



Junior Ranger

Review

May - June 1999



Make Your Own
Nature Diary



Creature Feature
Flying Fox



What is a
Cycad



Mulgara

on the Brink

Plant Profile

Cycads

What do explorers Captain Cook, Matthew Flinders, Ludwig Leichhardt and John McDouall Stuart all have in common?

All of them recorded, in their journals, the terrible agony suffered by men in their parties who ate cycad nuts and regretted it.

Cycads are ancient plants. They have been around since the age of the dinosaurs. They look like the perfect bush tucker: big and starchy. The problem is that they are extremely poisonous.

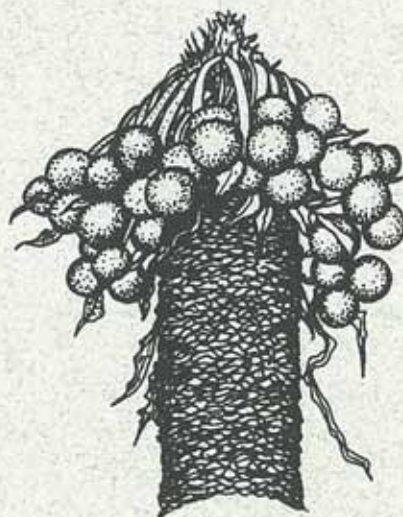
The ones from Central Australia were never eaten by Aboriginal people. The ones from the Top End were eaten, but only after the women removed the toxins by painstakingly cracking, soaking, grinding and baking the seeds.

Blokes and Girls

There are separate male and female cycads. The males have oval-shaped cones which produce pollen. Females have rounded fruits which each produce one seed.

Cycas armstrongii is common in the Top End north of Pine Creek.

The name comes from the Greek work *kykas* which means palm.



Female plant

The female plant produces a number of round cones that hang from velvety stalks.



Male plant

Oval-shaped male cone.

The Central Australian cycads are poisonous to people but they are a favourite food of the rare Central Rock-rat.

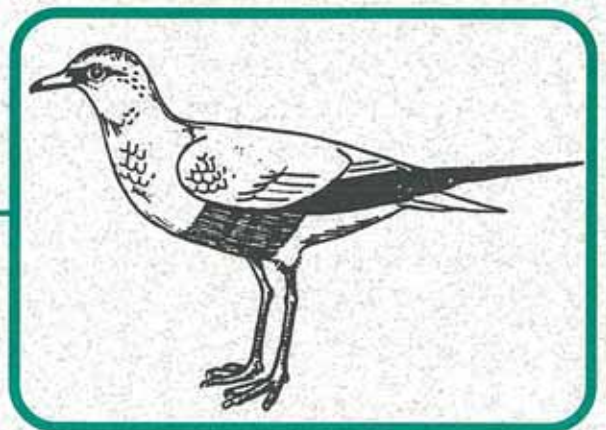


MacDonnell Ranges Cycad
Macrozamia macdonnellii

Nature Quiz

Test your knowledge of Australian wildlife with our quick quiz. (You'll find the answers on the second last page of this edition. But... don't peep!)

- 1 What animal gives birth to the world's biggest baby?
- 2 How fast (in kph) can a dragonfly travel?
- 3 Satin Bowerbirds in eastern Australia collect blue objects for their mates. What colour do our NT bowerbirds collect?
- 4 Which animal adorns our twenty cent coin?
- 5 What is Australia's smallest bird?
- 6 What colour are the flowers of our NT floral emblem: Sturt's Desert Rose?
- 7 What do Australian snakes mostly eat?
- 8 What NT animal holds the world record for the shortest pregnancy?
- 9 What does an entomologist study?
- 10 What birds are known in Tennant Creek as Barkly Seagulls?



Brain Teaser

Can you put these boxes together in the correct order to spell the names of three 9-letter Territorians?

DIC CRO BAN
COR OOT MOR
COD ANT ILE

One is a waterbird:

One is a reptile:

One is a mammal:

The solution is on the second last page.

On The Brink

The Territory's Mulgara

What's a Mulgara?

