

CARANBIRINI CONSERVATION RESERVE

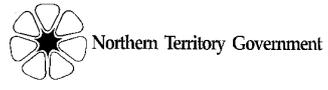


MANAGEMENT PLAN

2000

Parks and Wildlife Commission of the Northern Territory

PARKS AND WILDLIFE COMMISSION OF THE NORTHERN TERRITORY



Northern Territory Government

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1 INTRODUCTION

1.1 Location and Declaration

Caranbirini Conservation Reserve is located approximately 46 kilometres from Borroloola on the western edge of the Bukalara Range, in the Northern Territory (see Map 1). The Reserve is 1200 hectares and falls within McArthur River Station, NT Portion 4319. This portion was surrendered from Tawallah Station following a fifty-year agreement with MIM Limited. A Section 74A Agreement, under *the Territory Parks and Wildlife Conservation Act*, was signed for Caranbirini Waterhole on June 11, 1996.

The Reserve is bordered on three sides by McArthur River Station and the Carpentaria Highway on the western side (see Map 2).

1.2 Background

Caranbirini Waterhole is situated on Tawallah Pastoral lease, which is controlled by Colinta Holdings, the pastoral wing of Mt Isa Mines. The area was identified in the Gulf Land Use Study of 1991 as an "outstanding area" and was seen as potentially suitable for inclusion in the Northern Territory park estate (Dept. Lands and Housing, 1991). The Northern Territory Government, through the Commission has been in negotiation with the Board of Mt Isa Mines for the last three years to gain land tenure.

The traditional people of this area are the Gadanji and the Yanyuwa who have cultural affiliation with this area and associate this location with the Emu (Jagududgu) and White Cockatoo (Barrawulla) Dreaming. The Aboriginal name for the area is Garambarini.

1.3 Values of the Reserve

The theme of the Reserve covers the three habitats; a freshwater body, sandstone formations and surrounding woodlands.

Cultural values: The Gadanji and the Yanyuwa Aboriginal people have had a long association with the area and there are numerous sites of significance and burial sites within the Reserve.

Conservation values: Caranbirini Waterhole is a refuge for birds in the dry season when other water bodies have dried up. A diverse range of birds can be seen at this time of year including the "threatened" Carpentarian Grasswren and the "threatened" Gouldian Finch. The Reserve also contains the Borroloola Gecko, which has only been recorded within the Gulf region at present.

Tourism and Recreation values: The Reserve is ideally located for day trips for locals and for visitors travelling along the Carpentaria Highway. It is located approximately 46km from Borroloola and 64km from Cape Crawford. The Reserve can be accessed by 2WD providing the opportunity to see lost city formations in the Gulf which are usually restricted to 4WD.

The area has a diverse array of flora and fauna and offers visitors the opportunity to view the flora and fauna of the region in their natural habitat.

Scientific values: Caranbirini Conservation Reserve has been subject to very little systematic research and autecological studies. Further surveys will undoubtedly document a greater biological richness for the conservation reserve and for the southern Gulf Region. The waterhole's scientific value for research and monitoring into rare bird species such as the Carpentarian Grasswren and the Gouldian Finch is invaluable. The escarpments provide opportunities for study into the Borroloola Gecko, the Rock Ring-tailed Possum and for research into the rare plant, *Caltrix mimiana*.

Education and interpretive values: The geological values of the Reserve allow for education into the processes involved in the formation of the lost cities and monoliths. The waterhole also provides the opportunity to inform and educate the public in bird species that occur in the southern Gulf Region particularly the Borroloola sandstone escarpment.

1.4 The Concept of the Reserve and Its Purpose

The addition of Caranbirini Conservation Reserve to the Commission's Park estate will provide visitors with the opportunity to interact with nature and view escarpments typical of the Gulf Region and observe a bird refuge within easy reach of Borroloola in the Gulf.

To maintain the character of the Reserve, management will aim to ensure that all developments and practices retain the natural character and protection of its natural resources, while at the same time providing opportunities to maximise visitor experience through enjoyment of the scenery and wildlife.

The recreational opportunities provided within the Reserve will be nature-orientated, concentrating on the Caranbirini Waterhole and escarpments. Provision of access and facilities will be designed to ensure that visitors are able to enjoy a relatively quiet and natural experience within the Reserve.

The concept outlined above gives rise to several principal purposes for the Reserve, these are:

- To ensure protection and conservation of the Reserve's natural resources including; fauna, flora, soils, geomorphology and water resources.
- To ensure protection of the Park's landscape quality and visual integrity and promote an atmosphere of tranquillity consistent with the Reserve's natural character.
- To encourage informed appreciation and enjoyment of an essentially undeveloped, natural environment.
- To ensure the Reserve is managed in a way that respects and protects the cultural values of the Reserve's traditional Aboriginal custodians.
- To ensure the Reserve is managed in consultation with adjoining landowners.

1.5 The Intent of the Plan

This plan states the intent of the Parks and Wildlife Commission with respect to the management of Caranbirini Conservation Reserve. The Plan aims to ensure the protection of the values described previously while providing ample opportunity for recreational day-use and enjoyment by visitors. The Plan sets management objectives, addresses current issues and proposes measures to guide management and appropriate development.

The Plan will be reviewed every five years.

2 MANAGEMENT OF VISITOR USE

2.1 Objectives

- To offer safe, low-key, day-use recreational opportunities consistent with the character of the Reserve.
- To monitor, and where necessary control visitor use of the Reserve.
- To minimise the impact of visitor use on the Reserve's natural and cultural resources.
- To provide an interpretive service which enhances visitors' appreciation and encourages appropriate use of the Reserve's natural and cultural values.

2.2 Background

Visitors and locals for a number of years have used Caranbirini Waterhole and surrounding escarpments for bird watching and nature appreciation. Visitor numbers have been low with an annual maximum of approximately 4 000 visitors. This level of visitation seems to have had minimal impact on the area.

Since the declaration of the Reserve there has been no formal access or parking. The Reserve has been and still is used as a short, scenic roadside photographic stop by coach tour groups and independent motor tourists. The Reserve has a distinctively intimate character due to its small size and basic standard of facilities.

The main activities suited to the Reserve are nature appreciation through such activities as bush walking, bird watching and photography. These activities are further discussed in section 2.5, page 6.

2.3 Access

Road access to the Reserve is via the Carpentaria Highway, 46 kilometres from Borroloola. The access road into the Reserve is approximately half a kilometre in length, is gravelled and in reasonable condition.

Management Implications

If management objectives for the Reserve are to be achieved then the current road should be maintained as a 2WD gravelled road. Improving the standard of this road

will inevitably lead to an increase in visitor numbers.

Management Guidelines

- Vehicular access will be maintained and upgraded to a good 2WD gravelled road.
- A grid will be installed at completion of the fencing to stop cattle entering the park.
- Off road driving by members of the public will not be permitted.

2.4 Visitor Facilities

Construction of visitor facilities has commenced within the Reserve. There are currently minimal facilities provided which include a walking track and footbridge. The walking track is approximately 3 kilometres in length and includes a 15m steel gridmesh footbridge. The track has mounted track markers for the length of the walking track.

It is important that all developments are commensurate with the purposes of the Reserve as outlined in this plan.

Management Implications

The standard of facilities provided in the Reserve has a considerable bearing on the number of visitors wishing to enter the Reserve and their ultimate satisfaction with the experience gained.

