

# Litchfield National Park



## Environmental Education Campground

### Teacher/Group Leaders Handbook





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# Section 1

## PARKS AND WILDLIFE AND THE COMMUNITY

One of our commitments at Parks and Wildlife is to work with the community to manage and conserve the Northern Territory's natural heritage while providing recreational opportunities for use and enjoyment by present and future generations.

To undertake this Parks and Wildlife conducts a variety of community education and liaison initiatives. A number of these are focused on helping to foster an environmental appreciation in young people. The philosophy is that people who have had positive environmental experiences and who use and value the natural environment are more likely to protect it. This will help to ensure that the natural values of the Northern Territory remain for future generations.

The Environmental Education Camp at Litchfield National Park has been created by Parks and Wildlife to provide a stimulating and safe place for teachers to bring young people face to face with nature.

### **How to use this handbook**

This handbook is designed to provide teachers with information on facilities and educational opportunities offered by Parks and Wildlife at the Environmental Education Camp at Litchfield National Park.

The handbook is designed to be used as a reference tool. It is organised into three main sections:

- Section 1 - Orientation to the Camp and its facilities
- Section 2 - Natural environment overview
- Section 3 - Environmental education opportunities

**Using this handbook will help you plan and provide a safe and enjoyable environmental education experience.**

## GENERAL INFORMATION

### **The Top End Climate**

The climate of the Northern Territory's Top End is divided into two distinct seasons, the Wet and the Dry. The Dry is typified by warm days with cool nights and low humidity. Temperatures range from a minimum of around 20 degrees to a maximum of around 28 - 30 degrees. The Wet brings heavy monsoon rain showers and very high humidity. Maximum temperatures are around 34 - 35 degrees.

### **Introduction to Litchfield**

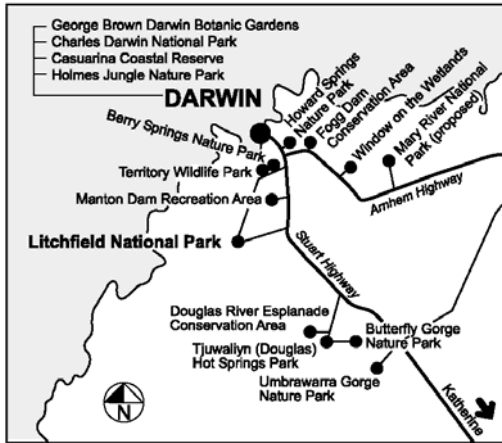
Litchfield National Park is one of the Northern Territory's most popular and accessible National Parks. Its beautiful watercourses, spectacular waterfalls and diverse habitats make it one of the most attractive parks in Australia's tropical north. Covering approximately 1,500 km<sup>2</sup> the Park contains examples of most of the habitats found in the Top End. Considering the abundance of freshwater and the Parks' relatively undisturbed nature, the diversity of plants and animals is comparable to other similar Top End areas like Kakadu.

### **How to Get There**

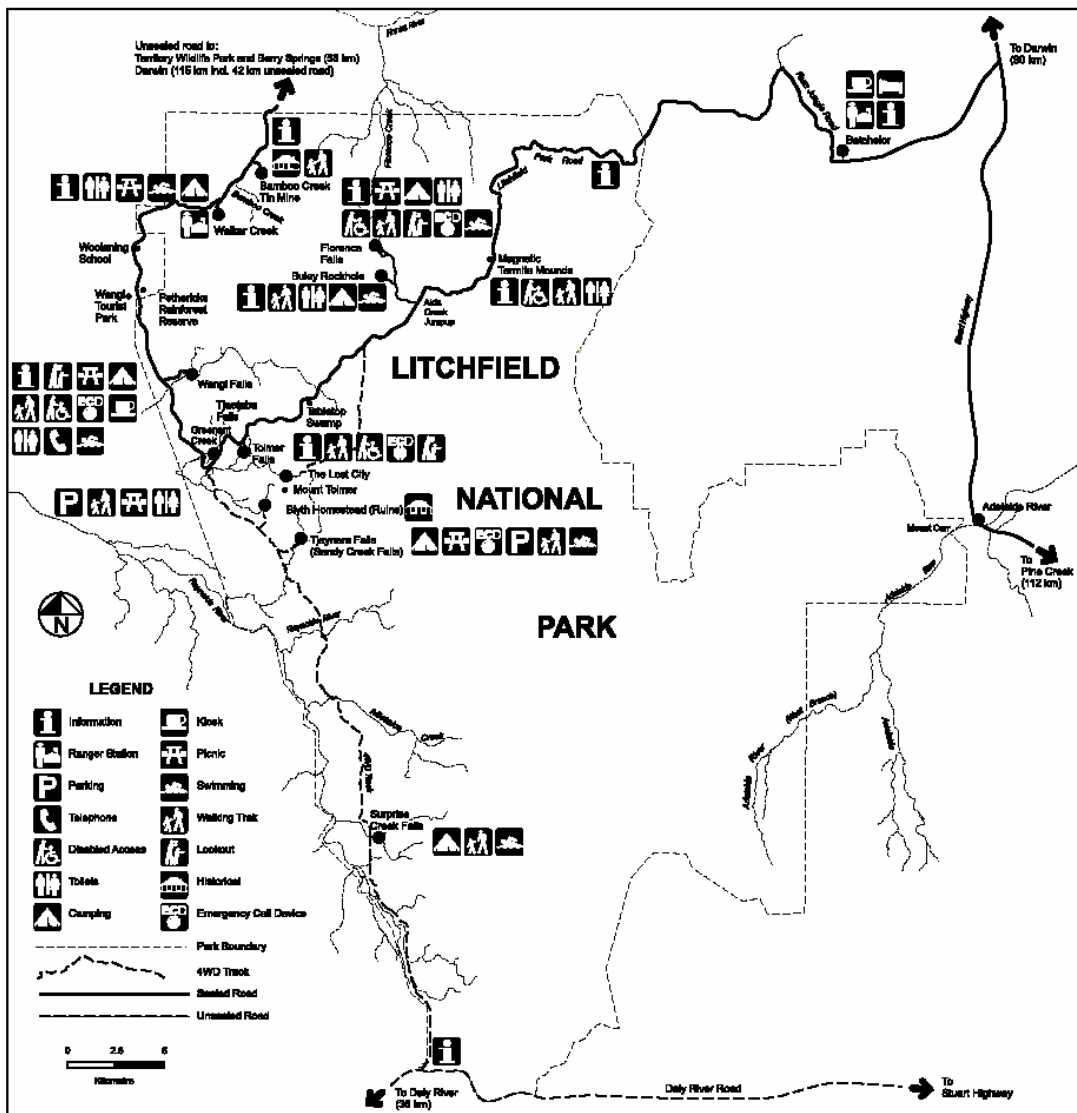
The Park is approximately a 1½ hour drive southwest from Darwin or approximately a 3-hour drive north from Katherine.

