



# Junior Ranger

## Review

Issue 2 2005



**CHECK**  
*it out*

**URBAN**  
*encounters*

*creature*  
**FEATURE**



**Barramundi**



**White-bellied Sea Eagle**



**Snakes**

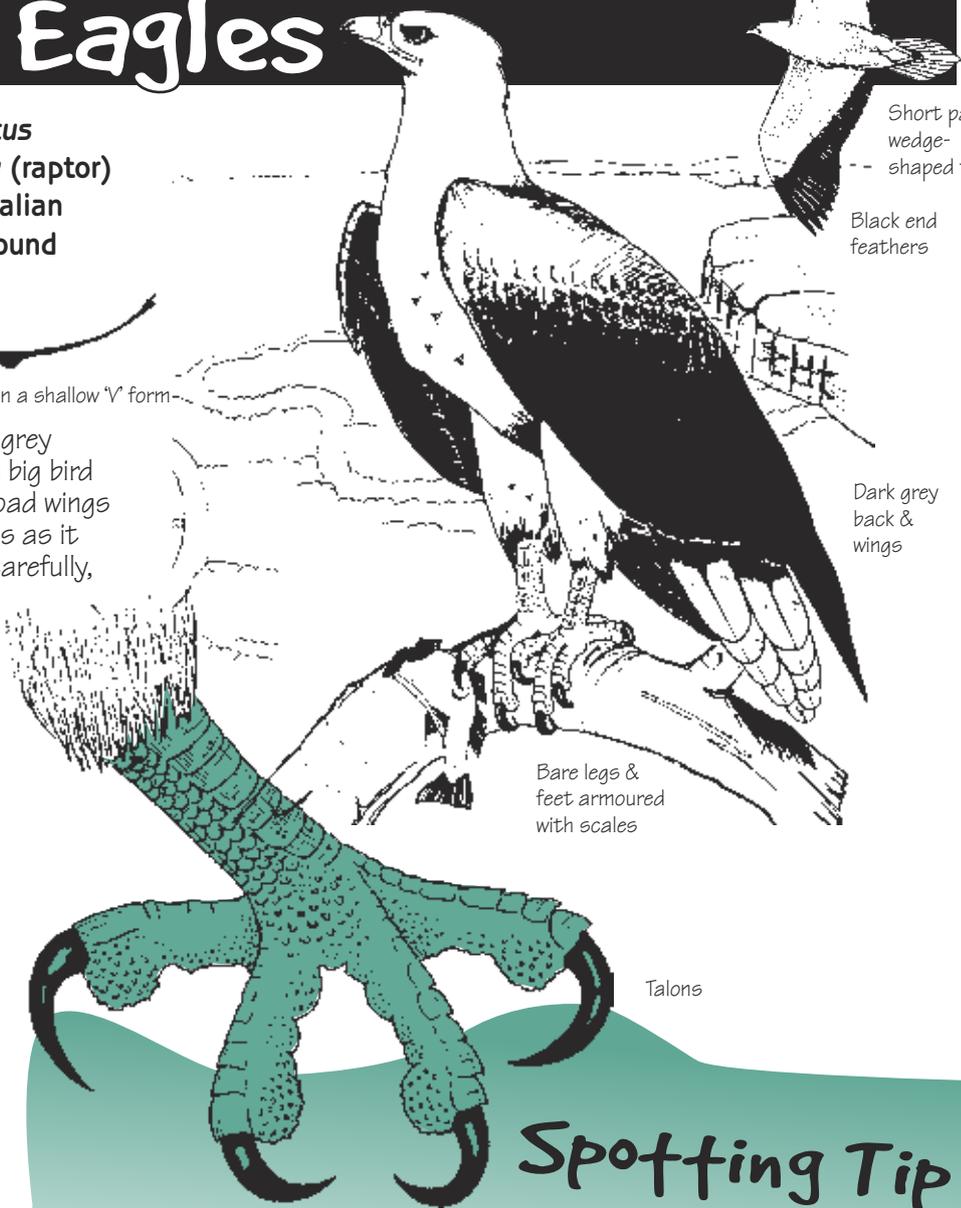
# Creature Feature

## Regal Sea Eagles

The White-bellied Sea Eagle *Haliaeetus leucogaster* is a majestic bird of prey (raptor) that is found around the entire Australian coastline, up the larger rivers and around lakes. It is a common sight for fishermen of the Top End.

This eagle is very easy to recognise. It is grey with a white head and underparts. It is a big bird (females up to 85cm and 4.5kg) with broad wings (up to 2m). Look for its upswept wing tips as it gracefully soars above you. If you listen carefully, you may hear it honking like a goose!

