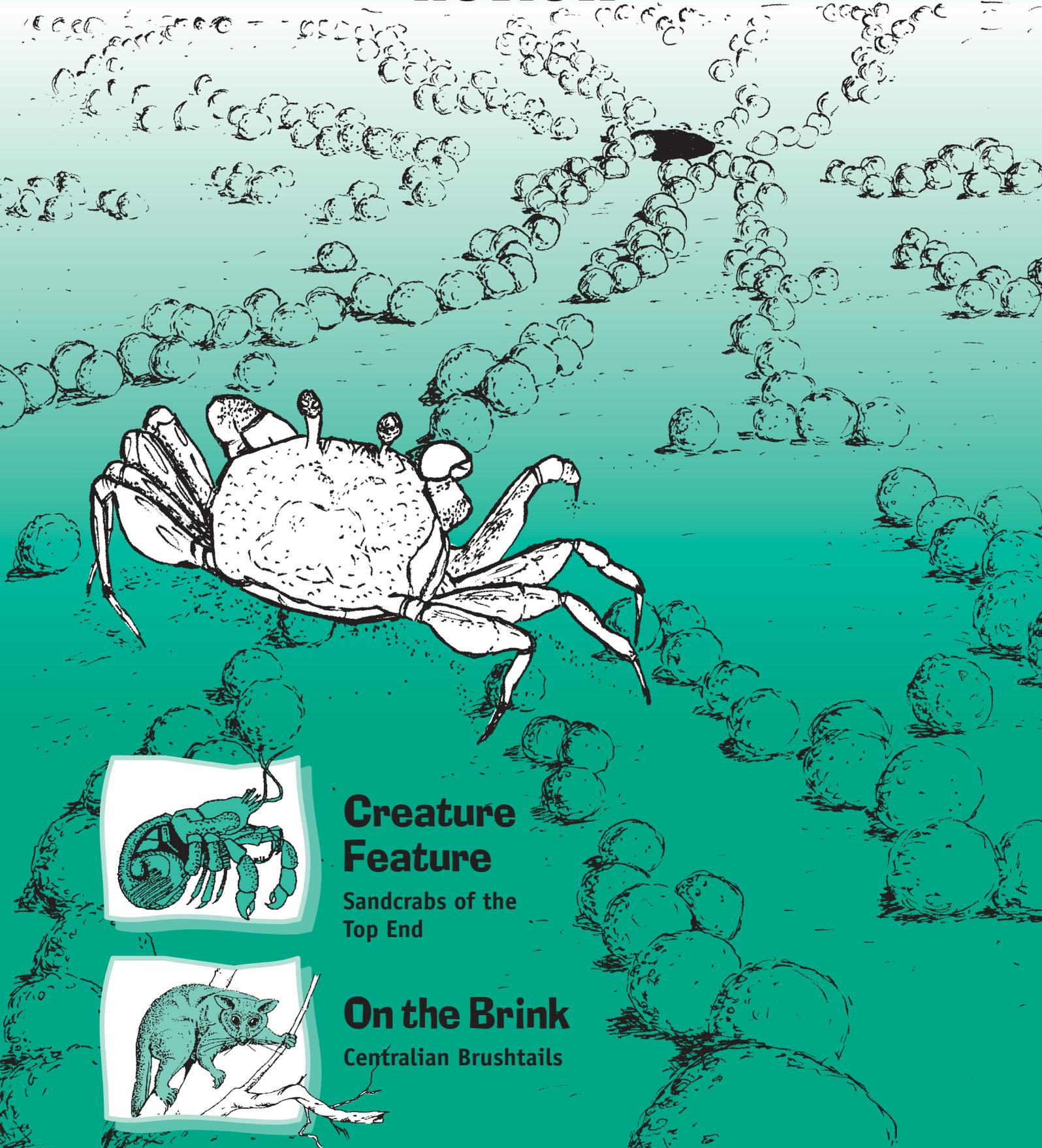




Junior Ranger

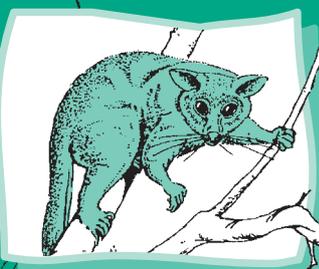
Review

ISSUE 2, 2002



Creature Feature

Sandcrabs of the
Top End



On the Brink

Centralian Brushtails



Cicadas

Cicadas are amazing creatures. They spend years underground about 40 cm below the surface. But their life in the open air lasts only a short time.

The nymphs of some American cicadas live underground for 17 years but ours have a shorter life: about 4 or 5 years. They attach themselves to roots and may remain in the one spot sucking sap for weeks before moving on to a fresh root.

