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)

The Annual President's Luncheon 2023

Patrick Medway AM presenting Dr Julie Old with her Honorary Gavel.

Dr Julie Old, Caitlin Gallagher, and Patrick Medway AM.

Guest Speaker, Caitlin Gallagher, spoke about the significance of youth participation and engagement in wildlife conservation now and in the future.

L to R: Dr Julie Old, Liz Hardy (Chief Advancement Officer, Univeristy of Technology, Sydney), Patrick Medway AM.

L to R: Caitlin Gallagher and Talitha Huston.

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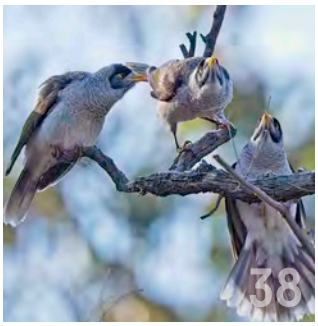
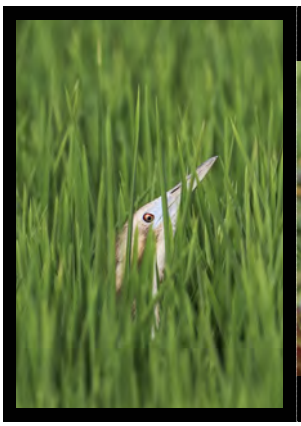


Regulars

Megan Fabian
Editor, *Australian Wildlife*



On the Cover:

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The Endangered Australasian Bittern (*Botaurus poiciloptilus*) is a large, secretive heron-like bird found in wetlands – shallow and vegetated freshwater or brackish swamps. The bittern occupies coastal and sub-coastal areas of south-eastern and south-western mainland Australia and the eastern marshes of Tasmania. The species also use rice fields as their habitat. Bitterns are well hidden and difficult to spot in the reeds. However, the distinctive booming call of the male gives them away. Threats to this species include drainage of wetland habitats, reduced water quality, alteration of natural water flows, use of chemicals near wetland areas, climate change, and predation by foxes, pigs, and cats. Images: Andrew Silcock.

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

Member Notice

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 tax-deductible gift recipient and registered with the Australian Charities and Not-for-profit Commission. Its public fund is listed on the Register of Environmental Organisations under item 6.1.1 of subsection 30-55(1) of the *Income Tax Assessment Act 1997*.

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 a national not-for-profit wildlife 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, advocacy, public awareness, community involvement, 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 attempted to convince politicians of the necessity to include the preservation of Australia's precious wildlife and its vital habitat in all their planning, environmental issues, and discussions.

From the President's Desk

Dr Julie Old – President

The 2023 Wildlife of the Year is an iconic group of plants, the Proteaceae Family, a family which is distributed throughout all states of Australia and includes at least 1,100 species.

Welcome to the Autumn 2023 Edition of *Australian Wildlife*

In this edition of *Australian Wildlife,* the President's Annual Report summarises the many activities and events the Society was involved in over the last year, and includes highlights from the 114th Annual General Meeting and President's Luncheon held in March. As you can see in the photograph here, the luncheon tables were adorned with Proteaceae, our Wildlife of the Year for 2023. The species pictured is *Grevillea* 'Big Red'.

One of the highlights in this edition of *Australia Wildlife* is the Australian Wildlife Society's 2022 Conservation Awards, presented at the President's luncheon – Serventy, Community, Rehabilitation, and Youth. The awardees are all outstanding conservationists, and the Society was very proud to acknowledge their efforts to preserve our unique biodiversity. Patricia LeeHong was awarded the Serventy Conservation Award for her long-standing commitment to wildlife conservation, establishing the Wildlife Rescue, Rehabilitation and Education Association. Snowy Mountains Wildlife Rescue LAOKO Incorporated was awarded the Community Wildlife Conservation Award for their outstanding 24/7 decadal commitment to wildlife rescue, including caring for orphans, rehabilitating injured wildlife, and educating the wider community. Quoin Turtle Rehabilitation Centre, dedicated to the rescue and rehabilitation of sea turtles, was our 2022 Wildlife Rehabilitation Award awardee, and has successfully rehabilitated and released 236 sea turtles since its establishment. Read more about the Society's 2022 Serventy, Community, Rehabilitation and Youth awardees awardees on pages 8-12.

The Australian Wildlife Society's Youth Conservation Award, established in 2019, is relatively new. Our first awardee was Caitlin Gallagher. Caitlin has attended the AGM and President's luncheon every year since, and this year presented a talk on the significance of youth participation and engagement in wildlife conservation. It is young people like Caitlin that will be our future conservationists, and the Society is proud to support enthusiastic and energetic young people in their efforts to conserve our unique flora and fauna. The 2022 awardee of the Youth Conservation Award was Talitha Huston. Amazingly,

President, Dr Julie Old, proposes a toast to 114 years of wildlife conservation by the Society.

The Society's 2023 Wildlife of the Year – Proteaceae *Grevillea* 'Big Red'.

at just 14 years old, Talitha started to write a book on the birds of the Perth Hills, published it at 16, and has since sold over 6,000 copies, with the proceeds going to wildlife charities. All the photographs in the book are her own, and the book is published on eco-friendly paper – recycled paper using vegetable ink. It is a huge accomplishment worthy of the Australian Wildlife Society's Youth Conservation Award for 2022.

Autumn is also the time of year to start receiving entries for our Scholarships and University Student Research Grant applications. Judging these scholarships and grants requires a considerable time and effort commitment by our volunteers, and this year we recognised the efforts of Dr Al Glen, one of our very first grant recipients. At the President's luncheon, Al was inducted into the Australian Wildlife Society's Roll of Honour for his outstanding and continued commitment to judging the Australian Wildlife Society's University Student Research Grants.

This year the Australian Wildlife Society is incredibly proud to announce a new University Student Research Scholarship, the Dr Clive Williams OAM Memorial Wildlife Conservation Scholarship, named after one of our former Roll of Honour recipients, former Director, and life-long member, that sadly passed away last year. Clive was a passionate supporter of young people and conservation. In recognition of Clive's support of the Australian Wildlife Society, including judging the Society's annual conservation awards, and his long-standing commitment to conserving Australia's unique flora and fauna, this prestigious scholarship will be awarded to the highest-ranked University Research Grant applicant. The information on how to apply for all the University Research Grants, including the new Dr Clive Williams OAM Memorial Wildlife Conservation Scholarship, is available on page 10 in this edition of Australian Wildlife.

This Autumn edition of *Australian Wildlife* also includes an article written by our Editor and Australian Wildlife Society Office Manager, Megan Fabian, on the Australasian Wildlife Management Society conference, recently attended by herself and Director Wayne Greenwood. The annual conference provides an opportunity to share new innovative pest management strategies and provides updates on current pest management practices. New Zealand has committed to a predator-free future by 2050. Consequently, it was invaluable for both Megan and Wayne to understand how this commitment is being achieved and its current progress in meeting the targets, as well as to support the many Australians in attendance at the conference and their efforts to humanely remove animal pests that threaten our unique Australian flora and fauna. The Society further supported these conservation efforts by sponsoring one Australian university student, Patrick Finnerty, to attend the conference and present their research on managing problematic herbivores during habitat restoration and post-fire recovery.

As always, there are articles in this edition of *Australian Wildlife* on a range of different and unique Australian animals, including flying foxes, noisy minors, insects, and even the elusive bunyip bird or Australasian bittern (*Botaurus poiciloptilus*). The Australasian bittern is a species that is the subject of a recent conference held in Leeton, NSW, where the Society's Director, Dr Hayley Stannard, attended to learn more about this wetland specialist.

Finally, given the dramatic rise in fake news and misinformation abounding on social media, Sid Hewison describes the vital role of a science communicator on pages 31-32. Science communication has always been at the heart of *Australian Wildlife,* and science at the forefront of what drives the decisions made by the Australian Wildlife Society's Board, so we hope you enjoy learning more about science communication, and the other articles in the Autumn 2023 edition of *Australian Wildlife*.

114th Annual General Meeting

The 114th Annual General Meeting of the Wildlife Preservation Society of Australia Limited, trading as the Australian Wildlife Society, was held on Wednesday, 1 March 2023, at Castlereagh Boutique Hotel, Sydney, New South Wales.

The President, Dr Julie Old, tabled the Annual Report for 2022 and highlighted the Society's achievements in wildlife conservation over the past year. The full report is featured in this magazine.

The meeting tabled and adopted the audited Treasurer's Report for 2022, showing a healthy financial balance overall, even though a loss was incurred in 2022.

Peter J. Varley, Chartered Accountant Registered Company Auditor, was confirmed as the Society's auditor for 2023.

The election of the Directors for the coming year took place. The following Directors were elected to the Board: Stephen Grabowski, Brian Scarsbrick AM, and John Creighton.

Annual President's Luncheon

The Annual President's Luncheon was held after the Annual General Meeting in the Adam's Room of Castlereagh Boutique Hotel, Sydney, and attended by an enthusiastic group of supporters, members, family, and friends.

The National Office Manager, Megan Fabian, introduced the President of the Society, Dr Julie Old, who welcomed the esteemed guests from near and far that joined us for this special occasion. The President announced the Society's 2023 Wildlife of the Year – Proteaceae (a selection of *Banksia* and *Grevillea* were featured on each table) and proposed a toast to 114 years of wildlife conservation by the Society. The President then introduced the Guest Speaker, Caitlin Gallagher, who presented a talk on 'the significance of youth participation and engagement in wildlife conservation now and in the future'.

The Society established a Roll of Honour, launched at the 2022 Annual President's Luncheon, to highlight past luminaries who have made a significant contribution to the longevity and success of the Australian Wildlife Society, and who are respected in the wider conservation field for their contribution to the preservation of Australian wildlife. The luminary added to the 2023 Roll of Honour was Dr Al Glen.

The Society also announced a new University Scholarship in Honour of Dr Clive Williams OAM to pay tribute to Clive's dedication and contribution to wildlife conservation. The Dr Clive Williams OAM Memorial Wildlife Conservation Scholarship is offered to honours or postgraduate students at Australian universities. The scholarship is available for research projects directly relevant to protecting Australia's wildlife, both flora and fauna. Each year, one $5,000 scholarship will be awarded. We were joined by Clive's daughters, Catherine and Alison Williams, who were presented with a Certificate of Appreciation and a native plant – *Grevillea* 'Big Red'.

The Society was pleased to announce the winners of its prestigious awards for 2022 during the luncheon proceedings.

Top: L to R: Wayne Greenwood, John Creighton, Noel Cislowski AM, Trevor Evans, Dr Julie Old, Patrick Medway AM, Dr Robin Crisman, and Stephen Grabowski.

2022 Serventy Conservation Award

The prestigious Serventy Conservation Award was inaugurated in 1999 to commemorate the outstanding wildlife conservation work by the members of the Serventy family – Vincent Serventy, his brother Dr Dominic Serventy, and his sister Lucy Serventy. Each member of the Serventy family has given a lifetime of commitment to conserving Australia's wildlife. The award is intended to recognise and celebrate wildlife conservation work not done as part of a professional career. It is awarded to those who labour in the field for a love of nature and a determination that it should be conserved. Often, these have been non-scientists who have earned their wildlife conservation skills through sheer hard work.

The award for 2022 was presented to Patricia LeeHong of Murphys Creek, Queensland.

Patricia is passionate about educating young people on the importance of wildlife conservation, showing them what she does, and allowing them to help so they can continue to conserve our precious native species. Patricia focuses on rehabilitating orphaned echidnas but does not ignore the cries for help from other orphaned species. She has helped native wildlife by nursing them until they are well enough to return to the wild and defend themselves.

In 2010, Patricia established the Wildlife Rescue, Rehabilitation and Education Association, a non-profit organisation with members from diverse backgrounds to unite in a common goal to provide resources for the rescue and rehabilitation of Australian fauna.

Patricia has given thirty years of service to wildlife conservation. Her ability to work tirelessly makes a difference, and this award is recognition that her work has not gone unnoticed. We need more people like Patricia, and it is with great honour that the Society awards Patricia the prestigious Serventy Conservation Award for 2022.

Acceptance Speech from Patricia LeeHong

I thank the Australian Wildlife Society for the honour of being awarded the prestigious Serventy Conservation Award. I feel privileged to be recognised for my dedication and commitment to wildlife and conservation.

My interest in wildlife began in the outback in the 1980s when I first started caring for wildlife, including emu (*Dromaius novaehollandiae*) chicks. It seemed incredulous that after many phone calls, the knowledge I required to raise emu chicks came from the local sheep farmer. I realised that a grassroots approach and hands-on skills were the easiest way to learn about the local wildlife and appreciate the natural environment surrounding me.

In the years to follow, I established a wildlife park that operated on a system of guided tours only, allowing me to share my wildlife knowledge and experience with the local community whilst ensuring that the welfare of the wildlife remained my primary focus.

In 1999, I moved east, settling in the Lockyer Valley, Queensland, and became involved in various environmental community groups. I further extended my focus to include the care of all native species, with a particular interest in koalas, echidnas, and birds of prey.

Late in life, I gained formal qualifications through various degrees in animal studies majoring in Wildlife Biology at The University of Queensland, my research focus being on the short-beaked echidna (*Tachyglossus aculeatus*). My greater goal in gaining formal education was to expand my knowledge and incorporate this with my hands-on experience to share with the broader community. Consequently, this new-found knowledge and experience resulted in the formation of Wildlife Rescue, Rehabilitation and Education Association Inc. in 2010.

Wildlife Rescue, Rehabilitation and Education Association Inc provides a grassroots, inclusive centre where the wider community can get involved and learn about wildlife, rescue, rehabilitation, and conservation. It provides opportunities for local volunteers, and national and international students of all ages and educational backgrounds. This opportunity offers the fundamental approach to learning which I was so fortunate to have experienced.

In receiving this award, I would like to acknowledge other various wildlife groups and individuals: Wildlife Preservation Society of Queensland Toowoomba Regional Branch, Queensland Wildlife Rehabilitation Council, Darling Downs Environment Council, Koala Conservation Project Working Group, Sonya Fardell, and lastly, the dedicated work and support from volunteers of Wildlife Rescue, Rehabilitation and Education Association Inc.

Top: Patricia LeeHong with her certificate and trophy and Rusty the koala (*Phascolarctos cinereus*).

2022 Community Wildlife Conservation Award

The Community Wildlife Conservation Award is awarded to a community group contributing to wildlife preservation in Australia.

The award for 2022 was presented to Snowy Mountains Wildlife Rescue LAOKO Inc of Berridale, New South Wales.

