



Junior Ranger

Review

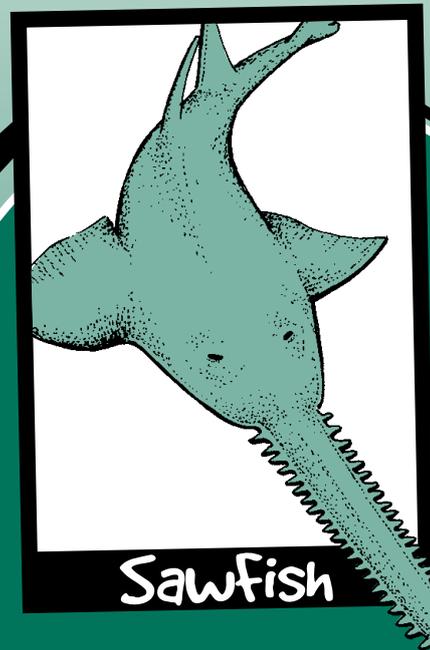
Issue 2 2007



PLANT
profile

URBAN
encounter

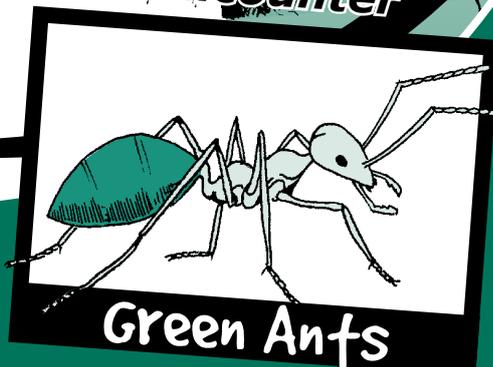
**On the
BRINK**



Sawfish



Cypress Pine



Green Ants



Creature Feature

Fab Frillies



The sight of a 'Frilly' flashing its full frill in an attempt to look bigger, more ferocious and fearsome, is a common one to Top Enders. In fact this lizard is a celebrity right around the world!

G'day from Graham

Welcome to the second issue of the Junior Ranger Review for 2007. It is fantastic to see so many young Territorians involved in the Junior Ranger Program for another year. Junior Rangers is a great way of learning about the natural environment as well as having heaps of fun along the way. The Parks and Wildlife Service have a great range of National Parks and Reserves for everyone to enjoy – why not head out this weekend for a picnic or an overnight camp. You will be amazed at what you can discover – from waterholes to wildlife – our National Parks have it all!

The "Territory Parks Alive" program has just begun for 2007 and includes a whole range of FREE Ranger guided walks and talks throughout the Northern Territory. A free brochure is available from your local tourist information office, or on our website www.nt.gov.au/nreta/parks. See you out in the Bush!

What a 'Frilling' experience

The largest of Australia's dragons (called Agamids by scientists), the Frilled Lizard, *Chlamydosaurus kingii*, is indeed the 'king' of our 60 or so species. Its large, loose frill around the neck and the ability to quickly run upright on its two back legs make them special in the world of lizards. For us, this makes them really easy to identify.

In the Top End you will see them in woodland country. They especially like areas where there is an open shrubby or grassy ground cover. Check them out in your local parks, golf courses, schoolyards or places like Howard and Berry Springs Nature Parks. Enjoy watching them, but don't try to touch, for although they are harmless they do have sharp teeth and claws and can inflict a painful bite and scratches.

Frilly Fact File

Boys are larger than girls and can reach about 95cm in length and weigh almost a kilogram. Their tails are about twice as long as their bodies.

The grey/brown colours and patterns of their rough scaly skin helps them to camouflage as tree bark.

Their frills can measure up to 25cm across; that's about the size of a dinner plate!

They are hard to find in trees as they move to the opposite side of the trunk as you look for them.

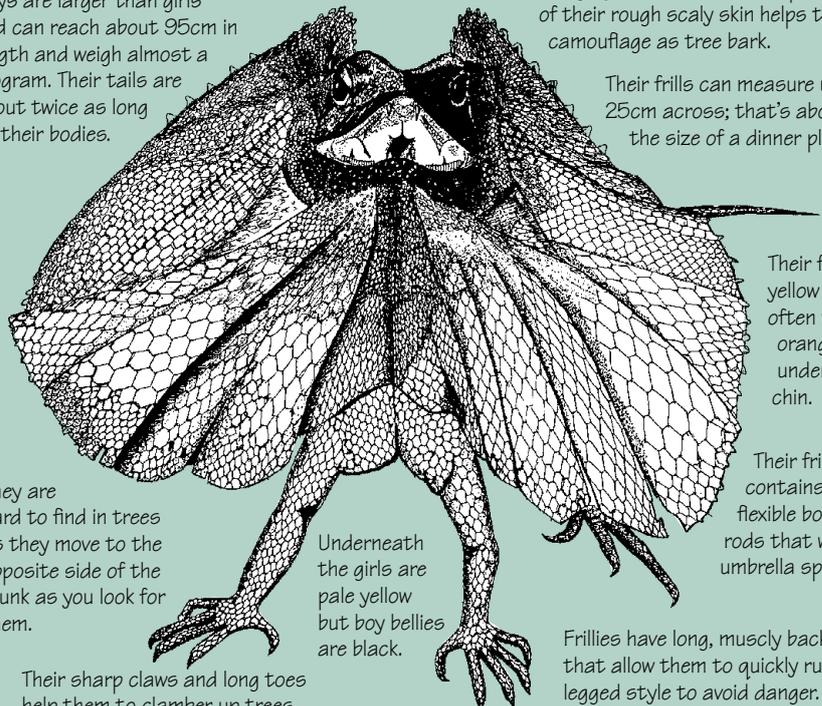
Underneath the girls are pale yellow but boy bellies are black.

Their frill is yellow to black, often with an orange patch under the chin.

Their frill contains several flexible bone-like rods that work like umbrella spokes.

Frillies have long, muscly back legs that allow them to quickly run two-legged style to avoid danger.

Their sharp claws and long toes help them to clamber up trees.