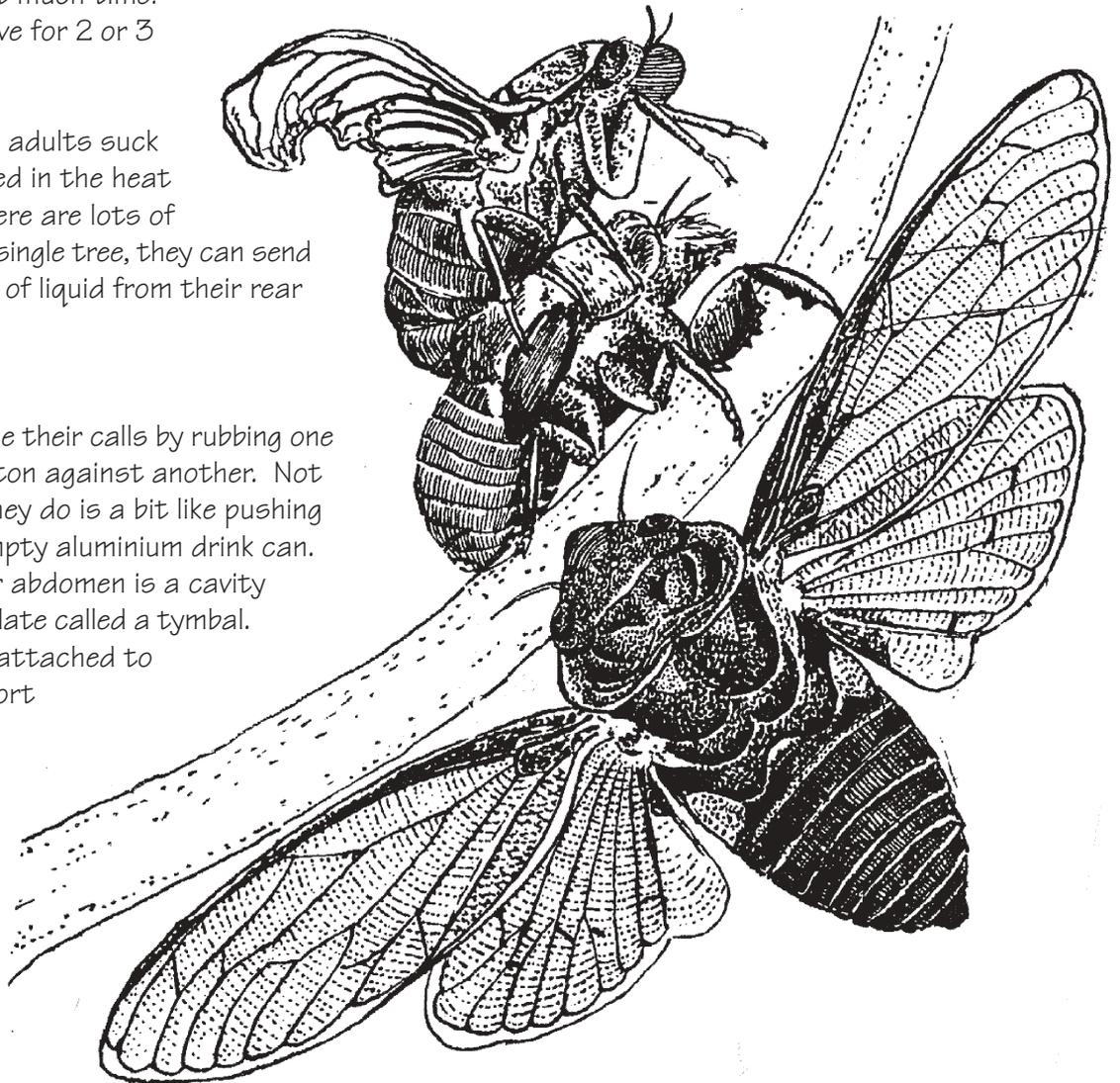
When fully grown, the cicada nymph digs a tunnel to the surface and emerges into the bright glare of day. It then climbs up the trunk of a tree and digs its claws firmly into the bark. There it undergoes its final moult. Its skin splits along its back and an adult cicada climbs out.

Only the males call. They do it to attract a mate. They haven't much time! Adult cicadas only live for 2 or 3 weeks.

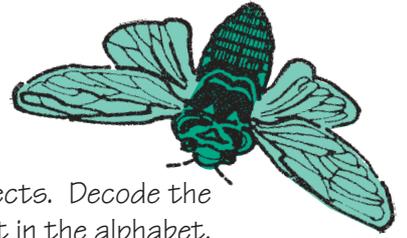
Like the nymphs, the adults suck sap. They mostly feed in the heat of the day. When there are lots of them feeding from a single tree, they can send down quite a shower of liquid from their rear ends.

Most insects produce their calls by rubbing one part of the exoskeleton against another. Not so cicadas! What they do is a bit like pushing in the sides of an empty aluminium drink can. On each side of their abdomen is a cavity containing a ribbed plate called a tymbal.

A strong muscle is attached to each tymbal by a short tendon. When this muscle contracts it makes the tymbal buckle inwards. When the muscle relaxes, the tymbal pops back to its original position.



Females lay their eggs in a slit in the bark. When the eggs hatch, the young nymphs drop down to the ground. It doesn't seem to matter how far they fall. They don't hurt themselves because they are so light. Once on the ground they dig into the soil. Their front legs are shaped like spades.



Cicadas have some of the most colourful names of any Australian insects. Decode the following names by changing each letter to the one that comes before it in the alphabet.

C J H X

H S F F O

X I J A A F S

E P V C M F

E S V N N F S

D I F S S Z O P T F

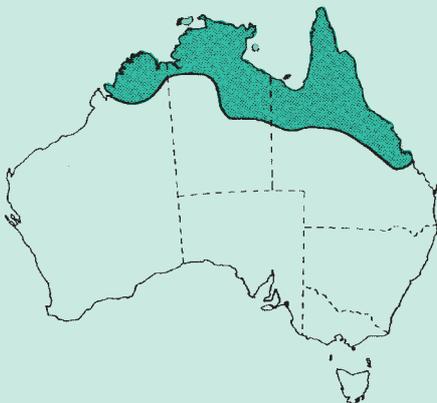
G M P V S Z

C B L F S

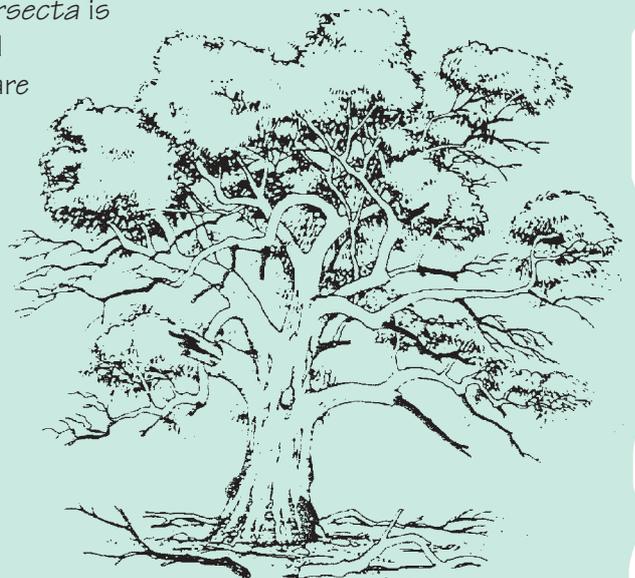
H S F F O H S P D F S



Northern Territory Cicadas



Macrotristria intersecta is common in Top End eucalypts. There are two varieties: the **Green Whizzer** and a dark form called the **Corroboree Cicada**.



