

# CBCS NEWS

A quarterly newsletter  
**Issue 16** — Summer 2023

## Carissa Klein is 2023 Queensland Young Tall Poppy Scientist of the Year

CBCS's Associate Professor Carissa Klein was named the 2023 Queensland Young Tall Poppy Scientist of the Year at an Australian Institute of Policy and Science (AIPS) ceremony on Wednesday 18 October.

Carissa, an ARC Future Fellow, leads a research group specialising in marine and coastal conservation. "I'm a marine conservation scientist and my research informs policies for improving the health of the ocean and the people it supports," Carissa said.

The work of Carissa's **Ocean Conservation Team** falls into four general themes: land-sea conservation planning; ocean zoning and protected area design; social equity in conservation; and sustainable seafood. "A healthy ocean is critical for solving some of the world's biggest challenges, whether that is feeding a growing population or reversing the decline of biodiversity," Carissa explained.

"We are focused on the environmental and social implications of seafood consumption, as seafood has an increasingly important role in feeding the world's growing population.

One of the biggest challenges we face is feeding two billion more people by 2050 without having an overwhelming environmental impact. Seafood will play an important role in solving this challenge if we improve our fishing, aquaculture and trade policies."

Carissa said she was honoured to receive the award.

"I'm among such great company, so it was thrilling to be recognised in a field of outstanding research projects. I look forward to continuing my work in science communication and sharing research outcomes," she said.

CBCS has been well represented in past Young Tall Poppy Awards, with alumni Kate Helmstedt and Ayesha Tulloch awarded in 2022 and 2021, respectively, and Associate Professor Celine Frere and Dr April Reside awarded in 2020.

The Young Tall Poppy Awards recognise excellence in science and science communication and are considered an indicator of Australia's future scientific leaders. University of Queensland winners join a national alumni network of science ambassadors who engage with students, teachers, government and the community to promote and develop Australia's current and future science leaders.

The awards are an initiative of the AIPS in partnership with The Office of the Queensland Chief Scientist.



Images (clockwise from left) Ocean Conservation Team PhD candidates Ama Wakwella and Rosa Mar Dominguez Martinez with Associate Professor Carissa Klein at the AIPS ceremony. Carissa accepting her award from Jamie Merrick, Director-General, Department of Environment and Science. CBCS's Professor Hugh Possingham with 2023 Queensland Young Tall Poppy of the Year Associate Professor Carissa Klein, Professor Paul Bonnington, Pro-Vice Chancellor (Research Infrastructure), and Professor Melissa Brown, Executive Dean, Faculty of Science. Credit The Office of the Queensland Chief Scientist.



## PROFILE

# A passion for water pollution mitigation: Protecting coral reefs globally

Dr Amelia Wenger 

CBCS Senior Research Fellow

Conservation Scientist, Wildlife Conservation Society

I can't really remember a time when I didn't want to be a marine biologist. I always loved being around animals, and there were moments when I thought I might want to be a vet. However, after the day that I spent working at our dog's vet when I was 12, where I spent most of the time cleaning up poop (the irony that this is what I work on now is not lost on me), I gave up on that dream.

Still, as a kid growing up in landlocked Washington, D.C., I didn't really know what being a marine biologist actually entailed or even if it was a real career option. So, when it came time to go to university, I chose a university in New York City, and decided to study biology, which seemed like the "smart" choice.

## From the landlocked to coastal

But my dream of marine biology hadn't disappeared, and I was thrilled when I got the opportunity to be a research assistant for a coral reef scientist and helped with field work in Honduras. This was the first time I was exposed to the impacts of pollution on coastal and marine ecosystems. The coral disease we were monitoring had been linked to wastewater pollution and even though we were in a Marine Protected Area, there were signs of the disease everywhere. This realisation that our main management tool to protect ecosystems did nothing to stop pollution was fascinating to me, and, spoiler alert, I was hooked!

After graduating from university and travelling around for a few months, I went back to the US and applied to PhD programs all over the country. And I did not get into or hear back from a single one. So, a month before my 23rd birthday, I secured a working holiday visa for Australia and told my family I was off to a place called Townsville, which seemed to have an inordinate number of marine biologists for such a small place. The plan was to get some work experience, travel around, and head back to try my luck again at getting into PhD programs in the US.

