AUSTRALIAN Wildlife

AUTUMN Vol: 2/2011
$10 (non-members)

Celebrating a new century of wildlife preservation in Australia

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

Ruchira Somaweera was awarded a Wildlife Preservation Society of Australia University Grant in 2010 for his project - "Assessing the level of impact of cane toads on Australian freshwater crocodiles".

Featured on the inside front and back covers are two posters designed by Ruchira, illustrating the vital importance of his research.

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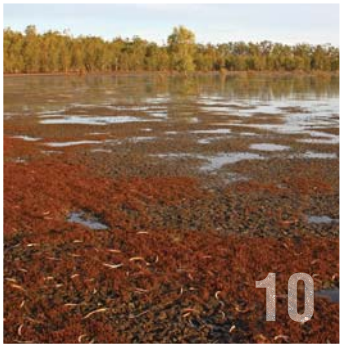

regulars

Front cover and back cover

The Mareeba rock-wallaby (*Petrogale mareeba*) is a species of rock-wallaby found in northeastern Queensland, Australia.

The Mareeba rock-wallaby is part of a complex species that includes the Sharman's rock-wallaby, the unadorned rock-wallaby and the allied rock-wallaby. These species are not easily distinguished except by the shape and number of chromosomes. Freshly moulted individuals are typically greyish on the back but as the year advances the colour changes to pale through to dark brown. Some individuals are almost black. The underside of the body and limbs are lighter and typically a sandy brown. There is a pale cheek stripe, with indistinct and patchy markings behind the shoulders and a dark dorsal stripe along the crest of the head. The paws and feet are dark and the tail darkens towards the tip which has an indistinct dirty white brush.

Photo by Michael Williams, It's a Wildlife – Nature and Wildlife Photograph Pty Ltd. To see more of Michael's wonderful wildlife photography look up his website at www.itsawildlife.com.au

WILDLIFE PRESERVATION SOCIETY AUSTRALIA

Celebrating a new century of wildlife preservation in Australia

Australian Wildlife

is the official journal of the 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.

Print Post Approval No: PP243459/00117

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Directors 2010

Notice to our members

The 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 Wildlife Preservation Society 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 - President

It was particularly exciting to witness first hand the arrival of the first batch of Tasmanian devils to the Barrington Tops, which is an absolutely ideal location for the Devil Ark project as the 350 hectare site has a similar climate and vegetation to that found in Tasmania.

One of the highlights of my year is our annual camping trip to Barrington Tops with the extended family and friends. Barrington Tops is a 25 kilometre long plateau extending between a series of extinct volcanic peaks in the Mount Royal Ranges, an easterly offshoot of the Great Escarpment in New South Wales. More than twenty valleys radiate from the hub of the plateau. Wild rivers become waterfalls plunging from great heights into fern-lined gorges.

The scenery, location and local wildlife are amazing – kangaroos and wallabies abound, platypus swim in the creeks and water holes. As we walk along the trails we keep an eye out for koalas, bandicoots, gliders, possums, echidnas and wombats. Birdlife is profuse, ranging from the magnificent wedge-tailed eagle and black cockatoos to smaller species like scrub birds and fruit doves. Near our camp site is a thick patch of blackberries and it is amazing to watch the range of small birds (finches, robins, fantails, wagtails, honeyeaters and wrens) that use the protection of this thorny bush as we rarely see these birds in our suburban environment.

In general, Australian backyards are liberally planted with Australian native plants. However, most of these, such as bottle-brush and tall grevilleas, provide abundant food for nectar eating, and often aggressive, birds such as rainbow lorikeets and noisy miners, whose numbers have proliferated. Small birds, such as the superb fairy-wren, golden whistler, silvereye and willie wagtail rarely find suitable habitat in the current suburban backyard or neighbourhood park. To protect them from attacks from cats and larger birds they need dense shrubbery in which to hide.

WPSA will shortly be launching a project urging Australians and Australian local governments to undertake a planting of dense shrubs in backyards and parks to provide a haven for these birds.

It was particularly exciting to witness first hand the arrival of the first batch of Tasmanian devils to the Barrington Tops, which is an absolutely ideal location for the Devil Ark project as the 350 hectare site has a similar climate and vegetation to that found in Tasmania.

After two years of preparation, the Devil Ark project at Tomalla Station received the first intake of devils during our stay in January.

Up to 1,000 devils will eventually live in social and family groups at the 500 hectare ark.

The conservation project, established by Australian Reptile Park director John Weigel, is designed to stop the extinction of the species due to facial tumours.

A breeding program begun in 2003 involved importing disease-free devils to mainland zoos.

The Australian Reptile Park in Somersby, NSW has teamed up with leading conservation organisations to develop Devil Ark which is being built in the Barrington Tops and will provide a major component of a coordinated Australia-wide Tasmanian devil breeding program.

From an initial founding group of 48 Tasmanian devils scheduled to arrive at the facility in November, a captive-bred population of 360 devils is anticipated by 2016. A second stage of the development will see the population increased to 900 Tasmanian devils by 2020.

I was fortunate enough to visit Tasmania in February 2011 and enjoyed the chance to visit this picturesque state. Our Society has closely followed the devastating results of Devil Facial Tumour Disease (DFTD) and upon reading Bronwyn Fancourt's article (Bronwyn lives in Tasmania); it now appears that DFTD may be having broader implications on other wildlife, such as the eastern quoll. Bronwyn's article (which appears on page 16) on her research has deepened my commitment and reinforced just how vital our Society's University Grants Scheme is to preserving Australia's precious wildlife.