The **Big W** (or Golden Drummer) *Thopha colorata* is very common in Central Australia. It's a very large cicada. The nymphs live on the roots of River Red Gums.

Want to learn more about these interesting creatures?

A good book is **Australian Cicadas** by M.S. Moulds, published in 1990 by New South Wales University Press. (ISBN 0 86 840 139 0)



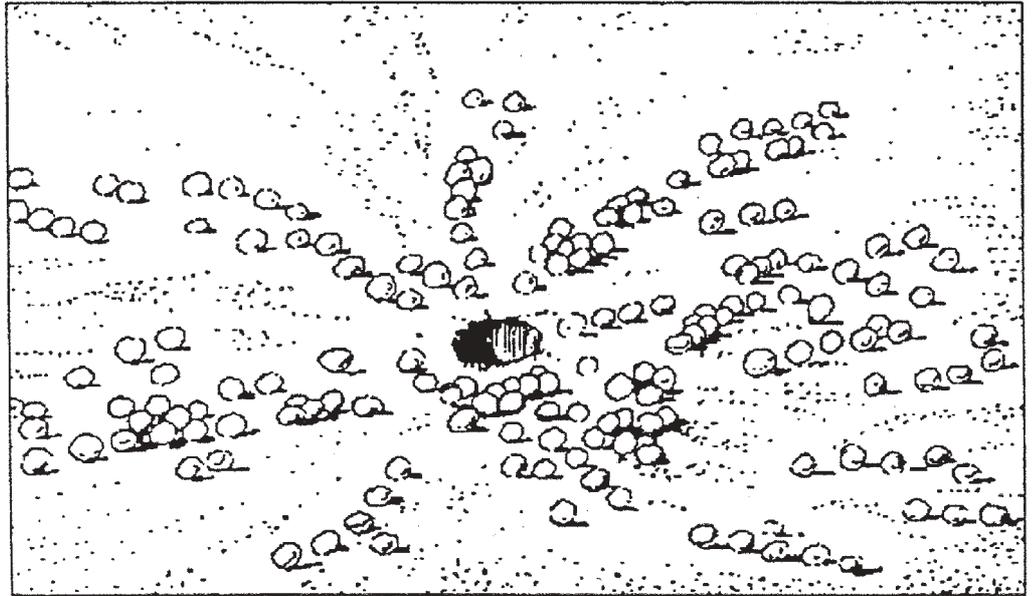
Sand Crabs of the Top End

Several species of crabs inhabit Top End beaches. They have different needs and inhabit different parts of the beach.

One of the first things you notice on the beach are the little balls made by the **Sand Bubbler Crabs**. These tiny white crabs burrow into the moist sand between the water's edge and the high tide mark.

They constantly sift the sand for edible material. They roll the leftover sand into little balls which pile up outside their burrows.

They must keep a lookout for shorebirds wanting to make a meal of them. However, they are quick movers and their sandy colour provides good camouflage.



Sand Bubbler Crabs are able to do something with their legs that no other crabs can do.

Decode the following sentence to reveal what this is.

1 = A	5 = E	9 = I	13 = M	17 = Q	21 = U	25 = Y
2 = B	6 = F	10 = J	14 = N	18 = R	22 = V	26 = Z
3 = C	7 = G	11 = K	15 = O	19 = S	23 = W	
4 = D	8 = H	12 = L	16 = P	20 = T	24 = X	

20 8 5 25

[] [] [] []

8 1 22 5

[] [] [] []

15 22 1 12

[] [] [] []

16 1 20 3 8 5 19

[] [] [] [] [] [] []

15 14

[] []

20 8 5 9 18

[] [] [] [] []

12 5 7 19

[] [] [] []

20 15

[] []

1 2 19 15 18 2

[] [] [] [] [] []

15 24 25 7 5 14

[] [] [] [] [] []

6 18 15 13

[] [] [] []

20 8 5

[] [] []

1 9 18

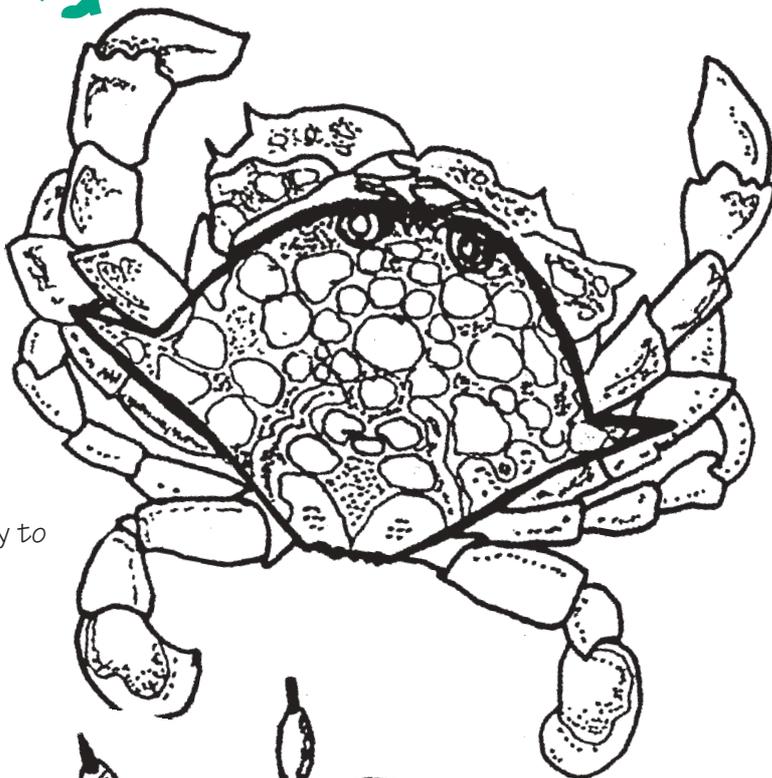
[] [] []



Next time you're walking along a Top End beach, keep a lookout for the shells of the **Flat-footed Box Crab**.