Snowy Mountains Wildlife Rescue LAOKO Inc, formed in 1988, is the second longest-running wildlife rescue group in New South Wales. It is a community organisation run entirely by volunteers caring for orphans, rehabilitating injured wildlife, and providing community education and training programs. Snowy Mountains Wildlife Rescue rescues injured and orphaned native fauna in the entire Snowy Monaro region. They have an emergency phone number operated 24 hours a day, 7 days a week, by volunteers.

2022 Community Conservation Award. L to R: Dr Julie Old, Lisa Petroff, and John Creighton.

Snowy Mountains Wildlife Rescue regularly provides information at community functions, markets, civic clubs, and seasonal events. They are also present at schools whenever they are invited. They provide regular training events for members of the public with or without membership.

They have a social media presence, newsletters, and a website, all providing valuable educational information. Some Snowy Mountains Wildlife Rescue members have substantial landholdings in which to release rehabilitated animals. No call for help from a public member is ignored, and all native animals are protected and cared for by Snowy Mountains Wildlife Rescue members. Snowy Mountains Wildlife Rescue has taken over 1,200 emergency calls for help from the public and had approximately 250 animals in care in the past twelve months with almost no government funding (except for $2,000 per year provided by NSW National Parks and Wildlife Service).

A committee manages the organisation, with five positions on the executive committee and eleven positions on the general committee. These volunteers work tirelessly and are devoted to the native fauna in the Snowy Monaro region.

They have had a long-standing role as a community group aiding species conservation. They dedicate enormous time and resources to rescuing and caring for native animals in need and are well deserving of the Community Wildlife Conservation Award.

Acceptance Speech from Snowy Mountains Wildlife Rescue LAOKO Inc

We accept this award with our deepest gratitude – thank you, Australian Wildlife Society.

We are a small volunteer rescue group in the heart of the Snowy Mountains in New South Wales, covering the entire Snowy Monaro Local Government Area. Our volunteers coordinate a phone line 24 hours a day, 7 days a week, to rescue, rehabilitate, and eventually release our local native wildlife.

NSW National Parks and Wildlife Services grant our license to rescue and rehabilitate native fauna. It regulates our rescues and rehabilitation of all animals to ensure they can be returned to their natural habitat.

The award and recognition are wonderful and greatly appreciated. The $5,000 will help us purchase and supply the unique marsupial milk powder for orphaned or injured joey kangaroos, wallabies, wombats, possums, and koalas we rescue yearly. Our average milk expense is at least $20,000 per year. We must continually fundraise or seek grants or donations for our group to survive.

Sadly, our peak season for rescues is winter, with the advent of snow season – when the influx of snow tourist traffic in our region can only be described as slightly chaotic! It seems everyone is in a hurry to make it to their ski holiday destination. Unfortunately, many of our native wildlife species are nocturnal or are active at night, dusk, and dawn. Many graze roadside and often fall victim to motor vehicle accidents.

Last year we received more than 1,200 calls to our 24-hour emergency phone number and rescued over 700 native injured or orphaned animals. Each animal was placed with a trained wildlife carer until it could be rehabilitated and released back into the wild.

Wombat joeys are in care for approximately two years before being released, and kangaroo and wallaby joeys stay in care for approximately ten months. The dedication our members exhibit to caring for and releasing native animals is tremendous, and they offer a considerable commitment to our native fauna.

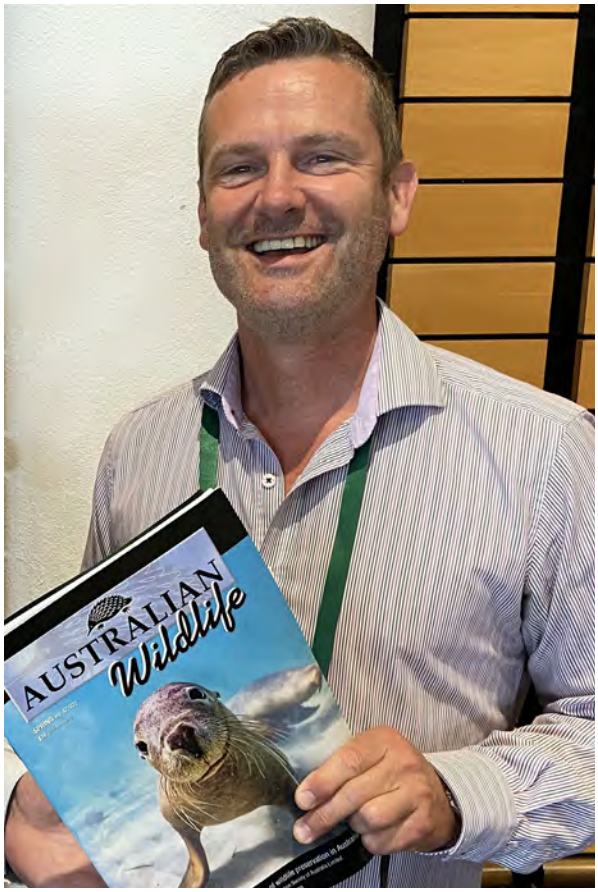
Once again, we sincerely thank the Australian Wildlife Society for their generosity and recognition of our wildlife rescue work.

L to R: Dr Robin Crisman, Dr Julie Old, Trevor Evans, Alison Williams, Catherine Williams, Patrick Medway AM, John Creighton, and Stephen Grabowski.

L to R: Dr Julie Old, Alison Williams, Catherine Williams, and Patrick Medway AM.

Dr Clive Williams OAM, in 2015, with his Medal of the Order of Australia for his services to psychology, conservation, and the environment.

Roll of Honour



Dr Al Glen was added to the Society's 2023 Roll of Honour for his outstanding and continued commitment to the Society and its Univeristy Research Grants.

Patrick Medway AM introducing the Roll of Honour to luncheon guests.

2022 Wildlife Rehabilitation Award

The Wildlife Rehabilitation Award is awarded to an individual or a wildlife conservation group contributing to the preservation of Australia's wildlife. The award is intended to acknowledge and commemorate the individuals or wildlife conservation groups working tirelessly to rescue, rehabilitate, and conserve Australia's native wildlife. Many people find the experience of rehabilitating native wildlife rewarding; however, it is time-consuming and can be very expensive.

The award for 2022 was presented to Quoin Turtle Rehabilitation Centre of Gladstone Harbour, Queensland.

Quoin Island Turtle Rehabilitation Centre is located on Quoin Island in Gladstone Harbour, the gateway to the Southern Great Barrier Reef. They are dedicated to the rescue and rehabilitation of critically endangered and endangered sea turtles.

2022 Wildlife Rehabilitation Award. L to R: Dr Julie Old, Kim Oudheusden, and Dr Robin Crisman.

Quoin Island Turtle Rehabilitation Centre opened in March 2012 and is the region's first sea turtle rehabilitation facility. They service Central Queensland, from Yeppoon to Agnes Water, about 300 km of coastline.

Sea turtles are constantly at risk of injury or illness. Environmental events like flooding and the constant threat of human interference, such as fishing, boating, and littering, heavily impact them. Each turtle requires an individual assessment and care program, with successful rehabilitation taking many months. The centre has a steady success rate of 72 percent, meaning most of the patients are rehabilitated and released back into the wild. Since its establishment, the centre has rehabilitated and released 236 sea turtles into the wild.

Of the 236 turtles taken in by Quoin Island Turtle Rehab Centre, 213 were green sea turtles (*Chelonia mydas*), 14 hawksbill sea turtles (*Eretmochelys imbricata*), 6 flatback sea turtles (*Natator depressus*) and 3 loggerhead sea turtles (*Caretta caretta*). All species are either endangered or critically endangered.

Acceptance Speech from Quoin Turtle Rehabilitation Centre

We are very grateful and honoured to receive this award. Our centre cares for sick and injured sea turtles 24 hours a day, 7 days a week. Like all wildlife organisations and carers, we purely do this for the animals, expecting nothing in return. To have our hard work recognised and acknowledged means a lot to us.

We opened our rehabilitation centre on 3 March 2012 in response to the large amounts of sea turtles stranded in our region due to flooding and a cyclone. These high rainfall events on land cause sediment to run into the ocean and cover sea grass, the primary food source for sea turtles. When turtles have used all their fat stores, they strand and are severely emaciated. It takes turtles, on average, three months in care with us to recover, and with a success rate of 72 percent, most turtles return to the ocean.

We are the only sea turtle rehabilitation centre in our region and still deal with the effects of flooding. Last year, we received triple the number of patients compared to 2012 when we started. This influx of patients in care resulted from two separate flooding events in our region.

Other significant problems sea turtles in our region face are boat strikes and fishing line entanglements. We are located in the Gladstone harbour, the gateway to the Southern Great Barrier Reef, which gets heavily marketed as a boating and fishing destination. Consequently, unfortunately, that comes at a cost to marine wildlife.

Our hope for the future is that human impact on innocent sea turtles due to negligence will be a thing of the past. For that reason, we also focus on educating the public. We set up our stall at several local events, write educational posts on social media platforms, and have schools visit our centre regularly. We educate people about the impacts of plastic, fishing, and boating on sea turtles. We also teach them how to reduce their plastic consumption and go responsible fishing and boating. The children are very receptive to this information and go home and teach their parents.

Fortunately, we have a steady base of about one hundred volunteers who respond to strandings up to 400 kilometres away, help us transport turtles across the region, prepare food, feed the turtles, and clean the tanks and pool. We also have three to four volunteers that live on-site at any time to help provide around-the-clock patient care. Without the help of volunteers, our centre would not be as successful as it is.

This award is an acknowledgement to all the volunteers, local businesses, schools, and individuals who support us, but especially to the person who makes it all possible: the very generous Bob McCosker, who built our centre and still pays all the bills.

Thank you, Australian Wildlife Society, for this award and the recognition of our wildlife conservation work. In accepting the award, we acknowledge all the other organisations and individuals across Australia working tirelessly to rescue and rehabilitate wildlife. Thank you for all you do, and keep up the excellent work!

2022 Youth Conservation Award

The youth of Australia make significant contributions to wildlife conservation through innovative projects and ideas. It is young people who can drive lasting and sustainable change, become the next ambassadors in wildlife conservation, and, hopefully, the successors of the current Board of the Australian Wildlife Society. We aim to inspire young people to have a stake in wildlife conservation by rewarding and recognising their efforts.

The award for 2022 was presented to Talitha Huston from Gidgegannup, Western Australia.

Talitha wrote a bird book called *Birds of the Perth Hills*, complete with hand-painted maps, all her own photographs, her own 'skittish rating', and photography tips for each bird. The book was received well because there is no bird book for the Perth Hills. She sold 120 copies at the Blue Sky Festival launch in Mundaring, Western Australia, and, within one week, had sold two hundred copies. To date, Talitha has sold over 6,000 copies and donated the proceeds to a wildlife charity in her region. It is impressive that Talitha created the book while still at school, without her parents knowing she had been doing it for over two years.

Talitha has also made a short video on the birds of the Perth Hills and speaks to different groups, including school students, to inspire them to participate in the conservation of native wildlife – a remarkable achievement by a young conservationist worthy of recognition of the Society's Youth Conservation Award for 2022.

Acceptance Speech from Talitha Huston

Thank you so much for this award. When I was fourteen years old, walking around the bush and taking photos of birds, I did not expect to receive such recognition and an outstanding award.

I have always been interested in nature and photography. I received my first camera when I was three years old. Because I was home-schooled through primary school, I had the opportunity to spend a lot of time outside in nature, and I think that was a slight head-start. I took lots of photos and came up with the idea of creating a book. I thought, maybe this is how I can have an impact at this age. Living in the Perth Hills, you take it for granted, having all the birds around you, and it is easy to get used to it. But having the opportunity to get out in nature and take photos, I realised how special our biodiversity is. I started piecing together my book when I was fourteen years old, while still at school, and finished I when I was sixteen. Once the book was finished, I presented it to my parents and said, "Do you think this could be published?"

After going through the technical process, two hundred copies of *Birds of the Perth Hills* were printed, and after one week, they sold out. It was great knowing that people were interested in our local birdlife. Since then, I have sold over 6,000 copies. I wanted to do it correctly, so the book was printed on recycled paper using vegetable ink. I have also donated over $4,500 to a local wildlife charity in Western Australia. The book has successfully been distributed to ninety-five shops and outlets around Perth and the south-west of Perth.

I have been privileged to conduct five radio interviews and twenty-five presentations to community groups and schools about the birds of Perth Hills, encouraging and motivating the community to get out there and follow their passions. Through these presentations, I have conveyed the importance of bird and environmental conservation to around 750 adults and children.

The environment is the most critical issue right now and will always be. I think it is easy to get overwhelmed knowing how to protect our environment. You can worry about many things. It is also easy to become complacent and not realise how beautiful and unique the birds and the Perth Hills environment are. I have always thought the environment should be our number one focus, and I am so grateful to be able to have an impact. I hope to get people to take more interest in the environment through my book and therefore want to conserve it.

Before enrolling in university, I wanted to see more of the world. I decided to take a year off and work along the east coast of Australia before travelling overseas for the last six months of the year. In 2024, I plan on studying film and the environment, with the dream of producing nature documentaries and hopefully becoming the next Sir David Attenborough. I am excited to see what the future holds.

Top: 2022 Youth Conservation Award. L to R: Dr Julie Old, Wayne Greenwood, and Talitha Huston.

Australian Wildlife Society (ACN 134 808 790)

President's
ANNUAL REPORT FOR 2022

A Year in Review

The past year has been challenging, with COVID-19 taking a toll on the economy again in 2022, and floods impacting Queensland and New South Wales. The Society was fortunate to be able to continue protecting Australia's precious wildlife during these challenging times. Director Ken Mason retired after ten years on the Board of Directors, Dr Hayley Stannard took on the role of Treasurer, and we welcomed a new Project Officer, Kate Schmahl, to the team.

With great sadness, one of our lifetime members and 2022 Roll of Honour recipients, Dr Clive Williams OAM, passed away on 4 September 2022. He was ninety years old. Clive joined the Society in 1986 and served on the Board of Directors for over thirty years. Clive significantly contributed to our major wildlife conservation projects, including Towra Point Nature Reserve rehabilitation and restoration work for migratory wading birds, Rockdale Wetland Corridor restoration, and National Tree Day programs. Clive played a substantial role in judging the Society's annual awards. We honour Clive's dedication and contribution to wildlife conservation.

One of the highlights of the year was presenting our four annual awards – the **Serventy Conservation Award, Community Wildlife Conservation Award, Wildlife Rehabilitation Award, and Youth Conservation Award.** We are aware of the wonderful work conducted by wildlife conservation organisations and volunteers. We know that many organisations and thousands of volunteers are working tirelessly to save Australia's threatened wildlife and the habitats in which they live. We are proud to acknowledge and reward these individuals and wildlife conservation groups and encourage them to continue their wildlife conservation work on behalf of the community.

