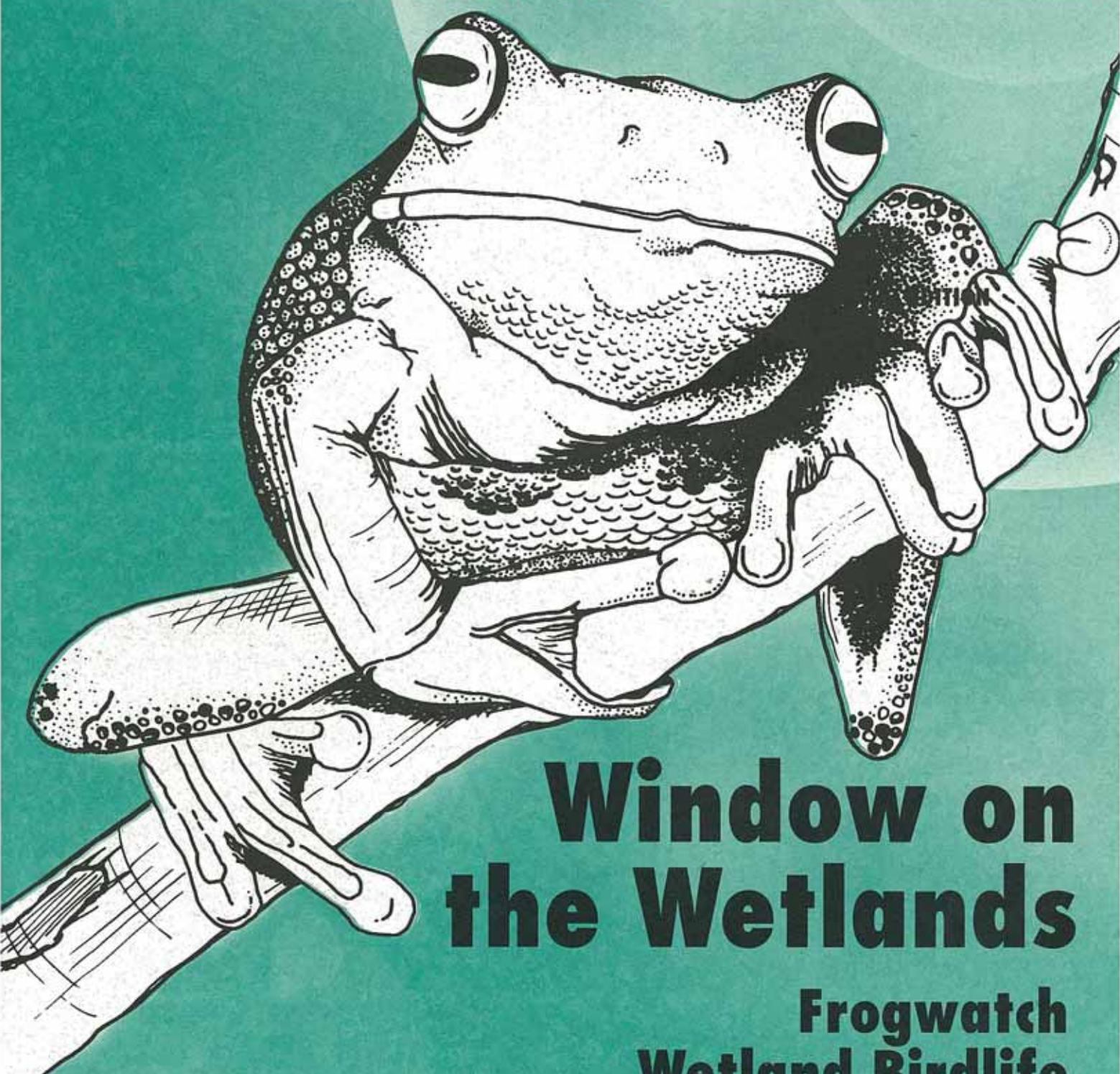




# Junior Ranger

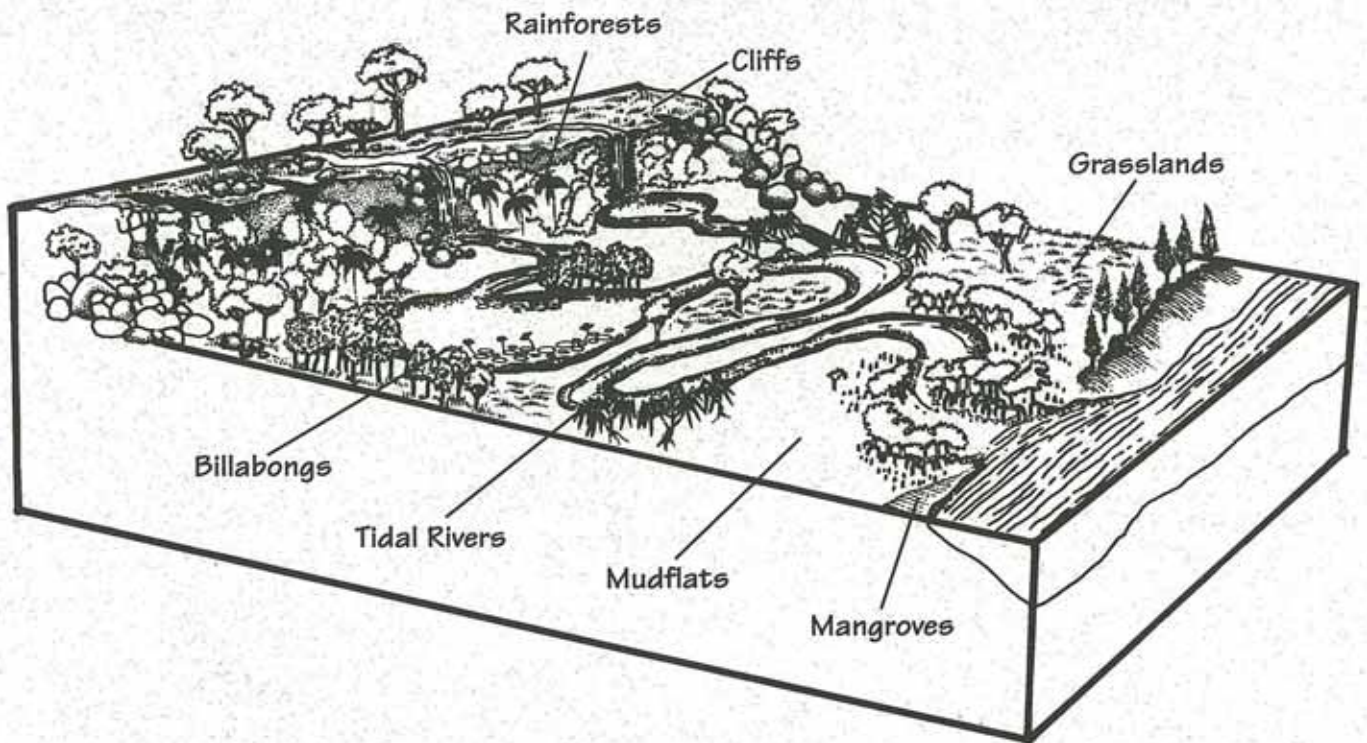
## Review



# Window on the Wetlands

**Frogwatch  
Wetland Birdlife  
Home in the Pandanus  
Out on the Floodplains**

# Coastal Wetlands



As Top End rivers approach the sea, they cross flat, coastal plains. During the wet season the rivers break their banks and flood these low lying areas. The water recedes when the monsoon season ends but the coastal plains don't completely dry up. Billabongs and paperbark swamps remain. Along the coast, mangroves and mudflats provide a moist habitat throughout the year. A large variety of birds, frogs, reptiles, invertebrates and fish live

in the coastal wetlands. This special edition of the Junior Ranger Review will introduce you to some of them. In the past, Australians have often treated our wetlands as wastelands. Swamps have been filled in to make football fields, rubbish dumps or industrial areas. Mangroves have been cleared for waterfront housing development and boat marinas. We need to look after our remaining wetlands.

Here's how you can get involved:

- Learn more about them and their management. You'll find you'll appreciate them even more.
- Treat wetlands and their inhabitants with care and respect. (Don't leave rubbish in them. Observe fishing and wildlife regulations. Avoid riverbank damage by reducing the speed of your powerboat.)
- Support community clean-ups and landcare groups working to save these special places.

## Ramsar Convention

Throughout the world, wetlands are under threat. In 1971 a number of countries got together to tackle the problem.

At Ramsar in Iran in 1971 a number of countries came together to make a list of Wetlands of International Importance and signed an agreement to protect them.

This became known as the Ramsar Convention.

In Australia 40 wetlands have been recognised as being among the world's most special places.



# What Duck is that ?

The Top End is famous for its wetlands wildlife.

Below are 9 waterfowl common in the Northern Territory.

The maps show where they live. Use coloured pencils and a bird guide from your local library to colour them. This will help you recognise them in the bush.



