



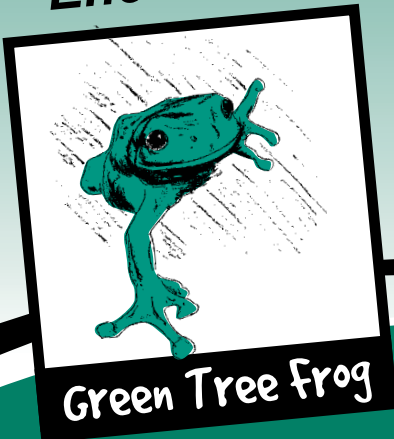
Junior Ranger

REVIEW

Issue 3 2009



URBAN Encounter



Creature FEATURE



Reader SURVEY

Prizes to be
won include
books,
vouchers
and DVD's!

2009

Creature Feature

Grim Ghost Bat

Is it true there are no vampires in Australia? Well, sort of! The Ghost Bat, *Macroderma gigas*, is the closest thing we have to a blood-sucking vampire, and it's found right here in the Northern Territory!

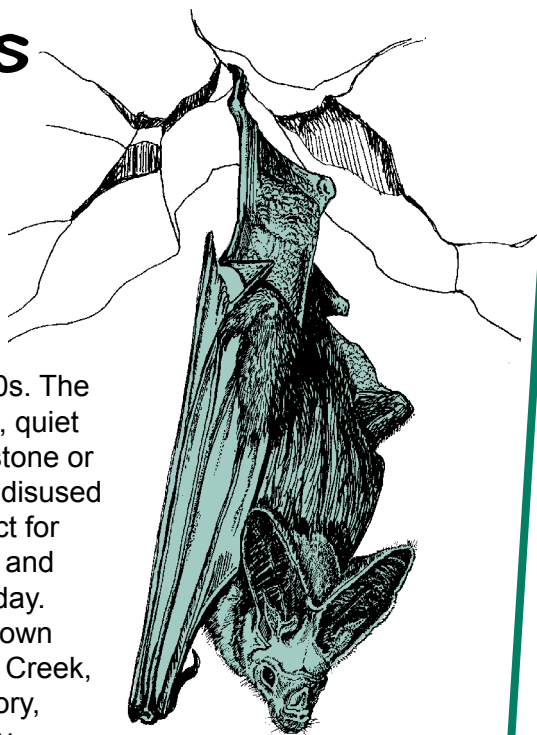
Australia's Vampire Version!

Whilst other bats in the Territory feast on insects, fruit and nectar, the Ghost Bat is the only one that really sucks blood! It is the only truly carnivorous bat in Australia, meaning insects, spiders, frogs, lizards, birds and even other bats are all on the menu! Of all the bats around the world that do this, Australia's own Ghost Bat is one of the largest. The other bats in this family of bloodsuckers (scientists call them *false vampires*) live in central Africa and southern Asia.

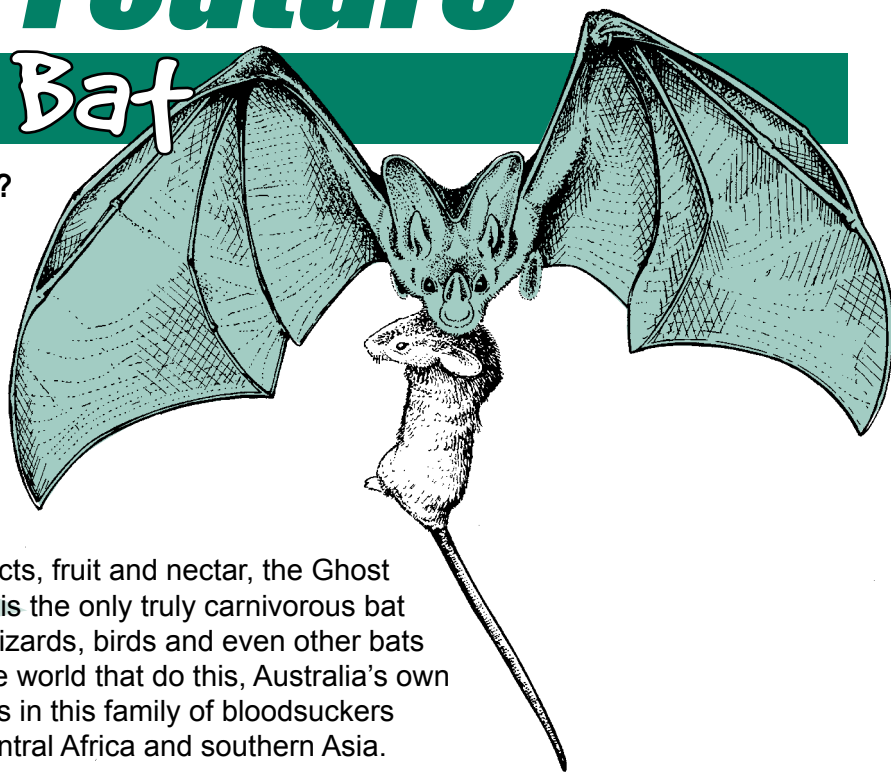
Silently swooping on its prey, on the ground or in the air, the Ghost bat wraps the victim in its wings and kills it with powerful bites to the neck. You can usually tell where a Ghost Bat has been feeding. It eats at the same place most nights leaving a telltale pile of bones littered on the ground. Its favourite places to eat are rocky overhangs and small caves.

Miners and cave dwellers

Ghost Bats now live mainly in tropical regions. Fossil records suggest they lived in arid central Australia 10 000 years ago right up until the 1960s. The Ghost Bat loves dark, quiet environments. Sandstone or limestone caves and disused mineshafts are perfect for raising their young in and resting in during the day. One of the largest known colonies is near Pine Creek, in the Northern Territory, where there are many disused gold mines.



You can find Ghost Bats roosting in caves and disused mineshafts.



