu lease only)

- 5 The Former Lease is hereby determined and the Lessor and the Lessee agree to take all steps and do all things necessary to surrender the Former Lease.

(Jabiluka lease only - there is no clause 5)

Native Title

- 5 (Gunlom lease only) 5. Nothing in this Lease shall be construed so as to affect or derogate from in any way any native title, Aboriginal or other rights, privileges or freedom of any Relevant Aboriginals or any of them or any other person that may subsist in the Park regardless of whether such rights, privileges and freedom are recognised, established or defined before or after the execution of this Lease.

Term

- 6 This Lease shall expire on the 31st day of December, two thousand and seventy eight (2078).

Financial Arrangements

- 7 (1) The Lessee shall pay to the Land Council on behalf of the Lessor an annual rent of \$175,701 (Kakadu) / \$1 (Jabiluka) / \$98,000 (Gunlom) payable in advance and shall further pay to the Land Council on behalf of the Lessor:
- (a) an amount equal to 25% (Kakadu) / 0 (Jabiluka) / 13.8% (Gunlom) of receipts from any entrance and camping fees and other charges imposed in pursuance of sub-section 17(1A) of the Act, such amounts to be paid quarterly calculated by reference to receipts of the previous quarter.
 - (b) an amount equal to 25% (Kakadu) / 0 (Jabiluka) / 13.8% (Gunlom) of receipts in respect of any charge, penalty, fee, fine or impost received by the Lessee or the Commonwealth of Australia arising out of the operation of the provisions of the Act or the Regulations made thereunder in respect of commercial activities undertaken within the Park in excess of the sum of Thirty Thousand Dollars (\$30,000) ("the threshold amount") to be paid annually in arrears and calculated by reference to receipts of the previous year.
- (2) The Lessee shall pay to the Land Council on behalf of the Lessor an amount equal to 25% (Kakadu) / 0 (Jabiluka) / 13.8% (Gunlom) of the amount received by the Lessee or by the Commonwealth of Australia pursuant to the grant of any estate or interest in the Park dependent on the Lessee's interest such payments to be made within four (4) weeks of receipt by the Lessee or by the Commonwealth of Australia.
- (3) Notwithstanding any term or provision of this Lease to the contrary nothing in this clause extends to any charge, penalty, fee, fine or impost received by the Lessee or the Commonwealth of Australia and arising out of the operation of the provisions of the Act or the Regulations made thereunder other than the charges, penalties, fees, fines or imposts referred to in sub-clause 1.

Rent Review

- 8 (1) The annual rent to be paid under clause 7 and the threshold amount pursuant to paragraph 7 (1) (b) (collectively "the review figures") shall be reviewed on the first day of January, two thousand and one (2001) and thereafter at five (5) yearly intervals during the term of this Lease (collectively "the review date") and shall be calculated by individually multiplying each of the review figures at the commencement of this Lease (called "base period") by the fraction NI/BI .

NI refers to the Consumer Price Index for Darwin (all groups) published by the Australian Bureau of Statistics (“the Bureau”) in respect of the quarter immediately preceding the particular review date and BI is the Consumer Price Index for Darwin (all groups) published by that Bureau in respect of the quarter immediately preceding the base period.

- (2) In the event that at any time during the term of this Lease the Bureau shall up-date the reference base of that index, the required conversion shall be made to preserve the intended continuity of the calculations by making the appropriate arithmetical adjustment to make the up-dated index number correspond in reference base to the index number at the review date.
- (3) In the event that it is not possible to make an arithmetical adjustment as specified in sub-clause 8 (2), or if there is a change in the basis of assessment of that index or its calculation has been suspended or discontinued, then in the event of the parties failing to agree upon a formula provided for in sub-clause 8 (1) then the matter shall be referred for determination by the Australian Statistician to fix a formula for review of the review figures on the review date which will provide as nearly as practicable the same adjustments of their review figures as if the Consumer Price Index referred to in sub-clause 8 (1) had been continued without variation and the determination shall be final and binding upon the parties.
- (4) Each rent review shall be made within three (3) months prior to the review date.
- (5) The Lessor shall notify the Lessee in writing of its calculation of the increase in the review figures on the review date.
- (6) The review figures shall not be reduced in the event of a decrease in the index number since the previous review date.
- (7) If the Lessee fails or refuses to accept the Lessor’s assessment of the review figures by notice in writing or the parties fail to agree upon the review figures at the review date within 30 days after service of notice thereof by the Lessor, the review figures shall be determined by reference to arbitration and thereupon the provision of paragraphs 16(2)(a) to (d) shall apply mutatis mutandis.
- (8) The Lessee shall in the interim pay the rent including an amount equal to not less than half of the increase in rent payable as calculated by the Lessor in the event that the parties are unable to resolve the difference in their calculations prior to the date for payment of the rent.
- (9) If the Lessee has paid rent in excess of the current amount due because of the Lessor’s calculation the Lessor shall repay the excess together with interest thereon at a rate equal to the interest rate charged at the time of the interim payment by the Lessee’s banker for amounts equal to the excess rent paid calculated at a daily rate.

PART III – COVENANTS AND CONDITIONS

9 The Lessee covenants –

- (a) to take all practicable steps to ensure compliance by all persons with the Act, regulations under the Act, this Lease and the Plan of Management;
- (b) not to transfer, assign, sublet or part with the possession of the Park or any part of the Park without the consent in writing of the Lessor;

- (c) to pay the Land Council's and the Land Trust's reasonable costs of and incidental to the preparation, execution, registration and stamping of this Lease agreed and assessed at ten thousand dollars (\$10,000) and in addition, to pay all registration fees and stamp duty payable in connection with this Lease;
- (d) to pay all rates and taxes which may at any time become due in respect of the Park;
- (e) to carry all of the risk as self-insurer in respect of the timely reinstatement to full value of any of the improvements in the Park which may be damaged or destroyed without the consent of the Lessor, being improvements existing at the date of the commencement of this Lease and such other improvements as may be made, except such improvements in respect of which there exists a contract of insurance insuring the risk to the extent of liability imposed upon the Lessee under this sub-clause;
- (f) to carry all of the risk as self-insurer as occupier of the Park as regards any liability to any third person;
- (g) as far as is practicable, to make good any damage to the Park (other than improvements) being damage caused by the Lessee except where the damage to the Park was occasioned with the consent of the Lessor or of the Board;
- (h) to comply with all Acts, regulations and other laws otherwise applicable to the Park;
- (i) to have regard in the performance of its functions in relation to the Park, to such priorities in allocating financial and other resources as are provided in the Plan of Management or determined from time to time by the Board;
- (j) to promote and protect the interests of Relevant Aboriginals;
- (k) to protect areas and things of significance to Relevant Aboriginals;
- (l) to encourage the maintenance of the Aboriginal tradition of Relevant Aboriginals;
- (m) to take all practicable steps to promote Relevant Aboriginal administration management and control of the Park;
- (n) subject to the Plan of Management, to engage as many Relevant Aboriginals as is practicable to provide services in and in relation to the Park;
- (o) without limiting the generality of the foregoing, to utilise the traditional skills of Aboriginal individuals and groups in the management of the Park;
- (p) subject to the Plan of Management, to encourage Relevant Aboriginal business and commercial initiatives and enterprises within the Park;
- (q) subject to the Plan of Management, to facilitate development of outstations by Relevant Aboriginals; (Gunlom lease only)
- (r) to liaise and consult regularly with the Land Council and Relevant Aboriginal Associations in connection with the administration, management and control of the Park; ((q) in Kakadu and Jabiluka leases)
- (s) to consult with and have regard to the views of the Land Council in respect of the formulation of any educational and interpretive policy in relation to the Park; ((r) in Kakadu and Jabiluka leases)

- (t) not to make any arrangements under sub-section 36(4) of the Act for the performance of functions or the exercise of powers under that Act in relation to the Park without the consent of the Land Council ((s) Kakadu and Jabiluka leases) (Kakadu and Jabiluka leases only): except arrangements for the performance of functions and the exercise of powers in relation to the Park by officers or employees of the Conservation Commission of the Northern Territory established by the Conservation Commission Act 1980 of the Northern Territory of Australia, who are responsible to the Lessee and under the direct supervision of the Service;
- (u) as far as practicable and subject to the Plan of Management and to this Lease, to provide such capital equipment and machinery as is reasonably required for the adequate maintenance of roads, camping facilities and all other Park improvements (being roads, facilities or improvements owned or controlled by the Lessee); ((t) in Kakadu and Jabiluka leases)
- (v) after consultation with and having regard to the views of Relevant Aboriginal Associations and the Land Council, and subject to the Plan of Management, to implement a licensing and induction scheme for tour operators carrying on commercial activities in the Park; ((u) in Kakadu and Jabiluka leases)
- (w) subject to the Plan of Management and the Act to use its best endeavours to collect entrance and camping and other charges and ensure such charges are properly accounted for on an audited basis; ((v) in Kakadu and Jabiluka leases) and 197.
- (x) subject to the Plan of Management, to permit an officer or officers of the Land Council to enter and move freely in the Park for the purpose of performing on behalf of the Land Council the statutory powers or functions of the Land Council.((w) in Kakadu and Jabiluka leases)

(the remaining sub-clauses of clause 9 are in the Gunlom lease only)

- (y) (i) The Lessee shall at all times respect and observe all due solemnity and deference with respect to sacred sites and shall consult with the Traditional Aboriginal Owners of such sites for the purpose of:
 - (A) establishing maintaining and updating a confidential register of the locations of sacred sites; and
 - (B) establishing, maintaining and updating a protocol for conduct in accordance with Aboriginal tradition in respect of each sacred site, including conduct when emergency access is required;
- (ii) In so far as he is permitted by the Act, the Lessee shall take such reasonable measures requested by the Traditional Aboriginal Owners or the Land Council as are reasonably necessary to ensure the protection of any sacred sites in the Leased Area of which the Lessee has knowledge or could reasonably be expected to have such knowledge as a result of consultations pursuant to subclause 9(y)(i) hereof and to use all reasonable measures to ensure that any such sacred sites are not interfered with in any way, manner or form.

- (iii) For the purposes of this clause 9(y) a sacred site shall be interfered with if:
 - (A) conduct which is not appropriate in accordance with Aboriginal tradition occurs at the site, or the sacred site is used or entered into not in accordance with Aboriginal tradition; and
 - (B) such inappropriate conduct, use or entry was without permission of the Land Council.
- (iv) Such protective measures as aforesaid shall be carried out in consultation with the Traditional Aboriginal Owners of the sacred sites, the Land Trust and the Land Council and may include the prohibition of persons from any particular area or areas and without limiting the generality of the foregoing, such measures may include the posting of appropriate notices; the erection of fences or other barriers, or the closing of any access roads to or impinging on sacred sites.
- (v) In the event that damage occurs to any sacred site as a result of the Lessee being in breach of this covenant, then the Lessee shall:
 - (A) pay compensation for distress, injury, or trauma, whether spiritual, physical or emotional, caused to any Traditional Aboriginal Owner of the site as a result of the entry or damage; and 198.
 - (B) in the absence of agreement being reached within a reasonable time between the Land Council and the Lessee, the amount of any compensation payable under this clause shall be assessed by an independent person with legal qualifications and at least 10 years experience as a practitioner of law in the Supreme Court of any State or Territory in Australia who shall be appointed by the Commonwealth Minister of Aboriginal and Torres Strait Islander Affairs, and shall be a person who is of recognised high reputation and capacity and who has an acknowledged familiarity with damage caused to sacred sites and the impact of such damage on Aboriginal people associated with such sites. Compensation payable under this clause is not dependent on the Lessor or the Land Council suffering economic loss; but shall at all times be commensurate with the level of distress, injury or trauma suffered.
 - (C) any such compensation shall be paid to the Land Council on behalf of those persons; and
 - (D) in any event restore the sacred site to such condition as the Land Council in consultation with the Traditional Aboriginal Owners shall determine.
- (z) in full consultation with the Lessor, to complete by the thirty first day of December two thousand (2000) a plan of environmental rehabilitation, in respect of the site known as Guratba (Coronation Hill) and other mine sites and associated workings in the Leased Area, so as to limit and where possible reverse the impact on the environment of any mining activities previously carried out thereon. Without limiting the generality of the foregoing such plan shall address:

- (i) removal as may be required by the Lessor, of all plant, machinery, equipment, refuse, debris or rubbish presently at each site which is not part of the natural environment of the site;
- (ii) measures to minimise soil erosion at each site (including containment of mine waste);
- (iii) establishment of a stable ecosystem of indigenous flora at each site, both to replace lost flora and to contribute to sub-paragraph (ii) hereof;
- (iv) sealing of drill holes, mining shafts and trenches as required by the Lessor;
- (v) control and eradication of weeds and animals in accordance with sub-clause 13(3) hereof; and
- (vi) such other measures as may be agreed by the parties from time to time; and the Lessee shall use its best endeavours to fully implement such plan of environmental rehabilitation by the 31st day of December, two thousand and fifteen (2015).

Disposal of Park Equipment

- 10 (1) Subject to any lawful obligation imposed upon the Lessee by the Audit Act 1901 or the Finance Directions issued thereunder, if at any time during the term hereof the Lessee is desirous of disposing of its interest in any property or equipment of the Lessee used in the operation of the Park, the Lessee shall give to the Lessor for the benefit of the Lessor, the Land Council or its nominee, any Relevant Aboriginal Association and any other incorporated body the membership of which is limited to Relevant Aboriginals or groups of Relevant Aboriginals (in this clause referred to as the "permitted Aboriginal purchaser") the right of the first refusal to purchase the said property or equipment or any part thereof subject to the following terms and conditions: -
- (a) the Lessee shall give notice in writing to the Land Council of the Lessee's intention to dispose of any such property or equipment. The notice shall constitute an offer by the Lessee to sell any such property or equipment to a permitted Aboriginal purchaser and shall specify the consideration required by the Lessee from a permitted Aboriginal purchaser for the purchase of the Lessee's interest therein, which consideration shall not impose any more onerous an obligation or duty upon the permitted Aboriginal purchaser or require the permitted Aboriginal purchaser to pay any greater pecuniary sum than the Lessee would impose upon or require from a purchaser other than a permitted Aboriginal purchaser;
 - (b) within fourteen (14) days after the Lessee gives the said notice a permitted Aboriginal purchaser may give notice in writing to the Lessee of acceptance or rejection of the Lessee's offer to sell;
 - (c) in the event of the giving of a notice of acceptance there shall be deemed to be a binding contract for sale by the Lessee and purchase by the permitted Aboriginal purchaser of the Lessee's interest in the said property or equipment for the consideration stated in the Lessee's notice;

- (d) the purchase price shall be paid within thirty (30) days from the date on which the notice of acceptance is given to the Lessee and, if the permitted Aboriginal purchaser shall make default in payment of the purchase price or any part thereof, it shall be lawful for the Lessee at its option and without prejudice to any other legal rights or remedies that the Lessee may have, upon giving fourteen (14) days notice in writing to the permitted Aboriginal purchaser, to rescind the contract constituted pursuant to paragraph (b) and thereupon to resell the said property or equipment by public auction or private contract and any deficiency on resale together with all outgoings, costs and expenses of and incidental to resale shall immediately thereafter be made good by the particular permitted Aboriginal purchaser to the Lessee; and
 - (e) in the event that a notice of acceptance is not given within the time limit as aforesaid, the Lessee shall then be at liberty to sell the said property or equipment by private contract to any other person for a pecuniary sum being not less than that specified in the notice in writing given pursuant to paragraph (a) or by public auction.
- (2) In this clause “property or equipment used in the operation of the Park” means property or equipment in such categories as is agreed upon between the Land Council and the Lessee.

Quiet Enjoyment

- 11 The Lessee paying the rent hereby reserved and observing and performing the covenants on its part and the conditions contained in this Lease shall during the whole of the term quietly enjoy the Park without any interruption or disturbance by the Lessor or any person claiming by, from under or in trust for the Lessor.