The character of the Reserve is defined as, a place to interact with nature and enjoy low-key, nature-based recreational opportunities (outlined in Section 1.4). The Concept of the Reserve and Its Purposes (page 2) has strong influence on the type of visitor facilities provided and the number of visitors for which the facilities are designed.

A low key visitor experience can only be obtained if the facilities provided are also low key and numbers are restricted to the carrying capacity of the area, this aspect is further discussed in 2.5 Visitor Activities.

No barbeques or bins will be provided within the Reserve, as the Reserve is too small. This will require visitors to take their rubbish with them. This decision will be reviewed in the future as visitor numbers increase.

Management Guidelines

- An entrance sign will be located on the Carpentaria Highway adjacent to the entrance of the Reserve.
- The car park will be located on a hardstand that was previously used by road construction groups. The parking area will have a carrying capacity of 15 cars and 5 caravans and will be defined.
- The existing walking track will need to be maintained.
- An interpretive shelter of standard design will be constructed.
- Cilvis Multrum toilet with disabled persons access will be constructed near the car

park.

- Platform picnic tables will be provided with positioning still to be determined.
- A bird hide is proposed for the northern bank of the billabong. This will be an open backed unobtrusive construction with an octagonal/ hexagonal concealed vision slit at the front and a roof.
- The fenceline is currently being cleared and the fencing will be completed when a suitable alternative arrangement is in place for the watering of stock. .
- The car park and access track will remain unsealed and will be maintained as needs require minimising the risk of soil erosion.
- The Traditional Custodians will be consulted regarding proposed developments and access within the Reserve.
- A Wilderness Hiking Track is proposed and will include the construction of a lookout on the escarpment opposite the waterhole.

2.5 Visitor Activities

Bird watching and short walks are the main activities promoted in the Reserve but nature observations and picnicking are also promoted activities.

Camping is **prohibited** within the Reserve. It is believed that not only is the Reserve too small but is situated between Borroloola and Cape Crawford which both have accommodation facilities.

Management Implications

Walks around the lost city formations have been a major activity within the Reserve for many years. The construction of a car park and the upgrade of the walking track are likely to increase the number of visitors to the Reserve.

Bird watching, as a visitor activity is likely to increase with the improvements of the roads and the establishment of a bird hide.

Management Guidelines

- A bird hide will be constructed to allow easy undisturbed viewing of Caranbirini Waterhole birdlife.
- The Reserve's Interpretive Programme will include bird identifications of the species most likely to inhabit the waterhole.
- Members of the public will not be permitted to operate generators anywhere within the Reserve.
- The effect of visitor activities on the Reserve's natural resources will be monitored and if necessary, visitor numbers will be regulated (see also page 8).
- Walking tracks will be clearly defined (see also page 6). Visitors will be required to keep strictly to the walking tracks to avoid damage to sensitive environments.

2.6 Visitor Safety

Visitor safety is of paramount importance and appropriate signage will be displayed outlining information relevant to Caranbirini Conservation Reserve and Gulf conditions.

Management Implications

The location of the Reserve within the Gulf Region will mean higher temperatures and humidity with a higher degree of radiation.

Camping and fires will not be permitted within the Reserve.

The Reserve's Interpretive Programme will highlight the appropriate behaviour of visitors to the Reserve.

Management Guidelines

- The Commission will provide safety signs for the Reserve highlighting appropriate behaviour while in the Reserve.
- Rangers working in this Reserve will be required to have completed a Senior First Aid Certificate.

2.7 Visitor Monitoring

Visitor monitoring is an essential part of park management. Being aware of visitor numbers, expectations and satisfaction is crucial for park management. This information can be obtained through the placement of traffic counters, pedestrian counters and conducting qualitative and quantitative visitor surveys.

Management Implications

Visitor monitoring will be conducted in the Reserve and will include the placement of a traffic counter and possibly a pedestrian counter in the future. As there is no camping permitted within the Reserve the main information required will be visitor numbers. A quantitative and qualitative visitor survey will be conducted in the future to determine visitor expectations and level of satisfaction.

Management Guidelines

- A pneumatic vehicle counter will be installed and calibrated at the entrance to the Reserve to measure monthly vehicle numbers.
- The number of visitors to the park will be monitored and regulated if necessary.
- A visitor Comments Book will be provided within the Reserve.

2.8 Visitor Information and Interpretation Programme

The purpose of park interpretation is to instil an understanding of the natural resources of a park and to promote appropriate behaviour in a park.

A draft Interpretive Plan will be prepared and will highlight the notion that the Reserve is a nature-based wildlife experience. A "Fact Sheet" will also be prepared for the Reserve. This sheet will provide visitors with a map and basic information concerning the Reserve. The Fact Sheet will be available from the Parks and Wildlife

Commission and tourist information stops.

Management Implications

A suitable Interpretive Programme can influence the behaviour of visitors which can benefit the visitor experience while also conserving the natural resources of the Reserve.

It is important that the information provided gives an appropriate expectation of what the Reserve can offer to ensure visitor safety and enjoyment are met.

Management Guidelines

- An Interpretive Programme for the Reserve will be prepared and implemented as soon, as is practicable. This programme will be reviewed.
- The Reserve's Interpretive Programme will include the identification of bird species that visit the waterhole.
- The Fact Sheet for Caranbirini Conservation Reserve will be available from Commission offices, through the Katherine Region Tourist Association and other interested bodies. The Fact Sheet will highlight recreation opportunities and facilities provided within the Reserve.
- Information Offices at Katherine, Borroloola, Cape Crawford and Mataranka will ensure that information about Caranbirini Conservation Reserve is available to potential visitors travelling along the Carpentaria, Roper and Stuart Highways.
- The Katherine Region Interpretation Unit will offer assistance where appropriate to organisations interested in promoting the Reserve (such as Katherine Region Tourist Association, Northern Territory Tourist Commission and others). The assistance offered will include slide shows, use of slides for publications, editing print media, books, brochures etc.
- The provision of visitor information will help to encourage visitors to assist in maintaining the natural and cultural values of the Reserve.

3 MANAGEMENT OF THE RESERVE'S NATURAL RESOURCES

3.1 Objectives

- To protect the Reserve's natural environment including native plants and animals, soils, geological resources and water resources.
- To protect the natural landscape and scenic resources and where appropriate rehabilitate disturbed landscapes.
- To provide special protection to rare and endangered flora and fauna.
- To minimise the impact of wildfire, humans, introduced plants and animals.
- Maximise visitor experience.

3.2 Geology, Landform and Water Resources

The southern Gulf region is geologically complex. Caranbirini Conservation Reserve is entirely comprised of the Roper Group. This group consists of quartz sandstone, siltstone, shale with subordinate ferruginous siltstone, ferruginous sandstone,

feldspathic sandstone, fine to cobble conglomerate, glauconitic sandstone, glauconitic micaceous siltstone and micaceous shale. Units composed dominantly of medium-grained quartz sandstone alternate with units that are dominantly finer-grained.

The Reserve contains high, rocky sandstone plateaux and ridges. These are included mainly within the Palaeozoic Group of Lower Cambrian rocks (Bukalara Sandstone) and the Tawallah Group (Yiyinti Sandstone and various volcanics). Rates of erosion are low due to the resistant nature of the rock while rates of sediment removal are high due to the relief and the competence of the streams. Because rates of sediment removal are greater than rates of sediment production in the catchments, rocky, skeletal areas result (Aldrick and Wilson, 1990).

Caranbirini Conservation Reserve contains four land system types, including Frazer (Asf), O'Keefe (Aso), Emmerugga (Rle) and Favenc (Rsf).