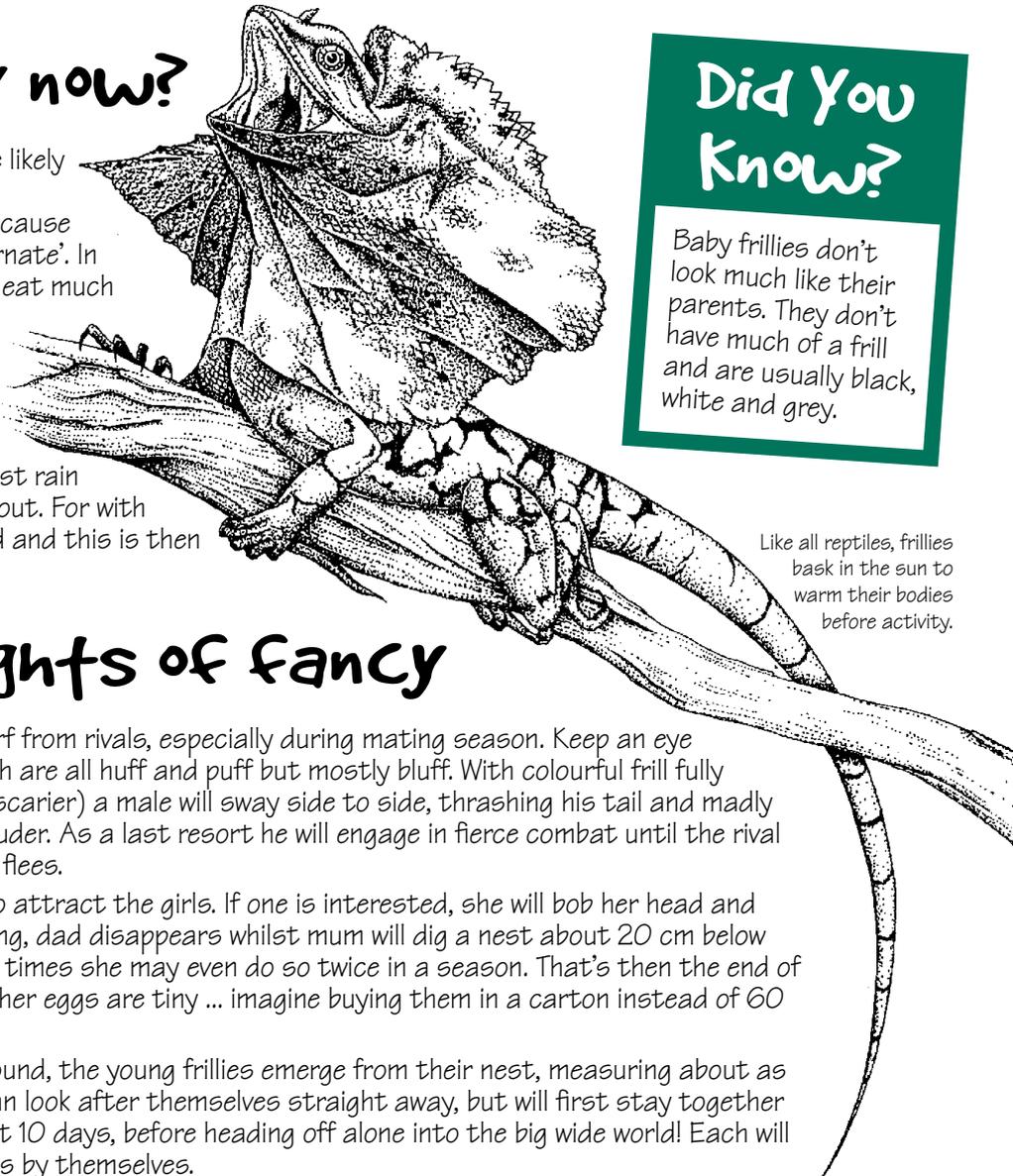
Centralian Cousins

You won't find frillies in Central Australia but you might see one of their large desert cousins. You may remember its name as it featured previously in a 2006 Review. If not crack the code to find its name. Replace each letter with the one that comes before it in the alphabet.

C F B S E F E E S B H P O

Where are they now?

Have you ever noticed that you are more likely to see a Frilled Lizard in the wet season (Oct. - April) than in the dry? Well it's because during the dry season they sort of 'hibernate'. In fact they slow down their activity, don't eat much and spend most of their time hidden, lounging around in the tree canopy. Sometimes they move from tree to tree. They are just waiting for the good times that come with the onset of the wet season. Within a few hours of the first rain you can expect to see frillies out and about. For with the rain comes the promise of more food and this is then the perfect time to have babies.



Did You Know?

Baby frillies don't look much like their parents. They don't have much of a frill and are usually black, white and grey.

Like all reptiles, frillies bask in the sun to warm their bodies before activity.

Fights and flights of fancy

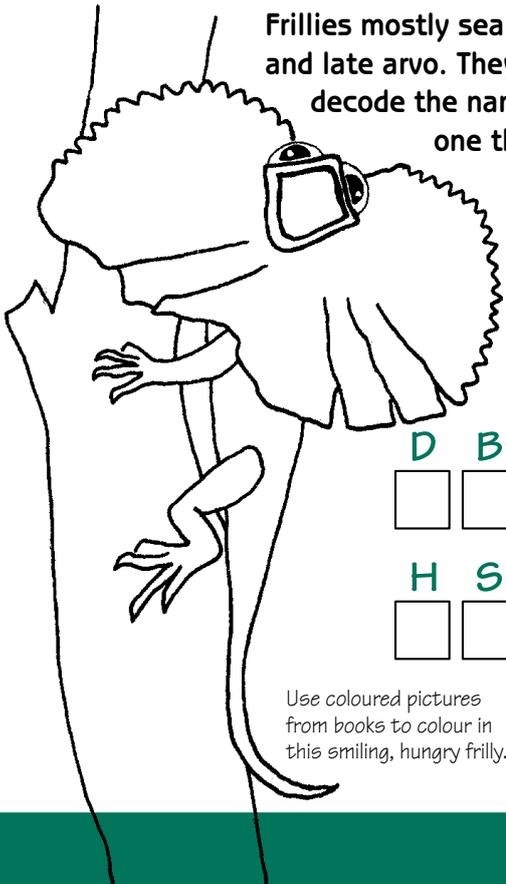
Male frillies aggressively defend their turf from rivals, especially during mating season. Keep an eye out for these spectacular displays, which are all huff and puff but mostly bluff. With colourful frill fully stretched (looking bigger, stronger and scarier) a male will sway side to side, thrashing his tail and madly hissing in an effort to scare off any intruder. As a last resort he will engage in fierce combat until the rival runs away or he himself is defeated and flees.

The boys also perform a similar dance to attract the girls. If one is interested, she will bob her head and peacefully stand her ground. After mating, dad disappears whilst mum will dig a nest about 20 cm below ground and lay about 8-14 eggs. In good times she may even do so twice in a season. That's then the end of her job as a parent. At around 5 grams her eggs are tiny ... imagine buying them in a carton instead of 60 gram chicken eggs!

After about 10 weeks warming in the ground, the young frillies emerge from their nest, measuring about as long as your pinkie finger (5 cm). They can look after themselves straight away, but will first stay together with their brothers and sisters for about 10 days, before heading off alone into the big wide world! Each will then spend most of the rest of their lives by themselves.

Favourite Frilly Foods ... What's on the Menu?

Frillies mostly search for their food on the ground (called foraging) in the morning and late arvo. They mainly eat invertebrates (animals without backbones). Can you decode the names of some favourite frilly foods? Replace each letter with the one that comes before it in the alphabet.



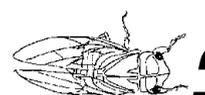
H S F F O B O U T

T Q J E F S T

D B U F S Q J M M B S T

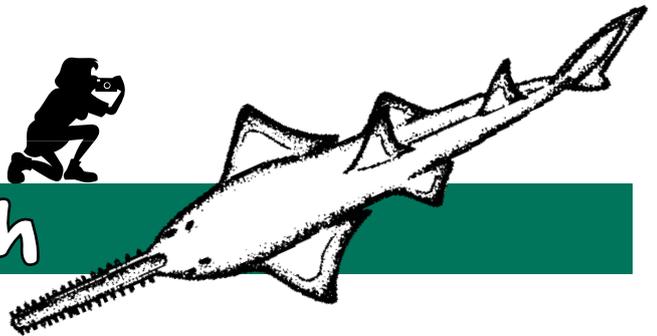
H S B T T I P Q Q F S T

D J D B E B T



Use coloured pictures from books to colour in this smiling, hungry frilly.

On the Brink



Secretive Sawfish

Freshwater Sawfish, *Pristis microdon*, are one of the world's largest and most unusual looking fish, yet we know very little about them. However, Territory scientists suspect that they might be in trouble and have listed them as *Vulnerable* to extinction!

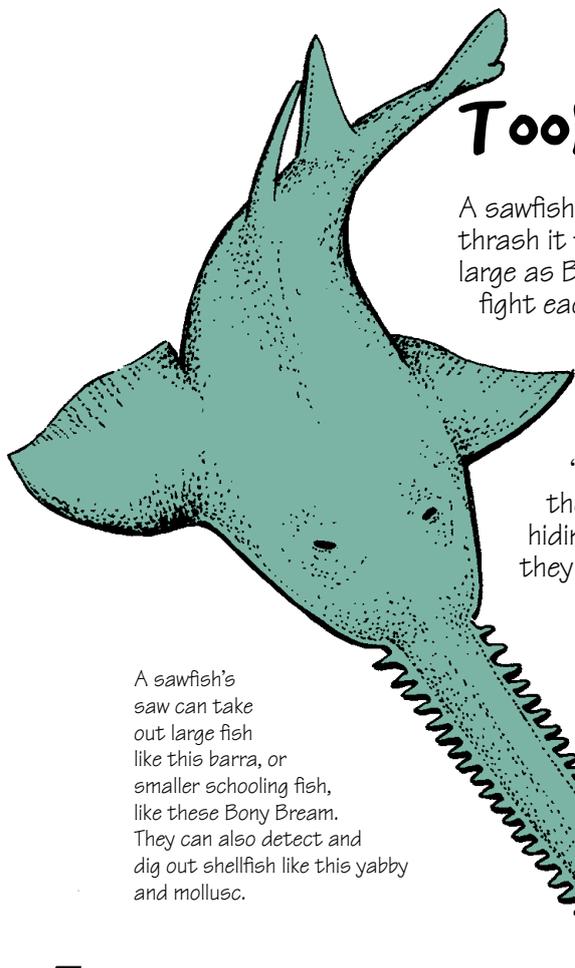
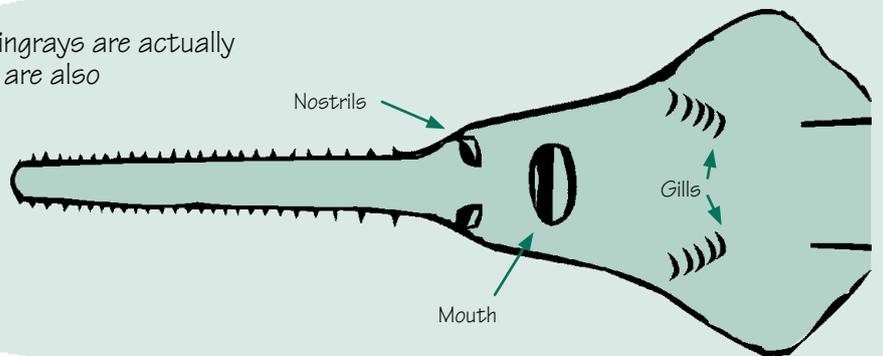
I thought I saw a sawfish!