G'day from Graham

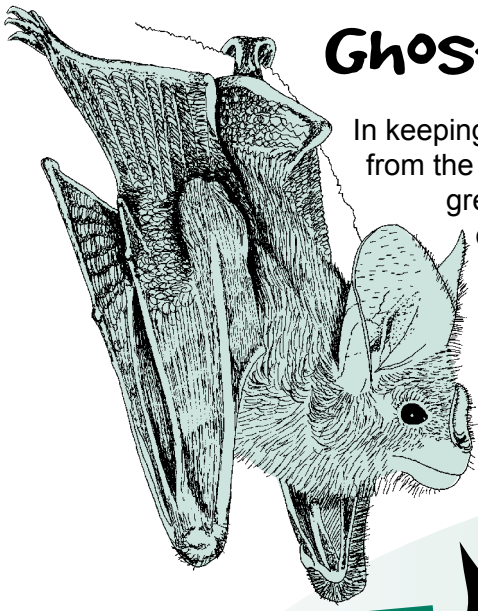
Welcome to the third edition of the Junior Ranger review for 2009. In this special edition, we've included a 'Readers Survey' for you to complete. It's your chance to let us know who our readers are, what you are most interested in, and any new suggestions on how we might make the Junior Ranger Review even more interesting in the future. To thank you for taking the time to fill out the survey you could win some great prizes – just remember to fill out and return the competition entry form!

Junior Ranger programs are in full swing across the Territory. Some of the activities that have been enjoyed are animal nightstays in the Parks around Darwin; the 'Great Dinosaur Dig' in Alice Springs; and the preparation and presentation by Junior Rangers of a local fauna walk-and-talk as part of the Katherine Festival. Well done Junior Rangers!

Thank you again for taking time to fill out our Readers Survey, and good luck in the competition!

See you out in the bush!

Graham



Ghostly!

In keeping with the spooky theme, this blood-sucking bat gets its common name from the pale colour of its fur. Ghost Bats have grey fur on their backs and pale grey or white fur on their undersides. Inland, some are paler, almost white in colour. It also has very thin wings that are almost see-through, making it appear very ghostly when it flies in the moonlight.

You can also tell the Ghost Bat from other bats by its extra large ears that join on to each other above the head, and its large eyes. It also has a funny looking leaf-like thing in the middle of its face called a *noseleaf*.

Did You Know?

The Ghost Bat is part of a group of bats known as *Microbats*. Even though it sounds like they are all small, they can be any size. The features that all microbats have in common are: they have only one claw on each limb; they fold their wings next to their bodies, rather than wrapping them around; and they are the only bats to use a tricky technique called echolocation to find their way around in the dark.



Echo what?

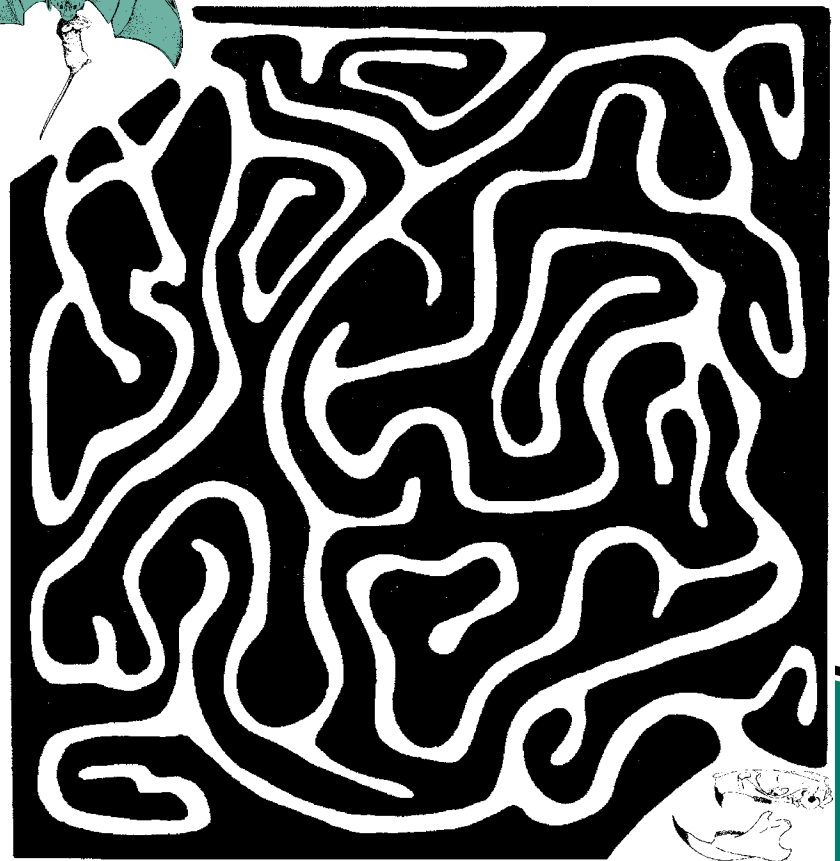
Microbats use echolocation to find their way in the cover of darkness. They make a sound and listen to how it bounces back in to their big ears - or echoes - from all the objects in their environment. Helping them to navigate, echolocation also allows them to find tiny insects to eat. Ghost Bats are special in that they use their big eyes and ears as well as echolocation to hunt for their prey. Human ears can't even hear the sound most bats make, so scientists have come up with a tricky device called a *bat detector*. Researchers have used these machines to discover that most bat species make their own special sounds, just like birds.

A microbat echolocating its moth dinner.



Echolocation - the secret language of bats

Bats use echolocation to find their way in and out of caves, and to find their prey. Use your unique bat ability to avoid dead-ends in this maze. Can you find your way back to your feeding site to add your latest dinner to the pile of bones?



On the Brink



Where have all the Water Monitors gone?

Swimming in billabongs or basking on creek banks, is a once commonly seen lizard of the Top End...Merten's Water Monitor, *Varanus mertensi*. Threatened by the cane toad invasion, they are now not so common. Suspecting they might be in trouble scientists have listed them as vulnerable to extinction!