Gliding head-on in a shallow 'V' form



Short pale wedge-shaped tail

Black end feathers

Dark grey back & wings

Bare legs & feet armoured with scales

Talons

### G'day From Ranger Bill

Welcome to our second edition of the Junior Ranger Review for this year. Firstly, a big thank you goes out to Ranger Alissa, and in particular Ranger Kylie from Alice Springs, for their wonderful efforts over the last twelve months. We farewell them with our best wishes and we will miss them. Ranger Emily has returned from her leave full of fresh ideas and energy after her international conservation efforts.

Most Junior Ranger programs throughout the Territory (Alice Springs, Katherine & Darwin) are now well underway. Tennant Creek will kick off on July 29th. I hope all our members out there have been having fun in the bush with our energetic Junior Ranger coordinators and I trust everyone is learning heaps about our unique and wonderful NT environs.

Don't forget to drop in on the DIPE show displays throughout the regions in June and July. Come in and say hello.

Hope to see you out and about in the bush!

Ranger Bill

### Spotting Tip

To recognise raptors (hawks, eagles, kites, harriers, falcons and the Osprey but not the owls) look for their similar features. They **all** have hooked, sharply pointed beaks, large forward pointing eyes that provide excellent (binocular) vision and powerful feet. Each foot has three toes forward and one back, with sharp curved talons (claws). Male raptors tend to be smaller than, or the same size, as females.

### Footy club Reveal

The White-bellied Sea Eagle is the emblem of a high flying Australian Rugby League Club. Use a mirror to reveal the club's name and their team colours.

Warrumbungle

Their colours are white and blue.

# Piracy on the High Seas

The White-bellied Sea Eagle scavenges for most of its food. It expertly steals food from seabirds and other predators after harassing them into dropping or vomiting up their catch.

It loves to eat dead animals (carrion), especially when it is young and learning to hunt. As an adult it also hunts mammals such as rabbits, taken from the ground, and is known to snatch flying foxes from their roosts.



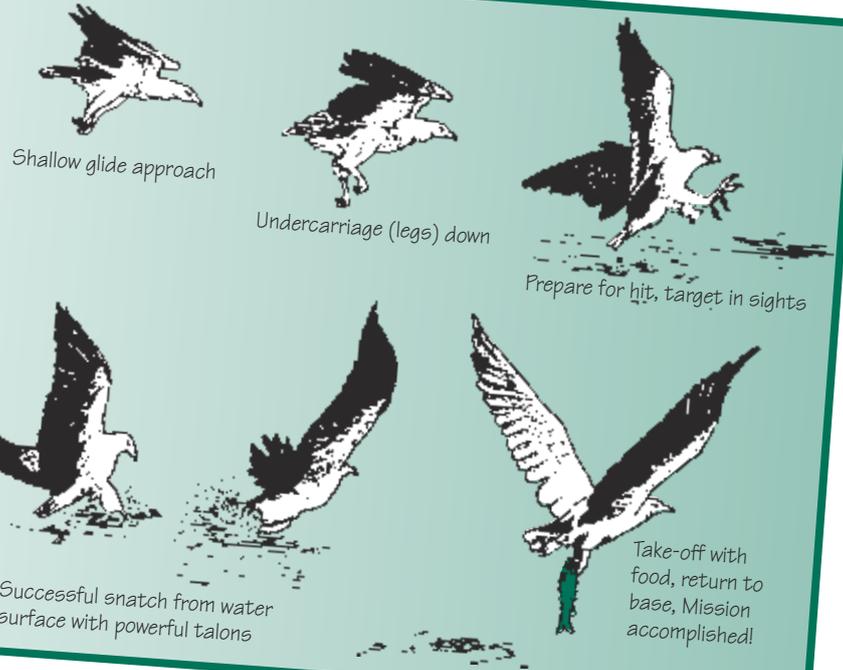
## Did you know?

Sea Eagles are not actually true eagles but more like giant kites (like the Whistling and Black kites). Eagles have completely feathered legs, but the Sea Eagles' feathers are more like long shorts, going just past the knee!

## Dive-bomber!

The Sea Eagle is a spectacular fisherman. Prey may include fish, baby sea turtles, crabs and sea-snakes.

From a perch high above it will patiently scan the water for a seafood meal. Once a target is spotted, the Sea Eagle swoops down with wings partly closed into a shallow glide, making sure its shadow doesn't scare off its prey. As it closes in it brings its talons under its chin ready for the strike. With an explosive splash of water the talons flash down and grab its prey from the water surface. A powerful beat of the wings and the Sea Eagle surges upwards, heading back to its perch to enjoy its meal. It is extremely strong as it can actually lift and carry half its own body weight whilst flying!



## Romance and Murder

White-bellied Sea Eagles stay together for life. They usually build their nest, a huge stick platform up to 4m thick, very high up in the fork of a tree. In the Top End, breeding is during the dry season (May to August). Two eggs are usually laid on a bed of fresh green leaves. The cute, fluffy white chicks hatch a few days apart. However, one is a bully! The first to hatch will often take all the food and pick on its brother or sister. It may even kill it!

Sea Eagles are good parents. The mother spends most of her time looking after the young whilst the father is off hunting for food and defending their territory (home). They may live for 30 years, which is old for a bird!

