

CBCS NEWS

A quarterly newsletter
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Dr Leslie Roberson wins the 2024 UQ Foundation Research Excellence Award

Samantha Wong-Topp

Dr Leslie Roberson has been announced as the winner of the 2024 UQ Foundation Research Excellence Award, recognised for her ground-breaking research titled *Combining data and expert knowledge: working with skilled fishers to identify feasible conservation targets for threatened species*.

Tackling bycatch

Within this body of work, Leslie uses her data in novel ways to find fisher-centric solutions to environmental problems in fisheries. Her project focuses on addressing bycatch – when fishers unintentionally catch species they weren't aiming for.

"Bycatch is one of the biggest obstacles standing in the way of a more sustainable global seafood supply", Leslie says. "Traditionally, managers have tried to tackle this by setting fleet-level restrictions on fishing. These top-down approaches fail to account for the behaviour and skill of individual fishers, which has fuelled industry conflicts and failed to resolve many pressing bycatch issues. This project takes a different approach by using advanced statistical models and behaviour change theories to work with the fishing industry to identify and spread practices already used by individual 'gold star' fishers".

Leslie has been involved in environmental conservation and resource management projects around the world for the past 15 years, working in Latin America, West Africa, Southern Africa and Southeast Asia. Collectively, these experiences have shaped her passion

"The FREA will be a big boost in expanding my research, building collaborations both locally and internationally, and bringing on more people to start crunching some of these big datasets!"



Dr Leslie Roberson with her 2024 Foundation Research Excellence Award.
Image credit: Olivia Graham, UQ Marketing Communications

for marine conservation, now leading to her current focus on innovative fisheries management approaches. Winning the 2024 UQ Foundation Research Excellence Award allows Leslie to continue pursuing this work further. "I was super excited to receive the FREA award. It's a great award because it not only acknowledges the impact and importance of this research but also provides resources to advance the project further".

Harvesting fishers' knowledge

"The inspiration for this project is so simple it's almost silly I've been able to publish it. The foundational idea is that instead of scientists coming up with solutions on their own, why not ask fishers how to fish better? Fishers are people, and just like all people, they don't act the same way", Leslie explains. "In many conversations with fishers and managers,

it was clear that this idea is understood anecdotally, yet it is very rarely translated into fisheries management strategies. Over the years, working closely with industry partners, it became obvious that there's a huge opportunity to better combine fisher knowledge with scientific data to create more effective and fair strategies for tackling bycatch".

Ultimately, Leslie hopes her work contributes a "little grain of sand to keeping the ocean beautiful while making seafood available for us to eat". She aims to develop a range of tools that go from working one-on-one with individual fishers to shaping policies at a higher level.

"The FREA will be a big boost in expanding my research, building collaborations both locally and internationally, and bringing on more people to start crunching some of these big datasets!" she says.

PROFILE

Conservation science *with* the business sector

Associate Professor Laura Sonter

CBCS alumna

After almost 20 years at The University of Queensland, I'm hanging up my academic bonnet for a job in the private sector. My new role is with The Biodiversity Consultancy (TBC), a UK-based company working with companies and financial institutions to improve the current state of nature. I'll be directing TBC's Science and Policy program and looking forward to continuing partnerships with UQ and other academic institutions.

Parting ways, reluctantly

Leaving academia was not an easy decision. It took the better part of two years to make and was made incredibly difficult knowing that I would be leaving behind my brilliant team of students, postdocs and research assistants. Working with Tom, Ilyas, Chloe, Bora, Alex, Jayden, Sreekar, Natasha, Robyn, Jaramar, Pablo, Natasha, Lasinidu and many others has been by far the best part of my job.

But, ultimately, it came down to wanting to learn some new skills, make some new friends, and have a go at creating change from "within" industry by engaging with some of the sectors that cause the most damage to biodiversity.

My research at UQ has focused on improving the biodiversity outcomes of mining. It's also been driven by a personal goal to improve and facilitate interactions between the conservation community and the mining and metals sectors. My group and I have made huge headway in this regard, infiltrating major industry-focused events (including World Mining Congress in 2023), and developing new tools and knowledge to illustrate global deforestation driven by mining, exploring the impacts of mining and energy development scenarios on biodiversity, and examining various policy options to conserve areas under pressure.



Top to bottom Laura at a rehabilitated mine site in Brazil, October 2024. Image credit: Laura Sonter
Crested caracara perched on a "nucleation site" for rehabilitation. Image credit: Laura Sonter





I've been lucky enough to work with some very clever people during my career, including many members of CBCS. Many key highlights link back to the workshops led by **Martine Maron** for a project funded by the Science for Nature Partnership. These workshops gave me a first peek into how science and research can be done outside academic institutions, led by NGOs, consultancies and industry. They also delivered peeks at the elusive shoebill, tree-climbing lions and orangutangs in Uganda.

Real impact

Through these international partnerships and collaborations, we've also had real impact. For example, my work with wonderful colleagues at the University of Sao Paulo in Brazil has been revealing the direct and indirect impacts of large-scale iron and bauxite mining in Brazil. Outputs have informed industry mining standards and commitments to nature and sustainability, and national and international policy on where and how to manage and mitigate mining risks to nature.

I'll be watching eagerly to see what great stuff comes next from CBCS, while working furiously to stay involved with the incredible breadth of important conservation science being done at UQ. Thanks for making my time at UQ so wonderful and please stay in touch!

"After almost 20 years at The University of Queensland, I'm hanging up my academic bonnet for a job in the private sector."



Top to bottom Laura's lab group at the World Mining Congress, June 2023. Image credit: Laura Sonter
 Laura in Cambridge, UK, in April 2024. Image credit: Laura Sonter

Associate Professor Tatsuya Amano announced as the British Ecological Society’s 2024 Equality and Diversity Champion

Samantha Wong-Topp

Global collaboration

In 2019, Associate Professor Tatsuya Amano founded **translatE**, a world-leading initiative that applies scientific approaches to the often-overlooked challenge of transcending language barriers in science. He and his global collaborators have successfully produced findings that highlight the impact of language barriers on science, and have additionally provided a range of solutions that journals, societies, conferences and scientists can take to begin addressing the issue. “[This award] is another opportunity for me to show [our global collaborators] how important their work is, and how their work is perceived by such a big society.