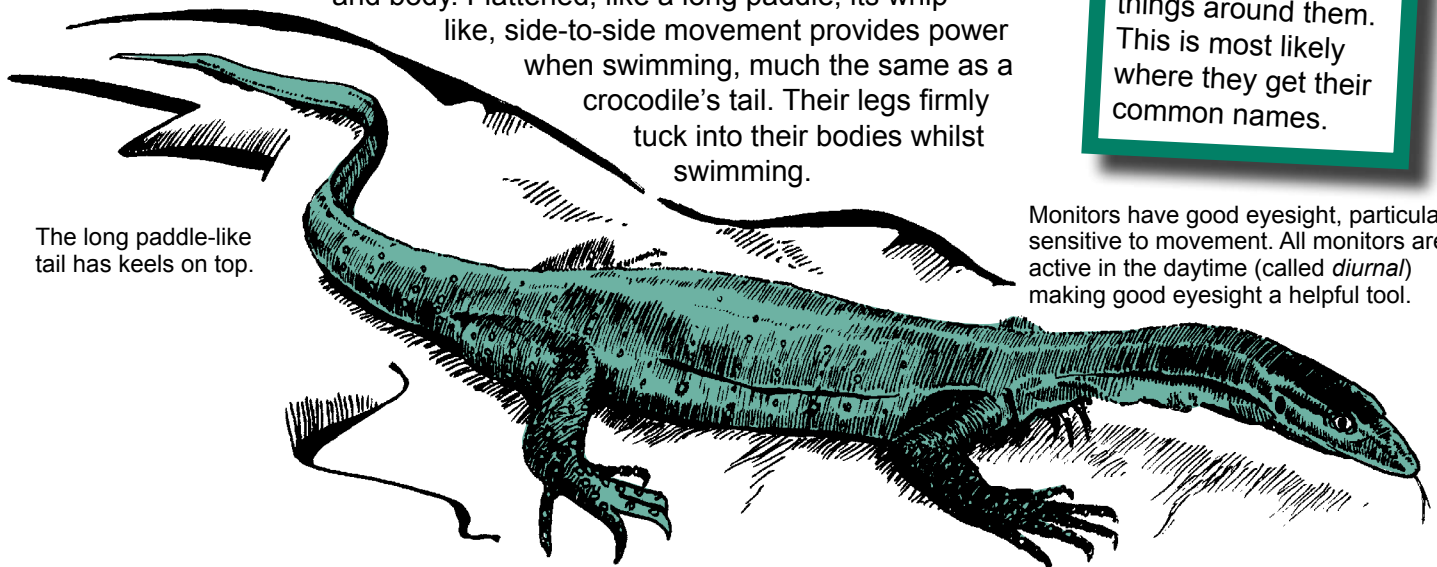
Sneaky, super swimmer

Merten's Water Monitors are equally at home in water as on land. When scared, they quickly jump into nearby water and swim away. They look for hiding places beneath submerged rocks and logs or overhanging banks. Super swimmers, their nostrils are equipped with special valves that shut tightly underwater allowing them to hold their breath for several minutes at a time. Their nostrils sit on top of their head which means they can sneak up on their prey whilst mostly submerged, much as a crocodile does. During the Dry Season, Merten's Water Monitors may live totally on land (called *terrestrial*), until the Wet Season rain returns to fill their favourite swimming holes.



Paddle tail

Measuring up to one metre long, the Merten's Water Monitor is dark brown to black on the back with lots of little cream or yellow spots. Underneath is white to yellowish with grey patterns on its throat and chest. If you happen to see one, the tail is a dead giveaway. It is much longer than their head and body. Flattened, like a long paddle, its whip-like, side-to-side movement provides power when swimming, much the same as a crocodile's tail. Their legs firmly tuck into their bodies whilst swimming.



The long paddle-like tail has keels on top.

Did You Know?

Sometimes goannas stand upright on their two hind legs. They appear to 'monitor' things around them. This is most likely where they get their common names.

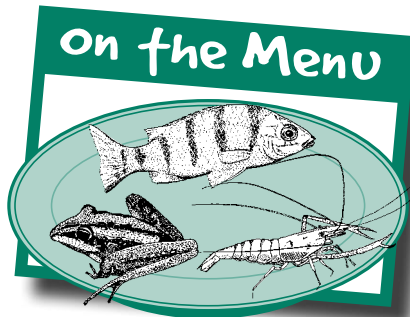
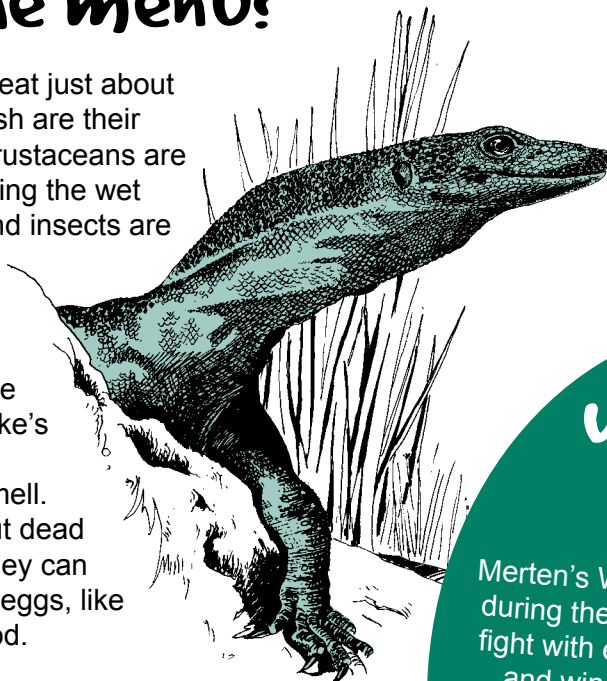
Monitors have good eyesight, particularly sensitive to movement. All monitors are active in the daytime (called *diurnal*) making good eyesight a helpful tool.

Using their limbs for climbing, wrestling and for covering distances overland makes monitors muscular lizards.

What's on the menu?

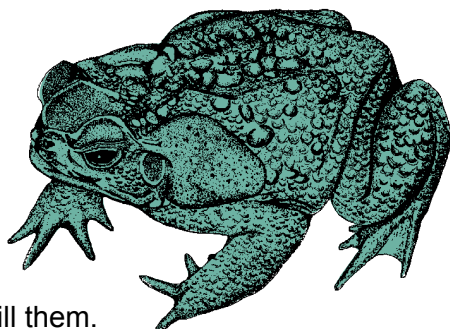
Like most monitors, Merten's will eat just about anything that comes their way. Fish are their favourite food. Frogs and small crustaceans are other tasty snacks, especially during the wet season. Birds, small mammals and insects are part of their diet if there are no fish available.

Their tongue is very interesting. It's really long with a big fork at the end and looks the same as a snake's tongue. It tastes the air and gives monitors an excellent sense of smell. It is so good that they can sniff out dead animals (called *carrion*) to eat. They can also easily find and dig up reptile eggs, like those of freshwater turtles, for food.