*I'm more fulfilled in my work than ever before.*



Image Hanging out after a strategy meeting with WCS Philippines. Credit Emily Darling.



## Existential questions

I ended up doing my PhD at James Cook University (JCU), and when I approached my supervisor and told him that I wanted to understand the impacts of water pollution on coral reef fish, he shrugged his shoulders, and said, "I'm not sure there will be any effect, but go for it". That was the ringing endorsement I needed to set off on my research! So off I went and, like all good applied scientists, at the end of all of my papers I wrote, "and this research will be really useful for management". But then the existential dread kicked in. Was my research useful for management? Was anyone from "management" even reading my papers?? And then it really dawned on me that although I had spent four years understanding the impacts of water pollution on coral reef fish and knew a lot about coral reefs, to reduce the impacts of water pollution, I actually needed to do a big pivot to understand how conservation and management decisions are made and what interventions can be implemented on land to reduce it.

And that's what I've been doing in the 10 years since completing my PhD, first as a postdoctoral research fellow at JCU, working with environmental managers in Western Australia and Queensland on prioritising invasive species management on islands.

I learned a lot about conservation and management in that position but, most importantly, I learned that pollution was really my passion and I needed to find a job that allowed me to work on it full-time. When a two-year postdoc came up at UQ to work on a Linkage grant between UQ and Wildlife Conservation Society (WCS) on trade-offs between logging activities and protecting coral reef fisheries, I knew that this was exactly the kind of work I wanted to do and luckily, I got the job!

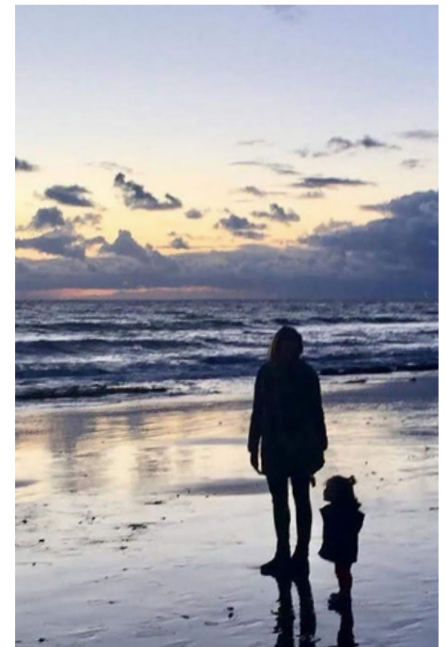
## Joint UQ-WCS role

While I was doing this work, an opportunity came up to do a short consultancy with WCS in addition to my full-time job. A wise academic cautioned me to turn down the position because it would be too much work, and I'm very glad that I completely ignored his advice. It was this consulting gig that ultimately led to a joint position between WCS and UQ in 2020. And in September this year, I officially launched my own water pollution program within WCS and now provide support to our marine programs around the world on how best to mitigate water pollution. This includes a new **guidance document on how to develop integrated conservation and sanitation programs** that we just released and a new grant to develop a **global water pollution mapping tool**.

Even though I am rarely in the water these days, I finally feel like my work really is useful for management, and I'm more fulfilled in my work than ever before.

From this vantage point, it's easy to tell the story of my journey to make it sound seamless. I haven't included the details on the nights and weekends I had to work when I took on too much, the tears, the self-doubt, the challenges of balancing my career and being a mother to a five-and-two-year-old. Along the way, I've had to recalibrate to figure out exactly what kind of marine biologist I wanted to be. But I like to think that the twelve-year-old shovelling dog poop would be very pleased with where we ended up.

Images (clockwise from top) An evening with my daughter in California. Credit Bob Wenger. Coral reef monitoring training. Working with WCS colleagues on Siquijor Island in the Philippines. Credit Emily Darling.



*I actually needed to do a big pivot to understand how conservation and management decisions are made and what interventions can be implemented on land to reduce water pollution.*







## Exploring the dugong and seagrass world with different eyes

Harris Heng Wei Khang   
CBCS PhD candidate

Harris Heng Wei Khang, a CBCS PhD candidate supervised by Associate Professor Daniel Dunn, Professor Peter Mumby and Dr Janet Lanyon, has recently been awarded a grant from the National Geographic Society in support of his research project, “Dugong Connectivity in Southeast Peninsular Malaysia: Innovative Approaches for Challenging Habitats” as a National Geographic Explorer.