Amendment of Act, etc

- 12 (1) Subject to sub-clause 12(4) hereof, the Lessee and the Lessor agree that the enactment of any Act or the making of any regulations (Gunlom lease only): or the coming into operation of a Plan of Management which is or are:
- (i) inconsistent with this Lease, (and where, in the case of an Act or Regulations, such Act is or regulations are applicable to the Park); and
 - (ii) substantially detrimental to the interests of the Lessor or Relevant Aboriginals as regards the administration, management or control of the Park,
- shall be deemed to be a breach of a fundamental term of this Lease for which this Lease may (subject to sub-clause 12(2)) be terminated on eighteen (18) months notice in writing (“a termination notice”) by the Lessor to the Lessee.
- (2) (i) Where the Lessor by notice in writing advises the Lessee of an alleged breach of sub-clause (1) hereof, the parties shall meet in Darwin or such other place as agreed within thirty (30) days of the receipt of the notice by the Lessee (“the thirty (30) day period”) to discuss whether there has been a breach of sub-clause (1);

- (ii) where the Lessor is ready, willing and able to meet with the Lessee but the parties do not meet within the thirty (30) day period due to the wilful neglect failure or refusal by the Lessee, then the said alleged breach shall be deemed to be an actual breach of sub-clause (1), provided however that where the failure to meet is occasioned by the Lessor or by factors beyond the control of the Lessee or the Lessor then the parties shall meet at such other time as is mutually agreed upon but in any event within thirty (30) days of the expiration of the initial thirty (30) day period;
 - (iii) where the parties agree within the thirty (30) day period or any extension thereof that the said alleged breach is an actual breach, there shall be deemed to be an actual breach of sub-clause(1);
 - (iv) where the parties meet but do not agree within the thirty (30) day period or any extension thereof that the said alleged breach is an actual breach the question of whether the said alleged breach is an actual breach shall be referred to arbitration pursuant to clause 17; 201.
 - (v) if there is deemed to be an actual breach or if an arbitrator finds that there is an actual breach, the Lessor may as from the date of the deeming or the finding (as the case may be) (“the trigger date”) issue a termination notice.
- (3) Where a termination notice is issued, representatives of the Land Council and the Lessee shall as soon as possible within the period of the notice, meet and enter into bona fide negotiations with a view to the grant of a new lease.
 - (4) Where, within one hundred and eighty (180) days after the trigger date, a termination notice is not issued as provided in sub-clause 12(2) then the Lessor, representatives of the Land Council and the Lessee shall meet to discuss whether to vary any provisions of this Lease including the rent, but not including the term.
 - (5) Clauses 16 and 17 shall not apply to any negotiations entered into under sub-clause 12(3).
 - (6)
 - (i) Where the Act or regulations giving rise to a termination notice is amended prior to termination of this Lease so as to no longer offend against sub-clause 12(1), the said termination notice shall immediately upon commencement of the amending Act or regulation, cease to have any force or effect.
 - (ii) Where the parties fail to agree that the amended Act or regulations no longer offend against sub-clause 12(1) the disagreement will upon notice by either party be referred to arbitration pursuant to Clause 17.
 - (iii) Time shall not run with respect to the termination notice from the date of the notice referred to in paragraph 12(6)(ii) until the date of the finding by the arbitrator.
 - (7) Without limiting the generality of the meaning of the term “substantially detrimental to the interests of the Lessor or Relevant Aboriginals as regards the administration, management or control of the Park” an actual or proposed transfer, assignment, sublease or parting with possession of the Park or any part of the Park by the Lessee without the consent in writing of the Lessor shall at all times be substantially detrimental to the interests of the Lessor or Relevant Aboriginals as regards the administration, management or control of the Park.

Park to be managed in accordance with the Act, etc.

- 13 (1) The Lessor and the Lessee agree that the Park shall be subject to administration, management and control in accordance with this Lease, the Act, regulations made under the Act and with the Plan of Management in force in relation to the Park pursuant to the Act.
- (2) The Lessee covenants that the flora, fauna, cultural heritage and natural environment of the Park shall be preserved, managed and maintained according to the best comparable management practices established for National Parks anywhere in the world or where no comparable management practices exist, to the highest standards practicable.
- (3) Without limiting the generality of sub-clause 13(2):
- (a) the Lessee shall use his best endeavours to control and eradicate infestations of *Mimosa pigra*, *Salvinia molesta* (and *Calatropis procera* - Gunlom lease only) in the Park:
 - (b) the Lessee shall protect known Aboriginal rock art sites from damage caused by natural occurrences including fire and water; and
 - (c) the Lessee shall use his best endeavours to control and eradicate infestations of cane toads (*Bufo marinus*) in the Park. (Gunlom lease only)

Lessee's indemnity

- 14 The Lessee shall indemnify the Lessor, its servants, agents or invitees (to the extent that the Lessor, its servants, agents or invitees is not or are not negligent) against all actions and claims whatsoever that may be brought, made or prosecuted against the Lessor, its servants, agents or invitees in respect of any action or claim arising out of any act or omission (whether negligent or otherwise) of the Lessee, its servants agents or invitees in or in relation to the Park.

Termination

- 15 This Lease may be terminated in writing at any time with the agreement of both the Lessor and the Lessee.

Variation

- 16 (1) The Lessor and the Lessee may from time to time by agreement in writing add to, substitute for, cancel or vary any of the provisions of this Lease.
- (2) The Lessee shall at least once every five years meet with the representatives of the Lessor and the Land Council to review the provisions of this Lease excepting the term, and
- (a) if the Lessor and the Lessee agree upon any variation to this Lease, the Land Council shall direct the Lessor to execute any or all documents necessary or desirable to give full effect to the variation;

- (b) if the Lessor and the Lessee fail to agree upon any variation to this Lease proposed by either party, the disagreement may, at the option of either party, be referred to arbitration by a barrister or solicitor of ten (10) years standing agreed between the parties or failing agreement, a person nominated by the Chief Justice of the Federal Court of Australia; or if the said Judge fails to nominate an arbitrator within thirty (30) days after having been requested in writing by one of the parties so to do, by an arbitrator nominated by the President for the time being of the Law Council of Australia or its successor;
- (c) in determining the question of any variation to this Lease, the provisions of the Commercial Arbitration Act (NT) shall apply and the arbitrator shall have regard to the following matters:
 - (i) the preservation and protection of Aboriginal ways of life, culture and tradition;
 - (ii) the interests, proposals, opinions and wishes of the Relevant Aboriginals in relation to the management, use and control of the Park;
 - (iii) the growth and development of Aboriginal social, cultural and economic structures;
 - (iv) freedom of access to the Park by Relevant Aboriginals and their freedom to carry out in the Park rites, ceremonies and other activities in accordance with Aboriginal tradition;
 - (v) the preservation of the natural environment;
 - (vi) the use of the Park for tourist activities; and
 - (vii) the duties, functions and responsibilities of the Lessee in relation to the Park; and
- (d) notwithstanding any of the foregoing, the arbitrator's determination shall:
 - (i) preserve the benefits and the essential rights conferred on the Lessor by this Lease, and
 - (ii) not reduce the payments or the rates of payments payable in accordance with Clauses 7 and 8.

Arbitration

- 17 If a dispute arises between the Lessor and the Lessee or between the Land Council and the Lessee in respect of matters to be agreed, formulated, discussed or requested pursuant to the Lease then either party may serve notice upon the other requiring that it submit the dispute to arbitration and thereupon the provisions of paragraph 16(2) (a) to (d) shall apply mutatis mutandis.

Parties to negotiate five years before expiry

- 18 The Lessor and the Lessee agree that they will enter into negotiations for the renewal or extension of the term of this Lease not later than five years before its expiration.

Research and exchange of Information

- 19
- (1) The Lessee agrees to permit and direct persons from time to time chosen by the Lessee, after consultation with the Land Council, being persons employed by the Lessee or under his authority, to assist the Land Council or a person authorised in writing by the Land Council in respect of any reasonable programme involving the identification and recording of Aboriginal sacred sites within the Park.
 - (2) The Lessee shall provide reasonable equipment and facilities for persons who are in accordance with sub-clause (1) permitted and directed to assist in the identification and recording of Aboriginal sacred sites within the Park.
 - (3) The Lessee agrees to make available to the Chairman of the Land Council or any person authorised in writing by the Land Council, access to all information relating to the Park including research reports sponsored, procured or supported by the Lessee that are in the possession of the Lessee other than information that would be privileged from production in litigation and information the disclosure of which would in the opinion of the Lessee, involve an unreasonable invasion of the privacy of an individual, or which is otherwise exempt from disclosure under the Freedom of Information Act 1982 whether or not that Act applies to the information.
 - (4) The Lessor agrees that the Land Council may make available to the Lessee or a person duly authorised in writing by the Lessee, all information of the Lessor relating to the Park including research reports sponsored, procured or supported by the Land Council that are in the possession of the Land Council other than information that would be privileged from production in litigation and information the disclosure of which would, in the opinion of the Land Council, involve an unreasonable invasion of the privacy of an individual or which is otherwise exempt from disclosure under the Freedom of Information Act 1982 whether or not that Act applies to the information.
 - (5) The use of Aboriginal Cultural Material relating to the Leased Area and which is in the possession, custody or control of the Lessee, shall be subject to the memorandum of understanding dated the twelfth day of May 1995 and made between the Land Council and the Lessee a copy of which is attached hereto as Annexure B. (Gunlom lease only)

Developments in the Park

- 20
- (1) The Lessor and the Lessee agree that the Land Council and the Lessee shall meet from time to time to formulate written policy in respect of environmental evaluation of proposed developments in the Park.
 - (2) A proposed development shall not take place except in accordance with any policy formulated under this clause.

Aboriginal training and employment

- 21 (1) The Lessee agrees:
- (a) to implement an Aboriginal training programme for Aboriginal persons resident in the Region the broad objectives of which are agreed with the Land Council comprising training in skills relevant to all levels of administration, planning, management and control of the Park;
 - (b) to employ training officers in the Park whenever necessary, and to give preference in employment of such officers to suitably qualified Relevant Aboriginals;
 - (c) subject to giving preference to Relevant Aboriginals, to use its best endeavours to employ in the Park in positions which are appropriate having regard to qualifications acquired in participation in the Aboriginal training programme, all persons who complete a course of the programme or, where such positions are not available, to assist in finding comparable employment;
 - (d) to provide appropriate and reasonable resources (including staff, training, facilities and accommodation) for Aboriginal trainees;
 - (e) in the Aboriginal training programme, to offer a course in ranger training, and land management skills up to and including, where appropriate, those required to fill the positions of District Supervisor and Park Superintendent or alternatively to provide such training by outside placement;
 - (f) to actively seek to achieve that at the earliest practicable opportunity during the term of this Lease the majority of permanent employment positions in the Park are held by suitably qualified Relevant Aboriginals; and
 - (g) to such extent as is practicable, provide for continuing training in appropriate skills including literacy and numeracy for Aboriginal persons employed in permanent positions in the Park.
- (2) The Lessee agrees: -
- (a) to procure that from time to time (but no later than 6 months after commencement of duties of any member of the Park staff) each member of the Park staff involved in administration, planning, management and control of the Park attend a cross cultural course the broad objectives of which are agreed with the Land Council;
 - (b) in the Aboriginal training programme and subsequent employment, to place particular emphasis on Aboriginality and Aboriginal land management practices;
 - (c) to take all practicable steps to adjust working hours and conditions to the needs and culture of Aboriginals employed in the Park.

Funding

- 22 (1) Subject to the Act the Lessee shall from monies lawfully available to the Lessee pay to the Board such moneys as are reasonably required for the administration of the Board and for the payment of any reasonable expenses incurred by members of the Board in the performance of their duties (herein collectively referred to as "the administrative costs of the Board").

- (2) The Lessee shall not make a payment under sub-clause 22 (1) unless and until the Board is empowered to receive and expend such payment.
- (3) This clause does not have operation to the extent that the administrative costs of the Board are met from another source or sources, including an appropriation by the Parliament.

Staffing

- 23
- (1) The Lessee will at all times use its best endeavours to maintain staff within the Park at the level and designations of staff requirements provided for in the Plan of Management.
 - (2) Subject to the Public Service Act 1922 and industrial awards and agreements, the Lessee agrees that arrangements existing at the commencement of this Lease in respect of Aboriginal representation on staff selection panels shall continue for the term of this Lease.
 - (3) If by operation of law sub-clause 23(2) is held to be of no force or effect, the Lessee agrees to consult with the Land Council concerning the procedures for selection and appointment of any permanent staff in the Park where duties and functions will involve substantial involvement with park administration management or control.
 - (4) Where levels of staff in the Park fall significantly below those referred to in subclause 23(1) the Lessee and the Land Council shall meet and discuss matters arising as a result of the staff levels.

Liquor Licences

- 24
- Insofar as the Lessee by virtue of any powers vested in it has any control over liquor distribution or consumption in the Park the Lessee shall consult with and have regard to the views of the Land Council in the exercising of those powers.

Restrictions on access

- 25
- (1) The Land Council may request the Lessee to restrict access to areas of the Park for the purposes of Aboriginal use of those areas.
 - (2) Where the Lessee is empowered to so restrict access to areas of the Park he shall accede to any reasonable request under sub-clause 25(1).
 - (3) The Lessee acknowledges that the Leased Area is part of the sacred site known as "Sickness Country" and in so far as his powers and duties under the Act allow he shall use his best endeavours to comply with Relevant Aboriginal tradition regarding access to sacred sites and agrees to establish a protocol with the Relevant Aborigines regarding such access.

- (4) In respect of the parts of the Leased Area which are sacred sites registered under the Northern Territory Aboriginal Sacred Sites Act 1989 and are shown shaded solid red on the plan attached hereto as Annexure A and in so far as the Lessee's powers and duties under the Act allow, the Lessee shall not permit access by the public nor carry out works such as earthworks, stoneworks or works on Aboriginal rock art thereon save with the prior written permission of the Land Council which may only be given after the Land Council has consulted the Traditional Aboriginal Owners of Sickness Country and is satisfied that they as a group consent. Such permission may be given on reasonable terms and conditions including conditions such as time of entry, persons permitted to enter and/or that persons must be accompanied by a representative of or a cultural adviser selected by such Traditional Aboriginal Owners.
- (5) In respect of the parts of the Leased Area shown hatched in blue on the said plan, the Lessee shall, in so far as practicable, restrict entry by members of the public to those persons who have obtained prior written permission from the Lessee.
- (6) If the Lessor so requests, the Lessee shall provide to the Lessor or his nominee, reasonable funding for such cultural adviser, including but not limited to: a salary equivalent to AS04 in the Commonwealth Public Service; normal employment overheads; and reasonable travel and accommodation expenses.
- (7) Such permission and conditions of entry to Sickness Country may be incorporated into an agreed Plan of Management if such Traditional Aboriginal Owners so agree.

Service of Notices, &c.

- 26 (1) Any notice, request, consent approval, communication or other document (in this clause called a "communication") to be given under this Lease shall be in writing addressed as follows:
- If to the Lessor - [address]
- If to the Lessee - [address]
- If to the Northern Land Council - [address]
- If to the Board - As notified in writing by the Board
- or to such other address as the relevant party or body may nominate by notice to each other party or body
- (2) Each communication shall be delivered by hand, or mailed by pre-paid registered post, or sent by telegram or facsimile transmission, to the address of the party or body to which it is being given and shall be deemed to have been given –
- (a) if received before 4:00pm on a business day - when it is received; and
- (b) if received at any other time - on the business day next following the day of receipt.

Definition of terms

27 (1) In this Lease: -

“ Aboriginal” means a person who is a member of the Aboriginal race of Australia;

“Aboriginal Cultural Material” has the same meaning as in the memorandum of understanding dated 12th May 1995, made between the Land Council and the Lessee a copy of which is attached hereto as Annexure B. (Gunlom lease only) “Aboriginal Land” has the same meaning as in the Land Rights Act; 208. “Aboriginal tradition” has the same meaning as in the Land Rights Act,

“the Act” means the National Parks and Wildlife Conservation Act 1975;

“Board” means the Board established in relation to Kakadu National Park in accordance with the Act;

“Cultural Adviser” means the person nominated by the Traditional Aboriginal Owners in accordance with the provisions of sub-clause 25(4). (Gunlom lease only)

“Former Lease” means those leases in the Registrar Book at the Land Titles Office, Darwin in the Northern Territory of Australia being instruments No. 79731, No. 79732 and No. 79733. (Kakadu lease only)

“Land Council” means Northern Land Council established under the Land Rights Act or any other Land Council that may be established for the area in accordance with section 21 of the Land Rights Act;

“Land Rights Act” means the Aboriginal Land Rights (Northern Territory) Act 1976;

“Land Trust” means an Aboriginal Land Trust constituted under section 4 of the Land Rights Act;

“Leased Area” means the area of land the subject of this Lease being part of Northern Territory Portion 4774 more particularly shown on plan S95/212 which has been deposited at the Land Titles Office, Darwin, being the whole of the land comprised in the Grant Registered Volume 477 folio 049. (Gunlom lease only)

“Lessor” includes the Lessor’s successors, assigns, servants, agents and contractors.(Gunlom lease only)

“Lessee” includes the Lessee’s successors, permitted assigns, employees, licensees, invitees, servants, agents and contractors. (Gunlom lease only)

“the Park” unless the context otherwise admits, means so much of Kakadu National Park as is leased to the Lessee from an Aboriginal Land Trust whether by this Lease or another lease;

“Region” has the same meaning as in paragraph (1) of the definition of “Region” in section 3 of the Act;

“Relevant Aboriginals” means all the traditional Aboriginal owners of the Park and the Aboriginals entitled to enter upon or use or occupy the Park in accordance with Aboriginal tradition governing the rights of that Aboriginal or group of Aboriginals with respect to the Park whether or not those rights are qualified as to place, time, circumstances, purpose, permission or any other factor and the Aboriginals permitted by them to reside in the Park;

“Relevant Aboriginal Association” means any incorporated Aboriginal Association or group whose members live in or are Relevant Aboriginals in relation to the Park; 209.
“Sickness Country” means the Bula Sickness Country as identified on the map attached as Annexure A to this Agreement. (Gunlom lease only)

“sacred site” has the same meaning as in the Land Rights Act; “Plan of Management” has the same meaning as in the Act;

“Traditional Aboriginal Owners” has the same meaning as in the Land Rights Act;

- (2) Unless the contrary intention appears this Lease shall be interpreted in accord with the provisions of the Acts Interpretation Act 1901 of the Commonwealth of Australia, where applicable, as if this Lease were an Act.