YOUR PERSONAL INVITATION TO OUR GALA FUND RAISING DINNER ON MONDAY 6 JUNE 2011

I am very excited to advise all our members that our Society will be holding a special Gala Fund Raising Dinner on Monday 6 June 2011 to celebrate the 40th Anniversary of the first Green Ban and to launch a new University Scholarship - the WPSA/UTS Wildlife Ecology Research Award.

We are privileged that our Guest of Honour will be Her Excellency, Professor Marie Bashir AC, Governor of New South Wales, and our guest speaker will be Mr Jack Mundey who will share his recollections of the first Green Ban in 1971 in the Sydney suburb of Hunter's Hill.

This function will provide a rare opportunity for our Society to raise funds to assist bright young Australians to study wildlife ecology and thereby assist us all in helping to save our native wildlife in all its various forms for the next generation of young Australians.

I urge all members who live in the Sydney region to join us for this special event, invite your family and friends, book a table at the special discounted rate, and help save our native wildlife.

Details and Booking Form are enclosed with this magazine.

Know your directors

Tony Cornell

Treasurer

Tony's expertise for this Committee is somewhat different from other Committee members. Tony confesses he has no degrees or organisational background in animals, flowers, grasses, or even lawn care, etc. His background is in money and a lifetime of community involvement, hence ideal for our organisation.

Tony emigrated from England with his parents in 1947. Following his school years, Tony's first job was with the Rural Bank which later became the State Bank. After some five years Tony left the Bank and took up employment with Southern Portland Cement at Berrima, initially working in the timekeeping section and later the costing section. After some three years Tony moved to Sydney when his career took a further change into the finance industry. From 1963 through to 2002, when he ceased employment, Tony worked for a number of large financial institutions – mainly in the area of recovering debts, but he also did spend some time in the share registry section, personal loans, and managerial operations.

During those early working days Tony was an active performer with the Moss Vale Dramatic Society, the Bowral Choral and Drama Society and later, on moving to Sydney, the Arts Theatre at Cronulla for about four years.

In 1966 Tony became a Foundation member of Kogarah Apex Club and subsequently held most positions in the club and went on to become District Governor. On being forced to retire from Apex in 1978 due to the age qualifications Tony was made a Life Member.

Upon his retirement from Apex, Tony was invited to join the Rotary Club of Kogarah and he remains a member of that club today. Tony is a Past President, a Past Secretary and was awarded a Paul Harris Fellowship in 1991 for his services to the community. Tony is currently one of four Rotarians sharing the writing of the weekly Bulletin and has been on the committee of the District Rotary Youth Leadership Award Scheme for many years.

In 1978 Tony became a Freemason and he is still currently very active with his Masonic Lodge. He is a Past Master and has been Secretary of his Lodge since 1994.

Turning to Community activities, Tony has previously been a member of the Kogarah Citizens' Australia Day Committee and was Chairman for some 14 years. Tony was also involved with a Community Youth Support Scheme (C.Y.S.S.) and its successor name of Skillshare for some eight years.

In 1999 Tony was elected as a Director to the Bowlers Club of NSW and served a term of three years.

From 1966 to 2008 Tony was the Treasurer of Health and Medicine Museums (a former special interest group of Museums Australia) and since 1977 he has been a volunteer member of Society for Preservation of Artefacts in Surgery and Medicine (SPASM), a medical museum at Gladesville.

One of Tony's most memorable events was being able to carry the Torch on its journey during the 2000 Sydney Olympic Games.

Tony is a relatively new member of the Wildlife Preservation Society of Australia, he became a Councillor in 2007 and Treasurer in 2009.

102nd Annual General Meeting 2011

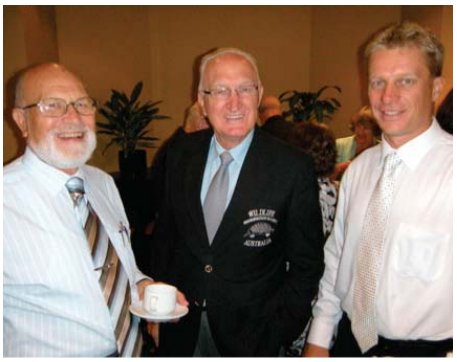
The 102nd Annual General Meeting of the Wildlife Preservation Society of Australia Limited was held on Wednesday 2 March 2011 in Sydney.

Suzanne Medway, Judith May and Noel Cislowski retired in accordance with the Constitution (10.3) and were re-elected as Directors of the Society.

The elected Directors of the Society for 2011 are: Suzanne Medway, Patrick Medway, Clive Williams, David Murray, Tony Cornell, Dick Mason, Noel Cislowski, Judith May, Vanessa Wilson and Peter Hardiman.

The Executive Officers and Committee Chairman of the Society will be elected by the Directors at the April 2011 Council Meeting.

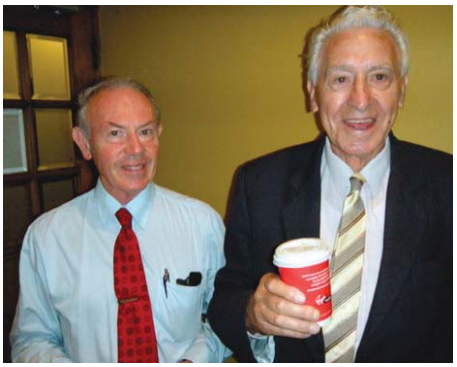
At the conclusion of the meeting members enjoyed a delicious morning tea.



Tony Cornell, Noel Cislowski, Stephen Grabowski

Clive Williams and Mike Augee

Suzanne Medway and Margaret McGurgan



David Murray and Peter Hardiman

Awards

2010 WPSA Serventy Conservation Medal

Dr Clive Williams, Vice President, announced the winner of the Serventy Conservation Medal for 2010 as Helen George. Helen was nominated by Dr Mike Augee, a member of WSPA's scientific advisory panel.