You're unlikely to see a live one because it lives in shallow water and burrows into the sand when it feels threatened. But parts of dead crabs are regularly washed up by the tides.

A sharp spine on each side of its back makes it easy to recognize.



Ghost Crabs live quite a long way from the water's edge. They dig deep burrows in the dry sand above the high tide mark.

These fleet-footed scavengers hide during the daytime but emerge at night to feed. As well as dead material, they prey on baby turtles which have just hatched from their eggs.

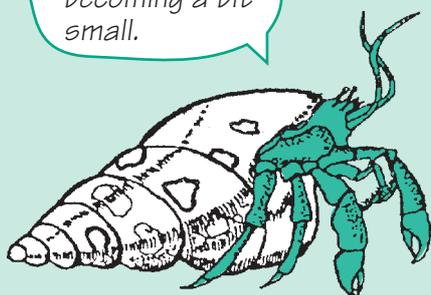
Ghost Crabs have horny stalks on the tops of their eyes. These get longer as the crabs grow older.



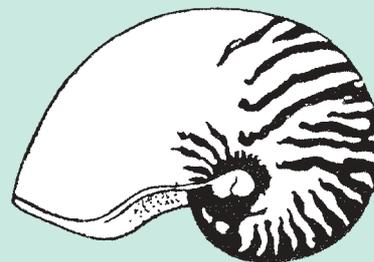
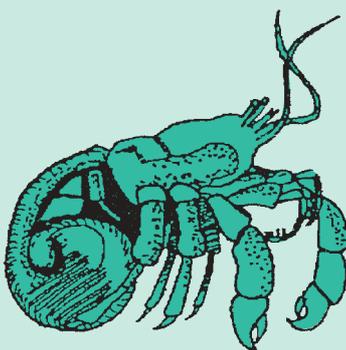
The humble **Hermit Crab** is one of the most common animals on Top End beaches. As it grows it must trade in its old shell for a more spacious home.

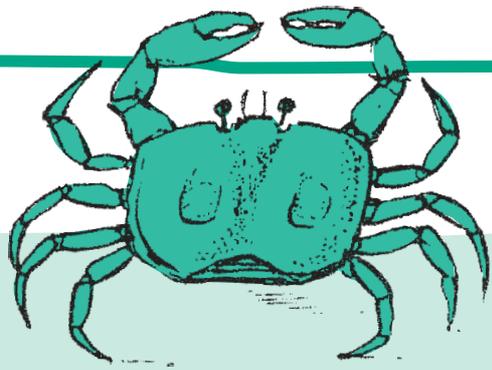
It might test out a number of shells before making its final selection. In a flash it whips out of the old shell and into its new one.

This house is becoming a bit small.



It's time to go upmarket!





Crabby Words

These words go in all directions and some are written backwards. Colour the boxes as you find each letter.

- | | |
|-------------|-----------|
| BALL | GHOST |
| BEACH | HERMIT |
| BURROW | MANGROVE |
| CARAPACE | MUD |
| CAY | NIPPERS |
| CLAW | ROTTEN |
| CRUSTACEAN | SEMAPHORE |
| EGG | SHELL |
| ESTUARY | SMALL |
| EXOSKELETON | STINK |
| EYESTALK | SURF |
| FACE | SWAMP |
| FEMALE | TIDE |
| FIDDLER | THORAX |

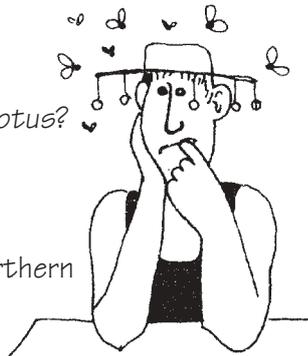
N	N	A	E	C	A	T	S	U	R	C	L
E	E	O	S	R	E	P	P	I	N	L	B
T	Y	S	T	I	N	K	S	O	E	A	E
T	E	E	U	E	G	G	S	H	L	W	A
O	S	M	A	L	L	W	S	L	M	L	C
R	T	A	R	A	A	E	D	I	U	E	H
E	A	P	Y	M	R	C	K	E	D	I	T
L	L	H	P	E	F	R	U	S	R	S	I
D	K	O	C	F	B	U	R	R	O	W	M
D	A	R	A	X	A	R	O	H	T	X	R
I	B	E	Y	M	A	N	G	R	O	V	E
F	A	C	E	C	A	P	A	R	A	C	H

You should have 10 letters leftover. String them together to spell the name of the only crab that can walk forwards. (All others walk sideways.)

Nature Quiz

How many of these questions can you answer? You'll find the answers on page 11 but don't peek!

- Which animal has the world's biggest appendix?
 - whale
 - rhinoceros
 - koala
- True or False:** Echidnas can swim.
- When are you most likely to see a Frill-necked Lizard in the Top End?
 - wet season
 - dry season
- What kind of lizard is a *Ctenotus*?
 - gecko
 - goanna
 - skink
- What animals are on the Northern Territory Coat of Arms?
- What is the floral emblem of the city of Darwin?
- Only one Australian waterfowl feeds its babies.
 - Black Swan?
 - Magpie Goose?
 - Freckled Duck?
- The Peregrine Falcon is one of the world's fastest birds of prey. The Latin word *peregrine* means
 - wanderer?
 - hunter?
 - fast moving?
- The world's oldest parrot was a Sulphur-crested Cockatoo which died at the London Zoo in 1982 aged
 - 60
 - 80
 - 100
- Why don't sleeping birds fall off their perch?