As a National Geographic Explorer, Harris becomes part of a community of likeminded individuals who share a passion for exploration and discovery, and address critical environmental issues with projects that have the potential to generate significant impact.

### Dugongs in the meadow

The journey to the award began with Harris investigating the spatial feeding ecology of Endangered dugongs in their seagrass habitats at the Sibu-Tinggi Archipelago in southeast Peninsular Malaysia. Harris faced the task of studying this elusive species in their seagrass meadow foraging habitats, which in Malaysia are challenging to study due to high water turbidity levels and complex subtidal geo-ecological systems. Recognising this challenge, Harris and his team from the **Team Sea Habitats** (a spatial ecology lab at Universiti Malaya, Malaysia) and **The MareCet Research Organization** (a marine mammal-focused NGO) took a different approach – tracing the feeding trails of dugongs in the meadow – to know what and where the animals feed. The result? They mapped the largest single subtidal seagrass meadow in Peninsular Malaysia (~13 km<sup>2</sup>), revealing distinct spatial feeding patterns driven by seagrass cover (Heng et al. 2022).

While this initial study laid the foundation and provided vital information for delineating protected areas for dugong feeding, there remained a dearth of long-term data on dugong populations, spatiotemporal habitat utilisation patterns, and the dynamic relationship between seagrass and dugong. This knowledge gap limits our understanding of how populations may be affected by various disturbances under environmental change. As the direct observation, capture and tagging of animals have been a challenge in seagrass habitats in Malaysia, Harris realised the need for a transformative and strategic approach to continuous data collection.



Images (clockwise from top right) Sharing stories and fun facts about seagrass and dugongs with elementary school students in Malaysia. Credit Ong Wan Ning. A feeding trail, showing evidence of seagrass grazing by a dugong in its habitat. Credit Harris Heng. A dugong grazing on seagrass by extracting it from the substrate. Credit Research team of Dugong Underwater Monitoring Project – Malaysia.

*Harris will share the stories of dugong and seagrass with the public in community outreach and education.*



## Data collection with eDNA and UAVs

Through this National Geographic award, Harris aims to integrate environmental DNA (eDNA) and unmanned aerial vehicle (UAV) surveys to overcome barriers in obtaining long-term species' population information in five ways:

1. enhancing access to new data collection of the animals without relying on direct sightings;
2. reducing the cost and risk linked to traditional field methods;
3. offering a non-invasive solution applicable to other marine taxa, particularly elusive species;
4. leveraging the advantages of both eDNA and UAV approaches to complement each other's limitations; and
5. being adaptable for partial or full implementation by local communities.

This integrated approach is envisioned to serve as a biomonitoring tool for conserving dugongs in remote and challenging environments.



Image Harris testing a waterproof drone. Credit Nina Ho.

## Joining a global community


With the support of the National Geographic Society, Harris will join the global community of National Geographic Explorers to make significant positive contributions to their fields. He won't just look at the world from the ocean and/or the sky (i.e., using eDNA and drones), he will also share the stories and discoveries of dugong and seagrass with the public, continuing his effort in community outreach and educational activities in Malaysia.

"I'm thankful to everyone who has encouraged me to continue in conserving oceans despite the lack of attention and resources available to undertake conservation research in Malaysia," Harris said.

"I have been creating little ripples since I started. Now I can equip myself to make a bigger impact, fostering a greater understanding and conservation of the natural world."

# From Brisbane to Broome

## A story of love and learning

Sai Meghna Reddy Gaddam   
CBCS Master of Environmental  
Management Graduate

As a marine social scientist with a background in environmental management, I am extremely interested in collaborating with Indigenous communities to assist in the management of land and sea. To make this vision come true, I was looking for trusted pathways to enter and work alongside Traditional Owners. Enter Aurora Education Foundation's internship. This opportunity became my solace and put a stop to that search. I got the opportunity to intern with Nyamba Buru Yawuru (NBY) in Broome, Western Australia, in the Environmental Services team.