The Society established a Roll of Honour to highlight past luminaries who have made a significant contribution to the longevity and success of the Australian Wildlife Society and who are respected in the wider conservation field for their contribution to the preservation of Australian wildlife. The luminaries added to the Roll of Honour were: Mr Ken Mason, Dr Clive Williams OAM, Mrs Suzanne Medway AM, and Dr Richard Mason.

Another highlight was the awarding of our ten University Research Grants offered to honours or postgraduate students at Australian universities. This year, the Society increased the value of its annual University Research Grants. The Australian Wildlife Society's University Research Grants commenced in 2005 with ten $1,000 grants awarded to honours and postgraduate students for research projects of direct relevance to the conservation of Australian wildlife – flora or fauna. In 2016, the grants were increased to ten $1,500 grants. This year, the grant amount doubled to ten $3,000 grants awarded to honours and postgraduate students at Australian universities – totalling $30,000 each year. We also awarded three special scholarships at the University of Technology Sydney, the University of New South Wales, and the University of Newcastle. The Society is proud to support the next generation of young Australians and their research on conserving Australia's biodiversity for future generations.

Australian Wildlife Society
Conserving Australia's Wildlife since 1909

Our Mission: Australian Wildlife Society, founded in 1909, is a national not-for-profit wildlife conservation organisation. We are dedicated to protecting Australian wildlife (flora and fauna) through national environmental education, public awareness, advocacy, hands-on wildlife conservation work, and community involvement. To fulfil part of our mission, we introduced the University Research Grants Scheme in 2005. Since its inception, we have awarded over 175 grants to very worthy recipients. In the future, we plan to steadily increase the dollar amount of the grants subject to further donations, which are always welcome.

Australian Wildlife Magazine

The magazine has a proud record and history and has proved extremely popular amongst all our members. The magazine's readership has spread across Australia and internationally, carrying a strong message of environmental education, wildlife conservation issues, and the preservation of native wildlife. We invite members to distribute copies to family and friends and invite them to become members.

E-newsletter

Our monthly e-newsletter, *Wildlife Wisdom,* has also proven extremely popular with our members. The content and quality of the newsletters have developed overtime. It continues to feature the vital work of the Society and news from our members. We encourage members to forward *Wildlife Wisdom* to their family, friends, and networks to help spread the important message of wildlife conservation across Australia.

Website

Our 2022 wildlife of the year was also featured – Australia's amphibians. Changes to the structure and layout will be an ongoing process as we continue to update our website to make it more user-friendly.

Social Media

We are active on five social media platforms (Facebook, Twitter, Instagram, LinkedIn, and YouTube). We aim to keep our followers up to date with important actions of the Society and the collective work being promoted nationally. We reached fourteen thousand followers on Instagram. Our followers continue to grow each month, and we thank you for your support.

Membership

As of 31 December 2022, we had 595 members in total. We had 120 Individual Members, 13 Family Members, 46 Concession Members, 12 Corporate Members, 33 E-Mag Members, 14 Associate Members, 24 Life Members, 20 Complimentary Members, and 313 Student Members. Please consider becoming a member of the Society to help protect Australia's native wildlife and natural habitats. Student membership is free.

Wildlife Science Ecology Research Scholarships

The **University Technology Sydney Wildlife Ecology Research Scholarship** was awarded to UTS School of Life Sciences PhD student, Mitchell Brennan, for his research on 'Aquarium bred and released seahorses as a conservation method for the endangered White's Seahorse, *Hippocampus whitei*.'

The **University of New South Wales Wildlife Ecology Research Scholarship** was awarded to NSW Centre for Ecosystem Science PhD student, Brendan Alting, for his research on 'Multi-species dynamics in a mixed-use coastal ecosystem-understanding how eutherian, marsupial, and reptilian predators interact.'

The **University of Newcastle Wildlife Ecology Research Scholarship** was awarded to UON School of Environmental and Life Sciences PhD Candidate, Louise Williams, for her research on 'The movement, foraging ecology, and health of migratory shorebirds in the Hunter and Port Stephens estuaries.'

Conservation Group Grants

The Society carefully considers all requests for grants from conservation groups that emphasise wildlife and habitat preservation.

This year, we were fortunate to be able to offer four Conservation Group Grants:

Mornington Peninsula Koala

Funds assisted Mornington Peninsula Koala Conservation Landcare Group in maintaining and increasing available habitat for Mornington Peninsula's koalas through tree planting and raising community awareness and education, particularly around road safety.

Adelaide and Hills Koala Rescue

Funds assisted Adelaide and Hills Koala Rescue in purchasing Makita fans and battery packs to keep koalas cool whilst in rehabilitation care.

Native Bee Conservation

Funds assisted Dr Kit Prendergast with her research on native bee hotels, and publishing a scientific paper and educational booklet on native bee conservation.

Camden Wombats Landcare

Funds assisted Camden Wombats Landcare in purchasing new wildlife cameras and moxidectin for mange treatment of wombats living in Camden, New South Wales.

Wildlife Photographic Competition

The annual judges' prize of $1,000 was won by George Madani for their photograph of an eastern pygmy possum (*Cercartetus nanus*). Eastern pygmy possums are tiny and appropriately whiskered for one primary purpose – raiding native inflorescences to get at that ambrosial sugary goodness!

Eastern pygmy possum (*Cercartetus nanus*). Image: George Madani.

Helmeted honeyeater (*Lichenostomus melanops cassidix*). Image: Kynan Tang.

The annual people's choice prize of $500 was won by Kynan Tang for their photograph of a helmeted honeyeater (*Lichenostomus melanops cassidix*). Acting as the bird emblem for Victoria, the beautiful, helmeted honeyeater is Critically Endangered, with fewer than two hundred individuals remaining in the wild.

Annual General Meeting and President's Luncheon

The 113th Annual General Meeting of the Wildlife Preservation Society of Australia Limited, trading as the Australian Wildlife Society, was held on Wednesday, 2 March 2022, at Castlereagh Boutique Hotel, Sydney, New South Wales, and attended by an enthusiastic group of supporters. The National Office Manager, Megan Fabian, welcomed the guests and introduced the Chief Executive Officer, Patrick Medway AM, who proposed a toast to 113 years of wildlife conservation by the Society. Patrick introduced our guest speaker for 2022, Dr Jodi Rowley, the Curator of Amphibian and Reptile Conservation Biology at the Australian Museum, who spoke about her research on Australia's amphibians. The Society was pleased to announce the winners of its prestigious awards for 2021 during the luncheon proceedings.

AGM Attendees: L to R: Roz Holme OAM, Kev Holme, Dr Robin Crisman, Philip Sansom, Brian Scarsbrick AM, Dr Julie Old, Ken Mason, Maureen Christie, Dr Clive Williams OAM, and Patrick Medway AM.

L to R: President Dr Julie Old presenting Director Ken Mason with his Roll of Honour Certificate.

Guest speaker, Dr Jodi Rowley, gave a presentation on Australia's amphibians.

L to R: President Dr Julie Old, Ken Mason, Suzanne Medway AM, Dr Clive Williams OAM, Patrick Medway AM.

Wildlife Conservation Awards

The winner of the **Serventy Conservation Award** was Maureen Christie of Carpenter Rocks, South Australia. Maureen has devoted herself to wildlife conservation work for more than twenty-seven years. Her accomplishments include initiating a plan to trap feral cats at known roost sites of the Critically Endangered, orange-bellied parrot (*Neophema chrysogaster*), being active in shorebird counts in south-east South Australia, helping to establish the Friends of Shorebirds SE, and she has been the Secretary/Treasurer of the Friends of Shorebirds SE since its inception. Maureen has coordinated regular monitoring of shorebird nesting sites and educated the public on the importance of keeping dogs on a leash, which led to the first successful hatching and fledging of the Vulnerable little tern (*Sterna albifrons*). She has also shaped South Australia's fisheries policy to protect its shorebirds.

L to R: Maureen Christie, Dr Julie Old, and Patrick Medway AM.

The winner of the **Community Wildlife Conservation Award** was the Wombat Protection Society of Australia, Tomerong, New South Wales. This group has operated for more than twenty years to protect wombats. Through its regular workshops and seminars, it educates schools, communities, and wildlife groups on the conservation and care of wombats. It has partnered with several universities to support research into wombats and their conservation. One of its significant achievements has been developing the burrow flap method to treat wombats with mange. Wombat Protection Society of Australia provides burrow flaps to interested groups and constantly researches the best ways to treat mange. Its education programs encourage people to coexist with wombats and not view them as pests.

The winner of the **Wildlife Rehabilitation Award** was Wildlife Rescue Australia, Woolgoolga, New South Wales. Wildlife Rescue Australia is an Australia-wide, specialist volunteer organisation dedicated to rescuing native animals – Australia's first truly national twenty-four hours a day, seven-days-a-week wildlife rescue phone service. Wildlife Rescue Australia operates an emergency twenty-four-hour call centre staffed by home-based phone coordinators trained to assist in all aspects of animal rescues. Wildlife Rescue Australia has a considerable impact on the rehabilitation of native wildlife. The dedication of its founders can be seen in the technological development and the enormous volunteer hours that have been put into creating an easy-to-use efficient wildlife rescue system. Winning the Wildlife Rehabilitation Award will help promote this innovative and nationally coordinated wildlife rescue service that saves the lives of thousands of vulnerable native species in need of assistance.

L to R: Shirley Lack, Dr Julie Old, and Patrick Medway AM.

The winner of the **Youth Conservation Award** was Nabilah Chowdhury of Ashfield, New South Wales. Nabilah works tirelessly for a sustainable future for the next generation while participating in other extra-curricular activities. Nabilah is part of Taronga's Youth at the Zoo program. She was the School Strike 4 Climate organiser in Sydney and is part of the United Nations Youth Delegate Programme. Her most significant personal achievement was stopping Samsung from funding the Adani coal mine and acting as the host of the Sydney school strike in May 2021, where over 10,000 people were in attendance.

L to R: Brian Scarsbrick AM, Coral Johnson, Dianne Ward, Dr Julie Old, and Patrick Medway AM.

L to R: Nabilah Chowdhury, Dr Julie Old, Dr Robin Crisman, and Patrick Medway AM.

University Research Grants Scheme

The Australian Wildlife Society's University Research Grants are offered to honours or postgraduate students at Australian universities. Grants are available for research projects of direct relevance to the conservation of Australian wildlife (flora or fauna). Each year, ten grants of $3,000 are awarded. The winners for 2022 were:

Adam Yaney-Keller
School of Biological Sciences, Monash University

Project Title: Disentangling the long-term effects of marine debris on Australian fur seals.

Javiera Olivares-Rojas
School of Biological Sciences, Monash University

Project Title: What is required to recover Australian threatened ecosystems?

Claire Butler
Institute of Marine and Antarctic Studies, University of Tasmania

Project Title: Comparative effects of ocean warming on kelp-herbivore interactions on Australian temperate reefs.

Jessica Keem
School of Ecosystem and Forest Sciences, University of Melbourne

Project Title: Refuges are vital for the survival and persistence of fauna in the wake of disturbance events.

Elise Oakman
School of Life and Environmental Sciences, University of Sydney

Project Title: Does restoration return insect pollinators to our endangered ecosystems?

Nicholas MacDonald
School of Life and Environmental Sciences, Deakin University

Project Title: Investigation of the immune response of the Tasmanian devil (*Sarcophilus harrisii*) to cancer and altered environmental conditions.

Erica Fonseca
School of Biological Sciences, Queensland University of Technology

Project Title: Social-ecological drivers and outcomes of conservation in private lands.

Nicole Lynch
School of Life and Environmental Sciences, University of Sydney

Project Title: Spot the quoll: Tactical use of olfactory information to improve detection and conservation of a rare, native carnivore.

Jaclyn Harris
School of Biological Sciences, Monash University

Project Title: Fire and Reptiles: An investigation into threatening processes and potential management solutions.

Shawn Scott
UniSA STEM, University of South Australia

Project Title: Post-fire population recovery and chytrid occurrence in frogs of the Mount Lofty Ranges, South Australia.

Key Projects

Platypus Alliance

We continued our efforts on a national scale to protect semi-aquatic air-breathing species, such as the platypus. We wrote several letters advocating that platypus be listed as a threatened species under Australia's environmental legislation, opera house nets be removed from circulation, educational signs be installed along waterways where platypus are present, and additional funding be allocated to research and monitoring platypus populations. Unfortunately, platypus and rakali are still reported trapped in opera house nets.

Snip Rings for Wildlife

The Society continued its efforts to educate the community about the negative impact of ring-shaped items on native wildlife and the actions they can implement to help prevent wildlife from falling victim to the risk of entanglement and death. The Society also commented on the *Inquiry into Plastic Pollution in Australia's Oceans and Waterways,* with our focus being action on plastic ring-shaped items, such as plastic rings and dome-shaped plastic lids. The Society is committed to raising awareness and advocating to protect native wildlife from the threat of plastic ring-shaped items as part of its SnipRingsforWildlife campaign.

Australian Wildlife Week

Australian Wildlife Week is celebrated across the country during the first week of October to encourage a positive relationship between humanity and nature. We hope to raise awareness of wildlife conservation issues across Australia and inspire all Australians to explore and develop a deeper understanding of these issues, gain the necessary skills to make informed decisions, and implement wildlife conservation action. This year, we hosted an Art Display, Online Webinar, and Video Competition to celebrate Australian Wildlife Week. A recording of the webinar is available on our website and YouTube channel.

Colouring-in Competition

The Australian Wildlife Society colouring-in competition is designed to inspire the younger generation to learn about Australia's native wildlife via visual art and creativity. We hope the experience allows participants to explore and develop a deeper understanding of environmental and wildlife-related issues. This year, we received 168 entries. All entries were stunning. Narrowing them down to three winners in each state and territory was tough. Thank you to Dr Jai Green-Barber for drawing our beautiful 2022 Wildlife of the Year – Australia's amphibians.

Aussie Ark Visit

As part of our support for conserving the broad-toothed rat (*Mastacomys fuscus*), the Society made a trip to the Australian Reptile Park and Aussie Ark to see the broad-toothed rat conservation project first-hand. We were welcomed by Tim Faulkner, Director, Owner, and General Manager. Then, we were taken on a tour of the Aussie Ark facilities by Hayley Shute, Curator and Conservation Manager, and Jo Runciman, the new Director of Partnerships and Sponsorship. We were taken behind the scenes, where we saw several conservation projects. We were excited to see the broad-toothed rat enclosures where the board-toothed rats are set to be temporarily housed before being released to a newly created wetland sanctuary at Aussie Ark.