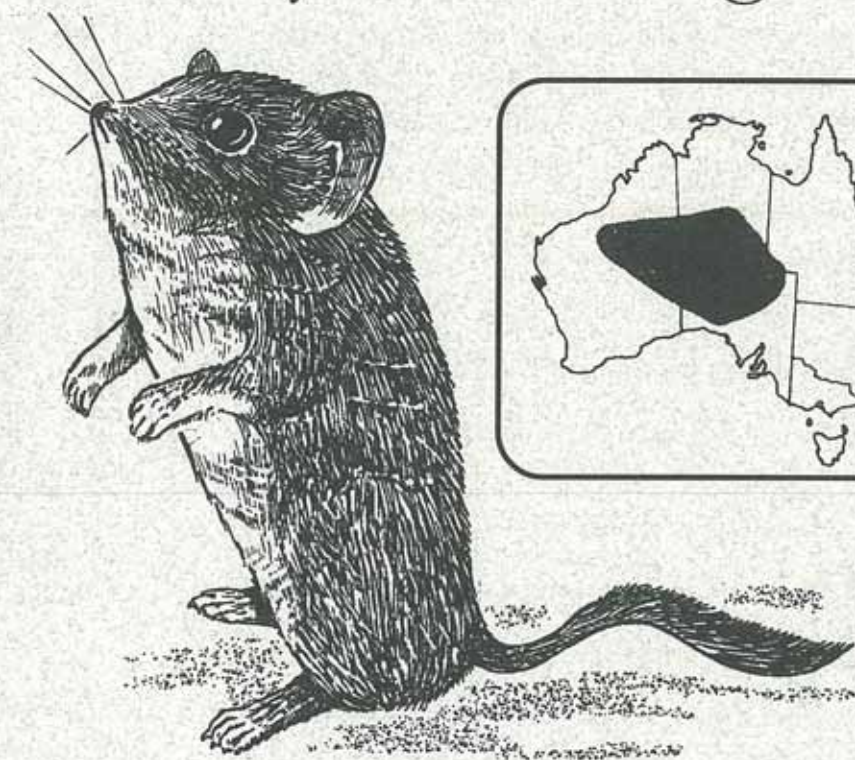
A Mulgara is a robust little marsupial of Australia's sandy desert. Its scientific name is *Dasyurus cristicauda*: (pronounced Daz-ee-ser-kus-kris-tee-kaw-dah). The first word means 'hairy tail'. The animal is the size of a rat. It is nocturnal but has been spotted on cold days, sunbathing at the entrance to its burrow.

What do Mulgaras eat?

Mostly they eat insects, spiders, centipedes and scorpions. But they'll also catch lizards and mice. Their short tail may be quite fat during good seasons. In tough times they may become inactive to achieve low rates of oxygen use.

How common are they?

Museum records show that Mulgara were once widespread and relatively common. However, the future security of the animal is of great concern. It has vanished from many places where it once lived. It now has a very patchy distribution. Small, isolated populations survive but



they are vulnerable to being wiped out by feral cats and foxes.

Where do they live?

The sand dune areas that support the highest number of Mulgara are near creeks and drainage lines running into salt lakes. Here the soil and vegetation is relatively rich and supports larger numbers of the invertebrates that the Mulgaras like to eat.

The Mulgara are hanging on in these patches of good country that are

like 'islands' in a 'sea' of less fertile desert.

How safe are they?

Unfortunately rabbits also find these places attractive. Their big appetites and rapid breeding can destroy the vegetation in these special places. When this happens the country is no longer able to support the healthy populations of the invertebrates on which the Mulgara feed. It is likely that rabbits have been a major factor in the Mulgara's decline.

Mulgara Fact File



Like many desert marsupials, Mulgara have very concentrated urine to conserve water.

They breed in winter. Sextuplets (six babies) are common. Mulgaras store fat in their tail like a camel does in its hump.

The Northern Territory appears to support the largest population of Mulgara.

Uluru is one place where they are surviving. But the tourist resort has been built in the part of the park where they are most common.

ENDANGERED

Aussie Wildlife

Here are the names of 24 rare Australian animals.
Can you find all the underlined letters in the maze?
Colour each letter as you find it. There should be 6 left over.