IN WITNESS WHEREOF the parties have executed this Memorandum of Lease.

the 27th day of March 1991 (Kakadu and Jabiluka leases)

the 20th day of May 1996 (Gunlom lease only).

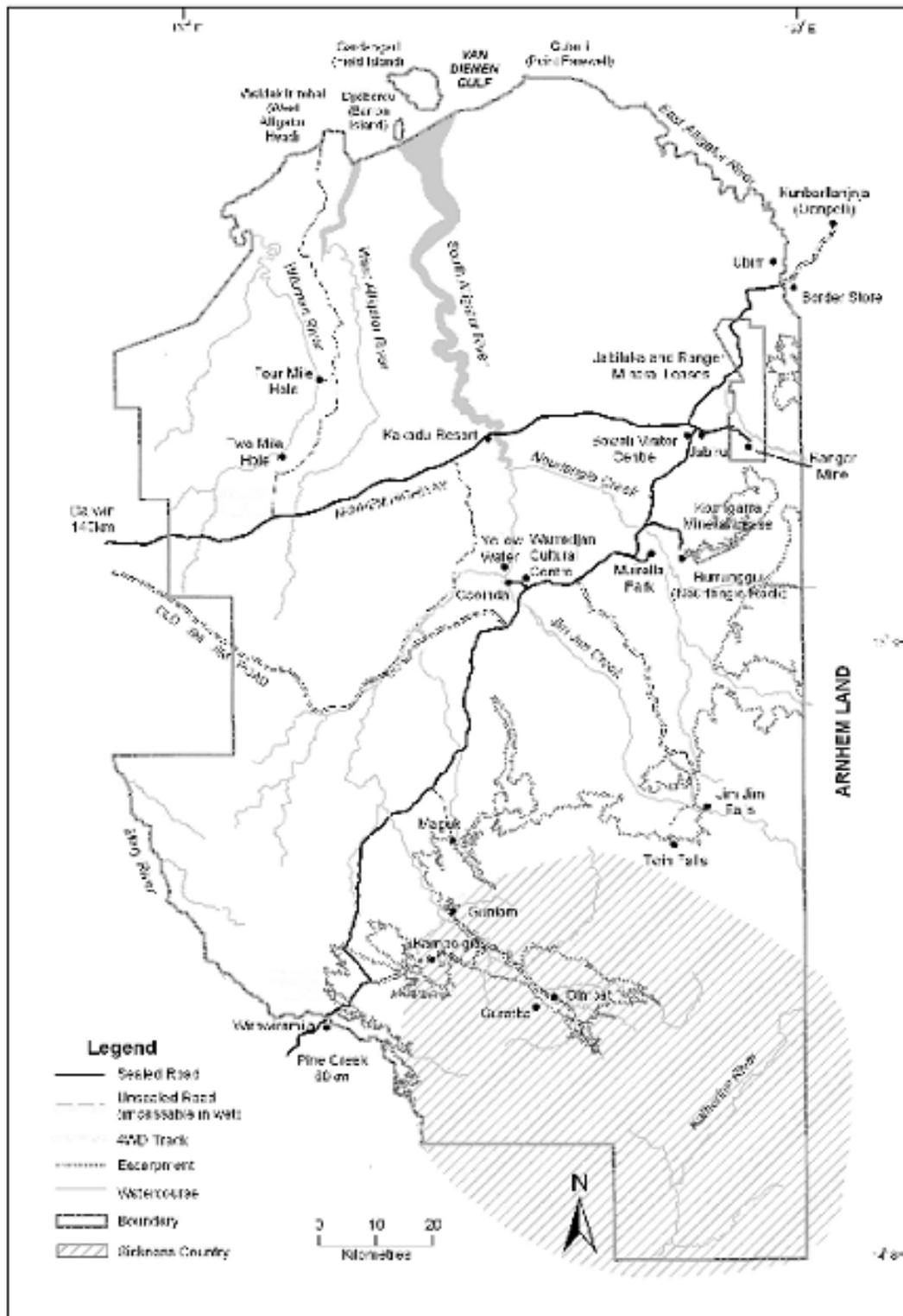
Annexure A

Plan of Leased Area showing Sickness Country, Registered sacred sites and areas where public access need not be by permit.

Annexure B

Memorandum of Understanding of 12 May 1995

Annexure A – Sickness country



Annexure B

To Lease by Gunlom Aboriginal Land Trust to the Director of National Parks and Wildlife

MEMORANDUM OF UNDERSTANDING REGARDING THE CONTROL OF ABORIGINAL CULTURAL MATERIAL IN KAKADU NATIONAL PARK

- 1 This Memorandum of Understanding sets out agreed arrangements for the control of Aboriginal cultural material from Kakadu National Park which is within the custody, power or control of the Director of National Parks and Wildlife.
- 2 For the purpose of this memorandum;
“Aboriginal” means a person who is a member of the Aboriginal race of Australia.
“Aboriginal Cultural Material” includes;
 - a) archaeological sites, rock art (including paintings, carvings, engravings and imprints), wooden and stone implements and other physical artefacts produced by Aboriginal people as a result of the traditional use of land within Kakadu National Park;
 - b) photographs (including negatives), video and cinemagraphic recordings of Aboriginal people, their living areas, archaeological sites, rock art and physical material;
 - c) audio recordings of Aboriginals;
 - d) unpublished printed material, field notes, maps and computer data containing information relating to the traditional use or occupation of Kakadu by Aboriginals; and
 - e) human, animal and plant remains that are of significance to Aboriginal people within the possession, custody or control of the Director.

“the Act” means the *National Parks and Wildlife Conservation Act 1975*.

“the Committee” means the Bining Heritage Management Committee established by the traditional owners of Kakadu to act on their behalf in relation to the control of their cultural heritage or such other body as is approved by the traditional Aboriginal owners of Kakadu, as a group, to fulfil that function.

“the Director” means the Director of National Parks and Wildlife and includes his servants, agents and delegates.

“Kakadu” means Kakadu National Park.

“Recording” means any physical recording, representation or depiction of Aboriginal cultural material or ceremony, and includes written records, pictorial representations, audio tapes, photographs, films, video tapes, and digital recordings.

“Regulations” means the National Parks and Wildlife Regulations.
- 3 This memorandum is subject to and should be read in accordance with the Act, the Regulations and the Plan of Management for Kakadu.
- 4 The terms used in the memorandum are to have the same meaning as in the Act and the Regulations unless otherwise defined herein.
- 5 Under the Act a function of the Director is the administration, management and control of Kakadu National Park.

- 6 It is the function of the Northern Land Council to protect the interests of traditional Aboriginal owners of, and other Aboriginals interested in, Aboriginal Land in its area. It is also a function of the Northern Land Council to assist Aboriginals in taking measures likely to assist in the protection of sacred sites on land (whether or not Aboriginal Land) in its area.
- 7 The Director will as soon as practicable establish and thereafter maintain, in a manner approved by the Committee, a register of all Aboriginal cultural material in Kakadu.
- 8 The Director will in conjunction with, and subject to the approval of, the Committee develop a protocol for access to the register.
- 9 The Director will take all practicable steps to ensure that;
 - a) members of the public who visit Kakadu are made aware that Aboriginal people are sensitive to being photographed and to their land, living areas, sacred sites and other cultural material such as ceremonies or rock art being photographed;
 - b) any Recording made by Kakadu staff, contractors and consultants in the course of their official duties is only to be on material owned and supplied by the Director and that those materials remain the property of and in the control of the Director, for access and use only in accordance with the terms of this memorandum and as approved by the Committee;
 - c) any Recording of Aboriginal Cultural Material will not be published without the consent of the Committee;
 - d) all cultural research permits issued in Kakadu have the prior approval of the Committee;
 - e) it shall be made a condition of grants of all cultural research permits that the permit holders acknowledge that any Recording remains under the control of the Director and cannot be used or published without his prior written consent and the Committee's approval;
 - f) it shall be made a condition of grants of all commercial film permits that the use of any Recording for advertising purposes must have the prior written consent of the Director and the Committee's approval.
- 10 The Director will do everything practicable to provide appropriate storage areas for Aboriginal cultural material in Kakadu.
- 11 The Director will support the efforts of traditional owners and other Aboriginal people to secure the return of Aboriginal cultural material that has been removed from Kakadu.
- 12 The Directors will not transfer control of any Aboriginal cultural material to any other person without the consent of the Committee.
- 13 The Director and the Committee will develop a protocol for staff, contractors and consultants dealings with Aboriginal cultural material and Recordings and the Director will require staff, contractors and consultants to give their written agreement to abide by the protocol.
- 14 The parties acknowledge that nothing in this memorandum is intended to affect any native title to Aboriginal cultural material.
- 15 The parties to this memorandum may, by agreement, review and if necessary modify or vary the terms of this memorandum from time to time as necessary.

DATED the Twelfth day of May 1995.

Appendix J

Species of conservation concern

Conservation status codes: CR = critically endangered; EN = endangered; VU = vulnerable.

EPBC Act = Status under the *Environment Protection and Biodiversity Conservation Act 1999*

TPWC Act = Status under the *Territory Parks and Wildlife Conservation Act (NT)*

IUCN = Status on the IUCN Red List of Threatened Species

Common name	Scientific name	Status			Habitat
		EPBC Act	TPWC Act	IUCN	
Plants					
(a shrub)	<i>Acacia</i> sp. Graveside Gorge ¹	CR	CR		Stone country
(a fern)	<i>Bolbitis quoyana</i>		VU		Stone country
(a cycad)	<i>Cycas armstrongii</i> ²		VU	VU	Lowland woodlands
(an orchid)	<i>Dienia montana</i> ³		VU		Rainforest
(a vine)	<i>Freycinetia excelsa</i>		VU		Rainforest
(a shrub)	<i>Hibbertia brennanii</i>		VU		Stone country
(a shrub)	<i>Hibbertia pancerea</i>		VU		Stone country
(a shrub)	<i>Hibbertia</i> sp. South Magela		VU		Stone country
(a shrub)	<i>Hibbertia tricornis</i>		VU		Stone country
(a shrub)	<i>Hibiscus brennanii</i>	VU	VU		Stone country
(a shrub)	<i>Jacksonia divisa</i>		VU		Stone country
(a shrub)	<i>Lithomyrtus linariifolia</i>		VU		Stone country
(an aquatic herb)	<i>Monochoria hastata</i>		VU		Floodplains
(a sub-shrub)	<i>Sauropus filicinus</i>	VU			Stone country
(a bladderwort)	<i>Utricularia dunstaniae</i>		VU		Lowland woodlands
Invertebrates					
(a decapod crustacean)	<i>Leptopalaemon gibbosus</i>			VU	Stone country creek
(a decapod crustacean)	<i>Leptopalaemon glabrus</i>			CR	Stone country creek
(a decapod crustacean)	<i>Leptopalaemon magelensis</i>			VU	Stone country creek
Top End dragon (a dragonfly)	<i>Antipodogomphus dentosus</i>			VU	Stone country
Kakadu vicetail (a dragonfly)	<i>Hemigomphus magela</i>			VU	Stone country
Rock narrow-wing (a dragonfly)	<i>Lithosticta macra</i>			VU	Stone country

Common name	Scientific name	Status			Habitat
		EPBC Act	TPWC Act	IUCN	
Fish					
Northern river shark	<i>Glyphis garricki</i> ⁴	EN	EN	CR	Marine, estuaries, rivers
Speartooth shark	<i>Glyphis glyphis</i> ⁵	CR	VU	EN	Marine, estuaries, rivers
Dwarf sawfish	<i>Pristis clavata</i>	VU	VU	EN	Marine, estuaries, rivers
Largetooth sawfish	<i>Pristis pristis</i> ⁶	VU	VU	CR	Marine, estuaries, rivers, floodplain
Narrow sawfish	<i>Anoxypristis cuspidata</i>			EN	Marine, estuaries, rivers
Reptiles					
Flatback turtle	<i>Natator depressus</i>	VU			Marine
Green turtle	<i>Chelonia mydas</i>	VU		EN	Marine
Olive Ridley turtle	<i>Lepidochelys olivacea</i>	EN		VU	Marine
Hawksbill turtle	<i>Eretmochelys imbricata</i>	VU	VU	CR	Marine
Loggerhead turtle	<i>Caretta caretta</i>	EN	VU	EN	Marine
Yellow-snouted gecko	<i>Lucasium occultum</i> ⁷	EN	VU		Lowland woodlands
Arnhem Land skink	<i>Bellatorias obiri</i> ⁸	EN	VU		Stone country
Merten's water monitor	<i>Varanus mertensi</i>		VU		Rivers, wetlands
Mitchell's water monitor	<i>Varanus mitchelli</i>		VU		Rivers, wetlands
Yellow-spotted monitor	<i>Varanus panoptes</i>		VU		Lowland woodlands, floodplain
Plains death adder	<i>Acanthophis hawkei</i>	EN	VU		Floodplain
Oenpelli python	<i>Morelia oenpelliensis</i>		VU		Stone country
Birds					
Partridge pigeon	<i>Geophaps smithii</i>	VU ⁹	VU	VU	Lowland woodlands
Red goshawk	<i>Erythroriorchis radiatus</i>	VU	VU		Lowland woodlands, rivers, wetlands
Grey falcon	<i>Falco hypoleucos</i>		VU	VU	Lowland woodlands, floodplain
Greater sand plover (Mongolian)	<i>Charadrius leschenaultii leschenaultii</i>		VU		Marine, estuaries

Common name	Scientific name	Status			Habitat
		EPBC Act	TPWC Act	IUCN	
Lesser sand plover	<i>Charadrius mongolus</i>		VU		Marine, estuaries
Australian painted snipe	<i>Rostratula australis</i> ²	EN	VU	EN	Rivers, wetlands
Bar-tailed godwit	<i>Limosa lapponica baueri</i>		VU		Marine, estuaries
Eastern curlew	<i>Numenius madagascariensis</i>		VU	VU	Marine, estuaries
Asian dowitcher	<i>Limnodromus semipalmatus</i> ²		VU		Marine, estuaries
Red knot	<i>Calidris canutus</i>		VU		Marine, estuaries
Great knot	<i>Calidris tenuirostris</i>		VU	VU	Marine, estuaries
Curlew sandpiper	<i>Calidris ferruginea</i>		VU		Marine, estuaries, floodplain
Masked owl (northern)	<i>Tyto novaehollandiae kimberli</i>	VU	VU		Lowland woodlands
White-throated grass-wren	<i>Amytornis woodwardi</i>		VU	VU	Stone country
Yellow chat (Alligator Rivers subspecies)	<i>Epthianura crocea tunneyi</i>	EN	EN		Floodplain
Crested shrike-tit (northern)	<i>Falcunculus frontatus whitei</i>	VU			Lowland woodlands
Gouldian finch	<i>Erythrura gouldiae</i>	EN	VU		Lowland woodlands
Mammals					
Northern quoll	<i>Dasyurus hallucatus</i>	EN	CR	EN	Stone country, lowland woodlands
Northern brush-tailed Phascogale	<i>Phascogale pirata</i>	VU	EN	VU	Lowland woodlands
Fawn antechinus	<i>Antechinus bellus</i>		EN		Lowland woodlands
Golden bandicoot	<i>Isoodon auratus</i> ¹⁰	VU	EN	VU	Stone country
Nabarlek	<i>Petrogale concinna</i>		VU		Stone country
Ghost bat	<i>Macroderma gigas</i>			VU	Stone country, lowland woodlands
Arnhem leaf-nosed Bat	<i>Hipposideros inornatus</i>		VU	VU	Stone country
Northern leaf-nosed Bat	<i>Hipposideros stenotis</i>		VU		Stone country
Bare-rumped sheath-tailed bat	<i>Saccolaimus saccolaimus nudicluniatus</i>	CR			Lowland woodlands
Brush-tailed rabbit-rat	<i>Conilurus penicillatus</i>	VU	EN		Lowland woodlands
Black-footed tree-rat	<i>Mesembriomys gouldii</i>		VU		Lowland woodlands

Common name	Scientific name	Status			Habitat
		EPBC Act	TPWC Act	IUCN	
Golden-backed tree-rat	<i>Mesembriomys macrurus</i> ¹⁰	VU	CR		Stone country, lowland woodlands, rainforest
Northern hopping-mouse	<i>Notomys aquilo</i> ¹⁰	VU	VU	EN	Stone country, lowland woodlands
Kakadu pebble-mouse	<i>Pseudomys calabyi</i>			VU	Lowland woodlands
Arnhem rock-rat	<i>Zyzomys maini</i>	VU	VU		Stone country, rainforest
Water mouse	<i>Xeromys myoides</i> ¹⁰	VU		VU	Rivers, wetlands, floodplain, marine, estuaries
Pale field-rat	<i>Rattus tunneyi</i>		VU		Stone country, lowland woodlands
Dugong	<i>Dugong dugon</i>			VU	Marine
Dingo	<i>Canis lupus dingo</i>			VU	Stone country, lowland woodlands, floodplain
Ecological communities					
Arnhem Plateau Sandstone Shrubland Complex		EN			Stone country