## Yawuru joint management

The Yawuru people are the Traditional Owners of Broome. There are four conservation parks, including a marine park, in the Yawuru joint management program, managed under varying arrangements. The in-town park (Minyirr Buru) is jointly managed by Yawuru Prescribed Body Corporate (PBC) and the Shire of Broome (SOB), with a service agreement with the Department of Biodiversity, Conservation and Attractions (DBCA). The terrestrial out-of-town park (Birragun) and the marine park (Nagulagun) are jointly managed by the Yawuru PBC and DBCA. The fourth Park (Guniyan Binba) is a tripartite arrangement with the SOB, DBCA and Yawuru PBC.

Image DBCA and Yawuru Rangers conducting drone surveys. Credit Sai Meghna.







*I was elated to use the two-way science method to collaborate with and empower the Kimberley Traditional Owners.*



## Internship project

My project was to analyse the current stressors and challenges within this complex tri-partied joint land and sea management. This involved interviewing multiple stakeholders from regional managers to rangers from NBY, DBCA and SOB. Based on the findings, I was required to highlight the next steps and opportunities that would arise from the state providing a more sustainable and supportive framework. This was highlighted through the form of a letter submitted to the Minister to call out the way forward for a successful and sustainable joint management program.

I also had the opportunity to plan and coordinate operational support and reporting for the Joint Management Program – Yawuru Park Council and Marine Management Body. I deepened my knowledge surrounding project management and curated project proposals. I undertook crocodile surveys and drone surveys with the DCBA Rangers and Yawuru Country Managers.

My favourite part of the internship was spending time on Country. Watching these amazing Rangers protect and conserve country irrespective of the extreme conditions further increased my zeal to work in this space. I truly cherish my conversations with the Rangers. Their love for Country and their duty to care for it gave true meaning to my career change.

## Working with the Indigenous Saltwater Advisory Group

Another highlight of my internship was supporting and working with the Indigenous Saltwater Advisory Group (ISWAG). ISWAG is auspiced by NBY and represents nine Traditional Owner Nations across the Kimberley Sea Country. This is a grassroots-level advisory group which has become a powerful united voice guiding management and conservation within the Kimberly region. This network supports the Traditional Owners to revive, maintain and sustain Traditional Ecological Knowledge. The group helps various Traditional Owner groups implement sea Country plans, facilitate the development of regional-level management plans and cultural protocols, enhance the Traditional Owners' capacity for marine management and empower them to lead and participate in marine research and monitoring projects. ISWAG works as a "one-stop shop" for relevant stakeholders to engage with Traditional Owners in the Kimberly region for knowledge-sharing and marine conservation.

I was elated to use the two-way science method to collaborate with Kimberley Traditional Owners and empower them towards the successful execution of their Healthy Country plans through collaborative research, policy and management. I had the opportunity to strengthen my grant writing skills as I co-facilitated grant writing and strategic research and collaborative opportunities in alignment with regional ISWAG Turtle and Dugong Conservation.

## Yawuru repatriation

A key moment in my internship that left a deep imprint in my heart was the Yawuru Repatriation Exhibition at Broome. This exhibition shares the truth about the Yawuru ancestors whose remains were returned from museums in Germany. The exhibition explores the pain faced by the ancestors and the healing experienced within the community when the remains were returned. It was an extremely emotional moment for me despite being a non-Yawuru person. I grieved their loss and felt a deep sense of equanimity when I understood how the desire of these ancestors to come back to their Country guided the current leaders to make their way to Germany and bring them home.

Throughout my internship, I did my best to align with the vision of Yawuru elders, which was to ensure that Yawuru Traditional Ownership is recognised and protected and that their culture, way of life and identity is safeguarded. This is a tiny step that I took as a researcher in strengthening my understanding of the cultural protocols, knowledge and nuances that are involved while working with Aboriginal land/sea managers and communities.

## Why I strive to be a good ally

As someone from India whose ancestors helped put an end to colonisation, I can fathom the amount of unity and conviction that it takes to support the Traditional Owners of the land as they reclaim their power and share their knowledge and wisdom. The sacrifices and resolution of my ancestors that bestowed me with my freedom are the reason I aspire to be the highest and best ally for the Traditional Owners of Australia. Learning and walking beside them as we co-create and co-design conservation strategies that shape the present and future of Country is truly a privilege. I am grateful to the Yawuru elders and ancestors for allowing me on their Country and acknowledge their contributions past, present and future that have shaped and continue to shape Australia.





