CBCS NEWS

A guarterly newsletter of the Centre for Biodiversity and Conservation Science Issue 11 Spring 2022





Dr Claudia Benham, at home in Brisbane.

Claudia Benham wins an ABC Top 5 residency

CBCS researcher Dr Claudia Benham is one of five Australian researchers selected for the 2022 ABC Top 5 Humanities and Social Sciences media residency program.

The ABC Top 5 is a two-week intensive residency that offers early career researchers the opportunity to work alongside some of Australia's leading journalists and broadcasters to develop communication skills and share their work. The program, supported by ABC Radio National, gives researchers a platform to share their research insights through podcasts and other media.

> This research will raise awareness of community-based solutions for coping with the climate and biodiversity crises.

GBR grief - and resilience

Dr Benham's research focuses on understanding how environmental change affects local communities in the Great Barrier Reef, including how communities are being affected by ecological grief following coral bleaching or other environmental declines. Ecological grief and climate anxiety are becoming more and more prevalent, particularly among children and young people. In Australia, the 2019–20 Black Summer bushfires and recent coral bleaching have increased the focus on these issues.

Over the next three years, Dr Benham will be working with local communities across the Reef to examine how factors such as place attachment (individuals' links to the environment) influence the likelihood of experiencing ecological grief. Her research will also look at how communities are responding to climate grief, and how community-based decision-making can help Reef communities to build resilience and plan for the future.

CREATE CHANGE

AUSTRALIA

THE UNIVERSITY **OF QUEENSLAND**

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.

cbcs.centre.uq.edu.au

Importance of social science

Dr Benham said, "I am thrilled to have been selected for the ABC Top 5 this year. Environmental change is already having a significant impact on local communities in many parts of Australia, and research plays an important part in understanding the full impacts of climate change and environmental losses and how these impacts are distributed. Social science research plays a key role in supporting adaptation but also in identifying how communities are working to combat climate change and environmental decline at a local level".

She also cautioned, "While we urgently need to tackle the causes of climate change, we also need to support communities who are already dealing with the effects of a changing climate, including those who are impacted by climate grief. These tend to be communities that depend strongly on the environment for their livelihoods, society or culture.

"This research is about the Reef, but it will also raise awareness of community-based solutions for coping with the climate and biodiversity crises, which are relevant to communities across Australia".

The ABC Top 5 Humanities and Social Science residency is underway in August-September 2022. The ABC also runs annual Top 5 residencies for Science and the Arts. Find out more at: www.abc. net.au/radio/programs/top5/top-5-2022/13973380

PROFILE

Professor Anthony J. Richardson CSIRO Oceans and Atmosphere, Head of Mathematical Marine Ecology Lab



Conservation planning in the open ocean

I think my background is unusual for an academic at UQ – I grew up in Brisbane. I live in the same suburb, Yeronga, where I went to high school and where my kids go. I also did my undergraduate degree in Maths and Ecology at UQ, and this started my interest in combining these disciplines in my research. And it is in south-east Queensland – specifically, in the subtropical rainforests of Lamington National Park – where I developed my love for the environment.

Cape Town in the 1990s

My interest in marine systems, particularly plankton, biological oceanography and fisheries, started during my PhD at the University of Cape Town in South Africa. My research investigated how plankton and the environment regulated the large fluctuations of anchovy and sardine stocks in this rich upwelling system. Living in South Africa was an eye-opening experience. I arrived in the country in 1993 as apartheid was being dismantled. I have vivid memories of that time: of the violence in the country before the election in 1994, such as the armed attack on a church that killed 11 people (I was nearby but luckily a winery was not targeted); of the excitement when Nelson Mandela was elected president; of being held at knifepoint coming home late after working on my thesis; of being an Australian in South Africa when the Wallabies beat the Springboks, which was unfortunately rare; and of travelling around the great game parks of southern Africa, such as Kruger. Etosha, Hwange and Chobe, which kindled my interest in conservation.