Webinars, Conferences, and Presentations

The Society strives for continuous improvement and works to develop and improve its impact on wildlife conservation outcomes. The Society attended and contributed to several important wildlife conservation conferences, webinars, and meetings. We participated in the annual conference held by the Nature Conservation Council of New South Wales and discussed important wildlife conservation issues with key stakeholders in the field. We attended a special online seminar hosted by the Invasive Species Council, which addressed the impacts of feral horses in Kosciuszko National Park, and the actions that must be implemented to help protect native species and fragile habitats. We attended the Australasian Wildlife Management Society Conference with various topics and speakers. We also participated in the Australian Conservation Foundation's 2021 State of the Environment Report briefing, to name a few.

Donations, Bequests, and Gifts

We continued with our bequest program during the year to encourage donors to support our wildlife conservation work across Australia. We are incredibly grateful to all our members for considering using the bequest program to help the Society with its long-term planning. Do not hesitate to contact the National Office for more details on the bequest program and how to join 'Friends of the Australian Wildlife Society' to make a regular monthly donation to support our national wildlife conservation efforts and programs. We are a tax-deductible gift recipient registered with the Australian Charities and Not-for-profit Commission. Our public fund is listed on the Register of Environmental Organisations under item 6.1.1 of subsection 30-55(1) of the *Income Tax Assessment Act 1997.*

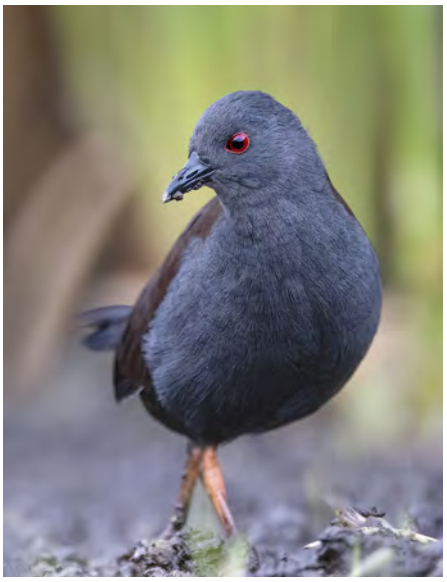
Financial Report Summary

The Society's Directors, Finance and Investment Committee, and the Public Fund Committee continue to exercise tight and effective control over the Society's finances, reviewing and adjusting the investment portfolio as required throughout the year.

A Special Thank You to all Members

This will mark our 114th anniversary. We thank you all most sincerely for your tremendous support and continued dedication and commitment to helping the Society preserve and protect Australia's native wildlife and natural ecosystems for future generations. I wish every member of the Society a happy, healthy, and prosperous 2023.

Dr Julie Old
PRESIDENT
31 December 2022



Saving a Booming, Marvellous Wetland

Georgina Steytler

"This is one of the best wetlands I have ever seen", gushed Michael Morcombe AM as he parted the reeds and stepped out onto the edge of another expansive mudflat. Michael would know, having travelled the length and breadth of Australia while writing and publishing over thirty-five books on Australian flora, fauna, and landscapes, including a ***Field Guide to Australian Birds.***

'Eungedup wetland', as it is known, is an area of private property situated mid-way between Albany and Denmark on Western Australia's south coast ('Eungedup' is the local Menang-Noongar name for the area). The wetland is, in fact, three adjoining properties, comprising 103 hectares which are part of a nearby and broader wetland complex that includes the Wilson Inlet, a wetland of national importance. The properties were routinely drained and planted with potatoes until a few years ago. However, since the cessation of farming, nature has rebounded in a verdant patchwork of grasses, reed beds (typha), open water pools (deep and shallow) and mudflats. In other words, the farming property has become a bird oasis with over ninety bird species identified to date, including over ten species of waterfowl, twelve species of raptor, and a slew of migratory shorebirds. It is also home to a plethora of non-feathered fauna, including rakali (*Hydromys chrysogaster*), south-western snake-necked turtle (*Chelodina colliei*), and the critically endangered western ring-tail possum (*Pseudocheirus peregrinus occidentalis*).

But it is the big, beautiful, booming residents – the Australasian bittern (*Botaurus poiciloptilus*) or bunyip bird – that first brought the properties to the attention of local scientists, nature lovers, and conservationists. They rallied together, and the campaign to buy Eungedup wetland from the farmer began in 2022.

Most Australians know of bunyips as mythological creatures that made deep, booming noises around swamps in the murky light of dawn and dusk. The maker of the noises is, in fact, the Australasian bittern, a large, stocky, thick-necked heron-like bird that occurs mainly in freshwater wetlands in the temperate south-east and south-west of Australia.

Top left: A spotless crake (Zapornia tabuensis) at Eungedup wetland, Western Australia. Wherever there is a mudflat, you will find several small, shy, and endearing crakes. Image: Georgina Steytler.

Top right: The Eungedup wetland comprises of three properties. This aerial photograph shows the third property with the coastal dunes in the background. Image: Georgina Steytler.

Bottom left: In summer, dozens of migratory shorebirds feed on the exposed mudflats, such as the wood sandpiper (Tringa glareola). Image: Georgina Steytler.

Bottom middle: White-faced herons (Egretta novaehollandiae) love fishing in the shallow waters. Image: Georgina Steytler.

Bottom right: Cormorants, like this little pied cormorant (Microcarbo melanoleucos), are one of the most common residents of the wetland. Image: Georgina Steytler.

An Australasian Bittern (Botaurus poiciloptilus) in flight taking off from the wetland. Image: Andrew Silcock.

Since the 1970s, the number of Australasian bitterns is thought to have declined by over 70 percent. The global population is estimated to be fewer than 2,500 mature individuals and decreasing. The Western Australian bittern population is estimated to be fewer than 150 mature individuals. Not surprisingly, the bittern is listed as Endangered under the *Environment Protection and Biodiversity Conservation Act 1999*.

The decline of bittern populations has been primarily driven by a reduction in the extent and quality of their habitat throughout southern Australia following the drainage of swamps for agriculture and development (south-western Australia has lost an estimated 70-80 percent of its wetlands). However, the cumulative impacts of climate variability and change (e.g., reduced rainfall), predation by feral animals (especially foxes), and reduced water quality as a result of increased salinity, acidification, siltation and pollution have also contributed to their decline.

Sightings of Australasian bitterns on the private property in 2020 led BirdLife Australia and the Department of Biodiversity, Conservation and Attractions to make a concerted effort to assess their status within this wetland complex. They discovered that the Eungedup wetlands hosted a breeding population of Australasian bitterns and represented up to 10 percent of the extant breeding population in Western Australia. During the 2020-2021 breeding season, four to six male Australasian bitterns were heard calling at the wetland.

Australasian bitterns favour wetlands with dense vegetation, from 0.5 to 3.5 m in height, where they forage in still, shallow water up to 0.3 m deep and often at the edges of pools or waterways. With the exception of a couple of deep-water pools and the deep drain that my camera and I inadvertently took a swim in, most of the Eungedup wetland is made up of raised causeways edging fields of knee-deep water.

Thickets of typha and mudflats that become exposed as the wetland dries out in summer make this ideal feeding habitat for the breeding bitterns and the migratory shorebirds that visit during this period. Common greenshanks (*Tringa nebularia*), sharp-tailed sandpipers (*Calidris acuminata*), pectoral sandpipers (*Calidris melanotos*), marsh sandpipers (*Tringa stagnatilis*), and wood sandpipers (*Tringa glareola*) are frequently observed. On several occasions, more than forty wood sandpipers have been sighted.

Significantly, owing to its previous use as farmland, the wetland also has an established drainage and pumping system that, as the climate dries, will allow for water levels to be maintained in favour of the breeding bitterns; the only wetland on the south coast where this can be done.

Dr Stephen Garnett, Professor of Conservation and Sustainable Livelihoods at Charles Darwin University, noted, "*The Eungedup Wetlands give one hope for the future. As south-western Australia dries due to climate change, such rare, magnificent wetlands become critical to the conservation of birds like the Australasian Bittern*".

After it became apparent the owner was prepared to sell the three properties comprising the wetland (for $505,000), a group of dedicated individuals and organisations (including Gondwana Link, BirdLife Australia, Denmark Bird Group, and the Conservation Council of Western Australia) banded together and formulated a plan to raise the money. We are incredibly fortunate that the Wilson Inlet Catchment Committee was keen to help and agreed to take on the ongoing management of the wetlands. Wilson Inlet Catchment Committee, an incorporated charity with Deductible Gift Recipient status, is already implementing conservation works on adjacent properties and has extensive expertise in native flora rehabilitation and invasive species control. The management group will look to place a covenant on the wetlands so their protection is guaranteed forever, and they can never be cleared of native vegetation.

Ongoing management will include maintaining the highly diverse habitat (deep pools, shallow water, mud flats) required for Australasian bitterns and other waterbirds, monitoring wildlife populations through surveys, camera traps and audio recording devices, analysing the water quality of the wetlands annually for pH, salinity and nutrients, controlling foxes, cats and pigs on the properties, revegetating any cleared areas within the wetland buffers with local native plant species, and minimising disturbances from human activities.

We have all our ducks lined up. Your financial assistance is all we need to secure and manage the 103 hectares of future-proofed, critical Australasian bittern (and other waterbird) habitat. So far, we have raised just over $140,000. We have until 31 December 2023 to raise the remaining $365,000. To learn more or to donate, visit the Wilson Inlet Catchment Committee website and click 'donate' at the top. Alternatively, please get in touch with Shaun Ossinger at info@wicc.org.au or contact Georgina (me) at wildandendangered@gmail.com

Please help us save these wetlands and give generously. You never know; one day, you may find yourself nestled amongst the reeds listening to the honks of black swans, grunts of swamphens, mournful wee-ees of red-eared firetails, and the occasional deep, resonant boom of an Australasian bittern.

Every dusk, large rafts of ibis and spoonbills fly into the wetland to roost in the trees. Image: Georgina Steytler.

A juvenile Australasian Bittern (Botaurus poiciloptilus) moving through the wetland, low to the ground. Image: Andrew Silcock.

A panoramic image of the wetland showing the extent and variability of the habitat. Since the cessation of farming several years ago, bulrushes (typha) have reclaimed the wetland, providing vital habitat for the Australasian bittern (Botaurus poiciloptilus), amongst others. Image: Georgina Steytler.

Wildlife Ecology
Research Scholarship

The Australian Wildlife Society Wildlife Ecology Research Scholarship is open to postgraduate research students from three Australian universities undertaking a research project that is of direct relevance to the conservation of Australia's native wildlife.

Scholarships are valued at $5,000 for one year.

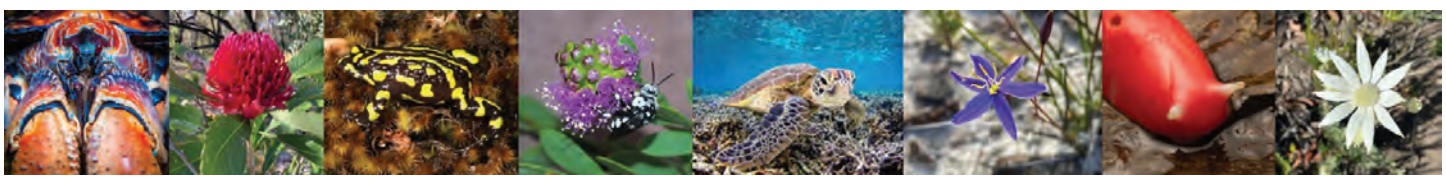
HOW TO APPLY
aws.org.au/scholarships/

APPLICATIONS CLOSE
31 May each year

UNSW SYDNEY

UTS UNIVERSITY OF TECHNOLOGY SYDNEY

THE UNIVERSITY OF NEWCASTLE AUSTRALIA



Australia's Amazing Insects

Prof. Russell Bonduriansky

Arriving in Australia for the first time many years ago as a young entomologist, I felt like a kid stepping into a giant candy shop. Astonishing creatures lurked and scuttled all around me, most of them still entirely unstudied by entomologists, and many still lacking even a scientific name. I could not wait to start exploring this mysterious micro-world.

Having devoted the past eighteen years to the study of Australia's native insects, I continue to be amazed and surprised by Australia's insect biodiversity. Although often overlooked because of their small size, these wonderful, complex animals have enormous importance for Australian ecosystems. They also offer valuable opportunities for scientific discovery.

In virtually every terrestrial and freshwater ecosystem, insects form an essential part of food webs and play important roles in many ecological interactions. While we might often wish for some insects (like mosquitos or bush flies) to disappear, many other animals feed on insects, and many plants – including some of our key crops – rely on them for pollination. If insects were to disappear, many ecosystems would surely be altered beyond recognition or would collapse entirely.

For example, flies provide food for small birds, mammals, lizards, and frogs, while tiny, stingless native bees pollinate many native plants. Ants – diverse and ubiquitous throughout Australia – hunt other small animals and clean up carrion. Termites (which are tiny, social cockroaches) break down vast quantities of dead wood. Leaf-eating insects like caterpillars process mega-tons of vegetation every day, and tiny springtails and midges teem in the soil.

Insects also have great practical importance. Insect pollinators play vital roles in modern crop production. But insects themselves have provided an important food source for Indigenous Australians for thousands of years, and some insects (like mealworm beetles and soldier flies) have the potential to provide a sustainable source of food for the world's growing population today. Insects could even help us deal with waste: some beetles and moths can digest materials like Styrofoam and cellulose and have the potential to play an essential role in the recycling of these materials.

While the ecological and economic importance of insects are difficult to overstate, so is their scientific importance. Most people do not realise how much of what we know about biology comes from research on insects. The tiny vinegar fly (*Drosophila melanogaster*) has been the workhorse of genetics for over

Top left: Large Neriid males (*Telostylinus angusticollis*) are very aggressive and sometimes engage in fierce battles for control of territories on rotting tree bark. The males strike each other with their elongated antennae, heads, and forelegs. Image: Russell Bonduriansky.

Top right: A different Neriid species occurs in far-north Queensland, where they breed on rotting fruit. This *Telostylinus lineolatus* pair is mating on a flower. Image: Russell Bonduriansky.

A remarkably camouflaged female leaf insect (*Phyllium monteithi*), native to the Far North Queensland rainforest. Image: Russell Bonduriansky.

a century and continues to yield new insights into how genes work. Research on *Drosophila* has revealed that all complex animals – a group that includes insects and ourselves – develop and function in much the same way. The same genes initiate the development of complex organs like eyes and brains and shape many aspects of the body structure in both insects and mammals – a legacy of our shared evolutionary history. Consequently, research on insects can tell us a great deal about ourselves.

But while all complex animals are similar in many ways, some species are beneficial for research on specific questions because of their unique ecology, physiology or behaviour, and a reason why Australian insects are so valuable to science.

For example, Australia has many native species of *Drosophila*. Several of these provide important insights into genetic variation and evolution in natural populations, including the potential for wild animals to adapt to climate change. Australian insects have also yielded surprising and counter-intuitive observations and provided textbook examples of important biological principles.