Images (clockwise from left) Martha Rojas Urrego, then Secretary General of Ramsar Convention on Wetlands, addresses the World Coastal Forum. Martha has recently been appointed Executive Secretary of the International Whaling Commission. Credit World Coastal Forum. There were many heroic moments on the pitch, although for sheer skill and performance on what was his debut appearance in the match, huge kudos to Professor Zhijun Ma of Fudan University, seen here deftly controlling the ball to start an attack. Chinese ornithology is growing ever stronger: The 17th Chinese Ornithological Congress was held in Nanjing in October 2023. Credit Chinese Ornithological Congress.

## Coasts, birds and soccer in China

Professor Rich Fuller 富

Coastal ecosystems are biodiversity havens, but they are under intense pressure worldwide. Threats to coasts arise from lack of awareness of their value, poor access to evidence-based conservation approaches and lack of capacity to implement them, together with the fragmented governance typical of coastal ecosystems. In the face of sea-level rise as well as erosion of natural capital and a biodiversity extinction crisis, there is now a more urgent need than ever for concerted actions to conserve these ecosystems and their services, ensuring that any use of them is sustainable.

### New initiatives

In response to these challenges, the World Coastal Forum has recently been established, and CBCS is delighted to be an official supporter of this initiative. The WCF was officially launched in September 2023 in Yancheng, China, near the site of the country's first coastal World Heritage area. This location is full of symbolism for coastal conservation because it protects critically important wetlands for migratory birds and represents a major commitment to long-term protection of tidal flats and other coastal ecosystems in China. More than 1000 people attended the launch, including high-level delegations from many countries and NGOs.

A series of task teams have been established to bring evidence to bear on coastal conservation issues. One of the first major products will be a "State of the World's Coastal Ecosystems", along with a conservation evidence toolkit. The emphasis is on getting actionable evidence on coastal conservation into the hands of policy-makers and managers. There are plenty of opportunities for researchers and managers working in coastal conservation to get involved in the WCF – check out [worldcoastalforum.org](http://worldcoastalforum.org) or come and chat with me.

A few weeks later, a huge crowd attended the 17th Chinese Ornithological Congress, where I was privileged to give a plenary talk on the future of bird conservation in the East Asian-Australasian Flyway. It was brilliant to see so many Chinese bird researchers in one place, and the sheer quality and quantity of work being done by a new generation of early career researchers in the country was truly heart-warming. While there is much brilliant ecology underway, my impression is that there's a strong need for more applied conservation science among Chinese ornithologists, to address the profound threats to biodiversity in the region.

*The race is on to understand the migrations of landbirds and protect their migratory paths.*

There were dozens of exciting talks on migratory birds, which have become a real focus area in Chinese ornithology, in particular for studies that track the journeys of the birds. Impressive miniaturisation of tracking devices now means that even tiny birds can be tracked, revealing high-quality data that would have been impossible to collect only a few years ago. With many migratory landbirds declining rapidly in the East Asian-Australasian Flyway, the race is on to understand the migrations and protect their migratory paths before a rash of extinctions hits this globally important migration hotspot.

### Optimism renewed


A highlight of the meeting was the traditional soccer match, in which North China plays South China, along the major biogeographic division between the temperate north and subtropical south. By virtue of hailing from Australia, I was co-opted in the South team, although despite our best efforts we ended the match 2-0 down. Great fun was had by all, and I left the meeting with renewed optimism about the future of the migratory birds that I love so much.







# The 31st International Congress for Conservation Biology 2023, Rwanda

Tom Lloyd   
CBCS PhD candidate

After a false start in 2021, thanks to you-know-what, the African conservation community was finally able to attend their first-ever International Congress for Conservation Biology (ICCB) outside South Africa in July of this year at the Kigali Convention Centre. Conversations with conservationists attending from Rwanda and neighbouring regions made it clear just how important this opportunity was to interact and network with conservation scientists from across Africa and around the world.

African delegates constituted 41% of the attendees, with a healthy dose of representatives from conservation hubs in Europe and North America. Delegates from Oceania made up just 4% of attendees, including current CBCS members Dr Chris O'Bryan, Dr Diego Correa, Dr Sreekar Rachakonda, and Dr Courtney Melton (SCBO President-Elect).