Frazer is described as rolling low hills and steeply incised valleys on bedded massive sandstone and siltstone. The vegetation of this landsystem is generally described as mid-high open woodland of *Eucalyptus leucophloia* with some *E. tectifica*.

Aldrick and Wilson (1990) describe O'Keefe as broad breached anticlines and dissected structural plateaux on bedded sandstones with sandstone columns. Vegetation is known as mid-high open woodland of *Eucalyptus miniata*, *E. tetradonta* and *E. ferriginea*.

Emmerugga is often described as undulating rolling hills on mainly argillaceous sediments. It has mid-high open woodland of *Eucalyptus leucophloia* with some *E. tectifica*, *E. terminalis* and *Erythroleum chlorostachys*.

Favenc is characterised as steep hills on mainly argillaceous sediments with mid-high open woodland of *Eucalyptus dichromophloia*, *E. miniata* and *E. tetradonta*.

Caranbirini Waterhole is a permanent freshwater body, which has only been known to dry up twice in the last twenty years or so. The waterhole is approximately 150 metres long and 12 metres wide after the wet season and shrinks progressively in the dry, reducing to a third of its size. It is presently used to water stock from McArthur River Station. The Reserve requires fencing to ensure protection of the area from stock.

The waterhole and nearby sandstone escarpment is an important habitat for a significant number of endangered species of flora and fauna, some of which are endemic to the Gulf.

Management Implications

Recreation activities require active management regimes to minimise their adverse effect on the environment.

The increase in numbers of people visiting the Reserve once access is improved and facilities are in place is an important consideration for erosion control and the spread of weeds.

Management Guidelines

- Information about the Reserve's geology, landforms and geomorphology will be included in the Reserve's Interpretive Programme.
- Structures will be located in such a way as to maximise the screening effects of existing landform and vegetation.
- Erosion will be monitored and if deemed necessary control measures will be implemented.
- Fencing of the Reserve to protect natural resources.

3.3 Vegetation

Caranbirini Conservation Reserve is located in the transition zone between tropical and arid zones. There are three main vegetation communities within the Reserve and these are the riparian vegetation, which surrounds the waterhole, the open woodland and the vegetation amongst the sandstone escarpments.

The broadscale vegetation for the area is *E. tectifera* (Northern Box), *E. terminalis* (Bloodwood) woodland with *Sehima nervosum* (White Grass), and *Chrysopogon fallax* (Golden Beard Grass) grassland understorey.

A flora list can be found in Appendix 1.

Management Implications

The riparian vegetation is prone to damage by feral animals, fire and uncontrolled access.

Management Guidelines

- The contrast between the riparian vegetation and that found amongst the sandstone escarpment will be a feature in the Reserve's Interpretive Programme.
- Effects of visitor use on the Reserves vegetation will be monitored and regulatory controls imposed if deemed necessary.
- Fencing of the Reserve and the construction of firebreaks are essential to ensure protection of the riparian vegetation and the Reserve.

3.4 Weed Control

There are several weed species found within the Reserve. Mossman River Grass (*Cenchrus echinatus*), Horehound (*Hyptis suaveorens*), Sicklepod (*Senna obtusifolia*), Spinyhead sida (*Sida acuata*), Flannel Weed (*Sida cordifolia*) and Paddy Lucerne (*Sida rhombifolia*). These weed species are classified as "B" under the Noxious Weed Act and their spread must be controlled.

In addition a number of introduced or invasive species were recorded including Buffalo Clover (*Alysicarqus vaginalis*), *Corchorus sidoides*, Wild Passionfruit (*Passiflora foetida*) and Verano (*Stylosanthes hamata*).

Management Implications

The Reserve may be susceptible to weed invasion and weed control and monitoring should be a priority for the Reserve.

Management Guidelines

- The Weed Control Strategy involves spraying three times a year for the first year and then once or twice a year for the following years. It is suggested that the weeds should be under control within 5 years. This process will be ongoing.
- The Weed Strategy for the Reserve will continue to be implemented and should be reviewed when necessary.
- Small weed outbreaks will be immediately removed.

3.5 Fauna

The presence of almost permanent water in Caranbirini Waterhole and its associated vegetation, combined with the sandstone escarpment vegetation and surrounding woodland provide a range of diverse habitats for fauna.

Parks and Wildlife Commission staff and volunteers conducted a small-scale fauna and flora survey in April 1996. A list of recorded fauna found on the survey and those found on other occasions can be seen in Appendix 1.

Avifauna

The Reserve has a rich birdlife as a result of Caranbirini Waterhole. There have been 118 bird species recorded, which are mostly species characteristic of savanna woodland with some significant inclusions of freshwater bird species. Bird species of significance recorded in the Reserve include the White-breasted Sea-Eagle (CAMBA), Carpentarian Grasswren (threatened), Gouldian Finch (threatened), Peregrine Falcon, Purple-crowned Fairy Wren, Australian Bustard and the Barn Owl (uncommon) (Protection Act Schedule 1).

Reptiles

There have been 11 reptile species recorded in the Reserve to date. These species have included several snake, skink and dragon species and one turtle species. The significant reptile recorded is the Borroloola Gecko (*Gyhyra borroloola*) which has a restricted distribution and has only been recorded within the Gulf of Carpentaria.

Mammals

Currently there have been 6 mammal species recorded within the Reserve. The occurrence of the Sandstone Antechinus (*Pseudantechinus bilarni*) and the Rock Ring-tailed Possum (*Petroseudes dahli*) is considered significant as they have a restricted distribution. The Sandstone Antechinus is a very important record, which helps to fill the distribution gap between Arnhem Land and the Queensland border. This poorly known species has specific habitat requirements of large sandstone boulders and massifs (Griffiths et.al., 1997).

Due to a lack of survey effort in the past there have been no bats recorded within the park. A more intensive survey of bat fauna would be expected to show at least some

bat species known from the area.

Amphibians

Four species of Amphibians have been recorded within the Reserve (see Appendix 1).

Aquatic Fauna

To date there have been three species of fish recorded in the waterhole. It is believed that an aquatic fauna survey of the waterhole may expand this list (see Appendix 1).

Management Implications

The waterhole is the area of the reserve with the highest recorded fauna and the area that has the potential to be used the most and the most sensitive to disturbance.

Management Guideline

- Further fauna surveys should be conducted within the first five years of the life of this plan.
- A programme for monitoring the species abundance and distribution of the fauna resources of the Reserve will be established.
- Interesting and rare native fauna of the Reserve will be featured in the Interpretation and Public Information Programme.
- Walking tracks and visitor facilities will be constructed to allow good nature appreciation and observations while also ensuring the protection of fauna and habitat.
- The natural distribution of native animals and their habitats will be maintained throughout the Reserve as far as possible.

3.6 Feral Animal Control

The feral animals that occur within the Reserve include cattle, horses and cane toads. A Feral Animal Strategy will not be required for the Reserve, as completion of fencing will exclude cattle and horses from the Reserve. It is necessary to remove stock currently using the waterhole from the Reserve.

There are presently no economical nor resource sound methods of eradicating cane toads. Monitoring of their impacts may be necessary.

Management Implications

Cane toads in the Reserve is of concern as the effects they cause to the waterhole and inhabitants are currently unknown.

Management Guidelines

- Construction and maintenance of a boundary fence.
- Remove feral animals.
- No domestic animals will be permitted into the Reserve. All visitor information and promotional materials will clearly indicate this regulation to potential visitors

to the Reserve.