Take the jewel beetle (*Julodimorpha saundersii*), native to parts of the outback and coastal Western Australia. Male jewel beetles are irresistibly attracted to discarded beer bottles, whose colour and shape resemble (to the eye of a male beetle) an enormous, super-fecund female. This odd behaviour has provided an iconic example of a super-stimulus.

Neriid flies (*Telostylinus angusticollis*) aggregate and breed on rotting tree bark in coastal New South Wales and southern Queensland. These flies can also be spotted on compost in urban backyards. Image: Russell Bonduriansky.

Then there is the mountain katydid (*Acripeza reticulata*). This species has an amazing startle display that has become a key example of anti-predator behaviour. Research by Kate Umbers and colleagues at Western Sydney University is exploring the evolution and ecology of this strategy.

Or consider the tiny Zeuss bug (*Phoreticovelia disparata*) of far-north Queensland. In many insect species, males attract females with 'nuptial gifts' of food, such as nutritious glandular secretions or prey items. But Zeuss bugs have furnished the only known example of a role reversal involving a nuptial gift from females to males. Research on the evolution of such unusual behaviours and reproductive strategies can yield insights that would otherwise be difficult to achieve.

In my lab at the University of New South Wales, my students and I study a large, beautiful insect – the stilt-legged fly (*Telostylinus angusticollis*). This species (a member of the family Neriidae) is native to coastal New South Wales and southern Queensland and very common in and around Sydney. It naturally aggregates and breeds on the rotting bark of *Acacia longifolia* trees and the introduced 'coral tree', but it can also be seen on compost in urban backyards. Despite its abundance and large body size, almost nothing was known about its biology until we began to study it.

Neriid flies turned out to be extremely useful for understanding how environmental factors such as diet can influence development. The flies' growth

Several male stick insects (*Megacrania batesii*) jostling for position around a female on a *Pandanus* sp. host plant in Far North Queensland. Image: Russell Bonduriansky.

Native *Drosophila* aggregating on *Pandanus* sp. fruit keys in far-north Queensland. A much larger Neriid fly (*Telostylinus lineolatus*) towers above them. Image: Russell Bonduriansky.

A stick insect is individually marked as part of a mark-recapture study. Image: Russell Bonduriansky.

Male Neriid flies (*Telostylinus angusticollis*) compete over a female as she lays eggs into tree bark in Sydney. Image: Russell Bonduriansky.

A stick insect (*Megacrania batesii*) with an engorged biting midge on its thorax. Image: Russell Bonduriansky.

rate, the development of sex-specific traits (such as the enlarged heads, antennae and forelegs used by males as weapons in their spectacular battles over territory), their behaviour, and even their rate of ageing, are all strongly influenced by their early-life nutritional environment. We also discovered that some of these environmental effects are transmitted across generations via effects on offspring development, providing new insights into trait inheritance.

We have recently started working on another fascinating group – the Australian stick and leaf insects (Phasmatodea). These large, spectacular insects are hyper-diverse and ecologically important in Australia, but surprisingly little research has been done on this group. Indeed, Australia's largest stick insect – the Gargantuan stick insect (*Ctenomorpha gargantua*), which grows to well over a half-meter in length – was only recognised and named by entomologists a few years ago. My students and I are using other (slightly more compact) stick insect species to research their unusual reproductive biology. Many stick insects belong to the tiny minority of animals endowed with the ability to switch between sexual and asexual reproduction (parthenogenesis). We are exploring the evolutionary and ecological implications of this unique ability.

So much is left to discover. I run an undergraduate course on evolution, where students carry out small research projects on locally abundant organisms at the University of New South Wales's Smith's Lake Field Station in Myall Lakes National Park. Even within the scope of an undergraduate project, students often discover entirely new behaviours and lifestyles among the insects, spiders, snails, and plants at the Station.

But there is also much cause for concern. Many people assume that insect populations are so vast that human activities rarely threaten them. Yet, troubling data suggests that many insect populations are experiencing a rapid decline. Even extremely abundant insects, like the Bogong moth (*Agrotis infusa*), can succumb rapidly to anthropogenic environmental change. But some insects have very restricted ranges and small population sizes, making them especially vulnerable to extinction as a result of climate change, pollution, habitat destruction, or over-collecting. Tragically, some insects are disappearing even before anyone has had a chance to learn about their unique biology. Because very few insect species are monitored, we do not even know what we are losing.

There is an urgent need to learn more about Australia's native insects, monitor their populations, and include insects in conservation strategies. Insects are a natural resource that we cannot afford to lose.

ADVOCATING

for Conservation Action Nationally to Protect Native and Threatened Species

Megan Fabian

On 6-8 December 2022, the Society attended and presented a poster and talk at the 35th Australasian Wildlife Management Society at the Napier War Memorial Centre, New Zealand. The conference theme was Ki Uta Ki Tai, from the mountains to the sea, and it turned out to be remarkably successful, with 110 registrants in attendance. The conference was officially opened with a Mihi Whakatau, a traditional Māori welcome ceremony, and a speech by the Australasian Wildlife Management Society President, Dr Thomas Newsome.

Several fabulous presentations took place over the three days. On the first day, the conference started with the Practitioner and Land Manager Symposium, which included talks on feral cat control and automated analysis of thermal imagery of vertebrate pests. David Worsley, from the Centre for Invasive Species Solutions, spoke about the impact of community and personal engagement to increase participation in wild dog and fox control through independent facilitation, which was a highly fascinating and engaging talk. There was also a strong focus on the different management strategies of feral deer and an interesting talk on Bandicoot Motels, by Lisette Mill, about engaging children in species conservation to protect the southern brown bandicoot (*Isoodon obesulus*) in south-west Victoria.

The final talk for the afternoon was by Jackie O'Sullivan, the winner of the Australasian Wildlife Management Society best student presentation, who highlighted that bush rocks provide critical habitats for reptiles and are a common feature in agricultural landscapes.

The Poster Talks and Poster Exhibitions took place in the late afternoon. The Society was delighted to speak to attendees of the conference about the work of the Society and our efforts in Australian wildlife conservation.

The first talk of day two took place during the Taonga Species Symposium. Dr Sean Fitzgibbon spoke about new conservation approaches to increase the abundance

Top: The flower of a New Zealand Christmas tree (*Metrosideros excelsa*). Image: Megan Fabian.

Samantha Wallace, from The University of Newcastle, spotlighted heath frogs. Image: Megan Fabian.

Jackie O'Sullivan highlights that bush rocks provide critical habitats for reptiles. Image: Megan Fabian.

Lisette Mill spoke about Bandicoot Motels and engaging children in species conservation. Image: Megan Fabian.

Australian Wildlife Management Society President, Dr Thomas Newsome, thanked the conference sponsors and partners, including the Australian Wildlife Society.

and distribution of dwindling koala populations in Queensland.

The last talk for the morning session was by Dr Linton Staples, from Animal Control Technologies (Australia), who spoke about a new pest bait, HOGGONE – a feral pig bait that uses a unique formula of sodium nitrate to control feral pigs.

Several fabulous and inspiring talks occurred in the Predator Free 2050 Symposium, which highlighted feral species management in New Zealand. The first talk after lunch was by Dr Al Glen, who spoke about monitoring and detecting feral cats on Auckland Island and preparing for their eradication. In 2019, the Society funded research into conserving the iconic New Zealand kiwi (*Rakiura tokoeka*) from extinction. Our support assisted with purchasing research equipment, travelling to and from the research sites in the ongoing monitoring of kiwi, and analysing feral cat scats for kiwi remains. Furthermore, Dr Al Glen was the first recipient of the Society's University Research Grant. He continues to share his time selecting the Society's University Research Grant winners in the future. We are incredibly grateful for his efforts.

Dr Debbie Saunders, from Wildlife Drones, spoke about innovative drone survey techniques for tracking

The National Office Manager, Megan Fabian, was immersed in the gannet colony's beauty. Image: Jan (Tour Guide).

invasive species – from individual animal movements to eDNA. Debbie advised that you can "Collect more data, more often, with less effort" using wildlife drone technology.

At 7 pm, the Conference Dinner and Award Ceremony followed the Australasian Wildlife Management Society Annual General Meeting. The theme for the dinner was 70s Disco, which was a lot of fun.

The following day, we headed to Cape Kidnappers, Hawke's Bay, a privately owned sanctuary, to see the Takapu or the Australasian gannet (*Morus serrator*) colony with Gannet Safaris Overland. We were greeted with picturesque rolling hills and dramatic coastal views. Arriving at the gannet colony, we saw roughly 25,000 gannets within close distance. The Australasian gannet is a stunning large seabird of the booby and gannet family, Sulidae. They can be found in Western Australia, along the southern and eastern Australian coastline and in Queensland, the North and South Islands of New Zealand, Lord Howe, and Norfolk Islands.

From September to December, these birds can be seen carrying nesting material (seaweed, grass, or feathers) to contribute to their nest. We were lucky enough to witness this behaviour with a male gannet flying, with a two-metre wingspan, into the colony from his visit out to sea holding nesting material in his beak. He glanced over the colony and spotted his mate. He circled a few times before making a clunky landing. He draped the nesting material around the female, and they greeted each other with a beautiful courtship dance – so spectacular to witness.

We were lucky to see the various stages of gannet development, from chalky-blue eggs to newly hatched chicks that were completely black. We saw three- to four-month-old chicks and subadults showing increasing amounts of white plumage. Then there were the stunning adults with beautiful gold crowns and blue-rimmed eyes.

We were also lucky to spot a group of Endangered pōteke or brown teal (*Anas chlorotis*) – pointed out by our knowledgeable tour guide, Jan. The brown teal is a small dabbling duck species endemic to New Zealand. It is classified as Endangered due to the impact of introduced predators.

L to R: Megan Fabian and Wayne Greenwood in front of the Society's poster. Image: David Worsley.

L to R: Director Wayne Greenwood and Dr Al Glen. Image: Megan Fabian.

The Australasian gannet (*Morus serrator*) or tākapu. Image: Megan Fabian.

The pāteke or brown teal (*Anas chlorotis*) with an introduced European greenfinch (*Chloris chloris*) in the background on the water's edge. Image: Megan Fabian.

The Society's Poster '*Advocating for Conservation Action Nationally to Protect Native and Threatened Species*'. Poster: Australian Wildlife Society.

On the return from Cape Kidnappers, we were delighted to see New Zealand's Christmas tree (*Metrosideros excelsa*), commonly known as pōhutukawa, mainly because we were travelling in December, close to Christmas, which made it extra special. It is a coastal evergreen tree in the myrtle family, *Myrtaceae*, that produces a brilliant display of red flowers, each consisting of a mass of stamens.

Visiting Cape Kidnappers, with its rolling hills, beautiful cliff edges, and noisy and somewhat graceful gannet colony, was a unique and memorable experience and is highly recommended.

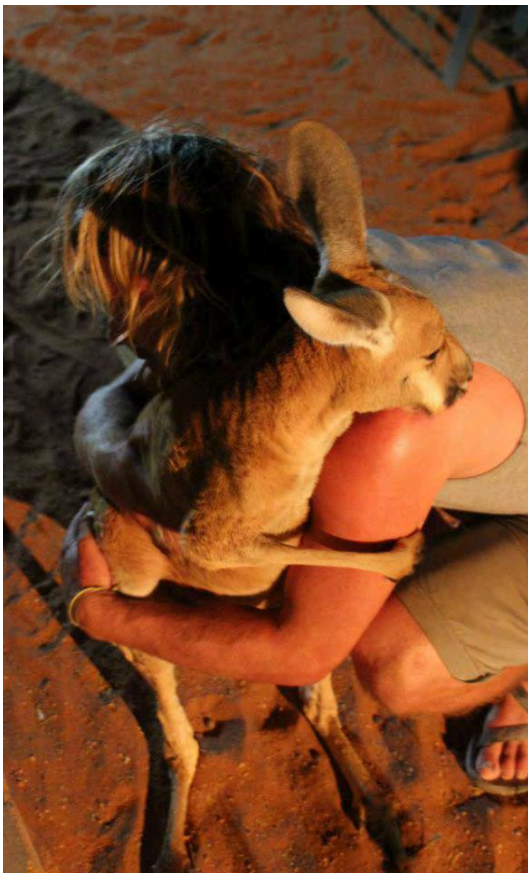
Although we made it back in time for the talks after lunch, unfortunately, due to some reshuffling of the afternoon talks, we missed one of our sponsored student talks by Patrick Finnerty. Patrick's talk was titled '*Neighbourhood watch – using 'virtual' neighbours to manage problematic herbivores during habitat restoration and post-fire recovery*'. Patrick was also one of the recipients of the Society's 2021 University Research Grants.

The first talk in the afternoon session was by Samantha Wallace, from The University of Newcastle, who spotlighted heath frogs and spoke about untangling habitat selection in a fire-prone landscape.

There were talks on the impact of drought-induced tree decline on reptiles and birds in a temperate forest habitat, optimising ecological surveys for conservation, and a talk by the President, Dr Thomas Newsome, on insects being the dominant scavengers in Australia. Who would have thought that insects were dominant scavengers?

The Australasian Wildlife Management Society conference came to a close with the final talk presented by Professor Trish Fleming from Murdoch University, who spoke about managing feral cats using field trials to increase the detection of feral cats.

Thank you to the Australasian Wildlife Management Society for hosting such a fabulous and successful event. The conference is a fantastic opportunity to network with students, non-governmental organisations, exhibitors, and government agencies. Please consider joining the Australasian Wildlife Management Society and applying for one of their many awards. Do not forget to watch for details of the 2023 conference held in Melbourne at the end of this year. We encourage you to visit the Australasian Wildlife Management Society's website for further information at https://www.awms.org.au



Wildlife Australia:

Being a Science Communicator

Sid Hewison

As an Australian tour guide, I have the unique opportunity to introduce people from all over the world to the incredible wildlife that can be found in our country. But being a tour guide is not just about leading groups of people on hikes or pointing out animals in the bush. It is also about being a science communicator, helping to educate people about the natural world, their connection to it, and the importance of wildlife conservation.

Sharing Knowledge and Inspiring Action

As a science communicator, a tour operator, and producer of digital content, my job is to take complex scientific concepts and make them understandable and interesting to a general audience. It involves explaining the latest research and discoveries in a way that is engaging and easy to understand. It also involves sharing interesting facts and stories about the animals, plants, geological features, and cultural sites we encounter on our adventures.

But why is science communication so important, especially regarding wildlife? For one, many people are simply unaware of the incredible diversity of species found in Australia. From the kangaroos and koalas that most people know about, to the more obscure and lesser-known species like the spotted-tailed quoll (*Dasyurus maculatus*) and the mountain pygmy-possum (*Burramys parvus*), we are home to a vast ecosystem of fascinating wildlife.