The high seas

I returned to a job at The University of Queensland in 2005, where most of my work has focused on large-scale research on the impact of climate change on marine systems, running a national plankton observing system, and global ecosystem modelling to investigate the role of plankton and climate change in fisheries and carbon sequestration. Although I have been involved in marine science for a long time, I am now engaging more with CBCS. I think this is because my interests and expertise in the open ocean are probably more relevant now, especially in marine conservation planning. Protecting the high seas is a growing conservation issue, with the 30x30 initiative, as only 1% of the high seas is currently protected despite representing 45% of the Earth's surface. Most new marine protected areas will have to be in the high seas.

My conservation planning work has benefited from strong collaborations with CBCS members Daniel Dunn, Jason Everett, Carissa Klein and Jeff Hanson. Recent CBCS PhD student Isaac Brito Morales developed the first 3-D. climatesmart, spatial plan for the high seas. This has helped springboard our work in large-scale conservation planning. MSc student Lea Fourchault is designing a multi-sectoral spatial plan considering fishing, shipping and deep-sea mining in the Indian Ocean. A recently finished MSc student, Tin Buenafe, has developed climate-smart conservation planning methods that can be easily applied. She is also designing Other Effective Areabased Conservation Measures (OECMs)

for Pacific Tuna species. Yet another MSc student, Alvise Dabalà, has developed a global mangrove prioritisation, which maximises ecosystem benefits such as coastal protection, carbon sequestration and fisheries, rather than the typical approach of minimising conflict with the fishing industry. Finally, two other students are expanding a global fisheries-focused ecosystem model to include the export of adult fish and eggs and larvae out of marine protected areas, which should improve estimates of the benefits of MPAs to fisheries, particularly in the high seas.

The coolest (literally!) conservation plan I am working on is in the Southern Ocean. Together with Daniel Dunn, postdoc Jason Everett, and researchers Tin Buenafe and Sandra Neubert, we are designing a network of protected areas in the eastern Weddell Sea, an area the size of France, Germany and Spain. This work funded by the Norwegian Government requires agreement of all 26 members of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) for the implementation of the protected areas. The science is the easy part!

Collaborations and applied research

Through these conservation planning projects we have been able to develop a transferable conservation planning workflow from data processing through prioritisation to visualisation. We have also created innovative climate-smart methods that can be readily deployed and an R Shiny App that runs customised spatial prioritisations in real time, which will be valuable for stakeholder engagement.

I have enjoyed my increased research focus in marine spatial planning. It has been especially rewarding seeing students gain expertise in becoming skilled R programmers, and I have enjoyed the more applied research. I would like to thank CBCS for fostering collaborations with Daniel Dunn, Carissa Klein and Jeff Hanson. And a big shout out to Jeff Hanson, as I think his R prioritizr software is a game-changer and I encourage anyone doing spatial planning to try it. Finally, anyone interested in marine conservation planning in R and learning quantitative skill please reach out.



CBCS makes a big impact on the 2021 State of the Environment Report

Brooke Williams and James Watson



populations, and the species occurs in low numbers (typically <2,500) with extinction possible in the medium term (10–100 years) OR continuing declines are documented and the species is extremely rare (known from <250 individuals and/or a single population) with high extinction risk within the next 10 years. Source: Silcock & Fensham (2018). Republished with the permission of CSIRO Publishing, from Australian Journal of Botany,

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Figure 9 Numbers of (a) declining and (b) imperilled (threatened) plant species per bioregion

Unless you have been under a rock or out doing remote field work, you would have seen that the 2021 State of the Environment (SoE) report was finally released by incoming federal Environment Minister Tanya Plibersek after being held back by the previous Coalition government for nine months. While the broad message that things are going very badly for Australia's species and ecosystems basically everywhere - is likely well known to readers of this newsletter. these five-yearly reports are critical summary documents, as they provide the foundational evidence that drives new policy initiatives and greater determination by governments to do the right thing for nature (and for people).

Climate change is now

A distinct difference between the most recent report and its predecessors is that the impacts of climate change are now being referred to in the present, rather than something that will happen in the future, with the report detailing how climate change is exacerbating pressures on every Australian ecosystem. Other key findings are that Australia now has more foreign plant species than native ones, and that the number of listed threatened species has risen by 8% since 2016, with more extinctions almost certain in the next decades.

CBCS contributes expertise

While the document was led by three prominent professors, the document represents thousands of hours of work over two years by more than 30 experts, with CBCS's very own <u>Daniel Dunn</u>, Megan Saunders, <u>James Watson</u> and <u>Michelle Ward</u> being contributing authors to some sections.