Few people have devoted over 45 years of their lives to conservation. However, that is the achievement of the winner of our Serventy Medal for 2010, Helen George. Helen was one of the people who contributed to the forming of the Wildlife Information and Rescue Service (WIRES) and since that time she has been active in educating wildlife carers how to be responsible for the animals which come into their care. Helen is reputed to be the first person to successfully raise an orphaned grey-headed flying fox to maturity. This occurred in 1978 and the flying fox was less than 24 hours old when Helen received him. Much of his life was spent as an education animal, living for almost 23 years.

Helen developed considerable expertise in this area and, in 1987, was awarded the Medal of the Order of Australia (OAM) for her services to conservation, principally for her work on the plight of the grey-headed flying fox. She was one of the key advocates for getting the NSW Government to place them on the protected list. She is a scientific member of the Royal Zoological Society of NSW.

Helen shares her knowledge freely and, although she has no formal qualifications, is often called on to talk to a variety of organisations, students and academics. With such a length of experience, her knowledge is naturally not confined to flying foxes. She is a keen observer and recorder of data and rigorously pursues scientific principles. She is hoping to soon publish a book on the care of macropods, which is eagerly awaited both by carers and veterinary scientists and students. It is a pleasure to have Helen's name added to the list of Serventy Medal winners.

Response by Helen George

I am delighted to receive this magnificent award. Although I never met Vincent Serventy, I remember him well in the 1970s and 80s. His holistic approach to the environment was music to my ears, and I continue to push that approach in endeavouring to convince carers of the absolute need to adopt a scientific approach to wildlife care. I believe that best practice demands a good understanding of environmental influences, mother animal behaviour, milk structures and natural diets if orphaned and injured animals are to be successfully rehabilitated. ►

Helen George with the Serventy Conservation Medal for 2010

Clive Williams, Suzanne Medway, Helen George and Mike Augee

2010 WPSA Community Wildlife Conservation Award

Dr Clive Williams announced the winner of the Community Wildlife Conservation Award for 2010 as Wombat Awareness Organisation of South Australia.

The southern hairy-nosed wombat is the emblem of South Australia, yet landholders easily obtain permits to cull them. Often this is done in inhumane ways, while the species is in decline. The Wombat Awareness Organisation (WAO), led by Brigitte Stevens, has for many years been fighting to educate the community of South Australia that current practices risk the eventual extinction of the species.

WAO has spent many hours of its members' time and considerable money on rescuing injured animals as well as negotiating with pastoralists over ways to live harmoniously with wombats. WAO has also conducted considerable research into sarcoptic mange, a deadly disease which threatens to ravage populations of the animal. WAO also has been raising money to purchase Portee Station in South Australia as a refuge for wombats as well as a place for scientific study into mange and other threats to wombat existence. Moreover, Portee Station will also be a refuge for other wildlife species, including 133 species of birds.

WAO is a completely volunteer organisation. Its achievements and aspirations make it a worthy winner of WPSA's Community Widlife Conservation Award.

Response by Brigitte Stevens

The Wombat Awareness Organisation is humbled to receive this incredible recognition from the Wildlife Preservation Society of Australia. Like all of our unique wildlife species, the southern hairy-nosed wombat deserves protection and the right to live without continual suffering and cruelty at the hands of people. Simple and effective solutions of protection and co-existence can be achieved to ease the pressure of the species' survival; winning the Community Wildlife Conservation Award promotes that we can make a difference through determination, dedication and love of our wildlife.

Brigitte Stevens

Shallow and muddy please ...

learning more about the Australian painted snipe

Janelle Thomas

Wetlands across Australia have suffered dramatic loss and degradation of habitat since European settlement, particularly in the south-east regions of Australia. Ecological pressures such as river regulation, water diversion, land clearing and climate change have placed immense stress on wetlands. As a result, a number of birds reliant on these ecosystems for feeding and breeding have experienced significant declines, including species such as the Australian painted snipe and the Australasian bittern. With a paucity of information on these species, recent research by Birds Australia's Threatened Bird Network and the Atlas of Australian Birds has identified these two species as being nationally threatened. By raising the profile of these and other wetland birds we hope to encourage better management and protection of the wetland habitats on which they are reliant.

Introducing the Australian painted snipe

The Australian painted snipe is one of Australia's most enigmatic wetland birds, yet until recently very little was known about this species due to its highly elusive nature.

Australian painted snipe are found across a vast area of northern and south-eastern Australia, with the Murray-Darling Basin historically considered a stronghold for this species. They utilise a wide range of freshwater wetlands for feeding but, during their breeding season, become much more selective. Ephemeral wetlands selected by Australian painted snipe for breeding are typically shallow and have low patchy vegetation around the margins, complex shorelines with exposed muddy areas, and low-lying islands on which birds will often nest. Nesting on these little islands is thought to be a form of protection, making the nest more difficult for predators to locate and access, and rather than flying in and attracting predators, they either walk or swim to the nest through shallow water, using the low vegetation for cover. Wetlands with tall dense areas of reeds appear to be avoided, possibly because this kind of habitat makes it difficult to detect predators.

