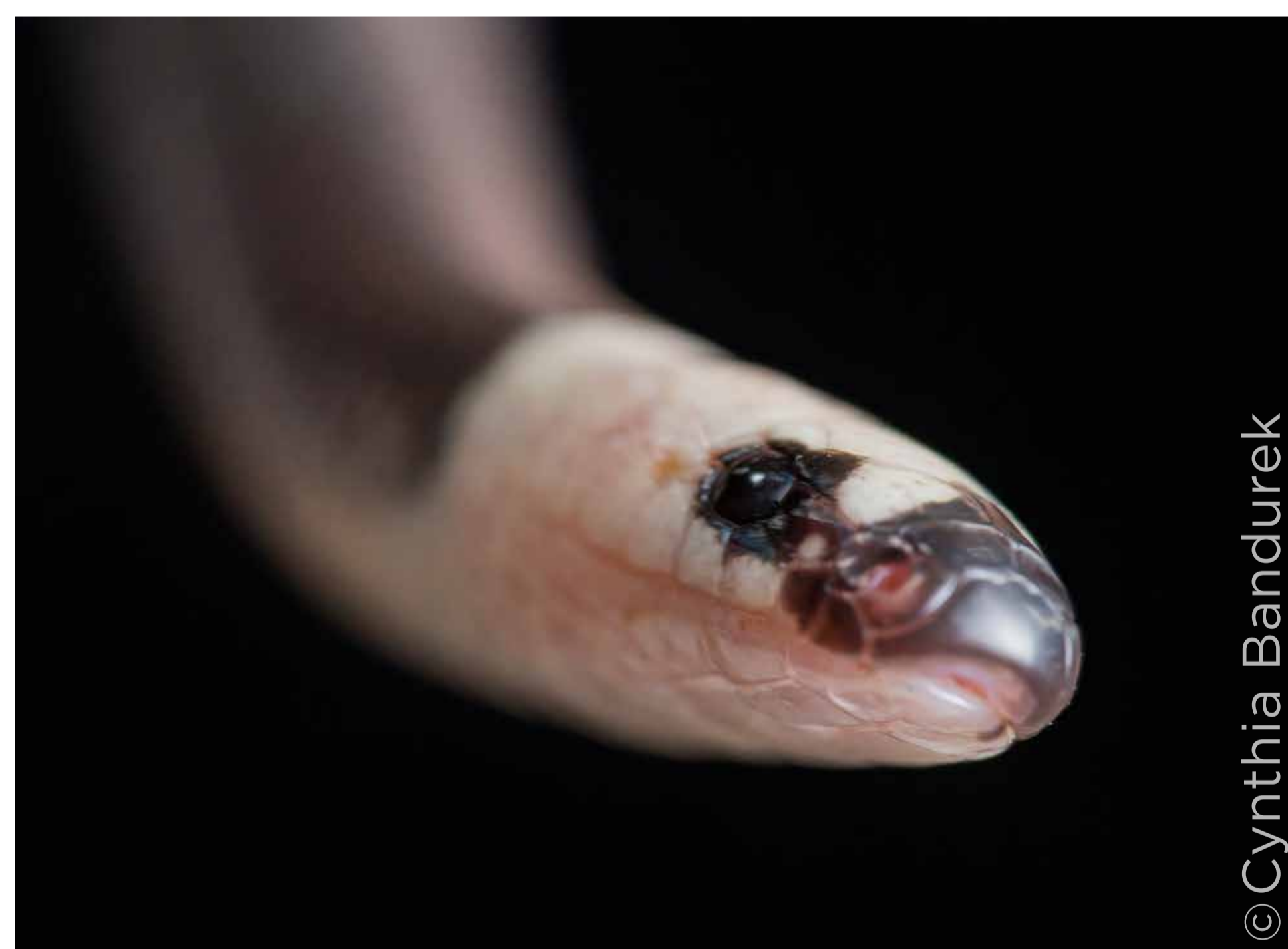


INTO THE WILD WITH AMARTYA MUKHERJEE

UNDER PRESSURE IN AOTEAROA:
AMPHIBIAN DECLINE
BY EMILY HOTHAM



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©Cynthia Bandurek



©Belen Etchegaray

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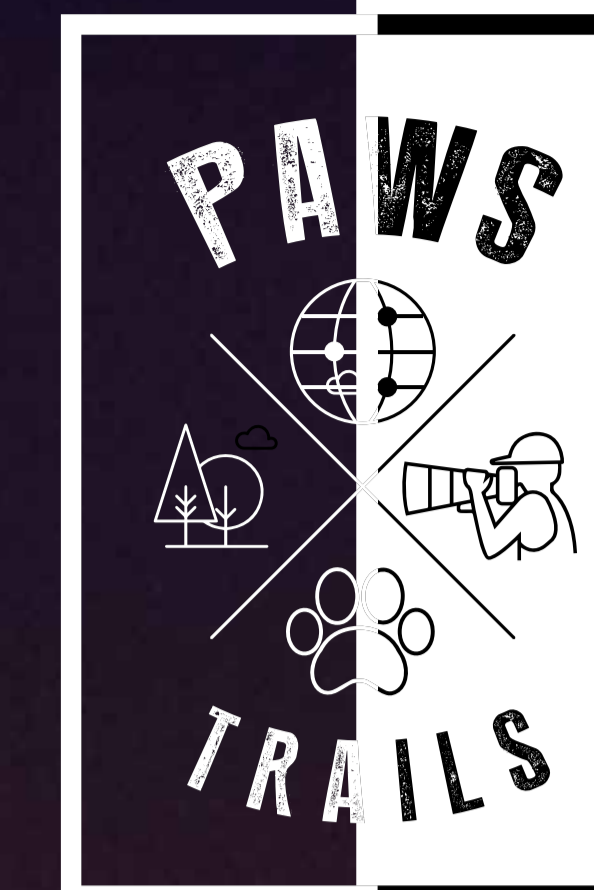
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Cover Story
Amartya Mukherjee

© Amartya Mukherjee



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Hank Tyler
Editor

With Volume 30, we celebrate five years of publishing PT Explorers. Over 300 authors and photographers have contributed their stories and inspirational wildlife photography. Thirty artists shared their creative experiences and their wildlife artworks. In our cover stories, we have showcased interviews with thirty outstanding wildlife photographers from around the world.

The energy and dedication of our contributors will propel us to continue to publish fascinating stories and eye-catching photos. We greatly appreciate the generosity of all our contributors, and we thank them very much. We invite you to contribute to PT Explorers. Please submit several of your best wildlife photos for inclusion in Your Gallery.

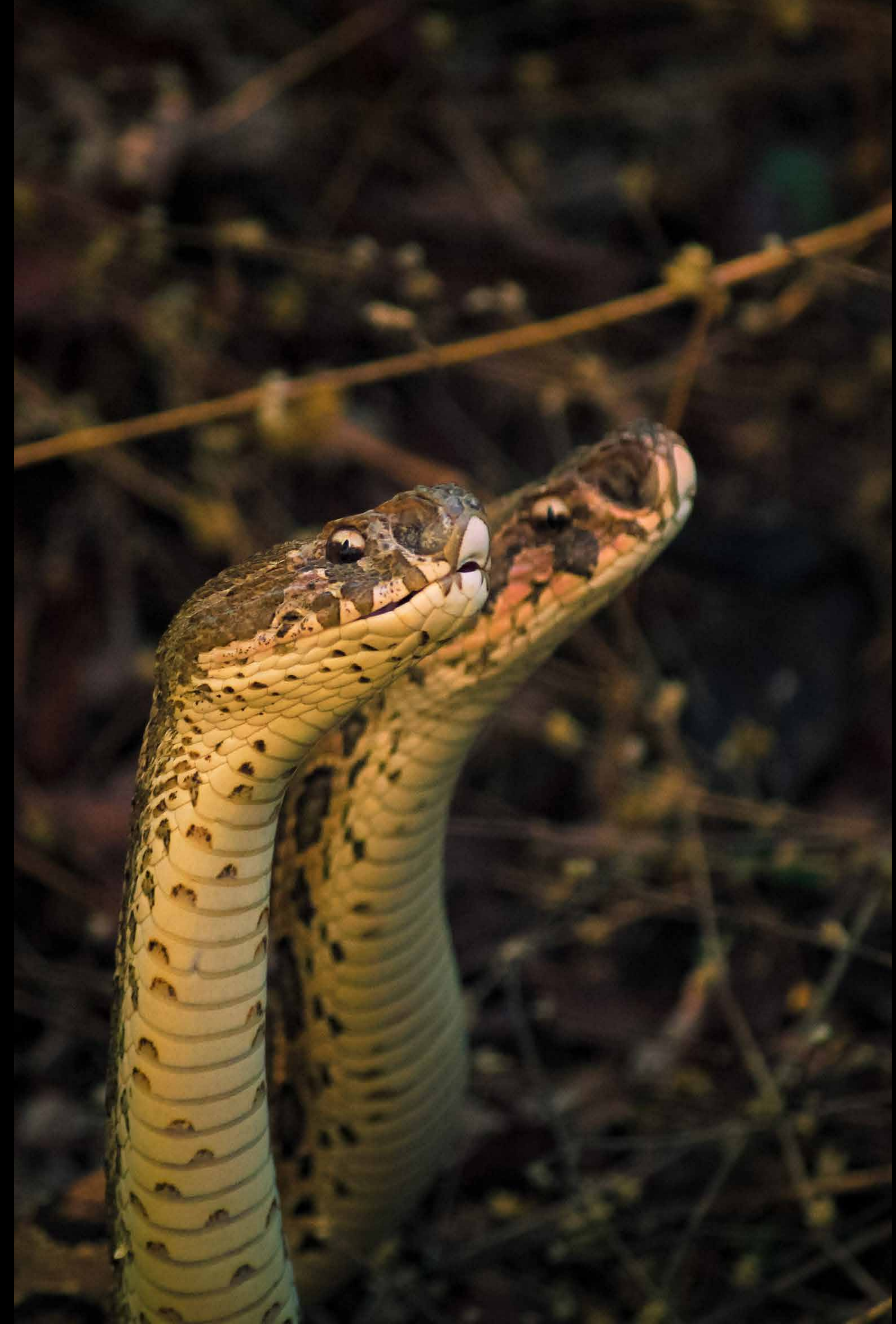
This edition takes us around the world. In our cover story acclaimed Indian photographer Amartya Mukherjee talks about his experiences and experiments with wildlife, nature, and other genres of photography photography. Amartya's philosophies and visions on life and photography have deeply influenced his work and he is a master who is able to reinvent himself over and over again while still remaining true to his fundamentals.

New Zealand's Emily Hotham writes about efforts to protect some of the rarest frogs in the world. Our South American editor, Cynthia Bandurek tells of her move to live in Costa Rica where she is enjoying macro photography in the biologically rich lowland tropical rainforests. The Species that we chronicle this time is the Black-headed Bushmaster. Roel De Plecker and Marcello Carvajal from Costa Rica tells the fascinating story of these serpents.

South African artist, Yvonne Ackerman tells us about her fascinating work as an artist on board polar expedition ships visiting arctic waters and in the southern hemisphere visiting the exotic islands of the Falklands, South Georgia, and of course Antarctica. From the Netherlands, Kerstin de Haan has captured charming photos of Mute Swans nesting on a polder near her home.

This volume's Her View is by Belen Etchehegaray and her spectacular photography of South America. Anay Sinha's Cub's Corner story shows his brilliant photos of hummingbirds in Arizona, US.

Our editorial team looks forward to discovering more exciting wildlife stories and photos to share with you in the coming years.



PHOTOGRAPHY DIRECTOR'S CHOICE



Khesava Datta
Russel Viper (*Daboia russelii*)
Madurai | India



FOUNDERS' NOTE

We have some exciting news.

While we were on our many expeditions in the wild, the PawsTrails team has always had a dream of having our very own safari lodge. That dream has come true with the launch of MARA TRAILS CAMP – the PawsTrails' lodge in the mecca of wildlife, the Masai Mara. While it wasn't easy, we are really excited that this dream has come true, and Mara Trails welcomed the first visitors in July 2021.

PawsTrails has always been vocal in supporting that conservation should be an inclusive endeavor. To succeed, conservationists must think holistically, taking into account the communities that live surrounding the concerned area. This is one of the guiding principles that we followed while envisioning Mara Trails. We have resolved to use 50% of our operational profits for awareness building and aiding the communities who live with the wildlife and act as their guardians. Renowned scientist Dr. Peter Hudson will be the conservation Director for Mara Trails and will be guiding us in all our activities.

When you plan your next expedition with us, you will not only have the best experience in the Mara, guaranteed by a decade worth of PawsTrails' experience in the field, but you will also be making a difference to the natural world and the communities that protect them.

Contact us for the best safari experience.

We thank all our readers for your continued support.

We continue to receive enthusiastic contributions from around the world from photographers, conservationists, researchers, and scientists. We are grateful to all of you and remain excited at the prospect of bringing the fruit of your labors to the greater Paws Trails community.

Hermis Haridas & Nisha Purushothaman

Founders - PT Explorers



COVER STORY

Into the Wild

with Amartya Mukherjee

Polar Bear (*Ursus maritimus*)

Amartya Mukherjee, a Bangalore-based chartered accountant, is an award-winning photographer and a regularly published writer, whose initial grounding in image-making was in the pictorial and street photography genre of Kolkata. Subsequently, with the move to the digital medium just over a decade ago, he ventured into extensive outdoor photography, with a focus on natural history. In the course of visiting over 25 countries with his camera, he has explored several of the iconic wildernesses of Asia, Africa and the Arctic and has undertaken expeditions to the top of Mount Kilimanjaro in Tanzania and above the northern Everest Base Camp in Tibet.

Amartya's photographic work has been awarded multiple times in various contests in India and abroad and his images and articles have been regularly featured over 50 times in leading global and Indian publications/ websites such as BBC Wildlife, National Geographic, National Geographic Traveller, India Today, Outlook Traveller, Lonely Planet, Saevus, Jetwings, Touriosity, Smart Photography, Asian Photography, Times of India, Hindustan Times and The Telegraph, apart from numerous Bengali magazines like Anandamela, Aranyak and Sananda. His images have been showcased at curated exhibitions and international salons in several cities across the world and in photographic presentations at various fora, as well as television programmes.

Through his creative work, Amartya strives to engender a love and awareness for our planet's wonderful natural and cultural heritages, some of which alas are fast disappearing.

**A selection of his photographs along with accompanying write-ups may be seen on his FB profile:
facebook.com/amartya.mukherjee.7/photos_all**





Indian Rhinoceros (*Rhinoceros unicornis*)

How did your passion for photography become ignited? Why were you initially attracted to street and wildlife photography?

For those of us who got introduced to photography when film still reigned, one of the fascinating visual delights was to lay one's hands on international magazines renowned for their superlative photographic content such as Life magazine. For nature lovers and nature-photographers the yellow bordered National Geographic surely had a special, almost revered, place in the heart and in the book shelves. Like countless others of my generation I still have vivid memories of some of the National Geographic covers of the 1980s and 1990s vintage. Through these issues one could not only explore science, culture, history, geography or the wonders of the world but also get exposed to quality photographs and photographers.

Those lavishly illustrated pages were a fairly big deal in the pre-internet days of the 1980s when we only had limited visual exposure in India. There was a single government television channel (Doordarshan) for a few hours every evening and most local newspapers and magazines were yet to start printing high quality colour pictures.

