AUSTRALIAN Wildlife

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Celebrating a new century of wildlife preservation in Australia

Journal of the Wildlife Preservation Society of Australia Limited
(Founded 1909)

Suzanne Medway AM, President of the Society, presented Tim Faulkner with the first sponsorship donation to Devil Ark

Brett Murphy, Petrick Medway and Luke Murphy

Winner of the major raffle of a Toyota Ascent Car - Xena Millmore.
L to R: Trevor Evans, Xena Millmore, Steve Wisbey & Suzanne Medway

Contents

features

regulars

Suzanne Medway AM
Editor, Australian Wildlife

Sabine Borgis
Sub-Editor, Australian Wildlife

Front and back cover:
The rainbow lorikeet is unmistakable with its bright red beak and colourful plumage.

Photo by:
Nick Edards, Half Light Photographic. Nick is a Sydney based wildlife carer and will point a camera at anything, but is best known for photos of bats, birds and motorbikes.

Australian Wildlife Society
Conserving Australia's Wildlife since 1909

Australian Wildlife

is the official journal of the Australian Wildlife Society (Wildlife Preservation Society of Australia Limited).

Founded in 1909, the Society is dedicated to the conservation of our unique Australian wildlife in all its forms.

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Directors 2017

Notice to our members

The Australian Wildlife Society (Wildlife Preservation Society of Australia Limited) is managed and controlled by an elected board of ten volunteer directors. The Society is a registered company limited by guarantee with ASIC and is responsible for complying with all its regulations.

Any member who might like to consider serving as a director of the Society is invited to contact the national office for more details. The most important qualification to serving as a director is 'a commitment to and love of Australian wildlife'.

The Society holds regular monthly meetings on the first Wednesday of each month in Sydney.

The Editor would like to feature a member's profile in the fortnightly email newsletter and occasionally in our quarterly magazine. Members are invited to consider submitting a short article with a photograph for possible publication.

Our Mission

The Australian Wildlife Society (Wildlife Preservation Society of Australia Limited) is an independent, voluntary, non-profit conservation organisation, formed in 1909, and is committed to the preservation of Australia's precious flora and fauna. We act as a watchdog and provide advice to government agencies and institutions regarding environmental and conservation issues concerning all aspects of wildlife preservation. Our mission is to conserve Australia's fauna and flora through education and involvement of the community. We are dedicated to the conservation of our unique Australian wildlife in all its forms through national environmental education programs, political lobbying, advocacy and hands on conservation work.

Our Society has always known that a conservation battle is never really won until the victory is enshrined in legislation. We have always tried to convince politicians of the necessity to include the preservation of Australia's precious wildlife and its vital conservation habitat in all their planning and environmental issues and discussions.

From the President's desk

Suzanne Medway AM - President

Technological man is facing a dilemma, with finite resources still linked to an emphasis on development, exploding human populations, and degraded natural environments.

Technological man is facing a dilemma, with finite resources still linked to an emphasis on development, exploding human populations, and degraded natural environments. A comprehensive conservation blueprint for an alternative stable society has yet to be put forward. Providing such a policy and plan should now be the main task of the conservation movement.

Although the average Australian is now more aware of conservation issues and goals, global warming and diminished resources, the work of the Australian Wildlife Society does not figure strongly in this awareness. This is the next task for the Society – to educate the populace to the view that each organisation working for environmental protection fills a special niche and no one group can encompass every aspect of that protection.

I believe the problem starts with a general lack of scientific literacy in our society. Unfortunately even many environmental groups suffer from this, too, in that they don't accept any facts that don't fit their ideology. Science doesn't work like that. So as a bona fide lobby group, we have to be very careful to always back up arguments with evidence because flawed arguments are very easily picked up by politicians and industry lobby groups to use as ammunition against us.

The Society has its unique role to play, but people must be educated to understand how that role fits into the whole, what responsible action can be taken by any concerned individual, and that by being united the voice can be effective. The future of the Society will almost certainly be in closer cooperation with other conservation groups, forming alliances and multi-level coalitions.

In the past, we have had many successful alliances and coalitions. The first one was when we joined forces with the late Lance Ferris of Australian Seabird Rescue to stop the mass release of helium balloons.

What goes up, does come down

Party balloons are a child's delight, especially if the balloon is filled with helium, and floats magically in the air.

While these releases continue in many parts of the world, considerable information from overseas sources continues to support the fact that marine creatures are at risk from swallowing these balloons.

Whether the balloon is attached to a string or not, if it is filled with helium, it will float and eventually come down still presenting a choking hazard or digestion hazard for marine turtles and many other species.

It has been said that helium-filled balloons rise to a height where they 'freeze to a state of brittle fracture' and 'burst into small pieces, after that they flutter harmlessly to earth.'

Ironically, even if balloons did fracture into small pieces, according to studies and autopsies of marine turtles, each piece of a balloon would present a significant threat to small hatchling turtles. All species of sea turtles in Australian waters are considered endangered, threatened or vulnerable. Statistics indicate that only one in a thousand sea turtles survive to maturity!

Agreed, latex is biodegradable. However, there are many marine creatures constantly searching for food sources. A floating balloon, or a piece thereof, represents a food source, whether it is biodegradable, deflated, blue, green, orange or in small, so-called 'harmless' pieces... and continues to be a significant threat to our precious wildlife, irrespective of the size, colour, texture or shape of the pollutant.

In worldwide studies (US Fisheries and Wildlife, UK Marine Conservation Society), it is estimated that a latex balloon may take as long as twelve months to biodegrade. Meanwhile, as they degrade, thousands more are released into the environment at balloon releases... to 'top up' the constant threat to our wildlife.

Dumping of balloons into the environment, whether it is on the ground or in the air, is not only littering but presents a hazard to marine creatures who mistake these items for food.

The jet-stream air flow across the continent is from west to east. Helium balloons are thus likely to reach the height of the jet-stream, and eventually, find their way into the ocean.

Have you ever been to a party where helium balloons were floating around the room? And for those who stayed late, they would have noticed that these balloons slowly drifted to the floor.

There is a simple explanation: helium is an expensive gas. Its atomic structure is very small, in fact, the second smallest atom in the world. A balloon is filled with what is called 'balloon gas' – a mixture of ordinary air and helium – just enough to float the balloon. The helium atom is small enough, over time, to pass through the wall of the balloon, thus allowing the balloon to descend.

If one were to dump 1,000 balloons on the roadway, the action would incur a penalty for littering. What gives us the right to dump many thousands of balloons in the ocean? That is very likely where helium-filled balloons will end up.

EVERY PERSON involved in the release of helium balloons creates a real threat to many endangered species of marine creatures.

At the closing ceremony of the Paralympics (2000), thousands of balloons were used in the display. Not one was filled with helium, and not one ended up in the ocean. There are many ways to celebrate with balloons, without recklessly endangering our wildlife.

What goes up, DOES come down!

We are losing our endangered species.

DID YOU KNOW?

Linda Dennis

Australia is full of amazing and unique flora and fauna. While many Australians know a little bit about a lot of plants and animals, there is so much information out there that is not widely known, surprising even!

A

Anthropozoonosis is a disease transmitted from human to animal, e.g., tuberculosis, chlamydiosis, Ross River virus, mycotic dermatitis.

Archerfish, found in northern Australian waters, bring down their prey by shooting jets of water. The fish clamps its gills closed and shoots water from its mouth knocking insects, etc., off their perches into the water where they are then eaten.

Australia has over 28,000 native species, and more than 80 percent of our plant and animal species can't be found anywhere else on earth – along with most of our freshwater fish and almost half our birds.

B

Bandicoot is an Indian name for big Asian rats, from which our marsupials, bandicoot, gained its name.

Emu. Photo: Linda Dennis

Most of the 2000 native **bees** of Australia are solitary, only members of the family Apidae are social.

The Australian **blobfish** lives more than 1000 metres beneath the oceans. No human has ever observed this fish in its natural habitat because of the great depths at which it lives.

The name **bilby** is an Aboriginal word meaning long-nosed rat.

The purple copper **butterfly** is one of Australia's rarest butterflies. Found only in the central west of New South Wales, it depends on a particular species of ant and special kind of blackthorn plant for its survival.

C

An animal that is considered to be **cathemeral** is active during the day and night (e.g., dingo).

The first recorded extinction as a direct result of human-caused **climate change** is the Australian Bramble Cay melomys.

Novice bird watchers often mistake the glossy black **cockatoo** with the yellow-tailed black cockatoo or the red-tailed black cockatoo when they are separate subspecies of the genus *Calyptorhunchus.*

Corellas live to around 50 years of age and mate for life, both sexes are essential in chick-rearing.

An animal that is considered to be **crepuscular** is most active during dawn and dusk (e.g., platypus).

D

The **Dandenong** Ranges National Park has six major vegetation communities in which about 400 indigenous plant species occur. The park is particularly well known for its spectacular mountain ash forests and fern gullies. Other vegetation communities include cool temperate rainforests, box stringybark woodlands, riparian forests, mountain gray gum-messmate forest and sclerophyll woodlands. The park supports significant plants such as the slender tree-fern and summer spider orchid. Fire plays an important role in the ecology of the vegetation.

The **Davidson's** plum, named after one of the region's pioneer sugar cane farmers, is one of the more well-known rainforest species of tropical North Queensland. The most distinctive part of Davidson's plum is its striking dark purple fruits. The fruits are a popular food source for many iconic rainforest animals, including the sulphur-crested cockatoo and the southern cassowary. They are also an important part of the modern Australian bush food industry.