Radjah Shelduck



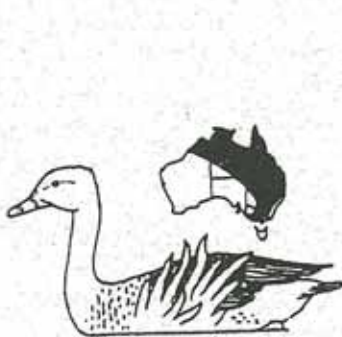
Wandering Whistling-Duck



Green Pigmy-geese



Pink-eared Duck



Plumed Whistling-Duck



Grey Teal



Pacific Black Duck



Maned Duck

## Wetlands Birdlife

The wetlands of Australia's Top End are renowned worldwide for their amazing birdlife. Their habitat could be threatened if we don't control the spread of feral animals, water weeds and saltwater intrusion.

Can you identify these Top End waterbirds whose names are written in mirror images?



nglrod



tlitz



uridnj



heron



terpe

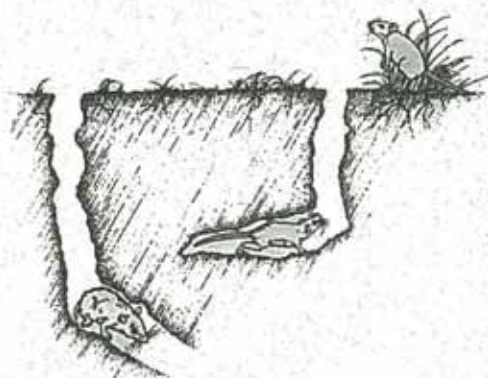
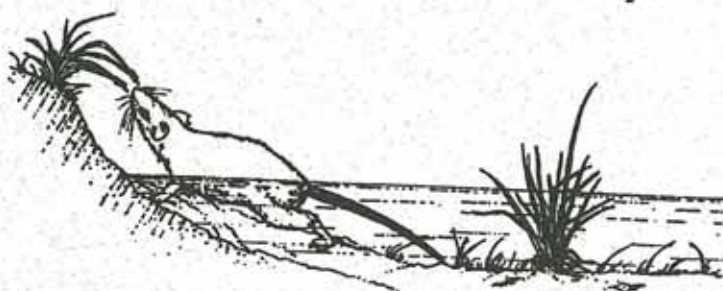


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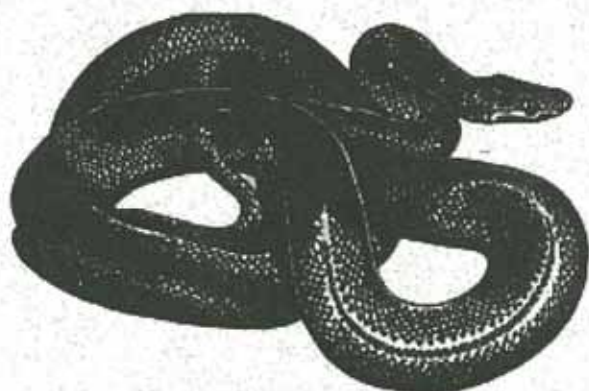
# Out on the floodplains

On the floodplains east of Darwin are two animals whose lives are closely linked.

Many thousands of Dusky Rats *Rattus coletti* live on the floodplains. They feed on the roots of grasses and sedges. They are excellent swimmers and also gather seeds and leaves from flooded plants.



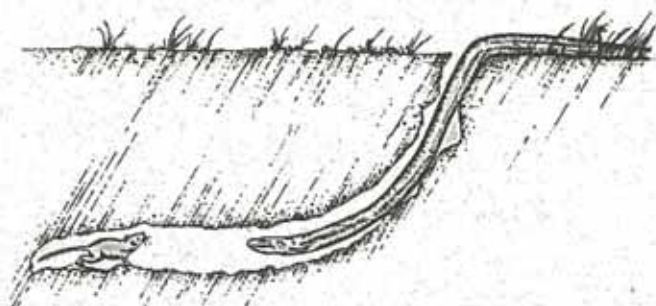
The rats live in burrows beneath the hard soil. They can breed when only one month old. Numbers build up quickly when conditions are good.



The rat's enemy is the Water Python *Liasis fuscus*. Small pythons slide into the burrows to get the rats. Big pythons stay on the surface and wait for the rats to come out at night. They have heat sensors that help them locate the rats in the dark.

## Did you know...

If you weighed all the rats and pythons living in one square kilometre of floodplain, they would weigh more than all the large animals (elephants, giraffes, etc) that live on one square kilometre of African savannah.