Thanks to that yellow bordered magazine I discovered Steve McCurry and his image of the Indian tailor in the monsoon floodwaters and the iconic green-eyed Afghan girl, who inexplicably went on to become an

enigmatic modern Mona Lisa of sorts! I discovered Chris Johns and Michael 'Nick' Nichols and their countless nature-based covers of cheetahs, chimpanzees, gorillas and tigers, which served to spark my school-boy imagination. I had never had the opportunity of visiting any Indian national park in my childhood and foreign travel was simply out of the question - international trips were then considered to be the exclusive preserve of the privileged. Indeed, staring 'into' those lovely pictures of lions in the African savannah and polar bears in the Arctic pack-ice transported me into a 'fairy tale' world, which was real and imagined in equal parts for a boy growing up in the concrete jungle of the city of joy (Kolkatta).

And one also came across the work of Indian masters like Raghu Rai and Raghubir Singh through books, magazines and exhibitions. These were gifted genre-defining visual artists who represented the nuances of the sub-continent in such poignant and perceptive ways, that over three decades later whenever I click a street scene, somewhere I suspect I am perhaps still getting sub-consciously influenced.

An additional factor that possibly also contributed to sowing the seeds of interest in photography was coming in touch with some photo-journalists through people we knew. I still recall a picture that I had seen as an eight or nine-year-old. It was a picture of a traffic policeman taking a bribe from a truck driver. That imprinted on me the power of visual documentation. It made me realise the importance of

the medium of photography, as it went beyond the passport pictures clicked in the neighbourhood studio or the usual wedding album pictures.

This is how I gradually got intrigued by street photography and wildlife photography in my mind's world as a boy, though proper photography and photo-expeditions would happen much later, in my working life when I was in my twenties. Indeed, my desire to explore the world as a curios traveller rather than a tourist was also sown in those childhood years. This has to be seen in context of the fact that though I have now travelled to nearly 30 countries with my camera, till I got a corporate job as a qualified chartered accountant in 2003, I had been on an aeroplane only twice in my then 25-year old existence!

What does style of photography mean to you and have you seen any major shifts in your photographic style over the past few years?

Irrespective of genre, photography is fundamentally about connecting with a moment in time-space. And actualising that connection often is a function of who we are and what is the meaning of life and photography for us. It is often far more than just the camera equipment being used, though of course that is an essential part of the cameraman's toolkit.

As I have progressed in my journey as a human being and a photographer, I have increasingly realised that it is not always possible to gain access to a significantly unique scene and therefore one of the ways to create one's own distinctive pictures is to design the images like a line

or a small stanza from a poem, to express a thought or feeling. So, the artistic quotient and the personal interpretations have gone up over the past several years.

Yet, despite whatever prior subject and situation knowledge that one may have, despite all preparations and pre-visualisations, it is also important to not become prisoners of the frames that may have worked for us earlier. In other words, pursuit of one's so-called signature style should not become a constraining factor that becomes bigger than the moment being photographed. For example, just because a particular picture of some charismatic wildlife has helped me get an important magazine cover or a photographic award, does not mean I should feel compelled to try and recreate that style of image over and over again! In other words, photographic style and quality are also dynamic and I have to keep challenging what I have already succeeded at earlier.

To give an example, that is why, even if I have successfully experimented with 16mm 'up-close and personal' images of African elephants from a few feet away, it does not mean that I will want to go on a safari without a decent telephoto-lens! Similarly, just because I have had creative success at slow shutter pans or intentional camera movement images, does not imply I will not continue to delight in creating traditional 'beautiful' pictures in 'golden' light.

Who was the individual(s) that influenced your photography the most?

Initially, my father, late Mr. S B Mukherjee, was my source of basic knowledge



Nilgiri Tahr (*Nilgiritragus hylocrius*)

Gentoo Penguin (*Pygoscelis papua*)

about photography because I saw him use his Pentax SLR while growing up. It was interesting to practically learn to operate that Pentax set-up as it had no auto-focus or auto-exposure. For me, in my initial days, getting a roll of decently exposed film from that camera was an achievement by itself! But on hindsight, that learning about working towards proper exposure in the pre-digital days helped me later in my own photographic journey.

The next influencer whose name I would call out is Mr. Madhu Sarkar, from whom I learnt so many new things at his studio at Tollygunge, Kolkata. Nuances of composition and indoor lighting, table top photography, model shoots, pictorial styles, salon photography etc. It was the start of a long-term association with many exhibitions and events enlivening the journey. Most importantly, from Madhu Sarkar I learnt to use photography as a medium of artistic expression, of creatively expressing thoughts, emotions and social statements.

I also have a healthy respect for all the photographers whose work I have had the opportunity of seeing and with whom I have interacted. I have been like a sponge. Absorbing much of what flowed around. Initially through books and magazines and then in the post-internet world through the web. And, of late, from social media platforms like IG and FB. And occasional visits to photo and art exhibitions and face-to-face interactions with professionals and passionate amateurs played their part.

In the nature and wildlife genre where I

have been immersed in this past decade, I have a particular fondness for the lyrical beauty of a Jim Brandenburg, an Art Wolf or a Frans Lanting and I have no hesitation in admitting that their magical images have taught me a lot. They have not just inculcated in me a desire to showcase nature as art but also moulded my overall life-view as a visual communicator.

Indeed, all sub-genres of nature photography have their own vital role and have served to inspire me. Be it the technically outstanding, beautifully executed John Shaw variety showing awe-inspiring landscapes and lovely animals or the raw, edgy conservation images of the Brent Stirton variety showing a bloody rhino with its horns cut-off or a dead silverback gorilla getting carried on a bamboo frame. I also like the specialized natural history strengths of a Paul Nicklen, a master documenter and explorer of the extreme polar regions and its denizens, or a Johnathan Scott, with whom I once spent an educative and enchanting week in the Masai Mara, which the 'Big Cat Man' knows like the back of his hand, having lived and worked there for decades. And there are many contemporaries and friends in wildlife photography whom I admire and continue to learn from such as Ole Jørgen Liodden.

This is not to say that my visual inspirations have only been from photographers – if I find the fine-art, minimalist, wildlife photography style of Vincent Munier to be inspiring, then it must also be stated that I never would have tried certain type of imagery had I not come upon the works of Vincent



van Gogh - his striking colours, emphatic brushwork and contoured forms. Not just other photographs but movies, music, books on philosophy and poetry can all serve to inspire a photographer, but nothing is more inspirational to me than this transient journey called life.

You are best known both for your wildlife and street photography - do you find your skills in street photography help with wildlife?

Henri Cartier-Bresson's "decisive moment" is true for both street photography as it is for wildlife. And therefore, there is a need for all photographers to hone their technical and aesthetic sensibilities in order to be able to respond to that decisive moment. This construct would be true for both a spontaneously unfolding street scene or a cheetah hunt!

More importantly, by immersing oneself in a totally different genre of image-making, in my case people photography, it is possible to explore new dimensions of wildlife photography in an original manner. I strongly feel 'how we see' is as important as 'what we see' but 'what we see' can expand 'how we see' and make us better image makers.

That is where exposure to multiple genres is particularly useful, as that helps develop one's creative eye. One has to only look at Sebastião Salgado's wildlife images to understand how uniquely he has been able to craft these images, no doubt drawing upon his vast experience as a prolific photo-journalist for so many decades.

The other common element between

people and wildlife photography is the need to always respect one's subjects. In landscape photography, whether I am photographing a rainbow over the Niagara Falls or the sun rays kissing the north face of Mount Everest, I do not have to be bothered about the sensibilities of my subject. Same is the case for, say, commercial product photography. But in case of people and wildlife photography I am dealing with living subjects and their sensibilities and safety is of paramount importance - always more significant than getting the desired photograph. This can be true while photographing festivals where there could be religious sensitivities or there could be cultural nuances to keep in mind while making pictures of tribal people. And in the same way, the core ethic of not disturbing one's subject to make a better picture is also an inviolate principle for wildlife photographers - think of pictures of nesting birds or any young animals. In conclusion, understanding the context and having empathy for the subject is a central tenet of both wildlife and people photography.

What is your favorite location for wildlife photography in India?

This is a tough one! Different locations across the vast Indian sub-continent are good at different times of the year. They offer different types of landscapes and the endemic flora and fauna that often go with such biomes. I have enjoyed exploring and learning from this great variety of mind-boggling natural history experiences that India can offer. It is a work in process and I doubt if I will be able to do justice to even a small fraction

of wild India's diverse offerings in this lifetime! And what's more, along with the internationally famous wildlife havens such as Jim Corbett National Park, there are lots of photographically exciting nooks and crannies spread across the sub-continent, from bird hides to micro-wonderlands in coffee plantations and forest edges, that beg to be explored.

I have shot trans-Himalayan landscapes and fauna from Ladakh in the north to endemic and endangered lion tailed macaques and Nilgiri Tahr in Tamil Nadu in the south. I have shot one-horned rhinos and white winged wood ducks in Assam in the east to galloping khur and desert fox in the parched Little Rann of Kutch in Gujarat in the west.

And, of course, I have enjoyed photographing the magnificent striped cats that seem to define Indian wildlife for much of the world. My best experiences with our national animal have possibly been in Ranthambhore but even in Bandhavgarh, Kanha and Kabini I have had tremendous photo ops with tigers.

Come to think of it, now that I stay in Bangalore, I will nominate nearby Kabini (Nagarhole National Park) as my current favourite wildlife location within India. This former hunting ground of the Mysore Maharajas, known traditionally for its vast congregations of elephants and high probabilities of leopard spotting, has now developed as a great place for tiger sightings as well. But what really makes this park extra special is the tantalizing possibility of catching a glimpse of that black ghost, perhaps the world's only habituated melanistic leopard - often

referred to as Blacky or Bagheera by the local guides and drivers.

Do you have a favorite wildlife shot and why do you love it so much?

This is an even tougher question! Short answer - yes, I have my favourites but these are not permanent favourites! My photography and my most preferred creations change with time. Plus, some become favourites from the external perspective and the others are treasured from an internal point of view.

To give an example from the wildlife paradigm, when one of my polar bear shots created in 2014 at Svalbard won a National Geographic Traveler contest, then got featured in multiple photography magazines and afterwards was used as a cover for Lonely Planet magazine, it became a favourite. And in becoming so, it displaced many of my erstwhile favourite tiger pictures that had been extensively featured in the media earlier. But when I displayed this prized polar bear image at one of my photo-exhibitions in Kolkata, this did not sell at all whereas various other pictures, even other polar bear pictures, sold briskly! So, personal favourites and editor's choices are no predictors of buyer preferences!

A couple of years after that I did a mountain gorilla expedition to Rwanda and my kitty of awarded and magazine-cover images got expanded, resulting in a reshuffle among my favourite nature pictures! And this process keeps getting repeated after every significant new photo-expedition.





Some pictures, however, become favourites in a very personal manner. These pictures generally have nothing to do with external validations and recognitions. In their very conception, execution and use, these pictures show different characteristics. I create them more for my own creative satisfaction as a visual artist.

A vertical-cum-horizontal slow-shutter pan of a flock of flying egrets at Ranganathittu, was inspired by not anyone else's photographs but somehow subconsciously encouraged by Jackson Pollock's abstract expressionism. Another personal favourite in this vein is an image of flying birds appearing as streaks of white against a pitch dark Masai Mara sky. This image struggled to get a dozen 'likes' on social media but resonates with aficionados familiar with the slashed canvas experiments of the minimalist master, Lucio Fontana. I am touching upon a few of my abstract wildlife images just to make the point that there can be no standard yardstick for determining what is a 'favourite' picture.

How do you balance your work with home life and yet still have time for photography and what advice can you offer for others?

Work is life. Home is life. Photography is life. For me, I think all are interconnected. It is not possible to have one without the other. As Abraham Maslow observed, a man's basic and psychological needs have to be significantly met before reaching the self-actualization orbit. To me, exploring the natural and cultural dimensions of planet earth with my camera helps me celebrate life, and

Melanistic Leopard (*Panthera pardus*)



© Amartya Mukherjee



Lion-tailed Macaque (*Macaca silenus*)

this in turn is possible due to the inter-dependent balance I experience between livelihood and life.

In terms of advice to others, I would recommend the photographer to think through, irrespective of the favoured genre or style, if they intend making photography their primary profession and why?

If, on the other hand, image-creation is going to be your life-long passion, even your obsession, as it is for me, then you need to carefully figure out what are the things you are going to try out photographically in the limited opportunities that the space-time of work-home-wealth-health will provide? I find it helpful to have a personal photographic vision and a mission statement, which can be worked on progressively over the years without, of course, becoming a slave to it. And when formulating this long-term photographic mission statement, the prosaic realities of successfully earning one's livelihood and the joys and responsibilities of family life must necessarily be factored in. I personally find it easier to construct such photographic pathways, both creative and practical, by co-generatively involving the people who matter most to me. Then the solutions and workarounds can be collaboratively worked upon, within a shared framework of values.

What are your thoughts about the DSLR versus mirrorless debate?

Cutting-edge developments are taking place dynamically in the world of technology. And the imaging industry

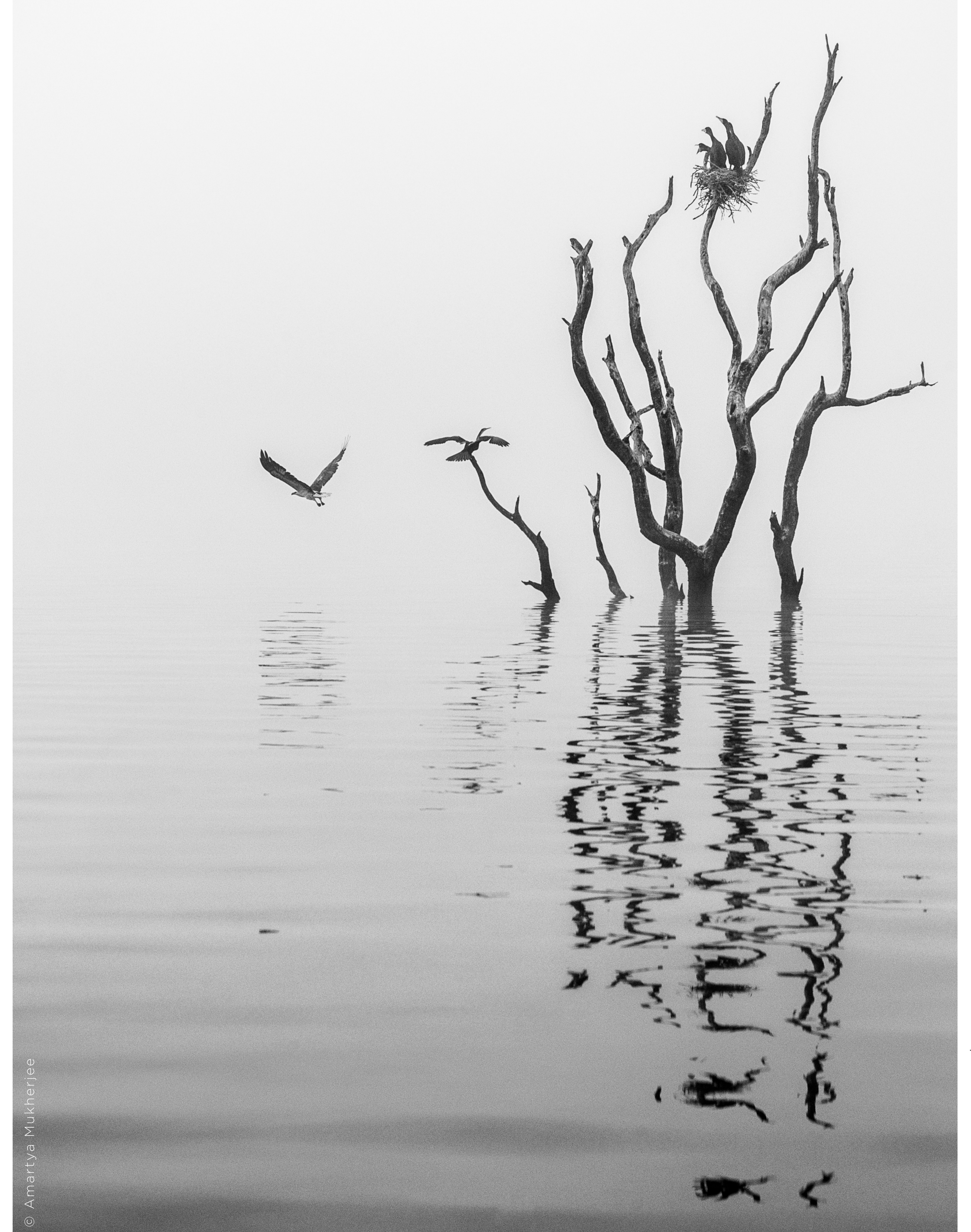
is also going through technology driven disruptions, which have not yet ended. What was generally considered photographically impossible just a few years ago, suddenly is becoming possible with the latest camera gear. But every system, be it DSLR or mirrorless, has its own suite of pros and cons. My thoughts on this debate, therefore, are still evolving. I have personally not yet reached that tipping point where for example, the apparent advantages offered by mirrorless cameras, will push me to make the switch from my DSLR system.

