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FNPW would like to thank the following people for their written and photographic contributions to this newsletter: Mary Bonet, Jane Baldwin, Adrian Muscat, Camille White, Andrew Colefax, Stephanie Hing, Mel Tyas, Lizzie Corke, Emily Sephton and Mike Banks.

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Front and back cover: Snowgum on the Bogong

River, Thredbo

(Mike Banks www.artefotografica.com.au).

This page: New shoots burst from a Snowgum trunk (Kozzie).

Insets: Reef Shark (Debbie Molesworth),

Blue Tongue Lizard (JJ Harrison), Flying Fox (Marj Kibby).



**T**riting the introduction to our PAWS magazine is always an interesting and pleasant task, as it provides an opportunity to look backwards for just a moment, reflect on what has been achieved, the lessons learnt, and then look to the future to further develop the strategies that will enable

us to achieve even greater conservation outcomes in the future.

In March, we raised money to continue research into the plight of the Murray River Turtles. These animals have been on earth for 220 million years but sadly, with the current rate of decline, might not been around to see the next century. We are very grateful that Australian Geographic has come on board to continue raising awareness of the difficulties these fascinating animals are experiencing.



FNPW's Annual General Meeting in May provided another opportunity to showcase the Foundation's new five-year strategy and ambitions to add land to 12 National Parks, double our income and become the peak environmental education vehicle on Australia's natural and cultural heritage.

Our end-of-financial-year appeal this year is focussed on raising funds to acquire more land for National Parks. Since we were founded in 1970 FNPW has purchased and permanently protected more than 600,000 hectares of land for Australia's future generations. Parks that will provide a safe habitat for our native species and protect our heritage.

Since the last edition of PAWS, we have re-launched our Backyard Buddies website backyardbuddies.org.au, where you can explore, create and help your own backyard buddies survive and thrive into the future. Your backyard is a small part of our Big Backyard - the green corridors that link our many National Parks, giving safe passage and a safe haven for animals whose habits and habitats don't recognise man-made boundaries.



This issue of PAWS includes the announcement of a new round of Private Land Conservation Grants. The landowners who applied for these grants are all doing wonderful things on their properties to help support local wildlife and the natural environment. Seeing how much is being done by these individuals is always very inspiring and heartwarming.

My final piece of news is that I am delighted and excited to announce that the Foundation for National Parks & Wildlife has signed a partnership deal with the Sealink Travel Group, Australia's largest water-based tourism business. Many of the routes they operate connect people to national parks, which makes them an ideal partner.



If I may close by requesting a favour of all the readers of this magazine. Please help us do more, by telling your friends and family about us - spread the word, follow us on social media, become a Backyard Buddy, or sign up as a Habitat Hero by pledging a monthly donation to FNPW.

Thank you for your amazing support.

We cannot do our work without you.

CEO. Foundation for National Parks & Wildlife.



t the end of another week, Mary Bonet wearily kicks off her boots and says with a smile, "I love it when a plan comes together".

Mary has spent the past two days at Wombeyan Caves with 30 children from Goulburn's Tambelin Independent School, installing nest boxes in the Abercrombie Catchment region which is home to five of the six species of gliding possum found in Australia – Squirrel Glider, Yellow-bellied Glider, Feathertail Glider, Sugar Glider and Greater Glider.

It is also home to over 2,400 species of native plants, animals, fish and reptiles.

Eighteen months into the 10-year program, Glideways is producing great outcomes.

There are thirty landholders involved in habitat restoration work and cross-tenure pest animal control projects, and a number of volunteer organisations assisting with the fencing and

## Glider Renovation Rescue

The K2W Glideways Bushconnect project, funded by a grant from the NSW Environmental Trust and delivered by FNPW on behalf of the Kanangra-Boyd to Wyangala partnership, is a collaboration to conserve gliders and their habitat by restoring natural connections across the Abercrombie Catchment.

revegetation of public and private land, including Conservation Volunteers Australia, Orange Local Aboriginal Land Council's Gaambuwananha Ngurambang team and the Black Diamond Recreational 4WD club.

Two kilometres of barbed-wire fencing has been replaced through the Barb Busters program, providing training for landholders on habitat and threat management, and 80 students from five local schools have participated in a schools' education program.

The education program has recently been expanded to include a teaching guide which aims to get connectivity conservation into the classroom, and the classroom out into nature. Created with the help of six local school teachers, the program aligns with the Stage 3 curriculum and can be completed over a term or as individual lessons.





The package includes lesson guides, fact sheets, and activities designed to inspire students and encourage learning about habitat, ecosystems, threats to biodiversity and the importance of wildlife corridors to gliders and other native animals.