Educating people about these species and their unique characteristics and behaviours can help create a greater appreciation for the natural world. We can also help raise awareness about the threats many of these animals face, such as habitat loss, climate change, and introduced predators, which can inspire people to take action and help protect these species and their habitats.

Connecting with Audiences

Being a tour guide is not just about talking or presenting information in a fun and exciting way. It is also about listening and engaging with people to be able to connect with them on an emotional level. I often have people of all ages and backgrounds, each with their own interests and questions. It is essential to adapt and cater to these different audiences, using various methods to convey the information.

Top left: Sid, sharing a moment with his favourite female red kangaroo (*Macropus rufus*), Minma, at Josephine's Kangaroo Orphanage in Coober Pedy, South Australia. Image: Myke Mollard.

Top right: Talking about bush medicine with a tour group in the Western Desert. Image: Philip Etheridge.

Bottom right: Explaining the geology of Wilpena Pound. Image: Philip Etheridge.

For example, when we encounter a mother kangaroo with a joey in her pouch, we might talk about the bond between mother and baby and how kangaroos care for their young. These explanations can help to create a deeper connection with the audience and inspire them to care more about the animals and their well-being.

In addition to the multi-day tours, I use other methods to engage with people and share our knowledge about wildlife. I often share entertaining and interesting stories on my social media channels, where I can reach even more people and share my passion for natural science, culture, and wildlife.

Tour Guiding and Science Communication

Being a tour guide and a science communicator is incredibly rewarding and important. It is not just about sharing facts and figures but about engaging with people, inspiring them to care about the natural world, and helping them be aware of their connection to it. After many years of observing people's experiences on my tours, I believe this engagement in nature is an enriching experience for people. It helps them feel more at ease as they develop their relationship with the natural world. As an Australian tour guide, I am proud to be a science communicator and help introduce people to the incredible wildlife that can be found in our country.

Top left: Reassuring a rescued kangaroo joey found on the Stuart Highway, South Australia. Image: Myke Mollard.

Middle left: 'A Corridor Through Time'. Getting excited about rocks at Brachina Gorge in Ikara-Flinders Ranges National Park, South Australia. Image: Philip Etheridge.

Bottom: Leading the 'Rim Walk' at Kings Canyon, Watarrka National Park, Northern Territory. Image: Philip Etheridge.

Batting Together for Grey-Headed Flying-Foxes **Two Decades On**

Matthew Mo and Libby Timmiss

Flying-foxes are ecosystem engineers, pollinating and spreading seeds of native plants. However, their reputation is shrouded in complex human-wildlife issues that often relegate them to pest status. In 2001, following evidence of significant population decline, the grey-headed flying-fox (*Pteropus poliocephalus*) was listed as Vulnerable under New South Wales and Commonwealth legislation. What has ensued is a new chapter in which the broad spectrum of threats facing the species has gained greater focus amongst the social dimensions in flying-fox management.

Two decades on, the grey-headed flying-fox is one of the landscape-managed species under the New South Wales Government's Saving our Species program. The management style reflects our improved understanding of how individual flying-foxes travel vast distances through the landscape in search of food. In effect, all grey-headed flying-foxes in the wild are a single interbreeding population with no regard for jurisdictional borders. Fittingly, the conservation of this endemic bat also sees very diverse stakeholders converging as a community, irrespective of sectoral boundaries.

Modern Approaches to Farming

Grey-headed flying-foxes have fed on cultivated fruit since early Australian settlement. For centuries, shooting animals has been the standard method for dealing with wildlife impacts on agriculture, but this conflicts with conservation objectives when the target is a threatened species. Once the species was listed as vulnerable under New South Wales legislation, the New South Wales Government announced a commitment to completely ban the shooting of flying-foxes, sparking controversy amongst farmers concerned about protecting their orchards.

Orchardist concerns about how the ban on flying-fox shooting would impact crop protection delayed the ban until July 2021. Along the way, researchers engaged with government officials and the agricultural sector to ensure emotional aspects of the issue were bridled by scientific knowledge. Various stakeholders played their part in campaigning for a non-lethal solution in the form of exclusion netting with small mesh holes.

The costs associated with installing and maintaining exclusion netting are a barrier for many farmers. In New South Wales, there was a $5 million state government subsidy scheme that provided matching funds for farmers investing in exclusion netting between 2011 and 2018. This initiative achieved more than 685 ha of netted area, and farmers were no longer eligible to apply for licences to shoot flying-foxes as a condition of the subsidy. Along with similar programs in other jurisdictions, these steps have helped guide the industry towards operating without harming wildlife.

With the backdrop of climate change, some farmers have partnered with the Saving our Species program, other state and territory governments and not-for-profit organisations to restore habitat

Top: A grey-headed flying-fox (*Pteropus poliocephalus*) takes the opportunity to rest from its remarkable long-distance journeys. Image: Matthew Mo.

An aggregation of stakeholders at the most recent National Flying-fox Forum in Adelaide, South Australia. This conference is convened by an ecological consultancy and facilitates valuable discussions related to flying-fox conservation and management. Image: Matthew Mo.

Tree-planting to restore Milton-Ulladulla subtropical rainforest on private farmland in the New South Wales South Coast region. Image: Matthew Mo.

corridors, providing shade refuge and windbreaks for livestock and promoting moisture retention. Through this, threatened ecological communities and wildlife habitats are re-established, which for flying-foxes mean foraging resources.

In-situ Management Replaces Camp Dispersals

Flying-foxes gathering by day in their thousands are a magnificent sight, especially as they stream out from their camps *en masse* at sunset. Unfortunately, these aggregations have also triggered negative interactions with residents living next to flying-fox camps due to their vocalisations, scent, and faeces. This issue has progressively grown, with researchers confirming that more and more flying-fox camps have formed in urban areas in recent decades.

While deterring animals from problem areas makes sense, there is growing awareness that dispersing flying-foxes from camps is not the one-stop solution once believed. Researchers, government officials and land managers have compiled and published evidence showing that following camp dispersals, there is a high likelihood of flying-foxes returning, as well as forming new camps in other contentious locations.

Understanding the risks involved in camp dispersals leads to *in-situ* management being a more sensible approach. To help councils make this shift, state governments have issued grants to fund camp management and community engagement actions. In New South Wales, the Flying-fox Grants Program delivered $1.75 million to councils and park authorities from 2016 to 2020. Part of this investment has seen subsidy schemes to help residents with self-mitigation measures, such as high-pressure gurneys to clean away faeces and double-glazing windows to reduce noise impacts. It is hoped that providing a means for residents to be involved in the solution will help address the challenges they face and provide a much-needed morale boost to help improve the human-wildlife conflict.

The emphasis on *in-situ* management has turned the focus of councils to habitat restoration as a way of expanding existing camps away from residential properties. Local Government New South Wales, a peak body of councils, is currently implementing the Flying-fox Habitat Restoration Program with $5 million from the New South Wales Environmental Trust. Researchers, consultants, land managers, bushcare coordinators, wildlife rehabilitators and government officials have collectively contributed their respective expertise to the design of this program.

Alternative Materials for Improved Outcomes

Some of the threats facing the grey-headed flying-fox are human infrastructure. The continual journeys of flying-foxes see them navigating through modified landscapes with materials like netting, barbed wire and overhead powerlines posing significant hazards.

While exclusion netting can be an effective strategy for protecting crops from wildlife, netting can also be deadly for wildlife if the mesh holes are large enough to allow animals to become entangled and trapped. Wildlife rehabilitators help to mitigate the large-scale impact of netting entanglements, but in the long-term, the solution lies in community members ensuring that the only netting they use has mesh holes smaller than 5x5 mm. Not-for-profit organisations have promoted this message for decades, and the Victorian Government recently introduced legislation restricting the household use of fruit netting to products with small mesh holes.

Flying-foxes also receive terrible injuries from barbed wire fencing. The solution also requires the community to seek alternative materials, such as replacing barbed wire with plain wire or avoid using barbed wire near trees or waterbodies where flying-foxes are likely to occur. Since 2006, the Tolga Bat Hospital in Atherton, Queensland, has coordinated the educational platform 'Wildlife Friendly Fencing', used by stakeholders to communicate with members of the public.

The image of a bat on an overhead powerline is not uncommon to most Australians. Powerlines cause electrocutions in flying-foxes and, in some cases, has been severe enough to result in mass mortalities. Energy companies are working to install spacers to powerlines or bundle cables, guided by wildlife rehabilitators identifying priority areas, to address the issue of flying-fox mass mortalities.

Turning Down the Heat

More frequent extreme heat events can have a devastating impact on flying-foxes. During 2019-20, the most recent hot summer, a published study estimated 72,000 flying-foxes perished in extreme heat events across forty camps, which comprised both the grey-headed and black flying-fox. This scale of impact was only determined through wildlife rehabilitators, veterinarians, land managers, researchers, community groups and government officials sharing information.

Exclusion netting protecting crops at an orchard in the New South Wales Central West region. Image: Kevin Dodds.

The first point of managing flying-foxes in extreme heat events is ensuring sufficient understorey and mid-storey vegetation in camps to allow flying-foxes the opportunity to move to these shaded areas. Bushcare groups are actively working to restore these natural shade refugia. Where this is not possible, government officials, researchers, land managers and wildlife rehabilitators collaborate on a range of research partnerships to identify other strategies. The Saving our Species program is currently commissioning a pilot study into the efficacy of artificial misting systems for microclimate manipulation in partnership with Western Sydney University, Campbelltown City Council and World Animal Protection. Hopefully, this research will inform whether and how misting systems can sufficiently reduce temperatures in the camp without increasing humidity, which would affect flying-foxes' ability to regulate their body temperature.

Improving the Image Crisis

The challenges faced by the horticultural industry and communities living next to flying-fox camps are limiting factors on public

The dog-like face of a grey-headed flying-fox (*Pteropus poliocephalus*). Image: Matthew Mo.

Thousands of grey-headed flying-foxes (*Pteropus poliocephalus*) stream out of a camp in Grafton at dusk. Image: Matthew Mo.

Fruit netting that has small mesh apertures are the solution for preventing wildlife fruit netting entanglements. Image: Kevin Dodds.

Matthew Mo is a senior project officer at the NSW Department of Planning and Environment and coordinates the Saving our Species conservation project for the grey-headed flying-fox. He also coordinates the Flying-fox Consultative Committee. His work has been published in several peer-reviewed scientific journals, including *Australian Zoologist*, *Pacific Conservation Biology* and *Human Dimensions of Wildlife*.

Libby Timmiss is a project officer at the NSW Department of Planning and Environment and coordinates the grey-headed flying-fox stream of the multiregional species funding program, and other post-bushfire threatened species recovery grants. In 2017, Libby submitted an Honours thesis on spatial factors influencing the establishment and occupancy of Australian flying-fox camps. This work has been published as a peer-reviewed article in the *Australian Journal of Zoology*.

support for conserving this threatened species. The emergence of zoonotic diseases such as the Australian bat lyssavirus has not helped, prompting fear and miseducation in the public. While this issue is being addressed by health officials and land managers communicating the risks to human health as minimal provided human-bat contact is avoided, the reputation of flying-foxes as disease vectors continues. The fear amongst some members of the public that Australian flying-foxes were responsible for the transmission of COVID-19 remains unsubstantiated.

Poor public perceptions have spurred stakeholders to launch campaigns on why flying-foxes should be valued. In 2017, the Hunter Joint Organisation of Councils secured a $100,000 grant from the New South Wales Environmental Trust to develop a landmark education campaign, 'Little Aussie Battlers'. The campaign portrays flying-foxes as important hard-working pollinators and seed dispersers. The tone encourages Australians to take pride in having flying-foxes in their area. In 2019, a similar initiative 'Flying-fox Supporters' was founded by private individuals wanting to broadcast to the masses that flying-fox conservation is the shared concern of numerous community members.

Take Action

Anyone can help by learning and sharing factual information about flying-foxes and being part of the community that speaks positively of them. A broader awareness of the importance of flying-foxes is likely to improve public support for conservation initiatives. You can also take steps to reduce the chances of flying-foxes being injured on your property. If you use exclusion netting on your property, ensure that only netting with small mesh holes is used. Ensure the netting is taut around the tree trunk or staked to the ground. Where possible, you can also replace barbed wire fencing with plain wire or other wildlife-safe materials. If you see an injured flying-fox, call a wildlife rehabilitator who can safely rescue the animal. For further information, please visit: https://bit.ly/Flying-foxManagement

Further Reading

Mo, M., Coutts-McClelland, K., Wilson, V., Haering, R., Oliver, L., Bell, L., & Lunney, D. (2022). Managing the grey-headed flying-fox as a threatened species in New South Wales two decades on: contentious issues for horticulturalists and communities. *Australian Zoologist*. https://doi.org/10.7882/AZ.2022.014

Are Our Café Leftovers Ramping up Noisy Miner Aggression?

Jade Fountain and Paul McDonald

Noisy miners (*Manorina melanocephala*) are native Australian honeyeaters that live in large cooperative social groups, with a distribution spanning eastern Australia from Queensland to Tasmania. They occupy the edges of open eucalypt forests and grassy woodlands, including cleared land and urban fringes. They have adapted to urban life particularly well, as many suburban readers can attest, thriving in towns, parks and backyards where they take full advantage of the smorgasbord of nectar-rich plants in our gardens.

Our native noisy miners are an overall grey colour, with flashes of yellow on their wings and exposed skin near the eye. Noisy miners are often confused with the introduced common myna (*Acridotheres tristis*, formerly the Indian myna), which shares a similar name and appearance. Common mynas share the same yellow eye-patch, but are primarily brown, with a full brown-black hood on their head, compared to the black 'face mask' that noisy miners have on an otherwise grey head.