**2WD Access:** Via the Stuart Highway and Batchelor township. The Stuart Highway and roads from Batchelor are sealed. Once you are in the park, sealed roads link the popular sites.

**4WD Access:** If you have a 4WD you can also get into the Park via the Stuart Highway, Cox Peninsular and Litchfield Park Road. The Litchfield Park Road from the Cox Peninsular Road to the Parks northern boundary is not sealed. This section is often corrugated and the towing of trailers and caravans is not recommended.



Wet season rains (between October and April) flood the lowlands in the Park and may make it impossible to get to some areas. Check road conditions by calling the Road Information Service 1800 246 199 or Ranger staff at either Batchelor (08) 8976 0282 or Walker Creek (08) 8978 2302.

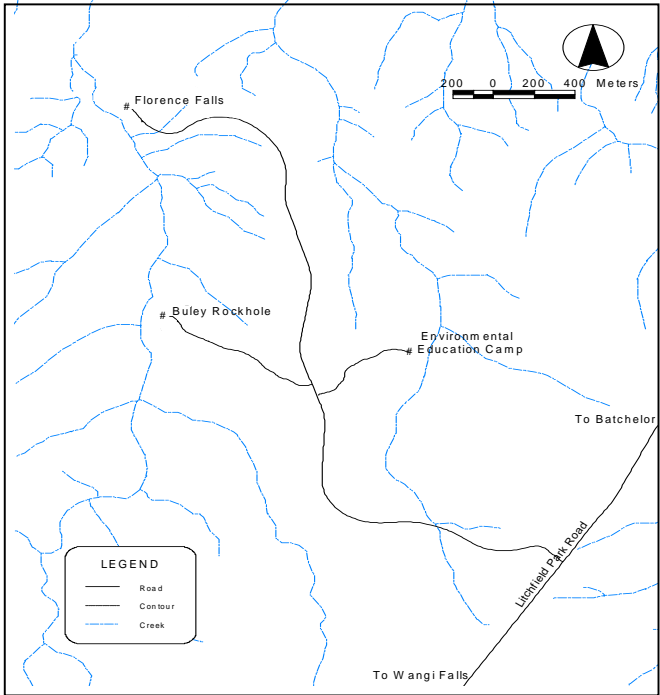


# THE ENVIRONMENTAL EDUCATION CAMPGROUND

The Environmental Education Camp offers diverse, enjoyable and safe opportunities to experience and learn about the Top End and its natural environment. The site is located adjacent to a small creek and is surrounded by a number of habitats that are common throughout the Park. Therefore you won't need to travel far to experience the diversity of Litchfield. Facilities include a large shelter with a kitchen, a separate ablution block and a grassed camping area. More details are provided under Site Information.

### How to Get There

Once in the Park, follow the Litchfield Park Road to the Florence Falls / Buley Rockhole turnoff. The entry road to the camp is located 2km along this road opposite the Buley Rockhole turnoff.