## Strange names!

To learn more about eagle chicks turn each letter into the one that comes before it in the alphabet. This dial will help you!

An eagle chick is known as an

F	B	H	M	F	U
<input type="text"/>					

An eagle nest is called an

F	Z	S	J	F
<input type="text"/>				



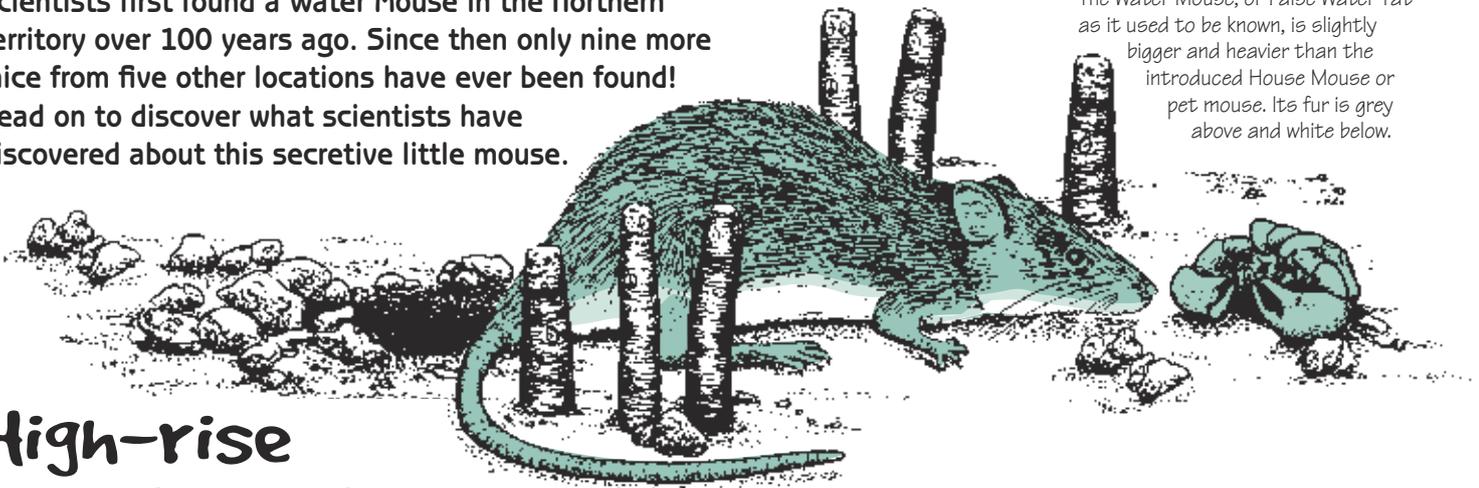
# On the Brink



## The Mysterious Water Mouse

Scientists first found a Water Mouse in the Northern Territory over 100 years ago. Since then only nine more mice from five other locations have ever been found! Read on to discover what scientists have discovered about this secretive little mouse.

The Water Mouse, or False Water-rat as it used to be known, is slightly bigger and heavier than the introduced House Mouse or pet mouse. Its fur is grey above and white below.



### High-rise apartments by the water

Water Mice, *Xeromys myoides* seem to like living on the edge of mangrove forests and floodplain grasslands. Although they can swim, they prefer not to. This may have led to the scientific name *Xeromys*, meaning "dry mouse".

They often build homes of dirt and mud at the edge of the high tide mark. These are about 60 centimetres high and look like termite mounds. Inside are a series of tunnels and nests where family groups sleep and breed.



### A seafood diet

The mice leave their miniature high-rise homes during low tide at night and move into the mangroves and floodplains to hunt (they're nocturnal). Mangrove worms, shellfish and crabs are their favourite dishes. When they catch a crab, they tear its arms and legs off before getting stuck into the meaty body!

### Is the Water Mouse on the brink?

Scientists cannot agree on whether they are really on the brink because they know so little about them. Scientists certainly haven't found them at many places, but maybe they are just hard to find. They have never been found in huge numbers, so maybe they just aren't common. There are heaps of mangrove forests and floodplain grasslands covering Australia's north, but we don't know how much of it is suitable habitat for them.

Our local Parks & Wildlife scientists only look at plants and animals in the NT. They figure that they can't really classify them as a **threatened species** because so little is known about them. They have classified them as needing more study. However, scientists working for the Australian (or Federal) Government who look at **all** of Australia's plants and animals have listed them as a **vulnerable** threatened species. Confusing, isn't it?