Even though they can grow to an enormous 5 metres in length, you'd have to be pretty lucky to see a Freshwater Sawfish. They seem to hang out in the larger river systems right across Australia's north, from the tidal areas near the ocean, right up to the upper reaches. However, they are bottom dwellers and tend to be very secretive. Your best bet is a visit to the Territory Wildlife Park, where you can walk underneath one in the walk through aquarium!

Sawfish are part of the Ray family of fish, so stingrays are actually some of their closest cousins. Rays and sharks are also closely related. They all have skeletons made of cartilage, not bone, just like your nose and ears.

Several species of shark also have big saw shaped snouts. The way to tell them apart is that all sharks have their gill openings on the side of their head, while all Rays (including sawfish) have theirs underneath.

Underneath a Freshwater Sawfish

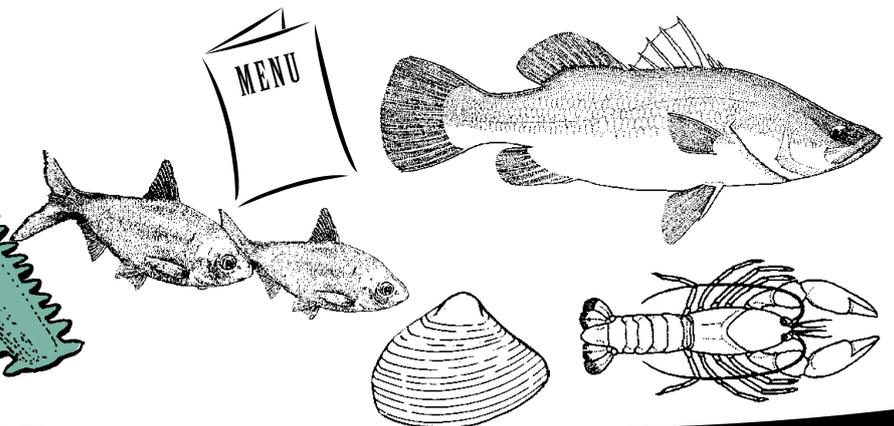


Tools of the trade

A sawfish's saw is an impressive tool. They can thrash it from side to side to stun and kill fish as large as Barramundi. The boys will even use them to fight each other to win the heart of a girl. They're normally very scared of humans, but if you land one in your boat, or otherwise corner one, watchout ... they'll put you to the sword!

'Electrical sensors' cover the underside of the saw. This allows them to detect animals hiding on sandy and silty river bottoms. Then they use the saw to dig out their prey.

A sawfish's saw can take out large fish like this barra, or smaller schooling fish, like these Bony Bream. They can also detect and dig out shellfish like this yabby and mollusc.



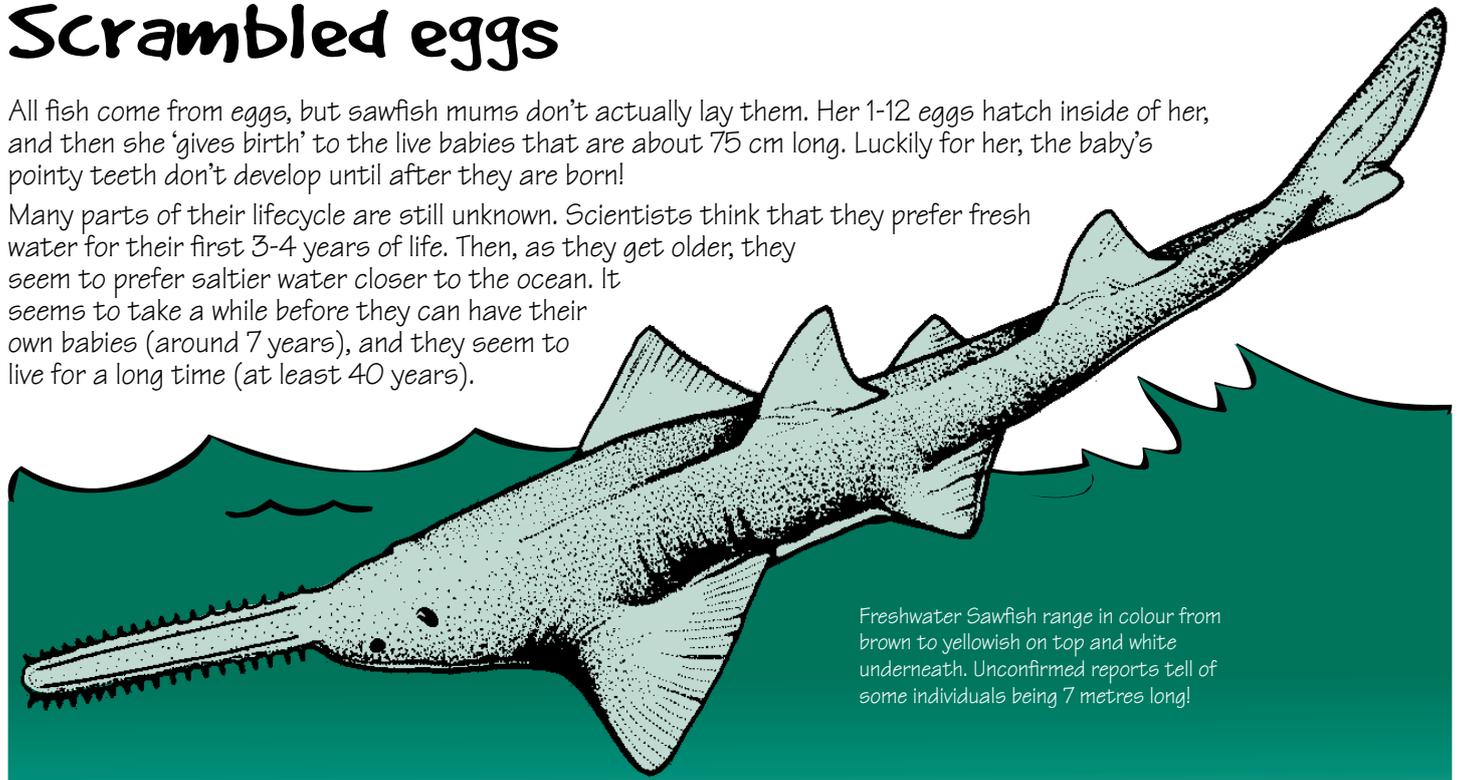
Science Snippet

Freshwater Sawfish used to be common in many parts of the world but the United Nations have now listed them as *Critically Endangered*.

Scrambled eggs

All fish come from eggs, but sawfish mums don't actually lay them. Her 1-12 eggs hatch inside of her, and then she 'gives birth' to the live babies that are about 75 cm long. Luckily for her, the baby's pointy teeth don't develop until after they are born!

Many parts of their lifecycle are still unknown. Scientists think that they prefer fresh water for their first 3-4 years of life. Then, as they get older, they seem to prefer saltier water closer to the ocean. It seems to take a while before they can have their own babies (around 7 years), and they seem to live for a long time (at least 40 years).



Freshwater Sawfish range in colour from brown to yellowish on top and white underneath. Unconfirmed reports tell of some individuals being 7 metres long!