What is clear from the SoE report is that CBCS continues to have a profound impact on these type of federal reports. By our count, 90 articles led or coauthored by CBCS members were referenced, across the Antarctica, Biodiversity, Coasts, Extreme Events, Heritage, Indigenous, Land, Marine and Urban sections of the report. Many figures from CBCS papers were used in the report to highlight core issues.

Some stand-outs included the featuring of the Threatened Species Index, which aggregates datasets from a range of programs monitoring population trends, which was used to show stark declines in plants, mammals and birds. This index is currently managed by Geoff Heard with the help of Tayla Lawrie, with past and present CBCS members Elisa Bayraktarov, Micha Jackson, Hugh Possingham and Ayesha Tulloch having been the driving force of the Index. Work led by Jen Silcock was used to show numbers of declining and imperilled plant species and the numbers of translocations documented by biogeographic region, and by Rod Fensham to show the density of common and threatened eucalypt species.

Impact of CBCS PhDs

Work led by CBCS students featured heavily. Current PhD student Tom Lloyd's work was used to show the density of citizen science programs for threatened species in Australia. Work by recent PhD graduate Stephen Kearney was used to show the number of threats and the 10 invasive species listed as affecting the greatest number of EPBC Act-listed threatened taxa, and the number of Australian threatened species that would benefit from different conservation responses. Recent PhD graduate Michelle Ward's work on habitat clearing was used to show the 10 threatened species that have lost the largest proportion and area of potential habitat to land clearing since the year 2000. Work led by previous CBCS Masters students Adriana Allek, Ariadna Assis, Nicoli Eiras, and Thais Amaral (supervised by Hawthorne Beyer) was used to show the relative frequency of broad taxonomic groupings of threatened animal species (including marine species) in Australia's states and territories. Other important works referenced included Rebecca Runting's article on opportunities for big data in conservation and sustainability, Carla Archibald's assessment on protected area governance types, Richard Fuller's review of monitoring migratory species, Jeremy Simmonds's work on environmental impact assessments and offsetting. Carissa Klein's work on marine turtle management, and research by many CBCS students working on human footprint mapping and what this means for the state of the environment.

If there was one thing the State of the Environment report highlighted to us, beyond making us realise the special role CBCS plays in doing the different types of science that helps decision-makers design the policies that bend the curve for nature, it is that far more science is needed, especially in the space of climate change, ecosystem collapse, and what this all means for the immediate future of humanity and the greater biosphere.



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Figure 11 Relative frequency of broad taxonomic groupings of threatened animal species (including marine species) in Australia's states and territories

Centre for Biodiversity and Conservation Science

Industry placements for PhD and Masters students

Who are we?

The Centre for Biodiversity and Conservation Science (CBCS) is a world-renowned solution-oriented research centre for biodiversity conservation at The University of Queensland (UQ). We have numerous outstanding Masters and PhD candidates interested in completing an internship. We are keen to help match up our students with external partners.

The internship program

The Australian Government has a new program to incentivise 60-day industry internships for Masters and PhD candidates. The student is paid as usual by their scholarship while completing the internship. The internship is not part of their thesis, rather, an independent project that can be completed within the 60-day timeframe.

Benefits to your organisation

- Your organisation will gain a highly skilled and motivated research student who will bring specialist knowledge, innovative ideas and fresh perspectives.
- The program is highly cost-effective and productive, as no wages are needed to support the intern, and they can complete a project that employees may have limited time to conduct.

- The program offers excellent pre-recruitment screening for potential employment once the intern has graduated.
- Mentoring an intern is professionally fulfilling for employees, particularly those looking for management and supervisory experience.

Benefits to the student

Students will:

- develop knowledge and transferable skills in a professional setting
- gain industry-specific training and hands-on experience
- build a professional network and gain a competitive edge in the job market

How can your organisation get involved?

Please write a half-page description with details of the potential project, location and timing. We will circulate opportunities to interested CBCS students and connect you to suitable candidates.

Please contact <u>Associate Professor Carissa Klein</u> at <u>c.klein@uq.edu.au</u> if you have any questions or would like to discuss further.