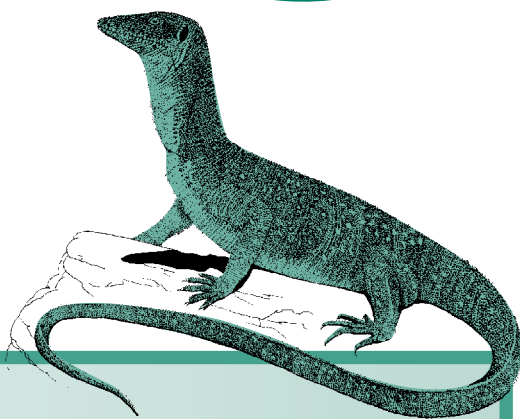
How does a toad threaten a big lizard?

The greatest threat to Merten's Water Monitors is the spread of the Cane Toad across the Top End. These monitors can easily eat toads that are big enough to poison and kill them. In some places, local populations have been completely wiped out. Plagues of toads may also compete with monitors for other prey, especially for those foods eaten by young monitors.



Wrestling for love

Merten's Water Monitors generally breed during the Dry Season. Wrestling males fight with each other to impress the girls and win the right to mate. Mums lay their eggs in a burrow in the ground, sometimes putting leaf litter in with the eggs before covering the hole. The eggs, usually about nine of them, hatch between six and nine months later. Emerging babies have to survive all on their own.



call me by my Aussie name

In Australia, most of us call monitors by another name. The early European settlers gave the name to them. They thought our monitor lizards looked like the South American Iguanas. This name sounds a bit like the last word. Use the grid to decode what we call monitor lizards.

2▲5★1●4★4★1●4■

□ □ □ □ □ □ □

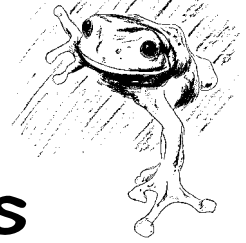
	1	2	3	4	5
●	A	B	C	D	E
▲	F	G	H	I	J
★	K	L	M	N	O
■	P	Q	R	S	T
◆	U	V	W	X	Y

Urban Encounter



Gorgeous Green Tree Frogs

Most of us who live in the Northern Territory will know the Green Tree Frog, *Litoria caerulea*. Not only are they bright green and larger than most other frogs, they have easily adapted to living with us in our homes, especially in the wet season!



Frog facts and features



Where you'll find the Green Tree Frog.

Their eyes are a beautiful golden colour and have horizontal irises, as do all the frogs in the *Litoria* genus.

As you can see from the map, this frog is common through most of the Top End. It can reach up to 10cm in length and can live for 20 years in captivity!

The Giant Tree Frog, *Litoria infrafrenata*, is sometimes confused with the Green Tree Frog. The main difference is a clear white stripe along the edge of the lower jaw of the Giant Tree Frog, which the Green Tree Frog doesn't have.

The skin of the Green Tree Frog has something in it that kills blowflies. Scientists are studying this and think it may be useful in making a natural insect repellent for humans. Imagine! Wearing Green Tree Frog on your skin to keep the blowies away!

Look for this frog mostly at night when it is out in search of food. It's one of the biggest frogs in Australia, so can feed on quite large food items like small birds, mice and bats as well as insects, spiders and smaller frogs. Catching its food with its strong jaws it will often need to use a hand to force the food down. When swallowing, the eyeballs pull in under the skin to help push the food down the throat.

Large discs at the end of its toes help the frog grip while climbing. That's why they can even climb on glass.

Did You Know?

Green Tree Frogs wipe a waxy secretion over themselves to conserve moisture loss during the day. They also tuck in their legs and lower the chin to minimise their surface area.

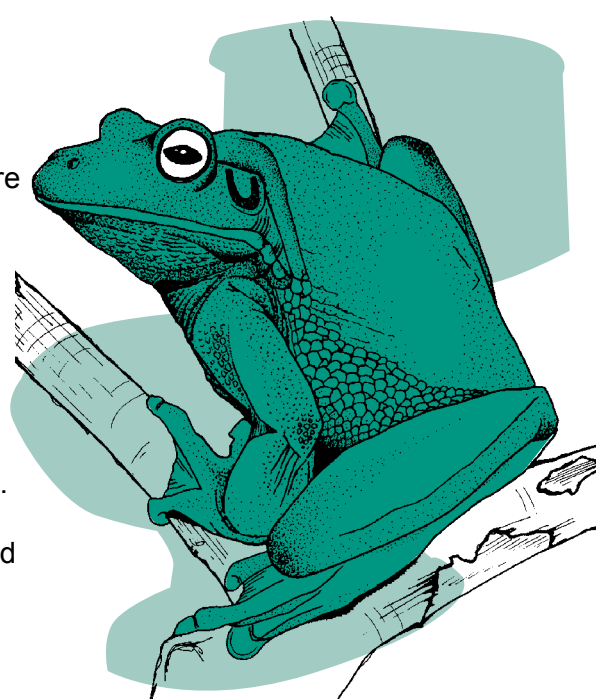
Science Snippet

Amphibian means 'dual life' and comes from the Greek words '*amphibia*' meaning both, and '*bios*', which means life. As frogs live in a water world as tadpoles and mostly on land as adults, this strange word fits them perfectly.

Household guests







Green Tree Frogs are well suited to living near human houses. They are often found on windows or inside houses, eating insects drawn by the light. Listen for them calling at night between October and March. Some frogs get together and sing like a choir at breeding time, but not the Green Tree Frog. You'll just hear one individual male calling for a female, or warning others out of its territory. These smart frogs have even figured out that when they call from hollows or drainpipes their call sounds louder!