## The python's enemy

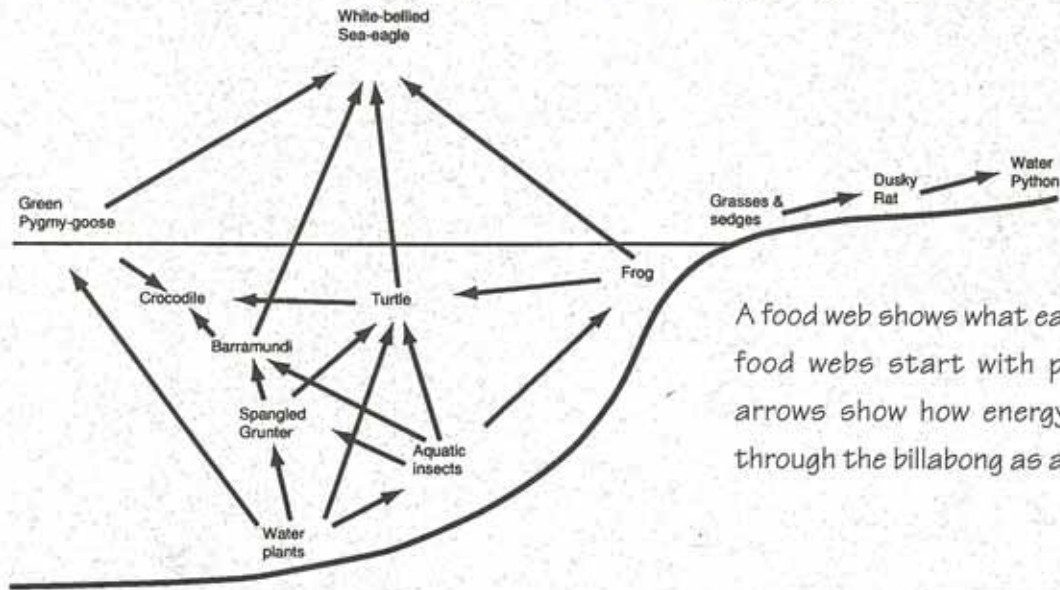
Pythons lay their eggs in the dry season when the soil is hard. They can't dig a burrow so they use someone else's. This is risky business because the burrows owner is fond of eggs.

Use the number code to find its name:  $\overline{6}$   $\overline{10}$   $\overline{3}$   $\overline{14}$   $\overline{1}$   $\overline{22}$   $\overline{24}$   $\overline{23}$   $\overline{18}$   $\overline{3}$   $\overline{24}$   $\overline{1}$

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	Z
10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	1	2	3	4	5	6	7	8	9

# EAT and get EATEN

There's a whole lot of munching and crunching going on in a Top End billabong.



A food web shows what eats what. All food webs start with plants. The arrows show how energy is passed through the billabong as animals feed.

Can you work out what these 4 animals eat?

1.  A

2.  L

3.  R

4.  E

Y

E



1.  G

2. A

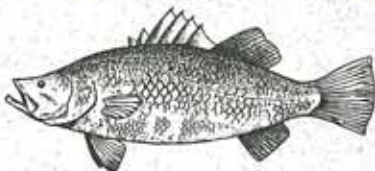
T

3.  G

U

4.  E

L

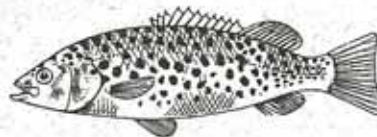


1. S

T

2.  Q

C

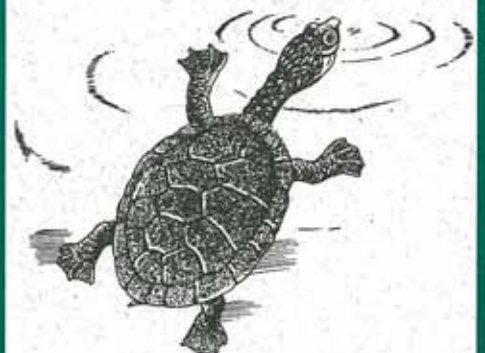


1.  A

N

2.  T

N





# Home in the Pandanus

A Pandanus tree, silhouetted against the setting sun, is a typical postcard scene of the Top End. These trees are common in the coastal wetlands.

## Pandanus trees

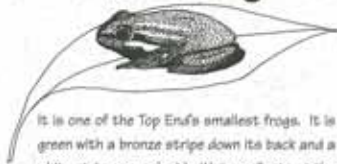
Some interesting animals live in or near Pandanus trees. The Northern Dwarf Tree Frog *Litoria bicolor* hides in the leaves, from its enemy the Green Tree Snake, *Dendrolaphis punctulata*.

## Crimson Finch

The Crimson Finch *Neochmia phaeton* is a beautiful red bird with a long tail. You see it feeding in long grass near creeks lined with Pandanus.



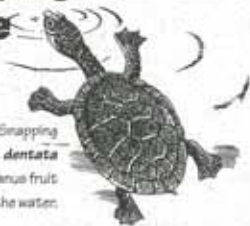
## Northern Dwarf Tree Frog



It is one of the Top End's smallest frogs. It is green with a bronze stripe down its back and a white stripe on each side. Water collects at the base of Pandanus leaves, where they join the stem. This keeps the frog moist during the dry season.

