



Junior Ranger

Review

ISSUE 2, 2003



Red Centre Snails

Creature Feature

Wild Dog
Dingo



Urban Encounters

Fairy Martins





Wild Dog Dingo

You'll never hear a dingo bark. But you may hear them howling, especially in the cooler months when they are breeding.

Dingoes (*Canis familiaris dingo*) are usually a ginger-yellow colour with a pale belly, white feet and a white tail tip.

They differ from domestic dogs in a number of ways. For example, they have a broader skull, different teeth and a distinctive trotting gait.

However, the main difference is their reproductive cycle. Dingoes only produce one litter of pups a year. Domestic dogs can produce two litters.

Dingoes mate in April or May. The females come on heat for a few days in May and the pups are born nine weeks later in August.

The females use the same dens each year. This might be a hollow log, a cave or an enlarged rabbit warren. Normally the male lives in a separate den to the female and pups.



When it's time for their education, mum takes the pups out to watch while she hunts food. They stay with her until the end of their first summer. Then they are on their own.

Dingoes don't bark

Dingoes howl, especially in the breeding season, but you never hear them barking in the wild. Captive dingoes have been known to yap and bark when kept with domestic dogs. However, their bark is sharper, more abrupt and more throaty than that of domestic dogs.

Use this number code to reveal another difference between dingoes and domestic dogs.

A = 26 B = 25 C = 24 D = 23 etc....

7 19 22 18 9

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8 7 18 24 16

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22 26 9 8

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6 11

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26 15 4 26 2 8

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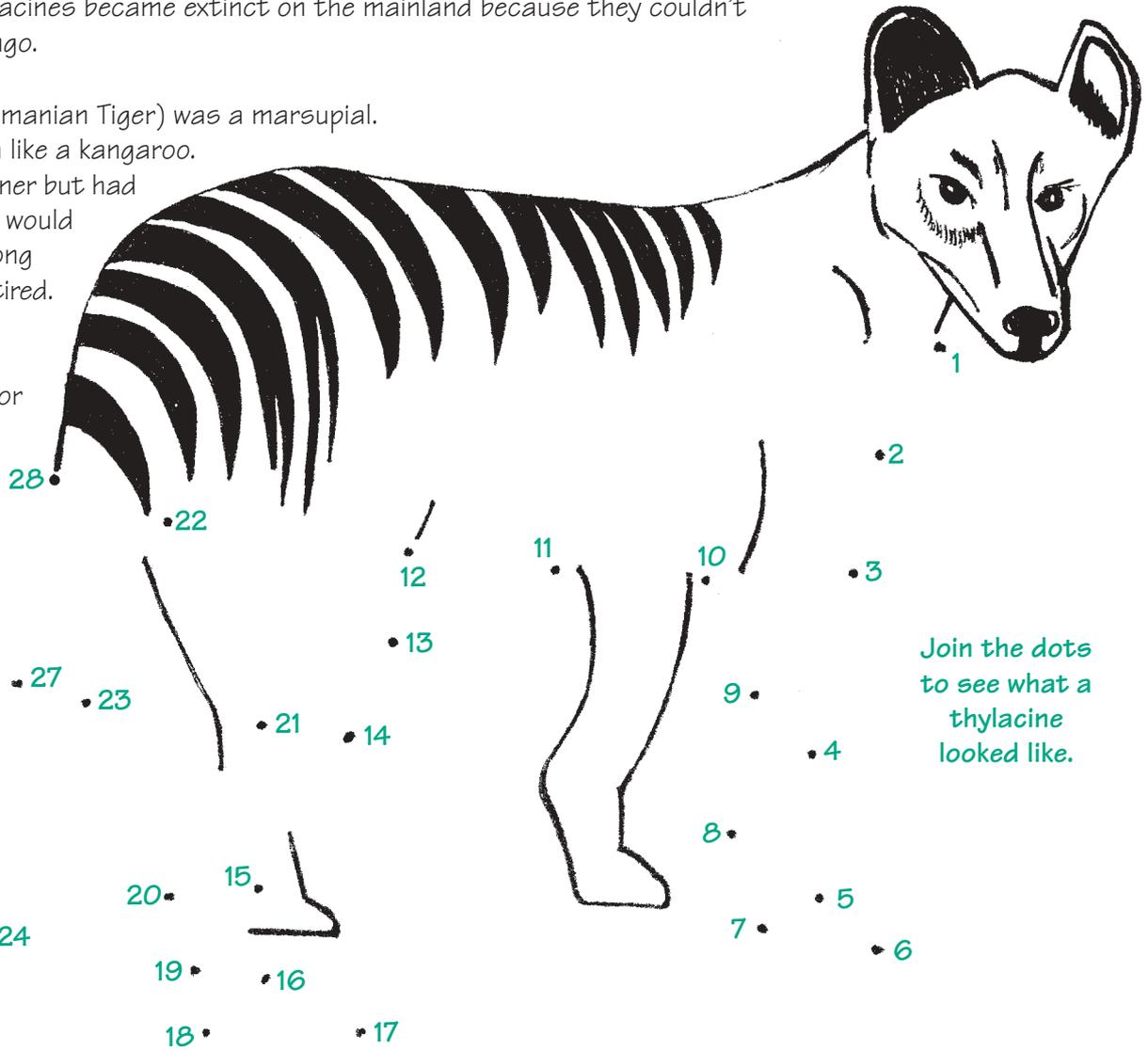


Australia's Other Wild Dog

Dingoes never made it to Tasmania. That's why the thylacine survived there until the 1930s. Thylacines became extinct on the mainland because they couldn't compete with the dingo.

The thylacine (or Tasmanian Tiger) was a marsupial. Females had a pouch like a kangaroo. It was not a fast runner but had a lot of stamina and would stalk its prey for a long time until the victim tired. It preyed on sheep in Tasmania and so a bounty was offered for its scalp.

The thylacine had a broad head and long muzzle. Its rump and long tail were a bit like those of a kangaroo.



Join the dots to see what a thylacine looked like.

The Dog Fence

Did you know that Australia has the world's longest fence? It stretches from South Australia to Queensland. Construction began in the early 1900s to keep dingoes out of Australia's sheep country. It was originally 8 614 km long but the Queensland section was shortened in 1980.