But then again, that is just my position at this point in time. A year or two later I may have a very different answer. And by then there could be some other technology altogether that will also need to be considered!

But still I would say that it is the user of the camera rather than merely the make or model of the camera that ultimately creates the picture. Ansel Adams' quote rings true even after all these years "The single most important component of a camera is the twelve inches behind it."

You are well known for the many magazine articles you have written about wildlife, what drives you to show your photographs like this?

Initially there was elation in being able to showcase my pictures on the print or electronic media. A live TV interview or a cover story in some reputed newspaper or magazine would give me a huge sense of achievement as a passionate photographer. The sheer joys of creating



© Amartya Mukherjee





Common Kingfisher (*Alcedo atthis*)

images and communicating to a larger audience through them was a reward in itself.

But over time, priorities have evolved. That is not to say I do not get pleasure from a publication or an award. I most certainly do and so far, even after 80 odd print publications, my motivation increases as various personal milestones are achieved in my life-long journey as a photographer-writer-traveller.

But I nowadays do genuinely tend to think more in terms of what my featured essay or photograph can achieve in a larger social context. And when personal recognition can be conjoined with an opportunity to serve a larger purpose, it helps in accomplishing more meaningful inner contentment.

I ask myself whether I can use whatever photographic and writing abilities I have developed to impactfully tell my stories in a way that makes more people take notice? When I am writing a cover story on Gentoo penguins based on my expedition to the seventh continent, I am also driven by the fact that I am having an opportunity to introduce many readers to the amazing wonders of the white continent. After all, very few people have the opportunity to visit such off-beat locations and if my stories have the ability to inform and inspire even a single soul, I would be satisfied as a communicator. Perhaps one of my pictures featured in Paws Trail magazine will help a person get connected to the natural world, and in some time that person may have joined in the advocacy for a better and more sustainable planet!

Maybe, just maybe, there could be a small boy or girl somewhere in India who, after seeing my images or reading my article in a magazine, would become more curious about the natural world. About science. About art. About life itself.

If you were limited to one camera and one lens for wildlife, what setup would you go for and why?

At this point of time, my go-to set up for wildlife would be a Nikon D5 paired with the 180-400mm F4 with inbuilt 1.4x TC. It is hard to beat the compositional versatility offered by Nikon's 180-400mm, which can go up to 560mm with the inbuilt TC engaged. The 180mm side of the zoom range allows decent habitat shots of even large animals and the 560mm tele-option is useful for capturing birds. For sure, certain aspects of the output quality may be a fraction below that of the fantastic prime lens alternatives such as a 400mm F2.8 lens. But since my core photo-design approach is mostly that of a visual artist and less of a nature documenter, the artistic freedom of this lovely zoom lens more than overcomes its slight technical inferiority. And in terms of my first-choice camera body, the D5 continues to be the most reliable beast for heavy duty field work. And in scenarios where it is not feasible to use a sturdy tripod, such as from within a safari jeep in India or Africa, I would carry a beanbag to stabilize my set-up.

If you won a prize and could visit any location in the world, where would it be?

This question alone will send me into day dreams for days on end!



Asian Small-clawed Otter (*Aonyx cinereus*)

The top of my mind thought is naturally to visit an enticing international location which I have not had the chance to explore earlier.

Since I have been fortunate enough to have had a chance to photograph at several of the iconic wildlife reserves in Africa and India, the current fantasies around answering this question deal with newer destinations in other regions.

Will winning this dream prize take me to the Emperor Penguins in the freezing heart of the Antarctic or to the Galapagos Islands to understand what inspired Darwin? Will it perhaps lead to an exploration of the Pantanal to try and see jaguars hunting caimans? Or will the prize be a passport to photograph a rarely visited rugged place such as Wrangel Island? Or will it be more exciting to spend time in Papua New Guinea discovering its exotic bird species and cultures? Or instead, should I simply visit our near relatives, the orangutans, in Borneo?

Will I rather visit Aah, if wishes were horses!!!

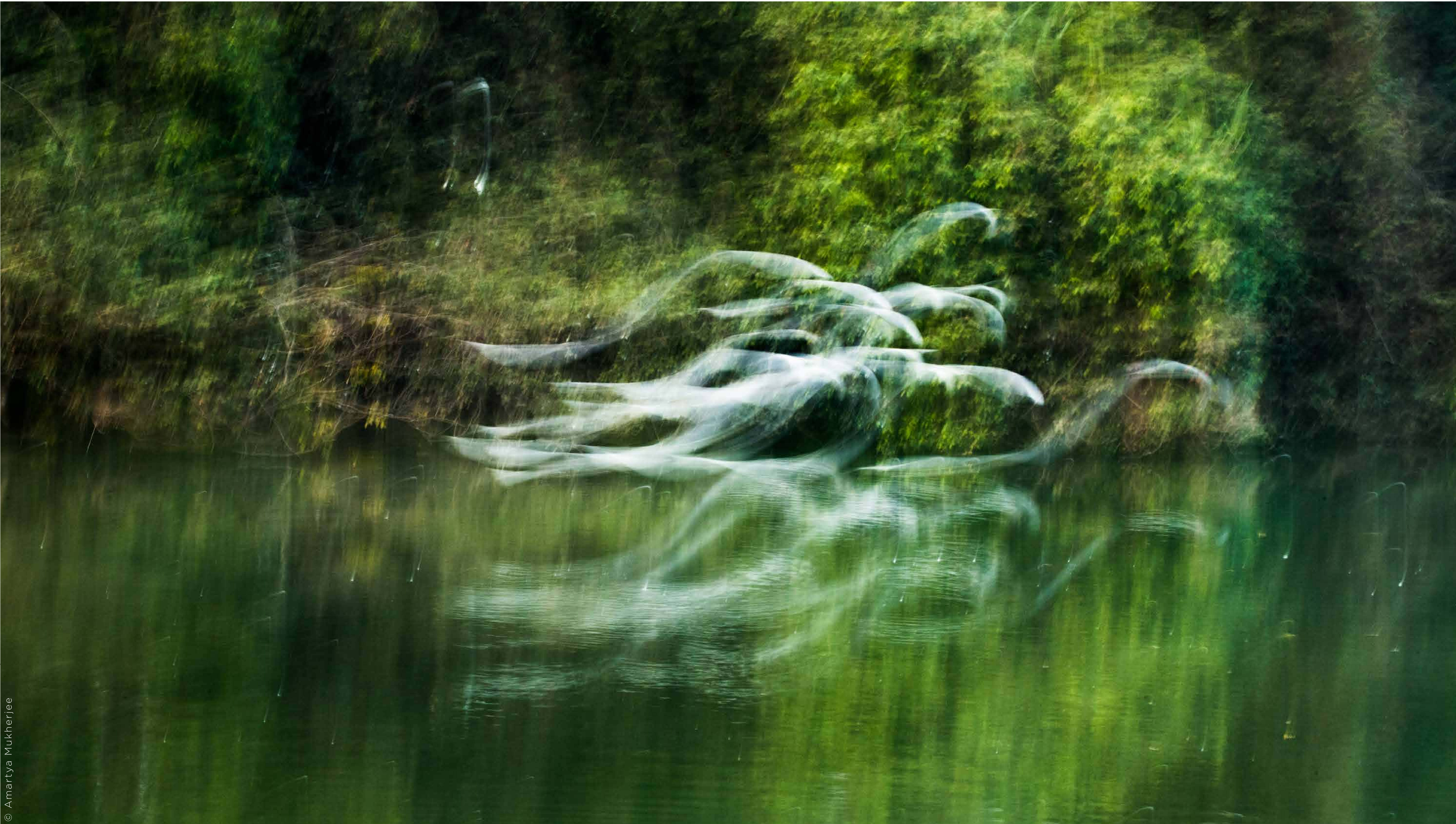
How would you like your photography to develop in the next 5 years?

My pictures are my finite offerings to the infinite. For me, there is no disconnect between my life's overall mission and my photographic journey, as these are intertwined. For me, the photographic journey does not merely connote photo-tours to different locations but contemplates the journeys within as well. Photography enables me to visually share these explorations with the outside world. And I hope to have continued further on this path in the next five years, following my inner bliss with gratitude.



© Amartya Mukherjee

Mountain gorilla (*Gorilla beringei beringei*)





Chinstrap Penguin (*Pygoscelis antarcticus*)



© Samantha King

CONSERVATION

Under Pressure in Aotearoa: Amphibian Decline

By Emily Hotham

Coromandel forest vegetation

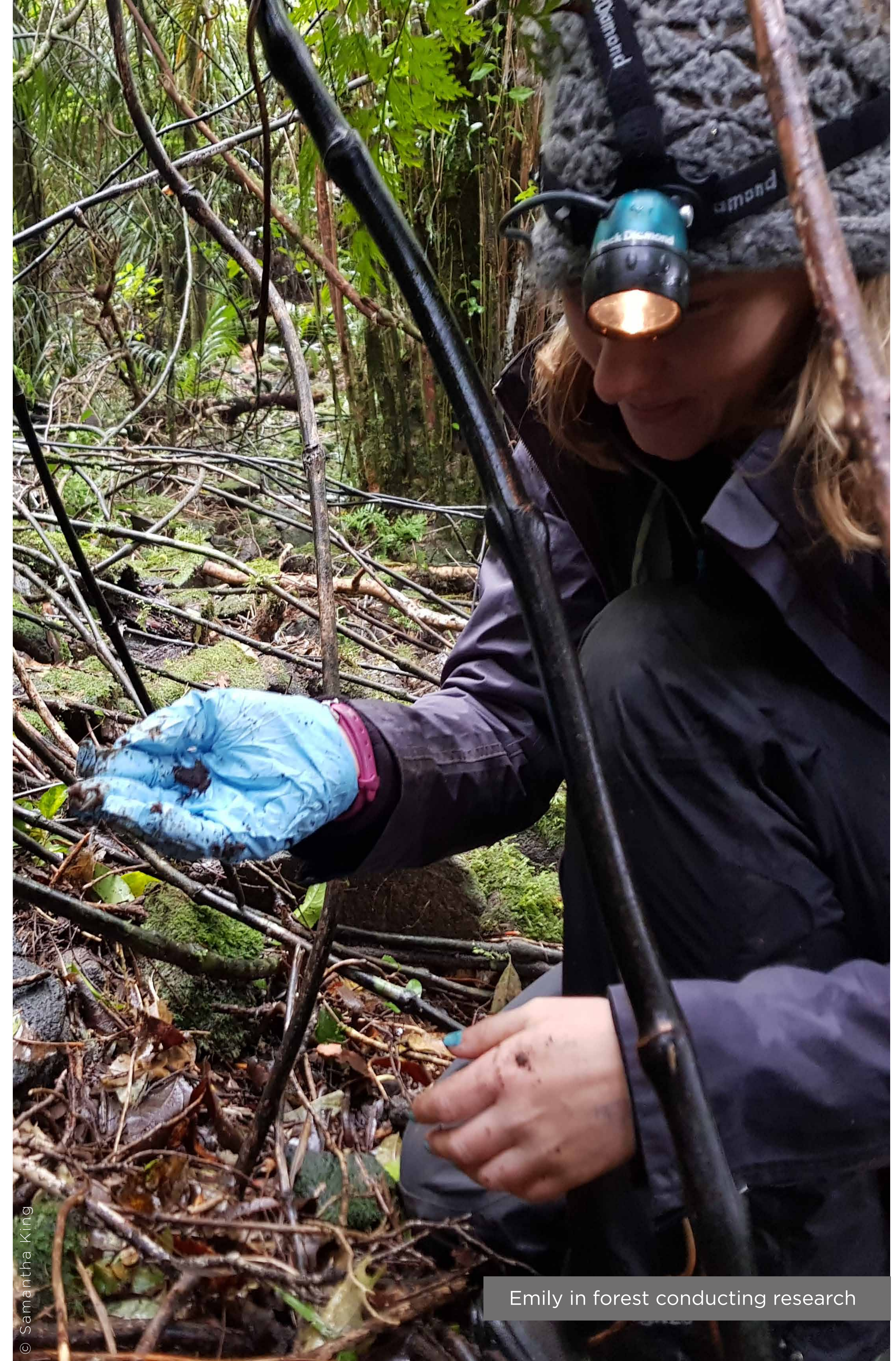
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Emily is a New Zealand conservation biologist with a passion for herpetology. She is working to spread awareness for species that people may not know exist, or are unlikely to ever see in the wild. Emily graduated from Massey University with a Masters in Conservation Biology, and gets paid for searching for herps.



Twenty-two years ago, research presented at the World Congress of Herpetology Conference sent shock waves through the amphibian community. Drastic declines and extinctions were predicted globally, and this has rung true for many species, including the Leiopelmatid frogs of Aotearoa, New Zealand.

Eighty million years ago Zealandia broke away from the supercontinent Gondwana. It then took a further 20 million years of tectonic movements and volcanic activity to form the landmass we now regard as Aotearoa. Having been the last major archipelago of islands to be colonised by humans, this allowed for an extended period of evolution of plant and animal



Emily in forest conducting research

© Samantha King



Hochstetter's Frog (*Leiopelma hochstetteri*)

species in the absence of terrestrial mammalian predators. Imagine giant insects, ancient reptiles, and flightless birds thriving in a pre-human world.

Often referred to as “living fossils”, the Leiopelmatid frogs are among this “archaic” fauna that originated from Gondwana. Having changed little in over 150 million years, Leiopelmatid frogs are among the most unique amphibians in the world and survived when most other creatures disappeared. Extant species of *Leiopelma* include three terrestrial and morphologically similar taxa: Archey’s Frog (*Leiopelma Archeyi*), Hamilton’s Frog (*L. hamiltoni*) and Maud Island Frog (*L. pakeka*), and one semi-aquatic species, Hochstetter’s Frog (*L. hochstetteri*). *Leiopelma* species are small, with snout-vent-length (SVL) ranging from up to 40 mm for the smallest species, Archey’s Frog, to 51 mm for Hamilton’s Frog. They are carnivorous, eating a range of invertebrates such as beetles and mites and all four *Leiopelma* species are generally nocturnal. But what actually makes *Leiopelma* so unique? Or as Professor Phil Bishop, a New Zealand frog expert, has said, “so weird?”

While many of us have watched tadpoles swimming around in backyard ponds, eagerly awaiting the morning chorus, Leiopelmatid frogs sat silently in the hills above. Endemic Aotearoa frogs lack external eardrums and vocal sacks that are characteristic of modern frogs, with *Leiopelma* species not known to vocalize in a social context. And forget about watching tadpoles, *Leiopelma* instead hatch as tailed froglets, the size of your pinkie nail. So why are our frogs, our

taonga (treasured), in trouble?