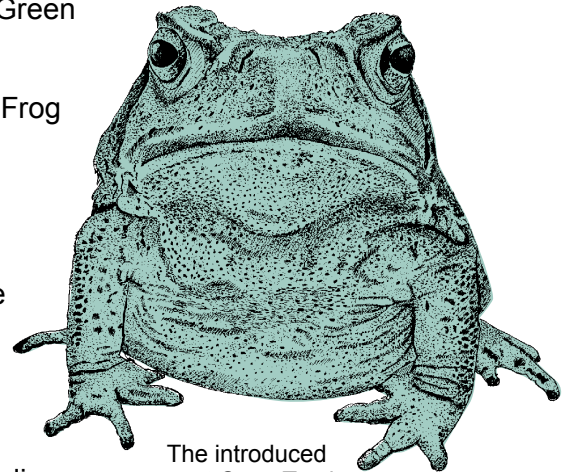
Sometimes living close to humans can be tough for a Green Tree Frog. Newspapers have reported that one made a full recovery from having its skin stitched back on after a close encounter with a lawn mower, and another was feeling ill after swallowing plastic lunch wrap.



Telling good from bad

Green Tree Frogs will often lay their eggs near our houses. Unfortunately, they often have to compete with Cane Toads, *Chaunus marinus*, for space in water and for food to grow. Next time you see eggs or tadpoles in water near your house, use the following tips to tell Cane Toad from Green Tree Frog.

-  Cane Toad eggs are in long spaghetti-like strings. Green Tree Frog eggs are in clumps.
-  Cane Toad tadpoles are black, including the underbelly. Green Tree Frog tadpoles are brown with a lighter underbelly.
-  Cane Toad tadpoles have eyes on top of the head. Green Tree Frog tadpoles have eyes towards the side of the head.
-  Cane Toad tadpoles are small (20-30mm long). Green Tree Frog tadpoles are much bigger (up to 65mm).
-  Cane Toad tadpoles have tails that are only as long as their bodies. Green Tree Frogs tadpoles have tails twice as long as their bodies.
-  Cane Toads have a fin around their tail that is almost invisible because it is transparent. Green Tree Frogs have a fin around their tails that has fine markings so it is easy to see.



The introduced pest Cane Toad.

Testing tadpole teaser

Label the two tadpoles correctly – with both their common and scientific names - using the description information on this page.

Tadpole A

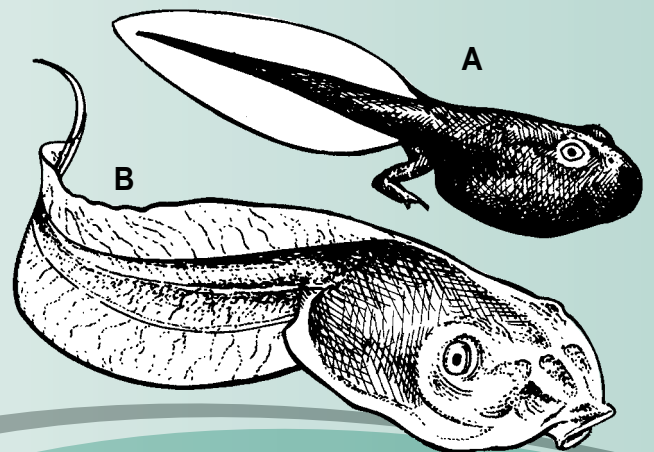
Common name:

Scientific name: _____

Tadpole B

Common name:

Scientific name: _____



Plant Profile



Cream, brush-like flowers.

Beefy Beefwood!

Scattered throughout Central Australia is a most useful tree. For thousands of years Aboriginal people have used the majestic Beefwood, *Grevillea striata*, for a wide range of purposes.

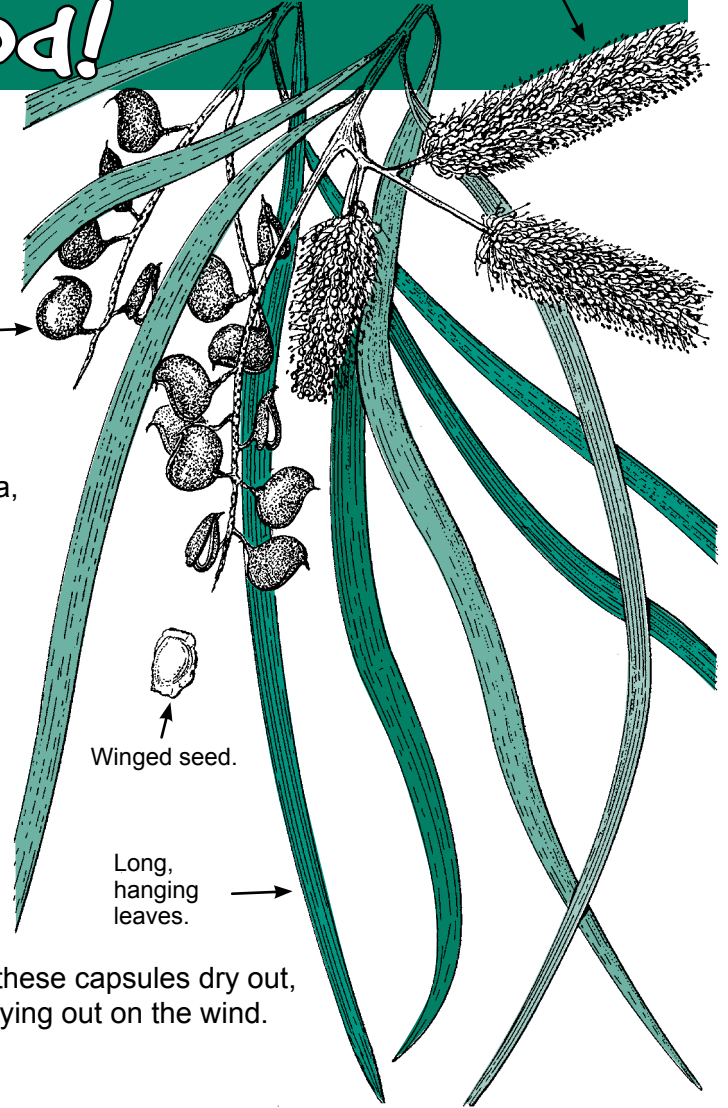
Mr Reliable

Normally found along creeklines and in flat country where the soil is fertile, the Beefwood tree is fairly common in Central Australia. It can also be found in Western Australia, South Australia, Queensland, New South Wales and Victoria.

Growing up to 9 metre high, Beefwood trees have drooping, blue-grey leaves. These very long, strap-like leaves have strong ridges underneath. The bark is dark, rough and corky. This helps to protect them from harsh Summer and Winter temperature extremes.