The Australian painted snipe feeds on aquatic macro-invertebrates, which in ephemeral wetlands are often in extremely high abundance after a flooding event, providing an abundance of food for chicks still developing their foraging skills. It is in this environment of exposed mud and shallow water that the breeding time of this unique bird becomes all-important, as it provides an ideal site for the newly born chicks to feed after they hatch. Such a strong reliance on specific wetland characteristics for breeding makes the Australian painted snipe particularly vulnerable to negative impacts on wetland habitat. This is reflected in recent records that indicate a serious decline in the number of birds observed. The decline of Australian painted snipe since the 1950s coincides with

Above: Australian painted snipe.
Photo by Chris Tzaros

Australian painted snipe. Photo by Chris Tzaros

Chris Tzaros monitoring Australian painted snipe in north-west Victoria. Photo by Chris Tzaros

significant deterioration of wetland habitat within river systems such as the Murray-Darling Basin due to factors such as over allocation of water for irrigation (approximately 70 percent of the Murray-Darling Basin water is now used for that purpose). This level of water extraction and regulation has not only dramatically reduced the frequency of flooding throughout the catchment's temporary wetlands but, due to the construction of dams and weirs along the rivers, the timing of flooding from the natural winter–spring cycle has also changed. A number of other practices associated with European settlement, including the removal of native vegetation around wetlands and the stabilisation of water levels, have seriously impacted wetland habitat for

Ephemeral wetlands provide a seasonal abundance of food as invertebrate numbers drastically increase. Photo by Chris Tzaros

Male (foreground) and female Australian painted snipe. Photo by Chris Tzaros

the Australian painted snipe.Although we now have a better understanding of what type of wetland habitat is required by the Australian painted snipe - particularly during breeding - there is still a lot we need to learn to help us save this species from further decline. Through continued research at Birds Australia on wetland birds such as the Australian painted snipe and the Australasian bittern, we hope to increase our knowledge of how to conserve wetlands for the protection of birds and other wetland-dependent species.

For more information on this project, please contact the Threatened Bird Network Coordinator, Janelle Thomas, at j.thomas@birdsaustralia.com.au

Australasian bittern. Photo by Rob Clemens

Like many waders, Australian painted snipe forage around the shallow peripheries of freshwater wetlands. Photo by Chris Tzaros

The surprising lyrebirds

I sat on a rock closely surrounded by seven male lyrebirds of various ages, all industriously raking the leaf litter in search of invertebrates as if I wasn't there. Three of the birds were singing and from time to time one or two would raise their tails in display, the long filamentary feathers shimmering like a silver veil.

It was my very first day with the superb lyrebirds at Scenic World in the Blue Mountains, New South Wales. Although I had been observing and studying lyrebirds for many years, I was not prepared for such a high density of birds or for them to be so accepting of my presence. Yet this experience proved fairly typical of the months to follow. These were the most extraordinary and surprising lyrebirds I had ever encountered.

Throughout the winter of 2010 I had the enviable task of carrying out a survey of the superb lyrebirds in and around Scenic World. The Scenic Railway and Skyway are well-known Katoomba landmarks, visited by many thousands of tourists every year. In the Jamison Valley at the foot of the cliffs, a boardwalk links the bottom station of the Scenic Railway with the newer Cableway, taking visitors in two circuits through temperate rainforest and into the edges of moist eucalypt forest. For observant visitors, the lyrebirds can be a real highlight as they wander close to the boardwalk without fear, sometimes launching into their famous and spectacular display. Philip Hammon, the Managing Director, wanted to find

Fern glen inside Scenic World

# of Katoomba

Carol Probets

out more about this population of birds so that visitors could be provided with accurate information. I was given a list of eight questions – such as the number of breeding males and females, the areas they occupy, what threats they face, etc., and it was my job during the next few months to find out and report back with the answers.

As it turned out, I also discovered something quite unexpected about these lyrebirds. But I'll get to that shortly.

During the field work, I spent 135 hours at the site and observed lyrebirds on 155 occasions. Most of these sightings were of single birds or two together, but a surprising 20 percent of sightings were of groups of three to eight birds which usually included several mature and adolescent males.

Lyrebirds do not form pair bonds or family groups. Instead, males compete for the attention of females by singing and displaying throughout the winter breeding season, with each bird occupying its own territory containing a number of scratched-up mounds of earth on which it displays. Females may visit a number of displaying males before making their choice and mating with one, or possibly more. The female builds a substantial nest, incubates the single egg and cares for the chick unaided, no mean feat through the coldest part of the year. The chick then continues to depend on her for many months to follow.

Ascertaining the total number of males on the site was a challenge. One part of

this involved rising two hours before sunrise and walking, by torchlight, down the 800 steps beside Katoomba Falls to be in the rainforest at the first glimmer of light, when the lyrebirds start to sing. By doing this, I could record the number and location of roosting males. Watching the rainforest come to life as the daylight gradually seeps in is a magical experience, even if it was during the freezing mid-winter of the Blue Mountains!

None of the birds were banded, but some were able to be individually recognised by their distinctive plumage features. These birds were useful as they could be followed, their territories mapped and their behaviour and use of display mounds recorded.

I quickly discovered that most of the males were not spread out in individual territories as they normally are, but were clumped in one area, which happened to coincide with the bounds of the boardwalk. Within this area were eight display mounds. I was dumbfounded when I realised that each of these mounds was regularly being used by more than one male. And this was not in a furtive or antagonistic way. The birds seemed fully accepting of the fact that they were sharing mounds. In fact, after displaying they would usually go off side by side feeding together. And despite such a concentration of mature and adolescent males, I witnessed virtually no aggression between them. These lyrebirds clearly have not read the lyrebird books!

Female superb lyre bird. Photo by Hank Vandepol, Foundation for National Parks & Wildlife

Is it a coincidence that the communal display area sits in the middle of the boardwalk, where tourists walk in often noisy groups every day of the year? The site is largely an elevated terrace, relatively flat and free of undergrowth compared to the surrounding country – topography which no doubt favours sound transmission, visibility and foraging opportunities.