Biota in Aotearoa was extensively altered after human colonisation. The arrival of Polynesians between 1280-1300 AD led to the burning of forests, introduction of kiore (*Rattus exulans*), and the exploitation of large birds, such as moa. European settlement followed around 350 years later and accelerated the trend of native species decline by habitat loss/disturbance, the introduction of exotic plants and animals, and disease. During this period, three *Leiopelma* species became extinct.

The highest proportion of threatened native species in the world can be found in Aotearoa. One would not find a single New Zealander who would dispute the devastating contribution introduced mammals have had to our fauna and flora. Prior to the arrival of humans, the only land mammals in New Zealand were small bats. Animal groups therefore evolved to become functional equivalents of mammals or, like the frogs, evolved traits such as longevity, low reproduction rates and freeze tactics. Our frogs also have cryptic colouration and lack vocalisation that could have helped them evade native predators such as the extinct Laughing Owl (*Sceloglaux albifacies*). However, these features provide limited protection against introduced mammalian species with highly developed olfactory receptors such as rats (*Rattus spp.*) and pigs (*Sus scrofa*).

To protect frogs against mammalian predation, Maud Island frogs and Hamilton’s frogs are restricted to predator-free off-shore islands. Maud Island Frogs are located on islands in the



Archey’s Frog (*Leiopelma archeyi*)



Archey's Frog (*Leiopelma archeyi*)

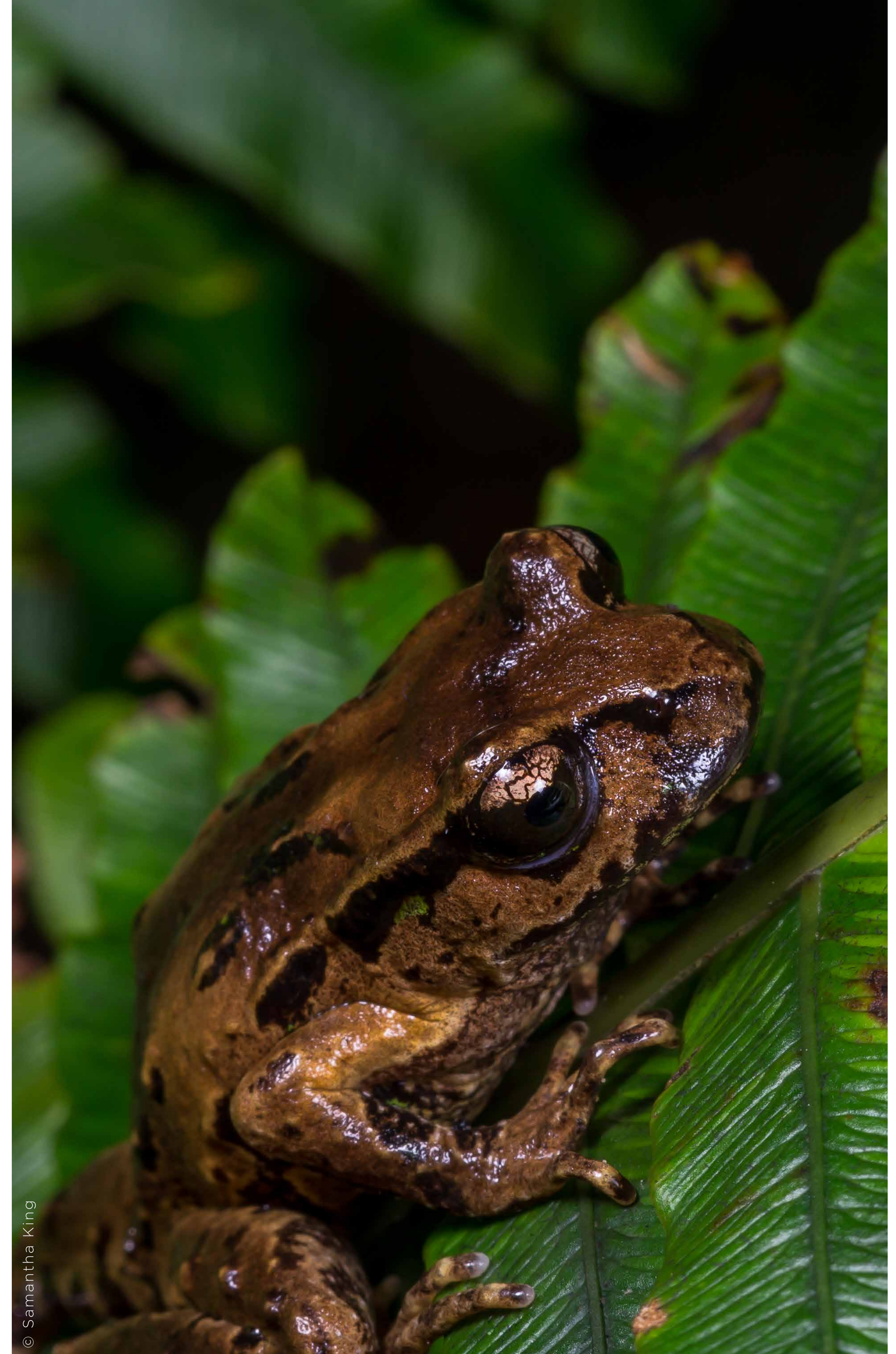
Marlborough Sounds. Stephens Island, where a population of Hamilton's Frog inhabits a small area on the 150 hectare island, is in the Cook Strait. On the other hand, Archey's and Hochstetter's Frogs co-occur with mammalian predators on the mid-upper North Island and these mainland frog populations seem to be in a losing battle against mammalian predators. The remains of Archey's Frogs in Whareorino have displayed bite characteristics of rats and anecdotal accounts suggest pig predation. The Department of Conservation (DOC) are monitoring areas with varying rat control to determine the effect rodents have on frog populations and how we might combat these effects.

Working as an ecologist, I am regularly told by the public "...back in my day the place was crawling with them", in reference to any native species. More often than not, they now point out the introduced Australian herpetofauna, praying that these croaking frogs and shiny skinks are our beautiful natives. Their disappointing looks and frowned muttering of the word "Australian" might sum up the competitive streak between the two countries more than their awareness of the mysterious Aotearoa herpetofauna.

The Archey's Frog is the world's most Evolutionary Distinct and Globally Endangered (EDGE) amphibian species. That is a big title to hold for a tiny New Zealand frog. But Archey's Frogs are not alone in their concerning threat status. Maud Island Frog and Hamilton's Frog are classified as 'Threatened - Nationally Vulnerable' and Hochstetter's frog as 'At Risk- Declining' by the New Zealand

Threat Classification System. Mammalian predation is not only to blame, but so is disease and habitat modification, as according to the New Zealand Native Frog Recovery Plan 2013-2018. With so few individuals left, the majority of New Zealanders will never see these weird and wonderful creatures. How can we convince the public to fight for something they may never see?

"The main problem is we are destroying their homes", comments Professor Phil Bishop. Habitat disturbance and destruction continues to be a major player in species decline, with forested cover now remaining at 26% in Aotearoa. Just over 50% of the land area has now been modified for human activities, such as urbanisation, agricultural production and exotic forestry plantations. The distribution of these areas reflects the economic value of the land, with protected areas skewed towards hilly, mountainous landscapes that are less desirable for agricultural and forestry practices but may not be ideal for all native species to seek refuge. Habitat modification impacts microclimates and ecosystem processes that are essential for amphibian survival and reproduction. *Leiopelma* are particularly vulnerable because they occupy discrete home ranges and depend on particular microclimates to live. They are also a relatively immobile species and therefore cannot easily relocate when their home ranges are adversely affected (one frog has been recorded by Professor Ben Bell as remaining in the same survey area for 37 years!). Habitat loss has also contributed to the fragmentation of populations of Hochstetter's frog on



© Samantha King

Archey's Frog (*Leiopelma archeyi*)



Hochstetter's Frog (*Leiopelma hochstetteri*)

the mainland, with isolation shown to cause smaller, cytogenetically distinct populations that are at risk of potential inbreeding.

Leiopelma populations have also been impacted by disease. Chytridiomycosis (disease caused by *Chytrid fungus*) is suspected to have contributed to a population crash in Archey's Frogs on the Coromandel Peninsula between 1996-2001. Interestingly, Chytrid fungus was eliminated by Archey's Frogs in clinical trials. However, we don't know the percentage of the wild population able to eliminate Chytrid, as is the effect the disease could have on other Leiopelma species. As Professor Ben Bell and others have put it, "...we understand so little of the pathology and epidemiology of any disease that might be affecting Archey's Frogs..." (Bell et al. 2004). Management, therefore, is difficult to implement.

These population declines for Leiopelma can have huge implications for the overall survival of the species due to the current isolation and size of populations. Additionally, the slow maturity (3-4 years) of the species and their reliance on environmental cues, such as high humidity and rainfall, and low clutch sizes (2- 19 eggs), can result in lower lifetime productivity, which is exacerbated by in high predation or stressful environments. Aotearoa frogs are protected however under the Wildlife Act, and may not be captured, collected or disturbed without permission from DOC. DOC, Auckland Zoo and researchers annually monitor native frogs to determine survivorship of populations. Current research on frogs includes reactions to introduced

predators, frog movement and behaviour, monitoring methodology and habitat use.

With the growing human population in New Zealand, climate change, and continued mammalian predation, on-going research and conservation is required to ensure management of existing and future Leiopelma populations. This is a difficult task. The implementation of Predator free 2050 (eradication of rats, possums and mustelids by 2050) does give hope for the future and helps to engage the public in the protection of our threatened wildlife. Predator-free islands have also been a saving grace. As cliché as it might sound, working together towards common goals will increase the effectiveness of conservation in Aotearoa.

A huge hole has been left in the amphibian world with the passing of Professor Phil Bishop - an outstanding researcher and frog enthusiast who dedicated his life to amphibian conservation in Aotearoa. All hope is not lost for our frogs, however. In the wise words of Phil Bishop "...if we give Archey and his friends a helping hand, they will be around for the next millennium". And with combined management and research efforts, I believe we will not allow our toanga to croak.

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Archey's Frog (*Leiopelma archeyi*)

© Samantha King



Hochstetter's Frog (*Leiopelma hochstetteri*)

SPECIES

Conservation of the infamous 'Plato Negro' - Costa Rica

By Roel De Plecker &
Marcello Carvajal



RR MM

Roel De Plecker joined the team helping in the fieldwork on Black-headed Bushmasters. As a reptile curator he has more than 15 years' experience on breeding and keeping this species. This Belgian born nature photographer spends his free time exploring the mountains and rainforests of central and southern Costa Rica, involving local communities, collecting data and photographs of Black-headed Bushmaster and it's habitat.

Marcello Carvajal is a Costa Rican herpetologist that works studying the ecology of pit vipers and crocodylians. Currently involved in forest management and restoration programs in and around the Osa Peninsula.

facebook.com/Plato-Negro-Ecology-and-Conservation-106683441238848

instagram.com/platonegro_org/

platonegro.org/





The bushmaster species inhabit our planet's Western Hemisphere and their genus comprises the world's largest vipers, with the South American Bushmaster (*Lachesis muta*) holding the record with lengths passing three meters. South American bushmasters are divided into two subspecies, being *Lachesis muta muta* and *Lachesis muta rhombeata*, a subspecies whose range is restricted to east-central Brazil's Atlantic Forest. Another South American species is the Chocoan Bushmaster (*Lachesis acrochorda*) which inhabits the forests from southern Panama, into Colombia and down to Ecuador. Costa Rica is home to two species of bushmasters, the Central American Bushmaster (*Lachesis stenophrys*), with a distribution from eastern Nicaragua to Central Panama, and the Black-headed Bushmaster (*Lachesis melanocephala*), of which the latter has the smallest distribution range of all *Lachesis* species. Therefore, our organization, named Plato Negro Ecology and Conservation, are making major efforts to study and protect this emblematic species from extinction.

Presentation of the Plato Negro

The Black-headed Bushmaster is the rarest species of bushmaster and can only be found in the central and southern Pacific region of Costa Rica, except reports of a few individuals found in Panama. The Spanish local name is Plato Negro meaning 'Black Plate', the scientific name was derived from the Greek *Lachesis* meaning 'the personalization of fate', *melanos* means 'black' and *cephalo* is 'head'. Although the total length of these snakes doesn't exceed





2m 30cm, it is still one of the countries' longest pitvipers, only outcompeted by the Central American Bushmaster or Matabuey (*Lachesis stenophrys*), meaning ox killer, that inhabits the Atlantic slopes of Costa Rica. Bushmasters are unique because they are the only New World Viper species known to be oviparous or egg layers, the eggs are laid in abandoned mammal burrows, which are guarded by the female for about three months. In some South American countries, they are called pineapple snakes, referring to their rugged keeled scales that are characteristic for them. They prove useful to them in courtship, where the males even turn on their backs to rub their scales against those of the females. Males tend to grow larger than females, which seems to be common in snake species where males perform ritual combat in the breeding season. Male combat might be a stimulus for a female bushmaster to mate, but publications on the captive reproduction of this species have also shown it is no necessity. These combats can be compared with a wrestling competition where the strongest opponent tries to push down the weaker one while keeping their heads up facing the forest canopy. These fights can go on for many hours and although these pitvipers have significantly large fangs and venom glands packed with lethal toxins, the use of this weaponry is never an option. In our experience, snakes are very reluctant to strike even when threatened and will only bite when left with no choice, their venom serves them better for immobilizing and digesting prey, like the rodents on which they feed. The term pitvipers refers to the presence of a loreal pit, located between

the nostrils and the eyes, this serves as a thermo-receptor or infrared organ, a heat detecting organ that doesn't occur in European or African viper species. Ophidian accidents or snakebites with/ from Black-headed Bushmasters are rare, even when encountered we witnessed a rather placid behavior, nevertheless if envenomation occurs it is a life-threatening situation for the person bitten. Fact is that sightings of them are a rarity, them being mostly nocturnal and prefer a hidden life deep in the primary tropical rainforest, a habitat that got scarce due to deforestation.