It’s a great opportunity and such a big honour.”




translatE has identified three key types of language barriers in science: “language barriers to the global synthesis of scientific evidence, language barriers to the local application of scientific evidence, and language barriers to the generation of scientific evidence – so that’s language barriers for non-native English speakers”, Tatsuya explains.

These barriers can, in turn, cause a range of ramifications for individual scientists, science and society as a whole. translatE aims to increase our understanding of what these potential consequences may be, and how we can overcome them.

“Previously, language barriers were only viewed as non-native English speakers’ problem, so we had to solve this by ourselves. But now, hopefully an increasing number of people are viewing this as society’s problem – everyone’s problem.”



What should you know:

-  **Currently, one third of global scientific knowledge** may be ignored as it is only available in languages other than English.
-  **About half of decision-makers** may not be utilising scientific evidence that is available only in English.
-  **95% of the world’s population** may be missing out on the opportunity to make their best contribution to science because their first language is not English.

A universal problem

Despite the substantial impact language barriers have had on science, Tatsuya says we may be beginning to see increased appreciation for the severity of the issue. “That’s a big motivation for me, and this award might also reflect that – you know, people’s changing views towards this kind of problem”, he says. “Previously, language barriers were only viewed as non-native English speakers’ problem, so we had to solve this by ourselves. But now, hopefully, an increasing number of people are viewing this as society’s problem – everyone’s problem. Even native English speakers can benefit by increasing access to scientific literature published in non-English languages, for example. And I believe changing people’s view towards that direction is an important process to solve this problem.”

Associate Professor Tatsuya Amano. Image credit: Samantha Wong-Topp



Rose (left) and her supervisor Professor Justine Bell-James (right). Image credit: UQ Marketing & Communication

Rose Foster wins the HDR Excellence Award at the UQ School of Law

Kristine (Tin) Buenafe

CBCS PhD candidate **Rose Foster** is the 2024 recipient of the Higher Degree by Research (HDR) Excellence Award at the UQ School of Law. Rose’s research is on the legal factors affecting successful restoration efforts in the marine environment under climate change.

This award celebrates the high-quality and novel work done by Rose in her PhD, which aims to investigate the legal barriers and opportunities for seascape-scale coastal marine restoration. “Our current environmental legal frameworks are underpinned by an aim of protecting our existing ecosystems, usually in their existing locations. An unfortunate side effect of this is that it doesn’t necessarily support nor actively encourage restoration activities to address

existing degradation and future climate change impacts, particularly at larger scales”, Rose says.

Coastal marine challenges

As research into restoration in coastal marine ecosystems is still in its early stages, the specific legal challenges for coastal marine restoration are yet to be fully understood. Rose seeks to investigate this problem in her PhD to articulate:

1. What are the legal barriers and opportunities for ecological restoration?
2. How do these barriers and opportunities arise in the coastal marine environment for seascape-scale projects?
3. How does this compare to the legal barriers and opportunities experienced in other legal systems, including the United Kingdom?

She tackles these points by examining two specific case studies in Moreton Bay and the Great Barrier Reef.

An impact on the ground

Winning the award recognises the incredible work that Rose has accomplished in her PhD, particularly her paper, “Legal barriers and enablers to upscaling ecological restoration”, published in *Restoration Ecology* (details below). “I am definitely surprised but of course also honoured. It was awarded to me for [my paper] published based on a chapter of my PhD earlier this year, so it was lovely to see that work recognised, given that it was my first first-authored publication”, Rose says. “There is a great cohort of PhD students at the Law School, and we all work on such different topics, so it was lovely to be recognised this time

and to get a chance to shamelessly plug my work. The timing was also nice as I start my third year, giving me a little boost of motivation and support as I get down to writing.”

While Rose is kicking goals in her PhD and continues to fill research gaps in her field, she attributes her interest in this topic to several years of working as a research assistant at the UQ Law School and the Centre for Policy Futures, examining law and policy applicable to coastal marine ecosystems with a focus on ecosystem services and restoration. “Restoration proponents often experience difficulties navigating the existing legal system, so I thought it would be worthwhile doing a PhD to try to understand that challenge properly and hopefully identify what may need to change to address this problem”, Rose explains.

Rose looks to continue this important and valuable work as she gears up for thesis writing and travelling to the United Kingdom for research. “[This research field] is a great area to work in, as I’ve had the chance to meet so many people who are working on the ground (or in the water) on restoration projects and have taken the time out of their own work to share their experiences with me. I’ve enjoyed doing a PhD in an area where there is a bit of hope behind the research, and a clear chance to have an impact through the work.”

Reference: Foster, R., and Bell-James, J. 2024. Legal barriers and enablers to upscaling ecological restoration. *Restoration Ecology*, 32(7), e14203. <https://onlinelibrary.wiley.com/doi/10.1111/rec.14203>



Stop press

Rose also received the Faculty of Business, Economics and Law HDR Excellence Award, as announced on Tuesday 26 November.

Congratulations, Rose!

“I’ve enjoyed doing a PhD in an area where there is hope behind the research, and a clear chance to have an impact.”

Professor Rain Liivoja (left), Director of Research in the UQ Law School, presenting the HDR Excellence Award to Rose Foster. Image credit: Justine Bell-James



Left to right A break from fieldwork tagging seabirds in Alaska: Dr Lily Bentley and Dr Autumn-Lynn Harrison from the Smithsonian National Zoo and Conservation Biology Institute, who will be collaborating as part of the fellowship.
Image credit: Amy Scarpignato

Black noddy tern, Heron Island. Image credit: Sirrob01, CCO, via Wikimedia Commons



Dr Lily Bentley secures Queensland-Smithsonian Fellowship to enhance seabird conservation

Samantha Wong-Topp

CBCS's Dr Lily Bentley, a movement ecologist and UQ postdoctoral research fellow, has been awarded a Queensland-Smithsonian Fellowship, receiving \$23,000 in funding to collaborate with the Smithsonian's National Zoo and Conservation Biology Institute.

The Queensland-Smithsonian Fellowship program offers Queensland-based professionals access to the world-class facilities, expertise and collections of the Smithsonian Institution. It funds fellowships for researchers to visit the United States or Panama and complete collaborative projects.

"Queensland's program with the Smithsonian Institution is the only agreement of its kind in Australia, offering a unique opportunity for researchers to collaborate, connect, and share mutually beneficial learnings in their chosen fields," Queensland Chief Scientist Professor Kerrie Wilson said in a statement to the Department of the Environment, Tourism, Science and Innovation (DETSI).