Saving the Sawfish

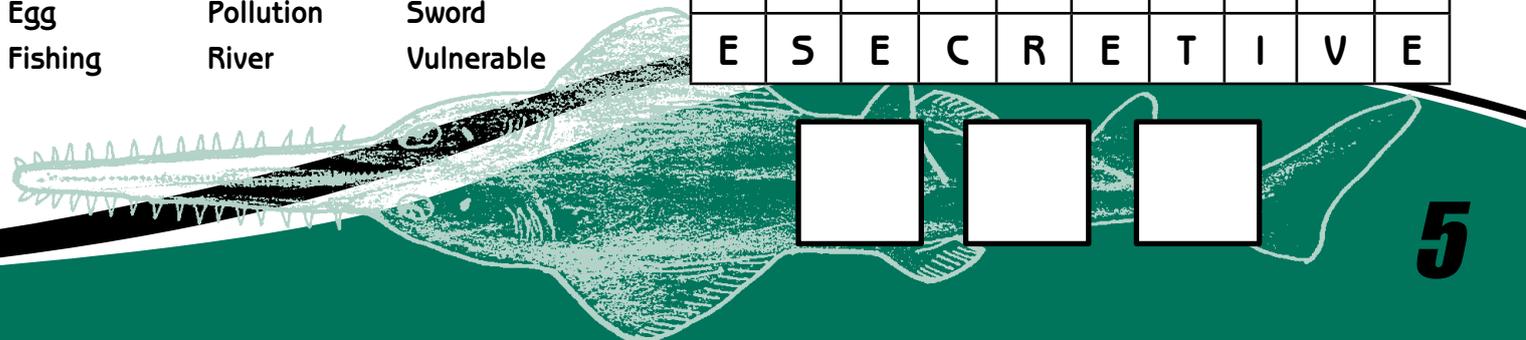
Freshwater Sawfish may never have been common in the NT, but they are certainly hard to find now. Their big jagged snouts tangle easily in nets, and this is one of the main causes of death in other parts of the world. However, laws already stop the use of gill nets in most of their home range in the NT. Fishermen occasionally hook them, so carefully let them go if this happens to you. We must look after these amazing fish, because if something goes wrong, their slow breeding rate makes it hard for them to recover. We don't want to end up like the rest of the world where fishing, pollution and development have nearly wiped them out.

Puzzling names

Scientists often describe a part of a plant or animal in its scientific name. They usually use a Latin or Greek word for that feature, as they've done with *Pristis*, the Sawfish's generic name. With only 3 letters, you can probably guess what this Greek word means, but complete this puzzle and place the leftover letters in the spaces provided to see if you're right!

- | | | |
|-----------|-----------|------------|
| Bones | Gills | Sawfish |
| Bottom | Lay | Secretive |
| Breed | Name | Shark |
| Cartilage | Net | Snout |
| Egg | Pollution | Sword |
| Fishing | River | Vulnerable |

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



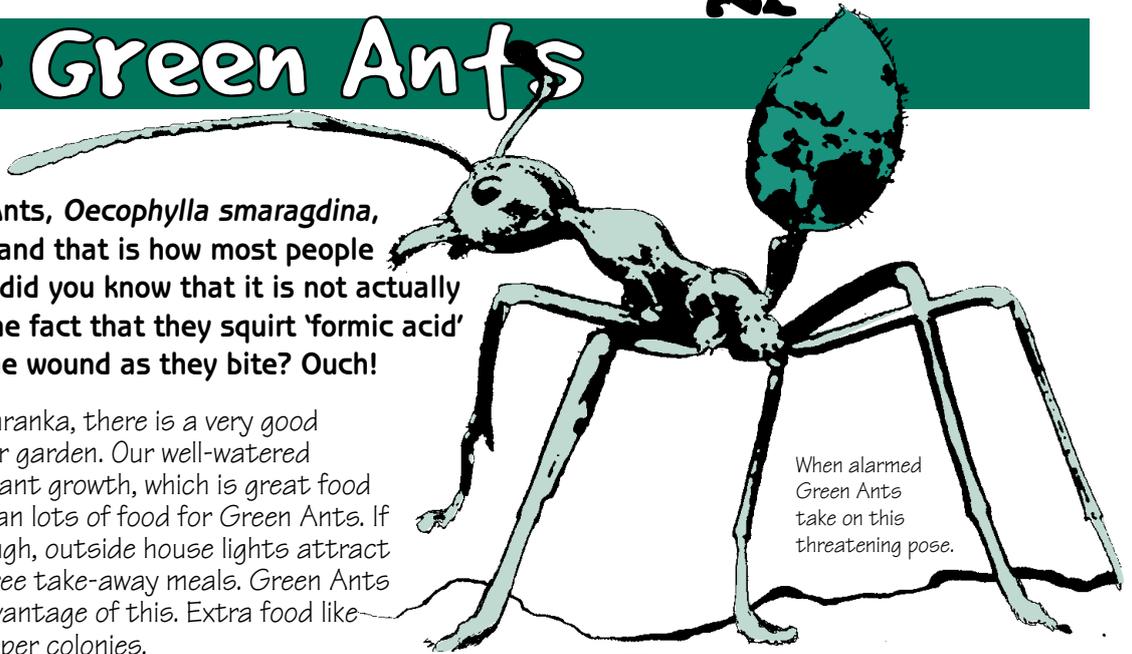
Urban Encounter



Grouse Green Ants

An encounter with Green Ants, *Oecophylla smaragdina*, is generally a painful one, and that is how most people remember them! However, did you know that it is not actually their bite that hurts, but the fact that they squirt 'formic acid' from their abdomen into the wound as they bite? Ouch!

If you live in, or north of, Mataranka, there is a very good chance Green Ants live in your garden. Our well-watered gardens provide year round plant growth, which is great food for insects. Many insects mean lots of food for Green Ants. If that is not already good enough, outside house lights attract even more insects, creating free take-away meals. Green Ants do the night shift to take advantage of this. Extra food like this can create Green Ant super colonies.



When alarmed Green Ants take on this threatening pose.

Did You Know?

If you have many Green Ants in your garden and they are becoming 'painful pests', you can do something about it. Control their numbers by removing their nests, pruning their favourite plants and turning off outside lights.

Sugar trade



A sap sucking Aphid.

Green Ants farm other insects such as scales and aphids (tiny sap sucking animals), for the sugar foods they produce. In return, they protect these animals from predators. Scientists call this 'symbiosis' (where both animals benefit from a relationship). If you remove the aphids and scales, by pruning and brushing the plant with warm soapy water, Green Ant numbers will drop.



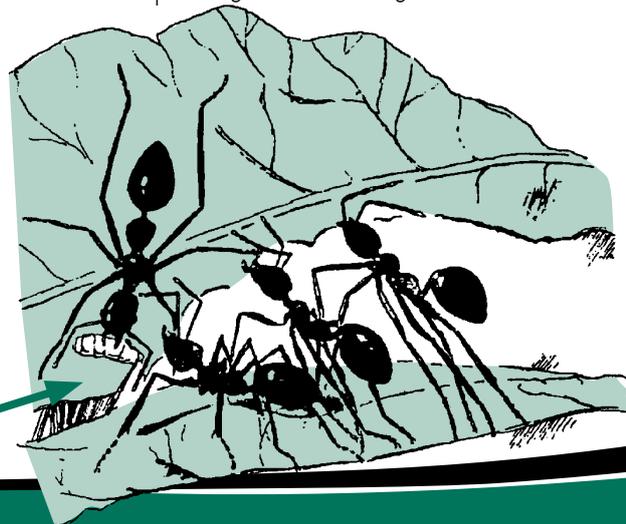
Revealed - putting the kids to work!

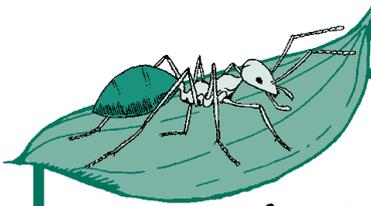
Alert - Green Ants use their own babies as building tools - read on.

Green Ants use their 'larvae' (babies) as portable sewing machines. A worker ant gently squeezes the larvae causing it to produce silk from special glands, which glues the leaves together.