Altogether I estimated eight to ten mature males and a similar number of adolescent males inhabiting the site, while four breeding females were located. A female with a bent tail is a clear indication of nesting, caused by long hours spent in the domed nest incubating the egg or brooding the young chick. I closely monitored two of the nests until each chick had left the nest. The just-fledged chick from one of these nests was then located, "parked" by the mother for four days in a dense tangle of vegetation on a steep shale

Male superb lyrebird in display. Photo by Trevor Quested

Male superb lyrebird, photo by David Stowe

ledge, 80 metres from the nest, where she continued to feed it. It would be hard to find a place more difficult for predators to access!

Such breeding successes are pleasing. In many places, cats and foxes can be a serious threat to the survival of chicks or adults, but happily I found no evidence of introduced predators at the boardwalk site during the survey. Of course this does not mean they are not present nearby, and the management of Scenic World will need to remain vigilant.

The only disturbing find was that nearly a quarter of the birds were suffering an unsightly leg condition believed to be caused by *Knemidocoptes* mites, a parasite known to infest superb lyrebirds in Sherbrooke Forest, Victoria, as well as pied currawongs and other wild birds. Although none of the affected birds appeared to be ill in any other way, the condition if severe may potentially cripple or kill a bird. It is quite likely that the disease occurs mostly as a secondary infection, attacking already weak or stressed individuals with lowered immunity. Perhaps it's mostly limited to places where the density of birds is particularly high. More research is needed to find out whether there is any cause for alarm.

As is often the case, this survey raised more questions than it answered. It's amazing to think that a relatively well studied species like the superb lyrebird still holds secrets. One thing seems certain. The lyrebirds at Scenic World are endlessly fascinating and exceedingly tolerant of human activity. I'm sure further studies will reveal much, much more about these wonderful, iconic birds.

Editor's note:

Carol Probets is a bird tour guide based in the New South Wales Blue Mountains.

Philip Hammon, the Managing Director of Scenic World, is a life member of the Wildlife Preservation Society of Australia.

A chick in the nest. The nestling's response to an observer's approach is to stand up and push its body into the roof of the nest so that only its legs are visible. This is a chick at five weeks of age. Photo by Carol Probets

Yellow-footed rock-wallaby

Suzanne Medway

The yellow-footed rock- wallaby (*Petrogale xanthopus*) is a member of the macropod family (the marsupial family that includes kangaroos, wallabies, tree-kangaroos, wallaroos, and others).

The word *wallaby* is from an aboriginal name given to this animal by the Eora tribe who lived around the Sydney area in early days of settlement.

The yellow-footed rock-wallaby is the largest of the wallaby group. A fully grown adult will stand 60 centimetres high and weigh 7-13 kilograms. It is covered with grey fur, has a beautiful white muzzle and a dark brown stripe down the centre of its back. These rock-wallabies are agile, hopping among rocks with their tails arched over their backs. With thick, rough pads of skin on their feet resembling a basketball surface, ensuring they do not slip, the yellow-footed rock-wallaby can even climb trees with sloping trunks. This Australian marsupial is considered to be the prettiest wallaby. It has great camouflage ability so as not to be seen by its predators. It can also stand very still or hop extremely fast to run away from danger. When it feels danger around, it will stomp the ground with its hind legs so as to warn others of the possibility of a predator nearby. Its predators are the wedge-tail eagle and the introduced fox.

Active mainly at night, they will shelter during the day in the vegetation between boulders, emerging in the evening to feed; only travelling to the surrounding plains when food is scarce.

The female yellow-footed rock-wallaby reaches a breeding age at 11-22 months and the male at 30 months. After mating, the female has a pregnancy which lasts 31-32 days. The joeys are born without fur and are blind. The mother licks a path on her belly which the joey must follow to the pouch. It attaches to one of the four teats in the mother's pouch where it remains for about 28 weeks. After a bit more than six months the young wallaby is old enough to stay outside of its mother's pouch.

Unlike kangaroos, young rock-wallabies do not follow their mother around. Instead, they are left at the rocky outcrop while the mother feeds and drinks. The mother returns for the young to suckle. Joeys are born throughout the year and, after giving birth, a female will continue breeding, depending on food availability. ►

The photos of the yellow-footed rock wallabies were taken in the Flinder's Ranges by Sharon Wormleaton

The female wallaby can become pregnant while she has a baby in her pouch. The embryo will then stay dormant until the pouch is free. The development of the embryo is delayed until the pouch is vacated by the older joey. This is called embryonic diapause.

Longevity of the species for both males and females is potentially at least ten years (Robinson et al. 1994), although in Middle Gorge, South Australia, trapped animals in captivity had a life expectancy of three to six years, with a mortality of ninety per cent for animals over six years old (Lim et al. 1992).

Emerging after sunset to feed, yellow-footed rock-wallabies feed on grasses, herbs and bark. They can go without water for long periods of time when it is cooler but, in hot weather, they will travel many kilometres to drink. The young have been seen to lick saliva from the mother's lips to obtain moisture.

The yellow-footed rock-wallaby inhabits semi-arid areas where rainfall is unreliable and drought is common. The wallabies are well-adapted to life in hot desert areas and can survive conditions too dry for most other

animals. They live on rocky outcrops sheltering in caves for protection. The yellow-footed rock-wallaby was once found extensively in the Flinders Ranges and other mountain areas in South Australia, extending through the north-west corner of New South Wales into south-western Queensland. Today, unfortunately, the species is only found in six isolated pockets in these three states.