Seabirds and the GBR

Lily's research project aims to summarise our current understanding of the migratory connectivity of Queensland seabirds to improve conservation outcomes and ultimately support a healthy Great Barrier Reef. The project will review and synthesise all tracking and banding data from seabirds in the Great Barrier Reef, building on previous studies that identified breeding-season foraging areas. There will be a focus both on datasets identifying non-breeding areas for Great Barrier Reef breeding colonies and datasets from seabirds breeding elsewhere that visit the Great Barrier Reef. Additionally, her project will adapt analytical methods developed at the Smithsonian Migratory Bird Centre to quantify the connectivity of Great Barrier Reef seabirds. It's important to understand the flow of highly mobile species in and out of important areas like the Great Barrier Reef – not only to support conservation planning for the species themselves but also so that we get a better picture of the connectivity required to maintain healthy ecosystem function.



CBCS networks – and future collaborations

"It's really exciting because there's so much expertise at the Smithsonian to work with", Lily says. "It was networks built through CBCS that allowed me to meet collaborators all around the world, and they have led to this scholarship. Dr Autumn-Lynn Harrison at the Smithsonian is an incredible mentor, and it's going to be an amazing opportunity to do some work outside of Australia, and bring that knowledge back to Queensland, which I'm really excited about as well. And it's always exciting to go to new places and meet new people and see how different organisations work."

Looking ahead, Lily hopes to see a lasting partnership with DESI. "I would love to continue to collaborate with [DESI] on the findings of this project and work together to co-design future research that both answers ecological questions and feeds really constructively into conservation and management needs. I think that would be the ultimate goal for what comes next."

"It was networks built through CBCS that allowed me to meet collaborators all around the world, and they have led to this fellowship."

Spotting one of the oldest snowy albatrosses in Australia: a personal reflection

Xu Shi  and Yang Wu 
CBCS PhD candidates

In September 2024, my fellow Fuller Lab member Yang Wu and I went on a pelagic bird-watching trip in Tasmania. Intense stormy weather had postponed our previous attempt at making this trip, so a few months later, we were excited to be making our second attempt.

Yang and I are avid birders and have travelled extensively in Australia, recording more than 400 bird species. But one major group of birds was missing

from our Australian lists: the seabirds – particularly the albatrosses who frequent the southern Pacific Ocean.

Abundance of albatrosses

Based in Port Arthur, Tasmania, we took a boat around 30 km out to reach the continental shelf. Despite the rough seas, we managed to see an incredibly diverse collection of seabirds, including seven albatross species. We saw dozens of shy albatrosses flocking near the boat fighting for baits, huge royal albatrosses circling around multiple times, as well as smaller, faster petrels and shearwaters

cutting through the waves with their long, pointy wings. Together, we recorded 26 species on the trip, including 18 pelagic seabird species.

The highlight was undoubtedly spotting an old snowy albatross (*Diomedea exulans*). The albatross stayed quite close to the boat for much of the time we were there, and because it was so close to us, we managed to see the glint of something white – and realised it was a leg band. We were excited to understand that this meant we might be able to uncover the story of this beautiful bird.

The snowy albatross swimming alongside our boat with a shy albatross in the back. Image credit: Xu Shi



A banded wanderer

With the help of a local expert who quickly connected us with other researchers, we were all delighted to learn that this albatross was approaching 43 years old – making it one of the oldest snowy albatrosses ever recorded in Australian waters. The oldest individual was a 46-year-old bird, recorded last year in Western Australia.

We learned that this particular bird had been banded as a chick as part of the French banding scheme on the Isles de Crozet in the sub-Antarctic Indian Ocean, more than 7000 km from Tasmania. It's a male who had its 43rd birthday on 1 October 2024.

Snowy albatrosses were formerly known as wandering albatrosses, which couldn't be more accurate. They are truly wanderers, often travelling thousands of kilometres across the ocean.

They're regularly seen on pelagic trips out of southern Australia. The Tasman Sea is one of the best places to observe these majestic birds. Adult snowy albatrosses breed every two years and take the alternate year off, so we could assume that this individual would likely be making its way back to the breeding colony soon.

Check out our eBird Checklist from the trip here: <https://ebird.org/checklist/S194481018>

This albatross was approaching 43 years old – making it one of the oldest snowy Albatrosses ever recorded in Australian waters.

Left to right The banding on this 43-year-old snowy albatross. Image credit: Xu Shi
The snowy albatross in its iconic flight. Image credit: Xu Shi



CBCS Q and A with Harris Wei-Khang Heng

Samantha Wong-Topp spoke to Harris Wei-Khang Heng, a PhD student supervised by Associate Professor Daniel Dunn, Professor Peter Mumby and Dr Alison Kim Shan Wee. Harris’s research investigates the influence of seagrass connectivity on the distribution and population structure of megaherbivores at different geographical scales. He plans to use this knowledge to assess and improve protected area networks with stronger incorporation of connectivity metrics for seagrass and megaherbivores.

Here, Sam discusses with Harris everything from his recent *National Geographic* award to his experience leading a workshop at the International Sea Turtle Symposium.

Congratulations on receiving a *National Geographic* grant! Can you share more about the project and its objectives?

“Thank you! I’m really excited and honoured to receive this grant from the National Geographic Society for my project, ‘Dugong Connectivity in Southeast Peninsular Malaysia: Innovative Approaches for Challenging Habitats.’ This project collaborates with Universiti Malaya, the University of Nottingham Malaysia and the Kelab Alami (a local community organisation).

“Our main objective is to combine two approaches – environmental DNA (eDNA) analysis and unmanned aerial vehicle (UAV) surveys – to improve our understanding of the distribution and population of elusive species like dugongs and green turtles.



Bottom to top Harris monitoring the drone’s live feed for signs of dugongs while surveying critical seagrass habitats. Image credit: Shing Yi Teh

After filtration, Harris carefully stores eDNA filters in buffer solution for later DNA extraction. Every step counts in the lab. Image credit: Shing Yi Teh



“These species often inhabit seagrass meadows in turbid waters, making it hard to spot them using traditional methods like boat-based visual observation. Manned aerial surveys and satellite tagging, while effective, are cost-prohibitive and require specialised expertise to ensure safety and reliability.