Alice Springs Mouse
Baw Baw Frog
Bilby
Blue Whale
Burrowing Bettong
Central Rock Rat
Cocos Buff-banded Rail
Eastern Bristle Bird
False Water Rat
Hairly-nosed Wombat
Hooded Parrot
Leadbeater's Possum
Leatherback Turtle
Lord Howe Island Woodhen
Macquarie Perch
Night Parrot
Numbat
Plains Wanderer
Purple-crowned Fairy Wren
Red Goshawk
Shark Bay Mouse
Sticknest Rat
Thylacine
Trout Cod

You should have 6 letters left over. String them together to spell the Aboriginal name for this rare parrot. (see the second last page for the answer).

Little is known about the habits of the Princess Parrot. It appears in a district, breeds, departs after the babies have fledged, then is not seen again for many years. The top of its head is light blue with a rose-pink chin. Its tummy is light blue and its wings are yellow.



Urban Encounters

Flushed with Frogs

How come frogs can live so happily in our loos? You'd think every bug in the bowl would breed beautifully on their moist skin.

The frog's trick is that its skin is packed with powerful antibiotics that prevent the germs getting a hold.

It's much the same with mosquitoes. If we crawl around swamps we're soon covered with the annoying things. Not so the frogs! They produce their own type of natural repellent. What amazing creatures!

Despite this, frogs are disappearing from the planet at an alarming rate.

Researchers are looking closely at a recently discovered skin fungus which is threatening amphibians across the world. Water quality also has a lot to do with the decline in frogs in Australia.

Frogwatch is a community program monitoring frog populations throughout Australia.

Ring your local Junior Ranger coordinator if you'd like to know more.



Litoria rubella

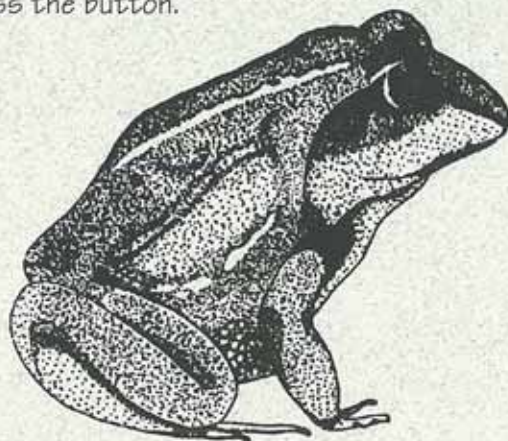
Flush the desert dunny and there's a chance more than water will appear. The permanent water in the bowl must seem like paradise to the little Desert Tree Frog.



Litoria caerulea

Top End toilets are often home to the big fat Green Tree Frog.

Both these frogs have large circular discs on the tips of their fingers and toes. These discs secrete a sticky mucus. So they have no trouble hanging on to the polished porcelain when you press the button.



Cyclorana australis

is one of the largest frogs you'll encounter in a Territory garden.

It's one of our burrowing frogs. Big numbers of them appear across northern Australia in the wet months.

A female may lay 7000 eggs in a shallow pool of water. The film of eggs float initially but then sink to the bottom. The creamy gold tadpoles complete their development in one month.

Give the Frogs a Helping Hand

Damp places, rainy nights and frogs go together. But frogs won't survive without healthy habitats. We can make a difference by making our backyards and suburbs more frog friendly. You can also join the growing number of people around Australia who are raising native frogs in their backyards and releasing them in suitable places.

Frogs do like

- leafy, well planted gardens
- lots of moist leaf litter
- compost heaps full of tasty insects
- ponds in which they can lay their eggs

Frogs don't like

- garden insecticides
- polluted water
- cunning, carnivorous cats



Raising Frogs in your Backyard

1. Choose a suitable tank or container for your tadpoles. Only use rainwater, unpolluted creek water or tap water that has been dechlorinated. (To dechlorinate, age the water in the sun for about 5 days in an open container.) 10 litres of water will be enough for 20 tadpoles.
2. Put your tadpoles in a spot with plenty of indirect light but not in direct sunshine. Tadpoles are sensitive to heat, so the water temperature should be fairly constant.
3. Put clean river gravel on the bottom of the container. Add some algae covered stones if you can.
4. You can feed your tadpoles on washed lettuce that has been boiled for several minutes. They will also enjoy algae and other small water plants.
5. Put some waterlilies or large rocks in the container so that the tadpoles have something to rest on when they're changing into frogs.
6. A branch leading out of their container will make a bridge for the young frogs to move into the garden.