The classroom lessons are complemented by opportunities to participate in other parts of the K2W Glideways project, such as the nestbox program.

Mary's recent work with the students was part of the Wombeyan nestbox program and saw twentythree nest boxes successfully installed.

The boxes will form part of a long-term monitoring program with local schools in the area and contribute to a broader effort to track changing conditions in the K2W link through research, monitoring and citizen science projects.

Since 2013, the K2W partnership has revegetated more than 500 hectares at these locations in an effort to link habitat containing resident gliders with areas in which they have disappeared.

"We are hoping that this restoration work will enable gliders to move back into these forests," Mary says.

With the exception of Greater Gliders, which feed predominantly on leaves, most species of glider have a diverse diet. Typical food sources include insects, sap, honeydew (a sugary coating on leaves secreted by small insects), manna (sugary coatings left on leaves by leaf transpiration), and the blossoms, pollen and nectar of flowering plants and trees.

As patches of habitat have become smaller, the number of trees has also reduced leaving less food for gliders and more competition for homes in hollow-bearing trees.

All gliders are dependent on hollow-bearing trees for nesting, roosting and shelter, often using



several different dens within their home range. Providing nest boxes at revegetation sites is an important part of the restoration approach, as is fostering enthusiasm for managing habitat for wildlife in our future K2W landholders.

The K2W partnership is a collection of local landholders, community groups and organisations who have been working since 2012 to create habitat links across the landscape between the Greater Blue Mountains and Wyangala Dam.

Top left: Mary Bonet works with students to build nest box designs in a range of materials from plywood and recycled plastic.

Top right: The Sugar Glider is just one of the five species of glider found in the area.

Below: Completed nest boxes with built-in temperature recorders are installed with the help of local aborist, Oliver Shoemaker, providing new homes for squirrel gliders, possums, greater gliders, powerful owls and bats.

Below right: A pair of Sugar Gliders snuggle up in their new nestbox home.









# Food glorious food?

Thanks to FNPW and its supporters, this Marine Science grant aims to determine the effects of the expanding aquaculture of Atlantic salmon in Tasmania and the potential interactions and concerns with reef ecosystems.

s reef ecosystems in Tasmania have broad conservation, social and economic values, . there is a need for a better understanding of how these systems may respond. There are many ways intensive farming of fish can interact with the broader environment, with enhancement of nutrients from waste feed and faeces key amongst these. Waste feed and faeces can become an additional food source for wild animals, with population-level consequences.

Using a lipid biomarker approach, this project aims to determine whether aquaculture waste may supplement the diet of key mobile invertebrate species within reef ecosystems in south-east Tasmania.

Results will provide critical information on how these species may use current food resources and whether the addition of aquaculture-derived nutrients and organic carbon influences food web dynamics.

This data will help assess whether these keystone species are suitable "canaries" for assessing the overall health of the reef ecosystem, and addresses a key knowledge gap regarding the broader ecosystem level interactions of intensive fish farming.

This project will make an important contribution to the conservation and management of reef ecosystems, as aquaculture continues to expand into the future.

Top left: Key reef species may interact with aquaculture directly through consuming waste, or indirectly by feeding on animals that benefit from aquaculture-derived nutrients and organic carbon.

Top right: Camille White (UTAS) assesses underwater populations of key invertebrate species on reefs adjacent to aquaculture

## Eyes in the sky to protect sharks and beaches

Shark attacks on humans are considered uncommon. However, when they do occur they are traumatic, attract disproportionate media attention and generate public concern.

ear of shark bites at surf beaches in Australia and overseas has led to a reliance on shark control (culling) programs in many coastal locations.

Current shark control programs effectively undermine marine conservation efforts by contributing to declining shark populations (target and non-target), and incurring further ecological consequences with other associated bycatch, such as turtles, dolphins, and rays.

There is a need to reduce reliance on shark control programs. However, a suitable alternative shark management approach must be able to address public beach safety needs.

A new project, funded by FNPW, is developing the use of Remotely Piloted Aerial Systems (RPAS), for non-destructive shark management and beach safety. RPAS, or 'drones', effectively collect aerial data at low altitudes and can store and relay realtime geo-referenced imagery and information.

Using RPAS, this project aims to determine shark movement predictability and define when a shark may be considered hazardous, which is essential for designing and apportioning surveillance effort.

Individual sharks will be tracked at representative beaches with a range of environmental and biological conditions.

The geo-referenced video data will also be used to test and refine automatic shark recognition

software, which will ultimately enhance the detection and reporting of shark sightings through automation.