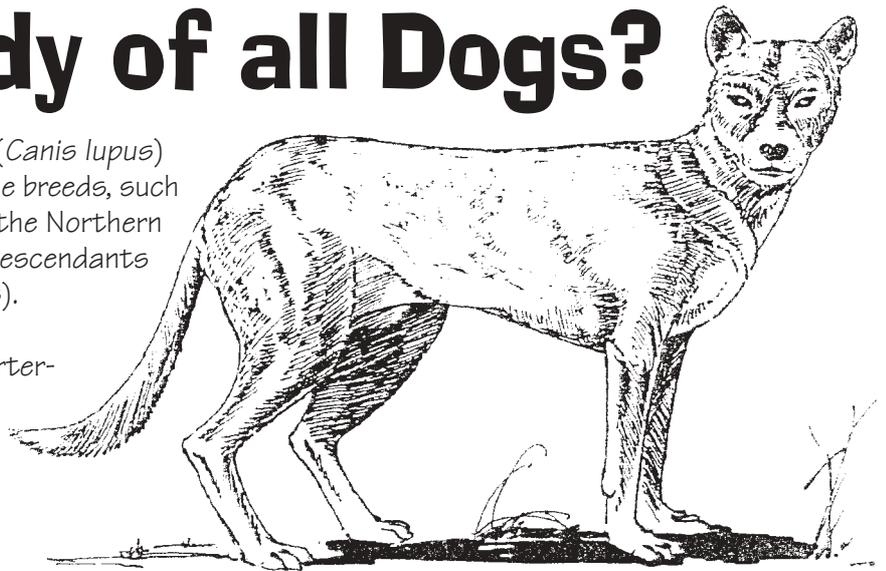
Keeping dingoes out of southeastern Australia has allowed kangaroo numbers to build up there. You now see more roos east of the dog fence than west.



The Granddaddy of all Dogs?

For a long time we thought the Northern Wolf (*Canis lupus*) was the ancestor of all our domestic dogs. Some breeds, such as the German Shepherd, are descendants of the Northern Wolf but scientists now believe quite a few are descendants of the Plains Wolf of India (*Canis lupus pallipes*).

The Plains Wolf is smaller, more slender and shorter-haired than the Northern Wolf. Far from being a savage beast, field observations have shown it is quite a restrained species, with an impressive social organisation and a lot of cooperation between members of a pack.



The Indian Plains Wolf became famous when Rudyard Kipling wrote *The Jungle Book* in 1894. It tells the story of Mowgli who was raised from a toddler by Indian wolves and tutored in the laws of nature by Baloo the bear, Bagheera the black panther and Kaa the python.

We're not sure exactly when wolves were domesticated but it was about 10 000 years ago. Humans were nomadic hunters and gatherers at that time. Wolves were attracted by meat scraps and bones lying around their camps. Our ancestors began to tame the pups, keeping the ones that weren't aggressive. Later they began to breed dogs to get features considered useful. One of the earliest breeds was the greyhound.

Canine burglar alarms

Dingoes don't bark so why do our pet dogs make so much noise?

It seems that we are responsible. In the early days of dog domestication, people favoured individuals which were good barkers, to warn them of intruders coming into their camps.

Dog Words

Can you find all 33 words?

They go in all directions and some are written backwards.

- | | | |
|-------------|-----------|----------|
| AFGHAN | DALMATIAN | POO |
| APSO | DANE | POODLE |
| BEAGLE | DINGO | PUG |
| BLUE HEELER | FOX | PULI |
| BOXER | HOT | PUP |
| BULLDOG | HOUND | SEX |
| CHIHUAHUA | HUSKY | SHEEPDOG |
| COLLIE | LABRADOR | SPANIEL |
| CORGI | LAP | TERRIER |
| COYOTE | MONGREL | TOY |
| DACHSHUND | PETS | WOLF |

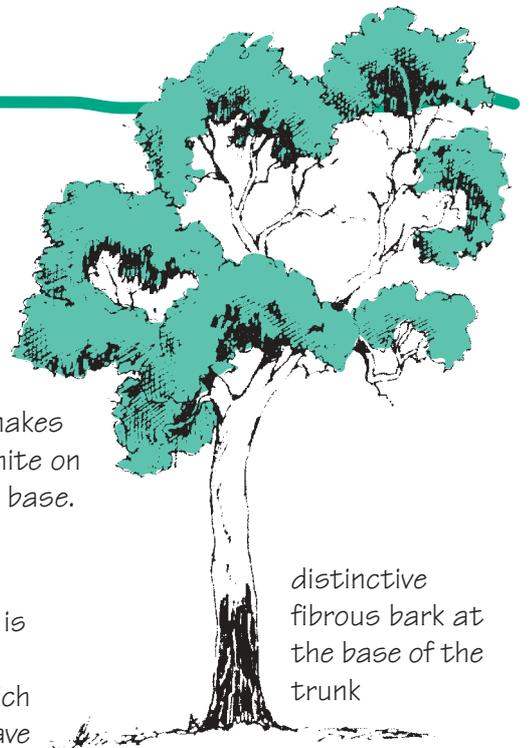




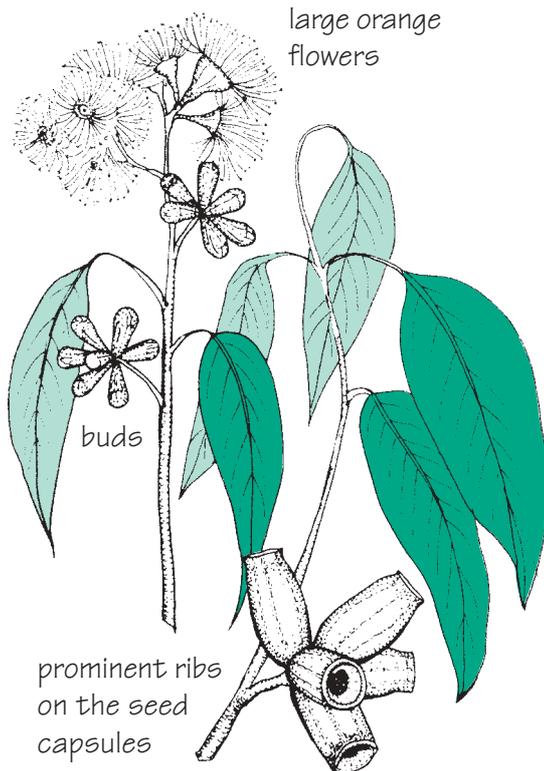
The Mighty Miniata

The Darwin Woollybutt celebrates the arrival of the dry season with a display of spectacular orange flowers.