Notes:

- ¹ *Acacia equisetifolia* Maslin & Cowie ined.;
- ² Occurrence in Kakadu may require further confirmation;
- ³ Formerly known as *Malaxis latifolia*, and recent taxonomic revision suggests that it may be renamed again as *Dienia ophrydis* (Margonska & Kowalkowska 2008);
- ⁴ Formerly known as *Glyphis* sp. C;
- ⁵ Formerly known as *Glyphis* sp. A;
- ⁶ Formerly known as *Pristis microdon*;
- ⁷ Formerly known as *Diplodactylus occultus*;
- ⁸ Formerly known as *Egernia obiri*;
- ⁹ As eastern subspecies *G. s. smithii*;
- ¹⁰ No confirmed records from Kakadu for at least 30 years

Source: Woinarski et al. 2014

Bibliography

- Atkins, S & Winderlich, S (eds) (2010). *Kakadu National Park Landscape Symposia Series 2007–2009. Symposium 3: Fire management*, 23–24 April 2008, Aurora Kakadu (South Alligator), Kakadu National Park. Internal Report 566, February, Supervising Scientist, Darwin.
- Chaloupka, G (1993). *Journey in time: the world's longest continuing art tradition: the 50,000 year story of the Australian Aboriginal rock art of Arnhem Land*. Reed, Chatswood.
- Director of National Parks (2004). *Kakadu National Park crocodile strategy*. Australian Government, Jabiru.
- Director of National Parks (2008). *Guidelines for environmental impact assessment in Kakadu National Park*. Australian Government, Jabiru.
- Director of National Parks (2009). *Kakadu National Park tourism master plan 2009–2014*. Australian Government, Jabiru.
- Director of National Parks (2010a). *Kakadu National Park climate change strategy 2010–2015*. Australian Government, Jabiru.
- Director of National Parks (2010b). *Kakadu National Park training strategy 2009–2014*. Australian Government, Jabiru.
- Director of National Parks (2010c). *Kakadu National Park – Fly Neighbourly Agreement*. Australian Government, Jabiru.
- Director of National Parks (2011a). *Parks Australia sustainable tourism overview (2011–2016)*. Australian Government, Canberra.
- Director of National Parks (2011b). *Kakadu National Park integrated waste management strategy (draft)*. Australian Government, Jabiru.
- Director of National Parks (2011c). *An-garregen: A strategy for cultural heritage management in Kakadu National Park (draft)*. Australian Government, Jabiru.
- Director of National Parks (2012). *Kakadu National Park management plan 2007–2014: Technical audit summary report*. Australian Government, Canberra.
- Director of National Parks (2013). *Kakadu research guidelines*. Australian Government, Jabiru.
- Director of National Parks (2014). *Kakadu National Park compliance and enforcement strategy 2012–2015*. Australian Government, Jabiru.
- Department of Sustainability, Environment, Water, Population and Communities (2011). *Information sheet on Ramsar Wetlands (RIS) – 2009–2012 version: Kakadu National Park*, Australian Government, Canberra.
- Department of Sustainability, Environment, Water, Population and Communities (2012). *Indigenous Employment and Capability Strategy 2012–2014*. Australian Government, Canberra.
- Dudley, N (ed) (2008). *Guidelines for applying protected area management categories*. IUCN, Gland, Switzerland.
- EC3 Global and Middle Star (2013). *Australia's timeless north national landscape: Experience development action plan*. Tourism Australia.
- Field, IC, Bradshaw, CJA & Haynes, C (eds) (2006). *Feral animals in Kakadu National Park: A management strategy for the future*. School for Environmental Research, Charles Darwin University. Report to the Department of the Environment, Water, Heritage and the Arts, Canberra.

- Fox, RW, Kelleher, GG & Kerr, CB (1977) *Ranger Uranium Environmental Inquiry second report*. Australian Government Publishing Service, Canberra.
- Hyder Consulting Pty Ltd (2008). *The impacts and management implications of climate change for the Australian Government's protected areas*. Report to the Department of the Environment, Water, Heritage and the Arts and the Department of Climate Change. Department of Climate Change, Canberra.
- Inspiring Place Pty Ltd (2013). *Kakadu National Park draft walking strategy*. Prepared for Parks Australia. Australian Government, Canberra.
- Jambrecina, M (ed) (2010). *Kakadu National Park Landscape Symposia Series 2007–2009. Symposium 5: Feral animal management*, 3–4 December 2008, Jabiru Community Centre, Kakadu National Park. Internal Report 568, October, Supervising Scientist, Darwin.
- McMahon and Associates Pty Ltd (2009). *On-site energy audit of Kakadu National Park, Northern Territory*. Unpublished report prepared for Kakadu National Park, Jabiru.
- Morse, J, King, J & Bartlett, J (2005). *Walking to the future ... together: A shared vision for tourism in Kakadu National Park*. Commonwealth of Australia.
- Murray, W (1995). *Kakadu National Park land rehabilitation strategy*. Unpublished internal report to the Australian Nature Conservation Agency, Jabiru.
- Murphy, B (2013). *An evaluation of fire management in the Stone Country of Kakadu National Park*. Unpublished report for Parks Australia.
- National Health and Medical Research Council (2011). *Australian Drinking Water Guidelines*. Australian Government.
- Petty, A, Alderson, J, Muller, R, Scheibe, O, Wilson, K & Winderlich, S (2007). *Kakadu National Park, Arnhem Land Plateau draft fire management plan*. Kakadu National Park, Jabiru.
- Rose, DB (1996). *Nourishing terrains: Australian Aboriginal views of landscape and wilderness*. Australian Heritage Commission.
- Tourism NT (2014a). *Economic contribution of tourism to the Northern Territory 2013–14*, NT Tourism Satellite Account . Tourism NT, Northern Territory.
- Tourism NT (2015a). *Quickstats report: Year ending March 2015*. Tourism NT, Northern Territory.
- Tourism Research Australia (2014). *Tourism Satellite Accounts 2013-2014*. Tourism Research Australia, Austrade, Australian Government
- UNESCO (2014). *Kakadu National Park: retrospective statement of outstanding universal value*. <http://whc.unesco.org/en/list/147>
- Walden, D & Nou, S (eds) (2008). *Kakadu National Park Landscape Symposia Series 2007–2009. Symposium 1: Landscape change overview*, 17–18 April 2007, South Alligator Inn, Kakadu National Park. Internal Report 532, March, Supervising Scientist, Darwin.
- Williams, RJ, Bradstock, RA, Cary, GJ, Enright, NJ, Gill, AM, Liedloff, A, Lucas, C, Whelan, RJ, Andersen, AN, Bowman, DMJS, Clarke, PJ, Cook, GD, Hennessy, K & York, A (2009). *Interactions between climate change, fire regimes and biodiversity in Australia – a preliminary assessment*. Report to the Department of Climate Change and the Department of the Environment, Water, Heritage and the Arts, Canberra.
- Winderlich, S (ed) (2010a). *Kakadu National Park Landscape Symposia Series 2007–2009. Symposium 2: Weeds management*, 27–28 November 2007, Jabiru Field Station, Kakadu National Park. Internal Report 565, January, Supervising Scientist, Darwin.

Winderlich, S (ed) (2010b). *Kakadu National Park Landscape Symposia Series 2007–2009. Symposium 4: Climate change*, 6–7 August 2008, Gagudju Crocodile Holiday Inn, Kakadu National Park. Internal Report 567, January, Supervising Scientist, Darwin.

Winderlich, S & Woinarski, J (eds) (2014). *Kakadu National Park Landscape Symposia Series. Symposium 7: Conservation of threatened species*, 26–27 March 2013, Bowali Visitor Centre, Kakadu National Park. Internal Report 623, June, Supervising Scientist, Darwin.

Woinarski, J, Russell-Smith, J, Andersen, A & Brennan, K (2009). 'Fire management and biodiversity of the western Arnhem Land plateau'. In J Russell-Smith, PJ Whitehead & P Cooke (eds), *Culture, ecology and economy of fire management in north Australian savannas: rekindling the wurrk tradition*, pp. 201–228. CSIRO Publishing, Melbourne.

Woinarski, J & Winderlich, S (2014). *A strategy for the conservation of threatened species and threatened ecological communities in Kakadu National Park, 2014–2024*. Report prepared for Kakadu National Park, Jabiru.

Woodward, AE (1973). *Aboriginal Land Rights Commission, first report*. Parliamentary Paper No. 138 of 1973. Australian Government Publishing Service, Canberra.

Zurba, M, Ross, H, Izurieta, A, Rist, P, Bock, E & Berkes, F (2012). 'Building co-management as a process: problem solving through partnerships in Aboriginal country, Australia'. *Environmental Management* 49, 1130–1142.

Map data sources

Australian Government data sources:

Australia, GEODATA COAST 100K 2004 1:100,000 © Geoscience Australia, 2004. All rights reserved.

Collaborative Australian Protected Areas Database (CAPAD) 2012, Department of the Environment, 2012

GEODATA TOPO250K © Geoscience Australia, 2006

Kakadu National Park Visitor Guide, Director of National Parks, 2008

Northern Territory Government data sources:

Kakadu Land Claims, 2007

Monsoon Vine – Forest Distribution in the Northern Territory, 2000

Other data sources:

CadLite (Northern Territory Cadastre), PSMA © 2013

A Jarvis, HI Reuter, A Nelson & E Guevara (2006). Hole-filled seamless SRTM data V3. International Centre for Tropical Agriculture (CIAT). Available from srtm.csi.cgiar.org

RAB Schodde, IJ Hedley & PN Martensz (1987). *Vegetation habitats, Kakadu National Park, Alligator Rivers Region, Northern Territory*. Report to Australian National Parks and Wildlife Service. CSIRO, Canberra.

Index

A

- Aboriginal Areas Protection Authority (AAPA)
 - Authority Certificate from, 137
 - and Bininj/Mungguy cultural sites, 53
 - register of, 51
 - unauthorised access, 53
 - and Indigenous research protocols, 117
 - and review of cultural protocol documents, 37
 - and rock art, 46
- Aboriginal associations and corporations
 - consultations with re management plan, 18
- Aboriginal businesses
 - outsourcing of activities to, 78
 - see also* Bininj/Mungguy businesses
- Aboriginal custodians, 2, 4–5
- Aboriginal land
 - and land claims in the park (as at April 2014), 8
 - outstations on, 119, 157
 - the park as, 7, 9, 10, 16, 30, 32, 36
 - subleases or licences, 118, 119, 131
 - see also* land rights
- Aboriginal Land Rights Commission (A E Woodward, 1973), 5
- Aboriginal Land Rights (Northern Territory) Act 1976* (Land Rights Act), 4, 5, 9, 168
 - and Jabiru, 120
 - and joint management, 16
 - and Mirarr native title claim, 121
 - and Northern Land Council, 31
 - and the park, 7, 32
 - and park leases, 208
 - and sacred sites, 51
- Aboriginal Land Trusts
 - and joint management, 16
- Aboriginal society
 - kinship and, 4
- access, 162–4
 - air access, 164
 - policies, 164
 - road access, 163
 - policies, 163
 - site access, 162
 - policies, 162
- access restrictions, 155, 162
 - see also* cultural closure protocols; permanent closure of visitor sites; temporary closure of visitor sites
- accommodation facilities, 144
 - see also* commercial accommodation
- activities *see* authorising and managing activities; carrying out and authorising activities not otherwise specified and new ways of authorising activities
- adaptive management, 147
- administration and business management, 125–49
- adventurous activities prohibited or regulated, 155, 171
- aerial survey techniques
 - and feral animal control, 83
- African pasture grasses, 72, 74
- air access, 164
 - policies, 164
- aircraft
 - EPBC Act definition, 164
- Airservices Australia, 164
- airstrips, 133, 134
- Alligator Rivers coastal floodplains, 13
- Alligator Rivers floodplains bird area, 16
- Alligator Rivers Region, 2
 - land rights in, 5, 7
 - and the park, 16
 - and uranium mining, 5, 120
 - uranium mining in, 95
- alligator weed, 80
- Allosyncarpia ternata* (Anbinik), 63, 73, 74, 89
- allowable activities
 - approval for, 153–4
 - authorisation of, 153–4
 - definition, 153
- Almudj/Alyod* (in Gundjeihmi language) – Rainbow Snake, 4
- Amateur Fisherman’s Association of the Northern Territory
 - consultations with re management plan, 18
- Anbinik (*Allosyncarpia ternata*) *see* *Allosyncarpia ternata* (Anbinik)
- andjamun* (sacred and dangerous)
 - rock art, 44
- An-garregen (cultural heritage) Strategy, 41, 43, 49
- Animal Management in Rural and Remote Indigenous Communities (AMRRIC), 86
- animals
 - prohibition on bringing into the park, 83, 184–5
 - policies, 184–5
- Anlarr (*Callitris*), 63
 - see also* cypress pine (Anlarr)
- apprenticeships, 38
- approvals
 - for allowable activities, 153–4
 - ‘class approval’, 153
 - ‘individual approval’, 153
 - suspension or cancellation of, 154
 - authorising certain activities, 131
- Approved Plant List, 80, 82
- aquarium fish, 86, 185
- aquarium plants, 85
- aquatic grassy weeds, 79
- aquatic plants, 65
- archaeological sites, 15, 16, 51
- Arnhem coast bioregion, 10
- Arnhem Highway, 133, 163
- Arnhem Land escarpment, 10
- Arnhem Land Plateau, 2, 13, 60, 73
- Arnhem Land Plateau Fire Management Plan, 88
- Arnhem Plateau
 - bird area, 16
- Arnhem Plateau bioregion, 10, 15
- Arnhem Plateau Sandstone Shrubland Complex ecological community, 63

- asbestos removal
 - and historic sites, 55
 - Asian water buffalo, 83, 84
 - see also* buffalo
 - assessment of proposals, 135–9
 - action, 136
 - cost recovery, 136
 - environmental impact assessment matters and considerations, 138–9
 - impact assessment process, 137
 - policies, 135–6
 - Atomic Energy Act 1953*, 120
 - Australian Federal Police
 - ex officio wardens, 129
 - Australian IUCN categories, 24
 - see also* IUCN categories
 - Australian IUCN management principles, 24, 166
 - see also* IUCN management principles
 - Australian Radiation Protection and Nuclear Safety Act 1998*, 95
 - Australia's Timeless North Experience Development Action Plan, 102, 144
 - Australia's Timeless North National Landscape, 102
 - Australia's Timeless North National Landscape steering committee, 107, 109, 142
 - authorisation of allowable activities, 153–4
 - application for, 154
 - policies, 153–4
 - authorising and managing activities, 131–2, 152
 - actions, 132
 - administrative processes, 131
 - management issues, 131
 - policies, 131
 - see also* carrying out and authorising activities not otherwise specified and new ways of authorising activities
- B**
- backpackers, 102
 - Balanda
 - and commercial use of plants and animals, 165
 - consultations with, 30
 - and country, 35
 - and decision-making, 30
 - and introduction of pastoralism, 88
 - and joint management, 29
 - and native plants and animals, 59
 - barramundi, 66
 - Bartlett, Jennifer *see* *Kakadu – Walking to the future together – A shared vision for tourism in Kakadu National Park* (J Morse, J King, & J Bartlett, 2005)
 - Batchelor Institute of Indigenous Tertiary Education and Indigenous employment, training and development, 39
 - belly ache bush, 80
 - bicycle riding tracks, 105
 - bicycles
 - restrictions on use of, 105, 171
 - big-headed ants, 85
 - billy goat plum (*Terminalia ferdinandiana*), 71
 - Bininj/Mungguy businesses, 13, 165
 - and commercial tourism, 39, 106, 107, 175, 176
 - outsourcing of feral animal and weed control to, 78, 87
 - see also* Aboriginal businesses
 - Bininj/Mungguy contract work, 17, 35, 37, 38, 39
 - Bininj/Mungguy cultural knowledge and practices, 41, 47–50
 - actions, 49–50
 - existing threats to values
 - Bininj/Mungguy access to country, 48
 - loss of traditional knowledge, 48
 - social issues, 48
 - outcomes, 47
 - performance indicators, 47
 - and research, 116
 - values and condition, 48
 - see also* Bininj/Mungguy cultural protocols, practices, laws and customs (including clan-based decision-making); Bininj/Mungguy values, traditional practices and cultural knowledge
 - Bininj/Mungguy cultural protocols, practices, laws and customs (including clan-based decision-making) and film-making and photography, 109
 - and hunting and gathering, 168
 - and management of the park, 30, 32, 36
 - see also* Bininj/Mungguy cultural knowledge and practices; Bininj/Mungguy values, traditional practices and cultural knowledge
 - Bininj/Mungguy cultural sites, 11, 41, 43, 51–3
 - existing threats to values
 - feral animals, 52, 53
 - loss of traditional knowledge, 52
 - unauthorised access, 52, 53
 - weeds, 52, 53
 - outcome, 51
 - performance indicator, 51
 - potential threats to values
 - climate change, 52
 - public access to, 43, 162
 - register of, 51, 53
 - restrictions on access to, 51
 - values and condition, 52
 - Bininj/Mungguy culture, 48
 - maintenance of, 49
 - Bininj/Mungguy outstations *see* outstations and living on country
 - Bininj/Mungguy peoples
 - aspirations to live on country, 50
 - and Board of Management, 31
 - and commercial use of resources, 165
 - consultations with, 17, 32, 35, 36
 - and country, 9, 11, 35
 - cultural experiences tours, 103
 - customary harvest practices, 50
 - and decision-making, 30, 35, 36