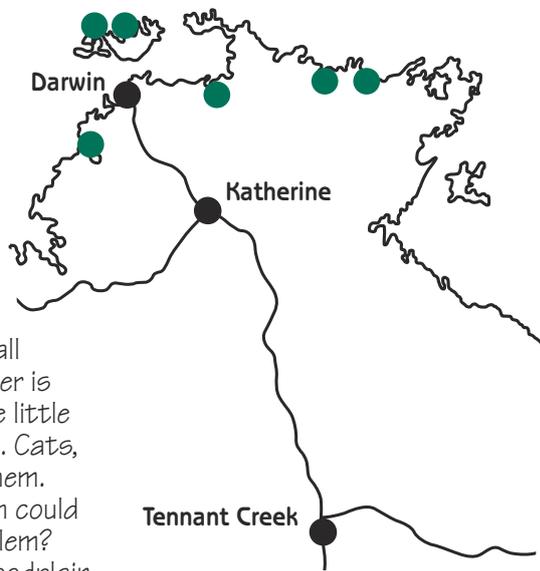
Home sweet home (sing along now!)



"Give me a home, amongst the mangroves, with lots of shellfish, a crab or two and a mangrove worm!"

# Possible problems for the Water Mouse

Water Mice only seem to occur in a few small isolated areas in the NT. One possible danger is that a local disaster could wipe out a whole little population (think tsunamis, fire or disease). Cats, dogs and feral pigs probably eat a few of them. Clearing or changing their habitat too much could also cause a problem, but how big of a problem? For instance, we just don't know whether floodplain weeds or cattle grazing actually bother them at all. More study needs to be done. Hopefully we might find more populations of this unique little mouse, and maybe they are doing just fine!



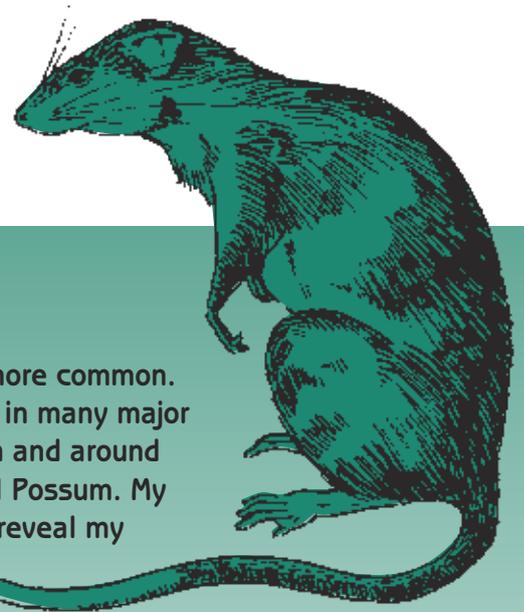
The Water Mouse has only been found in six locations in the NT (above). Strangely, one was found in the stomach of a crocodile!

## Did you know?

The Australian Government (based in Canberra) and Traditional Aboriginal Owners manage Kakadu and Uluru - Kata Tjuta National Parks, not Parks & Wildlife (NT Government). A single Water Mouse was once found in what is now Kakadu, way back in 1903.

## Science Snippet

Scientists use different levels of threat when classifying threatened species. The lowest level is **vulnerable**, then **endangered**, then **critically endangered** and worse still is **extinct in the wild** (lives only in zoos or botanic gardens). The final step is **extinct**.... game over!



## Who am I?

I am the Water Mouse's closest Australian cousin, but I am much more common. I am found around nearly the entire Australian coastline, and even in many major river systems. I am a super swimmer and spend most of my time in and around water. I'm pretty chunky, getting almost as big as a small Brushtail Possum. My scientific name is *Hydromys chrysogaster*. Complete the puzzle to reveal my common name.

1. Long slimy Water Mouse food

2. Water Mice like to live near...

3. Come out at night

4. Fur colour underneath a Water Mouse

5. Fur colour on top of a Water Mouse

6. Salt tolerant coastal plants

7. Food with many legs to tear off

8. Animals on the brink are

		1	<input type="text"/>	_____
		2	<input type="text"/>	_____ <b>R</b> _____
	3	<b>N</b>	<input type="text"/>	_____
4	<input type="text"/>	<input type="text"/>	<input type="text"/>	_____
		5	<input type="text"/>	_____
6	<b>M</b>	<input type="text"/>	<input type="text"/>	_____
		7	<input type="text"/>	_____
8	<b>T</b>	<b>H</b>	<input type="text"/>	_____

# Urban Encounter

## Barramundi

The Barramundi, *Lates calcarifer* is famous for its spectacular fighting ability when hooked on a fishing line and as a fantastic eating fish that is served by restaurants worldwide. Their reputation has attracted thousands of recreational fishermen from all over the world to the Northern Territory to try their luck. In the Top End, barra live very close to people, and they are sometimes even kept as pets!

### Did You Know?

Barramundi have growth rings like those on tree trunks. They are found in bony things in the head called **otoliths**. Each ring means one year of life. Barramundi can live for up to 20 years, but older barramundi are not good to eat, as their meat is tough and flavourless.

### A big fish in a big pond

Barramundi can grow to a large size (150 cm), and weigh over 40 kg. There are much larger ones recorded though, but they are uncommon. Barra are silvery coloured with large reflective scales and a broad fan-tail. Their size, shape and colour give them a spectacular appearance. They live in both salt and freshwater habitats.