3.7 Fire Management

Burning of the area has occurred for many years. Early wet season and early dry season mosaic burn is typically used for protection of special habitats, sites of significance and assets, from late dry season burns often caused by lightning. These early dry season burns are low intensity and low heat burns. There is a large threat to the Reserve from uncontrolled fires and wildfires.

Management Implications

The main objective of the Commission's Fire Management Policy is to maintain a variety of habitats through a programme, which changes the intensity, and frequency of fire.

The main concern of the Commission is the chance of wildfires occurring within the Reserve. Consultation with neighbouring landholders can reduce the threat of uncontrolled fires.

Management Guidelines

- In an attempt to stop wildfires, the Commission has developed a Fire Management Strategy for Caranbirini Conservation Reserve.
- A Fire Management Strategy would involve:
 - Wet season burns in sensitive areas;
 - Burns of low intensity with the purpose of fuel reduction;
 - The construction of fire breaks along the majority of the fenceline;
 - Burning of the road verges in the early dry season, reducing the occurrence of uncontrolled, high intensity fires;
 - Removal and control of weeds which would reduce the fuel load, minimising the chance of uncontrolled, high intensity burns; and
 - Protection of assets.

4 MANAGEMENT OF ABORIGINAL INTERESTS AND CULTURAL RESOURCES

4.1 Objectives

- To consider the interests and concerns of the traditional custodians of the area in all facets of park planning and management.
- To manage and conserve sites of historical and cultural importance.
- To encourage training and employment of Aboriginals, where opportunities exist.
- To provide, through the Reserve's Interpretive Programme, information on the Aboriginal values of the Reserve to the general public.

4.2 Background

Caranbirini Conservation Reserve is known to the Aboriginals as Garambarini Waterhole. The area is part of the Emu and White Cockatoo Dreaming Trail, which links Caranbirini with other areas.

4.3 Cultural Heritage

Caranbirini Waterhole has been a favourite spot for the Gadanji for many years. The site is used as a place of relaxation and hunting. The people hunt in the waterhole for the long neck turtle (Yabudarraman), water lilies (Wangalama) and freshwater mussel (Mulabugwalla). In the rocky outcrops the people hunted for echidna (Arbalurra) and sugar bag (Toonbarri) while out in the savannah they hunted kangaroo (Yungardi) and occasionally plain turkey (Awundabarra) and sugar bag.

It is a duty of the senior custodians to pass on their cultural heritage to their young people through stories and ceremonies and a story from the Gadanji can be found in Appendix 2.

Aboriginal art and burial sites are located within the Reserve and are recorded but not registered. It is a function of the Commission to not only protect these sacred sites but to educate the public in their importance and significance.

It may be a requirement in the future to protect art sites by restricting visitor access to these sites.

Management Implications

Under the Authority Certificate issued by the Aboriginals Area Protection Authority it is the responsibility of the Parks and Wildlife Commission to ensure:

1. Garambarini Waterhole is not damaged;
2. The escarpment is not damaged and
3. The conservation of Aboriginal paintings and artifacts found within the Conservation Reserve.

It is essential for efficient management that research into the cultural heritage of Caranbirini Conservation Reserve is conducted.

Management Guidelines

- With respect to the management of sites of Aboriginal significance, the Commission will be guided by the traditional custodians and by the requirements of the *Aboriginal Sacred Sites Act*.
- All developments within the Reserve will be subject to appropriate clearance certificates as required under the *Aboriginal Sacred Sites Act*.
- Further consultation with the traditional custodians and research into the Aboriginal values of the Reserve, including the location and protection of archaeological sites and artefacts will be carried out through the appropriate authorities.

- The Interpretation Programme for the Reserve will include appropriate information about the clans and their traditional associations with the land and stories of significant sites.

5 RESERVE ADMINISTRATION AND RESEARCH

5.1 Objectives

- To provide staff, resources and administrative services and facilities for the efficient management of the Reserve.
- To provide for the safety of visitors and Reserve staff, and the protection of Reserve assets.
- To operate in consultation with neighbouring landholders.
- To provide for a research and monitoring programme for the Reserve in order to allow the Reserve managers to make sound decisions on management practices.

5.2 Reserve Administration

The Parks and Wildlife Commission of the Northern Territory manage the Reserve. The Reserve is located within the Gulf District, which also includes Barranyi (North Island) National Park and the proposed Limmen National Park. The Gulf District staff is comprised of a Chief District Ranger (T5), a Senior Ranger (T3), a Ranger (T2) and an Aboriginal Trainee Ranger (T1).

Management Implications

The proposed improvements and facilities will increase visitor numbers, which may require current management regimes to be continually assessed, particularly with regard to resources and staffing levels.

Management Guidelines

- Management of the Reserve will be reviewed, when appropriate, relative to major additions to or changes in management directions for other parks and reserves in the Katherine Region.

5.3 Research and Monitoring

Flora and fauna lists for the Reserve are not comprehensive and very little is recorded regarding the Cultural values of the Reserve.

Management Implications

Lack of knowledge of the Reserve's values, its wildlife habitats and the

interrelationship between plants and animals is a hindrance to good management. With incomplete baseline data, it is difficult to monitor the effects of park management. The establishment of monitoring programmes ensures management decisions are responsive to changes in the environment of the Reserve.

Management Guidelines

- Organisations wishing to conduct research are required to obtain written approval from the Director of the Parks and Wildlife Commission by submitting a detailed proposal which must include:
 - a description of the project aims, objectives and any anticipated benefits for the Commission,
 - the location and duration of the project
 - the qualifications and experience of project staff
 - the proposed project methodology, particularly with regard to disturbance of sites, collections of materials and erection of apparatus
 - any special access provisions required.
- The Director's approval may include specified conditions with which outside organisations conducting research, monitoring or survey work on the Reserve, will be required to comply.
- Organisations undertaking research on the Reserve will be required to supply the Parks and Wildlife Commission with a report on the work conducted and a summary of the results.
- Research and monitoring programmes required within the Reserve include more detailed fauna and flora surveys, a cane toad monitoring programme and a Visitor Monitoring Programme.

6 MANAGEMENT PROGRAMMES

Caranbirini Conservation Reserve is a recent addition to the Commission Estate and is likely to experience a rapid rise in visitor numbers as access is improved and facilities are constructed. This section of the Plan brings together the more concrete guidelines and these are grouped together as programmes, which are assigned priorities to assist park management.

Priorities are assigned as follows;

- ONGOING:** already established but essential to be continued;
- HIGH:** imperative to achieve the Plan's stated objectives;
- MEDIUM:** very important to achieve the Plan's stated objectives but subject to the availability of resources;
- LOW** may be undertaken only if other guidelines are met and the necessary resources are available.

ACTION	REF.	PRIORITY
MANAGEMENT FOR VISITOR USE		
Construct the Bird Hide	6,7	High
Construct the hiking track	6	Medium
Construct a Lookout	6	High
Maintain the existing walking track	6	Ongoing
Construct Car Park	6	High
Construct toilet facility	6	High
Construct picnic tables	6	High
Minimise Visitor impacts	7,8	High
Establish a Visitor Monitoring Programme	8	High
Finalise and Implement the Reserve's Interpretive Programme	9	High

MANAGEMENT OF THE RESERVE'S NATURAL RESOURCES

Monitor and Control Erosion	11	Ongoing
Continue Weed Monitoring and Management Programme	12	Ongoing
Implement a Programme for surveying and monitoring Fauna and Flora	14	Ongoing
Clearing of portions of the Boundary Fences	6,14	Medium
Removal of Feral Animals	14	High
Implement the Reserve's Fire Management Strategy	15	Ongoing
Fencing north and south perimeters	6,14	High

MANAGEMENT OF ABORIGINAL INTERESTS AND CULTURAL RESOURCES

Consult with the Traditional Custodians regarding Aboriginal values, sites and protection of Archaeological sites and artefacts	17	Ongoing
Caranbirini will continue to be used by the Traditional Custodians for hunting and foraging	17	Ongoing

ADMINISTRATION

Implement the Research and Monitoring Programmes	19	Ongoing
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7 REFERENCES

Aldrick J. M. and Wilson P. L (1990). *Land Systems of the Southern Gulf Region, Northern Territory*. Conservation Commission of the Northern Territory, Palmerston, NT.