- employment of, 13, 17, 35, 36, 37, 39
 - and feral animals, 87
 - and fire management, 90, 91, 94
 - and food and other resources from rainforest, 73
 - and implementation of management plan, 37
 - and Indigenous cultural and intellectual property rights, 49
 - information for and consultation with on Board
 - activities, 33
 - and introduced animals, 83
 - and Jabiru, 123
 - and joint management, 15, 16, 28–40, 109
 - and lease areas, 157
 - and management of cultural information and material, 49
 - and management of cultural values, 41, 43
 - and native plants and animals, 59
 - and natural heritage management programmes, 59
 - and the park, 2, 5, 9, 10, 13, 99
 - and park management programmes, 78
 - and recreational boating and fishing, 96
 - and research and monitoring activities, 116, 181
 - and restriction on access to areas in the park, 162
 - see also* cultural closure protocols
 - and rock art, 44, 46
 - and safety of visitors, 125, 126
 - and South Alligator Valley rehabilitation plan, 95
 - and strategy for walking in the park, 104
 - and tourism, 39, 99, 107
 - and traditional fire management, 66, 67
 - and traditional hunting and gathering, 165
 - and traditional use of land and water, 152, 162, 168–9
 - and traditional use of plants and animals, 50, 162
 - use of aircraft by in wet season, 164
 - use of fire, 88, 90
 - and visitor information, 110
 - and visitors, 109
 - and wetlands and coastal and marine areas, 66
 - and work with researchers, 114, 115
- Bininj/Mungguy training and other opportunities, 38–40
- actions, 40
 - management issues, 39
 - outcome, 38
 - policies, 39
- Bininj/Mungguy values, traditional practices and cultural knowledge
- and park management programmes, 78
 - passing on to the young and future generations, 39
 - see also* Bininj/Mungguy cultural knowledge and practices; Bininj/Mungguy cultural protocols, practices, laws and customs (including clan-based decision-making)
- biodiversity, 2
- conservation of, 114
 - in stone country, 13, 60
 - threat of weeds to, 79
 - see also* Convention on Biological Diversity
- biological control agents, 87
- biological control techniques
- and weed management, 79, 80
- biological resources
- access to, 165, 181, 182, 183, 212, 213
 - see also* Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization
- biosecurity
- and feral animals, 87
 - and weeds, 81, 82
- Bird Areas, 16
- birds, 15, 103
- and disease, 86
 - endemic, 63
 - see also* exotic birds; introduced bird species
- bird-watching destination, 108
- black rats, 83, 85, 86
- black wallaroo (*Barrk*), 63
- black-striped mussel, 85
- Blair, Dr Sandy
- consultations with re management plan, 18
- Board consultative committees, 32
- see also* Kakadu Research and Management Advisory Committee (KRMAC); Kakadu Tourism Consultative Committee (KTCC)
- Board of Management
- and Bininj/Mungguy outstations, 118
 - composition of, 31, 142, 209
 - and consultation with Bininj/Mungguy, 36
 - and cultural heritage strategy, 43
 - and development of new tenure arrangements for Jabiru, 122
 - establishment of, 209
 - and fire management, 94
 - functions of, 209
 - and joint management, 16, 31
 - making decisions and working together, 30–4
 - and management of cultural values, 41
 - and management of the park under EPBC Act and Regulations, 32
 - and management plan, 17, 147, 210
 - and Nitmiluk National Park Board of Management, 142
 - outstations approved by, 118, 119
 - and Shared Vision Principles, 101
 - support for Board, 33
 - and Tourism Master Plan, 96
 - and visitor information, 110
- boating *see* recreational boating and fishing
- Bolung* (in Jawoyn language) – Rainbow Snake, 4
- Bonn Convention, 2, 11, 16, 194
- booking systems, 105, 132, 162
- bore sites, 134
- Bowali Visitor Centre, 110, 112
- broilga, 67
- Brucellosis and Tuberculosis Eradication Campaign (BTEC), 83, 84
- brush-tailed rabbit-rat, 84

- buffalo, 84, 86
 - and Bininj/Mungguy cultural sites, 53
 - and disease, 86
 - and floodplains, 67, 68, 69
 - and lowlands, 71, 72
 - and rainforest, 74, 75
 - see also* Asian water buffalo; water buffalo
 - Buffalo Farm, 87, 97
 - Bula* (important creator), 4, 51
 - Buladjang*, or 'Sickness Country' *see* Sickness Country (*Buladjang*)
 - burials
 - residents of the park, 168, 169
 - Burrunggui/Burrungkuy (Nourlangie Rock), 60
 - rock art, 44, 103
 - bush tucker, 66, 67
 - Bushfires Act* (NT), 89, 90, 126
 - Bushfires NT
 - and fire history of the park, 89
 - bushwalking, 102, 170, 171
 - see also* walking in the park
 - business model, 145
 - business prospectus for proposed developments and projects, 145
 - business travellers, 102
- C**
- cabomba, 80
 - Cahill's Crossing on the East Alligator River
 - dangers at, 126, 128
 - campfires, 170, 171
 - camping, 102
 - restrictions on, 170
 - camping areas, 68, 170
 - map, 172
 - unregulated use of, 96
 - camping facilities, 177
 - cane toads, 83, 84, 86
 - and goannas, 115
 - and lowlands, 71
 - and northern quolls, 83, 115
 - and stone country, 64
 - capital works and infrastructure, 133–4
 - actions, 134
 - management issues, 133
 - policies, 134
 - see also* infrastructure and works
 - carbon cycle, 94, 140
 - carbon dioxide (CO₂) levels, 92
 - carbon footprint
 - reduction of, 93, 94, 133, 140
 - carbon trading programmes
 - and Indigenous communities, 93
 - carrying out and authorising activities not otherwise specified and new ways of authorising activities, 146
 - catchment for the major river systems in the park, 65
 - stone country, 63
 - cats, 83, 84, 86, 185
 - desexing of, 86
 - and disease, 86
 - and lowlands, 71
 - see also* feral cats
 - cattle, 83, 84
 - and disease, 86
 - and lowlands, 71
 - Cephalomenes obscurum* fern, 65
 - ceremonial sites, 51, 52
 - Chairperson of Board of Management, 31
 - Charles Darwin University, 142
 - and Indigenous employment, training and development, 39
 - and Knowledge for Tour Guides training, 106
 - research on stone country fires, 89
 - Chestnut-quilled rock pigeon *Petrophassa rufipennis*, 70
 - China-Australia Migratory Bird Agreement (CAMBA), 2, 11, 16, 194
 - citizen science, 117
 - clan estates
 - and traditional owners, 4
 - clan totems, 4
 - clans, 4
 - climate change
 - and Bininj/Mungguy cultural sites, 52
 - and fires, 90
 - and floodplains, 68
 - impact of on natural and cultural values, 115
 - and lowlands, 72
 - and tropical savannas, 79
 - warming and weather effects, 92
 - climate change – park-wide threats affecting values, 76, 92–4
 - actions, 94
 - management issues
 - cumulative impact of threats, 93
 - infrastructure costs, 93
 - knowledge gaps, 93
 - scale and ability to overcome threats, 93
 - threats to human health, 93
 - outcome, 92
 - performance indicators, 92
 - policies, 93–4
 - climate change strategy, 93, 94
 - climate change symposium, 93
 - climate change vulnerability assessment of the South Alligator River catchment, 93
 - coastal areas of the park, 66
 - coastal floodplains, 13
 - coastal rainforest, 73
 - coastal vegetation, 67
 - coffee bush (*Senna occidentalis*), 80
 - commercial accommodation, 177
 - policies, 177
 - commercial activity licences, 107, 131, 132, 153
 - fees, 144

- commercial activity licensing policy, 106
- commercial boating, 176
- commercial crabbing, 179
- commercial film and media projects, 108, 109, 178
- commercial fishing, 66, 176, 179
 - illegal, 68
 - policies, 179
- commercial flights, 164
- commercial image capture survey, 108
- commercial operations, 144
 - leases and subleases for, 153
- commercial permits, 132
- commercial taking or harvesting of wildlife or plants, 165–7
- commercial tenancies
 - rent, 144
- commercial tour guides
 - accuracy of their information, 112
 - induction/training programme, 106, 107
 - training, 175
 - see also* tour guide certification
- commercial tour operations, 106
- commercial tour operators, 175
 - accreditation, 176
 - induction/training programme, 106, 107
- commercial tour permits, 132
- commercial tourism, 13, 15, 32, 99, 106–7, 175–6
 - actions, 107
 - authorisation and management of, 130, 131
 - Bininj/Mungguy and, 39
 - line of sight, 100
 - management issues, 107
 - outcomes, 106
 - performance indicators, 106
 - policies, 107, 176
 - promotion of, 107
 - review of, 131
 - see also* tourism
- commercial tours in the park, 106
- commercial use of resources, 165–7
 - plants and animals, 165–7
 - policies, 165–7
- Commonwealth Fraud Control Guidelines, 129
- Commonwealth Heritage listing, 9, 15, 213, 214
- Commonwealth land
 - the park as, 212
- Commonwealth reserve
 - control of actions in, 211–12
 - the park as, 7, 208
- Commonwealth Scientific and Industrial Research Organisation (CSIRO)
 - Climate Adaptation Flagship, 142
- community understanding and awareness of fire, 90
- compliance and enforcement, 129–30
- compliance and enforcement strategy, 130, 132
- conservation
 - national significance, 15
 - regional significance, 13
- Conservation Volunteers Australia, 142
- consultation guidelines, 37
- controlled actions, 135, 136
- Convention on Biological Diversity, 193
- Convention on the Conservation of Migratory Species of Wild Animals *see* Bonn Convention
- Convention on Wetlands of International Importance
 - especially as Waterfowl Habitat *see* Ramsar Convention
- Cooida
 - and commercial accommodation, 177
- Cooida airstrip, 133
- Cooida Road, 133
- cooperative promotion and marketing strategy
 - with tourism industry, 109
- Coronation Hill
 - mining lease, 9
 - see also* Guratba (Coronation Hill)
- country
 - concept of, 9, 11
 - decision-making about, 5
 - making decisions and working together on, 35–7
- country values, 9–10, 12, 21
 - looking after country, 57–75
 - line of sight, 58
 - natural values, 57
 - objective, 57
 - overarching principles for managing natural values, 59
 - see also* natural values
- crabbing *see* commercial crabbing
- creation
 - Aboriginal story, 2, 4
- Creation Ancestors, 4, 5, 44
- creation era, 51
- crocodile hunting, 125
- crocodile management strategy, 128
- crocodiles, 65, 94
 - risk to visitors of, 125, 126, 127, 171
 - see also* freshwater crocodiles (*Crocodylus johnstoni*); saltwater crocodiles (*Crocodylus porosus*)
- cross-cultural training for staff, 36, 37
- cultural closure protocols, 33, 35, 37, 109, 162
- cultural experiences, 103
- cultural heritage information management system (CHIMS), 41, 47, 49
- cultural heritage management programmes
 - Bininj/Mungguy cultural knowledge and skills and, 49
- cultural heritage sites
 - threat of pigs and buffalo to, 86
- cultural heritage strategy, 43
- cultural heritage symposium, 41
- cultural knowledge
 - loss of and fire management, 90
- cultural material
 - return of, 49
- cultural sites *see* Bininj/Mungguy cultural sites
- cultural values, 2, 9–10, 11, 15, 18, 21, 41
 - impact of climate change on, 115

- looking after culture, 41–56
 - line of sight, 42
 - objective, 41
- overarching principles for management of, 43
- overarching principles for managing park-wide threats to, 78
- and visitors/tourism, 100
- see also* Bininj/Mungguy cultural knowledge and practices; Bininj/Mungguy cultural protocols, practices, laws and customs (including clan-based decision-making); Bininj/Mungguy cultural sites; Bininj/Mungguy values, traditional practices and cultural knowledge; historic sites; rock art
- customary harvest practices of Bininj/Mungguy, 50
- cypress pine (Anlarr), 89
 - see also* Anlarr (*Callitris*)
- Cyrtobagous weevil, 80

D

- Darwin Coast bioregion, 10
- Darwin stringybark (*Eucalyptus tetradonta*), 70
- Darwin woollybutt (*Eucalyptus miniata*), 70
- decision-making about country, 5, 35–7
- decision-making in the park, 32
 - guide to
 - routine actions and non-routine actions, 34
- Department of the Environment
 - Indigenous Employment and Capability Strategy, 39
 - website
 - information on permits and licences, 132
- development impacts outside the park
 - and floodplains, 69
- dingoes, 71, 85
- Director of National Parks
 - functions and powers of under EPBC Act and Regulations, 31, 209
 - and joint management, 15, 16, 28, 31
 - and Kakadu National Park, 7, 9
 - authorisation or prohibition of activities, 155
 - obligations under land lease agreements, 31, 38
 - and Stage One lease agreement, 7, 30
 - and Kakadu National Park management plan, 17
 - managing Kakadu, 18
 - managing use of Kakadu, 18
 - and management of the park under EPBC Act and Regulations, 32
 - review of corporate policies and guidelines of, 33
- Disasters Act* (NT), 126
- disease
 - carried by pigs, buffalo, cattle and horses, 86
- disturbed areas, 96
 - see also* landscape disturbance
- djang* (dreaming places), 44, 52
- Djibordu (Barron Island), 66
- dogs, 83, 85
 - desexing of, 86
 - and lowlands, 71
 - see also* domestic dogs; feral dogs; wild dogs

- dolphins, 66
- domestic dogs, 86, 185
- donkeys, 83, 84
 - and lowlands, 71, 72
- dry season
 - and lowlands, 70
- ducks, 67
- dugong, 66, 67
- Duwa *see* patrilineal moieties Duwa and Yirridjdja

E

- East Alligator region
 - rock art, 44, 103
- East Alligator River crossing, 163
- East Alligator River floodplain, 65
- East Asian– Australasian Flyway, 16
- ecologically sensitive practices
 - authorisations for, 132
- education and risk-based enforcement programme, 129
- education travellers, 102
- egrets, 67
- El Sherana
 - mining lease, 9
- elapid snakes, 68, 71, 84
- Eleocharis, 69
 - bulbs, 68
- employment of Bininj/Mungguy, 13, 17, 35, 36, 37, 39
 - see also* Indigenous employment pathways
- endangered species
 - in floodplains, 66
 - in stone country, 63
- endemic species, 13
 - plants
 - in Northern Territory (map), 61
 - in stone country, 60, 63
 - vertebrates
 - in Northern Territory (map), 62
- energy audit, 140
- energy efficiency, 133, 140
- Energy Resources Australia (ERA), 142
 - consultations with re management plan, 18
 - and Jabiru, 120
 - and mining, 97
 - and Ranger uranium mine, 120
 - and weed management, 79
- enforcement *see* compliance and enforcement
- En-Route Supplement Australia (Airservices Australia), 164
- environment
 - EPBC definition, 135
- Environment Protection (Alligator Rivers Region) Act 1978*, 95
- Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), 2, 7
 - and access to biological resources, 165, 181, 182, 183, 193, 212
 - and appointment of wardens and rangers, 129, 130
 - assessment and approval provisions of, 135
 - and authorisation for certain activities, 130
 - and authorisation or prohibition of activities, 155