### Near the top of the food chain

Barra are mighty hunters! They are an ambush predator, waiting for their prey to come to them before striking at lightening speed. What they actually do is create a powerful sucking action with their bucket-like mouth drawing in water and unwary prey from over 20cm away.

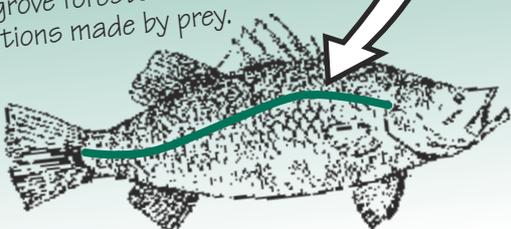
Barra will eat almost anything in the water as long as it fits in their mouth. As babies (fingerlings), they eat plankton (microscopic plants & animals). As they grow they eat larger things like insects, crustaceans (such as prawns - a real favourite),

frogs and other fish including other Barramundi. They have even been known to eat baby crocodiles! In turn, they are on the menu for birds like Black-necked Storks (Jabirus), Kingfishers, White-bellied Sea Eagles, as well as crocodiles and file snakes.

### Seeing without eyes

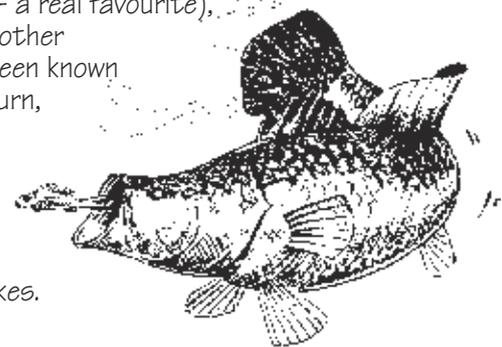
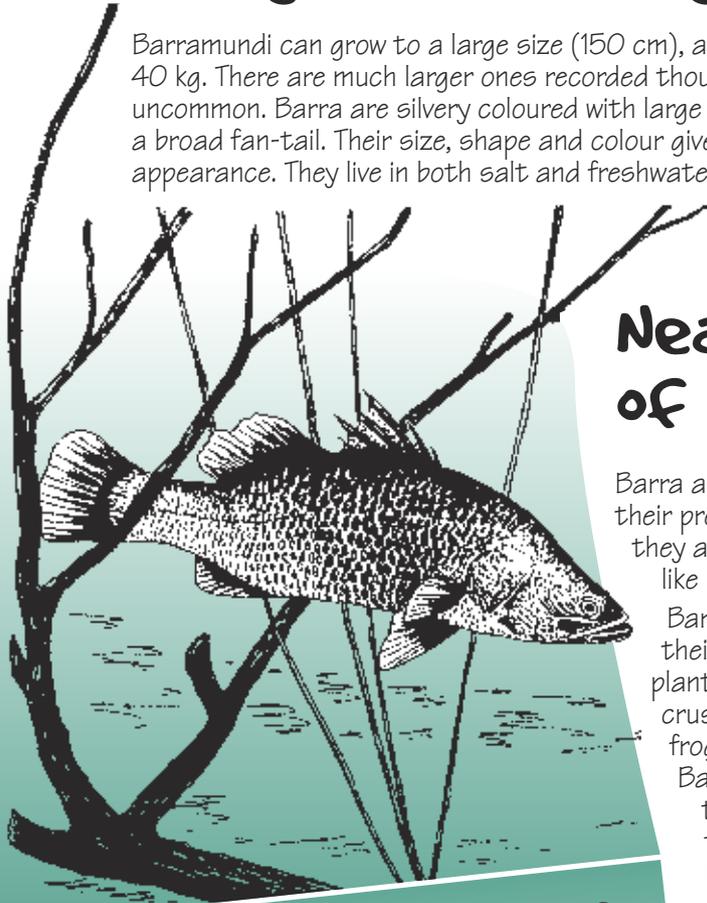
The lateral line

A special sensory organ called the **lateral line** allows the Barramundi to hunt in the murky waters of mangrove forests. It detects vibrations made by prey.



### Mangroves and Barramundi

Mangroves are essential in the lifecycle of the Barramundi. During the high tide they provide a sheltered environment for mating and as a nursery. When the eggs hatch, the babies get a head start from all the readily available food in this nutrient rich habitat.