## Northern Snapping Turtle

The Northern Snapping Turtle *Elseya dentata* feeds on Pandanus fruit that fall into the water.



Pandanus seed

## Sulphur-crested Cockatoo

Sulphur-crested Cockatoos *Cacatua galerita* are the main dispersers of Pandanus seeds. By June, the orange fruit is soft and fleshy inside its tough, protective fibres. The Cockatoos tease out the edible bits with their strong sharp beak.



Scientists who have studied the coastal wetlands believe that the Pandanus was much more impressive before feral animals came to the Top End.

Aelian Water Buffalo and feral Pigs have taken a heavy toll on the Pandanus communities. The buffaloes and pigs eat the new shoots and leaves that sprout from the base of the trees. Young seedlings have a hard time getting established. Buffalo numbers were dramatically reduced in the 1980's under the Government's Brucellosis and Tuberculosis Eradication Campaign (BTEC). But pigs are still running wild.



Pigs destroy plants and cause soil erosion. This is bad news for native animals that live and feed in the vegetation.



Red-cheeked Dunnart

Several native mammals have suffered because of damage caused by pigs and buffalo. The Red-cheeked Dunnart *Sminthopsis virginiae* and the Grassland Melomys *Melomys burtoni* were both more abundant when the Pandanus was thicker and provided shelter from predators. The Water-rat *Hydromys chrysogaster* was also more common.

## The Little Fairy

The Purple-crowned Fairy-wren *Malurus coronatus* has suffered because of pig and buffalo damage to the Pandanus thickets. It is now rare in the Top End.

Use the number code to colour this small male bird.

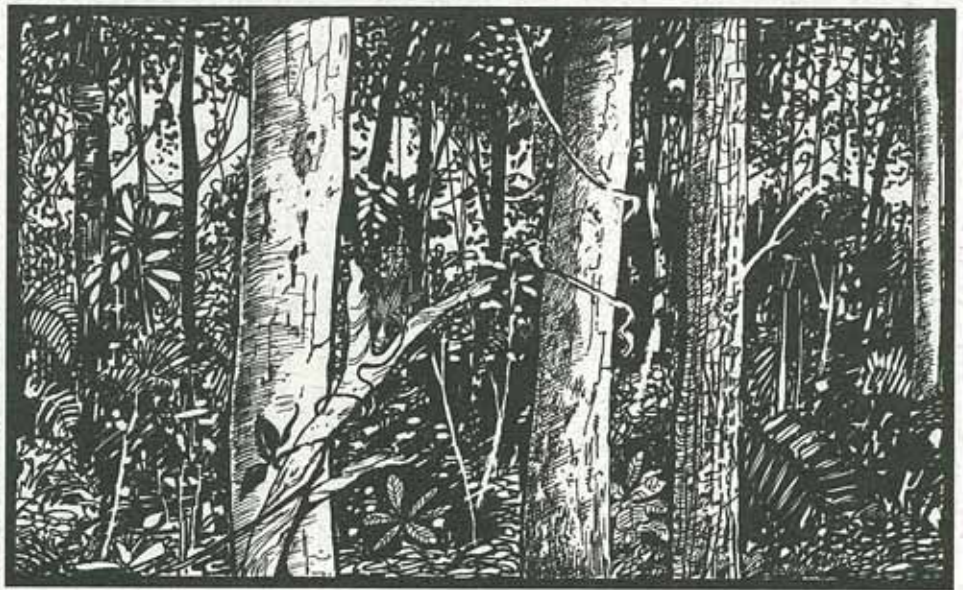
- |            |           |
|------------|-----------|
| 1 = purple | 4 = cream |
| 2 = black  | 5 = brown |
| 3 = white  | 6 = blue  |