Find out more

cdf.graduate-school.uq.edu.au/hdr-placements

Flatback turtle

Birds, brigalow, buffel and bovines

CBCS Honours student <u>Brodie Crouch</u> has been awarded an AW Howard Memorial Trust scholarship. He takes up the story.

The splash of a platypus diving in our farm dam, red-backed, variegated and superb fairy-wrens flitting between leaves, and the honking call of whitebellied sea eagles: these are the scenes of my childhood spent growing up on a dairy farm an hour and half north of Brisbane. It has inspired me to look for solutions to reconcile the biodiversity crisis with increased food production, by improving biodiversity outcomes on agricultural land at minimal cost to production.

My Honours project is investigating how we can achieve this on grazing properties in the Brigalow Belt Bioregion. This is an area that has been rapidly developed for agricultural production, which has established and continued to support rural communities who produce highquality food products, but at a cost to the region's biodiversity. Throughout the Brigalow Belt, a recurring landscape feature is linear strips of woody vegetation, retained along fence lines and throughout paddocks – a way for land managers to retain native vegetation on their properties.

Value to pasture and biodiversity

Earlier in the year, I was honoured to be awarded an AW Howard Memorial Trust scholarship, which will allow me to conduct fieldwork in the Morven, Augathella and Mungallala regions. The scholarship is awarded to students whose projects facilitate pasture research, so I am aiming to get an idea of not only of the habitat value of these strips to woodland-dependent bird communities, but also what costs and benefits they provide from a pasture productivity perspective.



Some evidence shows that retaining the strips of trees in grazing pastures has beneficial effects on pasture growth. So, there may be potential to improve biodiversity on grazing properties at a minimal cost to, or maybe even to the benefit of, agricultural productivity.

I'm very lucky to be working with an awesome supervisory team from both The University of Queensland and the Queensland Government's Department of Agriculture and Fisheries. This is the dream research project for me, and I'm super-excited about the fieldwork component. I headed out for my first round of bird and pasture surveys this winter, so stay tuned!

Sunrise through a brigalow strip.

<u>Maddy Dyring</u> wins 3MT Faculty of Science People's Choice Award

The University of Queensland's Three-Minute Thesis (3MT) Science Faculty final took place on Wednesday 27 June. Twelve finalists from six schools in the Faculty of Science battled it out for a place in the UQ final.



If I'm being honest, I initially signed up for 3MT purely to qualify for funding (I am a PhD student after all). But now that the dust has settled, I must say that the experience challenged me to think of creative ways to get people to care about groundwater (surface water's evil twin). In the biomedical field, giving your story a protagonist is straightforward because human health is so universally important. Ecosystems on the other hand, aren't quite as relatable. Groundwater is not classy, particularly when coastal wetlands are involved. They are muddy and moist, laden with odd smells. I've been poked and prodded by deceptively sharp reeds, eaten alive by mozzies, had breakdowns over pumps that won't pump, or yards of tubing that twist and tangle. But the groundwater-dependent wetlands I study are so important. They are worth protecting for the numerous ecosystem services they provide and for the role they will play as climate refugia in future.

Having won the SEES round against some tough competition, I moved onto the Faculty final and was lucky enough to be voted the People's Choice Award (no bribes necessary!). This was a real honour considering the high calibre of presenters from across the Faculty. I was offered the opportunity to present again in the UQ Wildcard competition on 25 August, but unfortunately had to decline due to a scheduling clash. I'd highly recommend 3MT to fellow CBCSers. It's a great way to distil your research and get people excited about conservation - and you even may even win a few dollaridoos to put towards your project!

RIGHT: From the swamp to the stage! 3MT challenged me to get people to care about groundwater-dependent ecosystems, like this beautiful mangrove swamp.



ABOVE: 3MT Final: The UQ Faculty of Science 3MT winners (from left to right): Runner-up: Jake Linsky (SBS); People's Choice: Maddy Dyring (SEES); and First Place: Summa Bibby (SCMB).