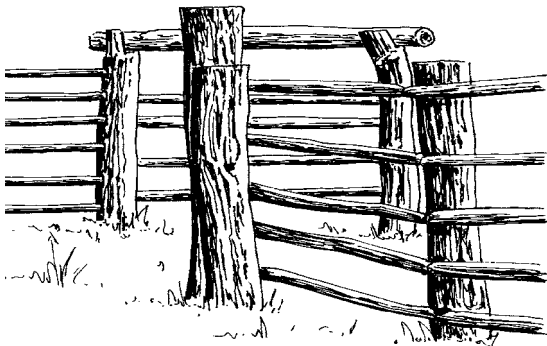
The impressive Beefwood flowers are cream to pale yellow. While many desert plants only flower in good conditions, Beefwoods are reliable – they will flower and fruit every year in Spring.

The tree also produces a small, woody seed capsule. As these capsules dry out, they crack open and send a pair of small, winged seeds flying out on the wind.



Roast beef!

The timber of the Beefwood tree is not very good as firewood but it's great for making fence posts. Early pastoralists noticed that when they cut through the tree's trunk it looked just like a raw slab of beef! That's how it got its unusual common name.

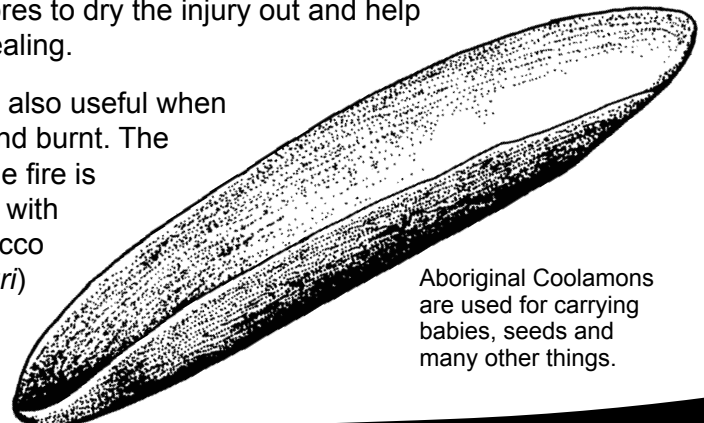


A Plant for many uses

Aboriginal people use the Beefwood tree in many amazing ways. A damaged Beefwood 'bleeds' a dark, reddish sap. This sap is mighty useful. It makes strong glue which is ideal for plugging up holes in wooden items such as Coolamons.

The sap is also a medicine. Collected when dry and hard it is ground down into a dry powder. This is dusted over burns or sores to dry the injury out and help promote healing.

The bark is also useful when collected and burnt. The ash from the fire is then mixed with native tobacco (called *Pituri*) to make it stronger.



Aboriginal Coolamons are used for carrying babies, seeds and many other things.

Home amongst the treetops!

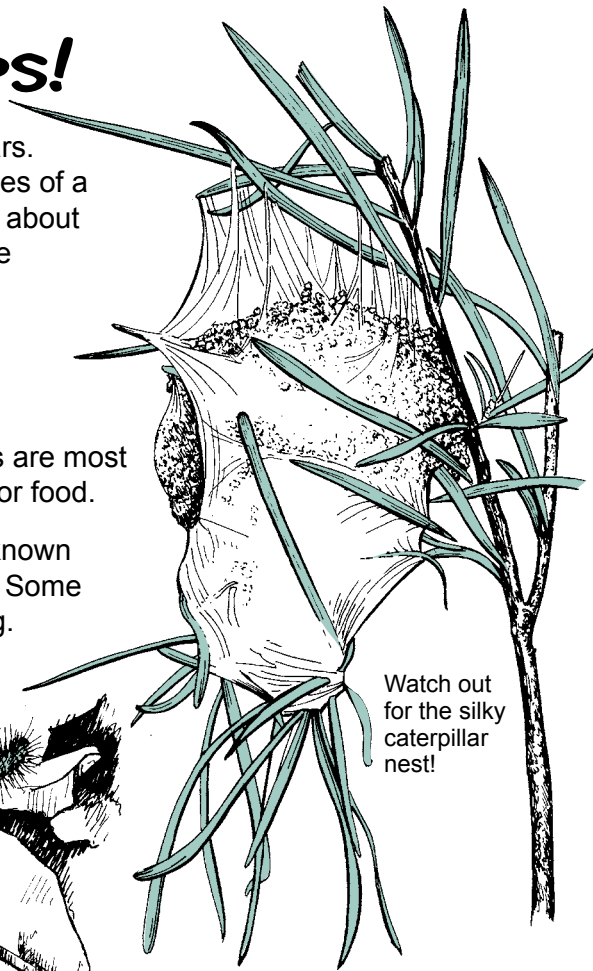
Calling the Beefwoods home are the amazing Processionary Caterpillars. These incredible caterpillars build a large, silk nest in the upper branches of a few kinds of tree but they really seem to prefer Beefwoods. The nest is about half the size of a football. Processionary Caterpillars eventually become moths called Bag-shelter Moths, *Ochrogaster lunifer*

Follow the leader

Moving in one, very long line, head to tail for protection, the caterpillars are most active in late Summer and Autumn, leaving their nest to go searching for food.

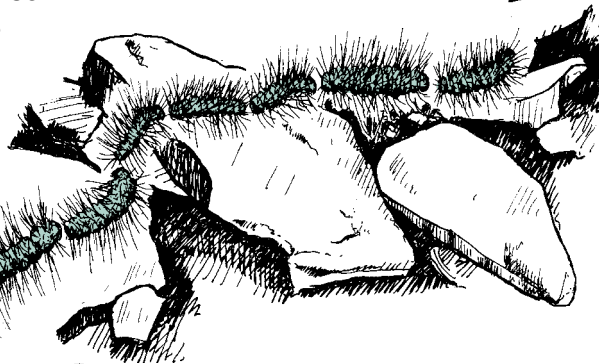
Watch out; don't touch these caterpillars or their nests! They are also known as 'Itchy Grubs' but you can get a lot more than just an itch from them. Some people can have severe allergic reactions which can be life threatening.

Scientists think that Beefwoods also play an important role in the lives of many other insects. Its flowers provide a reliable food source for native bees and other nectar feeders.