# A Humid Haven



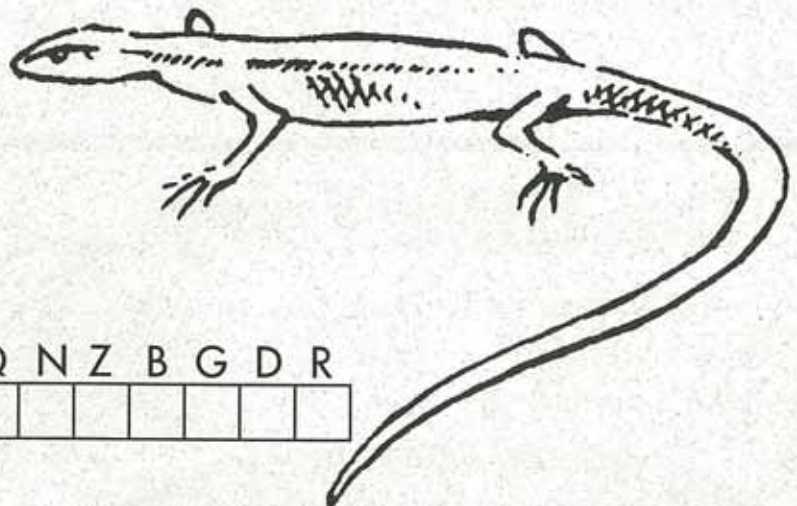
Small pockets of rainforest are dotted across the coastal plains, alongside creeks which keep the soil moist during the dry season. Here, a dense canopy of leaves shades the forest floor like an umbrella. The Rainforest Pitta is one of the birds found in this humid haven. It spends



most of its time on the forest floor, scratching through the leaf litter and poking its beak into the soil. Snails are favourite tucker. The

Rainbow Pitta holds a snail in its beak and bangs it against a stone or wood. After it has broken the shell, it eats the soft body inside.

**Find out what else Rainbow Pittas eat by replacing each letter below with the one that comes after it in the alphabet.**



E Q N F R

--	--	--	--	--

B N B J Q N Z B G D R

--	--	--	--	--	--	--	--	--	--	--

K D D B G D R

--	--	--	--	--	--	--

V N Q L R

--	--	--	--	--

A D D S K D R

--	--	--	--	--	--	--

R J H M J R

--	--	--	--	--	--

L H K K H O D C D R

--	--	--	--	--	--	--	--	--

R O H C D Q R

--	--	--	--	--	--	--

# Where Salties Live

**B1 C2 C5 C5 A4 D1 C2 A1 B4 C4**

--	--	--	--	--	--	--	--	--	--



**A2 B4 C2 C2 A1 A2 C5 C4 B2**

--	--	--	--	--	--	--	--	--	--

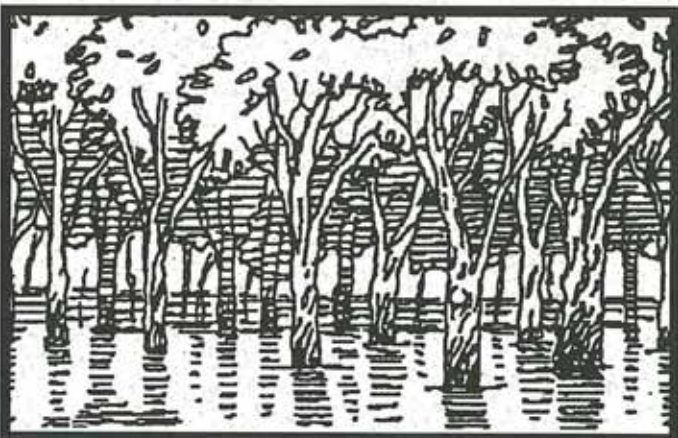


**D1 A1 D1 A5 D3 A2 A1 D3 C1**

--	--	--	--	--	--	--	--	--	--

**D4 E3 A1 C3 D1**

--	--	--	--	--



Saltwater Crocodiles live in coastal waters, wetlands and tidal rivers. But you might also spot them as far as 300km from the coast. Beware of the salties in the following places. Use the grid to decode their names. (To decode each letter find the square where the letter row meets the number row.)