Woollybutts are very common trees in the Top End. Their distinctive bark makes them easy to spot in the tropical woodland. It is smooth and powdery white on the upper trunk and branches but dark brown, spongy and fibrous at the base.



distinctive fibrous bark at the base of the trunk



Scientific name

The tree's scientific name is *Eucalyptus miniata*.

Miniatus is a Latin word which means 'flame'. Botanists gave the tree this name because of the orange colour of its flowers.

large, smooth, leathery leaves

Leaves

It has large, leathery leaves. The top surface is dark green but the underside is paler.

Flowering Time

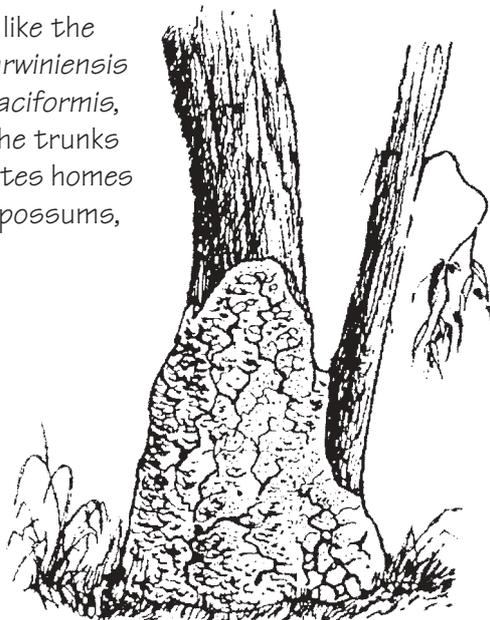
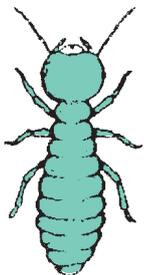
May to August

Fruit

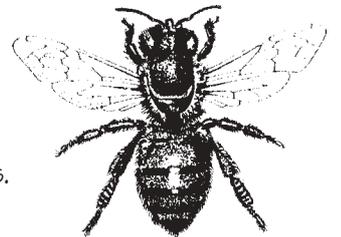
Like all eucalypts, the fruit is woody rather than soft and juicy. Each one has prominent ribs running along it and a whitish coating of wax.

Woollybutts and Wildlife

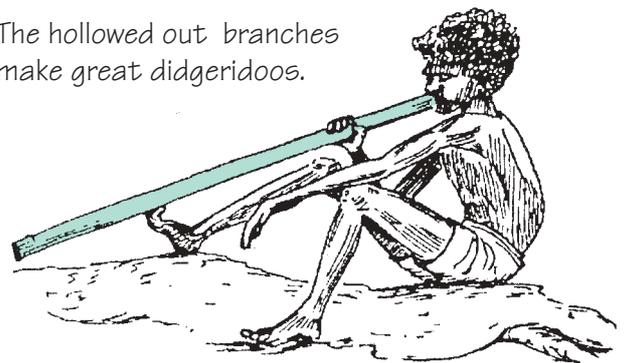
Wood-eating termites, like the giant *Mastotermes darwiniensis* and *Coptotermes acinaciformis*, devour the insides of the trunks and branches. This creates homes for hollow-dwellers like possums, parrots, and owls.



Woollybutt flowers are rich in nectar. Bees love them. Woollybutts are important honey trees.



The hollowed out branches make great didgeridoos.





Fairy Martins

Fairy Martins have a lot in common with people. They are noisy; they like to spend their days with others; and know the importance of a good house.

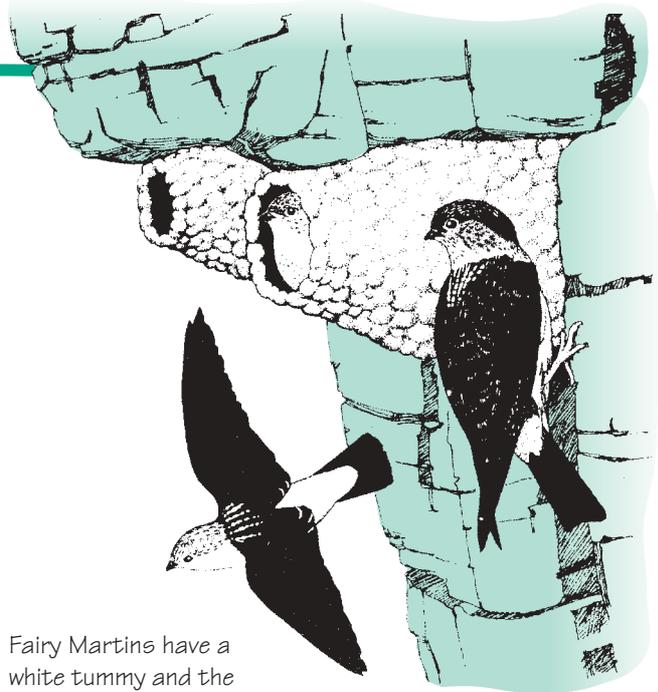
Fairy Martins are very busy little birds. Their colonies are a hive of activity. A high-pitched twittering begins before dawn and continues all day as birds come and go.

They are skilful aerial acrobats that catch all their food in the air. You may see swarms of them circling above open woodland or skimming across the surface of waterholes, grabbing a mouthful of water.

They are swift and graceful in the air, effortlessly fluttering, gliding and banking as they hunt for their insect lunch.

Breeding

The Fairy Martin breeding season starts in the middle of the year and lasts for several months. However, females normally only produce one brood a year. The birds that lay their eggs early in the season vacate the nest once they've finished to make room for others.