- and Bininj/Mungguy cultural sites, 51
- and Bininj/Mungguy traditional activities, 152
- and Board of Management, 31, 32, 33, 209, 210
- and commercial filming, photography and audio recording, 178
- and commercial operations/activities, 175, 179
- and commercial taking or harvesting of wildlife, 165
- and Commonwealth land, 212
- compliance with and penalties for breaches, 129, 215
- and conservation of biodiversity, 114
- definition of 'aircraft', 164
- definition of 'environment', 135
- and development of land in Jabiru, 121
- and Director of National Parks, 31, 41, 99, 113, 116, 118, 125, 126, 147, 148, 152, 155, 209
- and fees, 144, 145
- and firearms, 168
- and fishing, 173
- and genetic resources, 213
- and heritage protection, 213–14
- and incorporation of mining leases into the park, 9
- and infrastructure and works, 180
- and IUCN category, 10, 24
- and Jabiru, 123, 158, 161
- and Jabiru town plan, 122
- and joint management, 16, 28, 30
- and Koongarra Project Area, 9
- and management of park reserves, 208
- and management of use of the park, 18
- and management plan, 17, 24, 31, 208, 210
- and National Heritage listing, 15
- and *Native Title Act 1993*, 152, 212
- and Northern Land Council, 31
- objectives of, 209
- and outstations, 157
- the park as a Commonwealth reserve under, 7
- and permit for actions affecting protected species and communities, 114
- permits under Part 17, 129
- prohibitions
 - and/or regulation of international movement of wildlife specimens for scientific purposes, 114
 - certain activities, 152, 211
 - on killing, injuring, taking, trading, keeping or moving native species, unless authorised, 184
 - mining, 95
 - or control of certain activities, 146
 - research and monitoring for commercial purposes, unless authorised, 181
- and protection of park values, 10
- and recovery plans for threatened species or ecological communities, 57
- and roads and tracks, 163
- and Sacred Sites Act, 51
- and threatened species and ecological communities, 213
- and traditional use of land and water, 168, 212
- and wildlife protection, 213

Environment Protection and Biodiversity Conservation Regulations

- and access to biological resources, 165, 181, 182, 183, 193, 212, 213
- and access to the park, 155
- and amendment and revocation of prohibitions, restrictions and determinations, 155
- and Australian Ramsar management principles, 194
- authorisation or prohibition of activities, 152
- and authorisation or prohibition of activities, 155, 211
- and commercial flights, 164
- and Director of National Parks, 31, 155, 209
- and firearms, 168
- and firewood, 184
- and fishing, 173
- and IUCN category, 10, 24, 25
- and Jabiru, 123, 158, 159, 160, 161
- and Jabiru town plan, 121
- and management of park reserves, 208
- and management of use of the park, 18
- and park management, 10, 18
- penalties for breaches, 129
- and permit fees, 144
 - commercial tourism, 175
- and permits
 - for activities otherwise prohibited, 129
 - for allowable activities, 153
 - under Part 17, 131, 154
- prohibitions
 - camp fires except in authorised manner, 170
 - camping except in authorised camping areas, 170
 - certain adventurous activities, 155
 - certain fishing practices, 173
 - international movement of wildlife specimens for scientific purposes, 114
 - or control of certain activities, 146
 - or restriction of people entering or remaining in the park, 155, 162
 - re plants, animals, soil and other material, 80, 83, 184
 - research and monitoring activities, unless authorised, 181
 - scuba diving, 171
 - swimming in certain areas, 171
 - walking off a public road or track, 170
- and roads and routes for transportation of minerals, 95
- and roads and tracks, 163
- and temporary or permanent closures of sites, 105
- and traditional use of land and water, 168
- and wildlife protection, 213
- and World Heritage management principles, 193

- environmental impact assessment, 212
 - for commercial taking or harvesting of wildlife or plants, 166
 - Environmental Impact Assessment Guidelines, 135, 136
 - environmental impact assessment matters and considerations, 138–9
 - environmental impact assessment process
 - and human use impacts on park values, 96
 - environmental performance of park operations
 - review of, 141
 - Environmental Reform (Consequential Provisions) Act 1999*
 - and the park, 7, 208
 - Environmental Research Institute of the Supervising Scientist (ERISS)
 - Supervising Scientist Division, 142
 - and mining, 97
 - and research on environmental matters, 114
 - research protocols, 117, 181
 - and uranium mining, 95, 114
 - working relationships with, 116
 - environmentally responsible use of resources, 140
 - estuarine crocodiles *see* saltwater crocodiles (*Crocodylus porosus*)
 - eucalypt woodlands, 70
 - European bees, 71, 83, 85
 - event licences, 176
 - events in the park, 105, 176
 - events policy, 105
 - exclusive use or access to sites, 105
 - exotic aquatic animals, 85
 - exotic aquatic snails, 85
 - exotic birds, 85
 - exotic fish, 85
 - exotic pasture grasses, 88
 - extractive research and monitoring activities, 182
 - extreme weather events, 76, 92, 93
- F**
- Facebook, 110
 - fees (service fees, permit fees, and lease/licence fees), 105, 131, 144, 145, 175
 - feral animal control programmes, 83
 - outsourcing of to Bininj/Mungguy, 78, 87
 - feral animal education programme, 87
 - feral animal strategy, 87
 - feral animals
 - and Bininj/Mungguy cultural sites, 52, 53
 - and floodplains, 68, 69
 - and lowlands, 71, 72
 - and public safety, 86
 - and rainforest, 74, 75
 - risk of to visitors, 127
 - and rock art, 45
 - and stone country, 64
 - feral animals – park-wide threats affecting values, 76, 83–7
 - actions, 87
 - background on individual species
 - black rats, 85
 - buffalo and cattle, 84
 - cane toads, 84
 - cats, 84
 - dogs, 85
 - European bees, 85
 - exotic aquatic animals, 85
 - exotic birds, 85
 - horses and donkeys, 84
 - introduced ants, 85
 - pigs, 84
 - management issues
 - disease, 86
 - effective use of resources, 86
 - high-priority species, 86
 - other pests, 86
 - potential new species, 86
 - public safety, 86
 - unattended pets, 86
 - outcome, 83
 - performance indicator, 83
 - policies, 87
 - feral bees, 71
 - feral cats, 83, 84, 86
 - and floodplains, 68
 - and lowlands, 72
 - and stone country, 64
 - see also* cats
 - feral dogs, 85
 - and lowlands, 71
 - see also* dogs
 - feral herbivores
 - and lowlands, 71
 - filming and photography (and other commercial image capture), 108, 109, 178
 - policies, 178
 - fire
 - Bininj/Mungguy use of, 88
 - climate change and, 90
 - and floodplains, 68, 69
 - and historic sites, 55
 - and lowlands, 71, 72
 - and rainforest, 74, 75
 - and rock art, 45
 - and stone country, 60, 63, 64, 76, 88, 89
 - and weeds, 79, 80
 - see also* wildfires
 - fire – park-wide threats affecting values, 76, 88–91
 - actions, 90–1
 - management issues
 - Bininj/Mungguy support, 90
 - climate change effects, 90
 - invasive grasses, 89
 - knowledge gaps, 90
 - lack of community understanding and awareness, 90

- loss of cultural knowledge, 90
 - unplanned large and severe late-season fires, 89
 - wildfires spreading, entering or leaving the park through park boundaries, 89
 - outcome, 88
 - performance indicators, 88
 - policies, 90
 - Fire and Emergency Act* (NT), 126
 - fire education and communication programme, 91
 - fire history of the park, 89
 - fire management, 88–9, 88–91
 - Bininj/Mungguy and, 90, 91, 94
 - and climate change, 93
 - impact of on plant and animal species, 88, 89, 91
 - in lowland woodlands, 89
 - in lowlands, 72
 - in rainforest, 75
 - in stone country, 63, 64
 - fire management strategy, 89, 90
 - fire management training programmes, 91
 - fire plot monitoring, 94, 115
 - fire regimes, 89, 91
 - firearms (and other types of hunting equipment)
 - use of, 168
 - Firearms Act* (NT), 168
 - firewood, 170, 184
 - fish, 15, 66, 67
 - see also* aquarium fish; exotic fish
 - Fisheries Act* (NT), 174
 - fishing
 - non-commercial traditional practice, 168
 - see also* commercial fishing; illegal commercial fishing; recreational boating and fishing; sustainable fishing practices
 - flatback turtles, 66, 94
 - floodplains (freshwater country and saltwater country) An-kabohkabo dja kurrula, 2, 10, 57, 65–9
 - actions, 69
 - existing threats to values
 - climate change, 68
 - development impacts outside the park, 69
 - feral animals, 67, 68, 69
 - fire, 68, 69
 - illegal commercial fishing, 68
 - unauthorised access, 69
 - visitor impacts, 67, 68
 - weeds, 67, 68, 69, 76, 79, 80
 - outcome, 65
 - performance indicator, 65
 - values and condition, 67
 - see also* Alligator Rivers coastal floodplains; freshwater floodplains
 - Fly Neighbourly Advice (FNA), 164
 - Fly Neighbourly Agreement, 143
 - Fly Neighbourly Agreement or Policy, 164
 - flying foxes, 73
 - Fogg Dam, 13
 - forest *see* open forest
 - 4WD touring, 103
 - free and independent travellers, 102
 - freshwater country, 12, 67
 - freshwater crocodiles (*Crocodylus johnstoni*), 67, 84, 125
 - freshwater fish, 15
 - freshwater floodplains
 - aquatic plants, 65
 - see also* floodplains (freshwater country and saltwater country) An-kabohkabo dja kurrula
 - freshwater turtles, 92
 - frogs, 15, 68
 - fruit-eating birds, 73
- G**
- Gagudju people, 5
 - gamba grass, 64, 72, 79, 80, 84, 88
 - Gardangal (Field Island), 66
 - gathering, 165, 168
 - see also* traditional use of plants and animals
 - general rules for managing use of the park, 155–6
 - policies, 155–6
 - genetic resources
 - EPBC Act definition of, 213
 - see also* biological resources; research and monitoring activities and access to genetic resources
 - ghost ants, 85
 - gifts, donations or bequests, 144, 145
 - gillnet fishing, 68
 - Gimbat pastoral lease
 - land claim in, 7
 - Gimbat Resumption, 7
 - Gimbat Road, 133
 - ginger ants, 85
 - goannas, 67, 68, 71, 84
 - and cane toads, 115
 - goby fish, 15
 - Goodparla pastoral lease, 9
 - land claim in, 7
 - governance workshops and training for Board members, 31
 - grants, bursaries and other co-funding arrangements, 144
 - gravel pits, 95, 96, 97, 133
 - see also* sand, gravel and other earth materials
 - Great Barrier Reef
 - and tourism, 15
 - green ants, 85
 - greenhouse gas emissions, 88
 - groundwater resources, 140, 141
 - group inclusive travellers, 102
 - gudgeon, 15
 - Gunbalanya school, 38
 - Gunbang Action Group, 123
 - Gundjheimi Aboriginal Corporation, 86
 - Gunlom, 103
 - Gunlom Aboriginal Land Trust, 9, 30, 31, 157, 208
 - Gunlom camp, 47
 - Gunlom Land Trust Sickness Country Protocols, 51
 - Gunlom lease, 157

Guratba (Coronation Hill), 9
Gurig National Park, 13

H

heat-related illness, 92, 93
helipads, 134
heritage protection, 213–14
High Court of Australia
 and Proclamation for Stage Three, 9
historic sites, 11, 41, 54–6
 conservation management plans for, 56
 existing threats to values
 lack of knowledge and understanding of historic site values, 55
 loss of knowledge and stories relating to historic sites, 55
 natural weathering, fire and termites, 55
 outcome, 54
 performance indicator, 54
 potential threats to values
 asbestos removal, 55
 vandalism, 56
 register of, 56
 unauthorised access to, 56
 values and condition, 55
horses, 83, 84
 and disease, 86
 and lowlands, 71, 72
housing (for staff), 133
human health
 climate change and, 94
 heat-related illness and mosquito-borne viruses, 93
human impacts on park values, 95
 see also land use – park-wide threats affecting values
hunting, 50, 152, 165, 168
 see also crocodile hunting; traditional hunting areas; traditional use of plants and animals
Hyptis suaveolens, 74

I

ibis, 67
illegal commercial fishing, 66
 and floodplains, 68
image capture and dissemination, 109
 see also filming and photography (and other commercial image capture)
impact assessment, 135, 136
 process, 137
implementing and evaluating the plan, 147–8
 actions, 149
 implementation plan, 149
 management issues, 148
 policies, 148
 priorities for implementation of the plan, 148
 review of the plan, 149
incident management procedures, 128
Indigenous business opportunities, 104, 111

Indigenous community rangers, 35
Indigenous cultural and intellectual property rights, 49
Indigenous economic interests, 32
Indigenous Employment and Capability Strategy (Department of the Environment), 39
Indigenous employment pathways, 38, 40
 see also employment of Bininj/Mungguy
Indigenous research protocols, 35, 37, 117
indirect marketing material, 145
infectious diseases
 risk of to visitors, 127
information and guidance material
 for filmmakers and photographers, 109
information technology, 111
infrastructure and works, 180
 policies, 180
 see also capital works and infrastructure
infrastructure costs
 climate change and, 93
insects
 and disease, 86
 and rock art, 45
Institute of Professional Practice in Heritage (Australian National University), 142
international agreements, 193–4
international movement of wildlife specimens for scientific purposes, 114
international significance of the park, 15–16
International Union for Conservation of Nature (IUCN)
 protected area categories, 10
 see also IUCN categories
interpretation products and media, 111
interpretation programmes, 112
interpretation strategy, 111
interpretative ranger activities, 111
introduced ants, 71, 83, 85
 see also invasive ants
introduced bird species, 86
invasive ants, 71
 see also introduced ants
invasive grasses, 89
invasive pasture grasses, 79
invasive plants
 monitoring impact of, 115
investment, 144
Ironwood (*Erythrophleum chlorostachys*), 70
IUCN categories, 24–5
 75 per cent rule, 24
 protected area category II ‘national park’, 24
 policies, 25
IUCN management principles, 165
 see also Australian IUCN management principles

J

Jabiluka Aboriginal Land Trust, 7, 30, 31, 157, 208
Jabiluka lease, 157
Jabiluka uranium deposit, 5

- Jabiru, 120–4, 157, 158–61
 - actions, 123–4
 - and commercial accommodation, 177
 - commercial activities in, 159
 - development in, 159
 - development of, 95, 120
 - and park management plan, 121
 - development of new tenure arrangements, 122–3
 - environmental management of, 123
 - and feral animal control, 124
 - impact of establishment of
 - Aboriginal life and traditions, 121
 - on environment, 121
 - impact of establishment of on environment, 121
 - management issues, 121–2
 - and Mirarr people, 120, 122, 123
 - and native title claim by Mirarr people, 9
 - new planning scheme, 121
 - and plant control, 124
 - policies, 122–3, 159–61
 - policies relating to the roles and responsibilities of the Northern Territory Government and the West Arnhem Regional Council, 161
 - policies relating to the sale of liquor in Jabiru, 160
 - prohibition and regulation of certain activities, 158, 159, 160, 161
 - and Ranger Uranium Environmental Inquiry, 120
 - and Ranger uranium mine, 120, 121
 - and tourism industry, 120
 - town lease and subleases, 120, 121, 122, 123
 - town plan, 159
 - and uranium mining, 120
 - weed infestations, 80
 - Jabiru airstrip, 133
 - Jabiru Golf Course, 120
 - Jabiru Gun Club, 120
 - Jabiru native title settlement, 123
 - Jabiru residents
 - and Approved Plant List, 80
 - Jabiru Town Development Authority (JTDA), 122, 123, 142
 - subleases, 120, 122
 - Jabiru Town Plan, 121, 122
 - new, 122
 - Japan-Australia Migratory Bird Agreement (JAMBA), 2, 11, 16, 194
 - Jawoyn Land Management Advisory Committee, 142
 - Jawoyn people
 - and *Buladjang*, or ‘Sickness Country’, 51
 - Jim Jim Falls area, 60, 103
 - joint management, 15, 16, 18, 28–40, 109
 - line of sight, 29
 - making decisions and working together (Board of Management), 30–4
 - actions, 33
 - guide to decision-making, 34
 - management issues, 32
 - outcome, 30
 - performance indicators, 30
 - policies, 32–3
 - making decisions and working together (on country), 35–7
 - actions, 36–7
 - management issues, 36
 - outcome, 35
 - policies, 36
 - objective, 28
 - overarching principles, 28
 - review of arrangement of, 33
 - Junior Ranger Programme, 38
- K**
- Kakadu
 - origin of name, 5
 - Kakadu – Walking to the future together – A shared vision for tourism in Kakadu National Park* (J Morse, J King, & J Bartlett, 2005), 101
 - Kakadu Aboriginal Land Trust, 7, 30, 31, 121, 157, 208
 - Kakadu Birds iPhone application, 103
 - Kakadu Brand Identity Guidelines, 111
 - Kakadu Conservation Zone
 - and mining, 95
 - Kakadu Highway, 133, 163
 - Kakadu Knowledge for Tour Guides course, 176
 - Kakadu Land Rehabilitation Strategy, 95
 - Kakadu lease, 157
 - Kakadu National Park
 - as Aboriginal land *see* Aboriginal land
 - Aboriginal land and land claims in (as at April 2014), 8
 - and Bininj/Mungguy, 2, 5, 9, 10, 13, 99
 - Commonwealth Heritage listing, 9, 15, 213
 - as Commonwealth land, 212
 - as Commonwealth reserve, 7, 208
 - description, 2, 10
 - establishment, 5–9, 10, 208
 - IUCN protected area category II ‘national park’, 24
 - joint management, 15, 16, 28–40, 109
 - land claims, 7
 - landscape types, 12, 57
 - map, 14
 - threats in, 76
 - location, 3
 - map, 6
 - and mining, 7
 - National Heritage listing, 10, 15, 213
 - promotion of, 99
 - purpose, 208
 - Ramsar listing, 9, 10, 11, 16, 65, 79, 109
 - significance, 13, 15–16
 - Stage One, 7, 9, 16, 29, 30, 193, 194, 208
 - Stage Two, 7, 16, 193, 194, 208
 - Stage Three, 7, 9, 194, 208
 - values, 9–12
 - as a visitor experience destination, 99
 - World Heritage Listing, 2, 9, 11, 15, 79, 88, 99, 109, 140, 157, 193, 213