Distance from Environmental Education Campground to:	
Batchelor.....	42.5 kms
Termite Mounds.....	8.5 kms
Florence Falls.....	3 kms
Buley Rockholes.....	1.5 kms
Tabletop Swamp.....	11.5 kms
Tolmer Falls.....	17 kms
Greenant Creek.....	19 kms
Sandy Creek.....	30 kms
Wangi Falls.....	27.5 kms
Walker Creek.....	42 kms
Bamboo Creek.....	44 kms

### Fees and Charges

Camping fees for the site are in accordance with the Parks and Wildlife Commission camping fees 'Category C' - youth or outdoor education camping areas. The overnight fee is \$3.30 per adult; \$1.65 per child (5-15 years); and \$7.70 per family (2 adults and 4 children).



## **Group Size**

Groups are usually limited to 40 children plus adult helpers.

## **Length of Stay**

Maximum length of stay is 3 nights; requirements beyond this should be discussed on booking.

<h2><b>BOOKING PROCEDURE</b></h2>
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1. Phone Litchfield National Park, Batchelor Office on **(08) 8976 0282** to discuss availability and pencil in a booking. This must be done well in advance of your intended visit (minimum 3 weeks).
2. Park staff will then send/fax you a booking form.
3. Complete and return the booking form to confirm your booking.
4. You must re-confirm your attendance at least three working days prior to your arrival and arrange collection of the key.
5. After your visit return the key to the rangers and confirm total camper numbers.
6. An invoice will then be created and sent out for payment of camping fees

**Booking forms are at the end of this booklet.**

## **Cancellations**

If for any reason you need to cancel your booking, **please** ring our Batchelor office on 08 89760282 and inform park staff as soon as possible.

## SITE INFORMATION

### Site Access

Access is via a locked gate and a formed gravel road opposite the Buley Rockhole turn-off. The gate should be kept locked at all times and you will have to make arrangements with Park staff to collect a key.

### Communal Shelter with Kitchen and Store Room

Large rectangular open-sided structure with a concrete floor and a colour bond roof. Incorporating a lockable kitchen / preparation area and a separate lockable store room.



### Kitchen

Included within the kitchen are the following:

- 4 burner gas stove and griller
- 220L gas fridge
- ample stainless steel preparation surfaces
- double stainless steel sink

## Designated Parking

A turnaround area is near the shelter with provision for parking. **Please do not drive vehicles or trailers upon the grassed camping area.**

## Camping Area

Located adjacent to the shelter. Large lawned area suitable for approximately 20, 2 person-style tents.



## Campfire Area

- Large gas barbecue (please advise Rangers if needed before your stay)
- Fire pit
- Firewood
- 5 log bench seats



## **Ablution Block**

- Male - 2 toilets, 2 showers, 1 urinal and communal changing area
- Female - 3 toilets, 3 showers and communal changing area
- Disabled - toilet, shower and changing area.



## **Power**

Solar electricity to run the lights and ceiling fans. If you need to run any other electrical appliances please speak to Park staff. Remember to turn off all fans and lights before you leave.

## **Lights**

Fluorescent lights in shelter, kitchen / store and ablution block. Please use these sparingly as the camp is only run by solar electricity, and the batteries may run flat.

## **Water**

Cold and solar hot running water is available in the kitchen and ablution block, outside taps are also provided at these points. Any water taken from here **must** be boiled before drinking.

## **Gas**

Gas is used to run the fridge and stove in kitchen and barbecue in campfire area.



### **Camp Furniture**

- 8 trestle tables (2.4m x 0.6m)
- 48 plastic outdoor chairs

### **Miscellaneous Items**

- Rubbish bins and bin liners
- Cleaning agents (disinfectant, mop, buckets, brooms)
- Toilet paper

(These items are available from the main storeroom next to the kitchen, or the storeroom located at the far end of Ablution Block)

## **HEALTH AND SAFETY**

To ensure that your group has a safe and enjoyable stay please take notice of all Park signs and use caution and common sense. Please consider the following:

### **First Aid Kit**

Bring a comprehensive First Aid Kit adequate for the needs of your group.

### **Heat Illness**

Due to the climate in the Top End we recommend your group do the following: wear loose-fitting and light coloured clothing, use sunscreen, wear a hat, drink and carry plenty of water and walk in the cool of the day.

### **Swimming**

There are many designated swimming areas in Litchfield National Park. At the campsite swimming is available in the small creek adjacent to the shelter and on the map where indicated.

Swimming areas are not fenced. Enter the water with extreme caution. Please ensure your group is fully supervised while in and around swimming areas.

## **Biting Insects**

Protect your group from biting insects:

- Mosquitoes are present all year, especially at night.
- cover up - wear light, long sleeved / legged clothing.
- use an insect repellent containing DEET (Aerogard or Tropical Strength Rid)
- wear socks and closed shoes .
- do not sit or lie on bare ground or grass - use suitable ground cover.
- Use mosquito nets or mosquito proof tents.

## **Tropical Diseases**

Diseases can be acquired from this environment. Protect yourself from Scrub Typhus and Ross River / Barmah Forest Virus.

Microscopic bush mites on grasses and bushes transmit Scrub Typhus, avoid sitting on bare ground or grass and protect your legs and feet when walking. Ross River / Barmah Forest Virus is transmitted by mosquitoes, cover up and use a DEET based repellent. If you develop feverish symptoms or feel unwell let your doctor know about the possibility of these illnesses.