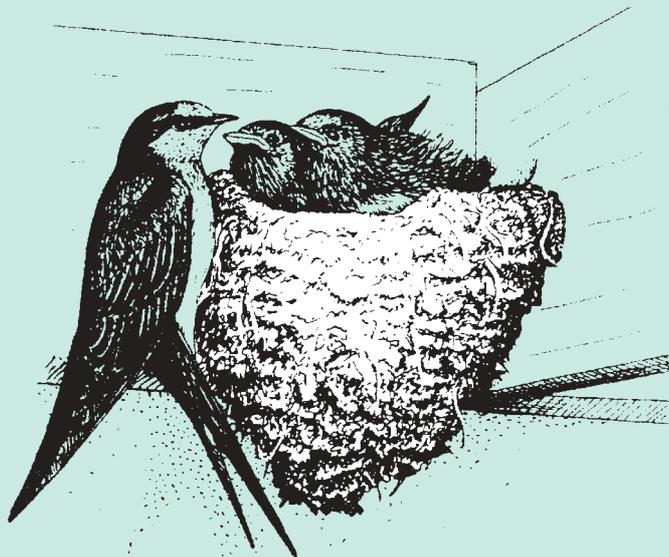


Fairy Martins have a white tummy and the top of their head is rust-coloured.

Fairy Martins nest in colonies. They build bottle-shaped nests from pellets of mud under bridges, rock overhangs and the eaves of buildings.

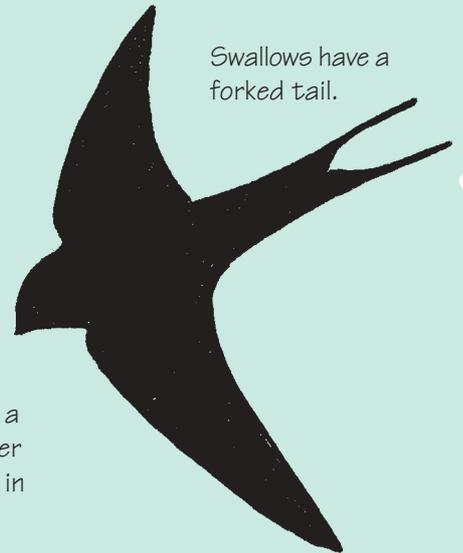
Welcome Swallows

Martins are relatives of swallows. They are a very common bird in southern and eastern Australia but don't like the cold. Tasmanian swallows fly to Queensland each year to avoid the winter chills.



(Illustration by Nicolas Day from Simpson & Day's *The Birds of Australia*)

Welcome Swallows collect mud and build a cup-shaped nest under people's verandahs or in their garages.

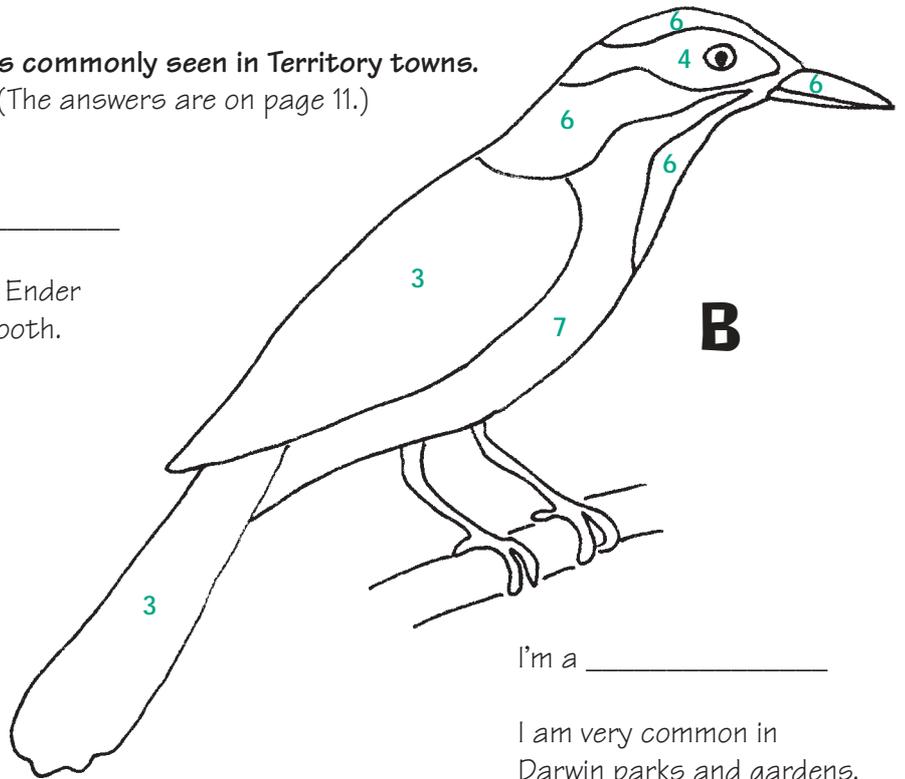
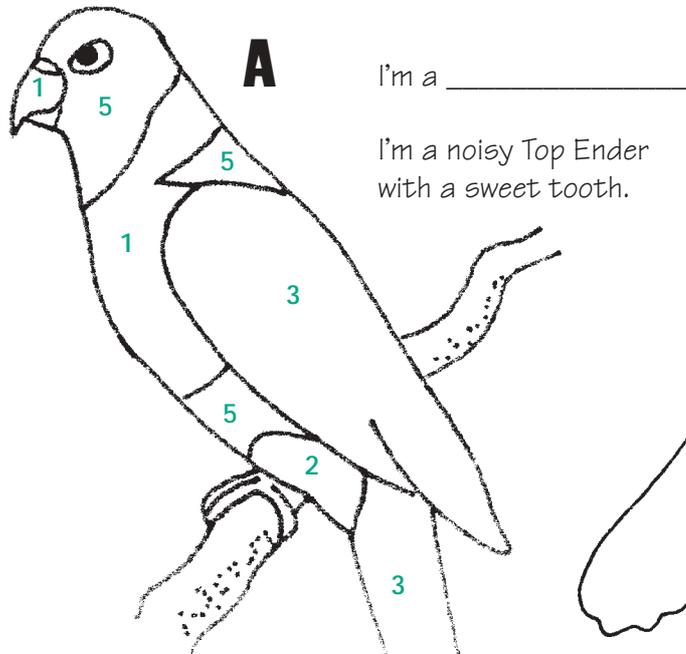


Swallows have a forked tail.