- Kakadu National Park Values Statement, 10–12
 - Kakadu Research and Management Advisory Committee (KRMAC), 18, 30, 32, 33, 113, 116, 117, 142, 181
 - review of terms of reference of, 33
 - Kakadu Research Guidelines, 49
 - Kakadu savanna bird area, 16
 - Kakadu Tourism Consultative Committee (KTCC), 18, 30, 32, 33, 142
 - review of terms of reference of, 33
 - Kakadu Tourism Master Plan, 144
 - Kakadu Visitor Guide and park notes, 111
 - King, John *see Kakadu – Walking to the future together – A shared vision for tourism in Kakadu National Park* (J Morse, J King, & J Bartlett, 2005)
 - kinship, 4
 - knowledge
 - and good management, 113
 - sources of, 113
 - see also* research and knowledge management
 - Knowledge for Tour Guides training, 106, 107
 - knowledge gaps, 115
 - and climate change, 93
 - and fire, 90
 - and lowlands, 72
 - and rainforest, 74
 - and stone country, 64
 - knowledge management framework, 117
 - Koongarra area
 - World Heritage Area, 11, 15
 - Koongarra Project Area, 9
 - Koongarra uranium deposit, 5
 - Korea *see* Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA)
- L**
- land claims
 - in the park, 7
 - land lease agreements, 30, 31, 38
 - and establishment of the park, 7, 9, 16, 29, 30
 - land mammals, 15
 - land rehabilitation *see* rehabilitation (land)
 - Land Rehabilitation Strategy, 97
 - land rights
 - in Alligator Rivers Region, 5, 7
 - Land Rights Act *see* *Aboriginal Land Rights (Northern Territory) Act 1976* (Land Rights Act)
 - Land Trust *see* Kakadu Aboriginal Land Trust
 - land use – park-wide threats affecting values, 95–7
 - actions, 97
 - management issues
 - cumulative impacts of landscape disturbance, 96
 - direct and indirect visitor impacts, 96
 - disturbed areas, 96
 - introduction of pests, 96
 - ongoing monitoring costs, 96
 - recreational boating and fishing, 96
 - unregulated use of visitor areas, 96
 - outcome, 95
 - performance indicators, 95
 - policies, 97
 - landscape disturbance
 - cumulative impacts of, 96
 - see also* disturbed areas
 - landscape-based fire plans, 88
 - landscape-based fire strategies, 89
 - landscapes
 - management of natural values in, 78
 - see also* floodplains (freshwater country and saltwater country) An-kabohkabo dja kurrula; lowlands – Kukarnhkarndan; rainforest – An-ngarre; stone country – Kun-warddewardde
 - language and language groups, 5, 47
 - preservation of, 49
 - large dragons, 68, 71, 84
 - lease agreement
 - for Stage One, 7, 29, 30
 - leases, 107, 131, 132
 - for commercial operations, 153
 - of non-Aboriginal land not under claim, 131
 - see also* subleases
 - legislative context, 208–15
 - Legislative Instruments Act 2003*
 - and Jabiru Town Plan, 121
 - and management plan, 24, 210
 - licences *see* permits and licences
 - line of sight, 17, 19
 - liquor
 - policies relating to the sale of in Jabiru, 169
 - Liquor Act* (NT), 160
 - Litchfield National Park, 13, 89
 - living in the park – Jabiru and outstations, 118–24, 157–61
 - see also* Jabiru; outstations and living on country
 - Local Counter Disaster Planning Committee, 126, 127
 - Local Government Act* (NT), 120
 - local significance of the park, 13
 - lotus lily, 66
 - lowland woodlands, 12, 57, 70
 - fire management in, 89
 - weeds in, 79
 - lowlands – Kukarnhkarndan, 70–2
 - actions, 72
 - and dry season, 70
 - existing threats to values
 - feral animals, 71, 72
 - fire, 71, 72
 - knowledge gaps, 72
 - outcome, 70
 - performance indicator, 70
 - potential threats to values
 - weeds, 71, 72
 - values and condition, 71
 - and wet season, 70

M

- macropods, 70
- Magela billabongs
 - salvinia control at, 80
- Magela Creek crossing, 163
 - dangers at, 128
- Magela floodplain, 95
- magpie geese, 66, 67, 68, 92
- mammals
 - endemic
 - in stone country, 63
- Management Effectiveness Framework, 147, 148
- management plan – fifth (1 January 2007 – 31 December 2013), 17
 - audit of implementation of, 17
 - and capital works and infrastructure, 133
 - and commercial crabbing, 179
 - and commercial tourism, 175
 - and cultural heritage information management system, 41, 47
 - and hunting in the park by Aboriginal people, 168
 - and Kakadu Visitor Guide and park notes, 111
 - and recreational activities, 170
 - and Shared Vision Principles, 101
 - and visitor numbers, 145
- management plan – sixth
 - Bininj/Munggy and implementation of, 37
 - commencement and termination, 24
 - consultations and submissions on, 17–18
 - and development of Jabiru, 121
 - draft (3 December 2014), 18
 - general provisions and IUCN category, 24–5
 - implementation and evaluation of, 37
 - implementation plan, 149
 - priorities for implementation, 148
 - review of the plan, 149
 - see also* implementing and evaluating the plan
 - planning framework, 18–21
 - focus of management for the protection of park values, 21
 - managing Kakadu, 18
 - managing use of Kakadu, 18
 - see also* general rules for managing use of the park; managing use of Kakadu National Park
 - planning hierarchy, 19
 - prioritisation, 19
 - values-based approach to planning, 19
- management plan framework, 17–21
- management planning process, 17–18
- management plans
 - matters to be taken into account in a management plan, 210–11
 - purpose of, 210
- managing use of Kakadu National Park, 152–85
- mangrove monitoring, 94
- mangroves, 10, 66, 67, 92
- mapping and defining the northern boundary of the park, 69
- Mardku *see* matrilineal moieties Mardku and Ngarradjku
- marine and riverine environments, 66, 67
- marine turtles, 66, 67, 115
- marketing *see* promotion and marketing
- Mary River National Park, 13
- matrilineal moieties Mardku and Ngarradjku, 4
- May, Dr Sally
 - consultations with re management plan, 18
- Melaleuca, 81, 92
 - see also* paperbark (*Melaleuca quinquenervia*)
- Melaleuca swamps
 - salvinia control in, 80
- migratory birds, 2, 11, 16
 - see also* China-Australia Migratory Bird Agreement (CAMBA); Japan-Australia Migratory Bird Agreement (JAMBA); Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA)
- migratory shorebirds, 16, 65, 67
- migratory species, 2, 11, 16, 57, 69, 194
 - see also* Bonn Convention
- mimi spirits, 44
- mimosa biocontrol agents, 80
- Mimosa pigra*, 67, 68, 69, 79, 84
- mining, 97
 - and the park, 7, 95
 - see also* disturbed areas; uranium mining
- mining rehabilitation, 95
- Minister
 - and Board of Management, 31
 - and management plan, 324
 - and recovery plans for threatened species or ecological communities, 57
- Mirarr people
 - and Jabiru, 120, 122, 123
 - native title claim, 9, 120–1
 - see also* Jabiru native title settlement
- mission grass, 64, 79, 84, 88
- mobile phone coverage, 111, 128
- moieties or halves, 4
- monitoring programmes
 - flora and fauna, 94
 - South Alligator low-level waste containment facility and groundwater and vegetation, 96, 97
- Morse, John *see* Kakadu – *Walking to the future together – A shared vision for tourism in Kakadu National Park* (J Morse, J King, & J Bartlett, 2005)
- mosquito fish, 86
- mosquito-borne viruses, 92, 93
- Mt Bundy Military Reserve, 142
- mud crabs, 66
- mudflats, 66, 67, 92
- Myrtaceae, 74, 81
- myrtle rust, 81
 - and rainforest, 74

N

- Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization, 193
 - Namarrgon* (Lightning Man), 4
 - Namarrgon camp, 47
 - Nanguluwurr (Nourlangie Rock)
 - rock art, 44, 103
 - National Archives of Australia
 - and digitisation and stabilisation of all audio and video cultural information, 47
 - national economy, 15
 - National Environmental Research Programme (NERP), 35, 142
 - feral cats, 83
 - major projects, 115
 - saltwater intrusion, 93
 - weeds, 79
 - National Forest Policy, 15
 - National Heritage listing, 10, 15, 213, 214
 - National Parks and Wildlife Conservation Act 1975* (NPWC Act)
 - and Board of Management, 31, 209
 - and establishment of the park, 7, 10, 208
 - and joint management, 16
 - National Reserve System
 - protected areas, 15
 - national significance of the park, 15
 - National Strategy for Ecologically Sustainable Development, 15
 - National Strategy for the Conservation of Australia's Biological Diversity, 15
 - native plants and animals, 57, 59
 - management of
 - in floodplains, 69
 - in lowlands, 72
 - in rainforest, 75
 - in stone country, 64
 - native plums, 73
 - native species
 - prohibition on killing, injuring, taking, trading, keeping or moving, unless authorised, 184
 - Native Title Act 1993*, 9, 152, 168, 212
 - and Mirarr people and Jabiru, 120
 - natural heritage management programmes, 59
 - natural values, 2, 15, 18, 21, 57
 - impact of climate change on, 115
 - management of at landscape level, 78
 - overarching principles for managing, 59
 - overarching principles for managing park-wide threats to, 78
 - and visitors/tourism, 100
 - see also country values
 - Nayuyunggi* (in Gundjeihmi language) – first people/ancestors, 2, 51
 - neighbours, stakeholders and partnerships, 142–3
 - actions, 143
 - management issues, 143
 - policies, 143
 - Newcrest Operations Ltd
 - mining leases, 9
 - Ngarradjku see matrilineal moieties Mardku and Ngarradjku
 - Nitmiluk National Park, 13, 89, 142
 - Nitmiluk National Park Board of Management, 142
 - consultations with re management plan, 18
 - non-commercial permits, 132
 - northern boundary of the park, 66
 - mapping and defining, 69
 - northern brown pine *Podocarpus grayae*, 60
 - Northern Land Council (NLC)
 - and Board of Management, 31
 - and consultations with Bininj/Mungguy, 35, 36
 - consultations with re management of the park, 31
 - consultations with re management plan, 18
 - and Jabiru, 123
 - and joint management, 30, 31
 - and outstations, 119
 - and the park, 37
 - and register of Bininj/Mungguy cultural sites, 51
 - and restriction on access to areas in the park, 162
 - and review of cultural protocol documents, 37
 - northern quolls
 - and cane toads, 83, 115
 - Northern Territory Aboriginal Sacred Sites Act 1989* (Sacred Sites Act or NTASS Act), 51, 137
 - Northern Territory Fire and Rescue Service (NT FRS), 126, 127
 - Northern Territory Government
 - and access to marine areas of the park, 69
 - and commercial fishing, 66
 - and Jabiru, 120, 161
 - and Jabiru Town Plan, 121
 - and Knowledge for Tour Guides training, 106
 - and roads and highways, 133, 134, 163
 - Northern Territory Planning Scheme, 121
 - Northern Territory Police, 126, 127
 - Northern Territory Sites of Conservation Significance
 - the park and, 13
 - Northern Territory Weed Advisory Committee, 142
 - Nourlangie region
 - rock art, 44
- ## O
- occupation licences, 105, 107, 131, 153
 - occupation sites, 51, 52
 - Oenpelli python, *Nawaran*, 63
 - Oenpelli Road, 133, 163
 - off-road driving, 68
 - Old Jim Jim Road, 133, 163
 - olive hymenachne (*Hymenachne amplexicaulis*), 67, 68, 69, 79
 - open forest, 2, 12, 57, 70
 - operational funding, 144
 - oral histories, 49, 56
 - orchid *Dienia montana* (formerly *Malaxis latifolia*), 74
 - outsourcing
 - feral control, 78
 - weed management, 78

- outstations and living on country, 118–19, 157
 - actions, 119
 - development of new outstations, 118, 119, 157
 - expansion of existing outstations, 118, 119, 157
 - impact of on park values, 119
 - management issues, 118
 - outstations approved by the Board, 118, 119
 - outstations in existence prior to the declaration of the park, 118, 119
 - policies, 118–19
 - pre-existing outstations on Aboriginal land, 157
- Outstations Guide to Development, 119
- P**
- paperbark (*Melaleuca quinquenervia*), 65
- para grass (*Bracharia mutica*), 67, 69, 74, 75, 79
- park branding, 111
 - see also* Kakadu Brand Identity Guidelines
- park closure *see* access restrictions; cultural closure protocols; permanent closure of visitor sites; temporary closure of visitor sites
- park data and information
 - methods for storing, managing and retrieving, 115
- Park Manager
 - functions and powers of, 31, 148
- park staff
 - consultations with re management plan, 18
- park values, 9–12, 18
 - focus of management for protection of, 20
 - human impacts on, 95, 96
 - see also* land use – park-wide threats affecting values
 - impact of outstations on, 119
 - threats to, 19, 21
 - see also* country values; cultural values; Kakadu National Park Values Statement; natural values
- Parks Australia
 - and Indigenous engagement, training and employment, 38
 - and park management, 16
 - promotion and marketing material, 109
 - review of agency-wide policies and guidelines of, 33
 - symposia on threats to values, 76
- Parks Australia Commercial Leasing Policy, 107, 131
- Parks Australia Commercial Tourism Licence Policy, 107, 131
- Parks Australia Compliance and Enforcement Manual, 129, 130
- Parks Australia Management Effectiveness Framework, 19, 114, 116
- Parks Australia Sustainable Tourism Overview 2011–2016*, 96
- Parks Australia’s Management Effectiveness Framework, 147, 148
- park-wide threats affecting values, 76–97
 - climate change, 92–4
 - see also* climate change – park-wide threats affecting values
 - feral animals, 83–7
 - see also* feral animals – park-wide threats affecting values
 - fire, 88–91
 - see also* fire – park-wide threats affecting values
 - information on various threats, 78
 - interlinking of various threats, 78
 - land use, 95–7
 - see also* land use – park-wide threats affecting values
 - line of sight, 77
 - objective, 76
 - overarching principles for managing park-wide threats to natural and cultural values, 78
 - weeds and plant pathogens, 79–82
 - see also* weeds and plant pathogens – park-wide threats affecting values
- partnerships, 142, 144
 - see also* neighbours, stakeholders and partnerships
- pastoralism, 88
- patrilineal moieties Duwa and Yirridjdja, 4
- penalties
 - for breaches of EPBC Act, 129, 215
- Performance Monitoring Plan, 148
- permanent closure of visitor sites, 105
- permits and licences
 - access to visitor sites, 105, 162
 - actions affecting protected species and communities, 114
 - administration and management of, 132
 - allowable activities, 153
 - assessment of applications for, 131
 - authorising certain activities, 131
 - bushwalking, 171
 - campfires, 171
 - commercial tourism, 106, 107, 131, 175–6
 - see also* commercial tour permits
 - compliance with provisions of, 132
 - EPBC Part 17 permits, 129, 131
 - events, 176
 - occupation and use of land, 131
 - outstations, 118
 - research, 115
 - suspension or cancellation of, 153
 - and visitor experiences, 103
 - see also* commercial activity licences; commercial permits; commercial tour permits; fees (service fees, permit fees, and lease/licence fees); non-commercial permits; occupation licences; research permits
- pest species management
 - and climate change, 93
- pests
 - introduction of, 96
- pets, 185
 - see also* unattended pets
- Pets in Jabiru Policy, 121
- pharaohs ants, 85