Several notable former CBCS researchers were also present, including Dr Aleksander Brackowski, Dr Duan Biggs, Dr James Allan, Dr Magdalena Lenda, Dr Moreno Di Marco, Dr Shawan Chowdhury, and Dr Vanessa Adams (SCB Global President).

## The importance of community

The theme for the conference was "The future is now: Sustaining biodiversity for today and tomorrow," underscoring the urgency of our collective actions and decision-making for determining the future of biodiversity. With over 700 talks across 125 sessions, there was a lot of ground to cover – far too much for one person to summarise here. Nevertheless, the importance of community involvement and capacity-building for the success of conservation programs was perhaps the most recurrent theme, and rightly so, given the geographic context. Many of the talks and several personal conversations echoed this sentiment: "These approaches are working, but we need more support from the global scientific community".

While biased by the streams I chose to attend, several other trending topics included methods and applications of eDNA, getting "Nature Positive" right,

achieving the Kunming–Montreal Global Biodiversity Framework (GBF) 2030 targets, addressing the underrepresentation of insect conservation, conducting conservation impact evaluation correctly, and as expected, exploring carnivore conservation and its socioeconomic complexities. The most striking takeaways for me, however, were the incredible achievements of local scientists working on shoestring budgets and just how understudied some systems are in Africa. Case in point: a talk on the results of the maiden camera trap survey of mammals in Togo's largest national park.

Although the complex history of international conservation collaboration in Africa is fraught with controversy and cruelty, the need for external scientists to support local capacity-building, biodiversity- and threat-monitoring, and environmental problem-solving in this part of the world hasn't diminished. On the contrary, imperialist interests that have long sought to exploit Africa's riches and its abundance of easily corruptible political systems are experiencing a resurgence in both the "Eastern" and "Western" worlds. Indeed, the challenges conservation scientists from these regions face have never been more profound than in the second Scramble for Africa.

Images (clockwise from top left) Next to the definition of "umbrella species" in the conservation dictionary lies a photo of the mountain gorilla (*Gorilla beringei beringei*). Oribi (*Ourebia ourebi*) graze in the shadows of an oil drilling platform, Murchison Falls NP, Uganda. Credit Tom Lloyd. Tom donating school supplies (and most importantly a football) to a Maasai village school on the border of the Maasai Mara NR, Kenya. With special thanks to Dr Nathalie Butt for her donation. Credit Courtney Melton.





*Now is the time for international conservation scientists to give African nature and those who depend on it the attention it deserves.*

## Experiencing African conservation challenges firsthand

Following the conference, I was eager to visit some of the most pressured yet biodiverse terrestrial ecosystems on the planet, from the Maasai Mara in Kenya to Bwindi Impenetrable National Park in Uganda. The communities inhabiting these ecosystems and their peripheries, as well as the conservation of these areas, depend on tourism income, which has been devastated by years of lockdowns.

Given the immense human pressures surrounding such ecosystems and the extensive forest loss and degradation on the continent, the intactness of ecosystems supporting migrations of megafauna in their millions and forests where elephants, gorillas and chimpanzees continue to coexist is a testament to the diligence and perseverance of African communities and conservationists.

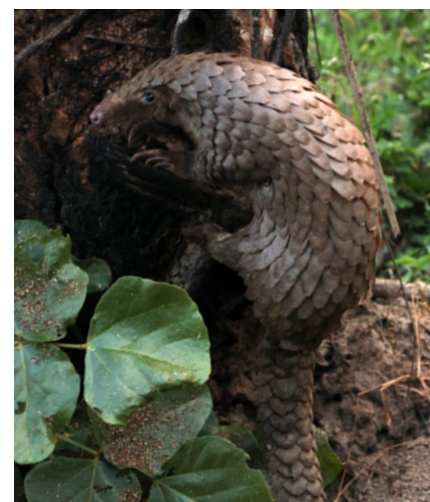
Driving across Kenya and Uganda, you are constantly confronted with the immensity and complexity of subsistence agriculture and its interplay with conservation and sustainable development. While less expansive, the impacts of heavy industry are also clearly visible, especially in some places very near (or within) conservation areas. Quarrying to support Kenya's rapid development has a history of threatening the movement of animals among the parks, conservancies and sanctuaries of the Amboseli-Tsavo ecosystem.