## **Crocodiles**

Saltwater Crocodiles are found in major rivers and waterways surrounding Litchfield National Park. Swim only at designated safe swimming areas and take note of all warning signs and site closures.

## **Communications**

Public Telephones are located at Wangi Falls, 25km from the camp or at Batchelor 40km from the camp.

## **Emergency Procedures**

Should a member of your group become ill or suffer a minor injury, a Health Clinic is located in Batchelor on Pinaroo Drive. Phone. 08 89760011 (24 Hrs).

In the event of a major medical condition, injury or missing person, use an Emergency Call Device (ECD) to contact a Ranger for assistance. The closest ECD to the camp is located 3kms away at the Florence Falls car park. Other ECD's can be found at Tolmer Falls, Wangi Falls and Sandy Creek Falls.

## **Drinking Water**

Water provided at the camp is untreated creek water, it **must** be boiled before drinking.

## **THINGS TO BRING**

Pots, pans and kitchen utensils

Crockery and cutlery

Kitchen cleaning agents (e.g. dishwashing liquid, sponges, scourers, tea towels etc.)

Teaching aids

Water storage containers

Drinking water (if you're not prepared to boil the water available at the site)

Comprehensive first aid kit

Extra lights (beyond those present in the shelter shed)

All camping equipment

All food

Any extra tables and chairs (beyond those provided)

Torches

## **YOUR RESPONSIBILITIES**

You are responsible for the general cleanliness and tidiness of the camp and its facilities.

Please report any problems, faults or breakages to a Ranger who will arrange to meet you before you leave.

## **During Your Stay**

### **Park Facilities and Equipment**

Look after your Park facilities and equipment as they are provided for everyone's convenience and enjoyment.

## **Camp Fires**

If you need a fire, light a small one in the fireplace provided. Dead timber is part of the natural environment. Only use wood from the woodpile provided and please use sparingly.

## **Food Scraps**

Keep the wildlife wild. **Do not** feed the mammals, birds or fish. Don't leave food scraps around; they may change the diets of local animals.

## **Rubbish**

Bins are provided at the site, please ensure they are used. If walking take plastic bags to carry rubbish back to the camp. Please take away any rubbish that can be recycled at the Darwin Recycle Centre.

## **When You Leave**

### **Rubbish**

Ensure the grounds are litter free and take all rubbish with you. For your convenience there are community rubbish dumps in Batchelor (free) and Berry Springs (fees may apply). Darwin Recycling Centre (free)

### **Kitchen**

Ensure that all kitchen facilities and surfaces are clean.

### **Ablution Block**

Ensure that all showers, toilets and floors and hand basins are clean and resupplied for the next group.

### **Camp Equipment**

Ensure that all camp tables and chairs are clean and placed back into the storage room.

### **Education Equipment**

Ensure that all education equipment and materials used during the camp are placed back into the storage room.



## CAMPING WITH CARE

Litchfield National Park is a special place. It is a fragile natural environment. Please help us look after it by ensuring you and your group follow these easy rules:

### Manage rubbish

- Don't litter, use the bins provided.
- Collect what others have left behind.
- School groups are asked to separate and bag recyclable and non-recyclable rubbish and dispose of it at recycling depots outside the Park.

### Prevent erosion

- To keep the banks strong, use the water entry points provided
- Stay on the tracks and paths
- Leave stones and logs where they are.

### Keep the water clean

- Use the facilities provided for toileting and washing.
- Don't pollute it with soap or detergent, toilet waste, sunscreen, insect repellent or rubbish.
- Remember, your drinking water comes from this creek.

### Keep the plants and animals healthy

- All plants and animals are protected. Look, photograph or sketch plants and animals but don't pick or disturb them or take them out of the Park
- Pick up any rubbish which might be eaten by or harm animals.
- Dead timber provides homes for animals so use the firewood provided.

### Keep animals wild

- Easy pickings and free food change the diet and habit of local animals.
- Don't feed the fish, birds, bandicoots or any other animals except yourselves!

### Keep fires under control

- Don't play with fire.
- Only use the fireplaces provided.
- Put fires out before you leave.

## Section 2

### Natural Environment Overview

The natural features of Litchfield National Park include sandstone ranges, constantly flowing waterfalls and rivers, an abundance of plant and animal life and a variety of easily accessible habitats. The Park provides unlimited opportunities to experience appreciate and learn about nature. Educational opportunities range from plant and animal identification and habitat studies to broader themes including the flows and cycles of life in natural ecosystems.

The Park offers a variety of aesthetic values, which relate to its natural beauty, spectacular scenery and many areas of contrast, tranquillity and solitude. These qualities provide a variety of opportunities for artistic pursuits and may stimulate, or be a focus for artistic expression. Experiences gained on the Park may be related through poetry, photography, painting, use of senses and other forms of nature appreciation.

The cultural values of the Park derive from its Aboriginal and European history. The Marununggu, Werat, Koongurrukun and Waray Aboriginal people have a long association with the land and many of the features on the Park are of great significance to them. European history has left its mark on the park in the form of an old tin mine at Bamboo Creek and the historic Blyth Homestead. Both of these areas provide an insight into the early years of European life in the area. A variety of educational opportunities may be pursued though the cultural aspects of the Park such as studies of early European history/lifestyles in the Territory and appreciation of Aboriginal perspective's of the land including the use of the bush for medicine and food.