“That’s where eDNA and UAVs come in. By integrating both methods, we can significantly enhance our ability to monitor these endangered species without relying solely on direct sightings. The two methods complement each other: UAVs provide real-time aerial surveillance, while eDNA allows us to detect the presence of species, even if we don’t physically see the animals. Together, we can gather more detailed information and do it more cost-effectively and less invasively, which is crucial for protecting these endangered species.”

Can you tell me about your recent fieldwork in Malaysia and the key goals you had for the trip?

“My recent fieldwork in the Sibiu-Tinggi Archipelago, located in south-eastern Peninsular Malaysia, was really exciting. The seagrass meadows in this region change significantly with the seasons, so our goal is to see if the dugong and green turtle populations follow those patterns. We’re trying to understand how these animals use their habitat over time by combining eDNA sampling with drone surveys.

“So far, I’ve completed two trips – one in April (post-monsoon season) and another in July (inter-monsoon season) 2024. I had incredible support from my project assistant, Zarifah, and volunteers, including **Jaime Restrepo** and **Melissa Staines**, both CBCS HDR students. Together, we collected eDNA samples from known habitats and spots where dugongs were sighted.

“Now, you might be wondering – did we actually see any dugongs? Well, the answer is both no and yes. On our first trip, which involved nine days of surveying, we didn’t spot any dugongs, as expected, due to poor seagrass cover. But we did encounter a turtle haven, with sea turtles surrounding our boat as we collected water samples – definitely a highlight of the trip!

“Then, three months later, during our second trip, we finally spotted them. It was breathtaking! We observed a dugong herd of about 20 animals in loose aggregations. Even more special was witnessing at least four mother-calf pairs, which is a great sign for the population’s health, particularly regarding reproduction.

“What’s even more fascinating is that they’re still feeding in the same ‘hotspots’ we identified seven years ago based on feeding trails (see reference below). This shows how indirect evidence, like these trails, can help us uncover patterns for species we don’t often see in the wild.”

You presented at the International Sea Turtle Symposium (ISTS) recently, can you tell me more about that experience?

“It was my first time attending ISTS, and I was amazed by how welcoming the community was. The atmosphere made it easy to feel right at home, which really reflects what the ISTS President said during his opening speech – something along the lines of, ‘When turtle people see each other, they hug, like turtles extending their flippers’. That sense of camaraderie was strong throughout the conference.

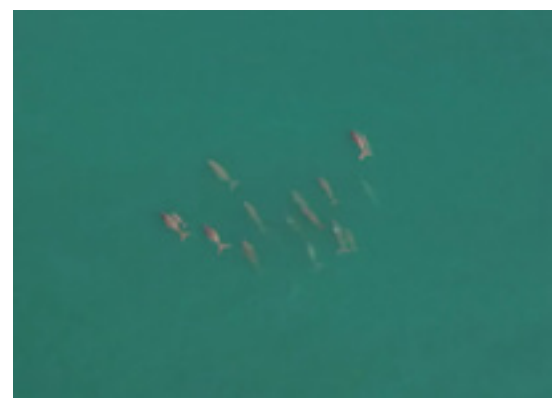
“I presented my first thesis chapter, which is a multilingual systematic review focused on the movement and migratory connectivity of green sea turtles in Southeast Asia. We analysed data from both global and regional literature databases, as well as unpublished sources. Interestingly, we found that nearly two-thirds of the information came from grey literature and unpublished data. What also stood out was how unevenly distributed the evidence is – some countries and certain sampling methods are heavily represented, while others are barely touched. This points to gaps that exist within certain countries, and must be addressed.

“The main takeaway from my talk was that grey literature holds valuable information that is often ignored, which is a real problem in this region. If we want to protect critical turtle habitats, we need more collaboration at the regional level to fill these knowledge gaps.”



Left to right This side of the islands hosts extensive subtidal seagrass meadows, vital habitats for dugongs and green turtles. Image credit: Harris Heng

In July 2024, we observed a herd of nearly 20 dugongs, offering valuable insights into group behaviour and habitat use. Image credit: Seagrass and Megafauna Conservation Initiative (SeaMeg)





Left to right The Applied Marine Biogeography Lab and Mathematical Marine Ecology Lab, in an informal moment. Image credit: supplied

Harris welcomes participants to the workshop focused on breaking down the barriers to advancing sea turtle connectivity knowledge. Image credit: Melissa Staines



You organised a workshop to address the issue of accessing information and highlighting tools for data-sharing. Can you elaborate on the goals and outcomes of this workshop?

“Before diving into the workshop details, I just want to thank everyone who contributed to its success, which includes Jaime Restrepo, Melissa Staines and Seh Ling Long. It was a team effort, and their support made all the difference.

“The workshop had two main goals. First, we wanted to bring together researchers, conservationists and government officials to learn about centralised data repositories and innovative tools for long-term monitoring, especially when it comes to sea turtle conservation. Second, we aimed to foster discussions around the data gaps and barriers each country faces in understanding sea turtle movement and habitat connectivity.

“What really stood out to me was how quickly everyone recognised a common issue – there’s already a wealth of data, but it often just sits unused, and accessing it can feel like an uphill battle. From the start, the participants were eager to collaborate and streamline our data management and sharing strategies, which was great to see.

“To spotlight practical tools for knowledge transfer, I invited my supervisor, Associate Professor Daniel Dunn, to introduce the **Migratory Connectivity in the Ocean (MiCO)** system. This platform consolidates data on migratory species like sea turtles

and helps generate actionable knowledge for global conservation efforts. We also had a researcher from Universiti Malaysia Terengganu, Dr Mohd Uzair Rusli, present their new Turtle Imprinting Database System (TIDeS), which is designed to make data collaboration much easier for those working in the field.

“In the long run, I hope this workshop will lay the groundwork for a regional collaborative network, where we can consolidate and deliver usable information to support more effective regional conservation efforts.”

Your workshop brought together 20 to 30 people from all over the world. What was the importance of this global collaboration, and how do you see it impacting future conservation efforts?

“To overcome barriers, we must reshape the systems in place, fostering an environment where communication, collaboration, and reciprocity are the norm—just like in nature, where everything is interconnected and works together. This includes standardising and contributing data to online repositories, reducing barriers to accessing governmental information, and enhancing the capacity of organisations to index and share knowledge effectively. Through this workshop, we opened the door to amplifying the voices of people who are working directly on conservation across different parts of the world.