Research and Conservation

In 2012 Dr. Stephen Spear, co-chair of the IUCN Viper Specialist Group, Costa Rican biologist Guido Saborio and Costa Rican herpetologist Marcello Carvajal, formed a group to begin to study the natural history of the Black-headed Bushmaster. After many surveys looking for this illusive species in the rainforests of the Osa Peninsula, it is only in 2015 they had their first wild encounter with this majestic pitviper. The location of the find was at Ecoturistico La Tarde, a rural ecolodge with a private reserve bordering Corcovado National Park. The reptile drew the attention of many Costa Rican people and soon tourists from all over the world came to admire the snake in her natural habitat. It is here that the first telemetry survey was conducted on the Black-headed Bushmaster, at this time I (author) joined the project and a life-time dream started to come true, one of the reasons I chose to come to Costa Rica was being part of the conservation of my favorite serpent along with studying

Plato Negro. (*Lachesis melanocephala*) - with radio tag



©Roel De Plecker



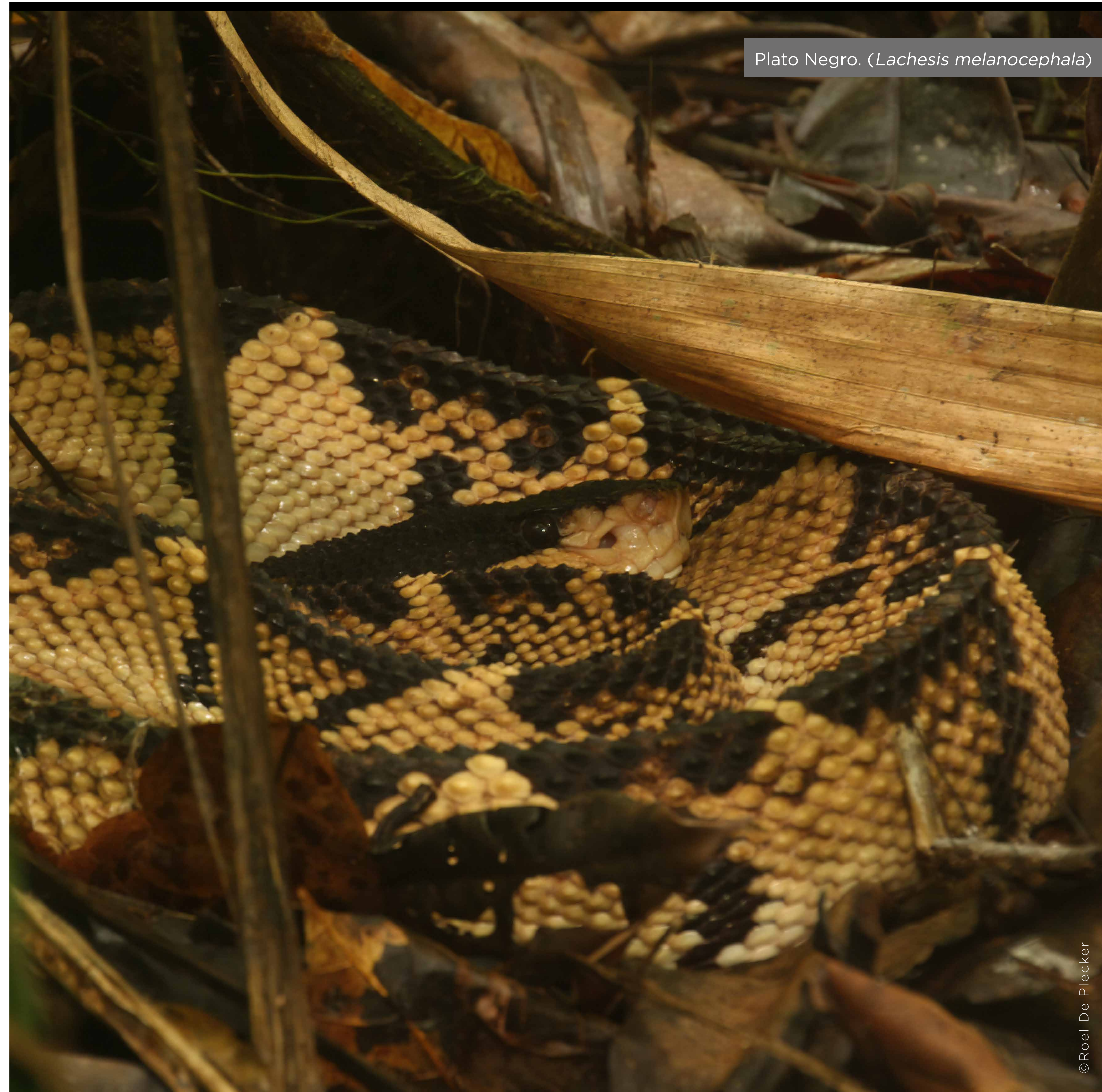
Ground cover vegetation

its natural history. At that time, we didn't have a veterinarian available to place the radio-transmitter under the skin of the snake, so we decided to place the device on the skin of the animal. For several months her movements were followed daily, especially by Marcello and Eduardo Castro, the owner of the eco lodge, and the fee for allowing tourists to see the snake hereby contributed to the costs of the logistics. This conservation strategy might be crucial to the protection of rare big venomous snakes, since locals normally would kill these animals, it is very important they can benefit from keeping them alive. Dispelling myths about the Plato Negro, is another very important topic to cover, most of the people see them as large aggressive venomous snakes, but by sharing our experiences interacting with the species and involving local communities in our research, these false accusations quickly change. During the telemetry study renowned Costa Rican botanist Reinaldo Aguilar Fernández joined our organization and with him a detailed description of the vegetation of the Black-headed Bushmaster's habitat is conducted. After several months the snake with the transmitter shed its skin, snakes shed their old skins when growing and this process called 'ecdysis' continues throughout their life, and with this the device was thrown off also. At least we had a glimpse of the animal's life cycle, a lot of new discoveries and data was collected, data that soon will be published in a scientific publication. Our search for other bushmasters continues and our research team got strengthened by dog trainer Carlos Orozco and his Belgian Malinois with the appropriate name 'Viper', this dog is especially trained to find wild

bushmasters. In 2019 herpetologist and ecologist Dr. Kimberly Andrews, was welcomed in the organization, working for the University of Georgia, she studied spatial ecology for reptiles for over 20 years and is devising innovative field techniques that will refine our understanding of the snakes' habitat and behaviors. Being able to track the bushmasters for a much longer period, the radio transmitters are best placed inside the snakes, that is why we invited Dr. Ana Maria Torres Mejia to join our group, she is a Colombian biologist and veterinarian that studied conservation medicine, she also is the director of Asomacao, an organization that works on the conservation of the scarlet macaw (*Ara macao*) in Costa Rica.

The Future

Costa Rica seems to be one of the only countries where the forest cover is increasing, thanks to many conservation efforts from the government as well as private initiatives. As an organization, we promote to protect what is left of the natural habitat of the Black-headed Bushmaster, but also restore already damaged ecosystems, true reforestation projects with local flora. For this it is important as far as is practicable to study the ecology of this magnificent pitviper, by doing more telemetry and surveys in the forest, often these studies include camping at the research sites. Since sightings of this species are infrequent within its distribution range, our plan for conservation includes a captive breeding program, which we find essential for the survival of this endangered species. The biggest challenge in all of this is



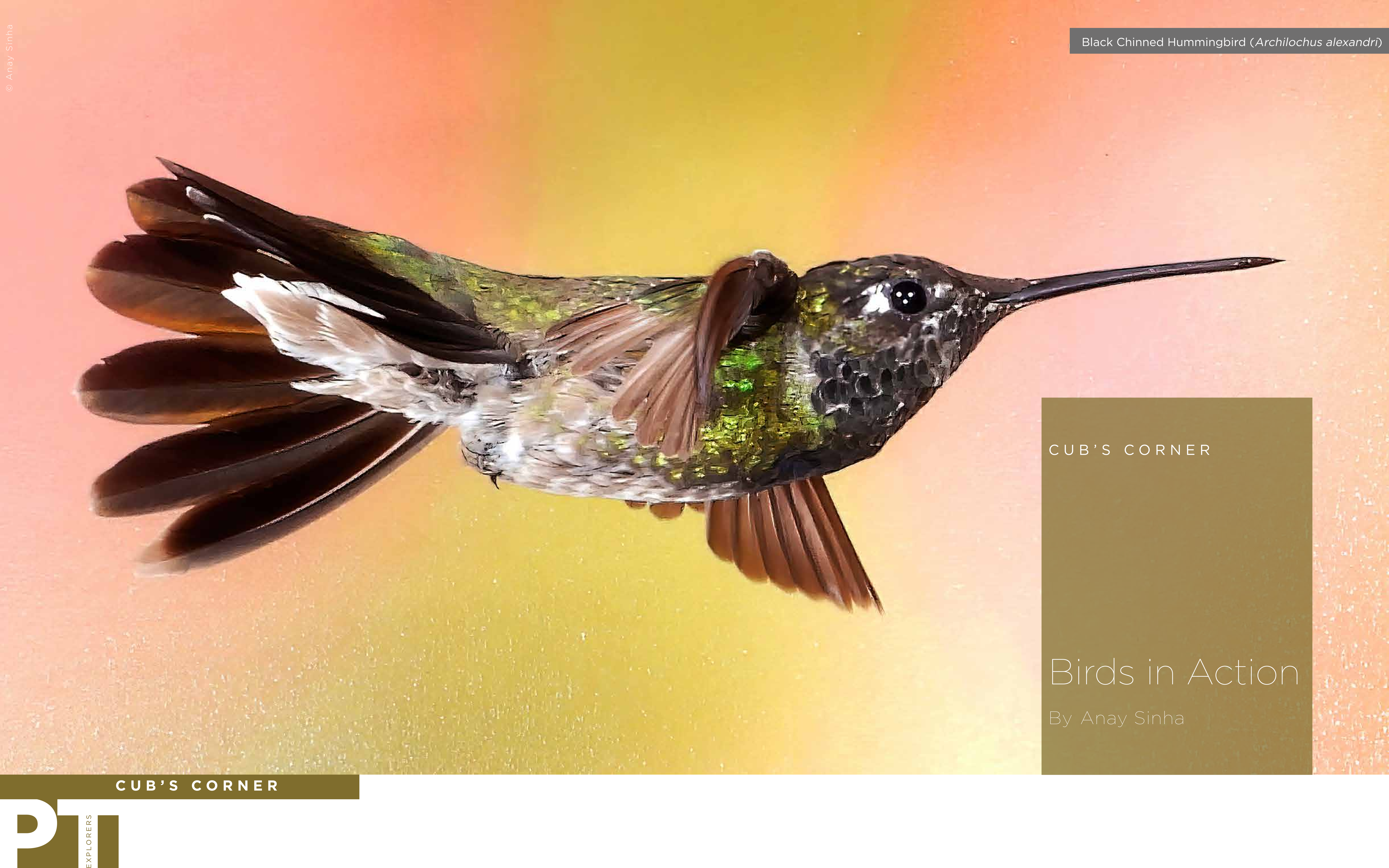
Plato Negro. (*Lachesis melanocephala*)



that people tend to be more attracted to charismatic animals like sloths, monkeys and macaws, snakes in most parts of the world still provoke more fear than fascination. Having had the honor interacting and manipulating several wild individuals of Plato Negros during our research, we certainly can reject the word 'infamous' at this article's title, since there was not one occasion were, these so called 'aggressive' snakes, even made the slightest attempt to strike at us. Looking at social media, people are claiming having seen the Plato Negro, steal and post photographs of the more fortunate, something we do not agree with, but we can see this in a positive way and conclude that the public interest in the species is growing. Educating and involving local communities is the key to conservation, making people more aware of the role of these creatures in the ecosystem, showing them once and for all that snakes are not the representation of the devil.







Black Chinned Hummingbird (*Archilochus alexandri*)

CUB'S CORNER

Birds in Action

By Anay Sinha

CUB'S CORNER

CUB'S CORNER



Broad-billed Hummingbird (*Cyananthus latirostris*)



© Anay Sinha

Anay Sinha is an aspiring nature photographer from Stamford, Connecticut USA. He is in grade three at KT Murphy school. Anay enjoys spotting and identifying new bird species

The only thing that happens constantly at my home in Stamford is planning of which place to visit next for our vacation and the activities during the vacation. My mom and dad love traveling, mostly to places in the middle of nature. My dad does not wait for the vacations though. He is out hiking, watching birds, animals, flowers, trees every weekend. He always carries his long and heavy lenses and cameras. I am going out with my dad on hiking and bird watching since I was very little. Naturally, I have grown to love and admire nature too and I have grown to love taking photos and videos.

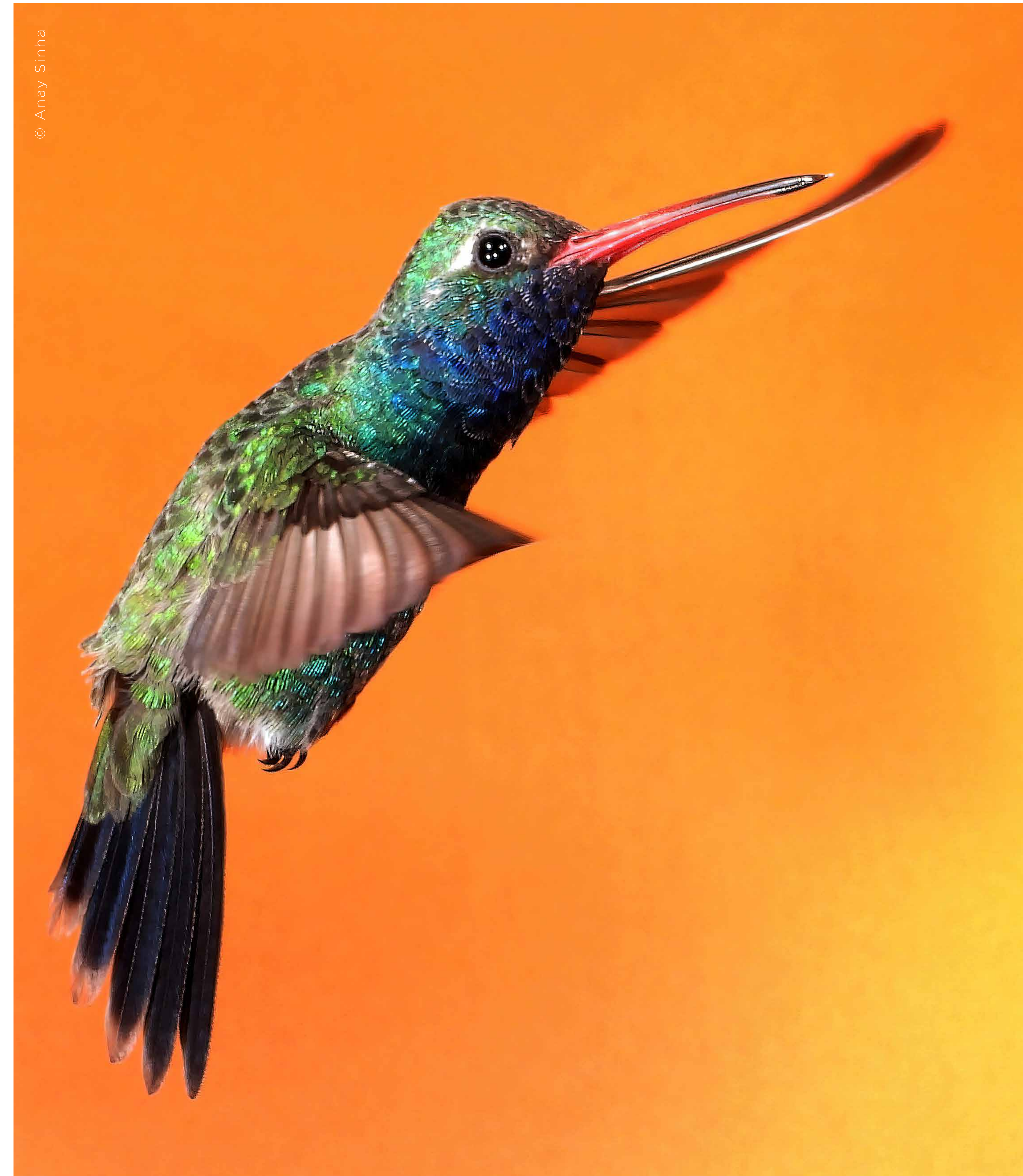
Recently my dad and I went on a weeklong vacation to Madera Canyon in southern Arizona from 19th to 25th April, 2021. My mom was stuck in India for almost six months due to the pandemic and hence could not come along. Since the time of our vacation was in the middle of spring, we decided to go to southern Arizona to watch the birds coming back from south and to attend a Hummingbird photography workshop. My dad and I both want to learn new photography techniques all the time. During this trip I was able to use and experiment with my brand-new Nikon P1000 camera.