Dingoes are social creatures that live in groups called packs, though some dingoes choose to live alone. A pack usually has around ten members. They

Dingoes. Photo: Linda Dennis

Western grey kangaroo. Photo: Linda Dennis

travel together and hunt together, but rank is highly contested. A dominant female and her mate lead the pack, with the dominant male as the ultimate pack leader. The dominant female kills the offspring of the other females in the pack. The members of the pack take care of the dominant females young.

Dugongs have a very muscular upper lip that hangs over a downward facing mouth, helping them to graze on sea grass on the bottom of the ocean. They can hold their breath for up to six minutes and dive to depths of 33 metres to feed. They eat about 50 kilograms of sea grass every day.

E

The word **emu** comes from the Portuguese word 'ema' which means large bird.

When Europeans arrived in Australia, four forms of emu occurred: the mainland emu, the Tasmanian emu, the King Island emu and the Kangaroo Island emu. The three island emus were exterminated rapidly, and only the mainland form survived.

At night time, when a torch is shone on a native animal their eyes will flash red in the darkness, an introduced animal, e.g., a cat or a fox, will flash green eyes.

Echidnas live slow and long. Echidnas have the lowest body temperature of any mammal, 32°C. Their body temperatures are not controlled in the same way as that of other mammals and can fluctuate by 6-8°C over the course of the day. Their long life spans – up to 50 years in captivity, with anecdotal reports of wild animals reaching 45 years – are due to their low body temperature and slow metabolism.

Male **echidnas** have a four-headed penis. During sex, two of the heads shut down while the other two grow bigger to fit into the female's two-branched reproductive tract. Males alternate the heads they use between matings.

54 Australian mammals, birds, frogs and other animals have become **extinct** since European settlement.

F

The rough tree **fern** is one of the tallest growing tree ferns in Australia. It has been known to grow over 12 metres tall. It is also the most common tree fern and can tolerate higher exposure to the sun than the soft tree fern.

The **fierce** snake or inland taipan has the most toxic venom of any snake. Maximum yield recorded (for one bite) is 110mg. That would probably be enough to kill over 100 people or 250,000 mice.

The **flying-fox** is the only mammal that can fly.

G

Some **geckos** have no moveable eyelids, so they use their tongue to lick clean their eyes. This behaviour is unique to geckos and snake lizards.

The **Gilbert's** potoroo is Australia's most endangered animal. It was thought to be extinct since the early 1900s, but then in 1994, it was rediscovered at Two Peoples Bay Nature Reserve near Albany, Western Australia. It is unlikely that many more than 30 animals exist in this sole wild population.

The **green** tree frog doesn't need to drink as it can absorb moisture through its skin.

H

The **Herbert** River ringtail possum is a solitary animal and lives above an altitude of about 300 metres in the dense rainforest of North Queensland. Another name for the Herbert River ringtail possum is the mongan.

Australia is home to about 40 species of ***Hibiscus,*** most of which are endemic. The flowers, leaves and even the roots are described as edible for humans, and the hibiscus also attracts many native bird species to the garden.

The long-eared **horseshoe** bat's flight is similar to that of a butterfly due to its short, broad wings. It hovers and darts among foliage and close to the surface of water.

While several birds of prey 'wind surf', there are only two Australian birds of prey that **hover** mid-air while hunting for prey. These are the black-shouldered kite and the nankeen kestrel.

I

The golden bandicoot (***Isoodon*** *auratus*) is a very rare bandicoot that is found in small areas of arid land in the top end of Western Australia. It was more widespread before European settlement including large areas of Western Australia, northern South Australia, and the Northern Territory.

Isopogon is a genus of 35 species of mainly low-growing and prostrate perennial shrubs in the family Proteaceae, endemic to Australia. They are found throughout Australia, though Western Australia has the greatest variety with 27 of the 35 species found there. They are popularly known as drumsticks due to the shape of their inflorescences.

Lyrebird. Photo: Linda Dennis

Shingleback lizard. Photo: Linda Dennis

Southern hairy-nosed wombat. Photo: Linda Dennis

The **"Itjaritjari"** (*Notoryctes typhlops*) is one of two species of marsupial mole. It inhabits the vast sand dunes of Central Australia where it is usually 20 to 60 cm below the surface. It is very rarely seen and is federally classified as endangered.

J

The difference between the male and female **jabiru** is in the eyes. The females are yellow while the males are brown.

Jacky lizards show crypsis in their appearance. This means they disguise their body outline by colouring (a form of camouflage).

The box **jellyfish** is considered the world's most venomous marine creature. The box jellyfish has killed more people in Australia than stonefish, sharks, and crocodiles combined.

K

Here's an easy way of telling the western grey **kangaroo** and the eastern grey kangaroo apart – the western grey kangaroo has thick fur on the base of the ears only. The tip to about three-quarters of the way down is bare or very short fur. The eastern grey kangaroo has thicker fur from the base of the ears to the tip.

The fastest **kangaroo** is the red kangaroo. It has been recorded at speeds up to 60 kilometres per hour. At this speed, its strides are up to eight metres long.

Tasmanian Devil. Photo: Linda Dennis

The **koala's** closest living relative is the wombat, although the genetic code between the two species differs by more than 20 percent. The difference in genetics between humans and chimpanzees is less than one percent! Koalas need to sleep up to 23 hours a day because it takes a lot of energy to digest the eucalyptus leaves they eat.

The laughing **kookaburra** is not really laughing when it makes its distinctive call – it's actually a territorial call to warn other birds to stay away.

L

The **leafy** seadragon's long snout is actually the mouth which can suck up thousands of prey a day like a vacuum cleaner!

The **letter-wing** kite is a night hunter. Like owls, the kite needs silent flight to be able to surprise prey. The kite is often mistaken for the black-shouldered kite as they look remarkably similar. However, the black-shouldered kite is a diurnal hunter.

The **lyrebird** is a master at mimicking the songs of other birds and the sounds it hears in from its surroundings in the Australian bush. The lyrebird is often heard calling the perfects sounds of the kookaburra, galah, cockatoo and others. It can also copy the sounds of chainsaws and cars, and for those living near humans, it has also been known to bark like a dog.

M

Female **macropods** (kangaroos, wallabies, etc.) have four teats, however usually only one young is born at a time and from the time of birth to the time of weaning a joey feeds from the same teat. Amazingly, it is possible for a macropod to have one joey in the pouch and another at foot that is still suckling by sticking its head in the pouch and she can produce two different milk compositions at the same time for the different stages of suckling joeys.

35 percent of all modern global **mammal** extinctions have been Australian mammal species (30 out of 84 worldwide extinctions).

Millipedes are vegetarians that feed mainly on mould and occasionally on roots of seedings.

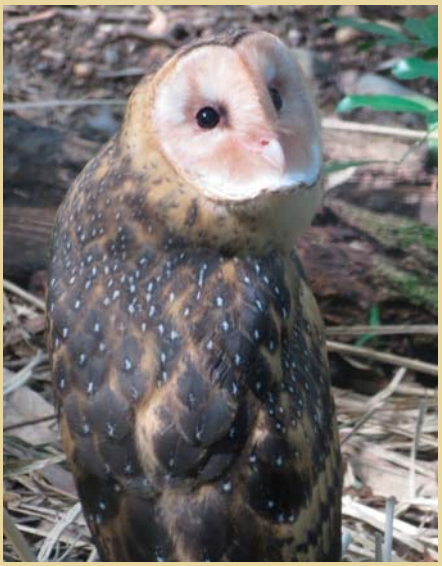
There are only two **monotremes** found in the world – the platypus and the echidna. **Monotremes** do not have teats but rather secret milk through pores on the belly.

Australia has a marsupial that is not only blind, but it doesn't have any eyes at all? And, it also lacks external ears? The marsupial **mole** lives in Australia's sandy deserts however it is rarely seen as it spends most of its life underground. The rare times the **mole** does venture above land is usually just after rain. The **mole** doesn't burrow like a wombat but constantly tunnels through the sand which is known as 'sand swimming'. There are two species of the marsupial **mole,** the southern (*Notoryctes typhlops*) and the northern (*Notoryctes caurinus*).

Australia has more than 90 species of **mistletoe,** and it has recently been discovered that **mistletoe** could help in the fight against cancer. The University of Canberra has found extracts of the plant can kill 80 percent of a cancer tumour (in the laboratory).

Myopathy (degenerative lesions of the muscle) can be caused by more than usual physical exertion (for example, during capture process). **Myopathy** often affects macropods, especially the eastern grey kangaroo and the western grey kangaroo. **Myopathy** often leads to the death of a macropod, but it can affect any animal including birds.

Freya, an orphaned green ringtail possum cared for by Hannah Marco of northern Queensland. Photo: Hannah Marco



Eastern grass owl. Photo: Linda Dennis

N

Australia is home to thousands of unique **native** plant species, 90 percent of which are found nowhere else on Earth. Of these about five percent or 1100 species are listed as Endangered or Critically Endangered under Australian state and federal laws.

The **northern** hairy-nosed wombat is one of Australia's most endangered species. In 1971 there were only 30 individuals and today, there are just over 200. **Northern** hairy-nosed wombats are found in only two locations – Epping Forest National Park (Scientific) in central Queensland and now, after a successful translocation, at the Richard Underwood Nature Refuge near St George in Queensland.

Numbats are diurnal as they need to be active when termites (their main food) are active. In the winter, termites are active in the middle of the day when the sun warms the ground. In the summer, termites are active early in the morning and in the evening. **Numbats** eat up to 20,000 termites each day.