The outcomes of this study will contribute to the further refinement of the RPAS methodology to improve its efficiency and reliability for shark detection.

It is hoped that the implementation of a proven and supported RPAS-based shark management alternative will reduce the reliance on traditional shark control programs, and have a substantial marine conservation impact.

Above: A bull shark off Redhead Beach NSW in January is "captured" on drone.

Below: Andrew Colefax, PhD candidate of Southern Cross University and the New South Wales Department of Primary Industry, sets up and prepares for a drone flight at Lennox Head NSW in January.





## **Designing new** signage a walk in the park

Fifty-two new interpretive signs will help visitors of all ages learn more about the plants and animals found along the walking tracks overlooking Sydney Harbour.

esigned by students from Beauty Point Public School, funded by FNPW and the NSW National Parks and Wildlife Service (NPWS), with site preparation by Year 11 students from Trinity Grammar School, this is an excellent example of a successful community engagement project.

Asking local primary school students to design the signage was a great way to engage them in the importance of our environment, and let them use their knowledge in a way that will benefit the community.

"Young people are our future and to have these students working alongside NPWS and FNPW staff is a wonderful way to ensure they will have a real connection with these special places. This project demonstrates how young people can be actively engaged in environmental education activities", said Odessa O'Brien, Development Manager, FNPW.

With a focus on the native plants and animals that share our built-up areas, waterways, backyards and parks, Backyard Buddies, an environmental education initiative of FNPW encourages all of us to make small changes to our homes, schoolyards and communities to better support our native wildlife.







Top: Students from Beauty Point Public School designed and illustrated the Bradleys Head signage.

Centre: Year 11 students from Trinity Grammar School prepared the site for installation of the signs.

Above: One of the new interpretive signs.



FNPW, partnering with SC Johnson, continue to support Kukundi Nature Play - a unique children's play area in Lane Cove National Park, Sydney.

tage 3 of the Kukundi Nature Play project has seen the area transformed into a positive outdoor learning space, building on the restorative work of the first two stages. The project has included improvements to the interpretive trail, and the installation of a sensory garden designed for children to acquire knowledge about the importance of nature.

The new nature play equipment, installed in April 2017, provides opportunities for children to engage in nature play, helping them acquire skills that will improve their confidence in outdoor environments.

The project has involved several corporate volunteer teams helping with bush regeneration, rubbish removal, painting the buildings, and carrying out an extensive clean-up of the area.

Kukundi is also home to a Bat crèche for orphaned Grey-headed Flying-foxes, which are now considered endangered, largely due to land clearing and habitat loss.

Volunteers from Sydney Metropolitan Wildlife Service Inc., successfully rehabilitate and release the megabats back into their natural habitat.

FNPW would like to thank SC Johnson for funding the new nature play equipment, involving their employees and demonstrating their shared value to support and engage children in environmental education activities.

As a family company, SC Johnson believe that along with providing great products that make life better for families, they should have a positive impact in the communities they operate in as well.



For more details or to sign up go to: backyardbuddies.org.au

The new Backyard Buddies website launched in late April 2017 reinforces the concept of connectivity - the connection between backyards, schoolyards and local parks that help create green corridors, which in turn supports the "Big Backyard" – our National Parks across Australia.

## **Woylie survival** in our hands

Woylies (aka Brush-tailed Bettongs) are unique Australian native marsupials. They play an important role in the environment as nature's gardeners.

nfortunately, since the 1990s, woylie numbers have decreased by over 90%. It was suggested that stress may be making the woylies more vulnerable to parasite infections. So, with help from FNPW, Stephanie Hing from Murdoch University, set about investigating possible links between stress, immunity and infection in woylies for her PhD.

In collaboration with the Western Australian Department of Parks and Wildlife, nongovernment organisations (Whiteman Park Reserve, Native Animal Rescue) and volunteers, they completed approximately two years of intensive fieldwork involving captive, free-ranging and wild woylie populations at rehabilitation facilities, in reserves, national parks and state

The trapping efforts were successful, with a total of over 300 individual woylies trapped, examined and sampled over the course of the study.

The study was expanded to include more individuals, samples and sites as the project progressed. In addition, they built capacity, training students and volunteers in wildlife field research skills.

#### This project involved a few exciting "firsts".

The first study of how well woylies' immune system works; the first long-term study of what factors influence stress hormones in woylies; and the first time looking at how woylies respond to conservation activities, like moving them from one place to another, and also natural disasters like bushfires.

Thanks to support from colleagues, collaborators and generous funders including FNPW, they've provided unique and important information to help the conservation of critically endangered woylies.