Creature Feature

Flying Foxes

They're one of the Top End's best known mammals but are absent from the dry centre of the country. They can't cope with cold desert nights because they lose too much body heat through their wings.

At dusk they stream out of the trees to look for flowers and fruits. They crush the fruit with their jaws, spitting out the pulp, and swallowing the juice and seeds. Their gut is short and simple so food passes through quickly. Flying-fox camps are pretty smelly places!

Flying-fox breeding is very seasonal. They mate in April with most births occurring in October. For the first 4 or 5 weeks the baby is carried on feeding expeditions. It clings to mum's fur with its mouth fastened into one of her nipples under her armpits. Later it's left in a nursery when mum leaves the camp at night.

If they're lucky, flying-foxes can live for 15 years.

They spend their days hanging by their toes from mangrove and paperbark trees. All day long they screech and quarrel. If they get too hot they fan themselves with their wings and lick themselves like cats.

Flying-foxes are quite different to the little insect-eating bats. Flying-foxes rely on sight and smell to find their food. They don't use ultrasonic echolocation like the little bats do.

The difference between the two types of bats are so great, many zoologists doubt that they evolved from a common ancestor. Some zoologists suggest that flying-foxes may be closely related to the primates: the group to which humans belong.

Camp accommodation is well organised during the April breeding season. Couples, unpaired adults and juveniles sleep in separate areas.



Classified Ads.

Births

Anaphaeis the Caper White Butterfly is delighted to announce the birth of 37 green caterpillars which hatched on a beautiful Alice Springs April morning. All babies are doing well, growing fat on delicious Caperbush leaves.

Bon Voyage

Goodbye to our dear friends the Sandpipers. Enjoy your trip to Siberia. Hope the flight goes well. Look forward to catching up on your return in September. Love from the Dotterels.

Accommodation

Urgent. Devoted couple keen to start a family. Seek elevated site suitable for building a nursery. Want to start construction in May. Please contact: Mr and Mrs Wedgetail, c/o Post Office, Tennant Creek, NT.

Road Works

Parks and Wildlife Commission advise drivers in the Top End to watch out for teams of Red-winged Parrots currently collecting seeds along roadsides.

Wanted

Enthusiastic young people willing to undertake regular observations of NT flora and fauna. Information wanted includes when plants flower, birds nest, insects emerge, etc. For more details ring Junior Ranger coordinators.

See the Nature Project Page to learn how to start up your own Nature Diary!

Signs *of the* Times

There's lots of things happening in the bush near you this April and May.

The Top End

Freshwater Turtles are laying their eggs. Lots of Heart Urchin shells are washed up on beaches.

Waterlilies flower in billabongs.

Darwin Black Wattle is in full bloom. Salmon Gums shed their bark. Wild grapes are fruiting near beaches.

Dragonflies are everywhere.

Flying-foxes are mating.

Central Australia

Itchy Grubs are on the move.

Eagles and Kites are preparing to nest.

Bloodwoods are flowering. Ruby Saltbush are producing tasty fruit.

Swift Moths are emerging from the roots of River Red Gums. Many Tree Martins pass through Central Australia on their way north for the winter.