O

The **Onionwood** (*Syzygium alliiligneum*), also known as Mission Beach satinash, is endemic to north-east Queensland, restricted to the area between Cape Tribulation and Tully. Altitudinal range is from sea level to 750 metres. It usually grows in well-developed lowland rainforest, occasionally ascending to the edge of the upland rain forest. The fallen fruit is eaten by the cassowary and is also edible to humans.

The **orca,** or 'killer whale' (*Orcinus orca*) is a toothed whale and is the largest member of the dolphin family. It can weigh up to (5,443 kilograms) and grow to 7 to 9.7 metres. The **orca's** large size and strength make it among the fastest marine mammals, able to reach speeds in excess of 56 km per hour!

The heart-shaped facial disc of **owls** helps them hear. When the sound of prey (e.g., moths, crickets, and mice) reaches the **owl,** it is channeled along the contours of the facial disc directly to the ears.

P

Some **pardalote** species, such as the spotted **pardalote,** build their nests underground at the end of a tunnel.

The **peregrine** falcon is the fastest bird on earth and has been clocked at speeds of 140 kilometres per hour. It is also highly intelligent.

In the wild male **phascogales** rarely live beyond their first mating, following which they usually die of stress-related diseases. Females can live up to four years of age.

Sometimes **possums** get poisoned with Ratsac when the baits are left out for rats and mice in ceiling cavities. The antidote for this is a Vitamin K injection, however, it must be given as quickly as possible after ingestion for it to be effective.

A baby echidna or platypus is called a **puggle.** These two Australian mammals are the only ones that lay eggs.

The **purple-neck** rock wallaby inhabits the Mt Isa region in north-west Queensland. The wallaby secretes a pigment that transforms its face and neck into colours ranging from light pink to bright purple. The pigment is known to wash off in the rain and fade away after death.

Q

Australia has ten native species of **quail;** the king **quail,** brown **quail,** and the stubble **quail** are true quails and comprise of three species and belong to the genus *Coturnix.* The other seven species of **quail** are referred to as button **quail** and belong to the genus *Turnix.*

Quintinia *sieberi,* known as possumwood, is a rainforest tree of eastern Australia. It is mostly found in rainforests at high altitude. The range of natural distribution is between the Clyde River, New South Wales (35° S) and the McPherson Range (28° S) just over the border in the state of Queensland. The possumwood tree is host to the leaf miner moth.

Kilogram for kilogram, the tiger **quoll** has the second strongest bite of any predatory mammal in the world, beaten only by the Tasmanian devil. Imagine the jaw strength of a spotted hyena or African lion – proportionally the tiger **quoll** has more bite than both!

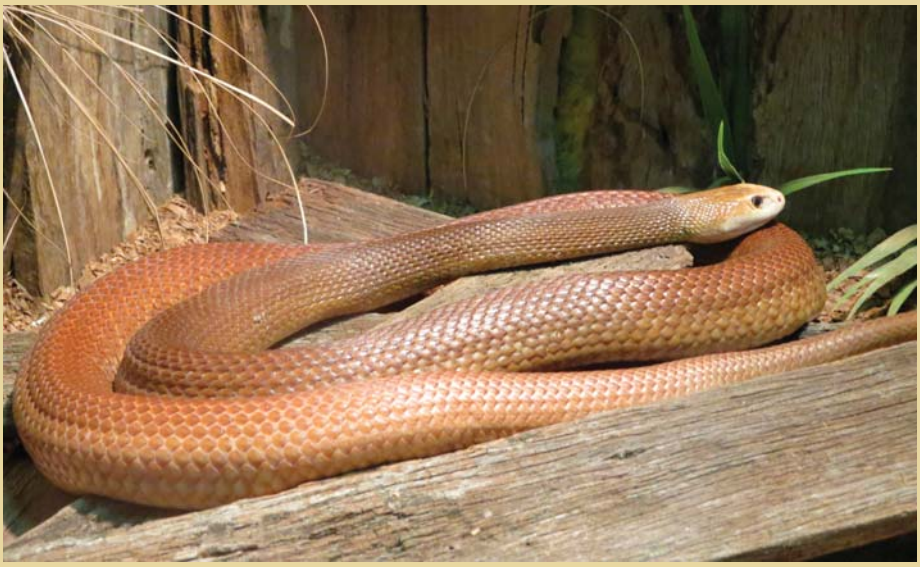
R

Scientists have suggested that the **red** kangaroo has the most efficient method of locomotion of any ground animal in the world. As it travels faster and faster, it uses less and less energy.

There have been 30 species of whales, dolphins, and porpoises recorded in the Great Barrier **Reef** in northern Queensland. Six species of sea turtles come to the **Reef** to breed. 215 species of birds (including 22 species of seabirds and 32 species of shorebirds) visit the **Reef** or nest or roost on the islands. 17 species of sea snake and more than 1,500

Echidna puggle. Photo: Linda Dennis

Female jabiru. Photo: Linda Dennis



Coastal taipan. Photo: Linda Dennis

fish species, in fact, around 10 percent of the world's total fish species can be found just within the Great Barrier **Reef.**

The green **ringtail** possum gets its name from its fur, which does indeed have a greenish tinge. In reality, the fur is olive grey, but it is grizzled with silver, yellow and black hairs and these make the possum appear green.

S

Shingleback lizards are monogamous (faithful to one another). Each year the same male and female will seek each other out, court one another and mate. They will often stay together for eight weeks before parting company until the next breeding season.

Australia is home to 10 of the world's 15 most poisonous **snakes.**

Compound 1080 or **sodium** monofluoroacetate, is a naturally occurring compound produced by many species of Australian plant. **Sodium** monofluoroacetate occurs naturally in about 40 native plant species in Australia, primarily of the genus *Gastrolobium,* which grow in Western Australia, across northern Australia in the Northern Territory and central Queensland. **Sodium** monofluoroacetate is a colourless salt with a taste similar to that of sodium chloride and is used as a metabolic poison.

T

Tasmanian devils were once widespread over much of mainland Australia, but are now only found in Tasmania. This is most probably as a result of the introduction of the dingo, which never reached Tasmania. The **Tasmanian** devil eats practically every part of its prey. With its powerful jaws and strong, sharp teeth, it can crush and eat bone. Its characteristic poo is often splintered with shards of bone.

The **Tasmanian** tiger, with its strong back legs and rigid tail, could hop on its hind legs like a kangaroo. The tiger used this motion when frightened or alarmed as it was a quicker motion then running, which its body shape made it difficult to do.

Thorny devils have a false head and can trick their predators by tucking their real head down between their front legs.

Tree kangaroos have the extraordinary ability to jump to the ground from 18 metres or more without being hurt.

Brush **turkeys** are born orphans. Chicks have a pretty rough start to life, having to scramble vertically out of their nest mounds, which takes around two days. Brush turkey parents have little to nothing to do with the chicks when they hatch; they are entirely on their own.

The Fitzroy River **turtle** can breathe through its bottom, in a process called cloacal respiration.

U

There are 21 mammals, 73 reptiles, 178 birds and four frogs at **Uluru** (also known as Ayers Rock) in the Northern Territory. There are around 400 native plants.

V

One of Australia's lesser known monitors, the spotted tree monitor (***Varanus*** *scalaris*) is found in the northern Australian tropics. Its preferred habitat is tropical woodland and monsoon forest.

W

Prior to European settlement, it is likely that the **western** barred bandicoot was widespread across Australia through the southern arid zone, from the Liverpool Plains in New South Wales to the north-west coast of Western Australia. Sadly they have been extinct on mainland Australia for at least 80 years, existing only in the Natures Reserve of Bernier and Dorre Islands in Shark Bay, Western Australia.

There are there species of **wombat** – the bare-nosed **wombat,** the northern hairy-nosed **wombat** and the southern hairy-nosed **wombat.** The hairy-nosed **wombat** comes under the genus *Lasiorhinus*. The northern hairy-nosed **wombat's** scientific name is *Lasiorhinus kreffeti,* and the southern hairy-nosed **wombat's** scientific name is *Lasiorhinus latifrons.* The bare-nosed **wombat** comes under the genus *Vombatus,* and its scientific name is *Vombatus ursinus.* There are three subspecies of the bare-nosed **wombat** – *Vombatus ursinus ursinus* which can be found on Flinders Island; *Vombatus ursinus tasmaniensis* which is located only within Tasmania; and *Vombatus ursinus hirsutus,* which is located in the south-eastern areas of the mainland.

Woylies, (also known as brush-tail bettongs) are members of the family Potoridae, which comprises all small kangaroo-like marsupials under 3kg, known as 'rat-kangaroos.'

X

There are two families of billfishes: the Istiophoridae family consists of marlins, sailfishes, and spearfishes and the **Xiphiidae** family contains only the broadbill swordfish.

There are more species of beetles in the world than any other group of insects, and they come in all sizes, colours, and shapes. Among the largest are the rhinoceros beetles, so named because the males generally have prominent horns on the front end of the body. Australia's rhinoceros beetle (***Xylotrupes*** *ulysses*) grows up to seven centimetres long. They are said to be the strongest animals on the planet as they can lift up to 850 times their own body weight. That's a bit like a human lifting up four double-decker buses filled with passengers.

Y

The **yellow-bellied** glider is the largest of the gliders, measuring up to 80 cm from nose to tail and weighing around 600 grams. Its tail is almost twice as long as its body.

The **yellow-tailed** black cockatoo is one of six species of black cockatoo in Australia. In recent years it has been in rapid decline because of native habitat clearance, with a loss of food supply and nest sites.

The **yellow** plumwood is an Australian tree in the Sapotaceae family. It occurs in seaside rainforests and drier rainforests from Forster in New South Wales to the Lakeland Downs in tropical Queensland.