When gathering material to build their dome-shaped nest, Woylies carry it curled up in their prehensile tail. This leaves their hands free for snacks they find on their way back to the nest site such as underground fungi or truffles!

# Eco burnings and canopy planting along the GOR

The coastal woodlands bordering Victoria's Great Ocean Road provide vital habitat for koalas, but they are in crisis.



s native trees are increasingly replaced by invasive species, this fragile ecosystem is further threatened by the absence of low intensity fires, which is considered to be a vital component of many Australian forests.

#### Koala Habitat Rescue

Over the past 20 years more than 70% of the Manna Gum community has been lost, and without intervention we will lose this unique and rare habitat type, along with the koalas and many other plants and animals that rely on it.

Funding from FNPW has enabled the Conservation Ecology Centre (CEC) to expand key elements of its Great Ocean Road koala habitat rescue program.

#### **Ecological burns**

Since 2014 the CEC and local fire authority have conducted 17 prescribed ecological burns across 40ha on seven private properties. Importantly, the

burns provide a good ash bed to plant young tree seedlings that will eventually replace the koala habitat trees which have largely been lost.

The controlled burns have also played a role in reducing the invasion of coastal plants into the woodlands of Cape Otway.

#### Canopy replacement planting program

Over the past four years the project partners have achieved 100ha of revegetation, including approximately 50ha of canopy replacement. A further 20ha of canopy replacement planting was completed in 2016.

Seedlings purchased with the support of FNPW have made an important contribution to the woodland revegetation, with mesh guards providing extra protection for trees in critical locations.



# And the grants go to ...

This year FNPW received over 100 applications from across New South Wales for the 2017 Private Land Conservation Grants (PLCG).



CATEGORY 1 Grant recipient	Bush regeneration, incl. weeding	Threatened species conservation	Nest boxes	Conservation fencing	Ecological fire management	Feral animal control
Mark and Margaret BAKER of Banksia View in Winmalee	•					
Cynthia BROOK of Glenroy in Tyalgum	•	•				
Leigh DAVISON of Dharmananda in The Channon	•	•				
Nick DEACOCK of Chakola in Kangaroo Valley	•	•	•			
Sandra HEUSTON of Soul of a Tree in Rosebank	•	•	•			
Philip JENSEN of Mt Oak in Billilingra	•	•				•
Michael JONES in Grassy Head	•					
Diana KUREEN of "High Ridge" in Triangle Flat					•	
Sharyn LAFONTAINE of Nerramen in Bungawalbin	•					•
Mikla LEWIS of Rosemont in Grenfell		•	•			
Peter LONG of "Ngiyaani" in Gunnedah	•					
Janet MAYER of Wodi Wodi in Foxground	•					
Marg MCLEAN of Falbrook Wildlife Refuge in Singleton	•					
Julie MILLS of Meringo Point Sanctuary in Meringo	•	•		•	•	•
Narelle MOODY of Crookshanks in Cooma	•	•				
Patrick MORRISEY of 'Habitat' in Goonengerry	•	•				
Malcolm READ of Ti-Willa in Mount Victoria	•	•		•		
Lisa SANTO of The Shield in Blaxlands Creek	•		•		•	
Paul SEGAL of Sassafras in Mooral Creek	•	•				
Chris SHEED of Elands Oxygen Farm in Elands	•					
Derek SKINGLE of Sandy Pinch in Goolmangar	•	•				
Katrina SOMMERS of Koala Gardens in Tuckurimba	•	•	•			•
Arnold VAYO of Vineyard Haven in New Italy		•	•			
Michele WADDINGTON of Tudibaring Farm in MacMasters Beach	•	•				
Adrienne and Erwin WEBER in Hopkins Creek	•	•	•			

hese grants are open to any landowners with conservation protection mechanisms on their land who would like to undertake conservation works in these areas.

The different projects that were considered for funding this year included:

- bush regeneration (including weed control)
- threatened species conservation
- installation of nesting boxes
- conservation fencing
- ecological fire management
- feral animal control

Depending on the conservation protection mechanism on their land, there are three different categories of Private Land Conservation Grants. This grants program is the result of multiple organisations, partnerships, and individuals, getting together to achieve important conservation goals. As most of the land in Australia is not protected by national parks, these voluntary conservation agreements and the PLCGs are a meaningful addition to responsible land management.

This program is proudly supported by our partners, the NSW Environmental Trust,
Community Environment Network of NSW,
Diversicon Environmental Foundation, Paddy Pallin
Foundation, Nature Conservation Trust of NSW,
NSW Office of Environment and Heritage, NSW
Local Land Services and Wildlife Land Trust

The Foundation would like to thank all these organisations, as well as FNPW donors and the generous landholders.





