Less obvious are the impacts of oil drilling in the "Pearl of Africa" – Uganda – but on learning of the profiteers and pathways of road construction in the north-west of the country, the picture becomes painfully evident. Near-perfect roads connect Murchison Falls National Park to the national highway network, not for improving tourism, but for facilitating access to machinery and the spoils of oil from the drilling site within the park.

After birding the Royal Mile, we waited patiently for excavators to clear the path as an old dirt road was being widened and prepared for paving to support another oil project, cutting through Budongo Forest, the largest stand of primary forest in Uganda.

While oil and other historical mining further south near Kibale Forest and Queen Elizabeth National Parks have also gifted non-target towns and villages improved access to agricultural markets, some populations of chimpanzees and elephants are forced to traverse the bitumen regularly as a result. However, once you reach Bwindi Impenetrable National Park at the southern end of western Uganda, the carefully manicured roads quickly turn to dust. Here, the unintended positive consequences of road-building for facilitating tourism and access to markets elsewhere in the country are underscored, as this is one of the most impoverished parts of Uganda, as well as its most important tourism destination. Nevertheless, the persistence of industrial interests in the Greater Virunga Landscape illustrates that now, more than ever, it's time for international conservation scientists to give African nature and those who depend on it the attention it deserves.

Images (clockwise from top left) Tom presenting his PhD chapter on mining activity in protected areas globally, awarded 1st place for best student speed talk. Credit Ayman Abdulkareem. Bwindi community pangolin project volunteer Joseph carrying a tree pangolin (*Phataginus tricuspis*) rescued from poachers just days before. Contact Tom if you'd like to support the community's work to surveil pangolin poachers in the Bwindi Impenetrable Forest. A young bush elephant (*Loxodonta africana*) in the Amboseli NP, Kenya. The Amboseli-Tsavo ecosystem is considered the last stronghold for 'tuskers', elephants with tusks that weigh more than 45kg each. Credit Tom Lloyd.





## PROFILE

# Being in nature, joyfully

Nicola Sockhill

PhD candidate

HDR representative – Research

I credit my love of nature to my family's yearly trips to O'Reilly's, including memories of hiking to Moran's Falls, finding a satin bowerbird's architectural nest and getting lost in the evening mist in the fields at Luke's Farmhouse. Subtropical rainforest remains one of my favourite ecosystem types, probably due to those early experiences in Lamington National Park.

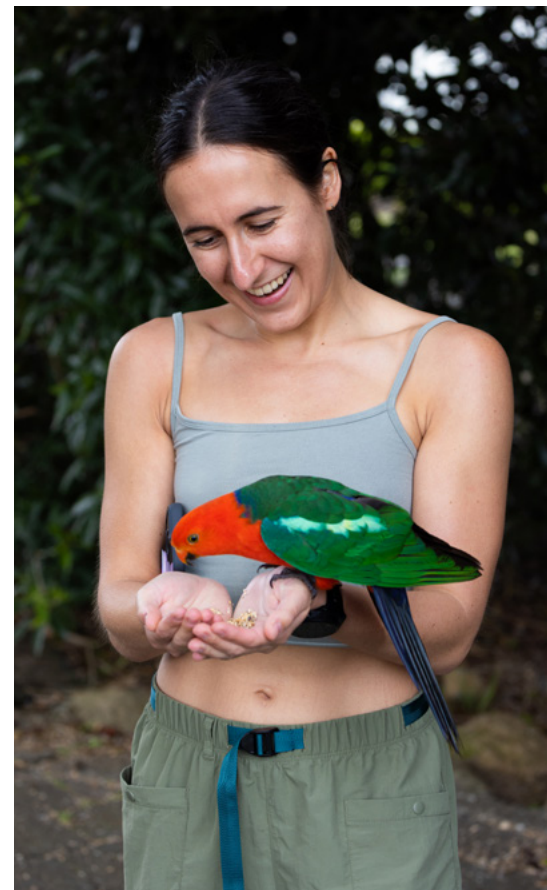
After living in a small town in north Queensland for my childhood and teenage years, I took the opportunity to move to a city as soon as possible by starting a Bachelor of Design, majoring in Architecture at Queensland University of Technology in Brisbane. I soon realised I wasn't passionate about architecture (yes, even despite the bowerbird's early influence), so I changed to a Bachelor of Business with a major in Advertising (should I keep this bowerbird analogy going – what are the blue decorations if not advertising?). I persisted through five years planning and implementing ad campaigns and generally hating life before finally deciding it wasn't for me.