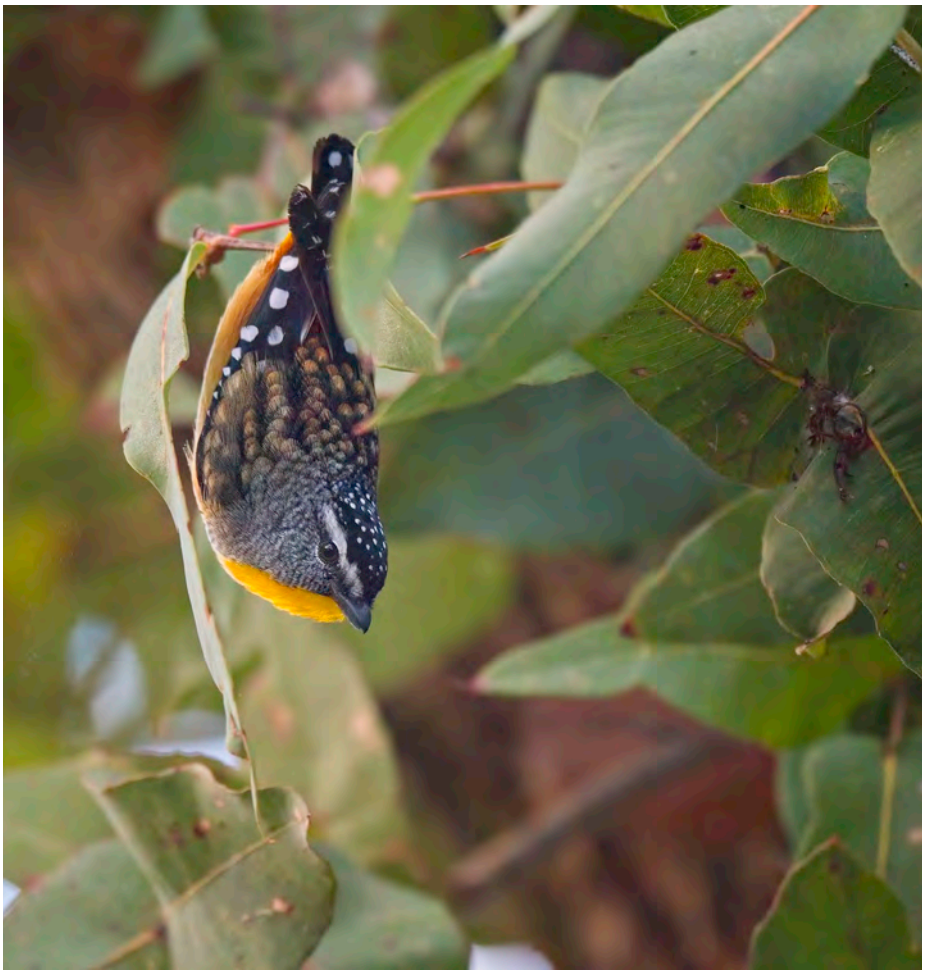
Colour aside, the behaviour of noisy miners is also distinctive, frequently described as 'despotic'. These birds use their advantage of numbers gained from living in groups to mob other birds, animals, and sometimes even people in an effort to evict them from their area. This behaviour involves swooping, calling, and even physical hits to get their message of moving on across. The coordinated aggressive mobbing by miners evicts other native species from crucial habitats throughout their range, and species smaller than the noisy miner are particularly at risk, such as the critically endangered regent honeyeater (*Anthochaera phrygia*). In recent years, researchers have recorded concerning declines in the abundance and diversity of small woodland birds where noisy miners are present, leading to amendments to the *Environment Protection and Biodiversity Conservation Act 1999* to include noisy miners as a key threatening process in 2014.

It is this tendency to display aggression and monopolise resources that likely explains the noisy miner's ability to adapt to urban areas and be so successful. Many living in our eastern capital cities will be familiar with a group of miners loudly calling as they work together to evict an intruder. With their increasing presence, particularly in our urban areas, we wanted to ask if the way noisy miners used human resources like leftover café food scraps or access to flowering plants in our gardens increased their level of aggression toward other birds. But first, how do miners achieve such sophisticated mobbing behaviour?

Not Just Noise, Miner Calls Coordinate Complex Social Behaviours

Going beyond the nuisance factor of the loud, noisy choruses that miners give when mobbing from a human perspective is a complex communication system. Noisy miners are highly social and cooperative with other birds in their colony, with non-related individuals assisting in caring for and raising others' young, in addition to the sentinel defence duties described above. The secret

Top: Noisy miners are frequently seen feeding on leftovers at cafés. Image: Jade Fountain.



Spotted pardalotes (*Pardalotus punctatus*) are smaller than noisy miners and compete for sugary insects – lerps – making them a common target of harassment. Image: Paul McDonald.Image: Paul McDonald.

to miner behaviour can be found in their vocalisations. Miners use different vocalisations to alert each other to different threats in their colonies, much like humans use different words for different threats. For example, noisy miners have a different vocalisation alarm for a terrestrial predator like a fox than used for an aerial predator such as a hawk. This type of alarm system is known as referential signalling. It enables the correct information on the type of threat in a colony and the best response to be communicated rapidly through all birds within earshot. Some other bird species can take advantage of this alarm system and use it to get early warnings about hawks. Humans can also benefit from the miner alarm calling for potential threats like snakes.

Is It Indiscriminate Exclusion?

When we see small birds being chased and harassed by noisy miners, it is easy to feel annoyed. However, blaming and demonising noisy miners does not help the cause, as this native species is simply taking advantage of human landscape modifications. Understanding how other species of birds can co-exist with or tolerate the presence of miners in our modified habitat is an important step in managing noisy miner populations.

A group of six noisy miners (*Manorina melanocephala*) demonstrate various social behaviours through postures. Image: Paul McDonald.

Therefore, we set out to test if noisy miners might be even more aggressive in an urban setting if they had access to human food (such as leftover cake at a café) or human-planted vegetation like grevilleas that provide abundant, year-round nectar resources. Perhaps, given access to a steady diet of high-energy food, noisy miners in urban settings might have more time and energy to devote to mobbing, further increasing their impact on other species. In addition to the impact of food, we also tested if the type of intruder mattered to the miners. Do they mob every species indiscriminately in urban settings, or are they more focused on potential predators or food competitors?

Testing Aggression

Our research utilised the playback of alarm calls and the presentation of model taxidermies to challenge miners in different habitats in and around suburban Canberra to measure their aggression. More specifically, we were interested in how human resources such as leftover food at cafés and planted gardens in urban backyards might influence mobbing behaviour intensity and duration when miners harassed other birds. To do this, we placed three different types of stuffed models into three different types of habitats (cafés, urban gardens, and natural bush areas). At the same time,

The musk lorikeet (*Glossopsitta concinna*) is a nectar competitor of similar size to noisy miners. Image: Paul McDonald.

The native noisy miner (*Manorina melanocephala*) perched in a *Grevillea* plant. Image: Paul McDonald.

Brown goshawks (*Accipiter fasciatus*) are predators of noisy miners at all life stages. Image: Paul McDonald.

Noisy miners (*Manorina melanocephala*) are native Australian honeyeaters. Image: Paul McDonald.

we broadcast noisy miner alarm calls over a speaker to test how noisy miners would respond. Presented model types included the following:

1. Food competitor: musk lorikeets (*Glossopsitta concinna*) (a similar sized bird to miners that competes with them for nectar) and spotted pardalotes (*Pardalotus punctatus*) (a food competitor that is a smaller body size than noisy miners),
2. Non-food competitor: eastern rosellas (*Platycercus eximius*) (has a different diet that is seed-based), and
3. Potential predators: brown goshawk (*Accipiter fasciatus*) (a potential predator for all ages of noisy miners) and pied currawongs (*Strepera graculina*) (a potential predator of eggs/early nestling stage only).

Miners Direct Most Attention to Predators and Competitors and Invest More Defence into Garden Settings

Our study found that noisy miners varied their responses to the different types of bird models. Noisy miners mobbed models of their predators for a longer period and in greater numbers than the other bird species presented. Noisy miners were also more likely to make physical contact (e.g., peck at the model with their beak) with the smaller food competitor models compared to predators or non-competitors.

Noisy miners also differed in the amount of time they spent engaging in aggressive behaviour across the different types of habitat areas, but not entirely as we had expected. Noisy miners exhibited aggressive behaviours for a much longer time in gardens and cafés

Noisy miner (*Manorina melanocephala*) mobbing behaviour is displayed through swopping, vocal alarm calling, and physical contact. Image: Paul McDonald.

compared to natural bush areas. Surprisingly, unlike our expectations that birds occupying cafés would show the highest amount of aggression, those in suburban gardens were most aggressive to our models.

Biodiverse Backyards or Sugar-Rich Gardens

Recent research has shown that the presence of human-modified gardens increases the ability of birds to colonise areas outside of their previous range. Noisy miners are one species that has taken advantage of this, increasing their range and density by accessing nectar-rich, longer flowering plants growing in gardens in south-eastern Australia.

The oasis of flowering sugary plants (such as callistemons and grevilleas) in Australian suburban gardens creates attractive habitats with high-value resources to defend. Part of the problem is native shrubs and trees are cultivated by humans to flower for longer or across multiple seasons, which may not suit the local climate in the region they are planted. This extended year-round food availability and lack of understorey in cleared areas can influence the types of birds that flock to that area.

The findings from this research indicate the importance of considering how our gardening choices in gardens, parks and housing estates influence the hyperaggressive behaviour of miners. Native plants and grasses are the recommended choice for urban gardeners, but these should be species local to your area and suited to the climate in your region. Avoid an abundance of exotic plant species and ensure your chosen plants are a mixture of nectar-rich and non-flowering species for balance. Gardeners should choose shrubs and trees that provide a variety of sizes and flowering types. While grevilleas and bottlebrushes are attractive to humans (and miners), they should be used sparingly. Plants with small flowers attract bees and other insects and help encourage a more diverse garden. The way gardens are layered makes a difference, so aim to plant a variety of sizes so that there is a mosaic of foliage for small birds to seek shelter in.

Balancing Biodiversity with Human-Modified Landscapes

Until further research can lead us to more defined answers as to how we manage noisy miners while maintaining biodiversity, one key area we can shift our focus on is influencing bird behaviour in our own backyards. We can do this by making better decisions about the varieties of plants we choose, from the backyards in suburbia to how new estates and parks are planted. We have shown that miners can increase their levels of aggression in a garden habitat with increased access to nectar. We are only just beginning to understand the complex social interactions of noisy miners and their nuances in how or why they respond to other avian species in their territories. Finding a balance so that both native noisy miners and the species that they sometimes bully have sufficient habitat is vital to a high level of biodiversity in the future.

A common myna (*Acridotheres tristis*) is characterised by a brown body and black head. Image: Paul McDonald.

Eastern rosellas (*Platycercus eximius*) do not overlap in their diet as they eat a diet of seeds. Image: Paul McDonald.

The pied currawong (*Strepera graculina*) is a nest predator of eggs and early hatchlings for noisy miners. Image: Paul McDonald.

Australian Wildlife Society
University Research Grants

The Australian Wildlife Society University Research Grants are scholarships offered to honour or postgraduate students at Australian universities. Each year, ten $3,000 grants are awarded. **Applicants must be a member of the Society;** student membership is free, and you can join through our website www.aws.org.au. Please send a copy of your student ID to accounts@aws.org.au

Grants are available for research projects of direct relevance to the conservation of Australian wildlife – flora or fauna. Grants may be used to purchase equipment and consumables, travel expenses related to field research, or attend a conference where you present your work.
The grant is paid directly to the student.

PREPARING YOUR APPLICATION FOR A GRANT

Applications should be a maximum of four pages (12-point font), including a brief CV and should be set out under the headings below (a reference list is not required).

APPLICATIONS EXCEEDING FOUR PAGES WILL NOT BE CONSIDERED

Introduction: Briefly introduce the background to your research topic, specify the project's aims, and outline its importance to wildlife conservation.

Methods: Briefly outline your proposed methodology. We require only sufficient detail to demonstrate that your aims are achievable. Remember that the assessors may not be familiar with your field of research. You must also indicate that you have obtained (or at least applied for) any relevant research licences, permits or approvals (including animal ethics).

Schedule: Outline a proposed timeframe for completing your project, listing significant milestones, including submitting a final report/article to the Australian Wildlife Society by the first week of September.

Budget: Itemise the expenses involved in conducting your research. Any funds already secured from other sources must also be declared. (This will not reduce your chances of success, provided your budget has necessary items that are not yet funded).

Brief CV: The final page of your application should consist of a short CV demonstrating your ability to produce high standard results within a limited timeframe. Also include the details of two referees who can comment on the proposed project, one of whom should be your academic supervisor.

Please prepare your application as a single Word document and submit it as an email attachment to info@aws.org.au. Please name your file: 'Your Name AWS Grant Year', e.g., 'John Smith AWS Grant 2022'.

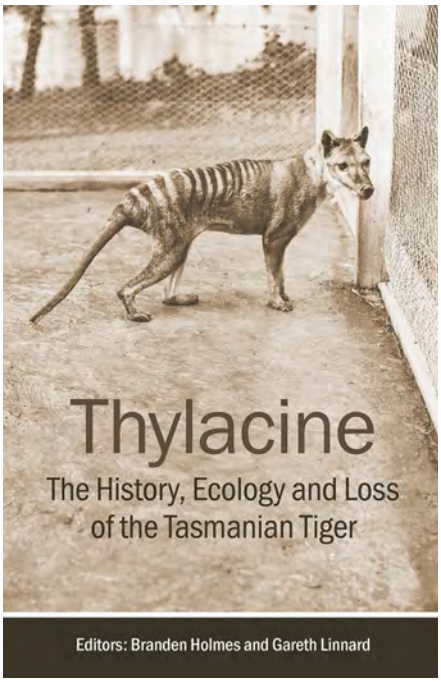
CLOSING DATE: APPLICATIONS ARE DUE BY 31 MAY EACH YEAR

APPLICANTS WILL BE NOTIFIED BY EMAIL IN JULY

CONDITIONS OF SPONSORSHIP

Recipients of Australian Wildlife Society grants will be requested to acknowledge the Society's contribution in all publications and presentations arising from their project. In addition, recipients will be required to submit a final report/article on their project for inclusion in the Society's magazine *Australian Wildlife*.

Book Reviews



Thylacine: The History, Ecology and Loss of the Tasmanian Tiger – *Edited by Branden Holmes and Gareth Linnard*

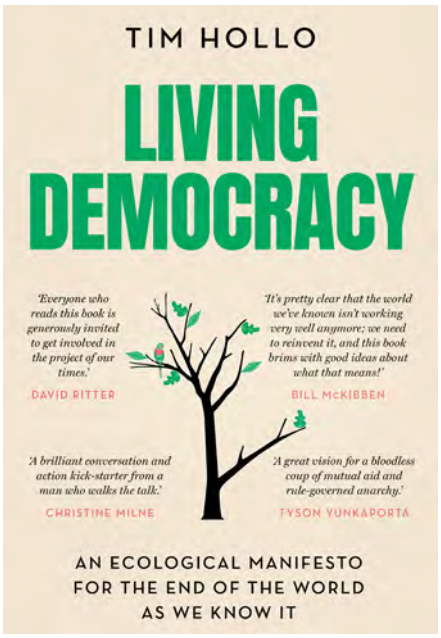
With seventy-eight contributors, including the President of the Society, Dr Julie Old (pgs. 6-7), *Thylacine: The History, Ecology and Loss of the Tasmanian Tiger* presents an evidence-based profile of the thylacine (*Thylacinus cynocephalus*), its ecology, evolution, encounters with humans, persecution, assumed extinction and its appearance in fiction. Until the mid-20th century, the thylacine was the world's largest carnivorous marsupial, and its disappearance has left many questions and contradictions. In recent years, its taxonomic position, ecology, behaviour, and body size have all been re-examined scientifically. Part one of the book details its anatomy, biology, and ecology, with Dr Julie Old's contribution titled 'Our growing knowledge of thylacine pouch young development'. She compares the similarities of thylacine pouch young (specimens kept at the Museum of Victoria in Melbourne) to pouch young of the closely related Tasmanian devil (*Sarcophilus harrisii*). She also provides hope that, with advances in science and technology, even more can be learnt about the thylacine in the future.