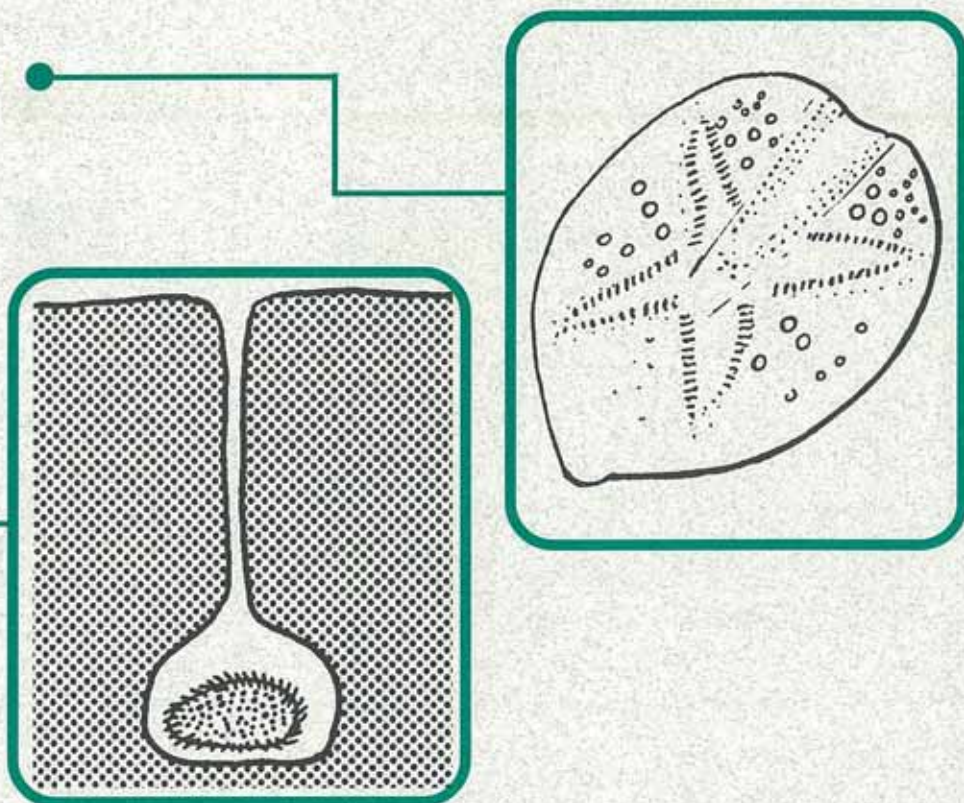
All Washed Up

Heart Urchins

Heart Urchins are animals of warm, tropical seas. Lots of their shells get washed up on Darwin beaches at the end of the wet season.

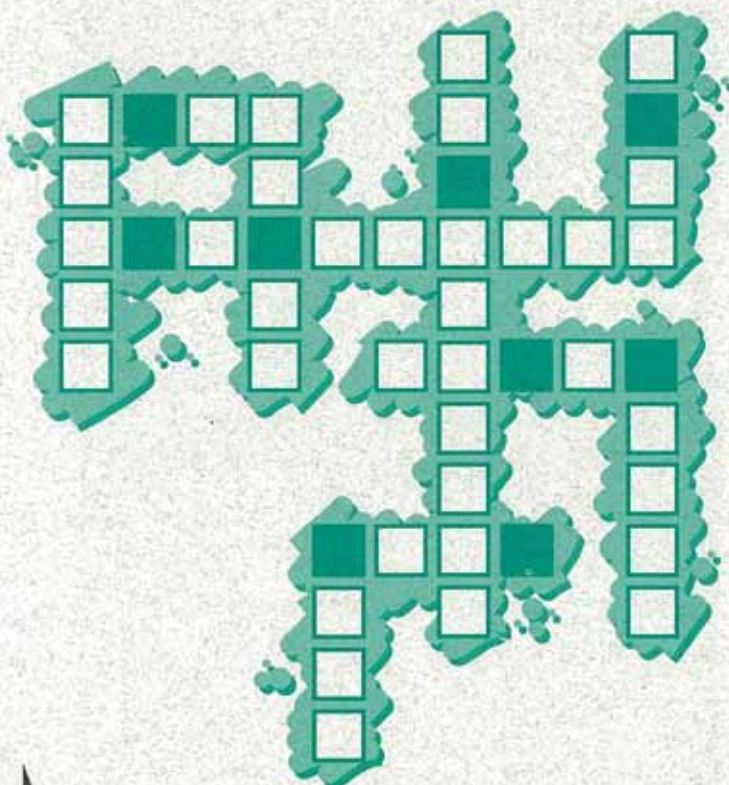
Heart Urchins belong to the echinoderm family. The name means 'spiny skin'. The ones washed up on the beaches have usually lost all traces of their skin.

Heart Urchins live in the sand in deep water off the coast. The animal's mouth is on the bottom side of its shell.



Build your own crossword from these 10 words

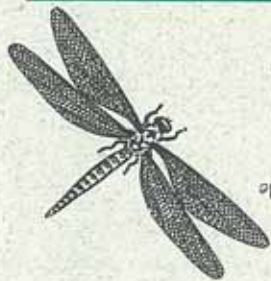
- ④ SEAS
SKIN
STAR
WARM
- ⑤ HEART
MOUTH
SHELL
SPINY
- ⑩ ECHINODERM
- ⑪ SAND DOLLAR



Answers are on the second last page.