I did, however, first let this career take me to London for two years, but I eventually moved back to Brisbane to finally start my career in science.

## After false starts, finding my path

I completed a Bachelor of Advanced Science (Honours) here at UQ, and this is where I began to establish some of my important friendships and professional relationships. Unfortunately, the final year of the degree was the infamous 2020, so it was a pared-back experience that even this introvert found challenging! I did, however, meet **Professor Richard Fuller**, and that set me on the fulfilling academic path I'm on today.

My Honours year with Rich was foundational to my research career so far. I clarified to myself that I love research, and learned how to work with big datasets, so decided that this is the sort of work I really enjoy and want to pursue for the foreseeable future. I worked with a great team of co-authors – Richard, as well as **Angela Dean** and **Rachel Oh** – and turned this research into my first publication (**Beyond the ecocentric: Diverse values and attitudes influence engagement in pro-environmental behaviours**), for which I was shortlisted for the Rachel Carson Prize.



I continued with Rich for my PhD. I'm now around halfway through it time-wise (and an undisclosed proportion of the way through it output-wise, eek). I still work with large datasets, but now predominantly use citizen science (eBird and iNaturalist) data as well as a variety of spatial and remote sensing datasets. I use them to explore how urban greenspaces support biodiversity, and I've already found that quite a lot of what we assume to be true is not quite right. I'm really interested in working with other researchers who use large-scale citizen science data, not only to discover interesting results but also to develop creative and optimised ways to work with these datasets. Working with such large-scale (and exponentially increasing) datasets is a relatively new opportunity and I'm excited to be at the forefront of this rapidly changing field.

This citizen science work is complemented by a series of projects looking at insects in urban garden beds in Melbourne, and how these insects are influenced by different design features. I'm excited to see how this researcher-collected data compares to citizen science data, and to see how the findings of these projects complement each other. I'm working with Professor Sarah Bekessy and others from RMIT on this, and hope the findings will enable more informed urban greenspace design and maintenance planning.

Images (top to bottom) At O'Reilly's with a beautiful male king parrot. Credit Jeff Ikin.  
Hiking with the Fuller-Amano labs at Christmas Creek. Credit Louis Backstrom.







*Working with large-scale (and exponentially increasing) datasets is a relatively new opportunity and I'm excited to be at the forefront of this rapidly changing field.*

### Exploring Norfolk and being active

While my work can be done on a laptop, I take the opportunity to help colleagues and friends with their fieldwork. My most recent trip was to Norfolk Island to help fellow CBCS PhD candidate **James Tweed** with his entomological research, where we set lots of insect traps in various vegetation types. Norfolk Island is beautiful and has many endemic and native species – some of which James himself will be describing as part of his work! – and habitats that we were able to explore while we were working. We even got to take a day trip to the breathtaking Phillip Island, a truly special experience featuring an abundance of seabirds and indescribable landscapes. Unfortunately, this trip was cut short by the impending cyclone Gabrielle, but James – if you ever need a volunteer in the future, I'll do it!

Outside of work, I'm almost always outside or doing something active. During the week I'll be either running or at the gym, and on weekends birding or hiking (or running or at the gym). In full-circle logic, my early research touched on how being in nature is incredibly important for mental and physical health, so even though I naturally feel happier when I'm outside and active, I try to remind myself of this during those times when I'm feeling tired or disenfranchised or working too hard.

While I'm only a few years into my academic career, I'm so happy to be able to continue doing what I love: working with great people, finding interesting and novel results and somehow making that fit into what can justifiably be passed off as a career.



Images (top to bottom) Exploring Phillip Island on a day trip from Norfolk Island. Credit Samantha Wong-Topp. On the iconic Tree Top Walk at O'Reilly's. Credit Jeff Ikin.

### About CBCS

The Centre for Biodiversity and Conservation Science (CBCS) is a world-leading solution-oriented research centre for biodiversity conservation.

Based at The University of Queensland (UQ) in Brisbane, Australia, CBCS works in partnership with scientists, governments, non-governmental organisations and industry to help solve the most important conservation problems around the world.

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