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

Be especially careful about swimming in

**C3 E1 A4 A4 35**

--	--	--	--	--

**E3 A1 D5 A5 D3**

--	--	--	--	--

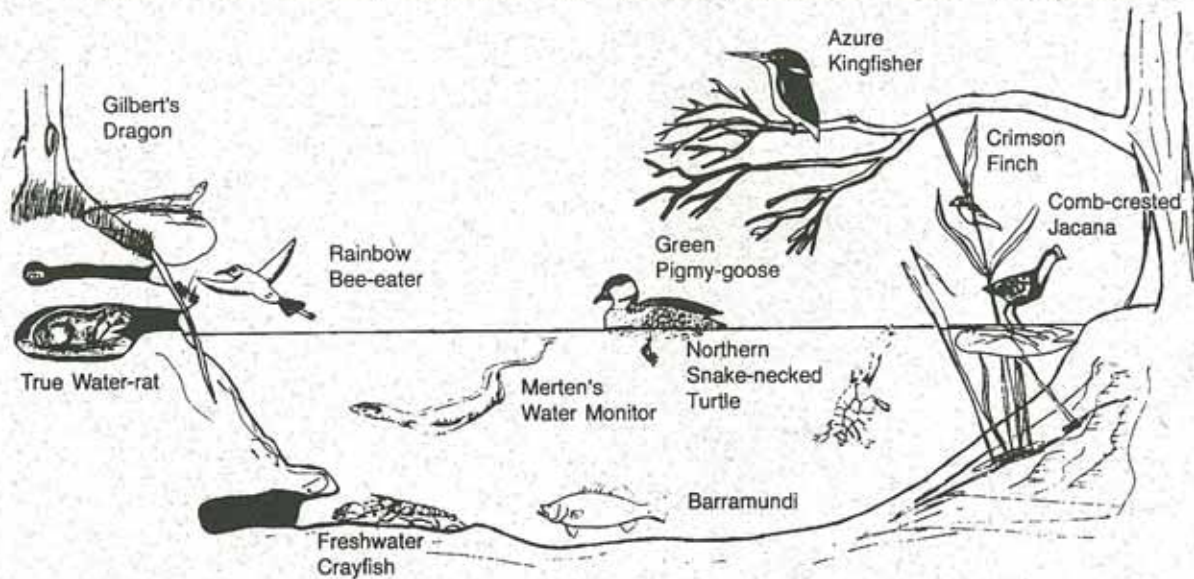
Use common sense when fishing, swimming and camping. Always observe the crocodile warning signs.





# Life in a Top End Billabong

Many animals live in or near Top End wetlands. Some spend all their lives in the water. Others live nearby because the water provides food or a place to breed.



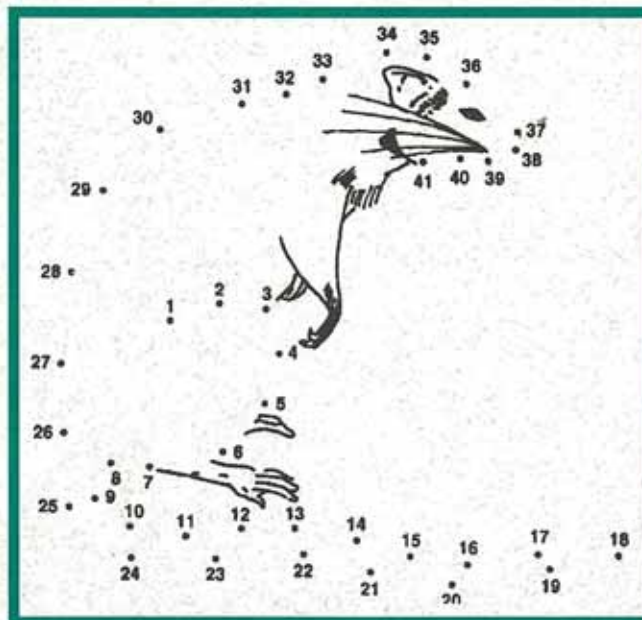
Gilbert's Dragon *Lophognathus gilbertii* may be spotted in vegetation by the water's edge. It feeds on a variety of insects which it has little difficulty catching because of its speed and climbing ability.

Two aquatic reptiles are the Northern Snake-necked Turtle *Chelodina rugosa* and Mertens' Water Monitor *Varanus mertensi*. This goanna never strays far from water and may be seen basking on a rock or log. However, it can stay underwater for several minutes searching for fish, frogs or shrimps. It has a flattened tail like a crocodile to propel it swiftly through the water. Its nostrils are high up on its head enabling it to breathe easily by simply raising the top of its head out of the water. Birds you may see include the Green Pigmy-goose floating on the water, the Comb-

crested Jacana walking on waterlily leaves or the Azure Kingfisher perched in an overhanging tree keeping a lookout for frogs and other tucker. Crimson Finches may be heard chirping from the long grass

material. Barramundi lurk in the deeper waters of the billabong but you may spot small rainbow fish and grunters swimming in schools near the banks.

There are only two Australian mammals specially adapted for life in fresh water. One is the platypus but it is not found in the Northern Territory. The other is the True Water-rat *Hydromys chrysogaster* which builds a burrow under the roots of paperbark trees in Top End billabongs. It is a nocturnal animal which eats fish, mussels, snails and crayfish.



by the water's edge. Keep an eye open too for tunnels excavated into mudbanks by the Rainbow Bee-eater. It lays its eggs in these unusual nests. Freshwater Crayfish *Cherax sp* are bottom dwellers which feed on detritus, an aquatic compost formed by the breakdown of plant and animal

Join the dots in the above illustration to see what it looks like. It has a streamlined body, flattened head and grows to 60 cm long. Its nostrils are located on the tip of its snout and its eyes are placed high on its head. This allows it to see and breathe easily while swimming. It also has partially webbed hind feet.

# YOU CAN MAKE A DIFFERENCE!

There is widespread community concern about our environmental problems. It's easy to feel a bit overwhelmed. But, be assured... you can make a difference.