Department of Lands and Housing (1991). *Gulf Region Land Use and Development Study 1991*. Northern Territory Department of Lands and Housing, Northern Territory.

APPENDIX 1 FLORA AND FAUNA SPECIES LIST

Flora List

<i>Acacia</i>	<i>argyraea</i>	<i>Cyperus</i>	<i>sexflorus</i>
<i>Acacia</i>	<i>difficilis</i>	<i>Cyperus</i>	<i>tenuispica</i>
<i>Acacia</i>	<i>dimidiata</i>	<i>Dendrophthoe</i>	<i>glabrescens</i>
<i>Acacia</i>	<i>galioides</i>	<i>Desmodium</i>	<i>brownii</i>
<i>Acacia</i>	<i>gonoclada</i>	<i>Digitaria</i>	<i>papposa</i>
<i>Acacia</i>	<i>hammondii</i>	<i>Dodonaea</i>	<i>lanceolata</i>
<i>Acacia</i>	<i>nuperrima</i>	<i>Dodonaea</i>	<i>oxyptera</i>
<i>Acacia</i>	<i>plaetocarpa</i>	<i>Dolichandrone</i>	<i>heterophylla</i>
<i>Acacia</i>	<i>platyphylla</i>	<i>Ectrosia</i>	<i>schultzii</i>
<i>Acacia</i>	<i>umbellata</i>	<i>Eragrostis</i>	<i>A42909</i>
<i>Acacia</i>	<i>wickhamii</i>	<i>Eragrostis</i>	<i>cumingii</i>
<i>Adenosma</i>	<i>muelleri</i>	<i>Eragrostis</i>	<i>hirticaulis</i>
<i>Alphitonia</i>	<i>excelsa</i>	<i>Eriachne</i>	<i>ciliata</i>
<i>Amaranthus</i>	<i>pallidiflorus</i>	<i>Eriachne</i>	<i>obtusa</i>
<i>Ampelocissus</i>	<i>acetosa</i>	<i>Eriocaulon</i>	<i>setaceum</i>
<i>Amyema</i>	<i>herbertiana</i>	<i>Erythrophleum</i>	<i>chlorostachys</i>
<i>Amyema</i>	<i>villiflora</i>	<i>Erythroxyllum</i>	<i>ellipticum</i>
<i>Anisomeles</i>	<i>malabarica</i>	<i>Eucalyptus</i>	<i>camaldulensis</i>
<i>Antidesma</i>	<i>parvifolium</i>	<i>Eucalyptus</i>	<i>dichromophloia</i>
<i>Aristida</i>	<i>exserta</i>	<i>Eucalyptus</i>	<i>ferruginea</i>
<i>Aristida</i>	<i>hygrometrica</i>	<i>Eucalyptus</i>	<i>miniata</i>
<i>Aristida</i>	<i>inaequiglumis</i>	<i>Eucalyptus</i>	<i>polycarpa</i>
<i>Atalaya</i>	<i>hemiglauc</i>	<i>Eucalyptus</i>	<i>pruinosa</i>
<i>Blumea</i>	<i>saxatilis</i>	<i>Eucalyptus</i>	<i>tetradonta</i>
<i>Boerhavia</i>	<i>dominii</i>	<i>Exocarpos</i>	<i>latifolius</i>
<i>Bonamia</i>	<i>pannosa</i>	<i>Fimbristylis</i>	<i>depauperata</i>
<i>Boronia</i>	<i>lanuginosa</i>	<i>Fimbristylis</i>	<i>littoralis</i>
<i>Bossiaea`</i>	<i>bossiaeoides</i>	<i>Fimbristylis</i>	<i>microcarya</i>
<i>Brachychiton</i>	<i>diversifolius</i>	<i>Fimbristylis</i>	<i>signata</i>
<i>Breynia</i>		<i>Fimbristylis</i>	<i>simplex</i>
<i>Buchanania</i>	<i>obovata</i>	<i>Fimbristylis</i>	<i>tetragona</i>
<i>Bulbostylis</i>	<i>barbata</i>	<i>Fuirena</i>	<i>ciliaris</i>
<i>Calytrix</i>	<i>brownii</i>	<i>Gardenia</i>	<i>pyriformis</i>
<i>Calytrix</i>	<i>exstipulata</i>	<i>Glochidion</i>	<i>disparipes</i>
<i>Calytrix</i>	<i>mimiana</i>	<i>Gompholobium</i>	<i>subulatum</i>
<i>Carissa</i>	<i>lanceolata</i>	<i>Gomphrena</i>	<i>lanata</i>
<i>Centrolepis</i>	<i>exserta</i>	<i>Gomphrena</i>	<i>canescens</i>
<i>Chamaecrista</i>	<i>mimosoides</i>	<i>Gonocarpus</i>	<i>leptothecus</i>
<i>Chamaecrista</i>	<i>symonii</i>	<i>Goodenia</i>	<i>armitiana</i>
<i>Chrysopogon</i>	<i>fallax</i>	<i>Goodenia</i>	<i>janamba</i>
<i>Cochlospermum</i>	<i>fraseri</i>	<i>Goodenia</i>	<i>leiosperma</i>
<i>Corchorus</i>	<i>sidoides</i>	<i>Goodenia</i>	
<i>Crotolaria</i>	<i>retusia</i>	<i>Grevillea</i>	<i>dydandri</i>
<i>Cyanthillium</i>	<i>cinereum</i>	<i>Grevillea</i>	<i>refracta</i>
<i>Cymbopogon</i>	<i>procerus</i>	<i>Grevillea</i>	<i>pteridifolia</i>
<i>Cyperus</i>	<i>aquatilis</i>	<i>Grewia</i>	<i>retusifolia</i>
<i>Cyperus</i>	<i>carinatus</i>	<i>Haemodorum</i>	<i>coccineum</i>
<i>Cyperus</i>	<i>crutulatus</i>	<i>Helicteres</i>	<i>cana</i>
<i>Cyperus</i>	<i>cuspidatus</i>	<i>Heteropogon</i>	<i>contortus</i>
<i>Cyperus</i>	<i>holoschoenus</i>	<i>Hibbertia</i>	
<i>Cyperus</i>	<i>microcephalus (subsp.</i>	<i>Hibiscus</i>	<i>leptocladus</i>
<i>microcephalus)</i>			
<i>Cyperus</i>	<i>microcephalus (subsp.</i>		
<i>saxicola)</i>			
<i>Cyperus</i>	<i>oxycarpus</i>		