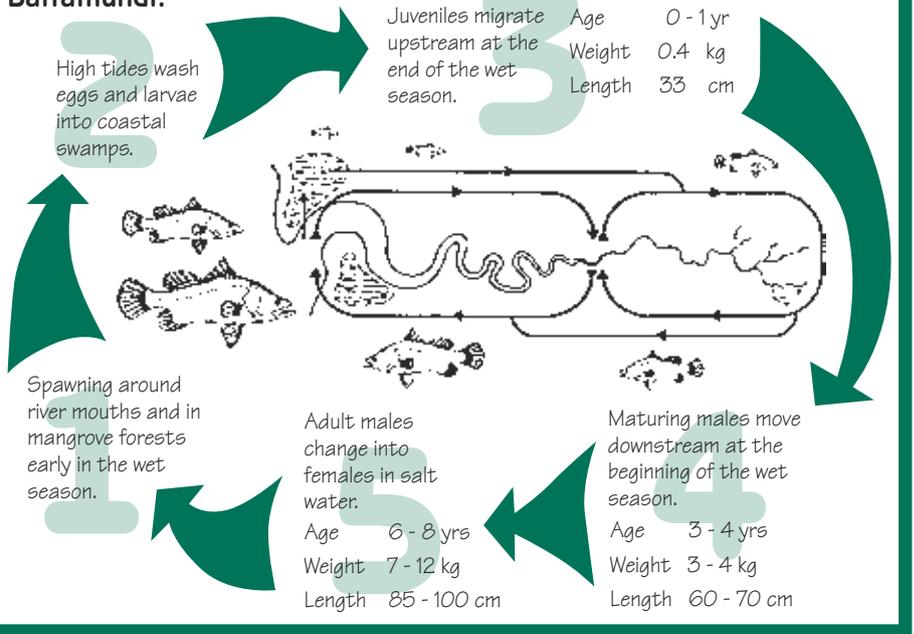
# Born a man and ....now a lady!

Barramundi breed during the wet season (Oct-May) in the salty water around river mouths. All fingerlings are born as males. When they return to salt water at around 6 to 8 years old, they become female! Scientists believe that the secret trigger for changing sex has something to do with salty water.

## Did You Know?

A female can produce 32 million eggs in one season. That's a lot of brothers!

This illustration shows the life cycle and migration pattern of the Barramundi.



## Puzzle Time

You too can help save the Barramundi! If we all do this together, Barramundi will be here for ever. Use the code to reveal the missing words.

Barramundi are great to catch but we should all consider the important role they play in their natural habitat. When fishing a person

may have     barra in their

B1 B4 E2 A5

possession, at any one time. Except in the Mary River area where the limit is only

per person.

D5 E3 C5

The Barramundi you have are not allowed to be under

-

B1 B4 B1 D5 E5 B1 B4 E2 A5

centimetres. This is because Barramundi under this size are males. Without them Barramundi would not be able to mate!

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

## Seeing a Barramundi up close

Barramundi live quite close to urban areas of the Top End, especially Darwin and Gove. With keen eyes, they can be spotted from places like Darwin's Stokes Hill Wharf at night. To try this, look for their eye shine with a torch. In daylight, they can be seen in the waters of mangrove forests and in shallow freshwater streams. You can snorkel with them at Howard Springs Nature Park, and feed them at Aquascene at Doctors Gully. In Mataranka, the Territory Manor has a Barramundi feeding display. At the Territory Wildlife Park the Barramundi swim over you as you walk through a glass tunnel in a giant aquarium. It doesn't get much better than that.

Mangroves lining the banks of Rapid Creek in Darwin.

# Plant Profile

## Witchetty Bush

## Natures Bed & Breakfast!



If you live in Central Australia you might see this plant in your backyard and walk past without batting an eyelid - well it's time to stop, look and explore the world of the Witchetty Bush!

### Perfectly at home in the desert...

The Witchetty Bush lives in arid Central Australia and has some great adaptations for conserving water and living in the desert.



### Funnel

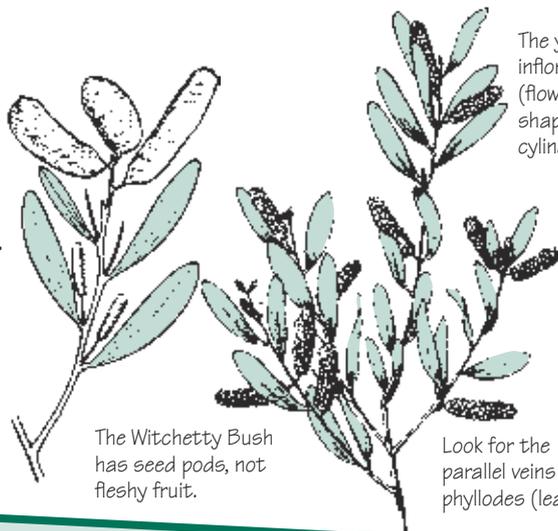
The branches of a Witchetty Bush are shaped like an upside down umbrella. This helps the tree to collect water when it rains. The leaves catch the rain and funnel it down the branches to the base of the tree.

### Leaves of green.. well, dull green

Like many plants in Central Australia, the Witchetty Bush has dull greyish green leaves. They attract less heat than darker leaves, meaning less water loss.