CATEGORY 2 Grant recipient	Bush regeneration, incl. weeding	Threatened species conservation	Nest boxes	Conservation fencing	Ecological fire management	Feral animal control
Wal DAWSON of Yarnel in Condobolin						•
Michael GILL of Ilonka in Reidsdale	•	•	•			•
Katie GRAY of Warrambui in Murrumbateman	•					
David GREGORY of Lungo del Fiume in Ballalaba	•	•		•		
<b>Winston GUYMER</b> of Rous Wildlife Refuge in Meerschaum Vale	•	•				
John HARRIS of Rifflerun in Bootawa	•	•				•
<b>Anne-Maree JOHNSTON</b> of Kangaroo Valley Friends Properties Pty Ltd in Kangaroo Valley	•					
Margaret MCBRIDE of White Leeds Arid Wetlands in Broken Hill	•	•				
Anne PHILLIPS of Yarrabin in O'Connell				•		
Jan PRESS of Dulan in Collarenebri	•					
John PRESS of Daraabah in Collarenebri	•					
John TAYLOR of Weirview in Harden		•	•			
Rosie TONGMAR in Fernleigh	•					
Robin WESTCOTT of Burrawang in Guerilla Bay	•					

CATEGORY 3A Grant recipient	Project Details
Mikla LEWIS of Young Landcare in Grenfell	Having organised my 8th annual Wattle Day celebration in August, I would like to run two Wattle Day Walks again this year with a more agricultural focus. This includes a Wattle Seed Collecting training workshop for Weddin and Young District Landcare groups.
<b>Frances O'BRIEN</b> of Wahroonga Waterways Landcare in Wahroonga	Aims to educate and engage students and the local community in environmental conservation by first developing literature for distribution amongst the local residents and schools. Then conducting bimonthly educational tours and hands-on bushland workshops.
Pam O'NEILL of Murrakool Incorporated in Barham	<ol> <li>Educational field trip to the Villages of The Pollack. Using archaeology to reconstruct floodplain environmental characteristics as they were before European settlement. The distribution of Aboriginal residential sites can provide information on their practices in traditional times and through this the distribution and makeup of natural resources available.</li> <li>Wetland Field Trip focusing on Endangered Australian Painted Snipe, incorporating Waterbird Identification &amp; habitat management.</li> <li>A field trip to Land for Wildlife properties highlighting threatened and declining woodland birds in the Murrakool area identifying birds such as Gilberts whistler, Hooded Robin, Grey crowned babbler etc.</li> </ol>
Alison RATCLIFFE of Brunswick Valley Landcare Inc in Brunswick Heads	Brunswick Valley Landcare took on the regional provision of Land for Wildlife (LfW) in Byron Shire in May 2016. Since then we have signed up 16 properties. Byron Shire Council previously signed up 85 properties to LfW but there has only been limited contact made with these original members over the past few years. Our aim is to link all these property owners together through a series of field days. This will engage the LfW community in our shire and give them some resources and knowledge to be able to better manage their properties for biodiversity.

CATEGORY 3B Grant recipient	Bush regeneration, incl. weeding	Threatened species conservation	Nest boxes	Conservation fencing	Ecological fire management	Feral animal control
Bruno BERTOLO of Figtree Farm in Whian Whian	•					
Judy and Graeme FOUNTAIN of Elmgrove in Bango	•	•	•			
Terry and Jennifer GRAHAM of Bowerbird Cottage in Eungella	•	•				
Ann HARTIGAN in KYOGLE	•	•				
Ian JUDD of Culmara in Whian Whian	•	•	•			•
Chris & Wendy KACZAN of Wainoni in Grassy Head	•			•		
Jacqui PAINE in North Tumbulgum	•	•	•			
Louise POWERS in Bobs Farm	•	•	•			
Julie RYAN of Clogheen in Mullumbimby	•	•	•			
Dawn THORNTON of Bellbowra in Bowraville	•					
Emma TONER of Lillifield in Wadeville		•				
Jennifer WELSS in Bango				•		
Carol WILSON of Karyrie Park in Young			•			

We congratulate all of this year's Private Land Conservation Grant recipients and wish them every success in their conservation outcomes.

If you have a conservation agreement on your property and would like to apply for a grant in next year's round, find out more at: www.fnpw.org.au/grants/nsw-private-land-conservation-grants

## FNPW needs your urgent help to continue our vital work. Please donate today.

I would like to support FNPW's ongoi	ng essential work by donating:	Foun
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