## Litchfield's Habitats

A habitat describes the place where one or many things live. Litchfield National Park boasts a variety of different habitats that are home to numerous plant and animal species. Some of these habitats have the vegetation as the dominant visible feature, such as woodlands and monsoon forests, while in other habitats the landform is the dominant feature, such as swamps and riverine habitats. The type of habitat that dominates an area is dependant on geology, soil and surface topography as well as climate and the availability of water. Litchfield National Park can be divided into two main areas, sandstone ranges and lowland areas. Habitats found on the Park may occur in one or both of these areas.

### Woodlands

Woodlands cover approximately 85% of northern Australia and they are the most common vegetation type in Litchfield National Park. These woodlands are dominated by a variety of Eucalypt (Gum) trees whose canopy is well spaced and allows sunlight to penetrate and promote the growth of a variety of shrubs, herbs and grasses.

Woodlands vary in their composition depending on their topographic location, the availability of water and suitability of soils. In Litchfield National Park different types of woodlands can be found on plains and hills, in rocky areas, along rivers and creeks and around swamps. The most common form woodland on the park is outlined below; other woodlands will be outlined in their appropriate habitat section.

Woodlands on plains and undulating hill areas form the most common type of woodlands in Litchfield National Park. In these areas tall Darwin Stringybark (*Eucalyptus tetradonta*), Darwin Woollybutt (*Eucalyptus miniata*) and Ironwood (*Erythrophleum chlorostachys*) trees form the canopy. The lower storey plants in these woodlands include Sand Palms (*Livistonia humilis*), Screw Palms (*Pandanus spiralis*) and a variety of shrubs but a very tall grass, called Spear Grass (*Sorghum* spp), is the most dominant. This grass grows very quickly during the wet season and can reach a height of up to 3 metres. As the grass dries it encourages fire into the woodland from April through to December. Most of these woodlands burn every 1 to 2 years but many of the plants and animals have adapted to this cycle. Some plants need fire to help their seeds germinate while some animals feed on the new growth that fire promotes.



This common woodland habitat is home to many animals including Northern Brown Bandicoots (*Isodon macrourus*), Agile Wallabies (*Macropus agilis*) and Northern Quolls (*Dasyurus hallucatus*). Regularly seen birds include Red-winged Parrots (*Aprosmictus erythropterus*), Northern Rosellas (*Platycercus venustus*), Partridge Pigeons (*Petrophassa smithii*), Magpie-larks (*Grallina cyanoleuca*) and a number of Honeyeaters (*Lichenostomus* spp, *Melithreptus* spp). In April/May when the Spear Grass seeds begin to ripen many seed-eating birds can be seen enjoying the feast that they provide. Reptiles including skinks (*Carlia* spp, *Ctenotus* spp), dragons (*Diporiphora* spp), goannas (*Varanus* spp), snakes (*Liasis* spp, *Demansia* spp) and geckos (*Oedura* spp, *Gehyra* spp, *Diplodactylus* spp) are also common and are often heard escaping through the leaf litter well before they are seen.

**Where to look for Woodland Habitats:**

- On the drive between Lost City turn-off and Tabletop Swamp.
- The Shady Creek Walk at Florence Falls.



## Rocky Country

On rocky hills, ridges and outcrops soil is scarce and little water is available. In these areas woodlands don't grow to the height of those on the plains. Here hardy trees such as Scarlet (*Eucalyptus phoenicea*), Emu Apple trees (*Owenia vernicosa*) and Northern Cypress Pines (*Callitris intratropica*) can be found. Lower storey plants include Cycads (*Cycas sp.*) and a variety of shrubs including the Kapok Bush (*Cochlospermum fraseri*) and Turkey Bush (*Calytrix* spp). *Hoya* an unusual and easily identified succulent plant can also be found scrambling over rocks or dangling from cliff edges. Spinifex hummock (*Triodia* spp) grasses usually form the ground cover although Spear Grass may also be present.



The Northern Cypress Pine is of particular interest because it only grows in small, scattered patches in rocky areas. This tree cannot withstand fire on a regular basis and rocky areas where fire cannot penetrate help to ensure that they are almost always protected. These rocky areas may also be a refuge for a variety of animals, such as possums, when fires are a threat.

Animals found in these rocky areas include Common Rock Rats (*Zygomys argurus*), Northern Quolls (*Dasyurus hallucatus*) and Short-eared Rock Wallabies (*Petrogale brachyotis*). A multitude of geckos and skinks can be seen and heard amongst the rocks and spinifex. Regularly seen birds include

Pied-butcherbirds (*Cracticus nigrogularis*) and Great Bowerbirds (*Chlamydera nuchalis*). In these rocky areas you may find a bower which has been constructed of twigs by the male Bowerbird to attract the females. The bower is usually adorned with a variety of white objects including pebbles, old snail shells and pieces of bone.