<i>Hibiscus</i>	<i>meraukensis</i>	<i>Plectrachne</i>	<i>pungens</i>
<i>Hibiscus</i>	<i>zonatus</i>	<i>Polygala</i>	<i>longifolia</i>
<i>Indigofera</i>	<i>linifolia</i>	<i>Pseudopogonatherum</i>	<i>contortum</i>
<i>Jacksonia</i>	<i>odontoclada</i>	<i>Ptilotus</i>	<i>exaltatus</i>
<i>Jacksonia</i>	<i>thesioides</i>	<i>Sauropus</i>	<i>D130577</i>
<i>Lechenaultia</i>	<i>filiformis</i>	<i>Schizachyrium</i>	<i>fragile</i>
<i>Lindernia</i>	<i>D46758</i>	<i>Schoenoplectus</i>	<i>laevis</i>
<i>Lindernia</i>	<i>clausa</i>	<i>Schoenoplectus</i>	<i>praelongatus</i>
<i>Lindernia</i>		<i>Scleria</i>	<i>annularis</i>
<i>Lipocarpha</i>	<i>microcephala</i>	<i>Scleria</i>	<i>novae-hollandiae</i>
<i>Ludwigia</i>	<i>octovalvis</i>	<i>Scleria</i>	<i>rugosa</i>
<i>Lysiana</i>	<i>spathulata</i>	<i>Setaria</i>	<i>apiculata</i>
<i>Marsilea</i>	<i>mutica</i>	<i>Setaria</i>	<i>pumila</i>
<i>Maytenus</i>	<i>cunninghamii</i>	<i>Solanum</i>	<i>echinatum</i>
<i>Melaleuca</i>	<i>leucadendra</i>	<i>Spermacoce</i>	<i>auriculata</i>
<i>Melaleuca</i>	<i>stenostachya</i>	<i>Spermacoce</i>	<i>breviflora</i>
<i>Melaleuca</i>	<i>viridiflora</i>	<i>Spermacoce</i>	
<i>Melhania</i>	<i>incana</i>	<i>Strychnos</i>	<i>lucida</i>
<i>Melhania</i>	<i>oblongifolia</i>	<i>Stylidium</i>	
<i>Mitrasacme</i>	<i>micrantha</i>	<i>Tephrosia</i>	<i>leptoclada</i>
<i>Mitrasacme</i>	<i>scrithicola</i>	<i>Tephrosia</i>	<i>rosea</i>
<i>Nymphaea</i>	<i>capensis</i>	<i>Tephrosia</i>	<i>spechtii</i>
<i>Pandanus</i>	<i>spiralis</i>	<i>Terminalia</i>	<i>canescens</i>
<i>Passiflora</i>	<i>foetida</i>	<i>Thysanotus</i>	<i>chinensis</i>
<i>Persoonia</i>	<i>falcata</i>	<i>Utricularia</i>	<i>sp</i>
<i>Petalostigma</i>	<i>banksii</i>	<i>Vitex</i>	
<i>Petalostigma</i>	<i>quadriloculare</i>	<i>Waltheria</i>	<i>indica</i>
<i>Phyllanthus</i>	<i>hebecarpus</i>	<i>Wrightia</i>	<i>saligna</i>
<i>Phyllanthus</i>		<i>Zornia</i>	<i>chaetophora</i>
<i>Pityrodia</i>	<i>ternifolia</i>	<i>Zornia</i>	<i>muriculata</i>

Exotic Species

<i>Alysicarpus</i>	<i>vaginalis</i>
<i>Cenchrus</i>	<i>echinatus</i>
<i>Hyptis</i>	<i>suaveolens</i>
<i>Passiflora</i>	<i>foetida</i>
<i>Senna</i>	<i>obtusifolia</i>
<i>Sida</i>	<i>acuta</i>
<i>Sida</i>	<i>cordifolia</i>
<i>Sida</i>	<i>rhombifolia</i>
<i>Stylosanthes</i>	<i>hamata</i>

(Source: Parks and Wildlife Commission of the Northern Territory Records, 1997 & NT Flora Atlas)

Fauna List

Mammals

Common Name	Genus	Species
Dingo	<i>Canis</i>	<i>lupus dingo</i>
Euro	<i>Macropus</i>	<i>robustus</i>
Short-beaked Echidna	<i>Tachyglossus</i>	<i>aculeatus</i>
Rock Ringtail Possum	<i>Petropseudes</i>	<i>dahli</i>
Common Rock-rat	<i>Zyromys</i>	<i>argurus</i>
Sandstone Antechinus	<i>Pseudantechinus</i>	<i>bilarni</i>
Eastern Forest Bat	<i>Vespadelus</i>	<i>pumilus</i>
Common Sheathtail Bat	<i>Taphozous</i>	<i>georgianus</i>

Birds

Common Name	Family	Genus	Species
Darter	Anhingidae	<i>Anhinga</i>	<i>melanogaster</i>
Pied Cormorant	Phalacrocoracidae	<i>Phalacrocorax</i>	<i>varius</i>
Little Pied Cormorant	Phalacrocoracidae	<i>Phalacrocorax</i>	<i>melanoleucos</i>
White-necked Heron	Ardeidae	<i>Ardea</i>	<i>pacifica</i>
White-faced Heron	Ardeidae	<i>Egretta</i>	<i>novaehollandiae</i>
Great Egret	Ardeidae	<i>Ardea</i>	<i>alba</i>
Nakeen Night Heron	Ardeidae	<i>Nycticorax</i>	<i>caledonicus</i>
Black-necked Stork	Ciconiidae	<i>Ephippiorhynchus</i>	<i>asiaticus</i>
Pacific Black Duck	Anatidae	<i>Anas</i>	<i>superciliosa</i>
Australian Wood Duck	Anatidae	<i>Chenonetta</i>	<i>jubata</i>
Green Pygmy-Goose	Anatidae	<i>Nettapus</i>	<i>pulchellus</i>
Kori Bustard	Otididae	<i>Ardeotis</i>	<i>kori</i>
Wedge-tailed Eagle	Accipitridae	<i>Aquila</i>	<i>audax</i>
White-bellied Sea-eagle	Accipitridae	<i>Haliaeetus</i>	<i>leucogaster</i>
Black-shouldered Kite	Accipitridae	<i>Elanus</i>	<i>axillaris</i>
Black Kite	Accipitridae	<i>Milvus</i>	<i>migrans</i>
Square-tailed Kite	Accipitridae	<i>Lophoictinia</i>	<i>isura</i>
Black-breasted Buzzard	Accipitridae	<i>Hamirostra</i>	<i>melanosternon</i>
Whistling Kite	Accipitridae	<i>Haliastur</i>	<i>sphenurus</i>
Brown Goshawk	Accipitridae	<i>Accipiter</i>	<i>fasciatus</i>
Grey Goshawk	Accipitridae	<i>Accipiter</i>	<i>novaehollandiae</i>
Collared Sparrowhawk	Accipitridae	<i>Accipiter</i>	<i>cirrhocephalus</i>
Spotted Harrier	Accipitridae	<i>Circus</i>	<i>assimilis</i>
Peregrine Falcon	Falconidae	<i>Falco</i>	<i>peregrinus</i>
Australian Hobby	Falconidae	<i>Falco</i>	<i>longipennis</i>
Brown Falcon	Falconidae	<i>Falco</i>	<i>berigora</i>
Nakeen Kestrel	Falconidae	<i>Falco</i>	<i>cenchroides</i>
Brown Quail	Phasianidae	<i>Coturnix</i>	<i>ypsilophora</i>
Chestnut-backed Button-quail	Turnicidae	<i>Turnix</i>	<i>castanota</i>
Little Button-quail	Turnicidae	<i>Turnix</i>	<i>velox</i>
Bush-hen	Rallidae	<i>Amaurornis</i>	<i>olivaceus</i>
Brolga	Gruidae	<i>Grus</i>	<i>rubicundus</i>
Bush Stone-curlew	Burhinidae	<i>Burhinus</i>	<i>grallarius</i>
Peaceful Dove	Columbidae	<i>Geopelia</i>	<i>striata</i>
Diamond Dove	Columbidae	<i>Geopelia</i>	<i>cuneata</i>
Bar Shouldered Dove	Columbidae	<i>Geopelia</i>	<i>humeralis</i>
Common Bronzewing	Columbidae	<i>Phaps</i>	<i>chalcoptera</i>
Crested Pigeon	Columbidae	<i>Geophaps</i>	<i>lophotes</i>
Spinifex Pigeon	Columbidae	<i>Geophaps</i>	<i>plumifera</i>
Red-tailed Black-Cockatoo	Cacatuidae	<i>Calyptorhynchus</i>	<i>banksii</i>
Galah	Cacatuidae	<i>Cacatua</i>	<i>roseicapilla</i>