“It’s about building bridges that carry different types of knowledge and experience. We need unbiased platforms where everyone can be heard. This kind of collaboration will help us piece together a more comprehensive understanding of what we know, which in turn will guide how we protect and manage sea turtles. At the end of the workshop, I said, ‘Sea turtles in the ocean migrate across borders to progress, and so must we’. That’s what this is all about – working across borders, breaking down silos and moving forward together.”

What’s next for you?

“Having support from organisations like the National Geographic Society, the Rufford Foundation and Auckland Zoo has really pushed me to go beyond what I thought was possible. But even more than that, it’s the people who have been there to guide me, without any conditions, that have made the biggest impact. They’ve helped pave the way, and that’s what’s really gotten me this far in my PhD.

“Right now, I’ve got a lot going on – balancing research, educational outreach and social engagement, all as part of my conservation efforts. But I think they all fit together really well. They align with the core philosophy of my doctorate, which is constantly asking myself, ‘Why am I here, and what am I doing this for?’ That question keeps me focused on the bigger picture and drives me to keep moving forward.”

PROFILE

Opportunities for conservation: tales from the Annual Science Conference of ICES

Kristine (Tin) Buenafe

CBCS PhD candidate

After 30 hours of uncomfortable air travel and inconvenient flight delays, I arrived in Gateshead, UK, to attend my first international conference: the 115th Annual Science Conference of the International Council for the Exploration of the Seas (ICES).

There, I presented a sneak peek of one of the first chapters of my PhD, “Current approaches and future opportunities in designing climate-smart protected areas”. As a budding quantitative marine conservation scientist focused on developing different tools to facilitate the uptake of climate-smart approaches in on-the-ground conservation planning, attending the Annual Science Conference of the ICES – a large marine science conference with a fisheries focus – was an eye-opening experience.

Assembling hundreds of marine scientists

ICES is a 122-year-old intergovernmental marine science organisation of nearly 6000 scientists from over 20 member countries. The ICES network builds and collates databases of knowledge from its scientific experts, develops tools to better visualise and analyse data and provides scientific advice to partners. ICES also hosts many events including trainings, workshops and expert-group meetings.

The biggest event is the Annual Science Conference, where hundreds of attendees gather to present the latest findings in their respective fields of marine science and build networks and connections that cross disciplines, continents and career stages. It provides the right environment to stimulate the birth of new ideas and collaborations that will advance various fields of marine science. This year, it was held in the Glasshouse International Centre for Music.



Top to bottom Tin getting ready for the graphics design workshop at the Dove Marine Lab in Newcastle. Image credit: Tin Buenafe

The Glasshouse International Centre for Music, the venue of the 115th Annual Science Conference of the ICES. Image credit: Tin Buenafe





Top to bottom, left to right Tin posing at the assembly area after her presentation and the panel discussion. Image credit: Silvina Ivaylova

Tin, along with Elena Gissi from the National Research Council in Italy (online), Bryony Townhill from the Center for Environment, Fisheries and Aquaculture Science (CEFAS) (online), Jade Millot from the Institut Français de Recherche pour l'Exploitation de la Mer (middle), and Catarina Marques Da Fonseca of the IOC of the UNESCO (right, session convener), participating in a panel discussion on how we can incorporate climate change in marine spatial planning. Image credit: Shenghui Li

Tin presenting her review on how climate change has been incorporated in designing climate-smart protected areas. Image credit: Silvina Ivaylova



The 115th Annual Science Conference focused on transdisciplinary approaches to marine science and ecosystem-based fisheries management, with keynote speakers and theme sessions revolving around these topics. There was a push to incorporate human dimensions in decision-making involved in fisheries management and spatial planning. It was great to see the continuous uptake and integration of the perspectives of multiple stakeholders – from different disciplines – in more applied marine sciences. A desire to advance the development of offshore renewables was also apparent, with multiple theme sessions focused on presenting the benefits of wind farms and floating solar farms. Multiple side events and workshops were geared towards engaging early career scientists. Some of these I attended, notably the workshop on graphic design for scientific visual communication at the Dove Marine Lab in Newcastle, and the side event led by the Editor-in-Chief of *ICES Journal of Marine Science*, Howard Browman. ICES actively encourages early career scientists, including PhD students, to participate in working groups and trainings.

Moving climate-smart conservation planning forward

While hearing many noteworthy talks across a variety of topics was great, the highlight of the conference was participating in my theme session, "Accounting for climate change in marine spatial planning: experiences and lessons learnt", led by the conveners,

Catarina Marques Da Fonseca of the Intergovernmental Oceanographic Commission (IOC) of the UN Education, Scientific, and Cultural Organization (UNESCO), Kira Gee of Helmholtz-Zentrum Hereon and Talya ten Brink of the National Oceanic and Atmospheric Association (NOAA). Like the other sessions, the presenters were a mix of scientists, managers and practitioners, providing different perspectives on the same topic.

In this theme session, I presented the main findings of a review paper I led where we summarised the different approaches to designing area-based management tools, which include protected areas, provided actionable guidance for applying these climate-smart approaches and highlighted the future direction of climate-smart conservation planning. Despite being disheartened by the lack of conservation focus throughout the conference, I was pleasantly surprised that my insights as a marine conservation scientist during the panel discussion were welcomed with open arms. In the panel discussion, I, along with many others, talked about how spatial planning and conservation planning do not have to be considered separately and are, in fact, synergistic. In the eyes of marine spatial planners who are mostly based in Europe, conservation is viewed as another conflicting stakeholder – but I pointed out that it doesn't have to be the case. In fact, multiple lab groups at CBCS are developing ways to incorporate the needs of different stakeholders in our spatial/conservation plans.

Key takeaways

As a PhD candidate, it was truly an amazing experience to interact and converse with scientists, practitioners and managers in the field of climate-smart marine spatial planning.

By actively participating in an event held on the other side of the globe – far from the four corners of my office and the safe confines of being behind my laptop all day – I learned so much, particularly:

1. There are a lot of unexplored synergies between broader marine spatial planning and conservation planning. Exploring the intersection of these disciplines has great untapped potential.
2. Measures of climate change should be incorporated in different steps of both marine spatial-planning and conservation-planning processes. We should move towards more adaptive measures in spatial and conservation planning.
3. Collaboration is the name of the game! Conversations are key. There are multiple stakeholders in the process of conservation planning and spatial planning. Stakeholder engagement throughout the processes is paramount (and shouldn't just be done when the spatial plans are finished just to tick a box!).