A detailed black and white line drawing of a butterfly and its chrysalis. The butterfly is perched on a diagonal twig, with its wings spread, showing a pattern of dark spots and lines on a lighter background. Below the butterfly, a chrysalis is attached to the same twig, also showing a patterned design.

Record Your Observations Here

This image shows a single sheet of white, textured paper with horizontal green ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper has a slightly mottled or recycled appearance.

Puzzle Answers:

Around The Traps

ALICE SPRINGS

Alice Springs Junior Rangers are currently involved in collecting scientific data on one of the biggest stick insect species in the world! The Desert Goliath Stick Insect. A species only discovered in 1997, the Desert Goliath Stick Insect has been successfully raised at the Alice Springs Desert Park, but more information is required on the species to assist in its management.

Sixty Junior Rangers have taken home two, 3cm long stick insects and will raise them to their adult size of 25cm. During this time Junior Rangers will be completing monitoring sheets on growth rate, egg laying and general behaviour. This knowledge will assist the Alice Springs Desert Park to learn more about the species and continue its successful captive-breeding program.

Mature insects will be returned to the Alice Springs Desert Park to be incorporated into the invertebrate display, and any eggs laid whilst in the care of Junior Rangers will become the next generation of animals to go on display at the Alice Springs Desert Park. We will keep you posted on how our stick insects are going and growing and what information we find out about them!

KATHERINE

The 1999 New Year saw Junior Rangers start with the annual Frog Watch activities. Four different locations around the Katherine Township had enthusiastic torch-bearing Junior Rangers hopping around in the middle of swampy frog habitat, with the lightning from massive distant thunderstorms sending out huge displays. Nitmiluk National Park frog watch is always

popular with lots of outsiders coming along making it a community event. This special event was also recorded by the ABC radio, for 8JJJ. The Katherine Australia Day Floods in 1998, revealed little change to the general frog populations according to our records kept from previous Junior Ranger Frog Watches. Also of good news there were no Cane Toad recordings in our Katherine Frog Watch

sites although they're well on their way. Also of exciting news is the chance for 12-14 year olds to go on a historical re-enactment expedition camp. Junior Rangers will meet and camp with a group of historians and Rangers who will re-trace the same explorative route that a famous explorer, Augustus Gregory travelled, way back in the 1850's. Like Gregory the entire re-enactment crew will ride horses for six weeks. Ouch.

DARWIN

What animal fires a harpoon out through its nose? Where would you expect to find a pneumatophore? And why do some crabs run sideways? This is what the Darwin Junior Rangers were investigating in the first half of this year's program. They explored the quality of water in a local creek, learnt about the secret lives of our Top End tadpoles, rescued plants from a site soon to be developed and learnt what survival was all about as they became part of a food chain in our wetland game.

Then it was down to the beach in April to discover the salty soup of animals

and plants that make up the sea. The feast of coastal activities included coming face to face with some venomous sea creatures and learning how to survive a day at the beach, to getting crafty and turning sand, styrofoam and stockings into echinoderms to investigating "Who was Who" in the world of shells.

Junior Rangers will also be participating in National Science week this year by taking part in The Great Marsupial Nightstalk! A national project co-ordinated by the Perth Zoo to collect data on marsupials - we'll let you know how we go!

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 and design and layout are by Big Picture Graphic Art. The cover was designed by Robbie Henderson. Illustrations in this edition are by Bob Whiteford, Sharon Hillen and Adi Dunlop.

Contributions are welcome and should be sent to:

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PO Box 496
Palmerston NT 0831

G'day from Ranger Bill!

Welcome to our first edition of the Junior Ranger Review for 1999 and a special welcome to all our new Junior Ranger members!

The Junior Ranger Review has taken on a new look in response to your requests. We hope you enjoy it and would like to hear what you think about the new changes. As a Ranger for over 23 years I have had first hand experience in land management and therefore appreciate the importance in knowing about what is happening in the environment.

The Junior Ranger Review is a terrific way to keep you in touch with what is happening across the Northern Territory in terms of its plants, animals and our parks and reserves.

If you have any stories about how you're helping our fauna and flora we'd love to hear from you.

Happy reading! Ranger Bill
Assistant Director Park Operations