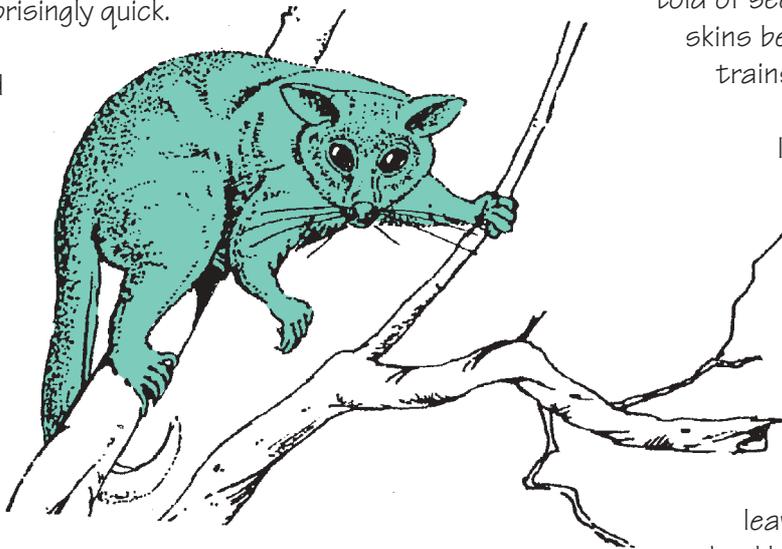


Centralian Brushtails

100 years ago Brushtail Possums were very common in the gum trees along the creeks of central Australia. Today they are very rare, only surviving in a handful of places.

Centralian Brushtails are the same species as their southern cousins *Trichosurus vulpecula* but generally a bit smaller. Their tail isn't as bushy and the colouring on their back and shoulders is also different. Another difference is they spend a lot of time on the ground where they're surprisingly quick.

They eat the flowers and leaves of **gum trees** and **wattles**. But they are particularly fond of the **Mistletoe** *Amyema maidenii*, **Bush Banana** *Leichhardtia australis*, **Plumbush** *Santalum lanceolatum* and **Quandong** *Santalum acuminatum*. The leaves of these plants are more nutritious than those of gum trees and easier to digest.



Why are they now rare?

Many possums were killed in the early days for their skins. A man who lived at Hermannsburg in the 1920s told of seeing big bales of possum skins being sent south on camel trains when he was a boy.

It also seems that possum numbers never really recovered from the very long drought that gripped central Australia in the late 1920s and early 1930s.

There are stories from the time of rabbits climbing high up into trees to get leaves and of big numbers of dead kangaroos, cattle and horses

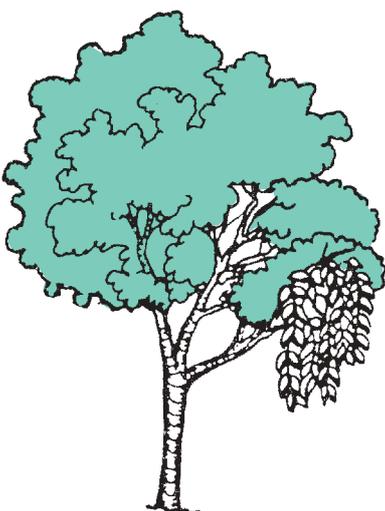
lying around. The possums had to compete for food with hungry rabbits, cattle, horses and camels. It was a battle for survival.

In the years that followed, feral cats and foxes wiped out many of those that had managed to hang on through the long drought.

Bushfires would also have killed many of them. Possums can avoid small fires but they have little chance of escaping a big summer bushfire that destroys trees and sweeps up the slopes of the ranges.

Where are they now?

There is a small group of them surviving along Irving Creek in the Petermann Ranges west of Ayers Rock. Plus there's a few small groups, scattered in the MacDonnell Ranges east and west of Alice Springs.



Possums love to eat the leaves, flowers and fruit of Mistletoe.

Some experts think that the amount of mistletoe has increased since the possums disappeared.

Saving the Survivors

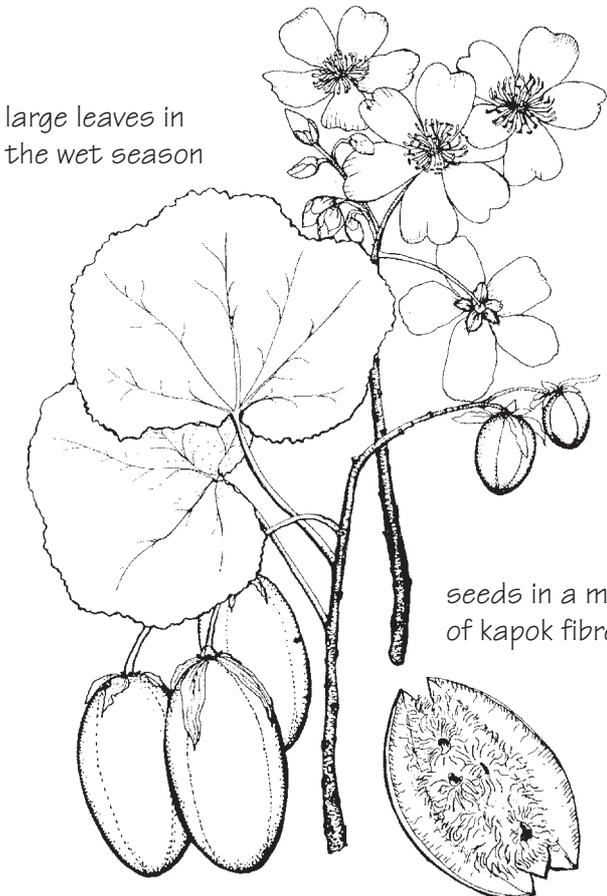
Most of the survivors these days are living in moist, rocky gullies in the hills rather than along creeks. These gullies are rich areas with good soils. The rocks provide some protection from bushfires and they are relatively free of rabbits, cattle and feral horses.

Rangers are hopeful that captive breeding and reintroduction programs might be successful if we manage the land properly and control feral cats and foxes.



Kapok Bush *Cochlospermum fraseri*

This spindly plant is a common sight along Top End roadsides. It loses all its leaves during the dry season and produces large, yellow flowers.