In the late 1800s and early 1900s the yellow-footed rock-wallaby was hunted for its beautiful coat. Wallaby shooting became a popular sport among the early colonists which led to reduced populations. Today, competition for food from feral goats, rabbits and sheep, especially in New South Wales, are serious threats. Habitat destruction, fragmented distribution and predation by foxes,

wedge-tailed eagles and feral cats are also threatening the species. The number of yellow-footed rock-wallabies in New South Wales plummeted by about forty percent in 1990-1991.

At least one subspecies (*P. x. xanthopus*) appears on the IUCN Red List of Threatened Species as Vulnerable. The subspecies has a population of only about 5,000 to 10,000 in Queensland, is present in small numbers in the Flinders Ranges of South Australia and known only from the Gap and Coturaundee Ranges in New South Wales. They are listed as an Endangered Species in New South Wales.

The other subspecies (*P. x. celeris*) is listed as Near Threatened. This species prefers rock crevices and caves in isolated rock outcrops and ridges in semi-arid country. It is threatened by fox predation and forced to compete with domestic and wild introduced species (particularly goats, rabbits and sheep), and wildfires.

The Royal Zoological Society of South Australia, Melbourne Zoo, Taronga Zoo and other organisations are actively involved in research and breeding programs for the yellow-footed rock-wallaby. Over recent years rock-wallabies successfully bred in captivity have been reintroduced into a protected area in the Flinders Ranges in northern South Australia. An extensive feral animal control program is ongoing in the area.

In New South Wales the yellow-footed rock-wallaby was first recorded in 1964 in the Coturaundee Ranges, now part of Mutawintji National Park. These two small mountain ranges in the far west of the state are still the only known places where the species survive in New South Wales.

The habitat of the surviving population is partly on private land, granting inadequate protection for the colonies. Scientists were certain that without immediate action the yellow-footed rock-wallaby would become extinct in New South Wales.

In 1979, the Foundation for National Parks & Wildlife purchased 100 square kilometres of this land, renaming it Coturaundee Nature Reserve, for the conservation and protection of the yellow-footed rock wallaby. Further funds were allocated to fox and goat eradication. Annual surveys of the area, which is now part of Mutawintji National Park, confirms that the population is now recovering, having increased every year since 1995. There are now between 300 and 400 wallabies.

The recovery strategy that saved the yellow-footed rock-wallaby now serves as a model to preserve other rock-wallabies, including the brush-tailed rock-wallaby, from extinction.

Death on NSW's roads

Ongoing campaign to prevent roadkill of wildlife

Eira Battaglia

In 2005 a public meeting was held to discuss the number of native animals being killed along the Wakehurst Parkway on the Northern Beaches, Sydney, New South Wales. As a result, the Northern Beaches Roadkill Prevention Committee was formed. The then local member of NSW Parliament was chairperson, with the administrator of Warringah Council, representatives from Roads & Traffic Authority (RTA), National Parks & Wildlife Service (NPWS), NSW Police, WIRES, and Sydney Wildlife, community environmentalists plus an expert researcher from University of NSW forming the committee.

After extensive data had been collected on wildlife killed along the Wakehurst Parkway and blackspots identified, especially for swamp wallabies, the committee successfully obtained joint funding from RTA and Warringah Council for the provision of 0.6 kilometres of fencing along the worst areas of roadkill of the Wakehurst Parkway. The fencing was placed between two culverts, which provided access for the animals to move safely between feeding areas. Since then, no wallabies have been killed along the fenced areas and we estimate that approximately fifty wallabies have been saved along that stretch of the Wakehurst Parkway.

Since 2007, the committee received little support from some of the original committee members owing to change of the local member, election changes within Warringah Council and a change in representation from RTA. Representatives from NPWS, WIRES, Sydney Wildlife and community members continued to meet on an irregular basis.

In 2010, the committee decided to become more active after the number of wallabies killed increased dramatically and roadkill was occurring almost daily; in September over twenty wallabies were killed, and a number of joeys were orphaned. Blackspots for roadkill were identified along various parts of the busy Mona Vale and McCarrs Creek roads, which back onto Ku-ring-gai National Park. We gained considerable publicity through the local newspaper with both letters to the editor and articles highlighting the problems. An item was also published in a national newspaper. Through contacts we were able to have ABC's *Stateline* program film an item about the work of the

A dead swamp wallaby. Photo by Jacquie Marlowe, Sydney Wildlife

Roadkill Prevention Committee to further highlight the ongoing issue of native wildlife roadkill.

It was decided that we should hold another public forum to discuss the issue of roadkill following the ongoing publicity. Various representatives from NSW Parliament, local government and government agencies were invited to the meeting, along with the general public. The ABC's 24-hour news channel also filmed an item about our committee, including filming of two swamp wallaby joeys in care by a Sydney Wildlife carer.

The meeting was chaired by the member for Pittwater, who had been strongly supportive of our committee's work. Over 100 members of the public attended the meeting and short talks were given by our chairperson, who outlined the committee's mission to install more fauna fencing along the identified major blackspots for roadkill. Dr Dan Ramp from the University of New South Wales, an expert in wildlife roadkill and a consultant on our committee, outlined why the wallabies were being killed and that their population was in danger of becoming unsustainable at the current rate of roadkill, especially with the number of females being killed. Mandy Beaumont from WIRES and I, representing Sydney Wildlife, spoke briefly about the rescue and long-term care required for orphaned joeys.