Z

Zoanthids are anemones that do not have a skeleton but are leathery masses of tissue. **Zoanthids** attach themselves to rock or coral and colonies can consist of hundreds of individuals. They are found in shallow tropical water or up to 30 metres deep in temperate water.

Zoonosis is a disease, illness or infection of animals that is transmissible to humans, e.g., ticks, mange, tuberculosis, chlamydiosis, mycotic dermatitis, bat lyssavirus.

Zooxanthellae are a very special type of marine plant. They are single celled algae which live inside the translucent fleshy tissue of many marine animals including types of giant clams, nudibranchs, and even jellyfish, however, they play their most important role when living within coral polyps as they can provide up to 90 percent of a coral's energy requirements.

Sources

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Australia

World leader in deforestation and species extinction

Frances Pike

The proposed provision in the revised Renewable Energy Target to burn native forests for biomass power will help accelerate the current man-made extinction crisis from disaster to catastrophe, to global ecosystem collapse – especially in those states signed up to Regional Forest Agreements.

The intensity of logging in Australia is visible behind the thin veneer of carefully retained trees along major highways and tourist routes, from planes and from satellite imagery.

Forestry has changed. Industrialised logging is the new norm. Silviculture (the practice of controlling the establishment, growth, composition, health, and quality of forests to meet diverse needs and values) is highly mechanised harvesting technology capable of intense rapid clearing. There was no announcement to the Australian public that selective logging by manual extraction was being replaced by machines that flatten forest understoreys.

A disastrous set of clear fell 'experiments', alongside the aerial application of herbicide and/or accompanying on-ground 'disincentives' to native animals (in the form of poisoned baits), is called 'sustainable'. Systematically, industrialised logging modifies forest ecosystems. Deliberately or inadvertently, a process of 'conversion' of forests into factories takes place. Australian deforestation is occurring at a rate and on a scale never seen before.

Two-thirds of Australia's loggable native forest is under Commonwealth-state Regional Forest Agreements (RFAs) – a mid to late 1990s attempt to control deforestation. The ecological basis was to be an offset system, the establishment of Comprehensive, Adequate and Representative (CAR) reserves. The process for establishing these was inadequate, unscientific, its legal status ambiguous[1]. Yet the stated ecological intent is used by government and industry to claim sustainability. Reports of catastrophic damage are countered by a hollow statement – RFAs were to make Australian forestry sustainable. Ergo Australian logging is sustainable. RFA rhetoric, paid for by their taxes, was fed to the public by industry and government. Now, science and empirical evidence expose the sustainable native forest logging myth as a 'deadly' lie. Australia is a leader in global deforestation and leads the extinction crisis.

RFAs left forests open to exploitation by legislating RFA logging exempt from the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC) – the federal government's own 'central piece of environmental legislation' and 'legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places'. Pretending the flawed system for establishing CAR reserves sufficient offset for logging non-reserves rendered 6.8 million hectares of national public forests vulnerable to state regulation. Where state environment laws don't bind the Crown (a state's forest agency), no law protects native forests from anything.

A state-by-state glimpse of RFAs reveals disaster. Wildlife is pushed

Above: Ringtail possum. Photo: Peter Woodard

Dwarf panda snail. Photo: Peter Woodard

to extinction, soil, water, and carbon storage functions destroyed. Industrialised logging kills forest life, directly and indirectly, and through cumulative impacts. The Industry has been promised 'rolling renewals' to the national forest estate. The first, Tasmania, is scheduled for as soon as possible this year – unless the Australian public prevents it.

Western Australia

In Western Australia, there is not one piece of legislation to defend forests from logging impact.

Western Australia exempts forestry from fauna provisions of its *Wildlife Conservation Act 1950*. Fifteen state and/or nationally listed threatened species are already gravely impacted, including some on the brink of extinction. Ancient forests carbon-dated to 600 years of age are clear-felled, to be re-logged long before they can recover. The essential breeding/nesting hollows for forest dependent fauna take 250 years to develop. Across the continent, even where these develop in half that time, hollows loss is a major extinction factor as trees of native forests are no longer being permitted to mature[2].

WA Forest Alliance monitors conversion/modification of the karri and jarrah forests, both of which grow in association with marri. What's left of the old mature karri is being clear felled, with no marri replanted. And where jarrah is logged heavily, no other tree species is encouraged to regrow.

Orange eucalyptus beetle. Photo: Peter Woodard

Western Australia's 800,000 ha RFA expires in 2019. Only 10,000 ha of mature karri remains with 500 ha clear-felled annually. If industry receives its 20-year LNP pre-election promise of 'evergreen extensions' and supply runs short, taxpayers could again compensate corporations, as in New South Wales.

New South Wales

The north-east of New South Wales is one of the world's 35 'biodiversity hotspots', with at least 1,500 endemic plant species (0.5% of the world's known plants) still being logged, despite 70 percent of primary vegetative cover already having been lost. Though a critical refuge for global species survival, from the Queensland border to Gosford, these biodiverse forests are, by stealth, being converted from ecosystems to single-aged stands favouring one species. There are seven endangered ecological communities on the national list here; 43 animal species and 164 plant species critically endangered, endangered and/or vulnerable to extinction. These forests house 11 percent of Australia's nationally listed threatened animals and 13 percent of the threatened plants. Of 109 species threatened by logging, it is logging that is now the number one threat to the survival of 41[3].

Even though the Auditor-General warned in 2009 that North Coast forests are being cut "faster than they can grow back", logging is continuing unabated, with New South Wales RFA rules facilitating clear fell. The NSW Government proposes total clearfell of the steep catchments above 30 percent slope – something that is currently illegal. The infamous and despised cable logging that decimated vast swathes of Tasmanian native forests would destroy the refuge for wildlife in the process of being 'expunged' (by logging) from the coast and lower hinterland strip.

In the South-Eastern bioregion, where 27,727 ha (45 percent of the gross area) can be logged, live 210 threatened species. Nineteen of these are not only bioregionally, but nationally endangered, with some classified as 'critically endangered' – one step from extinction – yet still the forests wherein they literally cling to survival are being clear felled.

Forest Corporation NSW's (FCNSW) flouting of the Integrated Forest

Operations Approval (IFOA), is well documented. Although only two state government ministers have any authority to make FCNSW adhere to the IFOA, there being no mechanism for public complaint, the public till now could at least read/hear about the rules being broken. Increasing media coverage of illegal state logging and multi-million annual losses of the native forest logging sector bothered now disgraced Liberal Premier Barry O'Farrell. In 2012, he instructed the Environmental Protection Agency (EPA) to 'fix' the problem but without reducing industry's annual supply, though the wood was not there.

The EPA 'remade' the IFOA, the title perhaps cynical. It proposes legal prescriptions replaced (largely) by 'best practice guidelines' but 'not strictly enforceable'. It's possible the NSW government waits till RFAs are 'rolled over', giving Industry the full LNP suite of pre-election promises (almost ongoing 20-year access), before announcing the new 'non-enforceable' set of rules that (un)protects forests.

Victoria

Five RFA areas in Victoria are decimated at a rate of 5,500 ha per annum, despite the fact that 70 percent of Victorian forests no longer exist and 30 percent of species are 'threatened' (with extinction). Its faunal emblem, the tiny fairy (or Leadbeater's) possum, is critically endangered, hanging for survival on the brink of extinction in an ecological community itself critically endangered[4]. But the mountain ash forests of the Central Highlands are 'promised' to industry, so are still being clear-felled/converted. With this and other illegal logging of RFA areas, extinction is on the cards also for three large forest owls, the glossy and the red-tailed black cockatoos, the long-nosed potoroo, the large brown tree frog, the spotted-tail quoll, the greater glider, and the list goes on.

As in all RFA states, forestry is excluded from the usual environmental and planning approval requirements, denying Victorians statutory rights to legal action in regard to illegal state logging. The Department of Sustainability and Environment (DSE), formerly responsible for regulating forestry activities, lacked a compliance and enforcement policy. Opinion was that its immediate regulatory successor would also lack a compliance culture (*One Stop Chop*, 4.1.3, p.42). The regulator, as of November 2014, the Department of Environment, Land, Water and Planning, has been compelled by forest activists to investigate illegal logging of rainforest by Vic Forests recently.

Homeless anglehead

To enforce breaches, Victorians must approach the equity division of the Supreme Court but only if, as third parties, they can prove standing – have more than a 'mere emotional or intellectual concern'. Citizens working with scientists and legal teams have managed this four times. Forestry has been made to comply with individual instances of laws they are meant to follow. Yet citizens are 'investigated' for daring to expose illegal state logging. Publicity, outrage ensues, but the logging has not stopped[5].

Tasmania

The whole of Tasmania is an RFA area, regulated through the Forest Practices Code with 'Agreed Procedures' between the Forest Practices Authority and the Department of Primary Industries, Parks, Water and Environment. As elsewhere, exempting forestry operations from normal state-based threatened species law is a primary extinction driver.

Facts proved an independent expert panel's concerns justified:

> "It is unclear whether and how this process actually happens. What monitoring of the efficacy of prescriptions for the protection of threatened species has been done? How adequate/defensible are the

Bearded dragon. Photo: Peter Woodard

data to address the question of adequacy of prescriptions?"

The Tasmanian swift parrot population is 'on a trajectory to extinction.'" Damage to the habitat of one species places pressure on another in an intensely interrelated chain of impact. Logging destroys not only mammal, bird, reptile and aquatic species habitat – it depletes invertebrates, sources of the terrestrial and aquatic food chain and, as pollinators, critical vectors for the survival of flowering plants. Invertebrates comprise at least 95 percent of global biodiversity.