#### **Where to look for Rocky Country Habitats:**

- On the walk at the Environmental Education Camp.
- Loop walk at Tolmer Falls
- The Shady Creek Walk at Florence Falls

#### **Swamps**

Swamp areas, which remain wet through most or all of the year, are refuge areas for many plants and animals through the dry season. Paperbarks (*Melaleuca* spp) are the dominant trees often forming dense stands around the swamp's margins. These trees have nectar rich bottle-bush shaped flowers from April to November and attract a variety of birds. Other common trees include Fern-leaved Grevilleas (*Grevillea pteridifolia*) and Banksias (*Banksia dentata*). A variety of sedges, grasses and herbs including orchids and fringe lilies can be found growing around the moist swamp edge. Aquatic plants like white and yellow Snowflake Lilies (*Nymphoides* spp) and Water Lilies (*Nymphaea* spp) can be seen floating on the water surface.





A wide variety of bird life can be observed around the swamp. Waterbirds including Cormorants (*Phalacrocorax* spp), Egrets (*Egretta* spp) and Ibis (*Threskiornis* spp) can regularly be seen and when the Grevilleas and Paperbarks (*Melaleuca* spp) are in flower Honeyeaters and Friarbirds (*Philemon* spp) are prolific. Freshwater Crocodiles (*Crocodylus johnstoni*) and turtles (*Chelodina* spp, *Eseya* spp) may also be in residence but are rarely seen. Frogs (*Litoria* spp, *Limnodynastes* spp, *Uperoleia* spp) start to become active with the first rains and are numerous throughout the wet season.

#### **Where to look for Swamp Habitats:**

- Tabletop Swamp

#### **Riverine**

Fresh water river systems in the Top End form narrow corridors of lush vegetation that contrast greatly against the much harsher, drier surrounding woodlands. Woodlands along watercourses usually have a denser canopy of trees than other woodlands. Trees may include Leichhardt Trees (*Nauclea orientalis*), Ti-trees (*Leptospermum longifolium*) and Paperbarks (*Melaleuca* spp). The canopy created by these trees allows a variety of soft, broad-leaved shrubs and annual herbs and grasses to grow as an understorey.



In Litchfield National Park many of the river and creek systems are unique because they flow all year round. This constant flow of water is due largely to the sandstone, which forms the Tabletop Range. The sandstone is very porous and during the wet season, when rain is plentiful, it acts much like a sponge soaking up large volumes of water. In the dry season water seeps from the sandstone and continually fills the creeks and rivers until the next rains.

The constantly flowing rivers and creeks in Litchfield have allowed large populations of many common riverine plants and animals to become well established. A variety of frogs and fresh water fish have been recorded in the Parks, rivers and creeks. While many of the birds found here are also dependent on the Park's wide spread permanent water supply.

Seed eating birds like Double-bar Finches (*Poephila bichenovii*) and Red-winged Parrots (*Aprosmictus erythropterus*) are never far from water. Reptiles too, take advantage of the abundance of water and the large Merton's Water Monitor (*Varanus mertensi*), which feeds mainly on fish and frogs, can often be observed around the numerous water holes, rivers and creeks. Some of Litchfield's waterways also contain populations of saltwater (*Crocodylus porosus*) and freshwater (*Crocodylus johnstoni*) crocodiles.

**Where to look for Riverine Habitats:**

- On the walk at the Environmental Education Camp.
- The Shady Creek Walk at Florence Falls.
- The walk from Buley Rock Hole to Florence Falls.

**Monsoon Forests**

Monsoon forests occur in small, widely separated patches across northern Australia and range from coastal areas to as far inland as Mataranka. They vary in their composition depending on their topographic location, the availability of water and suitability of soils. They occur on rocky outcrops, along coastlines, on floodplains, in gullies and gorges and along water courses.





In Litchfield National Park monsoon rain forests are associated with creeks and springs with a year round water supply. They consist mainly of evergreen plants that come in a variety of forms including palms, vines, tall buttressed trees and ferns. The upper storey plants such as Carpentaria Palms, fig trees (*Ficus* spp) and Weeping Paperbarks (*Melaleuca* spp) form a dense canopy through which little light can penetrate. A variety of vines can be seen twisting their way up through the canopy. Soft, broad-leaved shrubs and ferns form the vine forest under storey and the ground is covered with leaf litter.

Monsoon rainforest areas are home to many birds including Pied Imperial-Pigeons (*Ducula spilorrhoe*), Kingfishers (*Todiramphus* spp, *Ceyx* spp, *Dacelo* spp), Fairy-wrens (*Malurus* sp) and a variety of Honeyeaters (*Lichenostomus* spp, *Melithreptus* spp). Northern Quolls (*Dasyurus hallucatus*), Brown Bandicoots (*Isodon macrourus*) are common and Black Flying Foxes (*Pteropus alecto*) may be seen roosting in the branches. A wide variety of skinks, geckos and frogs can be found amongst the leaf litter.

**Where to look for Monsoon Forests:**

- The Shady Creek Walk at Florence Falls.
- The loop walk at Wangi Falls.
- The walk to Tjaetaba Falls at Greenant Creek.