These nests are great engineering feats. Construction is a real 'cooperative' effort. It starts with many ants linking into chains, to pull living leaves together. They pull the chain shorter and shorter, until the gap is one ant wide, and then the sewing begins. New leaves protect the nests from the sun and ensure that they are well camouflaged from predators.

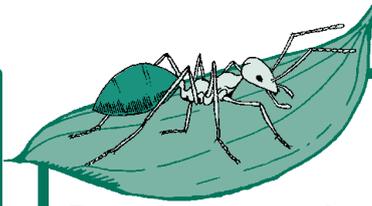
Green Ants sewing with a larvae.





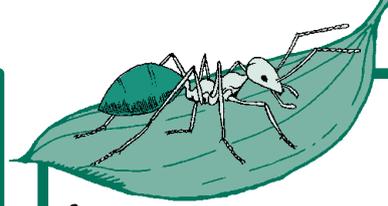
Green Ants are great!

Green Ants have an important role in our environment. They have their own 'niche' (their position in the world) up in native trees. They protect plants from plant-eating insects, such as termites and borers, and in turn are food for many native animals such as birds, spiders, crickets, and other ant species. Frilled Lizards rely on Green Ants as a food source in the dry season.



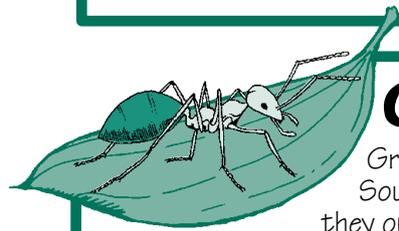
Biological indicators

Scientists call Green Ants 'biological indicators'. They are one way of warning us if their habitat is healthy or not, especially if they disappear! Things that affect Green Ants can be natural, such as bad weather, bushfires and attacks by native animals, or man made (unnatural), such as chemical pollution, land clearing and alien (introduced) plant and animal species. The introduced 'African Big-headed Ant' is one of the biggest threats to their survival.



Amazing Green Ant Facts:

- Indigenous Australians have eaten Green Ants for thousands of years as a form of medicine for viruses and stomach upsets.
- Ancient Chinese placed Green Ants on their crops to protect them from other hungry animals. Now people are starting to do it again, as it is cheaper than using insecticides (insect poisons) and less harmful.
- Scientists are studying the Green Ants' ability to work in big teams to build their amazing leaf nests. They hope to use what they learn to develop robots.
- A mature colony of Green Ants may span as many as 12 trees, contain as many as 150 nests and house 100 000 to 500 000 workers.

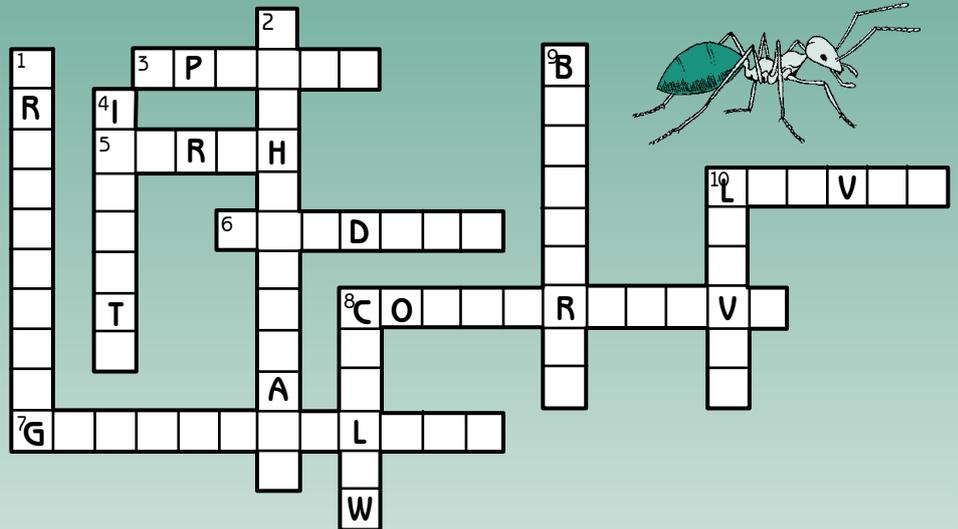


Gondwanaland link

Green Ants live right across northern Australia, South East Asia, India and Africa. This is because they once existed on one huge super continent called 'Gondwanaland', 50 million years ago. Now that is old!

Green Ant Word Puzzle

You should be able to find most of the answers in this article. But it has been made a little tougher by adding extra things; however these can be worked out from the information given. Have fun.



Down

1. Green Ants help plants by _ r _ _ _ _ _ _ _ _ _ g them from attack.
2. The African _ _ _ _ - h _ _ _ _ _ _ a _ _ is one of the biggest threats to the Green Ants' existence.
4. Green Ants eat mostly, what?
8. Green Ant colonies can have more than one queen. Only one reproduces though, the other one is called a 'c _ _ l _ w', (rhymes with shallow) and has to wait until the first queen dies before she takes over.
9. A natural threat to Green Ants survival are annual b _ _ _ _ _ r _ _.
10. Green Ants live in nests made of living l _ _ v _ _.

Across

3. Green Ants get sugar from little sap sucking insects called _ p _ _ _ _ _.
5. In Australia, Green Ants live in what part? East, West, South or North.
6. Green Ants like living in peoples _ _ _ _ d _ _ _.
7. Green Ants once lived on one super continent called G _ _ _ _ _ _ _ _ _ l _ _ _ _.
8. The survival of Green Ant colonies is due to their co _ _ _ r _ _ _ v _ _ work.
10. A baby green ant is called a l _ _ v _ _.



Plant Profile

Cypress Pine - Christmas Tree

our own



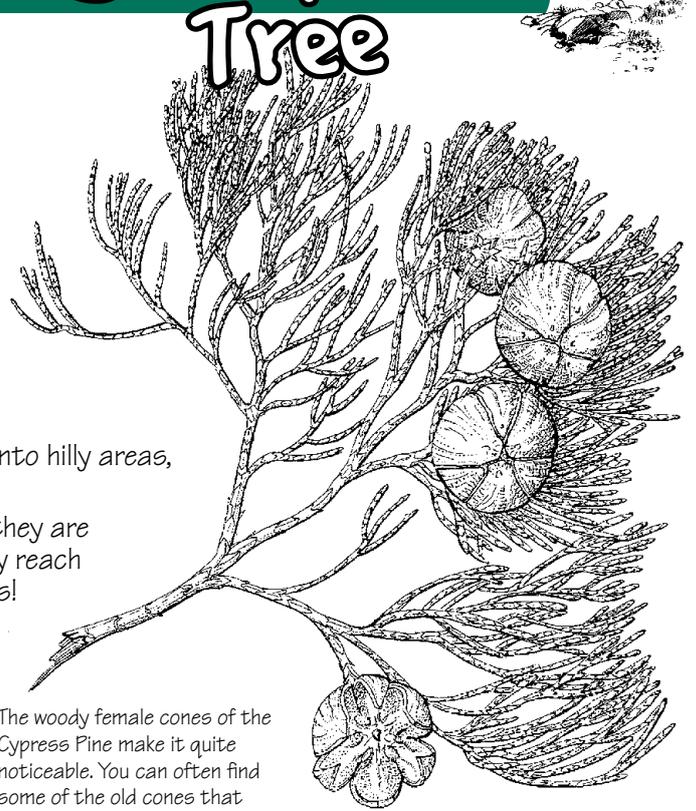
In some countries of the world pine trees are very common, especially where they experience a 'white Christmas', but not in Australia. In the Northern Territory we only have two species, the White Cypress Pine, *Callitris glaucophylla*, and the Northern Cypress Pine, *Callitris intratropica*.

Head for the Hills!

To find a Cypress Pine in Central Australia you'll need to go up into hilly areas, where you will often see whole groves of them.

They are often quite small trees, usually only 3 metres high. If they are growing in rocky areas where there is little soil, they usually only reach 1 m in height - they become dwarfed like Japanese bonsai plants!

Pine trees are not flowering plants like most plants in the world. Each adult plant has both male and female cones. After a good rainy season each tree releases minute, red-coloured pollen from the tiny male cones. This pollen floats around like dust and (hopefully) pollinates the female cones. They then produce winged seeds which are released and spread widely by the wind.