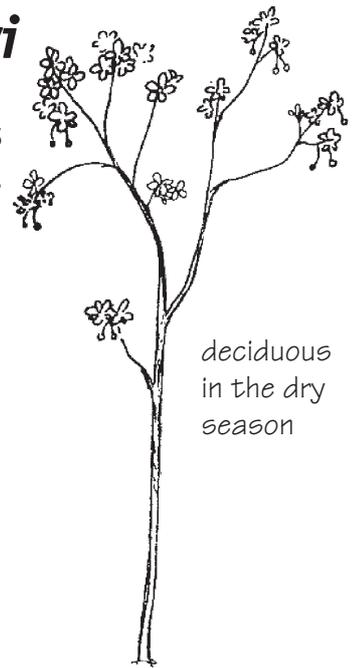


large leaves in the wet season

large yellow flowers

seeds in a mass of kapok fibres

Cochlospermum fraseri



deciduous in the dry season

If you break open one of the dry fruits, late in the dry season, you'll see that the seeds are covered by a mass of cottony fibres called **kapok**.

The plant's scientific name *Cochlospermum* comes from two Greek words: *kocklo* (which means wind) and *sperma* (which means seed).

Each seed has a little kapok parachute. The wind blows them away, spreading them far and wide.

Where's the hive?

Aboriginal people sometimes use kapok to find native bee hives.

Cross out every second letter to reveal their trick.

Tahbecy dceaftgchh ia jbkele mannod ptqire sa tluovnwg
 xtyhzraebacd doef fkgahpiojk ktlo mintos plqerg. STthuevn
 wtxhyezy acbacn dseefe gwhhiejrke kimt nfolpiqers.



Java Kapok

In the days before foam rubber, kapok was used for stuffing pillows, mattresses and upholstery.

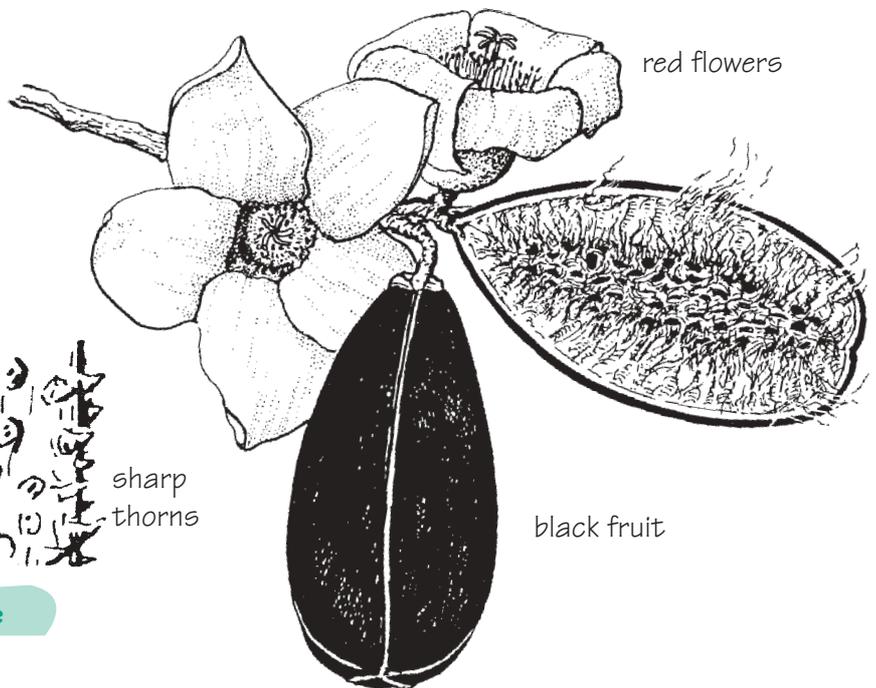
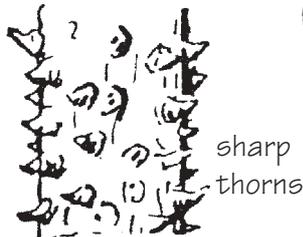
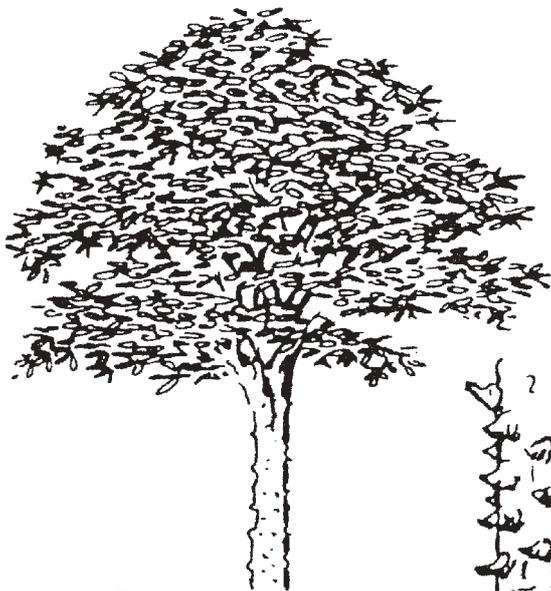
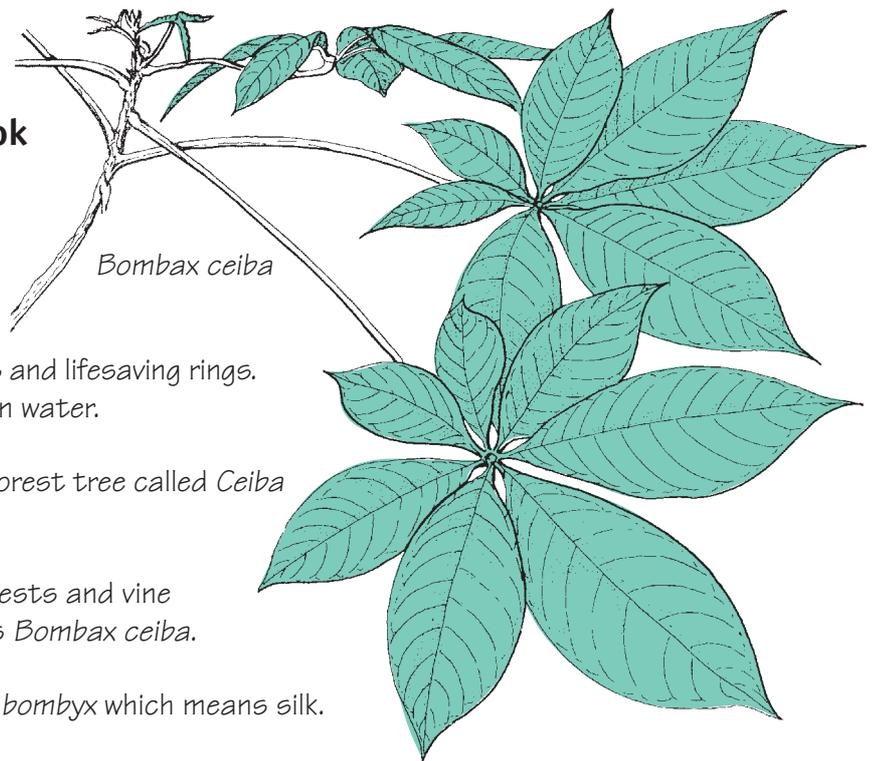
The fibres are too brittle for spinning but they're very buoyant, quick drying and water-resistant. So they were also used in lifejackets and lifesaving rings. They can support 30 times their own weight in water.