# Frogwatch

Frogs are disappearing from our planet at an alarming rate. Australia has already lost several species from the east coast. Scientists believe water pollution has a lot to do with this.

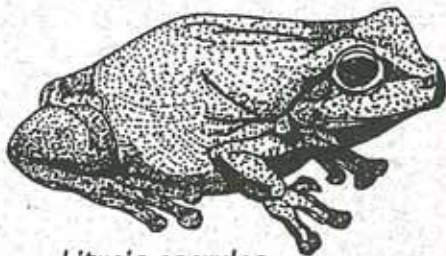
Frogs spend a lot of time in water and so are very sensitive to changes in water quality. They are a good indicator of the health of our environment.

## Did you know...

Australia has more frogs than the whole of North America and Europe. But we still don't know a lot about many of them. Frogwatch is a national program to encourage community involvement in monitoring frog populations throughout Australia. If you would like to get involved, ring the Community Education Ranger in Darwin on 89994565.



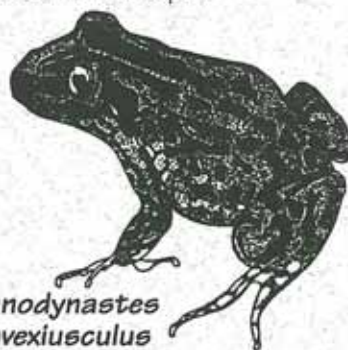
## What frog is that ?



*Litroia caerulea*

The large Green Tree Frog is common in Top End gardens and toilet bowls. Large suction pads on its feet allow it to cling to vertical surfaces. Males use the acoustic properties of the tree hollows to amplify their croaks as they call for a mate.

The Northern Spotted Grass Frog is common on Top End floodplains. In the dry season it burrows underground or retreats to paperbark swamps.



*Limnodynastes convexiusculus*

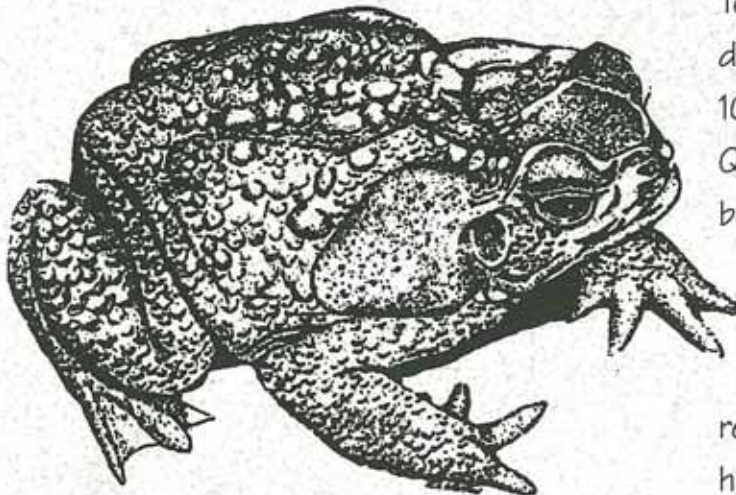


*Litoria nasuta*

If there was a Grand Prix race for Territory frogs, the Top End's Rocket Frog would probably win. It is fast, muscular and streamlined. It is usually a brown colour with racing stripes along its body.

# ...CANE TOADS...

## A Wetlands Intruder



Toads are frogs with dry, warty skin. Australia doesn't have any native toads.

101 Cane Toads *Bufo marinus* were bought to Queensland in 1935 to control the greyback beetle. This beetle is a pest which attacks Queensland sugar cane.

The Cane Toads didn't control the beetle. They spread overland and are expected to reach Darwin by the Year 2010. They are hopping towards the Top End wetlands at around 30 kilometres per year.



## Don't be mistaken!

Australia doesn't have any native toads. But we do have some frogs with blotchy skin and bumps. *Limnodynastes convexiusculus* is one of these. It is found on Top End floodplains. In the dry season it is forced underground or retreats to the permanent water of paperbark swamps. Use the grid to decode its common name.

	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

☆4 ☆5 □3 □5 △3 ○5 □3 ☆4

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□4 □1 ☆5 □5 □5 ○5 ○4

--	--	--	--	--	--	--	--

△2 □3 ○1 □4 □4

--	--	--	--	--

△1 □3 ☆5 △2

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The Junior Ranger Review is produced 4 times a year by the Parks and Wildlife Commission of the Northern Territory. This edition was written by Stuart Traynor. Design and layout are by Big Picture Graphic Art. The cover was designed by Emily Ward. Illustrations in this edition are by Bob Whiteford, Nicholas Pike, Adrian Salter, Sharon Hillen and Christine Bruderlin.

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