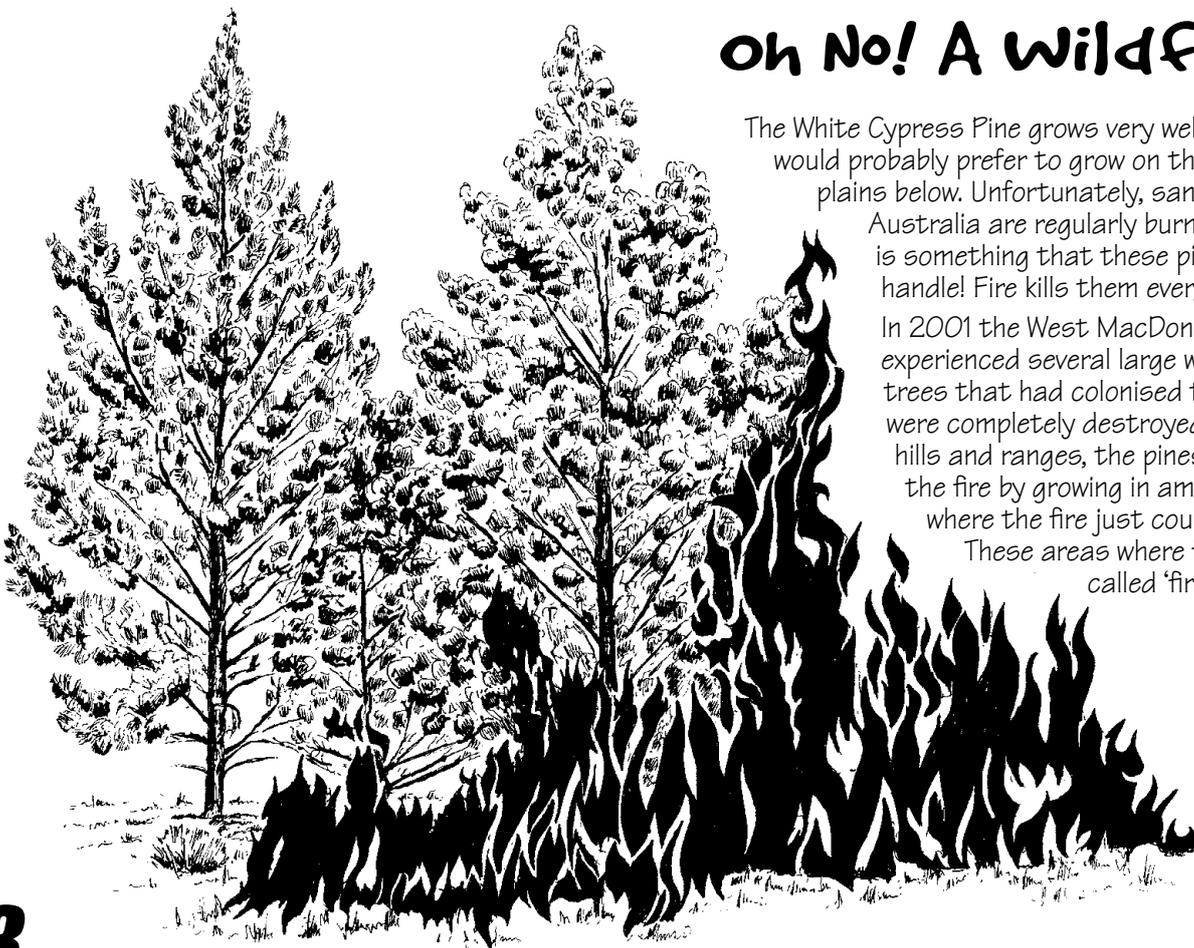
The woody female cones of the Cypress Pine make it quite noticeable. You can often find some of the old cones that opened last year still on the tree.

Oh No! A Wildfire!

The White Cypress Pine grows very well in the hills but it would probably prefer to grow on the rich soils of the plains below. Unfortunately, sandplains in Central Australia are regularly burnt by wildfires. Fire is something that these pine trees just can't handle! Fire kills them every time!

In 2001 the West MacDonnell ranges experienced several large wildfires. The pine trees that had colonised the plain country were completely destroyed. However, up in the hills and ranges, the pines managed to avoid the fire by growing in amongst rocky areas where the fire just couldn't get to them.

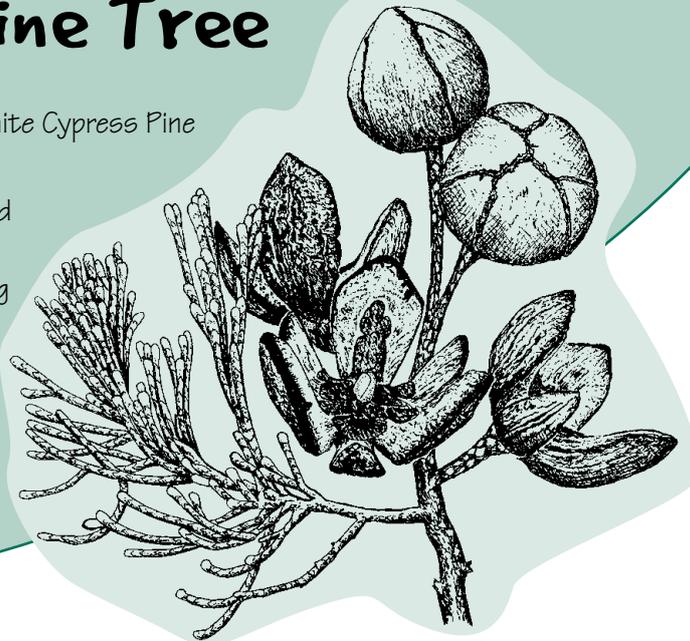
These areas where fire can't reach are called 'fire shadows'.



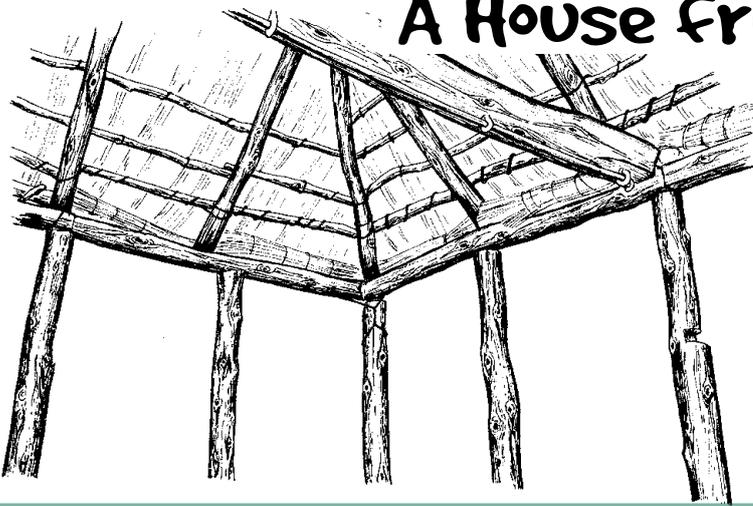
The Medicine Tree

Aboriginal people have many uses for the White Cypress Pine - here are just a few:

- the leaves are boiled in water and then rubbed onto the chest to help with colds and flu.
- the leaves and branches are placed on a fire producing lots of smelly smoke. The branches are then removed from the fire and the sick person is then laid on them. The oil from the leaves is released helping with the general health of the patient.
- the branches are sometimes thrown on a fire, as the smelly smoke will keep mosquitoes and other insects away.



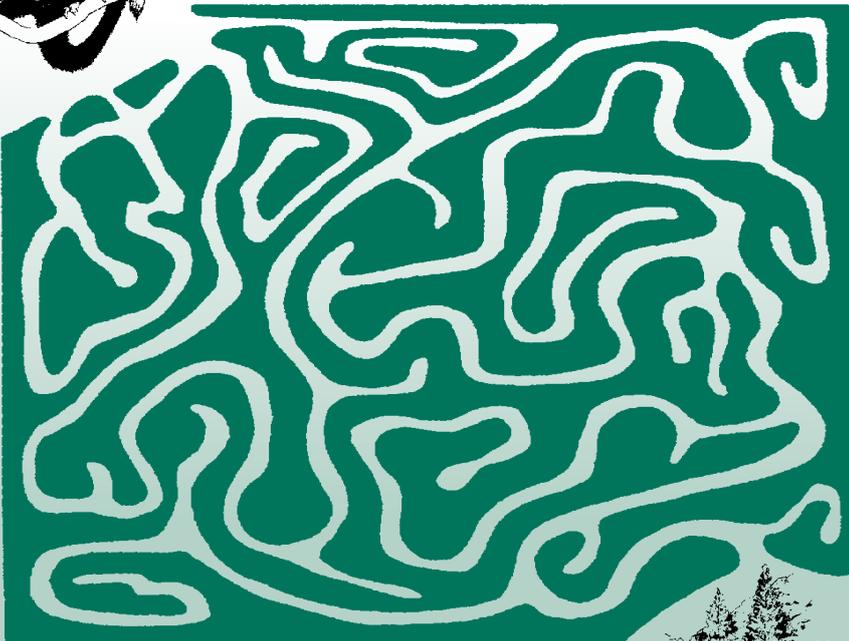
A House Free from Termites!