The best kapok came from an Indonesian rainforest tree called *Ceiba pentandra*.

A closely related tree grows in the dry rainforests and vine thickets of the Top End. It's scientific name is *Bombax ceiba*.

The plant's name comes from the Greek word *bombyx* which means silk.

It's easy to recognize in the forest because of the sharp thorns which stick out of the trunk.



Aboriginal people make string from the inner bark of this tree.

Did you know...

Medicine from the rainforest

For centuries people have gathered useful things from rainforests trees. Medical researchers have also found many valuable substances. These include antibiotics to treat infection, digitalis to prevent heart failure, and quinine to fight malaria. Tests are underway on a Queensland rainforest plant that may hold the cure for the AIDS virus.

Now it is time to assemble your wind direction indicator.

Thread the washer, the arrow and the 3 beads onto the nail. This drawing will help you.

Next push the nail through the dowels showing N, S, E and W.

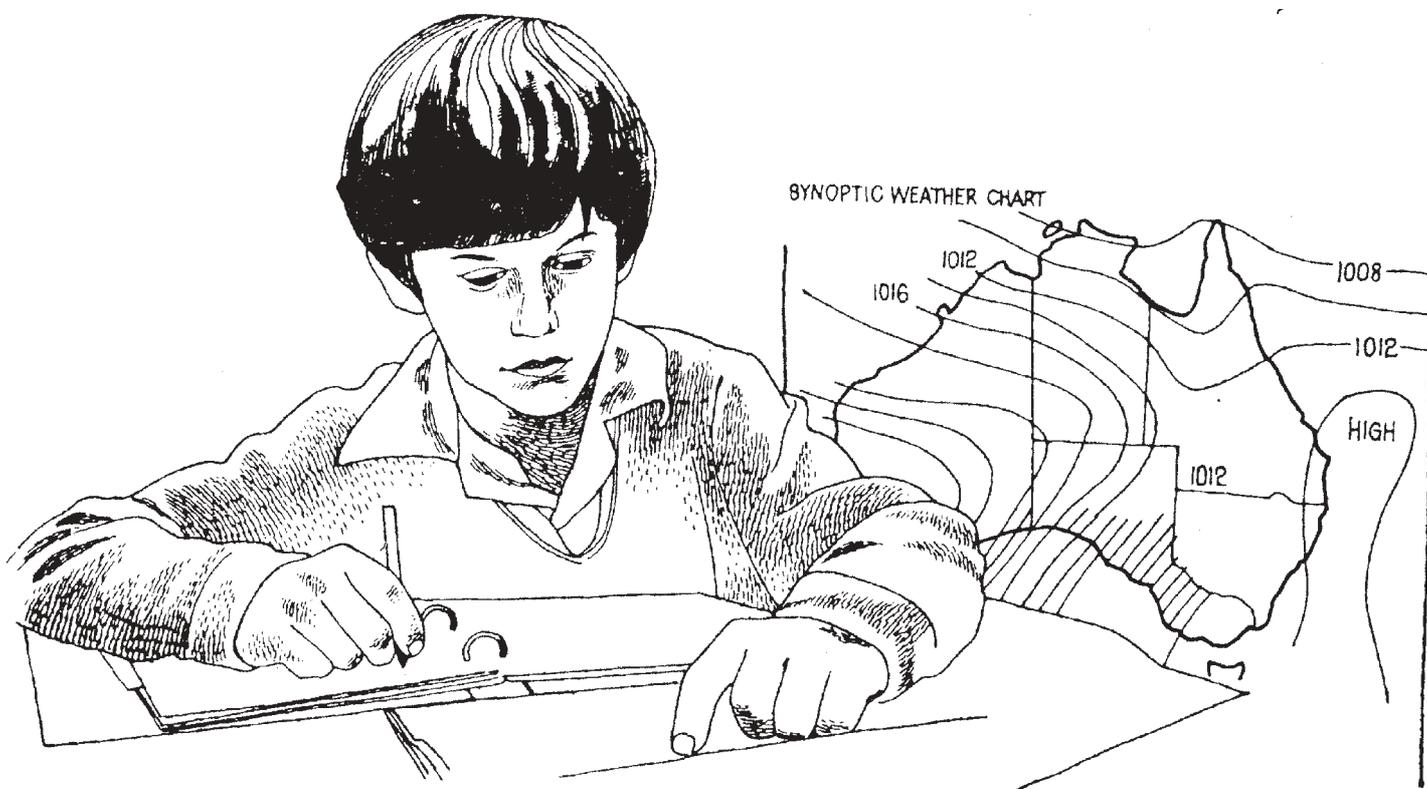
Fix the completed wind indicator to the top of a high post.