## Section 3

### Educational Opportunities

The Environmental Education Camp at Litchfield National Park provides a wide range of opportunities in a number of key learning areas including social education, science, maths and arts.

This section of the booklet has been designed to provide teachers with background to activities that are available at the Education Campground.

Please let the rangers know what environmental subjects you are currently studying at school and they will be able to suggest activities to suit.

You will find interpretive panels with information and activities in the storeroom.

Activity boxes for a variety of different subjects and age groups are available on request. Below are just a few examples;

#### **Surviving Litchfield**

Walk/ 3 games primarily aimed at family groups /primary school. Could be suitable for all groups containing children.

Activity is designed to help you understand the different adaptations that animals have to survive in Litchfield's wide range of habitats.

( \*\*Different types of lollies are needed as the food source for animals in games eg: jaffas, snakes, marshmallows, tic tac's etc)

**Junior Rangers have a wide range of activities, which are available for use at the campground. These include;**

Food Web Game

What am I?

Tracks and Traces

Invertebrates

Snakes Alive



## **Information for Exploring Litchfield** (Interpretative panels in storage room)

### Tricky Tasks

#### Magnetic Termite Mounds

**By just looking, work out how the unusual shape of these mounds helps termites inside to survive extreme heat and seasonal flooding.**

Other termite species can avoid the extreme heat by moving into galleries deep underground. The magnetic/ meridian termites cannot do this due to the location of their mounds. Seasonal flooding waterlog their underground galleries so they need so escape from the heat another way.

These termites solve this problem by building their mound in a curtain shape and direction which keeps part of the mound at a constant temperature, this being the eastern face of the mound.

In the morning the eastern face of the mound is heated and during the hottest part of the day only the narrow knife blade edge is exposed to the sun. In the afternoon the eastern face is shaded and kept at a constant temperature by the afternoon heat and circling winds. Therefore the magnetic/ meridian mound do not function as a compass but rather a solar panel or thermostat.

For more information:

Termites of the Top End - A. Anderson, P. Jacklyn

#### Buley Rockhole

**Map the watercourse. Where has this water come from? Where is it going?**

Look at the Litchfield National Park Map or topographic map: Rum Jungle 5071-1 in 1:50,000 which has this area on it.

Also read the information about the sandstone rocks at Florence Falls and the Termite Mounds.

## **Florence Falls**

**Read the sign to discover why many of Litchfield's waterfalls flow during the dry season. What are some of the benefits of these waterfalls?**

### **Moisture control**

The native Cypress Pine and the Carpentaria Palm are rarely found growing together. One look at their very different leaves, roots and general appearance shows they must live totally different lifestyles. But here at Florence Falls these plants can be found almost side by side.

Notice though, the abrupt dividing line between the pines growing high on the slope and the palms below. Let's take a closer look at this. We should expect to find very different living conditions for the plants on either side of the dividing line.

### **Water is the Key**

During the wet season rainwater soaks deep into the sandstone rock of the Tabletop Range. It flows slowly through the rock and re-emerges as trickling springs scattered along the edge of the Range. Many of the springs flow all year round.

Above the level of the springs plants find little moisture in the upper soil and must rely on deep, penetrating roots to search for much needed water. Below the springs water is plentiful and in some places saturates the upper soil. These conditions suit fast growing plants like palms and ferns. So it is really wet season water that keeps the palms going over the long baking Dry.

### **A Moisture Trap**

Within the monsoon forest the air is still and humid. The dense canopy holds moisture in and keeps drying breezes out. Under the canopy young palms and forest creatures live a protected life. The controlled climate of the forest is very different from the relentless sun and hot, dry winds that confront the Cypress pines.

### **Water to Spare**

The trees and palms of the monsoon forest can lose a great deal of water from their large leafy crowns but this is continually replaced by water drawn up from a spring or creek.

### **Water is Scarce**

Cypress pines are not related to true pines despite their cone like fruit and 'Christmas Tree' shape. Their leaves are so small, only a millimeter long, that they lose little of the tree's hard-won water through evaporation.

\*Extra information can be found on the interpretive panels at the Magnetic Termite Mounds.

### **Tabletop Swamp**

**Look at the types of plants that grow around the edge of the swamp. Why are they different to the plants that grow in the woodland area?**

#### **Woodland**

Eucalypts (Woolly butt, Stringybark)  
Ironwoods  
Acacias  
Sorghum (Spear Grass)

#### **Swamp**

Nymphoides (Waterlillies)  
Melaleucas (Paperbarks)  
Lophostemons

Plants that are dependent on moisture live around the edge of the swamp. Plants that can live with less water can grow in the woodland.

### **Tolmer Falls**

**Identify the conflicts between visitors and bats at Tolmer Falls. Have they been resolved?**

The caves at the base of Tolmer Falls provide shelter for the important colonies of the vulnerable Orange Horseshoe and Ghost Bat species. Access to the lower pool and gorge is closed to visitors to help protect these colonies, and protect the sensitive ecology of this area.

The viewing platform was built to enable visitors to see the falls without disturbing the bat colonies.