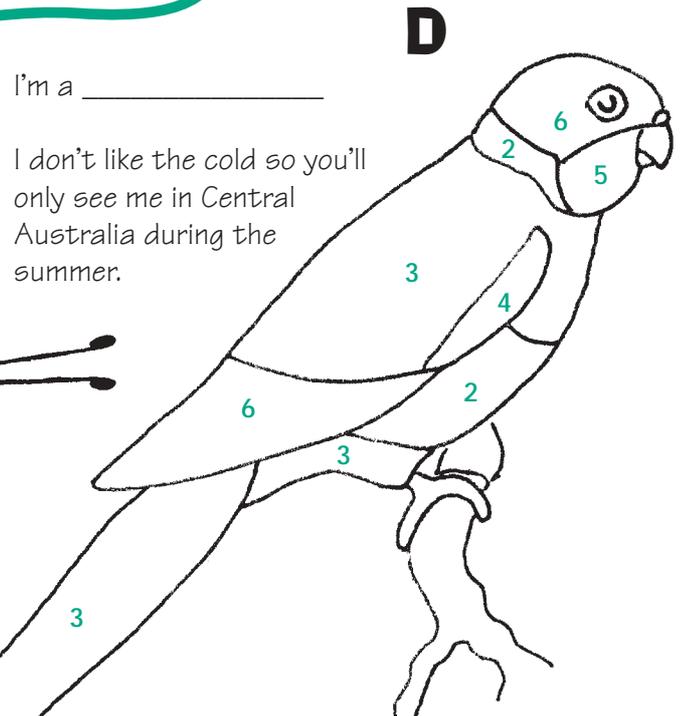
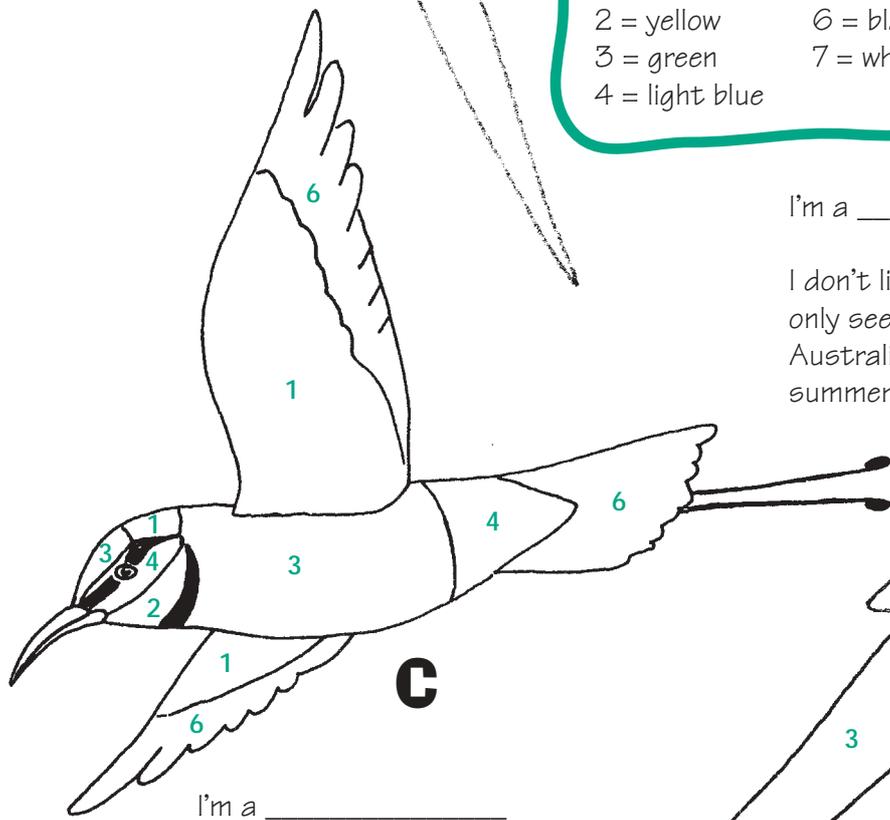
English swallows fly to South Africa in autumn. Their return at the end of winter is a welcome sight, telling people that warmer weather is on the way. However, swallows are not always so welcome in Australia because of all the droppings they leave under their nests.

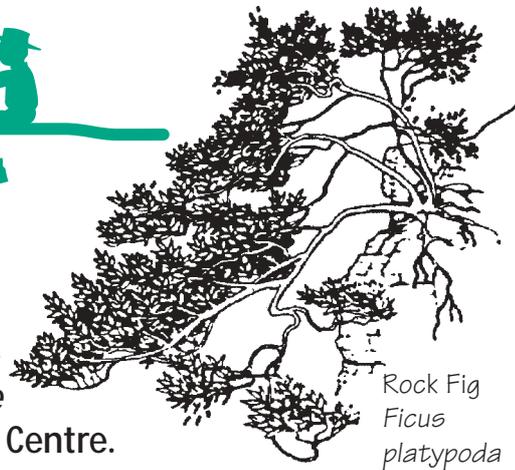
Some more urban birds

Use the number code to colour these birds commonly seen in Territory towns. Then use a bird book to find their names. (The answers are on page 11.)



- | | |
|----------------|---------------|
| 1 = orange | 5 = dark blue |
| 2 = yellow | 6 = black |
| 3 = green | 7 = white |
| 4 = light blue | |

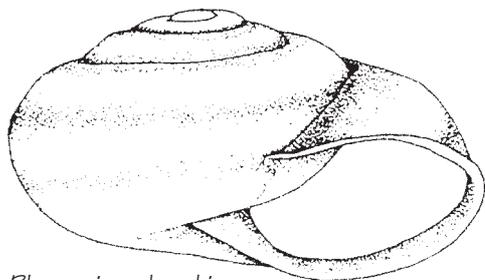




Rock Fig
Ficus platypoda

Red Centre Snails

You might think the Australian desert is an unlikely place to find snails. But a number of species of the *Camaenidae* family are adapted to life in the hot, dry conditions of the Centre.