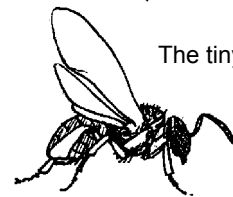
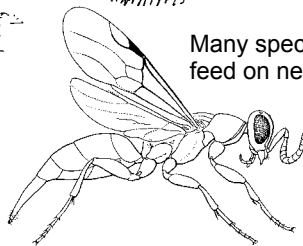


Watch out for the silky caterpillar nest!

Caterpillars on the march to a new feeding site,



Many species of wasps feed on nectar as well.



The tiny Native Bee.



The Bag-shelter Moth.

N	Y	I	M	C	F	E	C	G	I	P
E	K	S	O	A	O	N	O	N	N	A
C	R	L	T	T	O	I	O	I	S	S
T	O	A	H	E	T	C	L	L	E	D
A	C	B	S	R	B	I	A	A	C	E
R	K	F	S	P	A	D	M	E	T	S
N	N	E	I	I	L	E	O	H	S	E
E	U	E	L	L	L	M	N	T	C	R
S	R	B	K	L	H	Y	S	G	R	T
T	T	U	B	A	R	E	W	O	L	F
S	E	E	D	R	R	E	D	W	O	P

Beefwood boxed wordfind

Find all the Beefwood words below in the letterbox to uncover the 'secret' other name for the Processionary Caterpillar.

- BEEF
- HEALING
- SAP
- CATERPILLAR
- INSECTS
- SEED
- COOLAMONS
- MEDICINE
- SILK
- CORKY
- MOTHS
- SLAB
- DESERT
- NECTAR
- TRUNK
- FLOWER
- NEST
- POWDER
- FOOTBALL

Discovering Outdoors



Poo Clues

Finding Australia's animals in the bush can be hard. Many are nocturnal, secretive and most are scared of us. Have a go at becoming an 'animal detective' and learn more about animals by investigating the poo clues they leave behind.

The scoop on poop

Many animals produce very distinct droppings. Studying scats may not be everyone's idea of fun, but scats are a very useful tool that can tell us:

- What kind of animal did the deed;
- When the animal was in the area;
- What the animal ate;
- Approximate size of the animal; and
- How healthy the animal is.



Some animals, such as foxes, use poo as a territorial marker. They make sure to leave it in a very visible place!

Toilet talk

Poo, poop, droppings, dung... these are words we use to describe animals' waste. However, Scientists use the Greek word 'scat', which means excrement or faeces.

Scat ID

Scat identification is not easy. Changes to an animal's diet can alter the size, colour, shape and content of their scats making it difficult to determine 'who did it' without scientific equipment. The only way to become skilful in 'reading' poo clues is to practice looking closely at them and recording what you find.

You will need:

- Gloves
- Disposable bag, container or tray
- Magnifying glass
- Tweezers
- Water
- Antibacterial soap



WARNING!

Scats are dirty and germ. Many animals carry worms and other parasites that are harmful to humans. Remember to:

- Look, rather than touch;
- Always wear gloves or use a tool when handling;
- Dispose of scat properly – bag it, then put it in a bin; and
- Wash your hands thoroughly with antibacterial soap afterwards.

Scat Record

(Use this information as a template for your own records)

- 1 Area found.....
* backyard, walking track, riverbank, woodland, rocky outcrop?
- 2 When found.....
* date, was it left at night (nocturnal) or during the day (diurnal)?
- 3 Colour.....
* black, brown and/or white?
- 4 Number.....
* one, two or many?
- 5 Texture.....
* runny, thick, hard, smooth?
- 6 Width (cm).....
* the bigger the poo the bigger the animal!
- 7 Shape.....
* clump, pellet, square, round, cylinder, flat, pointed at ends?
- 8 Smell.....
* grassy (herbivore), earthy (insectivore) or yuk (carnivore)?
- 9 Content.....
* plant material (herbivore)
* insect bits and soil (insectivore)
* animal bits -hair, bones, feathers (carnivore)
* plant and animal material (omnivore)

What does this tell you about the animal that left the poo?

Draw the Scat or Stick a Photo here

Guess.....

Pellets not poop!

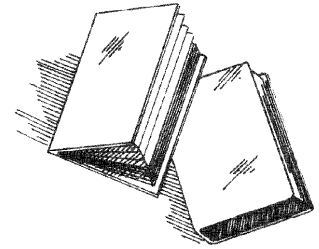
Birds of Prey, such as Wedge-tailed Eagles and owls, are carnivorous predators. After consuming prey, they produce pellets to get rid of the bones, fur and feathers. These pellets are coughed up (*regurgitated*) out of the bird's mouth!



Can you see the bones and hair in this owl pellet?

Field Guide

For more information and detail on identifying scats look at the book '*Tracks, Scats and other Traces. A Field Guide to Australian Mammals.*' by Barbara Triggs.



Whose poo is whose?

Here are some types of poo and animals you might find in the Northern Territory. Think about where these animals live, and what they eat. Draw a line to match these poos to their description and the creature that made them:



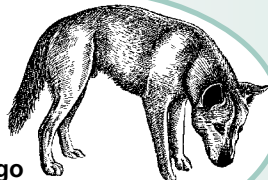
Short-beaked Echidna
Tachyglossus aculeatus

1. Found: under a bush
Smell: grassy
Content: grass
Width: 2cm
Shape: square pellets
Colour: brown



Red Kangaroo
Macropus rufus

2. Found: near a hollow log
Smell: earthy
Content: ant parts and soil
Width: 1.5 cm
Shape: long cylinder
Colour: black/brown



Dingo
Canis lupus dingo

3. Found: on a walking track
Smell: grassy
Content: grass
Width: 1cm
Shape: round
Colour: brown



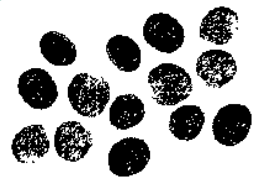
Rabbit
Oryctolagus cuniculus

4. Found: on top of a rocky outcrop
Smell: yuk
Content: bones, fur
Width: 4cm
Shape: cylinder, pointed at one end
Colour: brown, white