Moreton Bay Research Station CBCS ECR Writing Retreat – December 2021

Taking the initiative: Inaugural CBCS ECR Reps reflect on their year

Caitie Kuempel and Valerie Hagger

What a wonderful year we've had bringing the CBCS community back together and getting to know our fellow ECRs who share a passion for biodiversity conservation. Being the ECR Representatives allowed us to take leadership on initiatives that not only we wanted to see in the Centre but that we thought may help other ECRs navigate the vague and sometimes lonely step between student life and academic career. We set out to create a more inclusive, supportive group by providing opportunities for career development and socialising.

We met with CBCS seminar speakers, forging potential collaborations with the likes of Bill Laurance. On a social hike, we discovered a contrasting burnt landscape and spectacular display of wildflowers overlooking Numinbah Valley along Dave Creek's circuit at Binna Burra. We got writing on much-needed manuscripts on a retreat at Minjerribah

(North Stradbroke Island). There was a workshop on teaching conservation at The University of Queensland with CBCS Deputy Director Laura Sonter. There were also opportunities to hone our eucalypt identification skills with our resident botanist and author of the ACE Guide to Eucalypts, Rod Fensham. We showcased our research to the broader CBCS community, while networking with fellow ECRs from UQ, QUT, Griffith, and CSIRO in an ECR symposium. During this event, we gained valuable insights on teaching from a diverse panel of teaching staff from the School of Biological Sciences and School of Earth and Environmental Sciences, whose breadth of experience was very beneficial, providing an array of different responses to our questions. The symposium was a direct result of a meeting where ECRs asked for more opportunities to network, develop career skills and share their research.



ABOVE LEFT: Valerie Hagger ABOVE: Caitie Kuempel

Being a part of the CBCS Management Committee helped us deepen our network across the schools, experience how the Centre is run behind the scenes, and provide strategic direction, which was very interesting and a good career development opportunity in itself. We are excited to welcome the new ECR Reps into the roles -Alice Twomey, Brooke Williams and Ruben Venegas. We hope we have laid some groundwork that they can take and make their own. Thanks to the CBCS community for your engagement, the Management Committee for your enthusiasm and support, and to Director Daniel Dunn for creating the space and opportunity for us to contribute to CBCS, even if just in the smallest of ways.

Our year of coffee-drinking: Inaugural HDR Representatives reflect

Ama Wakwella and Natasha Cadenhead

June 2021. A weird time. For the planet, for universities, for CBCS, for HDR students. After a year and a bit of COVID, with people slowly coming back to campus, and a brand new structure for the CBCS Management Committee - having started our PhDs in the midst of all that tumult we began our HDR Rep positions, unsure of what it would entail. This was a new CBCS Management Committee, and none of us were quite sure how things would fall together. What followed was a wonderful year of getting to know so many lovely people, forming inspiring new relationships with our fellow committee members, throwing HDR pizza nights, organising grant schemes and hikes, having endless coffees together to strategise things that probably didn't need to be strategised (we needed the excuse for a coffee), and getting an inside look at the workings of universities and a centre like CBCS.

Hikes, grants - and pizza!

We were both tasked with representing the HDR community of CBCS on the Management Committee – making sure that any decisions made were always conscious of the needs of students in the Centre – and trying to find new ways to make the HDR group feel like a connected community. Alongside this, we each had a specific role in one of the main themes of the committee.

As a member of the Community stream, Ama worked with Deputy Director Nathalie Butt and ECR Rep Valerie Hagger to organise events for the whole CBCS community, across all career stages and life paths. A personal favourite was the hike at Binna Burra in Lamington National Park in October 2021, where an intrepid group of about 15 eager hikers (and one reluctant Natasha) hiked the beautiful 12km track through subtropical rainforest, along ridgelines of heath, and forests of Allocasuarina. As a member of the twoperson Power Team™ that made up the Research stream, Natasha worked with Deputy Director Tatsuya Amano (who has no idea I'm calling us a Power Team™, but I think will agree that we were a great team). The main job of the Research stream has been the running of the CBCS Small Grant Scheme, and while getting to learn the whole grant process from nose to tail was excellent fun, the best part was definitely reading all the fascinating and clever grant applications that rolled in.