Pleuroxia adcockiana

Snails are essentially 'leaky bags of water' in constant danger of desiccation. Despite this they have colonised the dry inland areas of Australia.

Most of them live in shaded, rocky gorges in the leaf litter beneath fig trees.

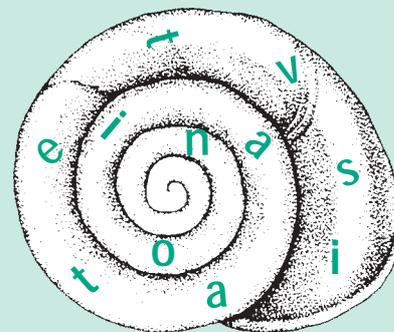
Some are 'free sealers' which cover the opening of their shell with a thick coating of mucus so they won't dry out. Others are 'rock sealers', attaching themselves to a rock like a marine snail.

The desert snails can survive long, dry periods by sealing themselves inside their shells and sleeping until rain falls.

Scientists use an 11 letter word (beginning with **ae**) for this process.

Can you unjumble the letters to make this word. A dictionary will help.

a e _ _ _ _ _



Threats to the snails' survival

The snails have learnt to cope remarkably well with the dry conditions. But they live in isolated colonies which could be wiped out if these places are threatened. Bushfires probably pose the biggest danger.

The spread of Buffel Grass, from north Africa and Asia, has increased the risk of bushfires in the Centre. Big fires swept through many areas in 2001 and 2002 following a couple of summers with above average rainfall. Fuelled by Buffel Grass, fires swept across the plains, along the dry riverbeds and into the ranges.

Buffel Grass was sown in the 1960s and 1970s for cattle feed and to solve dust problems. However, many people now believe this grass is a significant threat to biodiversity. Many small, rarely seen creatures like the Red Centre's amazing snails might be among the victims.



Garden Snails

The common garden snail *Helix aspersa* isn't a true blue Aussie: it's a feral from Europe. It is a significant pest which damages orchards and vegetable crops.

An environmentally-friendly snail killer

Many gardeners leave a saucer of beer in their garden to kill snails. It seems to work. We don't know if the alcohol poisons the snails or they just get drunk and drown.



Some Snail Stuff

Snail Trails

When a snail decides to hit the road, tiny muscles in its foot move up and down, from the front to the back, like a Mexican wave. This pulls it along. It lays a track of slippery slime as it goes to smooth the way. This turns a silvery colour when it dries and hardens.

Making Babies

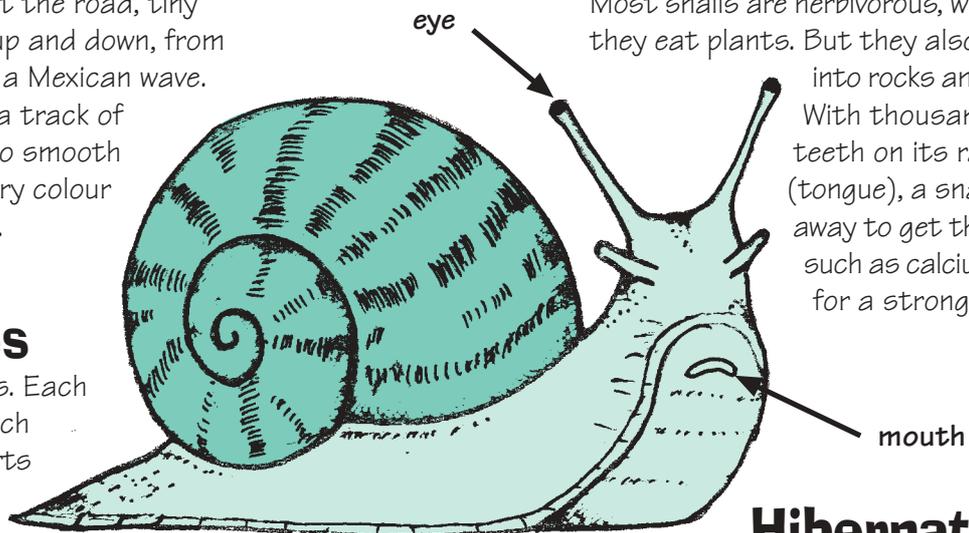
Snails are hermaphrodites. Each one has female parts (which produce eggs) and male parts (which make sperm).

They mate at night. A pair of snails will circle around one another, touching tentacles. Then they lie close together with the soles of their feet touching.

Each animal then shoots a hard dart into its partner's body. These darts stimulate each animal to squirt sperm onto the other's eggs.

Tucker Time

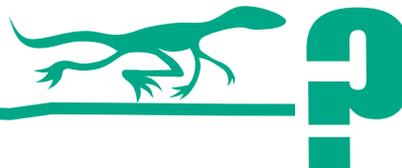
Most snails are herbivorous, which means they eat plants. But they also get stuck into rocks and concrete. With thousands of tiny teeth on its radula (tongue), a snail will grind away to get the minerals, such as calcium, it needs for a strong shell.



Hibernating

A snail may live for two years if it's lucky. In winter it seals up its shell with slime and sleeps until warm weather returns.

Nature Quiz



(You'll find the answers on page 11.)

1. What continent, apart from Australia, has native marsupials?
2. What should you put on box jellyfish stings?
 - a) sunburn cream
 - b) vinegar
 - c) wet sand
3. Bowerbirds are great collectors. What colour objects do Territory bowerbirds like to collect and place in the bowers?
 - a) red
 - b) blue
 - c) white
4. You can tell a male Galah from a female by their
 - a) eye colour.
 - b) size.
 - c) beak shape.
5. Where in the Northern Territory would you expect to see Mitchell Grass?
 - a) Top End
 - b) Barkly Tableland
 - c) Uluru National Park
6. What is a group of owls called?
7. When is World Environment Day?
8. Camels were brought to Australia for the exploring expedition of
 - a) John McDouall Stuart.
 - b) Augustus Charles Gregory.
 - c) Burke and Wills.
9. How many petals does a eucalypt flower have?
10. Why is the Comb-crested Jacana sometimes called the 'Jesus Bird'?