The prime minister 'tore up' the Tasmanian Forest Agreement to protect 500,000 ha of World Heritage nominated old growth (primary) forest upon coming to election, despite advice to the contrary from his own review panel. It was the first in his suite of pre-election promises to the forestry industry. The second is subsidising the industry by allowing native forests to be included in the Renewable Energy Target. The third is perpetual resource access via 20-year 'rolling' 'evergreen extensions' (the industry's words) of RFAs – coming soon.

Conclusion

The koala is now also declared nationally vulnerable to extinction. Australian forests and all they represent in terms of the biological richness of life on earth face accelerated mass extinction unless the LNP's Renewable Energy (Electricity) Amendment Bill 2015 is defeated.

You would think a decision of such magnitude might warrant a referendum. You would think with a manmade global extinction crisis, it would be better not to proceed.

It is up to us to prevent cross-bench senators from allowing the Liberal National Party to honour its 'deadly promise' to the timber industry. It is ecocide. It could happen within a week.

Despite warning from scientists and conservationists, the Coalition government overturned the ban on native forest biomass qualifying as a renewable energy source when burnt, with or without fossil fuel. The timber industry is now attempting to get the government to legislate that wood biomass (including that deriving from native forests) will also qualify for renewable energy subsidies when used for industrial heating processes.

Action Link: http://natives rule.org

Further info:

http://www.forestsandclimate.org.au/
http://www.marketsforchange.org/

Editor's note:

This article was originally posted to *Independent Australia* - https://independentaustralia.net

Independent **A**ustralia is a progressive journal focusing on politics, democracy, the environment, Australian history and Australian identity. It contains news and opinion from Australia and around the world.

Frances Pike gratefully acknowledges assistance from Australian Forests and Climate Alliance and NPA. Read more by Frances at www.natives rule.org, visit the Natives Rule Facebook page, or follow Frances on Twitter @natives rule

Endnotes

1. Senate Rural and Regional Affairs and Transport Legislation Committee : Dissenting report

Report on the Provisions of the Regional Forest Agreements Bill 1998

Senate Rural and Regional Affairs and Transport Legislation Committee : Dissenting report

2. PubFacts.com - Interacting factors driving a major loss of large trees ...

www.pubfacts.com/detail/23071486/Interacting-factors-driving-a-major-loss-of-large-tr...

Interacting factors driving a *major loss* of *large trees* with *cavities* in a *forest* ... However, many*ecosystems* are experiencing increasingly rapid *loss* of *large trees* ...

3. Response to Disturbance of Forest Species In CRA Regions In NSW – Upper North East and Lower North East Regions Prepared by Environment Australia A project undertaken for the Joint Commonwealth NSW Regional Forest Agreement Steering Committee as part of the NSW Comprehensive Regional Assessments. Project number NA 17/EH

4. http://leadbeaters.org.au/facts/

5. https://newmatilda.com/2015/05/20/green-group-exposed-disturbing-forest-clearing-investigated-victorian-government

Egernia major. Photo: Peter Woodard

Australian Wildlife Inaugural Ball

On Saturday 17 June the Society held its inaugural ball in the Western Leagues Club, Campelltown.

It was an outstandingly successful evening, with some 250 guests enjoying the festivities. A special thank you to all our sponsors who contributed to the fund raising for the evening, and especially to Tim Faulkner of Devil Ark for being our eminent guest speaker. Before telling an enthusiastic audience about Devil Ark, Tim spoke about the threat of extinction to many species of Australia's precious wildlife.

Tim Faulkner, Taryn Moore, and Suzanne Medway

Arch and Angela Tanty, Ellie Bluett and Sue Emmett

The Jacaranda Room was the venue for the Ball

Inaugural Ball continued

Noel Cislowski and Monique Garbowski nursing a one-year-old dingo pup

Caitlin Maxwell and an excited guest nursing a one-year-old wombat

Society Director, Ken Mason, wowed the audience with a guitar solo

Clive Williams

Colleen Keys, Margaret McGurgan nursing Peppa, the Tasmanian devil and Suzanne Medway

Dr Janette Keir accepting second prize in the raffle - a $3,000 travel voucher - on behalf of her sister, Dr Robyn Coman

Cheque presentation. L to R: Ken Mason, Noel Cislowski, Clive Williams, Suzanne Medway, Robyn Weigel, John Weigel, Trevor Evans and Wayne Greenwood

Giving hope to the endangered Tasmanian devil

Tim Faulkner, President and General Manager Devil Ark

High in the hills of the Barrington Tops is a critical project working to save an endangered Australian animal. Devil Ark is the largest conservation breeding program for the Tasmanian devil on mainland Australia.

The iconic Tasmanian marsupial is at serious risk of extinction from the transmissible cancer Devil Facial Tumour Disease (DFTD) and numbers have plummeted to less than 10 percent in some parts of Tasmania.

With no viable vaccine or likely cure for DFTD, Devil Ark's ambitious breeding program might be the key to its survival. Insurance breeding programs like Devil Ark are breeding disease free, healthy devils that will repopulate Tasmania once DFTD has run its destructive course.

Located at an altitude of 1,350 metres in the Barrington Tops, Devil Ark provides the perfect breeding environment for devils. The Tasmania-like vegetation and cool, wet and snowy conditions means the devils feel right at home.

Devil Ark is set in the beautiful World Heritage-listed Barrington Tops; 88km east of Scone, 83km west of Gloucester, 187km south of Tamworth and 234km north of Newcastle, in New South Wales, Eastern Australia. Set on 500 hectares, Devil Ark mimics the Tasmanian landscape.

But it's a battle against time. Genetic diversity is rapidly diminishing in Tasmania, so at Devil Ark, we are racing to breed large numbers of devils to preserve the species. Genetically robust Tasmanian devils mean the best chance of long- term survival.

The 2017 breeding season will see Devil Ark grow to 200 devils and the goal is to have 360 devils at Devil Ark by 2020.

Devil Ark enclosures are large, at least two hectares each, naturalistic and contain multiple devils and dens. These small groups of devils interact and behave the same as they would in the wild, ensuring the preservation of wild-type behaviour.

Minimising the devil's' exposure to humans maintains their independence, which is important for devils that will eventually be returned to the Tasmanian habitat.

Devil Ark's goals

Devil Ark is part of the Save the Tasmanian Devil Program (STDP), an initiative of the Tasmanian government, and around 40 zoos across Australia are part of the program.

A vital component of the STDP strategy was to establish an insurance population of healthy devils. Under the coordination of the international conservation body, International Union for Conservation of Nature (IUCN), and the peak Australian zoo body, Zoo and Aquarium Association

From South end looking North

(ZAA), a captive management strategy was developed and implemented that included a vital mainland component.

The aim of the 'insurance population' was to establish and maintain a population of healthy, genetically diverse Tasmanian devils that maintain their wild traits and are able to be successfully released into the wild when required.

There are currently around 600 devils in the program and 150 of those are at Devil Ark (25 percent). In 2016 Devil Ark welcomed its 200th joey. We welcomed another 37 in the early stages of 2017. This makes Devil Ark by far the largest and most successful facility. It is intended that Devil Ark will house 360 devils by 2020 with additional scope to expand to whatever population is required by the STDP in the future. With our adaptive and effective operations we managed to achieve this success at $2,000 per devil compared to the industry standard of $10,000 per devil.

Australian Wildlife Society's contribution

Our Society and Devil Ark have entered into a partnership to ensure a future for this cheeky Australian marsupial predator.

The Society is entirely funding a one-hectare enclosure to accommodate 15 newly weaned Tasmanian devil joeys every year (beginning in November this year). This 'weaning pen' development, along with others, will allow the Devil Ark population to grow to 210 devils by November 2018.

It will be a pivotal part of the program for many years to come, providing a 'half-way house' for post-weaning devils before being moved to either breeding enclosures, or for release on islands and fenced- off peninsulas in Tasmania, or larger naturalistic pens associated with Devil Ark.

The new enclosure will be named the Australian Wildlife Society enclosure.

Tim Faulkner
General Manager of Devil Ark

Cedar Creek Wombat Rescue Inc. & Hospital

Roz Holme

Cedar Creek Wombat Rescue Inc. and Wombat Hospital is dedicated to rescuing not just orphaned joey wombats but also sub-adults and adults that are in need of medical care – whether it be from car accident or many other illnesses – and also wombats being raised by a member of the public! But mainly we concentrate on wombats that are affected by mange that are in need of more than routine care to get them to the point of release. We also take on mange young from other wildlife rehabilitation groups that don't have the facilities to do so!

I was born and bred into wildlife and have been doing my mange work for over 36 odd years. I am also working under a scientific licence on a mange paper with PhD student Tamieka Fraser which is still ongoing. We also go into the field on other people's properties here in the Hunter Valley and treat wild wombats, achieving great outcomes of clearing up mange.

What is mange?

Mange is a terrible, debilitating disease in wombats. It is caused by a mite called *Sarcoptes scabiei*.

The mites mate on the skin and then the females tunnel into the skin causing a honeycomb of tunnels and laying eggs as they go. This process causes a severe inflammatory reaction and intense itching. Scratching as well as the burrowing of the mites causes damage to the skin. When the skin is damaged, a bacterial infection can take hold and produce pus. Large patches of skin can be affected. These patches form crusts that then crack leaving large open wounds that become fly-blown. The mites feed on serum, the liquid component of blood, and this, along with the bacterial infection, contributes to the overall decline of the wombat's health. Thick crusts form around the eyes and ears as well leading to blindness and loss of hearing. This makes it more difficult for the wombats to forage for food, further weakening them. As the disease advances, it can affect the organs including the liver, kidneys, heart and lungs.