Attending this international conference as a CBCS PhD candidate was a life-changing experience and I just can't wait to see what's next for me!



The world's largest conservation conference comes to Brisbane

The Society for Conservation Biology (SCB) and the Society for Conservation Biology Oceania (SCBO) are hosting the 32nd International Congress for Conservation Biology (ICCB) 2025 in Meanjin/Brisbane from 15 to 19 June 2025!

ICCB is the premier global meeting for conservation scientists and professionals, including researchers, students, environmental educators, practitioners and other conservation stakeholders. Next year's conference promises an exceptional program that includes keynote talks from world-leading conservationists, practitioners and Indigenous leaders, a diverse scientific program including a variety of symposia and poster sessions, dynamic workshops, and ample networking opportunities with leading conservation professionals and enthusiasts.

The conference philosophy for ICCB 2025 is to provide a safe and inclusive space that is accessible for people of many cultures and backgrounds to share their insights, knowledge and research with the aim of addressing conservation challenges and advancing conservation science and practice.

Accessibility measures

The ICCB 2025 conference team is also working hard to increase the accessibility of the conference to people whose first language is not English. The goal of the Language Accessibility Subcommittee, which includes several CBCS members, is to increase the linguistic and cultural diversity of ICCB 2025 participants and facilitate the exchange of diverse ideas, knowledge, experience and expertise on biodiversity conservation among participants. ICCB language accessibility measures are outlined [here](#), and include linguistically inclusive review guidelines (e.g., "No rejection for poor language" policy), free AI English editing services sponsored by Writefull and a mentorship scheme to support the preparation of presentations.

Other highlights

In addition to the core scientific program, other highlights that you can expect from ICCB 2025 include a special dinner event that offers a chance to connect in a relaxed setting, and field trips that will provide up-close experiences with Queensland's unique biodiversity. The conference also features a comprehensive pre-and post-congress program to enrich your experience, including a student weekend, workshops and training courses.

Abstract submission and registration for ICCB 2025 are opening soon. For more details visit the [ICCB 2025 website](#).

Unsplash



Four steps for achieving “Nature Positive”

CBCS PhD candidates Hannah Thomas and Yi Fei Chung spoke to Kristine (Tin) Buenafe and Samantha Wong-Topp

CBCS PhD candidates Hannah Thomas and Yi Fei Chung have recently co-led a *Policy Forum in Science*, co-authored by past and present CBCS members Brooke Williams, Martine Maron, Jonathan Rhodes, Michelle Ward and Jeremy Simmonds.

This piece calls for nations to commit to policies that align with nature positive outcomes, and was published to coincide with COP16, held in late October in Cali, Colombia.

The authors propose four key steps: (1) legislate for “absolute net gain” and aligned biodiversity targets; (2) limit and fully compensate for any biodiversity loss from development; (3) take substantial additional conservation actions to tackle other threats; and (4) resource effective and transparent implementation and enforcement of such policies.

“Our goal in providing these recommendations is to help countries make meaningful changes, be aware of potential loopholes in the conservation policies, and drive real positive outcome for species and ecosystems”, Fei says. “I hope that publishing this paper will contribute meaningfully to the discussions at COP16 in Cali, Colombia.”

Australia is among the first nations to commit to “nature positive” law reforms since the Kunming–Montreal Global Biodiversity Framework (GBF) was agreed on in 2022. However, the Australian Government’s proposed reforms raise critical issues that must be rectified if its laws are to align with true nature positive outcomes, act as a template for other nations and support achievement of the 2030 Targets and Mission outlined by the GBF.

“If laws are titled ‘nature positive’ I think it’s easy to assume that they will therefore reduce the loss of biodiversity and implement recovery actions for threatened species,” says Hannah.



Palm cockatoo *Probosciger aterrimus*, a threatened species. Image credit: © Queensland Museum. The Robin Hill Image Collection

“This paper is therefore important to illustrate that not everything that is titled ‘nature positive’ will result in an outcome that is positive for nature. We really wanted to communicate this in an easy-to-understand way.”

Some of the key issues discussed in the paper include the use of “relative” rather than “absolute” net gain when compensating for impacts to biodiversity and the option for developers to skip strict “like-for-like” offsetting requirements,


and instead provide a “conservation payment”, which does not necessarily have to compensate the same species that was originally impacted.

To find out more, read the paper [here](#), and articles in *The Conversation* [here](#), the *Biodiversity Council News* [here](#) and *COSMOS* magazine [here](#).

Australia is among the first nations to commit to “nature positive” law reforms since the Kunming–Montreal Global Biodiversity Framework (GBF) was agreed on in 2022.

PROFILE

Fly School III: a deep dive into all things Diptera

James Tweed 
CBCS PhD candidate

In August I was lucky enough to travel to Costa Rica to participate in the third ever Fly School.

Organised by entomologists from the Natural History Museum of Los Angeles County, the course offers an opportunity for participants to rapidly enhance their skills in collecting and identifying insects belonging to the order Diptera – aka flies! When I saw that applications were open, I was very quick to jump at the opportunity. Spending time in one of the most biologically diverse regions of the world and learning about flies – what could be better? I was fortunate to receive a grant from the **Dipterists Society**, which greatly assisted with the travel costs of reaching Costa Rica, not an easy place to get to from Australia...

Class assembles

I left Brisbane on 28 July, and four flights and 30+ hours later, I finally arrived in San José, Costa Rica. I checked into my Airbnb and spent the rest of the day exploring. My DuoLingo-level Spanish made communication with the locals

challenging at times, but I eventually managed to muddle my way through. After some successful birding in a small patch of rainforest behind the local WalMart, I checked into the hotel that would be the launching point for our trip the next day and then headed out for dinner to meet some of the other early arrivals.

On the morning of 1 August, the full Fly School class assembled. Around 30 students attended the course, most of them based in the Americas but a sizeable contingent had also travelled from Europe, Asia and Australasia. The diversity in the levels of entomological experience and research interests among the students, as well as the cultural diversity, was amazing, and it was fantastic to make so many new entomological friends. Like the students, the tutors came from diverse research backgrounds but all of them were leading experts in one or more areas of Diptera-related research. Matt Bertone was one of the instructors and a passionate photographer. He kindly made all his photos available to us and some of my favourites feature here.