Mounting Insects as a Display

No other group of animals contains the diversity found in the insect world. There are many species that are not yet known to science and many that are yet to be named and classified. Insects play a crucial ecological role. Without insects many other species of plants and animals would suffer.

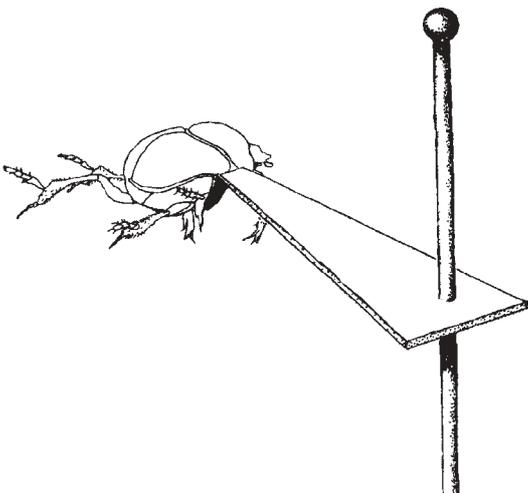
Insects have evolved into many shapes, colours and sizes. This variety makes insect displays look both interesting and attractive.

Mounting and displaying insects is a great way to learn about all the different species, their biology and their ecological role. If mounted correctly your insect display will last you for many years.

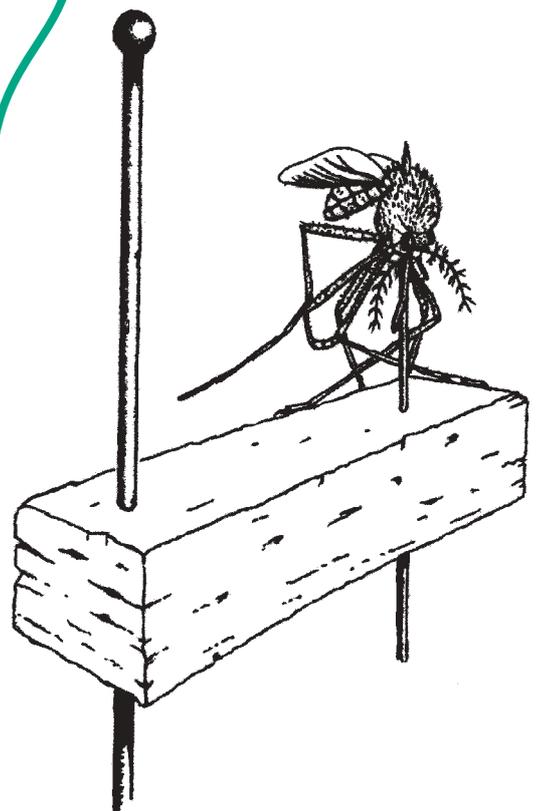
To find and collect your insects, look around lights, outside at night. Otherwise set up a sheet with a bright lamp behind it at night and pick the bugs off as they land on the sheet.

Items for mounting insects:

- air-tight container with a see-through lid
- moth balls to help preserve the insects
- silicon crystal sachet or dry rice to remove moisture (humidity)
- tweezers
- magnifying glass
- pin board material (cardboard/particle board/polystyrene foam)
- very fine pins
- corks
- stanley knife
- insect identification books
- printed labels (date, location, species name etc)
- strong absorbent tissue paper
- freezer



When mounting beetles and small insects it may be easier to pin, or glue them first before arranging their limbs. This is detailed work so use a magnifying glass to help you see your target. With very fine insects, gently place a dab of fast drying glue onto the top of a needle head, then place your insect on top.



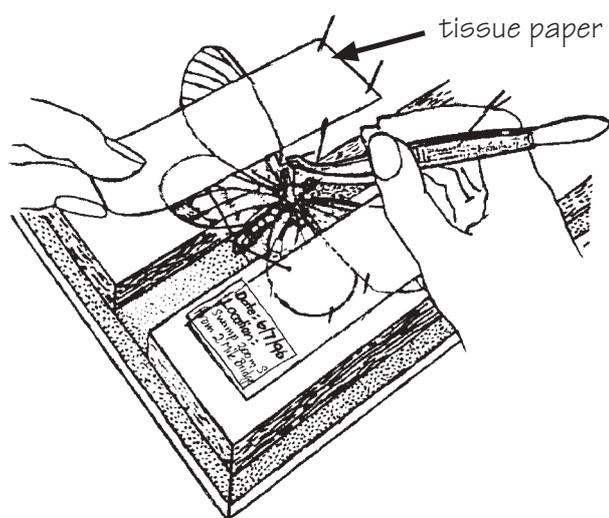
How to make a simple insect display:

Once you have some insects freeze them in jars or plastic containers. Freezing them helps to dry them out and preserve them. Moisture can cause insect specimens to decay, so it is best to keep them as dry as possible.

Your display box can be anything from a cut-down ice-cream container, cardboard box or wooden one for those that are keen. The depth of the box should be between 20 – 40 cm. For clear viewing, a glass or perspex sheet can be used as a lid.

Large insects can be difficult to mount because their bodies containing a lot of moisture (body fat) causing them to decay too quickly. However, there are many other insects which are quite easy to mount, such as moths, butterflies and beetles.

Thaw them out for about 20 minutes before mounting. Once the insect is limp it can be placed into a position and held there with pins and supports. It will dry in this position over a few days and will stay in place after the supports are removed. If the limbs are large and do not support themselves a little dab of super glue will hold the joint in place. The more you practice the better your display will look.



Mounting a butterfly.

A butterfly is displayed with its wings in full view. Place strips of tissue paper along and over the wings without damaging them. The pieces of tissue paper hold out the butterfly's wings so that they can become rigid once they dry. Place the support pins so that they do not damage your specimen.

Scientists always use an identification system when they deal with preserved animals. Each insect should therefore have a label with the following details

- scientific name of specimen (order, genus and species if possible).
- the date of collection.
- where you collected it.

Your display can represent the insects you have found in a particular habitat, or you may want them sorted into similar groups of insects, such as having all of the flies, wasps, dragonflies, etc together. Another way to present the display is to show them as a type of food web.