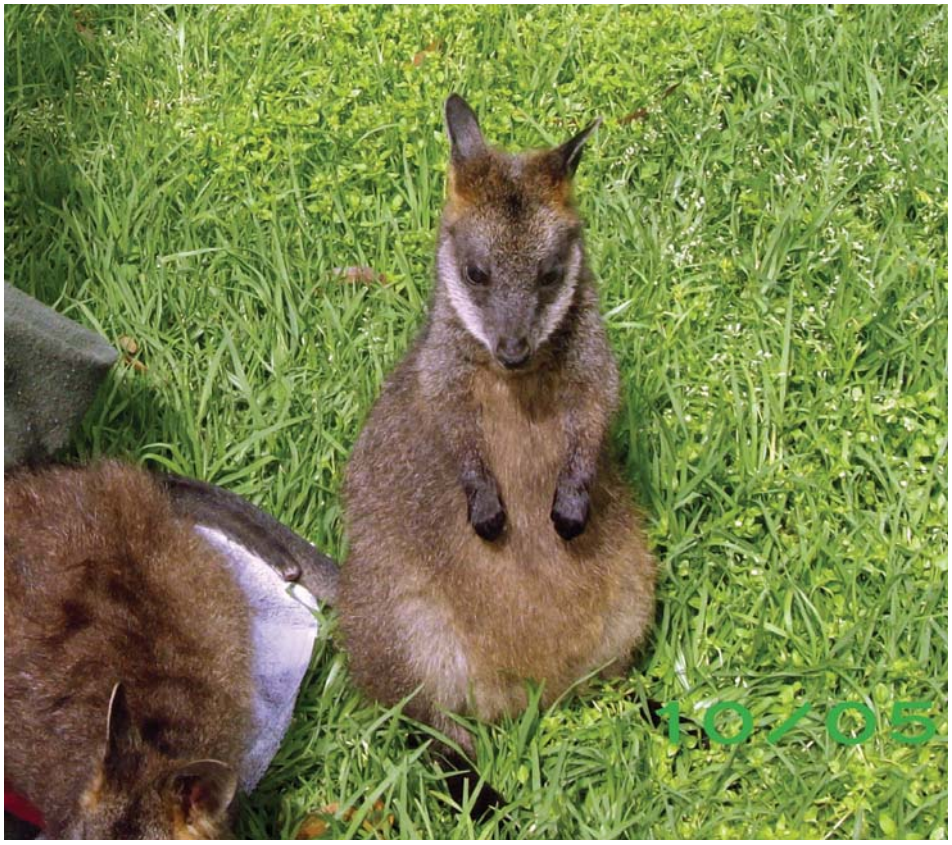
Electronic signage on Mona Vale Road. Photo by Mandy Beaumont, WIRES

Since the meeting, the committee has met with the RTA to discuss measures required to decrease roadkill. A suggestion agreed to at the meeting had been for electronic signage to be placed in the identified blackspots to alert drivers to "Slow Down" for wildlife and to be rotated around each area.

On 27 October, the first electronic signs were placed in three identified blackspots for wallaby deaths: Mona Vale Road near Kimbriki Tip, McCarrs Creek Road and Powderworks Road. It appears drivers are slowing down when the signs are seen, so the committee is hopeful that there will be a reduction in wallaby deaths. We will endeavour to obtain funding for fauna fencing along the identified blackspots and our liaison with RTA is continuing as we know the only real solution is to keep animals and vehicles separate.

In January 2011, the consultant group SMEC was appointed by RTA to conduct an options study and report back to RTA by March. The brief was to identify blackspots for roadkill, with possible areas for fauna mitigation measures and costings. The Committee has been involved with meetings and on-site identification areas of high roadkill, with the SMEC consultants and RTA representatives.

The electronic signage was removed in December and unfortunately a spate of wallaby deaths occurred along the Wakehurst Parkway and Mona Vale Road not long after the signs were removed. A hole was found in part of the Wakehurst Parkway fencing and a wallaby was found dead just beside the hole, the first death since the fencing was erected. A larger hole was found a short distance away. Who damaged the fencing or why it was done is unknown. Media attention highlighted the fence damage and RTA has temporarily made repairs until permanent repairs can be made. This highlights the ongoing need for fauna fencing or other mitigation measures, along with police cooperation in patrolling the areas where speed is a factor in wildlife roadkill.



Orphaned swamp wallabies in care. Photo by Eira Battaglia, Sydney Wildlife

Eastern quoll - a turbulent history

Bronwyn Fancourt

Whilst Australia can proudly claim to be home to many of the remaining large marsupial carnivores, their history has been turbulent to say the least. And their future doesn't look too crash hot either.

The eastern quoll is one of only three remaining large carnivorous marsupials in Tasmania, a fourth species (the thylacine) having become extinct during the last century. All three extant species have suffered significant reductions in their former Australian distribution, with two of these three species (the eastern quoll and the Tasmanian devil) now found only in Tasmania. The Tasmanian devil has recently been listed as endangered due to the spread of the fatal Devil Facial Tumour Disease (DFTD) that has led to local population declines of up to 90 percent. Given these recent and continuing instabilities within this endemic guild, the remaining large dasyurids face an uncertain future.

Until recently, eastern quolls were thought to be still widespread and locally common in Tasmania. However, annual spotlighting surveys suggest a statewide decline of around 50 percent in numbers over the past ten years, with no signs of recovery. To test the trends seen in the spotlighting data, three Tasmanian sites were surveyed during 2010 using live capture and release to get a better understanding of how many quolls were residing at each site. All three sites were formerly considered to be eastern quoll 'hotspots', historic studies at each site providing a baseline with which to compare current quoll numbers in order to discover if populations were increasing, decreasing or remaining relatively stable over time.