### **Wangi Falls**

**Debate the pros and cons of feeding native animals. Should visitors be allowed to feed native animals such as goannas, kites and fish at Wangi Falls?**

#### **Pros**

- Good photo opportunity of native animals.
- Get close to the animals.

#### **Cons**

- Easy pickings and free food changes the diet and habits of native animals.

- Animals can become aggressive towards people with food, which leads to the removal of these animals from the site.
- Animals removed to another site then face rejection and competition from animals within the new site.
- Animals taking food off visitors become prone to attack or injury from predatory animals.
- Birds swooping down to grab food can scare visitors.
- Animals which are fed by visitors over a prolonged period become reliant on that food source, then if that food source is removed this could result in the death of these animals.

Maybe you can think of some more that we haven't mentioned.

### **Walker Creek**

**Create a food web. List as many plants and animals as you can from the creek and its banks and work out who eats who.**

Use the food web game to help with this task. Also use the invertebrates game to find out what small animals live in the water.

Books to help you with this activity are;

- Native Plants of Northern Australia, John Brock.
- Reptiles and Amphibians, Cogger.
- Field Guide of Birds of Australia, Simpson and Day.

### **Bamboo Creek**

**Search the ruins for heritage value. Do these ruins tell us anything about the past? Should they be conserved?**

Bamboo Creek Tin Mine was discovered in July 1905 by two prospectors, Ford and Magnus. The tin was initially processed by hand dollying or crushing and burning it between layers of corkwood. It was then bagged in small sacks and carted to the railway by horse and cart. In 1909 the mine was sold to the Chinese. In the 1940's mining was carried out with the aid of a compressor and a jackhammer.

Mining at Bamboo Creek ceased in 1951 and was finally abandoned in 1954.

Bamboo Creek and the Blyth Homestead have been nominated as prescribed Heritage Places under the *Northern Territory of Australia Heritage*

*Conservation Act 1991.* An assessment of these sites is carried out, and a plan is made of how to protect and conserve these areas from fire, rain and unmanaged visitation.

This area is a Heritage place so please do not climb on or remove any on the objects around the ruins.

### **Greenant Creek**

**What are some of the things that would need to be considered when managing this site for wildlife and visitors?**

The area around *Greenant Creek* and *Tjaetaba Falls* is considered a scared area to the traditional custodians. They ask that you only swim above the falls.

The vegetation in this area is *Monsoon Forest*, which is associated with creeks and springs with a year round water supply. This area has an abundance of flora and fauna.

There is a walking track built along the edge of *Greenant Creek* with a boardwalk going through some of the more fragile areas. This enables visitors to see this environment without causing any major impacts to the vegetation or the wildlife.

**ENVIRONMENTAL EDUCATION CAMPGROUND  
LITCHFIELD NATIONAL PARK**



**BOOKING FORM**

(\* Must be completed)

\*Name of School: \_\_\_\_\_ \*ABN: \_\_\_\_\_

\*Contact Person (Teacher in Charge or Group Leader): \_\_\_\_\_

\*Telephone: \_\_\_\_\_ Facsimile: \_\_\_\_\_ E-Mail \_\_\_\_\_

\*Postal Address: \_\_\_\_\_

\*Camping Dates – Arrival: \_\_\_\_\_ Departure: \_\_\_\_\_

Number of Adults: \_\_\_\_\_ Number of Children: \_\_\_\_\_ Total Persons in Group: \_\_\_\_\_

\*Camp Activities: \_\_\_\_\_  
(Please provide an outline of major activities you will be undertaking at the camp eg bush walking, habitat studies)

**OVERNIGHT CAMPING FEES (GST Inclusive):**

- \$3.30 per Adult per night (16 years and over)
- \$1.65 per Child per night (5-15 years)
- \$7.70 per Family per night (2 Adults / 4 Children)

☆ If you require any Ranger assisted activities please contact the number below ☆

Batchelor Office Phone: (08) 8976 0282 or Facsimile: (08) 8976 0292

**You must re-confirm your booking 3 days prior to arrival  
and arrange collection of the campground key.**

Note:

- On return of the campground key, please inform Rangers of the total number of persons per night, who camped with the group.
- If the key is returned to the key box at the office, a Ranger will phone the contact person to confirm the final camping numbers.
- A tax compliant invoice will be forwarded to the Contact Person after the departure date for payment of camping fees.

**Ranger Station Use**

Date Booking Received: \_\_\_\_\_ Date re-confirmed: \_\_\_\_\_

Keys returned to:  Ranger (name) \_\_\_\_\_  Key box (located at office)

**Final camping numbers:**

Adults \_\_\_\_\_ x \$3.30 = Children \_\_\_\_\_ x \$1.65 = Families \_\_\_\_\_ x \$7.70 =

Multiply by No. of nights \_\_\_\_\_ x \_\_\_\_\_ **Fees Due (GST Inclusive): \$** \_\_\_\_\_

Ranger Name: \_\_\_\_\_ Ranger Signature: \_\_\_\_\_

**\*\* Ranger Station to fax completed booking form to DIPE Finance Section (08) 89323 849\*\*  
\* DIPE Finance Section to create & send invoice\***