### The right angle

The angle the leaves face can also minimise water loss. Have a close look at which way the Witchetty Bush leaves face. You'll notice they tend to point up. This means that only the edges of the leaf face the hot sun, so they lose less water.



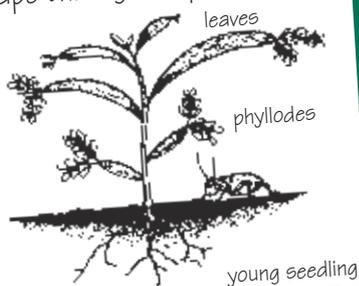
The yellow inflorescence (flowers) is shaped like a cylinder.

The Witchetty Bush has seed pods, not fleshy fruit.

Look for the parallel veins on the phyllodes (leaves).

### A tree with no leaves?

A Witchetty Bush doesn't have any leaves! It actually has 'phyllodes' which are like leaves, except they are better built for the desert environment. They start off as feathery leaves and then turn into phyllodes which are flattened leaf stalks. Phyllodes lose less water because they have fewer pores and don't sweat as much. They have fine hairs so water doesn't escape through evaporation.



### Flower Power

Exchange the number for the matching letter in the alphabet to find out the answer. Eg. 1=A 2=B 26=Z.

The \_\_\_\_\_ of a Witchetty Bush is called an \_\_\_\_\_

and is actually \_\_\_\_\_ of tiny \_\_\_\_\_ on one stalk.

# Bedroom, Kitchen & Nursery

Find out how the Witchetty Bush is used by plants, animals and people...



Some types of insects live in galls (woody growths) on the branches and feed off the sap. Others feed and lay their eggs on the leaves. Birds use the Witchetty Bush to nest and forage in. They also eat the insect eggs on the leaves and the sugary scale that some types of insects produce.



The seeds from the Witchetty Bush have a coloured attachment called an aril. Ants love them, so they collect the whole seed, take it back to the nest, rip off the aril and throw the seed away. This helps the plant to spread its seeds around, so look out for piles of seeds around ant nests!



Nectar from the flowers is mainly eaten by insects that help to pollinate the plant.



Witchetty Grubs turn into Ghost Moths when they become adults. The adults lay eggs around the Witchetty Bush and when they hatch the grubs burrow into the ground to feed in the roots.



Aboriginal women and children find Witchetty Grubs by looking for cracks in the soil and digging to the trees roots with a digging stick or crow bar. They find a swollen part of the root where the grubs are feeding, break it off and get the grub out with a piece of hooked grass or their finger. The Witchetty Grubs are eaten raw or cooked quickly in the coals. They taste a bit like egg and have heaps of good fats and energy.



Witchetty Grubs feed on the sap from the roots. They spend most of their lives as grubs, eating, getting fat and gaining enough energy to turn into adult Ghost Moths.

## Did you know?

The scientific name for the Witchetty Bush is *Acacia kempeana*. Acacias are commonly called Wattle Trees. There are about 900 different types of Acacia in Australia.

# Check it out!



## Dine In, Take away or Home Delivered?

Did you know that different snakes hunt in different ways? Just like you and me they have their favourite way of eating. Check out which snake likes dining in, which snake likes take away and which snake likes home delivered.

### Death Adders



#### Deadly delivery

Death Adders have great camouflage, making them hard to see. They stay perfectly still with their head curled up beside their thin worm like tail. Whilst hunting, a Death Adder will position itself on a path that small mammals use at night. The Death Adder will wiggle its tail to attract curious animals who think they have found a meal of their own! Then it strikes! With powerful venom, it kills the prey almost instantly and has hardly had to move! This makes the Death Adder an ambush hunter and a lover of home delivered meals.



Desert Death Adder  
*Acanthophis pyrrhus*



Woma Python  
*Aspidites ramsayi*

### Woma Python



#### An uninvited guest... having you for dinner

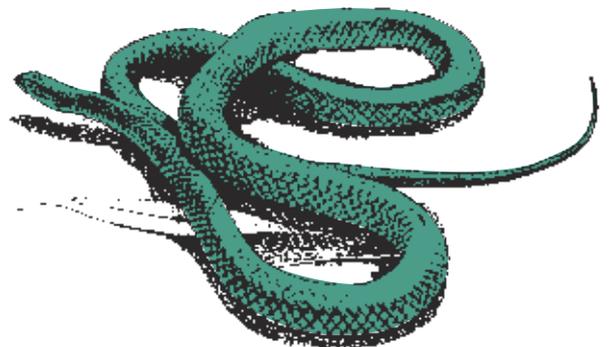
Woma Pythons are nocturnal snakes and differ from Whip Snakes and Death Adders because they are not venomous. Womas will go down into the burrows of mammals to eat them for dinner. When there is not much room down in a burrow, the pythons use their thick strong bodies to squash their prey against the wall. Reptiles are also a favoured food for these pythons, but when it comes to mammals, they choose to dine in.