Eventually, if untreated, the mange leads to system failure and death.

If a female with a joey is affected, she may reject the joey because she is unable to cope. The joey will likely also be affected and if not found and treated, will be unable to survive. Joeys should only be taken into care by a licensed experienced carer who is trained and knowledgeable in the treatment of mange. These joeys have many special needs and require a huge effort to rehabilitate them to the point of release.

Mange treatment

Mange can be treated successfully if caught early enough. Any wombat that is seen out during the day should be suspected of having mange. The sooner they are treated, the better chance they have to survive. They must be treated correctly and not harmed further by the treatment, so it's best to be done by someone experienced in not only handling wombats but also treating mange. Here at Cedar Creek Wombat Rescue Inc. & Hospital, we have treated many adults in the field and joeys in care for mange. The treatment involves applying a topical medication such as an ivermectin pour-on. Smaller wombats, which can be more easily handled, are given injections. The crusting prevents absorption of the medication and also leads to the severe cracking and damage to the skin. Treatment works best if it is done weekly and can take six to eight weeks or longer in some animals depending on the overall condition and health of the wombat. It takes persistence and perseverance, especially with the young ones, providing the support that they need to build some resistance.

Treating mange is an ongoing and important battle and must be continued, or we face the loss of one of Australia's most iconic animals.

Tonka before treatment

Tonka during treatment

Tonka

The Australian Humpback Dolphin

Linda Dennis

Tin Can Bay is home to a family of dolphins that has long frequented the area. They are Australian humpback dolphins led by their alpha, Mystique! This breed of river dolphins eat crustaceans, squid and fish.

I recently had an awesome up-close-and-personal experience with a small pod of Australian humpback dolphins at the Barnacles Dolphin Centre at Tin Can Bay, Queensland (regulated by the Queensland government). The amazing experience got me thinking about this threatened species, and I wanted to learn more. And now I'm going to share with you what I learnt!

Only as recently as August 2014 the Australian humpback dolphin (*Sousa sahulersis*), was recognised as a separate species due to it having enough unique features to set it apart from other humpback dolphins. It is the fourth species of humpback dolphin, the others being the Atlantic humpback (*S. teuszii*), the Indian Ocean humpback (*S. plumbea*) and the Indo-Pacific humpback (*S. chinensis*). Scientists took 17 years to finally decide that the Australian humpback dolphin is indeed a species of its own.

The dolphin got its common name from the distinctive elongated dorsal fin and hump-back appearance which arises from the accumulation of fatty tissue on its back as it ages. The 'hump' however is not as prominent as in other humpback dolphins. The Australian humpback differs from other dolphin species with its mounded forehead and long beak. Compared to other humpback dolphins, the Australian humpback dolphin has a distinct skull shape and number of teeth; it also bears a darker 'cape' on its back compared to its closest relative, the Indo-Pacific humpback dolphin.

Sousa sahulersis, the dolphin's scientific name, is derived from the Sahul Shelf, an underwater shelf located between Northern Australia and Southern New Guinea where the Australian Humpback Dolphins occur.

The Australian humpback dolphin is classified as Vulnerable by the Queensland Government and Near Threatened by the IUCN Red List of Threatened Species (Genus *Sousa* in general). These listings may be because there is still little known about the species. However, Tim Hunt, PhD candidate at Flinders University, says the Australian humpback dolphin may be listed as a threatened species if enough information was available. Tim has studied the Australian humpback dolphin population off the North West Cape near Exmouth. He says: "*In WA waters, less than one percent of the distribution of humpback dolphins has been surveyed adequately enough to assess their abundance. Estimates across Australia say there are fewer than 10,000 mature individuals, there isn't enough information to appropriately give them a conservation status listing." The species does not have an Australian federal listing (Environment Protection and Biodiversity Conservation Act 1999*).

The Australian Humpback dolphin inhabits the northern tropical waters of the west and east coasts of Shark Bay in Western Australia to the Queensland–New South Wales border. It prefers coastal and estuarine habitats in tropical and subtropical regions where waters are less than 20 metres deep. The dolphin is referred to as an 'inshore' species because it mostly occurs in shallow near shore waters, often at the mouths of estuaries and in tidal channels. Although humpback dolphins have been recorded up to 55 kilometres offshore on the northern Great Barrier Reef, they are primarily found within 20 kilometres of the coast.

The dolphin's diet consists of fish, prawns, molluscs, crabs, squid and octopus according to the location and season.

The Australian humpback dolphin is a more leisurely swimmer than some other dolphin species and does not, as a rule, surf bow waves. It swims within a small pod of around five or so

Mystique the alpha male of the Tin Can Bay dolphins.

dolphins. Each pod is led by an alpha male or, on occasion, an alpha female. Males will have raking marks on their bodies from fights with other males over territory, and/or female members of its pod.

It is a shy dolphin, so it is a rare privilege to interact with this species so closely. Take note that the maximum penalty for intentionally feeding (other than in permitted feeding programs) or touching a dolphin is $8,000. The maximum penalty for approaching a dolphin to within less than 100 metres (300 metres for jet skis) is $12,000.

Threats to the Australian humpback dolphin include habitat destruction and degradation from development, noise pollution, boating activities, illegal feeding, incidental capture in fisheries and incidental capture by the Shark Control Program. Entanglement in and ingestion of recreational fishing gear (hooks and line) or marine debris may also pose a threat. Humpback dolphins are exposed to pollution that is amplified up the food chain and may cause them to be more susceptible to disease.

The use of drones is now playing an important role in researching this species, giving researchers a bird's eye view of the dolphin's activity.

Raking on Mystique (fighting wounds).

Tin Can Bay is renowned for its visiting wild dolphins!

Iddy-bitty birds of Western Australia

Part 1

Splendid fairy wrens

Chrissy Banks

Photographed against a background of low native brush this male is in his eclipse dress however, like some of the more mature males he has begun to keep more of his blue.

I slip into consciousness slowly drifting in that peaceful place between wakefulness and slumber, deliciously warm under layers of blanket and doona. The tip of my head, possibly the only visible part of me, feels cold. I tentatively slip my nose from beneath the coverings and immediately withdraw it again. Yep. Cold. Frost on your windows kind of cold and I have no intention yet of getting up to embrace it. My mind is awake, though, and I realise the world outside our tiny cabin is still wrapped in early morning silence. Bliss. A peek at the clock tells me it's already past six-thirty. So, even the birds down here are lazy, I muse.

'Here', is a stunning little township on the south-west coast of Western Australia: Walpole, a petite slice of heaven on earth. Nestled neatly into nooks and coves, our particular hidey-hole lies within the borders of the Walpole-Nornalup National Park hugging the narrow sweeping shoreline of the Nornalup Inlet. The previous day we had spent kayaking the inlet with a curious bull ray accompanying us, gliding gracefully around, ahead and beneath our crafts, the blue dots on his grey skin evident beneath the clear water. But that was yesterday's adventure and a story for another time. Today was to be one of hiking, and I'm already looking forward to the wildlife delights I may discover.

But for now, I'm content to let the day warm up a little before climbing out of bed. Finally, the first tiny tweet of a wren sounds close outside my window. Then another. And another until there is surely a little family busy ducking in and out of the low shrubs off our rustic wooden porch. Curiosity gets me every time. Braving the cold, I tiptoe to the window, and there they are, impossibly small and delicate, a jenny, two immature males and an older male in full dress uniform. I smile and decide then, and there I will write about the tiny birds of this southern part of Western Australia.

And, finally, here it is. I couldn't choose them all of course, so I'm beginning this journey with the splendid fairy wren (*malurus splendens*) just because they were the ones to endear themselves to me that morning. So here we go...

Known more colloquially in Western Australia as the blue wren, due to

the male's vibrant blue courtship colours, the splendid fairy wren looks a little like a pompom with twig-like legs, quick, black eyes and a small, sharp beak. It can grow to 13.5 cms, half of that length being tail, used in communication as well as balance.

Dubbed as 'splendid', it is well deserved. In full breeding season, the adult male wears a striking cobalt blue on his hood, chest, belly and tail. His cheek pads are a lighter aqua blue, off-setting the cobalt beautifully, with lighter streaks of blue on his wings and tail. He wears a silky strip of black from beak to the back of his hood and a lovely black stripe across his chest. In a word, he's a stunner. Electric. Visually captivating. And he knows it. It's all about appearance and confidence for him if he wants to attract the right attention and father some chicks. The objects of his attentions are the jenny wrens, the girls - and yes, more than one if he can manage it.

The jenny wren is no less intriguing. Some have used words such a 'drab' and 'dull' to describe the jenny, but I think they have it wrong. She is beautiful and wears her tones of browns and fawns with simple elegance and errs on the side of subtlety with her eye band. It is a dusty red that blends perfectly with her earthy shades. Only her slim, long tail has a tinge of the 'blue wren' blue. She is quick, strong and very resourceful in raising her chicks and keeping her family stable.

During the off-season (non-breeding) both male and female will moult old feathers. While the females keep their colours, the male puts on his eclipse suit, one that more closely matches the female with the exception of light blue in his wings and no dusty eye mask. Some mature males simply don't bother with the change and remain in his 'blues' year round. Fascinatingly, the blue of his plumage is highly reflective in ultra-violet light making it likely that he is extremely prominent to other fairy wrens. As an interesting side-note, these aren't the only birds that see in the ultra-violet spectrum. Australia's budgies, as one example, also see in ultra-violet making the male colours simply outstanding in breeding season. Just thought you'd like to know.