Top to bottom A mating pair of flies from the genus *Somatia* in the family Somatiidae, only found in Central and South America. Image credit: Matt Bertone

A beautiful species of soldier fly from the genus *Cyphomyia*. Image credit: Matt Bertone

Whenever we weren't fly-focused, I got out to spot toucans, hummingbirds, sloths and other Central American wildlife.





Left to right The resident sloth catching some early morning sun. Image credit: James Tweed
The Fly School III team. Image credit: Matt Bertone

After brief introductions, we loaded our bags on top of the buses and set off. Our destination, and home for the next 12 days, was the Soltis Centre, a research station owned by Texas A&M University. The centre is in San Juan de Peñas Blancas, San Ramón, about a 2.5-hour bus ride from San José and is set on 250 acres of beautiful rainforest. The accommodation and facilities were fantastic, with a large lodge that contained the dining room, and a nicely air-conditioned lab that would be our base for the next 12 days. The cabins had bunkbeds, with three or four course participants to a room. The ability to spend the morning hunting flies in the rainforest and then take a shower and retreat to the confines of the air-conditioned lab during the heat of the day was a luxury not often experienced during fieldwork. Being immersed in the rainforest was incredible, and whenever we weren't fly-focused, I made sure to get out to try and spot toucans, hummingbirds, sloths and other Central American wildlife.

Rainforest, lectures and the lab

Over those 12 days, we cycled between fieldwork in the rainforest, lectures on all things Diptera and work in the lab pinning and identifying collected specimens. Most nights we were in the lab identifying flies until nearly midnight (out of choice), but this was broken up by short trips out to the UV light sheets to marvel at the diversity of insects that come out at night in the Costa Rican rainforest. Other highlights included a trip up a 30+ metre tower into the rainforest canopy and hikes to beautiful waterfalls. Spending time in the field learning the best methods of collecting flies was amazing, and the lectures were all highly informative and really helped to better grasp the diversity of flies, but it was in the lab work where I felt that the greatest learnings came!

In total, there are more than 130 fly families in the world, and so working out which family a given specimen belongs to is no easy task. The goal set for us by the course organisers was to successfully collect and identify at least 40 different families. We used dichotomous keys to identify specimens and discussed our IDs with our classmates, but it was the opportunity to have those IDs confirmed by world-leading experts and ask questions about where or why we might have gone wrong that was the most valuable aspect of the course.

New friends and the future

On the penultimate day, we submitted our collections for grading, where the experts ran through our specimens and made notes of any errors in our identifications, offering another valuable learning opportunity. The last day saw us pack our gear and head back to San José, where we were treated to a tour of the incredible insect collections in the museum. From there, everyone began to part ways. I spent the last two days of my trip travelling through some of Costa Rica's beautiful national parks with some newfound friends before beginning the return journey to Australia.

Overall, the course was an incredible experience that I would highly recommend to anyone interested in upskilling in Diptera taxonomy. The opportunity to do an immersive entomology-focused deep dive like this is rare, and something I feel very lucky to have experienced. My PhD research attempts to integrate the disciplines of taxonomy and conservation (with a focus on flies and other insects), and so I have no doubt that the skills I have developed and the contacts I have made will serve me well now and for many years to come.

The diversity among the students was amazing, and it was fantastic to make so many new entomological friends.

Natural forest regeneration in the tropics has the potential to sequester 23.4 gigatonnes of carbon



Dr Brooke Williams 
CBCS alumna postdoctoral research fellow

A new model estimates that 215 million hectares in tropical regions – an area greater than that of all Mexico – have potential for natural forest regeneration, representing an above-ground carbon sequestration potential of 23.4 Gt C over 30 years.

The research team for this work was led by CBCS alumni Dr Brooke Williams and Dr Hawthorne Beyer, and included many other past and present CBCS members: Dr Renato Crouzeilles, Professor James Watson, Dr Anazélia Tedesco and Professor Jonathan Rhodes. The work was carried out through the Institute for Capacity Exchange in Environmental Decisions (ICEED) and has just been published in the scientific journal *Nature*.

New model to guide savings

The research team modelled the biophysical conditions that can support natural regeneration in tropical forests. Dr Brooke Williams, lead author from ICEED and the Queensland University of Technology, says, “We need broad-scale forest restoration to mitigate the biodiversity and climate crises – but tree-planting in degraded landscapes can be costly. By leveraging natural regeneration techniques nations can meet their restoration goals cost-effectively. Our model can guide where these savings can best be taken advantage of”.

Natural forest regeneration also results in higher biodiversity benefits than other restoration methods. Dr Renato Crouzeilles from ICEED and Mombak says, “Where ecological conditions are such that forests can grow back on their own or with low-cost assistance, natural regeneration can be more effective than full tree planting in terms of biodiversity outcomes”.

Older cloud forest regrowth in Copey De Dota, Costa Rica. Image credit: Matthew Fagan



We need broad-scale forest restoration to mitigate the biodiversity and climate crises.

The study showed that biophysical conditions can support natural regeneration in over 215 million hectares of tropical forests globally – with 98 million hectares in the Neotropics, 90 million hectares in the Indomalayan tropics, and 25.5 million hectares in the Afrotropics. According to Professor Robin Chazdon from ICEED and the University of the Sunshine Coast, “Identifying suitable biological conditions is the starting point, but soil and socioeconomic factors also determine the quality of naturally regenerating forests. By partnering with nature, we can reach the scale and benefits that are needed to replenish the value of lost forest ecosystems.”

Maximising restoration actions

These results built on a dataset that identified historical natural regrowth patches, led by an international team of experts to categorise forest regrowth across tropical Earth. Associate Professor Matthew Fagan of the University of Maryland, Baltimore County, explains the method as follows: “In a previous study, we used satellite images to identify millions of small areas where tree cover increased over time. We then excluded the areas planted by humans with machine learning, focusing on natural regrowth. Those natural patches were the input data for this novel study, the first to predict where future forest regrowth will occur, given observed past regrowth.”

Natural regeneration can be more effective than full tree planting.