For further advice on insect mounting and insect identification contact Entomology (the study and research of insects), through the Department of Business, Industry & Resource Development, in Darwin on 8999 2311. Searching the Internet for insect clubs is another way to obtain tips and special insect mounting material.

PUZZLE ANSWERS

Creature Feature (page 2)
Their ears always stick up.

Urban Encounters (page 7)
A is a Rainbow Lorikeet
B is a Blue-faced Honeyeater
C is a Rainbow Bee-eater
D is a Port Lincoln Parrot

On the Brink (page 8)
aestivation

Nature Quiz (page 9)

1. South America
2. (b)
3. (c)
4. (a) Males have brown eyes but the females have pinky-red.
5. (b)
6. a parliament
7. 5 June each year
8. (c)
9. none
10. Its abnormally long toes and claws enable it to walk on waterlilies, making it look like it's walking on water.

Around the traps



G'day from Ranger Bill

Hi again, and welcome to Issue 2 of the *Junior Ranger Review* for 2003. I hope all our members throughout the Territory have been enjoying their time in the bush with our Junior Ranger coordinators.

In our last issue I mentioned the launch of the new Parks & Wildlife website. Since it has come on line, large numbers of people have visited the site. One of the areas of particular interest is the information on threatened species. It contains fact sheets that are great for helping with those school projects, and they are right at your fingertips. You can find them under the Plants & Animals heading – Threatened Species.

Darwin Junior Rangers recently visited Territory Wildlife Park to look at the Captive Breeding program for threatened species. Whilst on their visit they sponsored the Carpentarian Rock-rat as part of the Parks 'Territory Ark' program, which allows donated funds to go directly towards the feeding and care of this critically endangered species. Well done guys.

Alice Springs

Winter is a great time to be out and about in Central Australia, daytime temperatures are quite cool but it is still sunny with blue skies. Once the sun goes down it drops to freezing, but the night skies are crystal clear. In the dead of winter, nature puts on a bright flush of yellow, courtesy of the Sennas and Dead Finish in the rocky country and the Dune Wattle in the sandy country.

Dingoes howl a lot at this time of year, and early in the winter they mate. Pups are born 9 weeks later when the weather is warming up. For more about Dingoes check out the Creature Feature in this edition of the *Junior Ranger Review*.

Since our last 'Around the Traps', some highlights of the Central Australian program include Junior

Rangers in Tennant Creek getting the chance to test out their bush knowledge on an orienteering activity and the Alice Springs Junior Rangers discovering the interesting world of insects at the Desert Park.

Some Junior Rangers were lucky enough to have their photos used in the Department of Infrastructure Planning and Environment display for the Alice Springs and Tennant Creek Show.

Well that's all from us down in the Centre and I will let you know about all the great activities we get involved in during the winter program, in the next 'Around the Traps'.

See you out in the bush!

Ranger Emily.

Katherine

Frogwatch, Waterwatch, fresh water ecology, gecko spotlighting and insect trapping nights have all been great activities which have been carried out so far this year, by enthusiastic Junior Rangers from Katherine. Frogwatch was run much later than usual. The rains had long gone, but Junior Rangers still managed to capture seven species of different native frog species, as well as unfortunately sighting many cane toads. However, it was the numbers of frogs, which was quite amazing; they were out in force with many examples of each species found. The reason was fairly clear; we could hardly talk, as the air was so thick with insects. It is good to see such a healthy environment.

Three sandstone gecko species were sighted while spotlighting in Nitmiluk National Park. However the biggest thrill came after the program ended, when quite a large crowd of Junior Rangers and their families observed a giant Olive Python.

With the water theme now over Junior Rangers will follow 'wind'. This coincides with the cool dry south-easterly winds that have arrived. Junior Rangers will be finding out what effect this has on the local wildlife, as our native plant and

animal species survive five more months without rain. Now is a good time though, the cool air and strong winds are a refreshing relief from the heat of the wet season, and it is now that many fun activities are run.

Junior Rangers will rise with the birds to measure dew fall, any fog and we will try to get our kites flying. The kites are a way of seeing what the cool air does to the weather pressure systems. Helium balloons attached to the kites are going to be the only way the kites will reach winds roaring overhead, but do not tell anyone until they have run at least five times around the oval.

Two other big events are also on the calendar, the Katherine Show and the Flying Fox Festival Float Parade. This year the Katherine Show display is all about what impacts bushfires, feral animals and plant weed species are having on our native ecosystems. The Parade float will be using this message as well. It is a must see for all children and families so please come along and get involved.

See you out there.

Ranger Andrew

Darwin

Well the dry season has arrived and the weather is great for getting out and about in the bush. Areas often closed to the public during the wet season due to flooding rains are now open. Why not think about taking some time out during the school holidays and exploring the Top End.

As our northern wetlands begin to recede and permanent waterholes are all that remain, widely dispersed bird numbers begin to build up in more concentrated areas. Places like Fogg Dam, the Mary River and Yellow Waters see huge numbers of bird species return for the Dry. At a visit to any of these sites you may see Brolga, Black-necked Stork, Magpie Geese, Jacana, Egrets, Pygmy Geese and many more. And that is just some of the waterbirds.

Another obvious sign of the dry season are the smoky skies. Bush fires are a constant hazard as soon as the country begins to dry. Early in the dry season (April – May) controlled fires are lit in parks to reduce fuel loads and to help control fires late in the season. Fires, which appear later in the year, are generally deliberately or accidentally lit by careless visitors. Make sure when you visit a park that you follow all directions regarding fire. It may range from only lighting fires in designated fireplaces to full fire bans. Enjoy the dry season in Territory parks.

Ranger Vanda will be going on leave in August for the remainder of the year, but Ranger Dean will continue to run the Junior Ranger Program.

Looking forward to our next activity
Ranger Vanda & Ranger Dean.

The *Junior Ranger Review* is published four times a year by the Parks and Wildlife Commission of the Northern Territory. This edition was written by Stuart Traynor and Andrew pickering. Design and layout are by Action, Design, Print and Copy Bureau. The front cover illustration from Parks & Wildlife collection. Illustrations in this edition are mostly by Bob Whiteford with extras by Adi Dunlop, Sharon Hillen, Stuart Traynor and Robert Walter.

**Contributions are welcome
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