- photographers, 109
 - see also* filming and photography (and other commercial image capture)
 - pig-nosed turtle, 67
 - pigs, 83, 84, 86
 - and Bininj/Mungguy cultural sites, 53
 - and disease, 86
 - and floodplains, 67, 68, 69
 - and lowlands, 71, 72
 - and rainforest, 74, 75
 - Pine Creek bioregion, 10, 15
 - Pine Creek school, 38
 - plains death adder, 67
 - Planning Act* (NT)
 - and Jabiru Town Plan, 121
 - plant pathogens, 74
 - plant species, 15
 - plants
 - commercial taking or harvesting of, 165–7
 - prohibition on bringing into the park, 80, 184–5
 - policies, 184–5
 - see also* traditional use of plants and animals
 - potable water supplies, 140
 - precinct plans for key visitor areas, 104
 - prohibition, regulation or control, 152
 - adventurous activities, 155, 171
 - bringing animals into the park, 83, 184–5
 - bringing plants into the park, 80, 184–5
 - bringing soil and other material into the park, 80, 184–5
 - certain activities, 146, 152
 - in Jabiru, 158, 159, 160, 161
 - cultivating plants, except in accordance with this plan or a permit from the Director, 80
 - international movement of wildlife specimens for scientific purposes, 114
 - killing, injuring, taking, trading, keeping or moving native species, unless authorised, 184
 - movement of livestock through the park, 83
 - permits for activities otherwise prohibited, 129, 130
 - see also under Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act); Environment Protection and Biodiversity Conservation Regulations
 - promotion and marketing, 108–9
 - actions, 109
 - management issues, 109
 - outcome, 108
 - performance indicators, 108
 - policies, 109
 - unfunded, 144
 - see also* indirect marketing material
 - promotion of the park, 99
 - proposals
 - assessment of *see* assessment of proposals
 - protected areas
 - National Reserve System, 15
 - protected species and communities
 - permit for actions affecting, 114
 - public safety
 - feral animals and, 86
- Q**
- quolls, 71, 84
 - and cane toads, 84
 - see also* northern quolls
- R**
- radioactive waste, 95, 96, 97
 - Rainbow Snake, 4
 - rainforest – An-ngarre, 2, 13, 57, 73–5
 - actions, 75
 - existing threats to values
 - feral animals, 74, 75
 - fire, 74, 75
 - knowledge gaps, 74
 - weeds, 74, 75
 - outcomes, 73
 - performance indicators, 73
 - potential threats to values
 - myrtle rust, 74, 81
 - and stone country, 73
 - values and condition, 74
 - Ramsar Convention, 2, 11, 16, 65, 194
 - Ramsar listing, 9, 10, 11, 16, 65, 109, 194
 - weeds as threat to, 79
 - Ranger uranium deposit, 5
 - Ranger Uranium Environmental Inquiry, 5, 7
 - and Jabiru, 120
 - and Mirarr people and Jabiru, 120
 - Ranger uranium mine, 95, 120, 121, 143
 - rangers, 129, 130
 - rattlepod, 84
 - recovery plans for threatened species or ecological communities, 57, 72
 - recreational activities, 170–4
 - policies, 170–1
 - recreational boating and fishing, 66, 68, 96, 97, 103, 105, 173–4
 - policies, 173–4
 - recreational opportunities
 - management of, 97, 104
 - recycled and renewable resources and technologies, 141
 - regional economy, 13
 - regional significance of the park, 13
 - registered wildlife carers, 185
 - rehabilitation (land), 95, 97
 - renewable energy, 141
 - reptiles, 15, 63
 - Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA), 2, 11, 16, 194
 - research and knowledge management, 32, 113–17
 - actions, 117
 - line of sight, 114
 - management issues, 115–16

- objective, 113
 - outcomes, 115
 - performance indicators, 115
 - policies, 116
 - priorities, 116
 - resource restraints on, 115
 - see also Indigenous research protocols; Kakadu Research and Management Advisory Committee (KRMAC); Kakadu Research Guidelines
 - research and monitoring activities and access to genetic resources, 181–3
 - for commercial purposes, 181, 182
 - policies, 181–2
 - Research and Monitoring Strategy, 117
 - research permits, 115, 132, 181, 182
 - residents of the park, 13, 157
 - and animals, 123, 157
 - burials, 168, 169
 - and fire, 90, 91
 - Jabiru, 120, 123
 - and outstations, 118, 119, 157
 - and pets, 85, 185
 - and plants, 80, 123, 157, 184
 - resource use in park operations, 140–1
 - actions, 141
 - management issues, 140
 - policies, 141
 - resources
 - commercial use of see commercial use of resources
 - Retrospective Statement of Outstanding Universal Value (UNESCO 2014)
 - natural and cultural values of the park, 15
 - revenue and business development, 144–5
 - actions, 145
 - management issues, 145
 - policies, 145
 - risk management decision support tools, 115
 - Risk Watch List, 125, 128
 - risks to visitors, 125, 126, 127, 128, 171
 - river sharks, 66, 67
 - road access, 163
 - policies, 163
 - restrictions, 163
 - roads and highways, 133, 134
 - rock art, 11, 15, 41, 43, 44–6
 - actions, 46
 - climate change and, 92
 - conservation programme, 46
 - existing threats to values
 - feral animals, 45
 - fire, 45
 - insect damage, 45
 - loss of traditional knowledge, 45
 - number and inaccessibility of sites, 45
 - visitor impacts, 45
 - weathering, 45
 - outcome, 44
 - performance indicator, 44
 - public access to, 44
 - register of sites, 46
 - values and condition, 44–5
 - rock art site monitoring, 115
 - rock art viewing, 103
 - Rose, Deborah Bird
 - on country, 9
 - rubbish, 68
- S**
- sacred sites, 4, 51, 52, 92, 137
 - Sacred Sites Act see *Northern Territory Aboriginal Sacred Sites Act 1989* (Sacred Sites Act or NTASS Act)
 - safety and incident management, 125–8
 - and visitors, 104, 125
 - safety information for visitors, 128
 - saline mudflats, 92
 - salmon, 66
 - saltwater country, 12, 67
 - saltwater crocodiles (*Crocodylus porosus*), 66, 67, 125
 - saltwater intrusion, 84, 92, 93
 - and floodplains, 68, 69
 - saltwater inundation
 - and Bininj/Munggyuy cultural sites, 52, 53
 - Salvinia molesta*, 67, 79, 80
 - sand, gravel and other earth materials, 133, 134, 180
 - sandstone cliffs of the Arnhem Land escarpment, 10
 - sawfish, 66, 67
 - scenic flights, 164
 - Scribbly Gum (or Snappy Gum, *Eucalyptus racemosa*), 70
 - scuba diving, 171
 - sea-level rise, 92
 - and Bininj/Munggyuy cultural sites, 52
 - and floodplains, 68
 - seasonal changes affecting access and experiences, 111
 - see also wet season
 - seasonal ranger programme, 111
 - shared tourism vision for the park, 101
 - Shared Vision Principles, 101, 104, 108, 109
 - shorebirds, 66
 - Sickness Country (*Buladjang*), 9, 208
 - Jawoyn people and, 51
 - see also Gunlom Land Trust Sickness Country Protocols
 - Sickness Country protocols, 35, 37
 - sida, 79
 - sida leaf-feeding beetle (*Calligrapha pantherina*), 80
 - signage, 111, 112
 - significance of the park
 - internationally, 15–16
 - locally, 13
 - nationally, 15
 - regionally, 13
 - Singapore ants, 85
 - site access, 162
 - policies, 162
 - skin groups, 4
 - social media, 108, 109

- soil and other material
 - prohibition on bringing into the park, 80, 184–5
 - policies, 184–5
 - soils
 - woodlands, 70
 - solar power, 140
 - sound recording, 178
 - South Alligator
 - and commercial accommodation, 177
 - South Alligator low-level waste containment facility
 - monitoring of groundwater and vegetation, 97
 - cost, 96
 - South Alligator River, 66
 - drainage basin, 13
 - floodplain, 65
 - South Alligator River catchment
 - climate change vulnerability assessment of, 93
 - South Alligator Valley rehabilitation plan, 95
 - species and landscape monitoring programmes, 50
 - Spencer, W Baldwin
 - and name ‘Kakadu’, 5
 - spice finches, 85
 - sponsorship, 144
 - staff training and development, 39
 - stakeholders, 142
 - see also* neighbours, stakeholders and partnerships
 - stakeholders interests
 - park management decisions and, 33
 - stone country – Kun-warddewardde, 11, 12, 13, 57, 60–4
 - actions, 64
 - existing threats to values
 - feral animals, 64
 - fire, 60, 63, 64, 76, 88, 89
 - knowledge gaps, 64
 - weeds, 64, 76
 - outcome, 60
 - performance indicator, 60
 - and rainforest, 73
 - and rock art, 44
 - values and condition, 63
 - subleases, 105, 131, 132
 - of Aboriginal land, 131
 - for commercial operations, 153
 - Jabiru Town Development Authority, 120, 122
 - outstations, 118, 119
 - sunset destination, 108
 - Supervising Scientist *see* Environmental Research Institute
 - of the Supervising Scientist (ERISS)
 - sustainable fishing practices, 105
 - swimming, 103, 109, 126
 - risks, 125, 171
- T**
- temporary closure of visitor sites, 105
 - termites
 - and historic sites, 55
 - Territory Wildlife Park, 13
 - threatened species and ecological communities, 13, 16, 57, 213
 - animals, 63
 - in floodplains, 67
 - in lowlands, 71, 72
 - monitoring of status of, 115
 - plants, 15, 63, 65
 - in rainforest, 74
 - in stone country, 63
 - see also* recovery plans for threatened species or ecological communities
 - threats to values
 - existing threats
 - Bininj/Munggyuy cultural knowledge and practices, 48
 - Bininj/Munggyuy cultural sites, 52
 - floodplains, 67–9
 - historic sites, 55
 - lowlands, 71–2
 - rainforest, 74
 - rock art, 45
 - stone country, 64
 - park-wide, 76–97
 - potential threats
 - Bininj/Munggyuy cultural sites, 52
 - historic sites, 55–6
 - lowlands, 72
 - rainforest, 74
 - Three Parks Monitoring Programme, 89
 - tidal plains, 10
 - Tilapia, 85, 86
 - timber, including preservative-treated pine, 134, 180
 - tour business accreditation, 175
 - tour guide certification, 175
 - tourism
 - Bininj/Munggyuy and, 39, 99
 - impact of on the park, 96, 97
 - see also* commercial tourism
 - Tourism Australia
 - and marketing of the park, 144
 - tourism industry
 - cooperative promotion and marketing strategy with, 109
 - and infrastructure developments, 134
 - and Jabiru, 120
 - and notification of changes to visitor management, 33, 107, 156
 - and promotion and marketing, 108, 109
 - up-to-date information for, 107
 - tourism licence, 175
 - Tourism Master Plan, 96, 101–2, 104
 - Tourism NT, 13, 107, 108
 - consultations with re management plan, 18
 - and marketing of the park, 144
 - Tourism Top End, 142
 - toxoplasmosis, 86
 - traditional fire management, 88, 90
 - in floodplains, 66, 67, 68

- traditional foods, 66
 - traditional hunting areas, 92
 - traditional medicines, 66
 - traditional owners
 - and clan estates, 4
 - and IUCN protected area category II, 24
 - and joint management, 16
 - and management plan, 17
 - and Northern Land Council, 31
 - and restriction on access to areas in the park, 162
 - traditional use of land and water, 152, 168–9, 212
 - policies, 168–9
 - traditional use of plants and animals, 50
 - visitor access to the park and, 50
 - traditional utensils, 66
 - traditional weapons, 66
 - traditional weaving materials, 66
 - trainee programmes, 38
 - training *see* Bininj/Munggy training and other
 - opportunities; cross-cultural training for staff; staff training and development
 - training committee, 39
 - training opportunities on weed identification, control and monitoring, 81
 - training strategy, 39, 40
 - traveller types, 102
 - tree sparrows, 85
 - trigger plants *Styliidium* sp., 60
 - tropical savannas
 - and climate change, 79
 - turtles, 66, 67, 68
 - see also* flatback turtles; freshwater turtles; marine turtles
 - Twin Falls, 103
- U**
- Ubirr, 60
 - rock art, 44, 103
 - Uluru–Kata Tjuta National Park
 - and joint management, 15
 - and tourism, 15
 - unattended pets, 86
 - unauthorised access
 - to Bininj/Munggy cultural sites, 52, 53
 - and floodplains, 69
 - to historic sites, 56
 - United Nations Declaration on the Rights of Indigenous Peoples, 193
 - unplanned large and severe late-season fires, 89
 - Uranium Development Project (UDP), 7
 - uranium mining, 5, 7, 95, 114
 - and Jabiru, 120
- V**
- values *see* country values; cultural values; natural values; park values
 - Van Diemen Gulf, 66
- vandalism
 - and historic sites, 56
 - vessels (commercial fishing)
 - control of, 179
 - visitation, 99, 105, 108
 - decline in, 99
 - visitor areas
 - unregulated use of, 96
 - visitor experience destination
 - new visitor experiences, 103
 - the park as, 99, 108
 - actions, 104–5
 - line of sight, 100
 - management issues, 103–4
 - outcome, 101
 - performance indicators, 101
 - policies, 104
 - visitor impacts, 104
 - direct and indirect, 96, 97
 - and floodplains, 67, 68
 - and rock art, 45
 - visitor information, 110–12
 - actions, 111–12
 - management issues, 111
 - outcome, 110
 - performance indicator, 110
 - policies, 111
 - sources of, 110
 - visitor needs, 104
 - visitor numbers, 13, 111, 145
 - visitor numbers and usage of the park data, 99
 - visitor safety *see* risks to visitors
 - visitor safety incidents, 125, 126, 127
 - cost of, 127
 - reimbursement of cost of, 128
 - see also* safety and incident management
 - visitor sites
 - management of access to, 105
 - see also* permanent closure of visitor sites; temporary closure of visitor sites
 - visitors to friends and relatives, 102
 - volunteers (organisations, groups and individuals), 143
 - vulnerable species
 - in floodplains, 66
- W**
- Waldak Irrmbal (West Alligator Head), 66, 68
 - walking in the park, 104, 170, 171
 - see also* bushwalking
 - walking routes/tracks, 51, 52, 170
 - Warddeken Indigenous Protected Area, 142
 - and weed management, 79
 - wardens, 129, 130
 - Warnbi Aboriginal Corporation, 86
 - Warradjan Cultural Centre, 110, 112
 - Warramurrungundji (Earth Mother), 4
 - waste management, 140, 141

- water buffalo
 - removal of, 88
 - water hyacinth, 80
 - water pandanus (*Pandanus aquaticus*), 65
 - water quality, 134, 140, 141
 - waterbirds, 2, 13, 65, 67
 - Waterfall Creek Reserve, 7
 - waterfalls, 65
 - weather
 - and climate change, 92
 - see also* extreme weather events
 - weathering
 - and historic sites, 55
 - and rock art, 45
 - website, 111
 - weed education programme, 81
 - weed management programmes, 79
 - and climate change, 93
 - outsourcing of to Bininj/Mungguy, 78
 - use of poisonous substances, 81
 - weed management strategy, 81
 - weeds
 - and Bininj/Mungguy cultural sites, 52, 53
 - and fire, 79, 80
 - and floodplains, 67, 68, 69, 76, 79, 80
 - and lowlands, 71, 72, 79
 - and rainforest, 74, 75
 - and stone country, 64, 76
 - weeds and plant pathogens – park-wide threats affecting values, 76, 79–82, 84
 - actions, 81–2
 - deliberate introduction of beneficial non-native species (biological control agents), 80
 - management issues
 - biosecurity, 81
 - existing infestations in Jabiru and other lease areas, 80
 - myrtle rust, 81
 - overall weed threat to park values, 80
 - potential new weeds, 80
 - weed–fire interactions, 80
 - weeds present in the park but not yet well-established, 80
 - outcome, 79
 - performance indicator, 79
 - policies, 81
 - Weeds Management Act 2001* (NT), 80
 - Weeds of National Significance, 79
 - West Alligator Head, 103
 - West Alligator River
 - floodplain, 65
 - and recreational boating and fishing, 66
 - West Arnhem Bushfire Committee, 142
 - West Arnhem Regional Council
 - and Jabiru, 120, 123, 158, 161
 - West Arnhem Regional Council Local Government Area Shire
 - and Jabiru, 120
 - Western Arnhem Plateau, 13
 - Western Australia Parks and Wildlife
 - and feral cat control in the Pilbara, 84
 - wet season
 - and access restrictions to the park, 162, 163
 - and air access, 164
 - Wetland of International Importance, 16
 - wetlands, 2, 16, 65–6, 67, 92, 194
 - freshwater, 68
 - of international importance, 214–15
 - see also* Ramsar Convention; Ramsar listing
 - saline, 68
 - wild dogs, 85, 86
 - wildfires, 88, 89
 - wildlife
 - commercial taking or harvesting of, 165–7
 - wildlife carers *see* registered wildlife carers
 - wildlife protection, 213
 - wildlife specimens
 - international movement of for scientific purposes, 114
 - wildlife watching, 103
 - Wildman River floodplain, 65
 - Window on the Wetlands, 13
 - Woirnaski, Dr John
 - consultations with re management plan, 18
 - woodlands, 2, 12, 70
 - soils, 70
 - Woodward Commission *see* Aboriginal Land Rights Commission (A E Woodward, 1973)
 - work experience, 38
 - Work Health and Safety Act 2011*, 125
 - Working on Country, 35
 - World Heritage Convention, 2, 11, 15, 193, 213
 - World Heritage listing, 2, 9, 10, 11, 15, 88, 99, 109, 140, 157, 213
 - weeds as threat to, 79
- Y**
- yams, 73, 74, 86
 - yellow chat (Alligator River subspecies), 67
 - yellow crazy ants, 85, 86
 - Yellow Water, 65
 - salvinia at, 79
 - Yirridjja *see* patrilineal moieties Duwa and Yirridjja

[THIS PAGE IS INTENTIONALLY BLANK – INSIDE COVER]



Australian Government
Director of National Parks

Federal Register of Legislative Instruments F2016L00002