Common Name	Family	Genus	Species
Little Corella	Psittacidae	<i>Cacatua</i>	<i>pastinator</i>
Sulphur-crested Cuckatoo	Psittacidae	<i>Cacatua</i>	<i>galerita</i>
Rainbow Lorikeet	Psittacidae	<i>Trichoglossus</i>	<i>haematodus</i>
Varied Lorikeet	Psittacidae	<i>Psitteuteles</i>	<i>versicolor</i>
Red-winged Parrot	Psittacidae	<i>Aprosmictus</i>	<i>erythropterus</i>
Cockateil	Cacatuidae	<i>Leptolophus</i>	<i>hollandicus</i>
Budgerigar	Psittacidae	<i>Melopsittacus</i>	<i>undulatus</i>
Northern Rosella	Psittacidae	<i>Platycercus</i>	<i>eximius</i>
Pallid Cuckoo	Cuculidae	<i>Cuculus</i>	<i>pallidus</i>
Hornsfield Bronze Cuckoo	Cuculidae	<i>Chrysococcyx</i>	<i>basalis</i>
Common Koel	Cuculidae	<i>Eudynamys</i>	<i>scolopacea</i>
Pheasant Coucal	Centropodidae	<i>Centropus</i>	<i>phasianinus</i>
Southern Boobook	Strigidae	<i>Ninox</i>	<i>novaeseelandiae</i>
Barn Owl	Tytonidae	<i>Tyto</i>	<i>alba</i>
Tawney Frogmouth	Podargidae	<i>Podargus</i>	<i>strigoides</i>
Australian Owllet Nightjar	Aegothelidae	<i>Aegotheles</i>	<i>cristatus</i>
Spotted Nightjar	Caprimulgidae	<i>Caprimulgus</i>	<i>argus</i>
Azure Kingfisher	Alcedinidae	<i>Alcedo</i>	<i>azura</i>
Blue Winged Kookaburra	Halcyonidae	<i>Dacelo</i>	<i>leachii</i>
Red-backed Kingfisher	Halcyonidae	<i>Todiramphus</i>	<i>pyrrhopygia</i>
Sacred Kingfisher	Halcyonidae	<i>Todiramphus</i>	<i>sanctus</i>
Rainbow Bee-eater	Meropidae	<i>Merops</i>	<i>ornatus</i>
Dollarbird	Coraciidae	<i>Eurystomus</i>	<i>orientalis</i>
Fairy Martin	Hirundinidae	<i>Hirundo</i>	<i>ariel</i>
Black-faced Cuckoo-shrike	Campephagidae	<i>Coracina</i>	<i>novaehollandiae</i>
White-bellied Cuckoo-shrike	Campephagidae	<i>Coracina</i>	<i>papuensis</i>
White-winged Triller	Campephagidae	<i>Lalage</i>	<i>sueurii</i>
Varied Triller	Campephagidae	<i>Lalage</i>	<i>leucomela</i>
Jacky Winter	Petroicidae	<i>Microeca</i>	<i>fascinans</i>
White-browed Robin	Petroicidae	<i>Poecilodryas</i>	<i>superciliosa</i>
Rufous Whistler	Pachycephalidae	<i>Pachycephala</i>	<i>rufiventris</i>
Little Shrike-thrush	Pachycephalidae	<i>Colluricincla</i>	<i>megarhyncha</i>
Sandstone Shrike-thrush	Pachycephalidae	<i>Colluricincla</i>	<i>woodwardi</i>
Restless Flycatcher	Dicruridae	<i>Myiagra</i>	<i>inquieta</i>
Grey Fantail	Dicruridae	<i>Rhipidura</i>	<i>fuliginosa</i>
Northern Fantail	Dicruridae	<i>Rhipidura</i>	<i>rufiventris</i>
Willie Wagtail	Dicruridae	<i>Rhipidura</i>	<i>leucophrys</i>
Grey Crowned Babbler	Pomatostomatidae	<i>Pomatostomus</i>	<i>temporalis</i>
Purple-crowned Fairy-wren	Maluridae	<i>Malurus</i>	<i>coronatus</i>
Varigated Fairy-wren	Maluridae	<i>Malurus</i>	<i>lamberti</i>
Red Backed Fairy-wren	Maluridae	<i>Malurus</i>	<i>melanocephalus</i>
Carpentarian Grasswren	Maluridae	<i>Amytornis</i>	<i>dorotheae</i>
Weebill	Acanthizidae	<i>Smicrornis</i>	<i>brevirostris</i>
Western Gerygone	Pardalotidae	Gerygone	fusca
White-throated Gerygone	Pardalotidae	Gerygone	olivacea
Varied Sittella	Neosittidae	<i>Daphoenositta</i>	<i>chrysoptera</i>
Black-tailed Treecreeper	Climacteridae	<i>Climacteris</i>	<i>melanura</i>
Silver-crowned Friarbird	Meliphagidae	<i>Philemon</i>	<i>argenteiceps</i>
Little Friarbird	Meliphagidae	<i>Philemon</i>	<i>citreogularis</i>
Blue-faced Honeyeater	Meliphagidae	<i>Entomyzon</i>	<i>cyanotis</i>
Singing Honeyeater	Meliphagidae	<i>Lichenostomus</i>	<i>virescens</i>
White-gaped Honeyeater	Meliphagidae	<i>Lichenostomus</i>	<i>unicolor</i>
Grey-headed Honeyeater	Meliphagidae	<i>Lichenostomus</i>	<i>keartlandi</i>
Grey-fronted Honeyeater	Meliphagidae	<i>Lichenostomus</i>	<i>plumulus</i>
Yellow-tinted Honeyeater	Meliphagidae	<i>Lichenostomus</i>	<i>flavescens</i>
Black-chinned Honeyeater	Meliphagidae	<i>Melithreptus</i>	<i>gularis</i>
White-throated Honeyeater	Meliphagidae	<i>Melithreptus</i>	<i>albugularis</i>
Brown Honeyeater	Meliphagidae	<i>Lichmera</i>	<i>indistincta</i>
Bar-breasted Honeyeater	Meliphagidae	<i>Ramsayornis</i>	<i>fasciatus</i>