Use a compass to find out which direction is north and point the N in that direction.

Check that the arrow can swing freely but the other two pieces of dowel don't.

The arrow should swing when the wind blows and points in the direction it is blowing. Record this direction with that in the newspaper or TV weather report.

Adapted from 'Looking at the Wild' by Harry Butler - Hodder and Stoughton.



PUZZLE ANSWERS

Urban Encounters (page 3)

Big W

Green Whizzer

Double Drummer

Cherrynose

Floury Baker

Greengrocer

Creature Feature (page 4)

They have oval patches on their legs to absorb oxygen from the air.

Crabby Words (page 6)

soldier crab

Nature Quiz (page 6)

1. c)

2. True

3. a)

4. c)

5. Two Red Kangaroos and a Wedge-tailed Eagle

6. Red-flowering Kurrajong

7. b)

8. a)

9. b)

10. Its toes lock into place when its legs are bent. The only way the bird can lose its grip is if it straightens its legs.

Plant Profile (page 8)

They catch a bee and tie a long thread of kapok to its leg. Then they can see where it flies.

Around the traps



G'day from Ranger Bill

Welcome to the second issue of the Junior Ranger Review for 2002. I hope you enjoyed the first edition of the new-look Review and I'm sure you will find the information, puzzles and project page in this issue just as enjoyable

All Junior Ranger programs throughout the Territory are now well underway, and I trust everyone is enjoying the activities they are attending.

If you're out and about during the school holidays, why not keep a nature diary. Take note of what's happening in the country around you. Is the landscape changing, are particular birds and lizards becoming more prevalent or disappearing? Let us know about your observations on our website. Note the change in our web address, now at - <http://www.nt.gov.au/ipe/paw/>

Don't forget to drop in on the Parks & Wildlife show displays throughout June and July - come and say hello.

Darwin

The 9-11 year old Junior Ranger Program in Darwin has been very successful so far this year. All sessions have been well attended, with Junior Rangers and their families particularly enjoying the Sunday activities. During April we spent time on the beach, getting down in the sand to dig our turtle nests. Later in the month a group of 50 visited the aviaries at Territory Wildlife Park and spent the morning as Bowerbirds collecting items for bower building. Competition between the groups was fierce and large amounts of sticks, snail shells and white rock were collected. Then several mums spent Mother's Day with us at Berry Springs Nature Park dissecting raptor pellets - great stuff! But it was also a good excuse for a family swim and barbecue.

The 12-14 year old Program is also underway, with enjoyable sessions at the car rally (hopefully adhering to the speed limits) and the Museum - luckily we had chosen an indoor activity as the rain really came down. Ranger Dean is looking for locations for the end of year camp - any suggestions are welcome.

Unseasonal rain at the end of May threatened a couple of our activities. Congratulations to all those families who braved the spotlight walk at Charles Darwin National Park. We managed to spot some spiders, micro bats and a Brown Tree-snake through the clouds of midges.

Looking forward to further adventures in the bush.
Ranger Vanda & Ranger Dean.

Alice Springs

The Alice Springs Junior Ranger Program was kicked off with a bang over the long weekend in May. A Bang literally, Junior Rangers entered their first ever float into the Bangtail Muster.

This was the 41st Bangtail Muster, which was first held in 1959 to celebrate the ties between Alice Springs and the Cattle industry. A Bangtail refers to cattle tails. After cattle were mustered, cattleman cut off the hairy end of each animal's tail. These hairy ends were counted at the end to work out how many cattle were mustered.

There were 40 floats in this years parade, that stretched for more then 500 m. The theme for the Junior Ranger float was, 'Young Territorians, at home in the Bush'.

Junior Rangers also kicked off in Tennant Creek in May, with local members taking part in 'What is Fire?' the first of a series of fire related activities. This activity saw Junior Rangers learning about fuel, heat and oxygen and building their own fire tetrahedron.

The temperature has really dropped since our last around the Traps, with Alice Springs experiencing cool, though sunny, days and freezing nights. The daytime temperatures are generally around 17°C but drop overnight to zero or below.

Dingoes howl a lot at this time of year, and early in the winter they mate. The pups are born 9 weeks later when the weather is warming up. Two other common mammals that also breed only once a year, in winter, are the Echidna and Fat-tailed Pseudantechinus.

You would be very lucky to see an Echidna or a Fat-tailed Pseudantechinus, but keep your ears open for dingo noises next time you are camping.

See you out in the bush!
Ranger Emily.

Katherine

Katherine Junior Rangers are now well into the Jawoyn season of **Malparr**. This is the flowering and seeding time of one of the Top Ends most common Eucalypts, commonly known as the Darwin Woollybutt, with the scientific name *Eucalyptus miniata*. This tree is quite significant due to the number of titles it has earned, such as; Calendar tree, wildlife food tree and most importantly as a habitat tree. During the coming events covering June, July and August, Junior Rangers will be finding out all about the Darwin Woollybutt and the role they play in our bush environment.

This is the busy time of the year for Katherine Junior Rangers because preparations are needed to get ready for the Katherine Show and the Flying Fox Festival parade float, which Junior Rangers are entering once again. For both the show and the parade we will be constructing creative objects which follow this years theme - **the Jawoyn calender and it's five seasons**. The school holiday program is full of preparation activities, as well as other exciting environmental activities such as, Gecko spotlighting, the importance of wetlands, learning fishing skills, looking at cycads, investigating bushfires as well as catching fish for our Junior Ranger pond. The telescope is also coming out again for further interesting star gazing evenings.

Isn't nature great, see you all soon.
Ranger Andrew

The Junior Ranger Review is produced 4 times a year by the Parks and Wildlife Service of the Northern Territory. This edition was written by Stuart Traynor and Emily Findlay. Design and layout are by Action, Design, Print and Copy Bureau. The front cover was drawn by Robbie Henderson. Illustrations in this edition are by Milton Andrews, Kaye Kessing, Nick Pike and Bob Whiteford.

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