Splendid fairy wrens are chatty, social birds that live in matriarchal family groups. One single-breeding female organises the home, feeding and raising of the young. The family group comprises of the mating pair, plus helpers – juveniles (male and female) from previous seasons that stick around for a couple of seasons before either taking a dominant role in the family group or moving onto a new group, usually an adjacent family group. While 'at home' they help with the raising of new young and in defending their territory. While a jenny and her mate will pair for life, these are promiscuous birds regularly mating outside of their family group throughout the breeding seasons. This isn't done out of a raging philandering impulse, but as security. A jenny will mate with males outside of her territory to ensure her nest is full, just as he will mate with other females to ensure his line continues. The result is that a jenny nest during breeding season (September-January) is well occupied. Perhaps that's thanks to the male wren's stellar efforts to woo the ladies.

Aside from his stunning colouring, the male also performs an almost comical flight pattern to gain the attention of desired females. He thrusts his neck forward, twists his body and goes first forward then straight up, over and over, performing what has been dubbed the 'sea-horse flight'. He is also capable of beating his wings madly to travel straight down, make a brief touch down and then lift straight back into the air looking for all the world like a miniature feathered helicopter. With his cheek pads fanned out, his spectacular 'dance' moves and his snappy suit, what jenny would stand a chance?

It's worth mentioning that Mr Wren also seems to be quite the charmer. A dapper dresser for certain, he is also a giver of flowers – or in his case, petals. Pink and purple petals are his favourite, presumably because they contrast with his stunning plumage. Once he's found one to his taste, he presents it to his female. That's so adorable! Of course, she isn't the lone recipient of his flowers. Occasionally a male can be seen giving a petal to females in bordering territories, most likely to promote himself for the on-coming mating season. Or maybe he just likes to share pretty things. Whatever the case, flowers go over with ladies, no matter the species it seems.

With the main female won over, a nest needs to be constructed. The jenny chooses a spot close to the ground amid the limbs of protective woodland shrubs, preferably those with thorns to serve as protection against predators. She weaves grass and spider-web into a round, dome-shaped structure with an entrance on one side. At any one time, the nest can hold two to four dull white eggs marked with brownish spots. They take between 13-16 days to incubate, and hatchlings are fed by the entire family for up to 13 days. By this time they are fledged, and the jenny can refill her nest at will. Since we already know that fairy-wrens are promiscuous, it is only fair to add that the male will assist in the raising of his young in whichever nest they are

Caught in the afternoon sunlight this jenny sings loudly to her family, a social call of pip-pip-pips that lacked any panic. She was a flash of brown, difficult to see until for a very brief moment she stood still to sing.

to be found. In fact, he is assisted in this task by members of the family group, ensuring that all chicks fledge successfully.

Fairy-wrens are predominantly insectivorous, enjoying a diet made up mostly of arthropods; crickets, grasshoppers, spiders and just about any bug they catch. But they supplement with seeds and the occasional fruit. In summer when insects are plentiful the family have plenty of time to socialise and can be seen, flitting and hopping quickly through the thickets in what seems an endless game of tag. They are lightning fast and quick to flight when startled. In the winter months, when food is scarcer, the family will hunt from dawn to dusk with ants making up a good portion of the diet because they are rich in protein and easiest to find.

Natural predators of the fairy-wren species across Australia are your standard Aussie nest-raiders; kookaburras, currawongs, magpies, crows, ravens, butcherbirds, etc., all capable and willing to take on a barrage of furious wrens to snatch an egg or chick. Now, while the idea of an egg or cute chick being snatched is sad to us tender-hearts, the truth is, that's nature as it was intended. Introduced pests are another matter altogether! Causing grief for all wrens are black rats, cats and the king of egg thieving, the fox! As always, the question has to be asked, are we the worst threat to their existence? The answer, of course, is yes. Pesticides. Buildings. Immaculate, non-native gardens. These things all contribute to receding numbers of fairy-wrens in urban areas. Before dense urbanisation, fairy-wren territories could spread over 4.4 ha (11 acres for the old school). This area included the main family plus extension of the family. Unfortunately, as the human population spreads out, families have been forced to find what bit of suitable habitat they can to survive in. Sadly, though understandably, splendid fairy-wrens have not adjusted well to human invasion and some groups have disappeared altogether in suburbia. In our time in Western Australia, I rarely sighted a wren around home, though those living in the hills of the Darling Range sighted them on occasion.

I believe the biggest threat we pose to all fairy-wrens across Australia is two-fold and I only see an immediate answer to one. So I'll point out the other first: high-rise or apartment living where gardens are difficult to keep. It would be wonderful if each unit block had a common garden that was specifically designed to encourage our endemic wildlife, but sadly this is not so, and our parklands are not extensively planted with the native shrubs the birds need to build their homes. However, it does lead me around to the second, more easily solved problem. Those of us with gardens, and living within the natural territories of the fairy-wrens, can make sure we plant bushes the wrens will enjoy and ensure the soil is rich with insect life. It isn't all that hard. It just takes a bit of planning and a desire to do the right thing.

It's simple really. If we want to continue hearing the delicate chatter of the fairy-wrens, catch a glimpse of them flitting through our gardens, then we'll plant a few tightly packed native shrubs to encourage them to stay. Take a moment with me and just imagine in the evenings, year through, how the

This is a prime example of just how well blended the jenny is with her nesting environment. Lit by the golden glow of afternoon sun she is still quite hard to see and it took some time to find and capture her in the lens. Being summer, this jenny has spent a lot of her day eating and playing with her family.

family group will snuggle side by side within the coverings of a bush you provided, grooming and pipping happily together before sleep. Wouldn't that be fantastic? Of course, it would. Why wouldn't you want to have gorgeous, colourful little birds inhabiting your garden? I've sat quietly for simply ages while a family have gone about their business around me. I've had them hop up onto a table beside me to eye off crumbs from my morning tea in an out of the way garden café in Margaret River. It isn't that they don't want to be near us, it's that we make it *hard* for them to be near us. They'll happily co-exist if we give them that chance.

I'm willing to. Are you?

A stunning edition to the Western Australian bushland, the male splendid fairy wren can be seen here in his full mating season colours. It was a fleeting moment of stillness in his busy day that allowed me to frame such a beautiful shot. Then he was gone.

As you can see clearly here the male displays a stunning selection of well complimented blues to win his ladies. You can see how a startling pink petal would off-set him beautifully.

WomSAT – Wombat Survey and Analysis Tool

Bare-nosed wombat

Julie M. Old, Edward Narayan, Chandni Sengupta, Rowan Thorley, Blaire Vallin
School of Science and Health, Hawkesbury, Western Sydney University

The southern hairy-nosed wombat (*Lasiorhinus latifrons*) and bare-nosed wombat (*Vombatus ursinus*) both suffer from sarcoptic mange. Mange infestations are severely debilitating, and result in death of wombats through secondary infections. Although wombats can, at times, be treated using 'treatment flaps' or 'burrow flaps' or invasive techniques, these methods have limitations and are not always effective. In our preliminary study conducted in 2011, we found the following limitations prevented further treatment of wild wombats in the field using relatively non-invasive techniques (i.e. treatment or burrow flaps):

- A very large population of wombats in the study area, hence huge numbers of active burrows requiring 'treatment flaps' to be assembled and maintained long-term, which was not feasible or practical.
- As wombats move around and share burrows, it was very difficult to ensure newly infested wombats (or potentially other infested animals) did not reinfest treated wombats, hence huge amounts of people-power were required to maintain burrow flaps indefinitely.
- Difficulty ensuring the affected animals were treated effectively and other animals were not inadvertently treated unnecessarily
- Potential risk of resistance developing in the mite population
- Difficulty treating wombats in areas that were inaccessible to people
- The scale of the problem

It was clear from our preliminary study that a nation-wide strategy was needed to increase public awareness of wombats, and to gain a greater understanding of how and why wombat mange occurs and affects wombats to the extent that it does. The development of WomSAT is the first stage in educating the general public about wombats and increasing public awareness of wombat sarcoptic mange.

WomSAT (WomSAT.org.au) is a citizen science-based website, with associated iPhone and Android apps. It allows anyone to log wombats (dead or alive,

and their level of mange), and wombat burrow sightings online, in real-time. The information gathered will be used primarily to investigate the ecology of wombats and mange; specifically it will document wombat distribution, and sarcoptic mange distribution and prevalence in wombats. It is hoped the information gathered will provide clues as to when and why wombats appear to be so badly affected by sarcoptic mange. Collection of long term data across the entire wombat range will aid in our understanding of the disease and the development of nation-wide management strategies.

WomSAT also documents other threats to wombats, such as road kill. Long-term data collected on wombat roadkill fatalities will provide data to identify 'hotspots'. The data can then be used to provide justification of where road mitigation strategies are required to reduce wombat deaths.

In addition to WomSAT, we have started to investigate the immune system of wombats. The first study involves investigating MHC gene diversity of wombats using non invasive techniques (DNA from scats). MHC gene diversity can be correlated to the level of immune competence, hence the more diverse the MHC genes in wombats, the better their ability to fight disease and infestations such as mange. We are hopeful this study will provide insights into why wombats are so badly affected by mange in some areas and others are not. The second study we are currently undertaking is aimed at assessing the levels of stress in wombats, again using non-invasive techniques (scats). Stress is likely a contributing factor to the severity of wombat mange, but it is yet to be assessed. Both these studies will increase knowledge of the wombat immune system and aid in future wombat conservation efforts.