On the HDR front though, nothing can top the HDR pizza nights – getting to know so many of the cohort better, having a space to all catch up and chat and share the wins and woes that come with higher-degree research was both personally and professionally gratifying. Getting together the following day to go through all the feedback, gathered via anonymous comment forms, was always a highlight too. Some terrific ideas emerged that informed our later events, and we got some really kind and generous feedback, too, that always made us feel warm and fuzzy.

And more coffee!

We're going to miss turning up late to CBCS meetings because we mistimed our coffee run, taking new HDRs student out for coffees and getting to know them, peer-pressuring Daniel into making all our catch-ups coffee-based, and generally having an excellent excuse to go out for a coffee with anyone, anytime. We probably won't stop having endless coffees with each other, but I guess we'll have to find something else to over-strategise about (no, not our PhDs, how rude of you to even suggest it!). Ultimately, though, what we're going to miss most is the way that our HDR Rep positions gave us the excuse to meet so many of you, and get your help in growing the CBCS community into the wonderful, caring and inviting space it is today. We hope you agree. If you don't ... well, you'll have to take it up with the new Reps ;)

> What we'll miss most is your help in growing the CBCS community into a wonderful, caring and inviting space



Tash and Ama celebrating their big year, outside Alphabet in West End.

Flourish! shines a light on interdisciplinary research



The Theo Murphy Flourish! Symposium for interdisciplinary solution to Planetary Health, sponsored by the Australian Academy of Science, was hosted by Griffith University on 6–7 June, and included workshops, panel discussions and research presentations focused on the theme of interdisciplinary solutions for a thriving planet.

Solutions for the planet

The symposium brought together researchers from across disciplines who are striving to operationalise planetary health solutions. Attendees representing a range of institutions (including the Queensland Government, QUT and Griffith University) were able to join in the discussions with world-leading experts in environmental science, policy, human and animal health, governance and decision-making, including Queensland Chief Scientist, CBCS's own Professor Hugh Possingham. The symposium was held at the fantastic Shipp Inn in South Bank – an excellent conference venue for anyone looking to hold local events in Brisbane.

Thanks to support from CBCS, the symposium included a poster presentation run by CBCSers Christopher O'Bryan, Ama Wakwella and Helen Mayfield, providing a great opportunity for 12 early career and higher degree researchers to present and discuss their work with fellow researchers across disciplines. Seventy researchers attended the poster session, presenting and/or perusing the fabulous posters on display. It was wonderful to see several CBCSers representing the conservation and biodiversity side of planetary health, alongside equally great posters from public health, veterinary science, food security/safety and more.

Crossing disciplines, focusing on specialists

The overwhelming take-home message from the conference was not only the importance of scientists working across both the environment and human health fields, but that interdisciplinary research needs to be more than that spanning the arts, humanities and, crucially, Knowledges from Australia's First Nations Peoples. Attendees also identified some of the challenges of working in an interdisciplinary space: having their skills recognised, being trusted in different disciplines, and publishing and career opportunities that focus on specialists rather than generalists.

Connecting with other interdisciplinary researchers was a clear strength of the symposium. Many attendees found a sense of belonging in being able to discuss issues and challenges specific to interdisciplinarity with others in the same situation. To build on this, we hope to soon launch the Flourish! Network for interdisciplinary researchers in planetary health, so watch this space ...

Discussion and mingling at Flourish! Symposium.



CBCS at Pheno 2022



Heatwave conditions in the south of France.

The international meeting of the community working on phenology was held on 20–24 June in the ancient walled city of Avignon, in the south of France. It took place at the beautiful University of Avignon, Hannah Arendt Campus.

As one of only four delegates from the southern hemisphere, CBCS's <u>Nathalie</u> <u>Butt</u> was there to deliver a keynote address on phenology and climate change in the south.

Around 150 people attended, mainly in person, for the first time in several years for most people, and others Zoomed in from China, South Africa and other places in Europe.

Talking about how climate change is affecting phenology, as well as other natural processes and interactions, seemed especially timely given the heatwave that was happening at the same time – the temperature most days was around 34–36C.

The Hannah Arendt campus at the University of Avignon.



SEQ Marine Social Science Hub launch



Early in June, people with interests in marine social sciences gathered at The University of Queensland for two exciting events to establish and launch the newly formed <u>South East Queensland (SEQ)</u> <u>Marine Social Science Hub</u>. The SEQ hub is part of the <u>Australian chapter</u> of the <u>global Marine Social Science network</u> and was instigated by researchers who realised there was a need for regional hubs in a country as vast as Australia.