We stayed at the beautiful and serene Santa Rita lodge in Madera Canyon. Hummingbirds were buzzing everywhere. And then there were plenty of other birds like Redstarts, Bridal Titmouse, Orioles, Tanagers, Warblers. In other words, it was birds galore. The lodge had hummingbird feeders at specific places inside the compound. The hummers were visiting the feeders frequently. Many times, we watched them fighting over the right to

feed from a specific feeder. The most bully among all the hummers was a Magnificent Hummingbird. He was literally guarding one feeder and would chase any other hummingbird that came anywhere near that feeder. It was amazing to witness such territorial fight among birds over food.

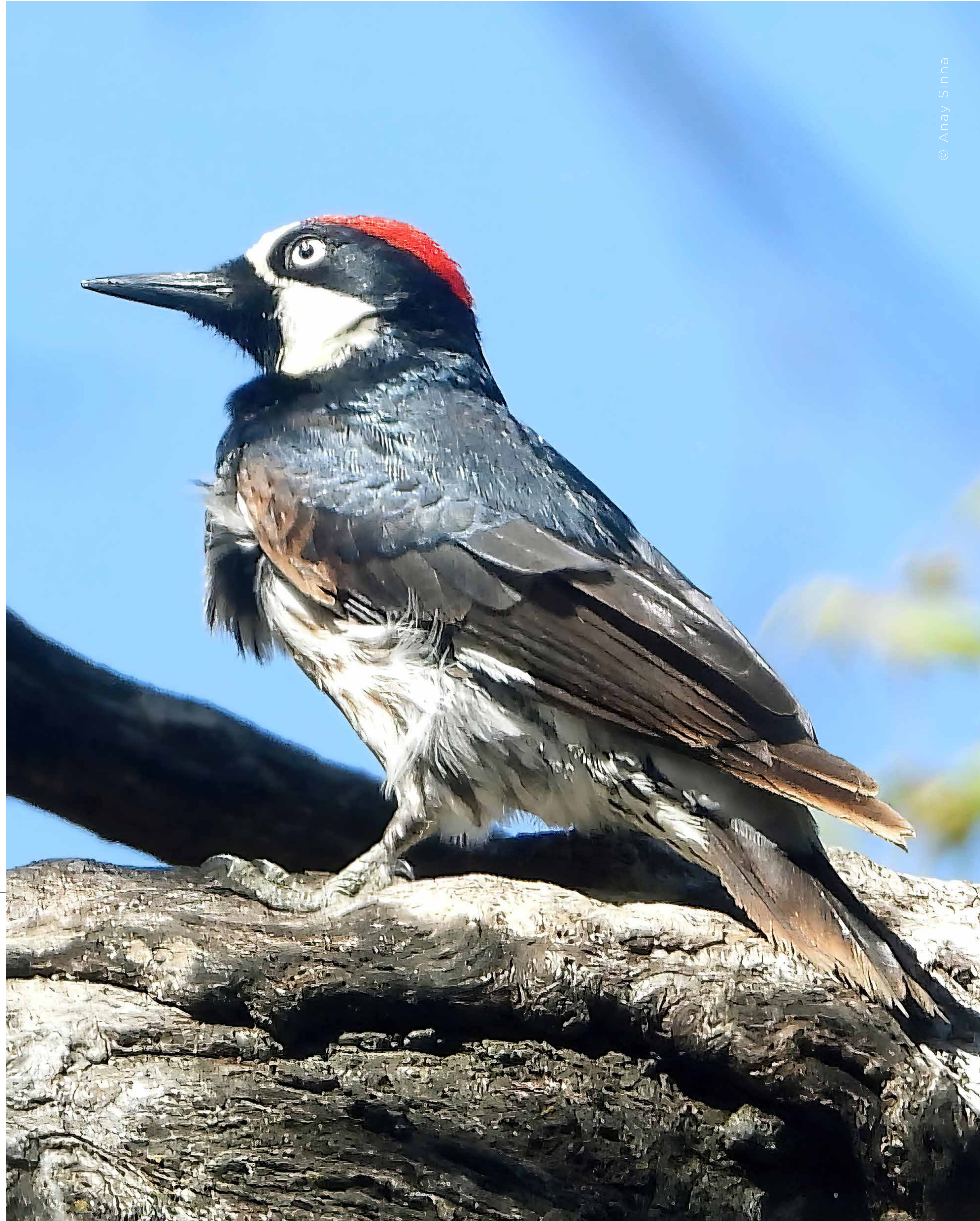
There are mainly four species of hummingbirds you can see in southern Arizona. Broad billed, Black Chinned, Rufous and Magnificent. Magnificent Hummingbirds are the largest of the four species and probably the most beautiful with brilliant colors. Rufous Hummingbirds generally migrate first and are visible in southern Arizona in the beginning of Spring. We were bit too late to see them. They all went further north by the time we arrived on 19th April.

We had couple of other wonderful birding experience at the lodge. I saw an Elf Owl for the first time ever. A pair of Elf Owls nest on a telephone pole right opposite the lodge. We were able to see the male Elf Owl flying in after dark and were able to photograph it with the help of a flashlight. The Elf Owl is the smallest owl in the world. The second experience was seeing a nightjar late in the night. We heard a Whip-poor-will calling repeatedly near our cabin. My dad went looking for it and found it following the calls. I joined him a little while later and we both watched and photographed and then left it alone. It was amazing to see a nightbird at night. Their eyes literally glows when the flashlight falls on them. That is why we watched it for a short period and switched off the light to ensure we do not disturb it.

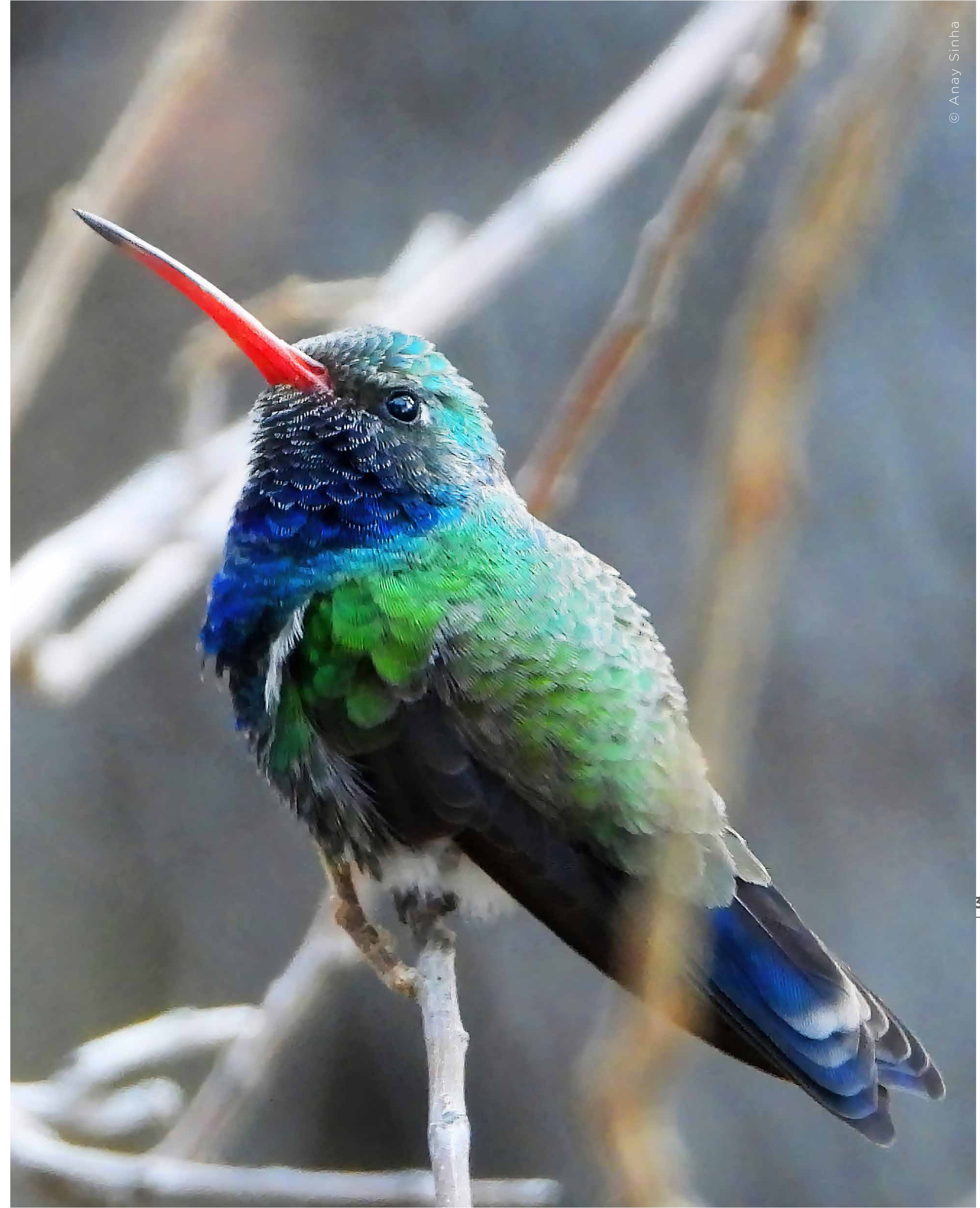


© Anay Sinha

Acorn Woodpecker (*Melanerpes formicivorus*)



Broad-billed Hummingbird (*Cyanthus latirostris*)





The Madera Canyon region offers spectacular trekking and bird watching opportunities. In the mornings and evenings on different days of our trip, we went on hikes on the mountains and desert in the area. We hiked on the nearby Mt Wrightson trail, and the Elephant trail in the desert. Arizona is very dry, and the trees and bushes are different. I began learning the cacti and trees. I felt the tree trunks. Some were very smooth while some were like crocodile skin.

On our treks we spotted a number of new bird species. Red Faced Warblers, Ash flycatcher, Black Throated Grey, Mexican Jay, Western Tanager, Hermit Thrush, Peregrine Falcon, and lot more. We did not see much wildlife though except white tailed deer and a mountain spikey lizard. Our biologist guide Scott mentioned that the mountains we were hiking are home of mountain lions and even some jaguars. In the evening we watched moonlight washing over the mountains. It was an incredible sight to remember for a long time.

I am really happy I had the opportunity to visit southern Arizona because I was able to see many new life birds, and to experience the desert southwest of America. I was able to capture good pictures of the hummingbirds and many other birds including owls and night birds. I loved this trip and I hope and look forward to returning to further explore southern Arizona.

Her Views & Visuals

By Belen Etchegaray



White-eared Opossums (*Didelphis albiventris*)



Belén was born in Buenos Aires in 1966. She is author of the book “Esteros del Iberá” and “De agua, tierra y cielo”; She also participated with her photographs in more than 20 books, manuals and encyclopedias, among which She could highlight “Animals” and “Animals in action” both from National Geographic.

She is the director of the portal www.fnaweb.org, editor of the magazine Argentina Photo Nature, co-creator of Women Nature Photographers and member of AFONA Asociación Argentina de Fotógrafos de Naturaleza.

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Her Views and Visuals

© Belen Etchegaray



Black Howler Monkey. (*Alouatta caraya*)





Marsh Deer (*Blastocerus dichotomus*)

How did your interest in wildlife arise?

From a young age, trips to natural environments with the family were a constant on vacations. Back then it was my father who took the photographs, which we later shared with friends and family.

When I was old enough, it was very natural for me to focus on portraying landscapes and animals ... it was what I had seen as a child and with the theme that I felt most comfortable with.

How do you describe your journey as a photographer and a person?

The growth was in parallel... the more I photographed the more I became passionate, the more I wanted to learn and show the results that for many were unknown.

It is a constant learning full of passion.

What is your view on Nature Conservation? How can we, as wildlife photographers, help to protect our Mother Nature?

Wildlife conservation is very important. A common perception is that only large organisms need to be conserved, when in reality each organism contributes their bit to make this world better.

As photographers, we have in our hands a very powerful tool to publicize and disseminate the different species and places as well as their problems. Images have that power.



Scorpion (Arachnida)



© Belen Etchegaray



Can you give our readers the best wildlife photography tips? Do you have any recommendation on settings or gear for wildlife photography?

The best advice I can give you is not to wait until you have the best equipment or lens to get started... knowing the techniques, with any camera you can get good pictures. With patience, desire and passion, incredible images are achieved!

In wildlife photography, I recommend using one of the priorities that helps to have control of it and react quickly to freeze that action that happens in a second.

What plans do you have in the future related to Wildlife Photography?

For 18 years I have been spreading photographic awareness in the hope that the more nature photographers there are, the more people will be showing the natural beauties that surround us. I do photography courses, my activities on social networks and I am the editor of the Argentina Photo Nature magazine. I recently added a YouTube channel, which I hope will serve to continue bringing more people closer to this exciting natural world.

Tell us something about the gears you use.

I use a Canon 70D, Tokina 11-14, Canon 100-400 and Sigma 105 macro.



Bee (*Hymenoptera*)

Snail Kite (*Rostrhamus sociabilis*)



Butterfly (Lepidoptera)





© Belen Etchegaray

Yarará Chica or Neuwied's Lancehead (*Bothrops neuwiedi*)



Pumice Stone Field - Catamarca Province - Argentina

TRAVELOGUE

The Magic World Hidden Costa Rica's Tropical Lowland Rainforests

By Cynthia Bandurek

Sipurio Snouted Tree Frog (*Scinax elaeochrous*)

TRAVELOGUE



Cynthia Bandurek is an Argentinian Conservationist Ecologist, Field-Naturalist, Nature photographer, and wildlife artist. She has worked for more than eleven years at the Natural Science Museum and two years at the Darwinion Botanical Institute in Buenos Aires. In January 2021, Cynthia moved to Costa Rica to pursue work in conservation biology. And now she is living and working at La Cotinga Biological Station in the Osa Peninsula. She participates in Conservation Projects in Argentina. She is the author of the Book: “The world of small, An approach to the universe of arthropods from an artistic, visual, and evolutionary perspective.”

Cynthia is PT Explorers’ Contributing Editor for South America. She is Nature First Photography Ambassador (<https://www.naturefirstphotography.org>)

<https://cynthiabandurek.com/>
https://www.instagram.com/cynthiabandurek_artphotography/
<https://lacotinga.com/>

Making a dream come true.

In January 2021, I moved from my home in Buenos Aires Argentina to Costa Rica to live in the tropical rainforests. Moving from a densely populated urban

environment to the lush tropical rain forest on the Gulf Dulce coast of the Pacific Ocean was a dream come true.

I always feel amazed by tropics because of their biodiversity. Rainforests are an

Granular Poison Frog (*Oophaga granulifera*)



open laboratory where you can discover the magic of nature and the magic of biological processes. As a passionate biologist, seeing the evolution and ecology of the tropics is an inspirational place for me to live and work.

A travelogue is a travel diary, but my journey is a special one because it does not have a final date. It is just the beginning of a new way to live my life, a way connected with I love the most and the most deeply feelings inside me... nature always was the path in my life, and I decided to make that connection completely real. Now I am part of the jungles and its pure magic.

My new home is La Cotinga Biological Station (www.lacotinga.com) in rainforests of southwestern Costa Rica, on the Osa Peninsula, on the Gulf Dulce coast. Osa peninsula is a place called by National Geographic as one of the hotspots of biodiversity. La Cotinga covers almost 40 hectares and is connected with two private nature reserves and lodges that connect with Corcovado National Park.

Costa Rica is a beautiful country, especially for nature lovers, with only 0.03% of the world's land surface, and 6% of the planet's biodiversity. It is the country with the greatest biodiversity on the planet per square kilometer of territory. Approximately 25% of Costa Rica is protected, with different categories of conservation.