Everyone can help!

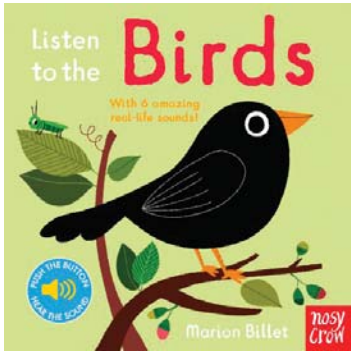
Please support #WombatWednesday on Twitter and Facebook, and log a sighting of a wombat at least every Wednesday using either of the WomSAT apps or directly using the website (womsat.org.au) if you see wombats or their burrows. The more information we gather as a community, the greater the chance we have to conserve wombats for future generations. We are also on the search for fresh wombat scats for the immunology projects we are undertaking. If you can help, please drop us an email.

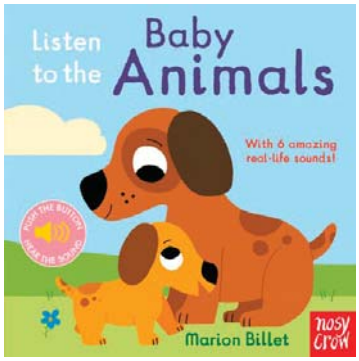
We would like to thank all the #WombatWarriors and everyone for their support!

Website: WomSAT.org.au

Email: WomSAT@outloook.com

Book Reviews





Listen to the Birds, Listen to the Baby Animals

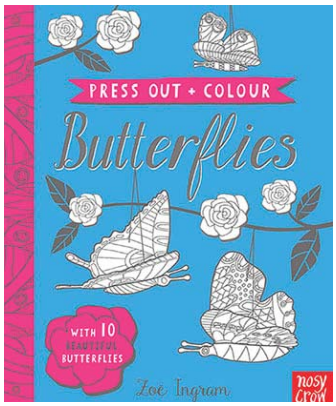
Adults and children alike will be enchanted by these charming board books, which are distinguished by the exceptional quality of the sounds that bring every picture to life. Aimed at the very young, the books have a button on every spread which triggers one of six different baby animal sounds.

Publisher: Allen & Unwin
RRP: $18.99

Gift Boxes to Colour and Make Birds and Blossoms

Each page of this brilliant book is actually a box! Simply tear along the dotted lines, fold along the scored lines and you've created a gift box perfect for storing all kinds of goodies. The boxes are beautifully decorated with black and white designs of birds and blossoms, which you can customise by colouring in with pens or pencils. Get creative with your colour scheme or use traditional colours from nature –- either way, this fantastic book of easy-to-assemble boxes will make sure your gifts are truly special this springtime.

Publisher: Allen & Unwin
RRP: $19.99

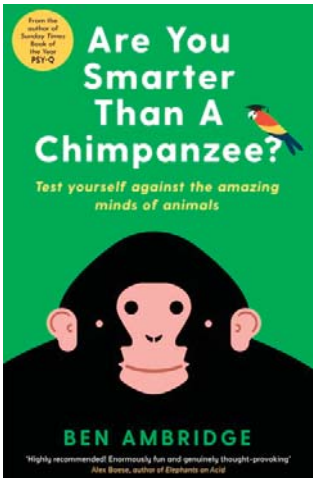


Butterflies - Press out, colour

Make your own beautiful, 3D butterfly decorations with this board book of press-out ornaments. Each press- out butterfly is intricately decorated with foil and perfect for all ages to colour in. Featuring ten unique butterfly species, each with a contrasting pattern on the undersides of their wings, the press-out pieces can be easily slotted together to create cheerful hanging ornaments.

Publisher: Allen & Unwin
RRP: $19.99

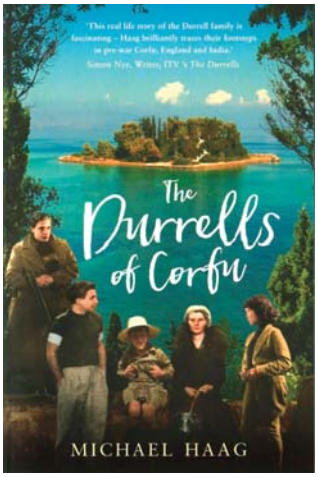
Book Reviews



Are You Smarter Than A Chimpanzee?

What makes humans special? What makes us different from animals? Psy-Q author Ben Ambridge's entertaining, illuminating new book has a surprising answer: less than you might think. Really, we're all just animals. But all animals - us included - are pretty special. *Are You Smarter Than a Chimpanzee?* is a collection of ingenious tests, puzzles, quizzes and games that pits the reader against a range of extraordinary creatures.

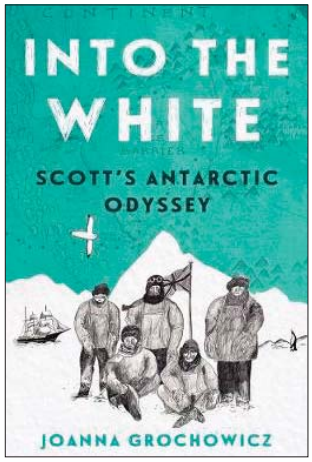
Publisher: Allen & Unwin
RRP: $29.99



The Durrells of Curfu

Gerald Malcolm Durrell OBE was a British naturalist, zookeeper, conservationist, author and television presenter and is reknown in the environmental movement, but his early life is just as fascinating. The Durrell family are immortalised in Gerald Durrell's *My Family and Other Animals* and its ITV adaptation, *The Durrells.* But what of the real life Durrells? Why did they go to Corfu in the first place – and what happened to them after they left?

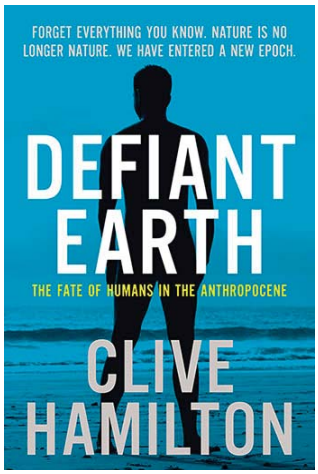
Publisher: Allen & Unwin
RRP: $22.99



Into The White Scott's Antartic Odyssey

This is the story of Robert Falcon Scott's Terra Nova expedition to Antarctica and the memorable characters, who with a band of shaggy ponies and savage dogs, follow a man they trust into the unknown. Battling storms at sea, impenetrable pack ice, man-eating whales, crevasses, blizzards, bad food, extreme temperatures, and equal measures of hunger, agony and snow blindness, the team pushes on against all odds. *Into the White* will leave you on the edge of your seat, hoping against hope that Scott and his men might survive their Antarctic ordeal to tell the tale.

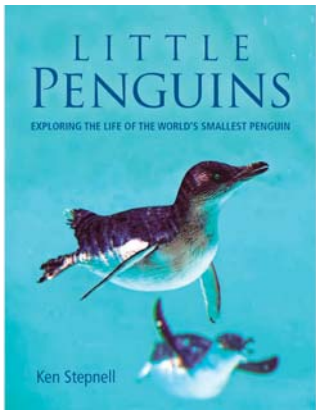
Publisher: Allen & Unwin
RRP: $14.99



Defiant Earth
The Fate of Humans in the Anthropocene

Clive Hamilton, Professor of Public Ethics at Charles Sturt University, Canberra, explains that we must face the fact that humans are at the centre of the world, even if we must give up the idea that we can control the planet. He calls for a new kind of anthropocentrism, and explores how we might use our power responsibly and find a way to live on a defiant earth.

Publisher: Allen & Unwin
RRP: $29.99



Little Penguins

The little penguin, blue penguin or fairy penguin lives an extraordinary life. It is the world's smallest penguin species, found all around the coasts of New Zealand and the southern half of Australia, often in the vicinity of major towns and cities. This beautifully illustrated book explores every aspect of the lives of these remarkable seabirds, from feeding and breeding to migrations and threats. The entertaining and informative text is accompanied by many beautiful photographs which illustrate the lives of these much-loved birds.

Publisher: New Holland
RRP: $24.99

A Field Guide to Reptiles of New South Wales

In this handy pocket-sized book you will find every gecko, flap-footed lizard, goanna, dragon, skink, snake and turtle known to live throughout the state's many habitats. The guide narrows down the field of species identification to a manageable size for any naturalist. The telltale details that make identification possible lie in the descriptions of families, genera and species; these are accompanied by clear line drawings.

Publisher: New Holland
RRP: $35

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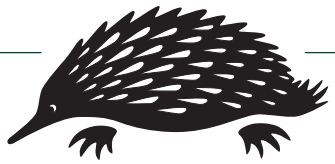

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- ☐ Associate (library, school, conservation groups): $85
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Another way which you can support the work of the Wildlife Preservation Society of Australia (Australian Wildlife Society) is to remember us in your will.

If you would like to make a bequest, add the following codicil to your Will:

> I bequeath the sum of $..... to the Wildlife Preservation Society of Australia for its general purposes and declare that the receipt of the Treasurer for the time being of the Society shall be complete discharge to my Executors in respect of any sum paid to the Wildlife Preservation Society of Australia Limited.

"The challenge to the present adult generation is to reduce the increasing pressures on the Earth and its resources - and to provide youth with an education that will prepare them emotionally and intellectually for the task ahead.

Suzanne Medway and guest speaker, Tim Faulkner

Colleen Murphy, Taryn Moore, Luke Murphy and Brett Murphy

Tim Faulkner, Taryn Moore, Heather Grabowski and Stephen Grabowski