Research symposium, 3 June 2022

The first event, a research symposium, brought together marine social scientists from across south-east Queensland to get to know each other and the work we do. The event was well attended by researchers from The University of Queensland, Griffith University, Queensland University of Technology, University of the Sunshine Coast, CSIRO, Healthy Land & Water, the Queensland Government's Office of the Great Barrier Reef and the Department of Environment and Science, and others.

Public showcase, 8 June 2022

World Ocean's Day (8 June) was the perfect date for the second event, a public showcase, which was held in partnership with the <u>UQ Art Museum</u>. The Art Museum is currently hosting the multi-year <u>Blue</u> <u>Assembly</u> project that explores people's relationship with the ocean, and is underpinned by scholarly research across multiple disciplines. This focus, along with the UN World Oceans Day theme of *Revitalisation: Collective Action for the Ocean* set the scene for a full day of discussion and reflection on current issues in marine areas of south-east Queensland. The UQ Media and Production Services team from the School of Communication and Arts were on board to film the event, providing a valuable record of the day. The links below will take readers to the recordings of each session.

After introducing the Public Showcase, Jacquie Chlanda (Education Manager, UQ Art Museum) welcomed CBCS Director <u>Dr Daniel Dunn</u>, who gave an insightful and entertaining talk about the <u>value</u>. of the social sciences, from a natural scientist's view. Jim Walker (Lecturer, School of Earth and Environmental Sciences, The University of Queensland) then led an important discussion with Indigenous panel members (Mibu Fischer, Dale Ruska, and Michael Aird) on Indigenous perspectives on "engagement" in research. The feedback on this panel was overwhelmingly enthusiastic, with one participant describing it as the most useful thing she has been to in a long time.

Griffith University's Associate Professor Kerrie Foxwell-Norton led a panel <u>conversation with women in marine</u> <u>conservation</u>, which explored the panellists' experiences, ways of looking at the world, and stories of their work to protect marine environments. Attendees then took a tour of the exhibition in the Art Museum, and listened to a talk by two of the exhibiting artists, Sanchintya Mohini Simpson and Isha Ram Das.

In the afternoon, the focus turned to research, with <u>eight fabulous marine social</u> <u>scientists</u> giving the audience a taste of what they do through five-minute speed talks. To finish the event, the Queensland Chief Scientist, <u>Professor Hugh</u> <u>Possingham</u>, officially launched the SEQ Marine Social Science Hub and attendees enjoyed the celebration and networking into the evening.

Join the network

The SEQ Marine Social Science Hub would like to extend their deep gratitude for funding and support for these events, which came from CBCS, <u>the UQ Art</u> <u>Museum</u> and their staff, Jim Walker (SEES, UQ), the organising committee and the numerous volunteers who made it happen.

For anyone interested in joining the network (whether you are a marine social scientist, or not), please visit our <u>website</u> and sign up for the <u>email list</u>. We look forward to growing this network and continuing to connect people with interests in marine social science.

#SEQHUB Research Symposium 2022



Science at the human-environment interface

I don't think anyone is surprised by my career path in conservation science. I'm still preaching the same conservation messages that I was when I was a kid, only now I have a little bit more evidence to back up my arguments. But not many people know that my other passion is music (I'm a big fan of the Kinks, the Beatles, Elton John, Blondie and David Bowie). Before doing my Bachelor of Science I did a diploma of audio engineering and worked as a sound engineer. After a few nights of listening to some terrible music and feeling extremely underwhelmed, I switched lanes to begin my studies in ecology and zoology at The University of Queensland. While I was doing my bachelor out of my interest and love for nature. I wasn't sure where a career in science could lead. But through the courses at UQ that featured some inspiring lecturing by CBCS members all those years ago (including Hugh Possingham, Rich Fuller and Kerry Wilson to name a few) I realised that being a conservation scientist was a job, and I knew that's what I wanted to do.