Early European settlers to Central Australia quickly realised just how aggressive termites could be. The poles of the Overland Telegraph Line from Adelaide to Darwin were immediately attacked by hungry termites. Many of the poles were made using River Red Gum and these turned out to be a favourite food of the termite. Where pines were available they were used as well, and they suffered very little from termite attack. Even today some of these Cypress Pine poles still stand. Many of the early houses in Central Australia were then built using Cypress Pine - the early settlers had learned their lesson to use only termite resistant timber!

The Possum Maze

Imagine you are Mr. Possum for a minute. Find your way from here to the safety of the White Cypress Pine grove. You only have 1 minute - time yourself!



Did You Know?



The Common Brushtail Possum, *Trichosurus vulpecula*, is a threatened species in Central Australia. It is sometimes found in thickets of the White Cypress Pine. Look for their poo (called scats) at the base of the tree. They are about 1cm long and bent like a banana.

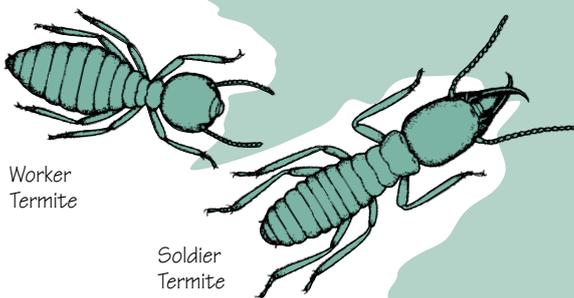
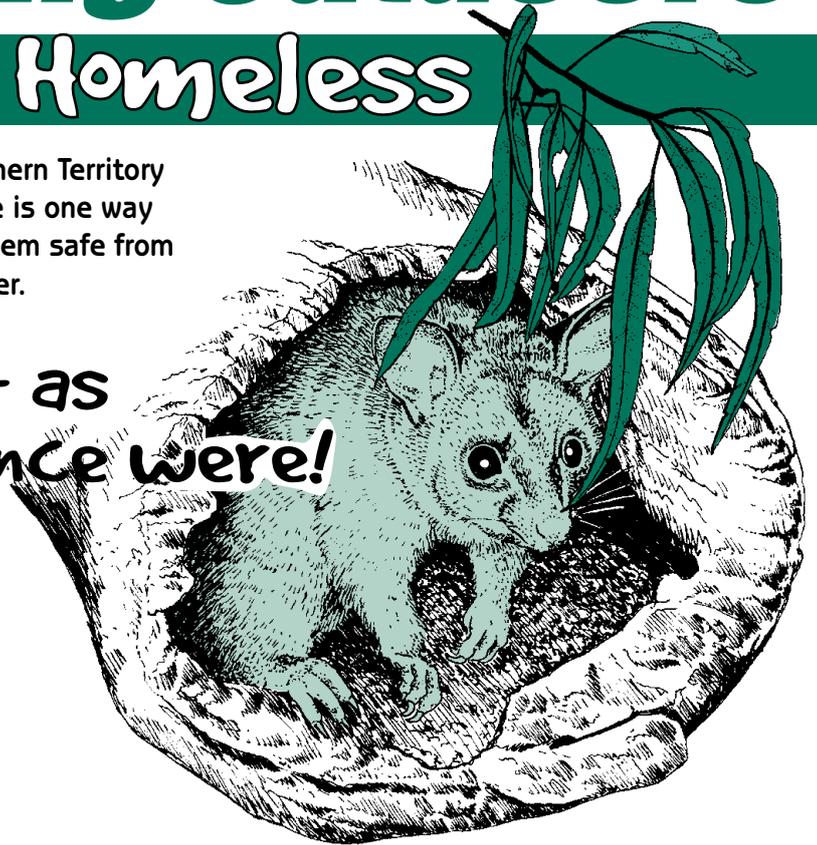
Discovering Outdoors

Housing the Homeless

There are many threatened species in the Northern Territory including some of our mammals and birds. Here is one way you can help. Build a nest box home to keep them safe from predators, and protected from our harsh weather.

Tree Hollows - Not as Common as they once were!

Tree hollows offer many animals a perfect home - nice, warm and safe from predators. Unfortunately, tree hollows are not as common as they once were because of changes in the use of fire. Since Aboriginal people have moved away from some areas of land there have been less small fires and an increase in large wildfires that can burn huge areas very quickly. Large trees often die in these wildfires, destroying the hollows that provide a home for our wildlife.



Worker Termite

Soldier Termite

The Tree Hollow Maker!

Many of our big trees in the Northern Territory are almost completely hollow. If you look up at where branches have snapped off in the wind you may see a hollow in the remaining piece of limb. These hollows are formed from the furious appetite of termites - they just love to eat wood! They usually eat out the middle of trees, leaving the outer living part to keep the tree growing.

Building a Nest Box

- 1 Ask your parents if you can build a nest box with their help.
- 2 Use the plan on the next page to measure and cut the wood for the nest box.
- 3 Construct your nest box using a hammer & nails or a power drill & screws.
- 4 Paint your nest box with exterior green paint.
- 5 Fill the bottom of the box with straw or leaves to make it more attractive to wildlife.
- 6 Attach the finished nest box to a large tree and wait to see if any animals make it their home!

Things you will need:



Your parent's help



Pair of gloves



Eye protection



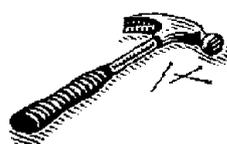
Paint brush & green paint



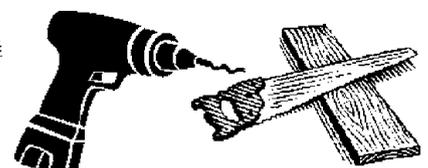
Measuring tape



Ladder



Hammer & nails or a power drill & screws

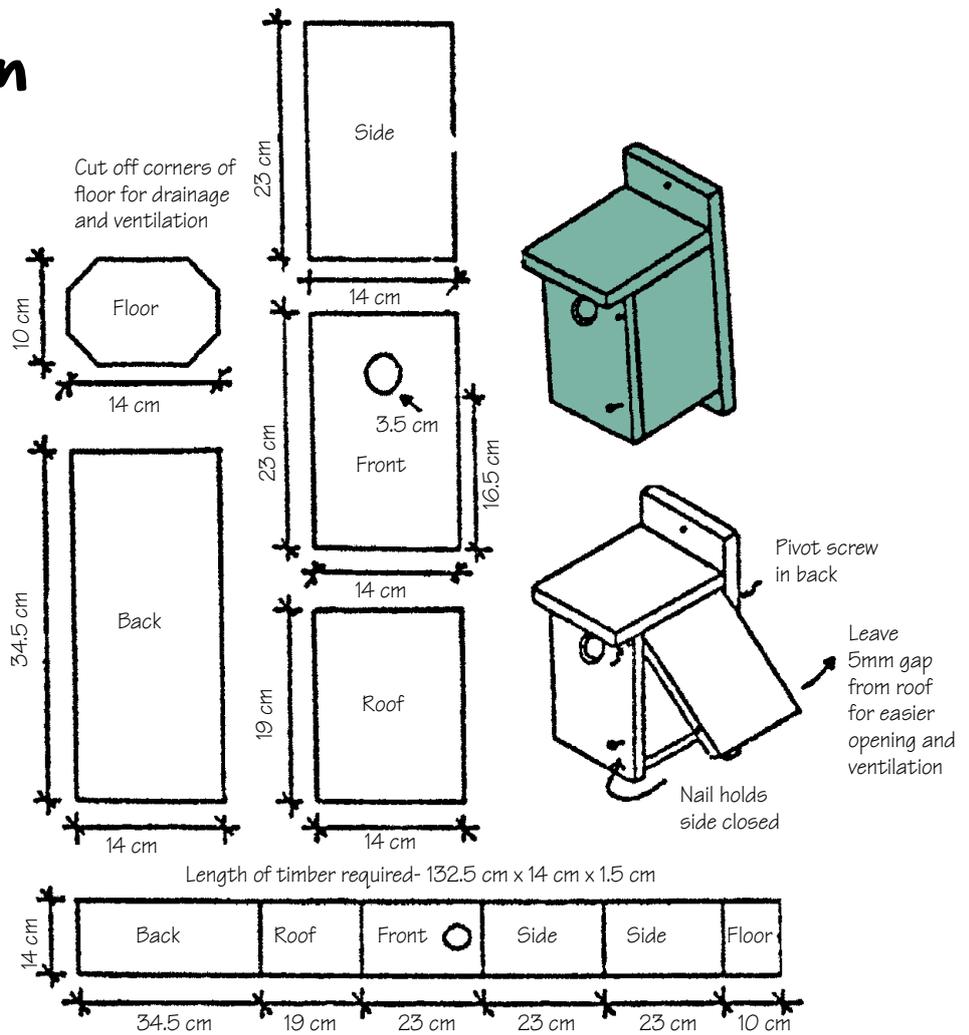


Wood & saw

A Nest Box Plan

You will need your parent's help and permission to build this nest box. This is just a basic design for a nest box - there are many more designs on the internet for you to choose from. Just type "nest box" into your search engine and you will find all kinds of designs for different birds and mammals.

For this nest box use a length of untreated pine 132.5 cm (length) X 14 cm (width) X 1.5 cm (diameter or thickness).

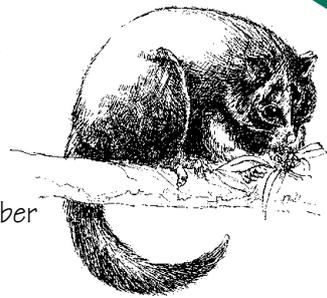


Home sweet home

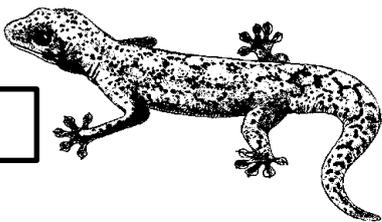
Take a look at the animal pictures below. See if you can identify each one by cracking the code to find its name. Replace each letter with the one that comes before it in the alphabet. Then tick the boxes if you think the animal may make a nest box a home - remember where you put your finished nest box.



E F B U I B E E F S



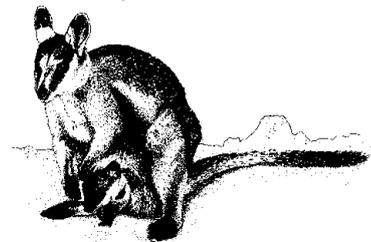
Q P T T V N



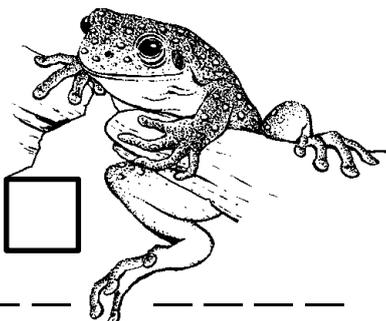
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H S F F O U S F F G S P H

Discover a Territory Park

Flora River Nature Park

Flora River Nature Park protects 25km of the Flora River and its adjacent floodplain and woodland. The Park is jointly managed by the Wardaman Aboriginal people and the Parks and Wildlife Service of the Northern Territory.

Springs and things

Deep crystal clear spring waters and large 'tufa' dams make this a beautiful park to visit. The 'tufa' dams span the entire river in places and are created when minerals (calcium carbonate) present in the water harden and mix with plant debris to form walls as high as 10 m. The water spills over the full span of these falls creating breathtaking views.



Getting there

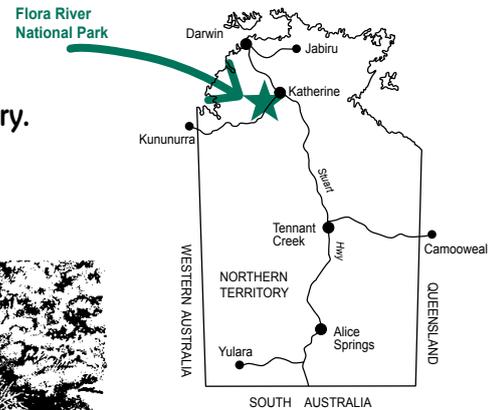
Flora River Nature Park is located 122 km south-west of Katherine. Head west along the Victoria Highway for 86 km, then follow the access road for another 46 km to the main Park campground. The access road is suitable for 2WD vehicles from April to October, however heavy rains during the wet season close the Park. Check road conditions before you visit by visiting the website: www.roadreport.nt.gov.au

What to see and do

The Park offers opportunities for boating, canoeing, short walks and fishing. And although the river looks great for swimming, both Freshwater, *Crocodylus johnstoni* and Estuarine (Saltwater), *Crocodylus porosus*, Crocodiles live in the area, so definitely NO swimming.

Two short walking paths start near the campground and take you to Kathleen and Djarrung Falls. A boat ramp slipway is provided to launch your boats down the steep riverbank. Dinghies need to have a motor of 15 hp or smaller. Please respect fishing codes in the area by using lures, as turtles will take baited hooks.

From May till October, fish, turtles and Freshwater Crocodiles are easily spotted in the crystal clear water. The famous Pig-nosed Turtle, *Carettochelys insculpta*, is only found in a few places in the Northern Territory and one of them is the Flora River. It was previously thought to have only existed in Papua New Guinea.



Puzzle Answers

Creature Feature:

Bearded Dragon.
Green Ants, Spiders,
Caterpillars, Grasshoppers,
Cicadas.

Urban Encounter:

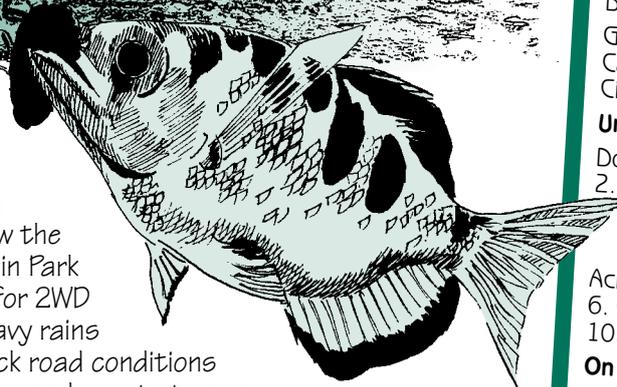
Down - 1. Protecting.
2. Big-headed Ant.
4. Insects. 8. Callow.
9. Bushfires. 10. Leaves.
Across - 3. Aphids. 5. North.
6. Gardens. 8. Cooperative.
10. Larvae.

On the Brink:

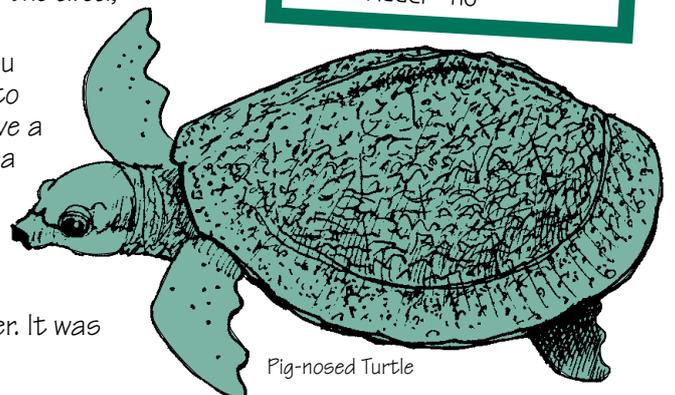
Saw.

Discovering Outdoors:

Rock-wallaby - no
Budgerigar - yes
Possum - yes
Green Tree Frog - yes
Gecko - yes
Death Adder - no



Archer Fish



Pig-nosed Turtle

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