A



B



C



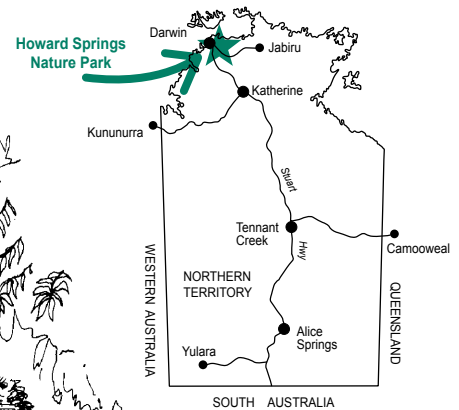
D



Discover a Territory Park

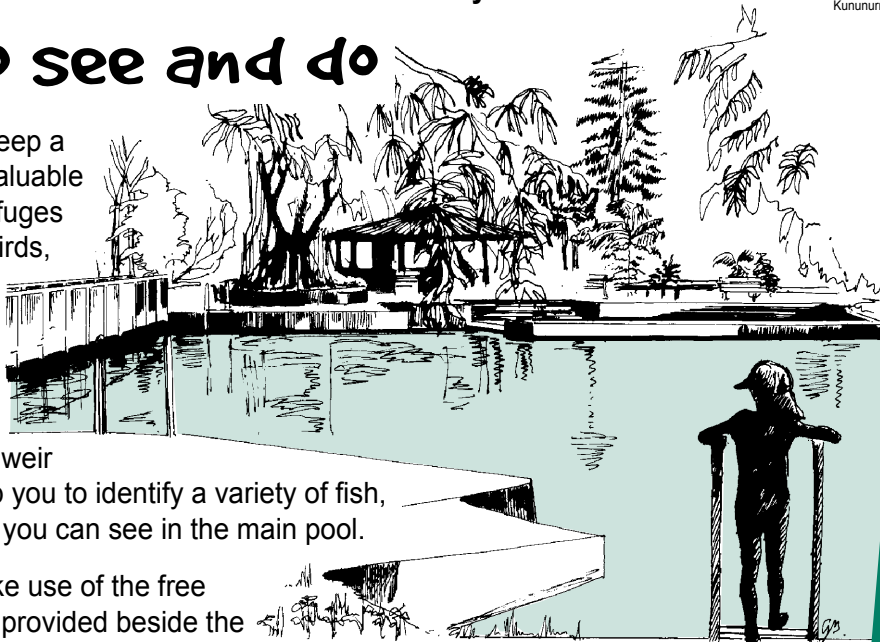
Howard Springs Nature Park

Are you keen to check out native wildlife up close? Then Howard Springs Nature Park is the place to be. A popular spot for locals and visitors to explore, the Park is close to Darwin and accessible all year round.



What to see and do

Take binoculars and keep a look out – the Park's valuable wildlife habitats are refuges for large numbers of birds, mammals and reptiles. You can often see Ibis and Agile Wallabies on the lawns. Stop and read signs on the weir walkway, they will help you to identify a variety of fish, turtles and file snakes you can see in the main pool.



Pack a picnic and make use of the free barbeques and tables provided beside the beautiful, spring-fed waterhole. Set up a game of cricket or toss a frisbee on the lovely shady, grassed picnic areas. A toddler's pool is available to small children for swimming. Visitors are encouraged to check out the Ranger's office notice board and website www.nt.gov.au/nreta/parks for latest Park information.

In 1957, Howard Springs became the Northern Territory's first Reserve under the NT Reserves Board, now the Parks and Wildlife Service.

Spend 30 minutes strolling along the 1.8km walking track, which winds its way through the cool woodland and monsoon forest. Another short track off the main road will take you through a dense monsoon forest to the springs which feed the main pool.

WWII History



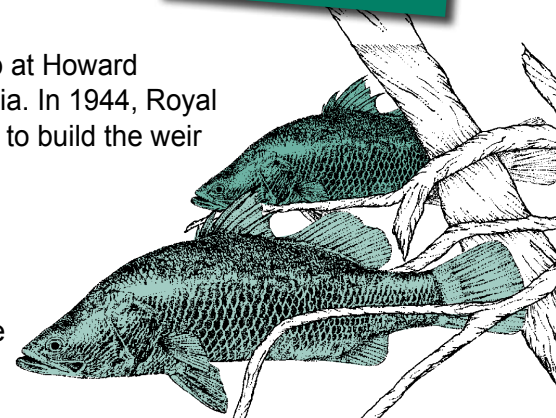
HISTORIC SITE

During World War II, rest and recreation camps were set up at Howard Springs for up to 120 servicemen from the USA and Australia. In 1944, Royal Australian Engineers toiled under hot and humid conditions to build the weir and improve the old swimming hole.

Getting there

The Park is located approximately 35km south of Darwin. Turn east off the Stuart Highway onto Howard Springs Road. Gates are open all year from 8.00am to 8.00pm daily, however camping is not permitted. Remember to slip, slop, slap and wear insect repellent to keep biting insects away.

See if you can spot the huge Barramundi, *Lates calcarifer*, from the weir wall.



Puzzle Answers

On the Brink:
Goannas.

Urban Encounter:
Tadpole A = Cane Toad, *Chaunus Marinus*.

Tadpole B = Green Tree Frog, *Litoria caerulea*

Plant Profile:
Itchy Grub.

Discovering Outdoors:

Echidna = 2 C.

Kangaroo = 1 D.

Dingo = 4 A.

Rabbit = 3 B.

The Junior Ranger Review is published four times a year by the Parks and Wildlife Service of the NT. This edition was written by Dean McAdam, Michael Barritt, Jennifer Cunningham and Katie Chatto. Editor Dean McAdam. Design and layout by Graphics'Il Doo. The front cover by Leonie Richards. Illustrations by M. Andrews, G. Betley, T. Binder, S. Bone, K. Day, D. Evans, K. Kerr, B. Kessing, D. McAdam, A. Pickering, L. Richards, A. Schoots, A. Taylor, B. Whiteford & R. Whitlow.

Contributions & subscription requests are welcome and should be sent to:
The Editor
Junior Ranger Review
PO Box 496
Palmerston NT 0831

Please Note: You are welcome to photocopy the text & illustrations in this book without prior permission for non-profit educational purposes only. If text is reproduced separately it must not be altered and the Parks & Wildlife Service of the NT must be acknowledged as the source. (If you wish to use the illustrations, permission must be sought). Please contact the editor if in doubt.