Common Name	Family	Genus	Species
Rufous-throated Honeyeater	Meliphagidae	<i>Conopophila</i>	<i>rufogularis</i>
Banded Honeyeater	Meliphagidae	<i>Certhionyx</i>	<i>pectoralis</i>
Black Honeyeater	Meliphagidae	<i>Certhionyx</i>	<i>niger</i>
Mistletoebird	Dicaeidae	<i>Dicaeum</i>	<i>hirundinaceum</i>
Striated Pardalote	Pardalotidae	<i>Pardalotus</i>	<i>striatus</i>
Red-browed Pardalote	Pardalotidae	<i>Pardalotus</i>	<i>rubricatus</i>
Crimson Finch	Passeridae	<i>Neochmia</i>	<i>phaeton</i>
Double-barred Finch	Passeridae	<i>Taeniopygia</i>	<i>bichenovii</i>
Masked Finch	Passeridae	<i>Poephila</i>	<i>personata</i>
Long-tailed Finch	Passeridae	<i>Poephila</i>	<i>acuticauda</i>
Gouldian Finch	Ploceidae	<i>Erythrura</i>	<i>gouldiae</i>
Star Finch	Ploceidae	<i>Neochmia</i>	<i>ruficauda</i>
Chestnut-breasted Mannikin	Ploceidae	<i>Lonchura</i>	<i>castaneothorax</i>
Olive-backed Oriole	Oriolidae	<i>Oriolus</i>	<i>sagittatus</i>
Figbird	Oriolidae	<i>Sphecotheres</i>	<i>viridis</i>
Great Bowerbird	Ptilonorhynchidae	<i>Chlamydera</i>	<i>nuchalis</i>
Australian Magpie Lark	Dicruridae	<i>Grallina</i>	<i>cyanoleuca</i>
White-breasted Woodswallow	Artamidae	<i>Artamus</i>	<i>leucorhynchus</i>
Masked Woodswallow	Artamidae	<i>Artamus</i>	<i>personatus</i>
Black-faced Woodswallow	Artamidae	<i>Artamus</i>	<i>cinereus</i>
Little Woodswallow	Artamidae	<i>Artamus</i>	<i>minor</i>
Pied Butcherbird	Artamidae	<i>Cracticus</i>	<i>nigrogularis</i>
Australian Magpie	Artamidae	<i>Gymnorhina</i>	<i>tibicen</i>
Australian Raven	Corvidae	<i>Corvus</i>	<i>coronoides</i>
Torresian Crow	Crovidae	<i>Corvus</i>	<i>orru</i>

Fish

Common Name	Genus	Species
Sleepy Cod	<i>Oxeyeleotris</i>	<i>lineolatus</i>
Spangled Grunter	<i>Leiopotherapon</i>	<i>unicolor</i>
Archer Fish	<i>Toxotes</i>	<i>chatareus</i>

Reptiles

Common Name	Genus	Species
Two-lined Dragon	<i>Diporiphora</i>	<i>bilineata</i>
Ring-tailed Dragon	<i>Diporiphora</i>	<i>magna</i>
Bennetts Dragon	<i>Ctenophorus</i>	<i>caudicinctus</i>
Gilberts Dragon	<i>Diporiphora</i>	<i>bennettii</i>
Long-Tailed Rock Monitor	<i>Lophognathus</i>	<i>gilberti</i>
Sand Goanna	<i>Varanus</i>	<i>glebopalma</i>
	<i>Varanus</i>	<i>gouldii</i>
	<i>Varanus</i>	<i>storri</i>
Plain Ctenotus	<i>Ctenotus</i>	<i>inornatus</i>

Common Name	Genus	Species
Borroloola Gecko	<i>Gehyra</i>	<i>borroloola</i>
Spiny-tailed Gecko	<i>Diplodactylus</i>	<i>ciliaris</i>
Bynoes Gecko	<i>Heteronotia</i>	<i>binoei</i>
Marbled Velvet Gecko	<i>Oedura</i>	<i>marmorata</i>
Zig-Zag Gecko	<i>Oedura</i>	<i>rhombifer</i>
Two-spined Rainbow Skink	<i>Carlia</i>	<i>amax</i>
Arboreal Snake-eyed Skink	<i>Cryptoblepharus</i>	<i>plagiocephalus</i>
Red-tailed Snake-Eyed Skink	<i>Morethia</i>	<i>ruficauda</i>
Eastern Lerista	<i>Lerista</i>	<i>orientalis</i>
Broad-Banded Sand Swimm	<i>Eremiascincus</i>	<i>richardsonii</i>
Freshwater Crocodile	<i>Crocodylus</i>	<i>johnstoni</i>
Northern Snake-necked Turtle	<i>Chelodina</i>	<i>rugosa</i>
Keelback Snake	<i>Tropidonophis</i>	<i>mairii</i>
Mulga or King Brown Snake	<i>Pseudechis</i>	<i>australis</i>
Green Tree Snake	<i>Dendrelaphis</i>	<i>punctulata</i>
Black Whip Snake	<i>Demansia</i>	<i>atra</i>
Red-Faced Turtle	<i>Emydura</i>	<i>victoriae</i>

Amphibians

Common Name	Genus	Species
Cane toad	<i>Bufo</i>	<i>marinus</i>
Knife-footed Frog	<i>Cyclorana</i>	<i>cultripes</i>
Northern Dwarf Tree Frog	<i>Litoria</i>	<i>bicolor</i>
Green Tree Frog	<i>Litoria</i>	<i>caerulea</i>
Copland's Rock Frog	<i>Litoria</i>	<i>coplandi</i>
Peter's Frog	<i>Litoria</i>	<i>inermis</i>
Rocket Frog	<i>Litoria</i>	<i>nasuta</i>
Pale Frog	<i>Litoria</i>	<i>pallida</i>
Roth's Tree Frog	<i>Litoria</i>	<i>rothii</i>
Red Tree Frog	<i>Litoria</i>	<i>rubella</i>
Tornier's Frog	<i>Litoria</i>	<i>tornieri</i>
Wotjulum Frog	<i>Litoria</i>	<i>wotjulumensis</i>
Ornate Burrowing Frog	<i>Limnodynastes</i>	<i>ornatus</i>
Northern Spadefoot Toad	<i>Notaden</i>	<i>melanoscapus</i>
Bilingual Froglet	<i>Crinia</i>	<i>bilingua</i>
Remote Froglet	<i>Crinia</i>	<i>remota</i>
Floodplain Toadlet	<i>Uperoleia</i>	<i>inundata</i>
Stonemason Toadlet	<i>Uperoleia</i>	<i>lithomoda</i>

APPENDIX 2 GADANJI CULTURAL HERITAGE

Story of Emu (Jagududgu) and White Cockatoo (Barrawulla)

“One day when the time was right the Emu (Jagududgu) decided to leave Marawali (Nutwood Downs) which was his birthplace or dreaming and travel the dreamtime trail. He journeyed as far as Carawalala (Eastern Creek) in company with the Devil Devil (Karajali). Here they separated and the Karajali carried on down the left hand side of the trail to devil hill whilst the emu travelled on the right to Garambirini where he rested for a while. After resting Jagududgu had a corroboree.

He was joined in this corroboree by the white cockatoo (Barawulla) who was born at and still lives at Garambirini and who never travelled far from his dreaming place which is marked to this day by a pale stone high up in the escarpment, looking out over the main waterhole.

When he had rested enough he then started down Emu Creek (Lumburanyi) and across to the water hole known as the lakes (Baranbani) on Spring Creek Station. Then straight across the top of Spring Creek Station to the headwaters of the Wearyan actually to the gorge known as Malanja, or Malanja Munya, where he rested and left his mark in the form of a large rock in the middle of the river.