### Whip Snakes



#### Fast food... the running kind!

Whip Snakes are daytime hunters. When they are warm they become fast and agile. They have good eyesight, great for spotting fast moving lizards - main course! Whip Snakes hunt lizards by chasing after them and injecting venom into their body. They usually strike the lizard quite a few times until the venom starts to work. Then they swallow it whole. If they try eating the lizard before the venom works they risk being bitten and injured by their own meal. With fast food in mind Whip Snakes obviously like their dinner to take away.



Yellow-faced Whip Snake  
*Demansia psammophis*

## Why the Difference?

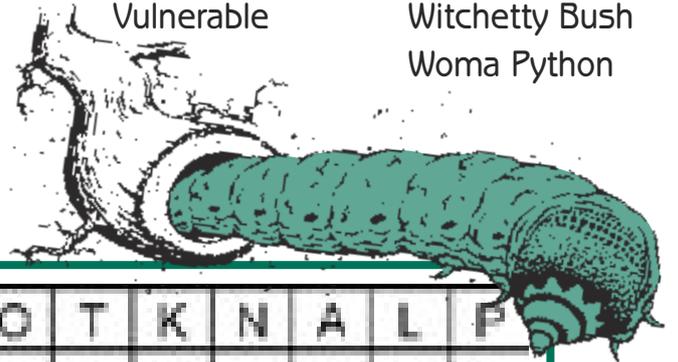
Snakes have different ways of hunting because they occupy different niches in the environment. This means that they eat different food, are active at different times, and behave in different ways. If they all ate the same thing and hunted in the same way there might not be enough food or space to go around!

# Nature Quiz

## Junior Ranger Word Search

To find out more about these words check out the articles and read carefully!  
Look for the answers up, down, diagonal and back to front.

- |             |               |            |            |                |
|-------------|---------------|------------|------------|----------------|
| Acacia      | Fishing       | Nocturnal  | Talons     | Water Mouse    |
| Adaptation  | Grub          | Phyllode   | Top End    | Whip Snake     |
| Aril        | Inflorescence | Plankton   | Vulnerable | Witchetty Bush |
| Barramundi  | Jabiru        | Raptor     |            | Woma Python    |
| Death Adder | Krill         | Roots      |            |                |
| Eggs        | Mangroves     | Sea Eagles |            |                |
| Family      | Moth          | Shellfish  |            |                |



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

Use the left over letters to fill in the spaces.

You can find Katherine Gorge in

-----

# Discover a Territory Park

## Nitmiluk National Park

Nitmiluk National Park is well known for its spectacular gorges. Spring fed rainforests, waterfall plunge-pools and rock art sites are scattered along the sandstone walls. This ancient sandstone plateau supports a range of unique animals and plants.

### What to see & do

Your first stop in the Park should be the visitor centre, for all information and to plan your visit. You will find a wide array of activities. These include fishing (lure only), swimming, day and overnight walking tracks, canoe hire, various cruises and helicopter flights. You can also bring your own canoe or small dinghy (permit required) to do a day trip or camping trip along the Gorge.

### When to visit

A dry season visit between April and August is ideal. March and April are a great time to see the escarpment wild-flowers.

### Walks

There are extensive walking tracks within Nitmiluk. The Southern Walks consist of both day and overnight walks which take you along the gorge system. Offering a more secluded experience is the Jatbula Trail, a 67 km five day walk from the Gorge to Edith Falls. This walk takes you through some of the most spectacular scenery in the Park, including cascading springs and waterfalls.

### Interesting wildlife

While in the Park, keep a look out for rare and endangered species like the Gouldian Finch, Hooded Parrot, Yellow-throated Grass Wren and Red Goshawk. The mound building Spinifex ant lives on the escarpment top along with the Curly-leafed Acacia, *Acacia helicophylla*.

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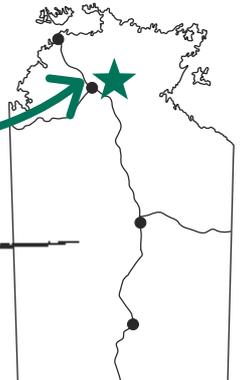
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Peregrine Falcons build their nests high up in the gorge walls. Keep an eye out for them stooping for prey.



Gouldian Finch



### Where is it?

The main entrance to the Park is 30 km northeast of Katherine along the Gorge Road. Access to the Leliyn (Edith Falls) sector is via 20 km of sealed road, off the Stuart Highway 40 km north of Katherine.



Second gorge – Nitmiluk National Park

### Puzzle Answers

#### Creature Feature:

Manly Warringah. Club colours maroon and white.

Eyrie. Eaglet.

#### On the Brink:

Worms, water, nocturnal, white, grey, mangroves, crab, threatened.

I am a Water Rat.

#### Urban Encounter:

Five, two, fifty-five.

#### Plant Profile:

The flower of a Witchetty Bush is called an inflorescence and is actually hundreds of tiny flowers on one stalk.



Spinifex clump