As a macro photographer I mainly focus my photographic work in making the invisible, visible, the unseen, seen. I am







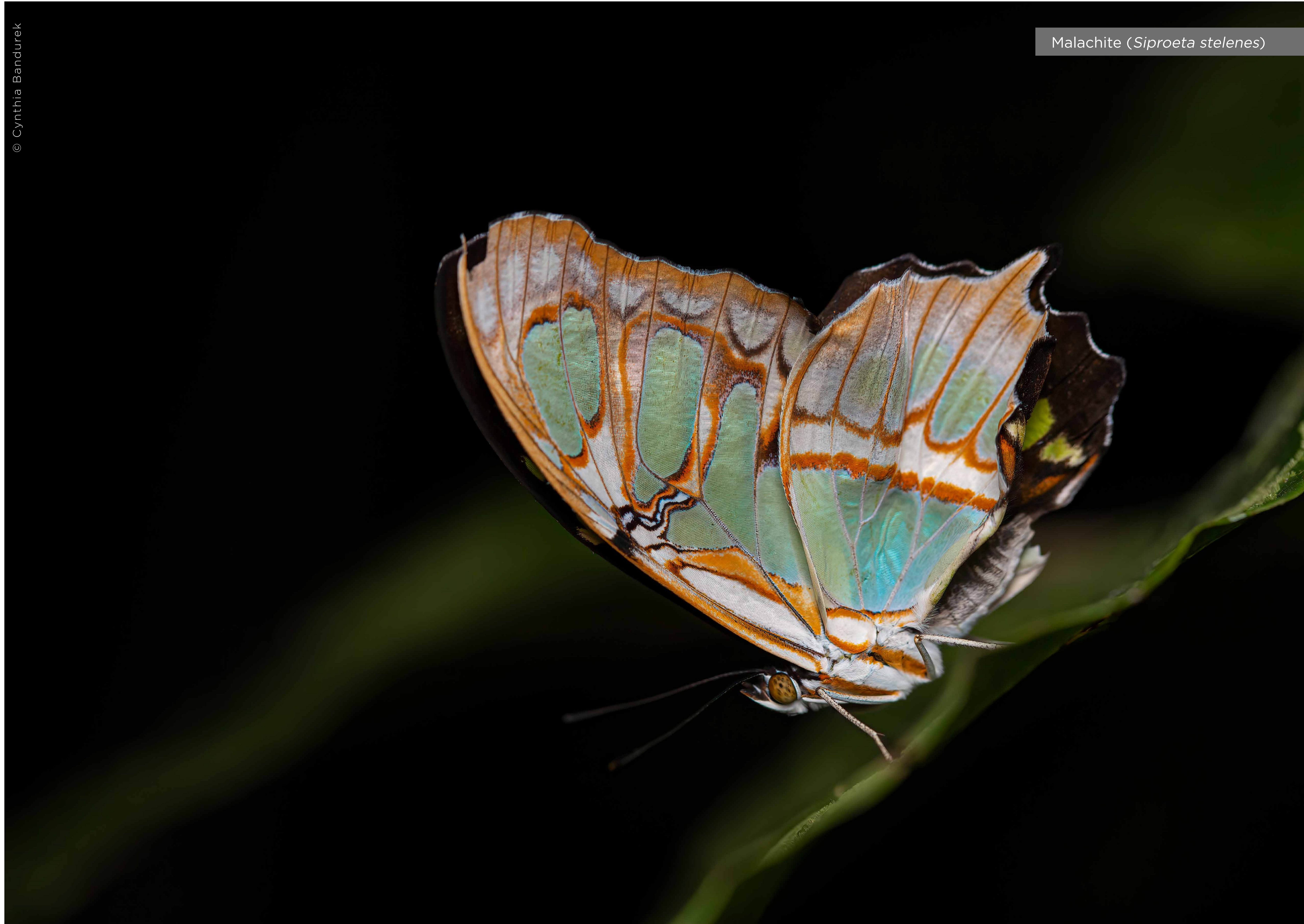
convinced that if we take the time to explore, we allow ourselves to be curious. We will discover the subtle details of fauna and flora, and even better we will discover the behaviors, its ecology, and the importance every living being has in the intricate network supported by complex relationships, which allow the fragile balance of life and, therefore, our existence.

Tropical life is magical - the amazing biodiversity of the low land tropical rainforests always impresses me. The small insects living on wet leaves and close to the ground catch my eye. Exploring the ground and vegetation for new insects is exciting - from tiny ants to big cicadas. From animals resting on leaves to hunting situations, all I can witness is registered by my camera. The creatures hidden in the forest at night catch my attention even more. Frogs singing in the ponds, lizards sleeping on the leaves and snakes looking for prey are all submerged in the mystery of the night.

Someday a magazine writer defined me as someone that combines art, science, and esthetics. The fact is that I learned that in the art of interpreting nature lies the essence to create a link between science / knowledge and community. But if we can add the power of the images to make the people stop and use some of their time to learn about nature and to connect with it, the impact is even bigger. In essence my photographic work tries to bring to the public aspects of nature that are often little known but are still amazing. I believe that the power of images can be used as a tool for the "Conservation of Nature," sensitizing

© Cynthia Bandurek

Malachite (*Siproeta stelenes*)





and bringing society closer to the environmental issues that we are going through as humanity.

Life in my new home

I wake up every morning in a nature reserve, surrounding by vegetation and birds singing outside my windows. Enjoying the sky full of stars, without light pollution, experience the slow rhythm of life that occur in a little town, are simple details of life that sometimes we forget. But today those little things make my life better.

I just can wear my boots and walk into the forest every day, looking for animals, situations, and details to photograph and capture with my camera.

The goal behind La Cotinga is to restore land completely destroy for more than forty years by cattle raising. The forest was cut down and replace by grasslands, and the soil was compacted by cows. But now, the process of reforestation has begun. They are planting trees and restoring the tropical forests. That situation allows us not just to witness the process, and vegetation dynamics, but also analyze the changes on fauna that occur while the forest is slowly coming back.

I enjoy exploring the differences of the biodiversity of grasslands in recovery, secondary and primary forest. I focus on the smallest creatures that in general go unnoticed for most people. Insect macro-photography is my specialty. I delight is spotting and photographing the amazing diversity of arthropods, amphibians and reptiles found at Cotinga.

Caterpillar (Lepidoptera)

© Cynthia Bandurek





My photography shows the awesomeness of these creatures and its ways of life.

A frog pond is near the scientist house where I live in the station. That spot is full of activity every night, specially now that the rainy season has started (May to November). You can feel immersed in the chorus of songs that males produce to find a couple. Several frog species and even more individuals give me the opportunity to experiment with my camera and flashes, to develop my creativity to create a variety of images. These different photos have visual impacts that allow me to transmit a message about the value of life generating empathy with species less consider when we talk about biodiversity.

Photographing the small world

Taking photographs in the rainforest is a great challenge because the conditions of light changing weather. The light filters among the little open spaces the leaves left, generating a really contrasting scenery with dark shadows and harsh lights. So, in these conditions it is really important to become an expert in lighting, knowing how to manage the natural light and combine that with artificial sources of lights too.

Photographing in the humid tropics is a continuous learning experience. We have to learn also how to find the small creatures hidden in the abundant rainforest vegetation. Costa Rica is famous for its large size fauna, as sloths, colorful birds, tapirs, and anteaters. Because most people don't pay attention to the small world doesn't mean that it



© Cynthia Bandurek

Rosenberg's Gladiator Tree Frog (*Boana rosenbergi*)



Grasshopper (*Orthoptera*)



doesn't exist. All the animals I mentioned before are immensely outnumbered by tiny arthropods, such as insects, spiders, and millipedes. So, if we can adjust our eyes to find the beautiful but minute life, we will discover a new universe of behaviors, structures and colors to enjoy.

Something important in all kinds of photography, but also in macro-photography, to find a way to get more creative frames, and I believe something important is to explore different taking angles to get surprising and unseen frames. We can create different scenarios with our ability to manage the light. Just changing the direction of our source of light we will create outstanding and original atmospheres and moods.

Playing with the selective focus, that in macro-photography is almost a mandatory strategy to use because of the shallow depth of field, it will give us fantastic frames with a deep sense of three-dimensionality.

But remember, we can play around the subjects to get some beautiful frames, but we need to be aware that nature in all its forms need to be respected. Even if our subjects are small and easy to manipulate. We need to always put nature first.

If you are interested in discovering the life hidden in this wonderful and intense lands and learn how to photograph in natural environments, just bring your boots, flashlight and camera, and we will explore Costa Rica's rainforest, and create outstanding frames of its magnificent biodiversity.

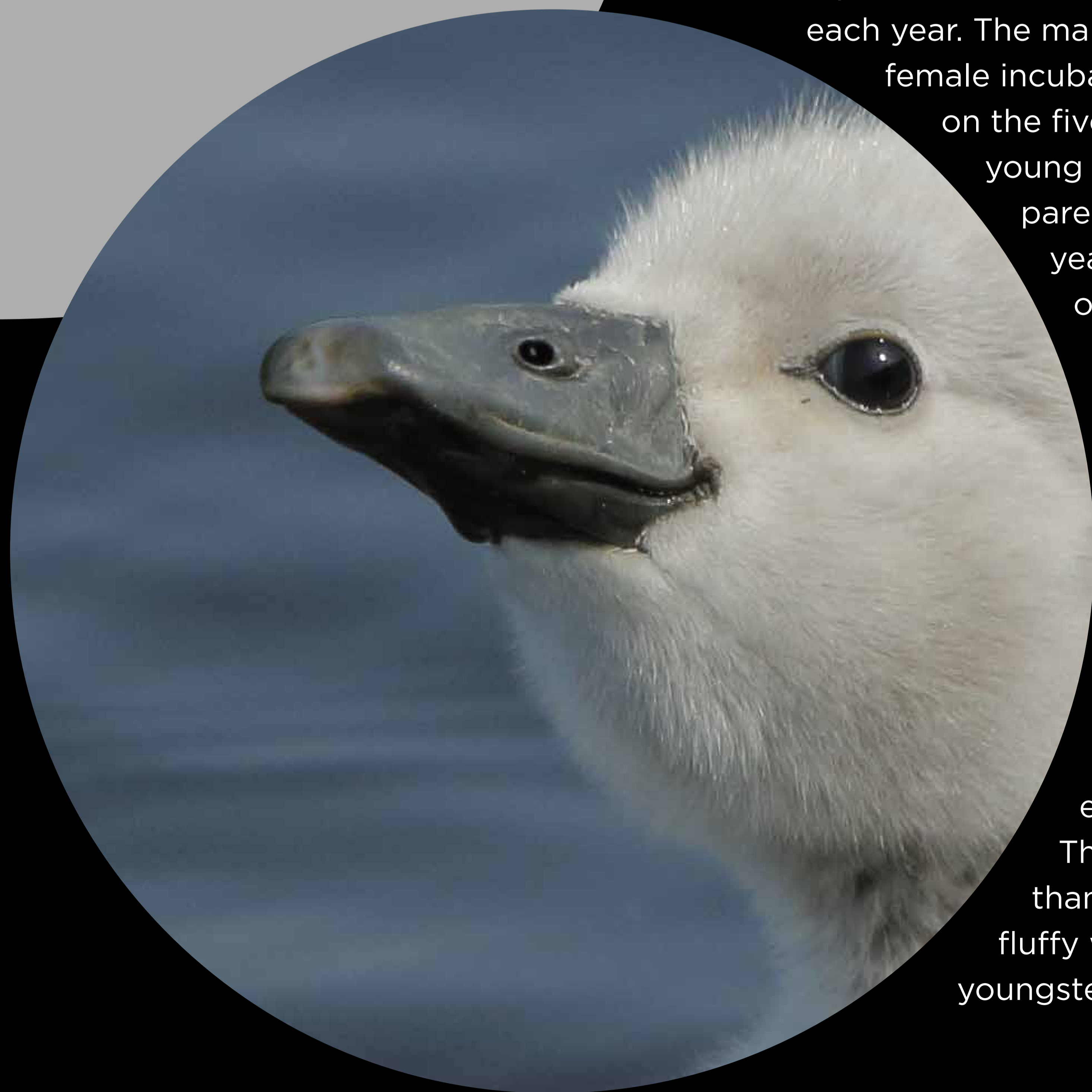


Red Eyed Tree Frog (*Agalychnis callidryas*)

In the west of the Netherlands on the north of Haarlem, a medium-sized city near Amsterdam, lies the Hekslootpolder. It is a peat meadow area with a size of 1.63 km². In addition to peat meadow, the area also consists of sand and clay soil. These diverse soil types provide a wealth of flora and fauna. And the variety of flora and the abundance of locks and puddles attracts many different birds.

I have a penchant for waterfowl, and in particular the Mute Swan (*Cygnus olor*), one of the six species of swans found on our planet. It is the largest breeding bird in the Netherlands, weighing up to 12 kilos. Although large in stature, it is a graceful bird with its long graceful neck, beautiful white plumage and orange beak. Mute swans can be seen all year round in the polder, and one or two pairs breed each year. The male keeps watch, the female incubates about 36 days on the five to eight eggs. The young remain with their parents for another year. A breeding pair often stays together for a lifetime.

Every year I cycle through the meadows in the area in search of swan nests. After that it is a matter of observing until the eggs are hatched. There's nothing cuter than seeing all those fluffy white and gray youngsters, especially in



©Kerstin de Haan

Mute Swans in Netherland's Hekslootpolder

By Kerstin de Haan

Mute Swan (*Cygnus olor*)

the early weeks, when they're 'swimming along' on mom or dad's back. I finally managed to capture that moment on camera this year, with a breeding pair in the Hekslootpolder that successfully raised four youngsters this year.

Because the polder area is enclosed by

roads, and there is a lot of recreation on the polder paths by walkers, runners and cyclists, the birds in the area have become accustomed to people, and therefore a lot less shy than in other places. Without disturbing them, I can get very close with my telephoto lens. A shelter or camouflage is not necessary.