Dr Starry Sprenkle-Hyppolite, a co-author from Conservation International’s Center for Natural Climate Solutions, which helped fund the research, emphasises the importance of the model of the Potential for Natural Forest Regeneration. This model will enable targeted implementation of scalable, cost-effective restoration actions designed to maximise the potential biodiversity and climate mitigation benefits of assisted natural regeneration in forest restoration activities during the UN Decade on Ecological Restoration. “We are already using this dataset to explore and ground-truth ‘hotspots’ for natural climate solutions based on assisted natural regeneration, working with local communities and land managers who may be interested in allowing some of the forest to recover on their land through payment for ecosystem service schemes”.

A powerful solution for our times

As we are increasingly faced with the impacts of climate change, the team urges governments to recognise the importance of leveraging natural regeneration potential as a powerful nature-based solution for restoring vast areas of important ecosystems such as tropical forests that deliver multiple benefits to nature and people. To facilitate and promote the restoration of tropical forests, the authors have made the dataset publicly available and free to use through the data repository Dryad <https://doi.org/10.5281/zenodo.7428804>.


Reference: Williams, BA., Beyer, HL., Fagan, ME., Chazdon, R., Schmoeller, M., Sprenkle-Hyppolite, S., Griscom, BW., Watson, JEM., Tedesco, AM., Gonzalez-Roglich, M., Daldegan, GA., Bodin, B., Celentano, D., Wilson, SJ., Rhodes, JR., Alexandre, NS., Kim, DH., Bastos, D., and Crouzeilles, R. (2024). The global potential for natural regeneration in deforested tropical regions. *Nature*. <https://doi.org/10.1038/s41586-024-08106-4>

Top to bottom Eight-year-old second growth in La Martita, Brazil. Image credit: Robin Chazdon
Atlantic Forest, Tres Barras, Brazil. Image credit: Brooke Williams



PROFILE

A nomadic conservation journey

Dr Sreekar Rachakonda 
CBCS Postdoctoral Research Fellow

At 18, I couldn't believe my luck when I landed a zoo internship at the Madras Crocodile Bank – sure, I started off in the library, but I was surrounded by crocodiles!

I dove headfirst into stacks of herpetological journals, devouring everything I could about reptiles and amphibians. Little did I know, this library stint would lay the academic groundwork for my career. While I initially wanted to study animal behaviour, witnessing the rapid destruction of natural habitats up close shifted my focus towards conservation biology.

From canopy to classroom

That shift became more pronounced when I first visited Borneo and witnessed vast tracts of lowland rainforests being converted into oil palm plantations. During my time there, I studied bird behaviour on a hemi-epiphytic fruiting fig tree from a canopy platform. It was a heart-pounding experience, especially being just a few metres away from a Critically Endangered helmeted hornbill. The mornings were alive with the calls of Bornean gibbons and the raucous laughter of the helmeted hornbills,

but what stayed with me most was the sobering thought that the forest I stood in might soon be gone.

During my time in Borneo, I met Professor Rhett Harrison, my first academic advisor, who was not only an expert on figs, but also shared my interest in statistics and conservation biology. Soon I was working with him at the Xishuangbanna Tropical Botanical Garden in China, pursuing my Master's research.

Conservation gets complicated

Xishuangbanna – a biodiversity hotspot near Laos, Myanmar and Vietnam – was undergoing rapid transformation. Expanding rubber plantations were fragmenting its rich subtropical rainforests. While I studied the effects of forest fragmentation on local wildlife, I also noticed something else: unsustainable hunting, quietly driving species towards extinction. It soon became clear that simply protecting forests was not enough. There were invisible threats we had to tackle, too. This realisation led me to dive deeper into applied ecology to find innovative conservation solutions.



Top to bottom Dr Sreekar Rachakonda. Image credit: Andre Chan
Camping in a cave while working in the remote rainforests of Kalakkad Mundanthurai Tiger Reserve in India. Image credit: Supplied

It soon became clear that simply protecting forests was not enough. There were invisible threats we had to tackle, too.





Left to right Examining the evolutionarily distinct rail babbler at the Lee Kong Chian Natural History Museum in Singapore. Image credit: Tze Kwan Fung

Birding with my lab-mates and close colleagues, left to right: Dr Jarrod Hodgson, Dr Alan Stenhouse, Dr Peri Stenhouse, myself, and Dr Guohualing Huang. Image credit: Jarrod Hodgson

My growing interest in these approaches led me to connect with Professor Lian Pin Koh, a global expert, who became my PhD advisor at the University of Adelaide. Afterward, I continued working with him at the National University of Singapore. Between stints, I also had the chance to study plant-animal interactions in the temperate forests of Czechia and Japan with Dr Katerina Sam.

Guarding ecosystems from the desk

Until the pandemic, I was primarily a field ecologist. Then COVID-19 hit, and I had to adapt. I transitioned to a spatial conservation biologist, guided by an incredible team at the Centre for Nature-based Climate Solutions in Singapore. Dr Yiwen Zeng helped me master spatial analysis, Dr Aakash Lamba introduced counterfactual approaches and soon-to-be Dr Hoong Chen Teo helped me

leverage cloud-based computing tools like the Google Earth Engine. While I miss my days in the field, I have found immense fulfilment contributing directly to global and national policies that impact conservation on a larger scale.

Before joining the Centre for Biodiversity and Conservation Science, I mostly viewed the world through the lens of an ecologist. My focus was squarely on protecting species and ecosystems, without fully considering how industries, markets, and policies shaped the landscape of conservation. That perspective shifted thanks to my CBCS academic advisor **Associate Professor Laura Sonter**, who introduced me to the complex interplay between businesses, governments and ecosystems. I am now investigating how businesses can assess and disclose their nature-related impacts, a crucial step towards making conservation part of financial decision-making.

A path in progress

Looking back, my academic journey has taken me to some of the world's most breathtaking landscapes, from the tranquil woodlands of Toma Komai to the vibrant rainforests of Borneo. Along the way, I have witnessed the damaging impacts of habitat fragmentation and unsustainable hunting. These experiences have motivated me to focus on developing creative, science-based solutions to protect these incredible ecosystems. While I may not be making huge strides to protect our planet, I am working on it alongside my colleagues at the Centre for Biodiversity and Conservation Science – one research paper, field expedition and policy meeting at a time!

“While I miss my days in the field, I have found immense fulfilment contributing directly to global and national policies that impact conservation on a larger scale.”

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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