At Cradoc in southern Tasmania, local declines of 63 percent were observed between 1984 and 2010. Similarly, populations at Cradle Mountain in the central highlands declined by over 70 percent between 1991 and 2010. At Buckland in the state's east, not a single eastern quoll was captured across five months in 2010. This last observation is even more concerning when a past researcher recalls setting 12 traps near this site and often catching 13 or even 14 quolls in one night! Whilst the spatial distribution of quolls is quite patchy and their population densities are even patchier, long-term population changes at these three study sites support the declining trends seen in the statewide spotlighting data.

So what is causing the decline? Eastern quolls were once widespread throughout much of south-eastern Australia, but are now considered extinct on the mainland. Foxes have often been blamed for their mainland demise, although persecution and disease have also been implicated. So have any of these historic agents of decline played a part in the recent Tasmanian declines?

European red foxes present a novel risk to eastern quolls in Tasmania. Their decimation of native wildlife on the mainland and the irreversible ecological ramifications has been well-documented. Tasmania, however, has escaped much of this devastation – until now. The recent introduction of foxes into the state has unsettled that long-standing 'fox-free' status, and whilst fox numbers are still thought to be relatively sparse, we currently have no idea whether they are impacting on species such as the eastern quoll. As Tasmania's apex predator, Tasmanian devils may have helped suppress previous attempts to introduce foxes into the state through aggressive encounters with foxes or possibly by predating on their cubs. But with DFTD rapidly reducing devil numbers across the state, the dwindling dominance of an apex predator may now provide foxes with an opportunity to establish themselves permanently in Tasmania. To add insult to injury, declining devil numbers may also

Above and Overleaf: Black and tan eastern quolls were once thought to be two different species, but they are just like the blondes and the brunettes of the quoll world

allow for increases in mesopredators such as feral cats and spotted-tailed quolls, resulting in increased competition for eastern quolls, or even predation of their young. Feral cats are also the definitive host for the protozoan *Toxoplasma gondii*, so increasing cat numbers increases the eastern quoll's exposure to potentially fatal diseases such as toxoplasmosis. All in all, the ecological interactions are quite complex, and the potential trophic cascades could be devastating. Research is currently underway to assess the ecological impacts of declining devil numbers due to the spread of DFTD.

Unlike their devilish cousins, eastern quolls examined during 2010 showed no obvious signs of disease, although their declining numbers meant that few individuals were captured and examined. Many more individuals will need to be examined and screened over coming years before disease can be ruled out as a contributor to the decline.

But wait, there is more. Eastern quoll declines also correlate with several other significant events over the same period, such as drought and habitat modification. Like most of Australia, Tasmania endured a sustained and persistent drought for much of the past decade, with drought-breaking rains first falling in mid-2009. Being predominantly insectivorous, eastern quolls may have been affected by reduced food availability throughout this period; hence population declines were possibly due to nutritional stress. None of the quolls examined in 2010 appeared emaciated; in fact, their body condition was equal to or better than that observed in historic studies. This is not unreasonable given that rains received since mid-2009 would have increased food availability in the months that followed, allowing surviving quolls to feed up and restore condition by 2010. Further modelling of how eastern quoll populations respond to a range of bioclimatic variables will help establish how sensitive the species is to stochastic or cyclical events such as droughts.

Quolls were trapped using PVC devil traps

Eastern quolls are bold around people and can often be seen scavenging on food scraps around car parks and camp grounds

Eastern quolls are one of the few endemic species that seem to have adapted well to agricultural land-clearing. They are commonly associated with bush-pasture interfaces, where they can forage for pasture grubs in grasslands and paddocks by night, and retreat to the safety of a den in nearby bushland during the day. However, they are also found to varying degrees in a range of different habitat types. The conversion of different habitats may present a threat to the species, through the removal of either foraging habitat or suitable den sites. Little is known about what constitutes high-quality eastern quoll habitat, so the impacts of any past or future changes in land-use on this species are not currently understood.

So it seems there is a long list of potential culprits in the case of the declining eastern quoll, but no real understanding of just who or what is to blame. I have just commenced a three-year project in conjunction with Chris Johnson, Stewart Nicol and Clare Hawkins to try to identify the cause (or causes) of this recent decline, and to gain a better understanding of the key threats to eastern quolls in their last remaining stronghold. For further information on this research, or if you are interested in volunteering in the field, please contact Bronwyn Fancourt at the University of Tasmania (bf2@utas.edu.au).

The Wildlife Preservation Society of Australia kindly helped fund this project through a University Grant in 2010. Additional funding was provided by the Holsworth Wildlife Research Endowment, Royal Zoological Society of NSW and the M.A. Ingram Trust.

Reproduction success still appears high, with nearly all quolls carrying a full compliment of 6 pouch young

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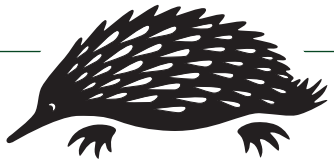

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"The challenge to the present adult generation is to reduce the increasing pressures on the Earth and its resources - and to provide youth with an education that will prepare them emotionally and intellectually for the task ahead.

SUZANNE L. MEDWAY
President

Under the supervision of Professor Rick Shine of the University of Sydney, Ruchira Somaweera is studying the ecology and conservation of freshwater crocodiles at Lake Argyle in Western Australia for his PhD.

Even though Ruchira's current research work is on crocodiles, he couldn't suppress his love for snakes and he has been photographing snakes since he came to live in Australia two years ago.

The photographic posters featured on the inside front and back covers were undertaken as a 'free time' activity due to this life-long passion and are being used for educational programs in Darwin and in the East Kimberley region. Copies have being circulated among selected governmental organisations, nature clubs, schools and reptile keepers in the northern tropics.