After a two-year hiatus of travelling around Europe and central and South America, I came back to UQ to do my Honours year. This is where my passion for problem-solving began. I was tasked with developing prescribed burn schedules that balanced burning for both conservation (in fire-dependant ecosystems) and asset protection objectives in the City of Gold Coast. This challenge introduced me to spatial conservation planning, and I'm still working on these types of problems today.

Intact ecosystem conservation across scales

After a few months of working as a research assistant with the Wildlife Conservation Society, I started a PhD at UQ focused on assessing the state and planning for the conservation of intact ecosystems, which involved both global and local analyses. For the global analyses, I developed metrics and assessments to quantify how human activities impact biodiversity and ecosystem services across Earth. For the local analyses, I designed planning frameworks to effectively allocate conservation action, which I developed in collaboration with non-academic counterparts in applied case studies in the Orinoco region of Colombia and the eastern Democratic Republic of Congo.

More spatial planning

At the very start of the pandemic, afraid of getting trapped in Australia, I moved to Brazil and paused my PhD to work across two spatial planning projects. One was with the International Institute for Sustainability Australia (IIS-AU), where I worked on a variety of restoration planning problems including assisting with modelling the potential for natural regeneration, and developing a Convention on Biological Diversitysupported decision support platform called WePlan Forests. The second was working with The Nature Conservancy (TNC) and Microsoft to bring a worldleading conservation planning software, Marxan, to the cloud.



PROFILE Dr Brooke Williams CBCS ECR Representative – Engagement

Back again to UQ

I'm now glad to be back at UQ as a postdoc focusing on the development of new tools and assessments to improve outcomes for ecosystem services that are impacted by teleconnections (such as global trade), and for private land conservation. As an incoming ECR Representative on the CBCS Management Committee, I'm excited about giving back to the CBCS community who have supported my science journey. I am passionate about continuing to build our incredible capacity for addressing some of Earth's most pressing challenges.

I am passionate about building capacity for addressing some of Earth's most pressing challenges

Burrowing owl babies in Tijucas, Brazil.



HOTO:

WildObs workshop

Some 126 Australian mammal species are listed as extinct or threatened; for many others, we simply do not have sufficient data to establish population trends. Collecting and analysing data on free-ranging animals is burdensome, and relies substantially on the use of expensive manpower or equipment. Camera traps are widely used to study and monitor threatened and invasive vertebrates, but produce big data that are difficult to store, process and analyse.

As a result, existing camera trap initiatives and datasets are also nearly all siloed, offline and incompatible, creating barriers to collaboration across organisations and preventing powerful cross-site or temporal analyses of population trends.

To solve these problems, CBCS sponsored a workshop in July to establish The Wildlife Observatory (WildObs).

> A national vertebrate database would be a step-change in Australia's wildlife monitoring

Over a rainy retreat in Lamington National Park, 35 attendees from Australia's leading academic, NGO and government organisations convened to pave a way forward for this ambitious initiative. They identified key steps required: 1) Standardise ongoing camera deployment and datasets for improved data utility with a deployment manual; 2) Mobilise vast troves of existing "legacy" camera datasets that are being lost every year; 3) Create an accessible smartphone field app to ensure robust sampling protocols and metadata collection; 4) Secure Australian data for the future with free unlimited image backups in the cloud; 5) Harness the vast power of AI to rapidly and accurately process images; and 5) Collate, curate and share a world-first continental database at TERN and a user-friendly online dashboard that enables ecologists and land managers Australia-wide to explore prior projects, register new projects and freely access all data and infrastructure, with support to easily run robust analyses.

Achieving this will be difficult, but the pay-off huge. A national vertebrate database would produce a step-change in the timeliness, scale and depth of evidence available to managers and researchers as they respond to pests, bushfires, floods and climate change.

Shawan Chowdhury joins iDiv

Shawan Chowdhury, a recent CBCS PhD graduate, has started a new position at the German Centre for Integrative Biodiversity Research (iDiv) in Leipzig, Germany. As a Postdoctoral Research Associate, Shawan will combine and analyse German biodiversity data to identify changes in the state of biodiversity in Germany. During his doctoral research, Shawan worked on insect movement and conservation with Professors Richard Fuller and Myron Zalucki.



Shawan outside his new workplace, iDiv, in Leipzig.

The WildObs workshop participants gathered at O'Reilly's in Lamington National Park in July.



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