Publisher: CSIRO Publishing
RRP: $59.99

I'll Take Care of You – *Maria Giraldo and Nicoletta Bertelle*

A tiny seed finds itself lost in the world, but with care from the Sky, Earth, and Sun, it grows into a beautiful apple tree. When the tree meets a bird in need of help, it offers its branches as shelter. This heart-warming tale celebrates the harmonious relationship between birds and trees. In return, children will learn to care for others and cultivate empathy and kindness.

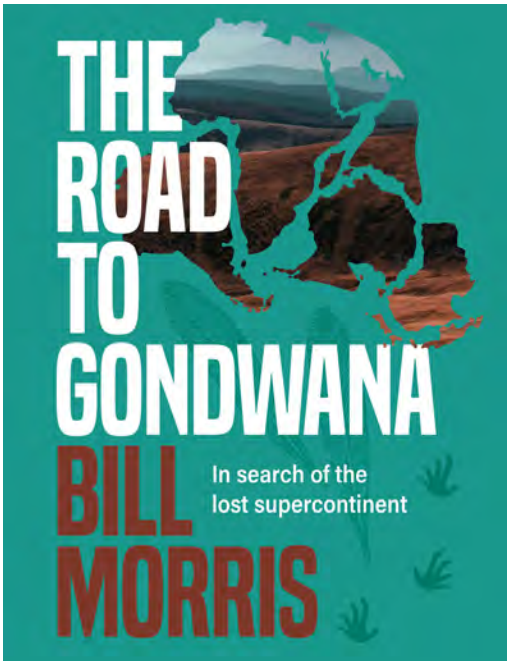
Publisher: Blue Dot Kids Press
RRP: $18.95



Living Democracy – *Tim Hollo*

Across our society, there is a mounting sense of desperation in the face of the climate crisis. Extinction is in the air. But what if the solutions to our ecological, social, and political crises could all be found in the same approach? In *Living Democracy*, Greens activist Tim Hollo offers bold ideas and a positive vision. It is the end of the world as we know it, but it does not have to be the end of the world.

Publisher: NewSouth Books
RRP: $32.99

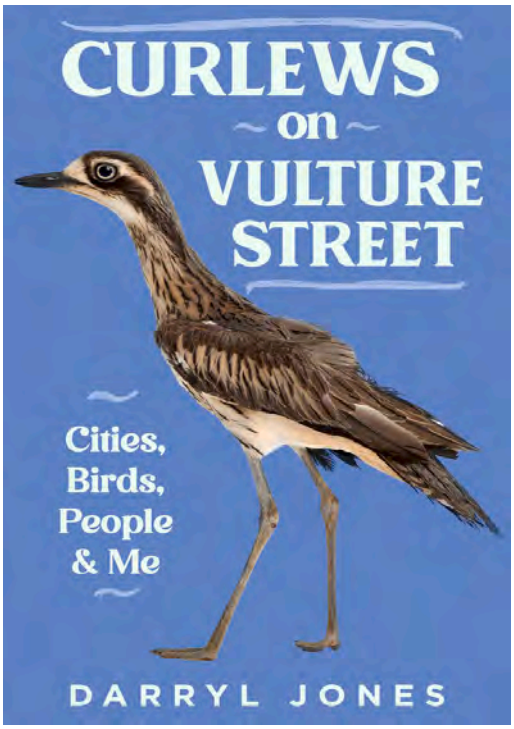


The Road to Gondwana – *Bill Morris*

The Road to Gondwana takes the reader on a journey searching for the lost southern supercontinent. It traces the steps science took to find Gondwana and the journey Gondwana itself took through five hundred million years of Earth's history. Our tour guide on this journey is Glossopteris – an extinct tree that dominated the supercontinent for fifty million years before vanishing in the most devastating event ever to strike life on this planet, the Permian mass extinction.

Publisher: Exile Publishing
RRP: $39.99

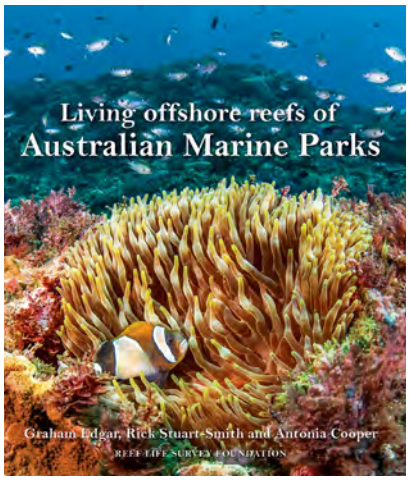
Book Reviews



Curlews on Vulture Street: Cities, Birds, People & Me – *Darryl Jones*

Despite the noise, heat, and pollution, many birds successfully live among us. The brush turkey (*Alectura lathami*) rearranges gardens, and the Australian white ibis (*Threskiornis molucca*) steals from our bins. The author shares a fascinating story of curiosity, discovery, adventure, and conflict, played out in city streets and backyards. He also provides rare insights into the intimate lives of some of our most beloved and feared neighbours. You will never see magpies, curlews, ibis, lorikeets, and cockatoos in the same way again.

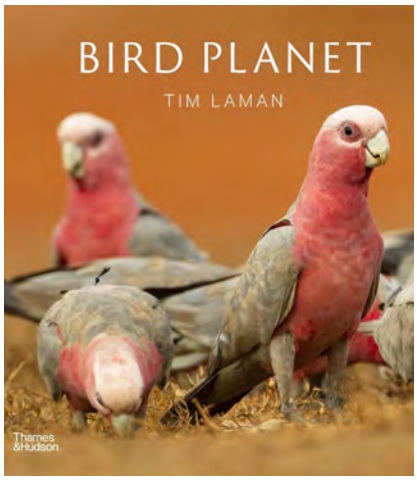
Publisher: NewSouth Books | RRP: $32.99



Living Offshore Reefs of Australian Marine Parks – *Graham Edgar, Rick Stuart-Smith, and Antonia Cooper*

Australia is uniquely privileged to possess extensive tropical and temperate reef ecosystems as an island continent. These vibrant communities of plants and animals support fishing, tourism, recreation, education, and a general sense of well-being for many people. This book is a stunning visual celebration of the beautiful and vibrant life that they support. This beautiful book devotes a chapter to every key reef system around Australia, with maps and graphics, hundreds of stunning photos, and vivid written accounts.

Publisher: New Holland Publishers
RRP: $59.99



Bird Planet – *Tim Laman*

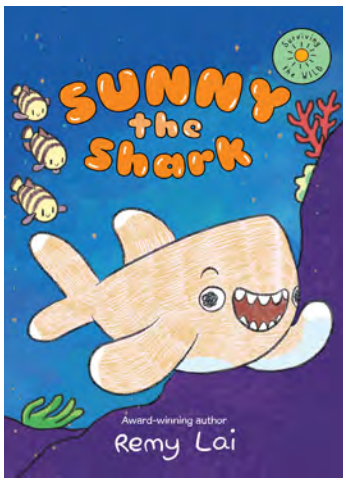
Organised into eight geographical chapters, *Bird Planet* takes readers on a voyage worldwide, including Australia. The author shares his favourite bird photographs from more than twenty-five years in the field and some of his memorable adventures in pursuit of them. His extensive travels have brought him face to face with many rare and beloved species – from black-naped terns (*Sterna sumatrana*) that frequent small offshore islands to the striking, colourful rainbow bee-eater (*Merops ornatus*) that strategically capture and eat their prey. *Bird Planet* will inspire a greater appreciation for birds and the importance of protecting their environment.

Publisher: Thames & Hudson Australia | RRP: $80.00

The UnderWorld – *Rob Annesley*

The *UnderWorld* seeks to explore and expose the environmental predicament in which the world finds itself in relation to the decline of many insect species, including our essential pollinators. Pollinators are paramount to human survival as they are the foundation of the food chain, without whom our food sources would no longer be viable. Through text and images, the author explains the fascinating variety of protective camouflage techniques used by insects to avoid predation and the many stages in their moulting process. The book contains over 120 beautifully photographed images of some of the most interesting insects across Australia.

Publisher: Momento Photo Books Australia | RRP: $99.00



Sunny the Shark – *Remy Lai*

Sunny the Shark is a fearsome predator. As the oceanic whitetip shark (*Carcharhinus longimanus*) searches for her next meal, a chatty school of pilot fish trails behind, cleaning her in exchange for food crumbs. But when Sunny mistakes a plastic ring for prey, and it gets caught around her fin, she soon struggles to hunt. Will she be able to break free and find food before winter sets in?

Publisher: Allen and Unwin | RRP: $14.99

Australian Wildlife Society

Threatened Wildlife Photographic Competition

A national competition that awards and promotes the conservation of Australia's threatened wildlife through the medium of photography.

The Australian Wildlife Society invites photographers to raise the plight of threatened wildlife across Australia. Our Society aims to encourage the production of photographs taken in Australia by Australians, reflecting the diversity and uniqueness of Australia's wildlife whose conservation status is listed as Vulnerable, Endangered, or Critically Endangered.

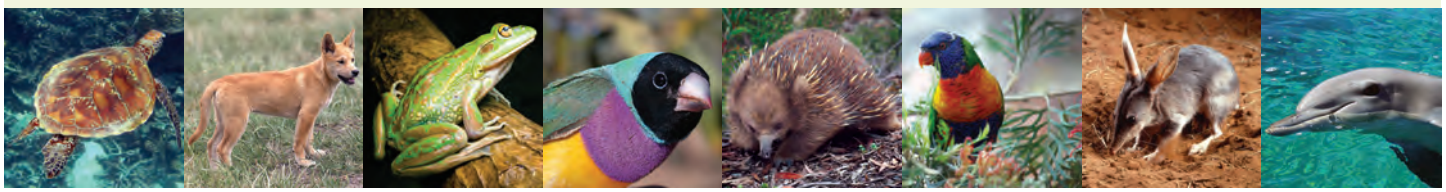
An annual judge's prize of $1,000 will be awarded
An annual people's choice prize of $500 will be awarded

Rules of entry:

1. The subject of each entry must be officially listed as either a Vulnerable, Endangered, or Critically Endangered Australian species – fauna or flora,
2. The entry must be the work of the entrant,
3. The photograph must have been taken within the twelve months prior to the date of entry,
4. The name of the threatened species, photographer, and date taken must be included in the 'file name' of each photograph submitted. For example, koala_JohnSmith_1.1.11,
5. Entrants retain the copyright to their entries but accord the Australian Wildlife Society the right to use the photographs in any of its publications or any reprint arising therefrom,
6. Entries are to be submitted to – **photo@aws.org.au.** It is recommended that image files are no larger than 2mb,
7. All entries must be accompanied by a short paragraph (maximum 150 words) describing the status of the threatened species, the photograph's location, and the reasons and circumstances for choosing to photograph it,
8. Directors of the Society or their families are ineligible to submit entries,
9. There shall be no charge for entry and entrants may submit more than one entry, and
10. The final result is at the discretion of the Directors and will be announced in August each year.

CLOSING DATE FOR ENTRIES IS 30 JUNE

ONLINE VOTING FOR THE PEOPLE'S CHOICE WILL BE OPEN FROM 1 JULY TO 30 JULY



Membership Form

Membership

Become a member of the Australian Wildlife Society

Simply fill out this form.

Australian Wildlife Society
Conserving Australia's Wildlife since 1909

Name:.....

Address: .....

City/Suburb:.....Postcode:.....

Telephone:.....Fax: .....

.....Email:.....

Membership category (please tick)

- ☐ Student (conditions apply): $0
- ☐ Individual (hardcopy magazine): $55
- ☐ Family (hardcopy magazine): $70
- ☐ Concession (pensioner/student/child): $50
- ☐ E-mag (emailed as PDF, no hardcopy will be sent): $30
- ☐ Associate (library, school, conservation groups): $85
- ☐ Corporate: $125
- ☐ Life: $2,000

(Includes postage within Australia. Add $40 for overseas postage)

Three year membership (please tick)

- ☐ Individual (hardcopy magazine): $150
- ☐ Family (hardcopy magazine): $190
- ☐ Concession (pensioner/student/child): $135
- ☐ E-mag (emailed as PDF, no hardcopy will be sent): $81
- ☐ Associate (library, school, conservation groups): $230
- ☐ Corporate: $340

(Includes postage within Australia. Add $60 for overseas postage)

Payment details (please tick)

☐ Direct Debit ☐ Cheque ☐ Money Order ☐ Mastercard ☐ Visa Card Security Code (CSC) __ __ __ __

Card Number:

Name on Card:.....Expiry:.....

Signature:.....

Amount $.....

Donation $.....

Total $.....

Mail to the: **Australian Wildlife Society**
29B/17 Macmahon St, HURSTVILLE NSW 2220
Email: accounts@aws.org.au
Website: www.aws.org.au

Direct debit: **BSB:** 062 235
Account No: 1069 6157
Account Name: Wildlife Preservation Society of Australia trading as the Australian Wildlife Society

Membership Hotline: Mob: 0424 287 297

Note: All cheques to be made out to the Australian Wildlife Society

Membership Benefits

Magazine: Receive the quarterly issue of Australian Wildlife via email or post to keep up-to-date with the collective work promoted nationally.

E-Newsletter: Receive the monthly e-newsletter. Keep up-to-date with news from our members and on the work of the Society.

AWS Portal: Access the Members' Resource Centre - your destination for resources and materials on various wildlife-related topics.

Social Media: Contribute to our social media platforms: Instagram, Twitter, Facebook, LinkedIn, YouTube, and Website.

Right to Vote: You have the right to vote on important matters at Society general meetings (financial members only).

Other Benefits: Awards, Scholarships, Grants, and the opportunity to network with like-minded people.

LEAVE A BEQUEST IN YOUR WILL

If you would like to find out how to leave a bequest to the Society or how your bequest can make an impact, please download our bequest information pack.

The Annual President's Luncheon 2023

L to R: Caitlin Gallagher, Rossana Creighton, Sisilia Citrajaya, Megan Fabian, John Creighton, and Sakkara Creighton.

Dr Julie Old and Noel Cislowski AM.

L to R: Prof. Mike Archer and Prof. Suzanne Hand.

Andrew Cox, Chief Executive Officer, Invasive Species Council (R), speaking with Director Trevor Evans (L).

L to R: Dr Julie Old, Talitha Huston, and Bob Huston.

Dr Julie Old presented Sakkara Creighton with the first lucky door prize.