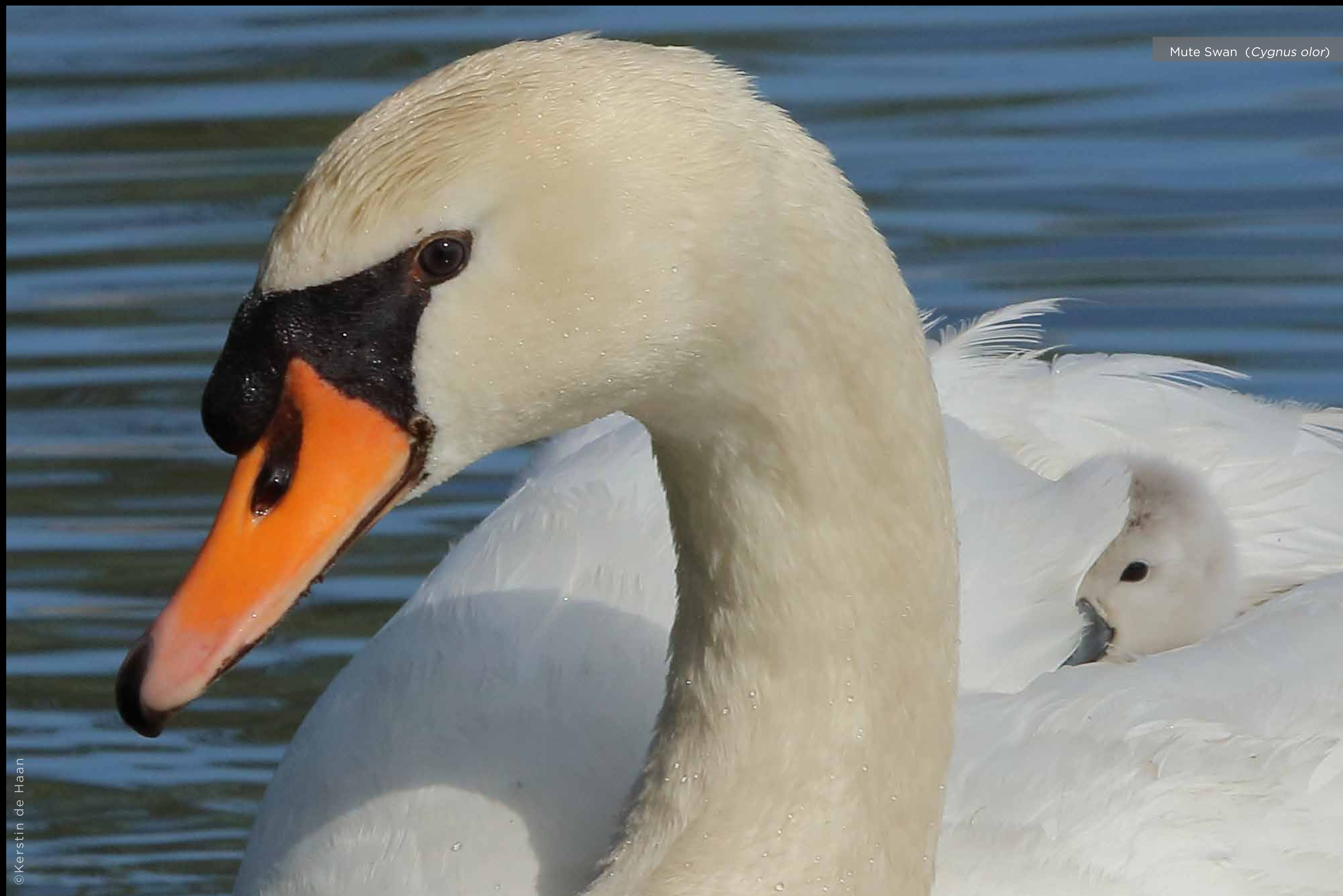
Mute Swan (*Cygnus olor*)



The best time to shoot for me is in the afternoon and evening, when the light is best from behind.

The great thing about birding is that birds are always and everywhere, free and for nothing. And if you get to know an area through and through over time, as a photographer you know exactly where to be and when, for the best chance of a successful photo. Patience is key. If you stay calmly in your place (sometimes for hours!) something beautiful always arises. Every time that I go out birding, I experience something special, without exception.

Bio of author:
Kerstin de Haan was born on one of the Dutch Wadden Sea islands. The Hekslootpolder is her paradise backyard, and for several years she has been involved with the Association for the Conservation of the Hekslootpolder, where she is the editor and photographer for the magazine that is published twice a year. For her, watching and photographing birds is collecting little lucky moments.



Mute Swan (*Cygnus olor*)



South African Wildlife Artist
Yvonne Ankerman

WILD ARTS SHOWCASE

Alkefjellet, Svalbard



Yvonne Ankerman is a South African artist with a background of sailing, boating and nature guide. She has worked as resident artist aboard expedition vessels in arctic and Antarctic waters. She shares her experiences and artwork of visiting some of the most remote islands in the ice and snow polar regions.

[instagram.com/yvonneankerart/](https://www.instagram.com/yvonneankerart/)

[facebook.com/yvonne.ankerman](https://www.facebook.com/yvonne.ankerman)

As I was growing up in South Africa, we were fortunate that my parents traveled with us to nature parks and game reserves. It inspired a love for those big, wide-open spaces, sounds of bird calls and experiencing mammals living free in their natural environment. As my father was a keen yachtsman, we went sailing every weekend, and that is where my love of the water and ocean comes from.

Once I completed my schooling at Intech College, I spent a number of years as a specialist nature guide in the world renown Kruger National Park in South Africa, which deepened my love for wildlife.

I fell into polar nature guiding quite by accident. Due to a cancellation, I was fortunate to get a spot as Resident Artist



© Yvonne Ankerman

Gentoo and chick



Black Browed Albatross

on an expedition ship, traveling up the West African Coast. In 2014 I began working for the Canadian based company G Adventures. I loved my work onboard, as we traveled to unusual, largely nature-based destinations, experiencing fauna and flora that only a few people are fortunate to see. This was a turning point in my career, and I proceeded to enroll and complete all the courses necessary, and more, to stay on the ship as one of the expedition staff. This involved Zodiac driving (inflatable boats), first aid, firefighting, crowd management, safety at sea, to name but a few.

The Expedition ship I work on, takes about 100 to 130 passengers, so they are small enough to be more personable and it's an easier and quicker flow for logistics at a landing site.

When we are "at sea" or between destinations, we offer presentations on Geology, Ornithology, History, Glaciology and in my case, Art Workshops. Painting sessions are on the "sea days", and when a "landing" has been canceled, due to weather conditions. Anyone is welcome to join, but I normally get between 20 and 30 of the passengers to attend.

Ninety percent of my work onboard, is in the polar regions of Antarctica and Svalbard in the arctic. Who would have thought that a safari guide in Africa, could end up working on ships, as an artist, in the polar regions?

I must say it took me a while to get used to the frigid weather conditions, but with the correct clothing anything is possible. To experience these wide-open spaces, incredible wildlife, spectacular mountains,

glaciers and scenery, is a dream come true.

The art workshops onboard are for all guests to enjoy, and we work primarily in watercolour and pen and ink. The painting sessions are light, unfussy and non-toxic. We have a one to two hours painting session, which includes a demonstration by me, on the medium of watercolour and how it reacts, tips, hints and a bit of perspective. Ultimately, it is to have fun, relax and learning a new skill. We paint seascapes, ice, birds, whales and mammals and it is wonderful to see guests creating an art piece, when they never thought they had any skill.

When we are ashore, I always carry my sketchbook and materials (I have a "YouTube" video on what painting kit I take along on an expedition) as one never knows when there may be an opportunity to render a quick sketch or watercolour.

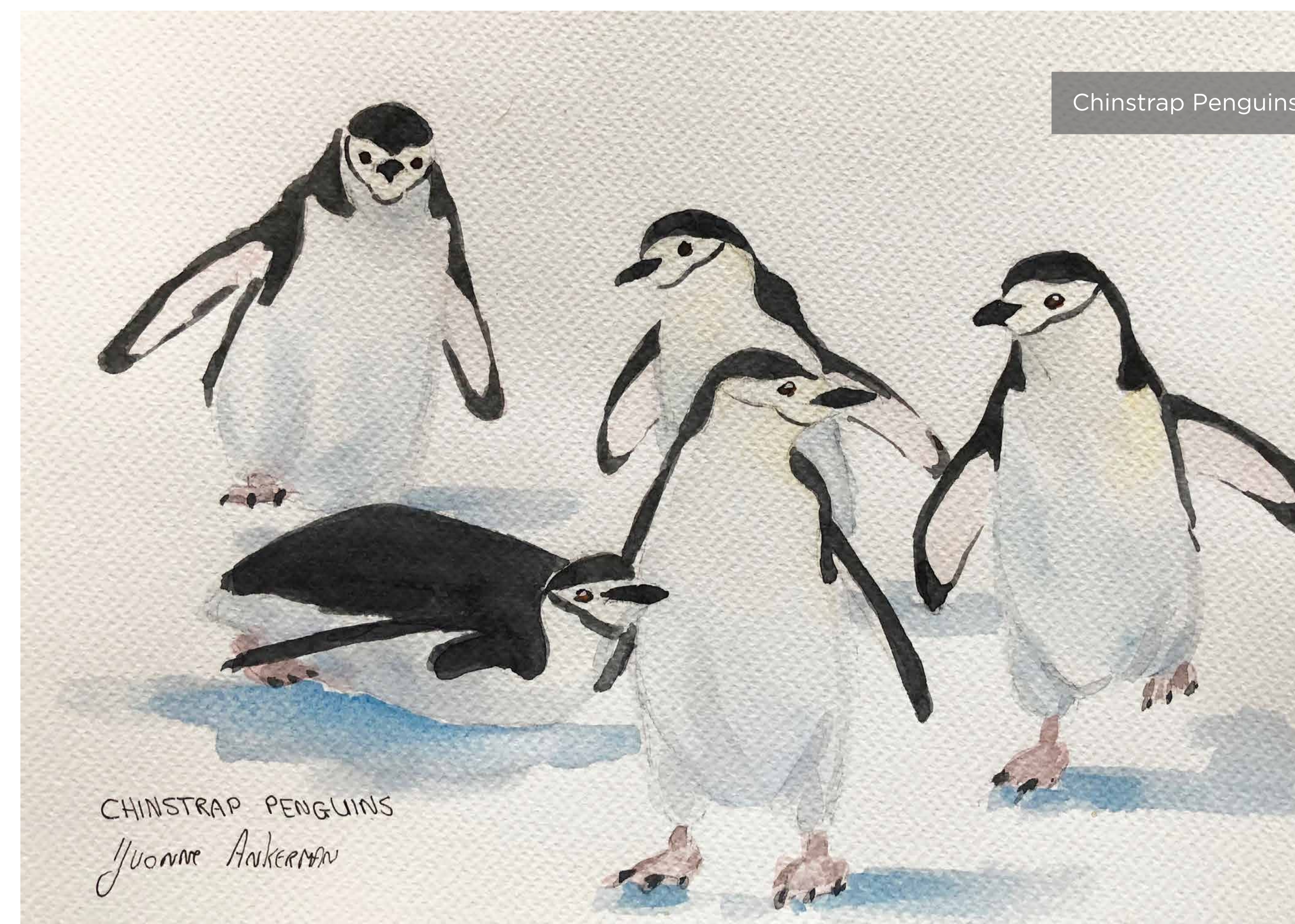
I love using my sketchbooks, as one day, when there is a time where I can no longer travel, I will have all these amazing memories to look back on, as I page through my books.

I have had to learn to paint snow and ice, which was pretty challenging for a girl from Africa, and the varieties of blues and grey to depict the glaciers and ice. I have had to learn to wear the most comfortable gloves to paint in, (with the tips of my fingers exposed), trying to deal with ice crystals forming on my pallet and sketchbook and being halfway through a painting when it starts to snow, which then smudges the entire painting. It has been an exciting and thrilling learning experience indeed.



Brunnich's Guillemots, Svalbard

©Yvonne Ankerman



Chinstrap Penguins

©Yvonne Ankerman



Horseshoe Island, Antarctica Peninsular



ANTARCTICA
YVONNE ANKERMAN

The wildlife on the Antarctic peninsula is spectacular, with seals such as Leopard Seals, (named for its spots) Weddell Seals (named after Cpt Weddell, a sealing captain in 1821) and Crabeater Seals (the first explorers thought that the seals ate crabs, because of the pink feces, but the pink colour comes from eating krill, which is also pink. There are no crabs in Antarctica).

The birdlife leaves one breathless, watching the mighty Wandering Albatross glide and soar over the ocean, as well as other species of albatross, petrels, prions, cormorants, gulls, skuas and of course everyone's favorite, the penguins.

My personal favorite penguin is the Adelie Penguin, that look like they are running around in tuxedos, but the Gentoo Penguin and Chinstrap Penguin are just as awesome to watch.

I have been super fortunate to see an Emperor Penguin on a few occasions and it is an experience that will stay with me forever.

The landings are very protected and normally give good opportunities to hike, spend time observing the wildlife, kayak and partake in Zodiac explorations. Every landing is unique, weather and wildlife dependent. A few personal favorite places in the Antarctic are, Brown Bluff, Paulet Island, Peterman and Paradise Bay.

Out of the Sub Antarctic Islands, South Georgia, slightly north from the Antarctica peninsular and east of The Falkland Islands, is an unbelievable place

to visit. It is also the place where Sir Ernest Shackleton and five companions, managed to reach on their epic journey in a small boat in 1916, to save the remaining men on Elephant Island, after their ship had been crushed by ice. It is a story of real-life bravery and a must read for anyone who is fascinated by early sea voyages, expeditions and adventure.

The wildlife in South Georgia is like walking into a David Attenborough BBC documentary. At certain landing spots, there are over two hundred thousand breeding pairs of King Penguins, and thousands of chicks. There are also Elephant Seals, (a male weighs upto four tons) Antarctica Fur Seals, Leopard Seals, Weddell Seals, Gentoo Penguins, Chinstrap Penguins and Macaroni Penguins. And, not forgetting a spectacular variety of land bird life that includes the endemic South Georgia Pintail and South Georgia Pipit.

To see the penguins returning from their time feeding at sea, slick as mercury, grey and black flashes riding the waves and the secretive Leopard Seal gliding gracefully between the ice, hunting its prey, is a site that one will never forget.

I have often sat on a high vantage point, with watercolour and sketchbook at hand, and taken in the spectacle. To be surrounded by the sounds of the thousands of birds is something that will stay with me forever.

The maximum size of my sketchbooks is A4, but mostly I would use a A5, as one has to take into account the size of one's backpack, the weight, the wind (many clips to keep the pages from tearing



© Yvonne Ankerman

ATLANTIC PUFFIN
YVONNE ANKERMAN

Puffin



SOUTH GEORGIA

Yvonne Ankerman

Penguins



©Yvonne Ankerman

Puffin

off) and the limited time one has ashore. At times I may only have 30 minutes to sketch, other times up to two hours.

I like to sketch onboard, as the ship is repositioning to a new landing site, or during a ship's exploration through the channels of the Antarctica Peninsular. This is an opportunity to spot whales, such as Humpbacks, Orcas, Fin and Minke and if we are lucky, to observe them feeding. This is also a great opportunity to see the majestic ice bergs, with all its glorious hues of blue and white.

When traveling in the Northern Hemisphere, along the Scottish and Norwegian Coast, my highlight is to paint the bright and colorful Atlantic Puffins, that often nest in their thousands along the scree slopes. The beak turns red with yellow highlights, during the breeding season and they are a firm favorite among the guests onboard.

Then again in Svalbard, the arctic, I enjoy painting the humorous looking walrus and the majestic Polar Bear. Most of the Arctic trips start in Longyearbyen on Spitsbergen, in the Svalbard archipelago. We travel up the west coast, visiting various fjords and around through the Hinlopenstretet to Nordaustlandt and back through Storfjorden, if ice conditions allow.

On all trips we head up towards the pack ice, where I have been fortunate to witness Polar Bears in its natural habitat, on the vast sea ice, hunting for seals. It is devastating to think that in the years to come, the ice will reduce dramatically, and take away the habitat of the bears.

The seals in the Arctic are quite skittish but the ones that we are most likely to see, are bearded seals, ring seals and harbor seals. Mostly we are fortunate to experience the antics of the walrus, both in and out of the water. Huge lumps of blubber and wonderful to watch.

Once onboard the ship, one of my jobs is to decorate a nautical sea chart, with illustrations of wildlife. This chart is then raffled off to the guests with the funds raised going to worthy organizations that research and help protect the oceans, such as "Clean Seas" and the "Whale Shark Project" in the Galapagos islands.

I have learnt to travel light, when it comes to paint, (my painting travel pack is on my YouTube video), only taking the bare necessities, in a pouch that can be strapped to my waist. It contains my palette, sketchbook, a few ink markers and gel pens. My small travel paint pack is easy to put in my shore kit and whip out whenever I get the time.

Now, with Covid-19, none of the ships have been working and I have not had an income for 18 months and probably will be another six months before things get organized, for us all to return to work. I miss it immensely, and I realize how lucky I am to have had this opportunity and do not take it for granted.

As a beginning artist, I was influenced by the artwork of British polar doctor and artist, Edward Wilson 1872 - 1912, and British Artist William Turner 1775 - 1851. Over the past decade my style has been shaped by spectacular experiences in polar regions, working in harsh

conditions, and the need to work rapidly. I want to record the experience in a travel journal, that I can look back on and enjoy in years to come.

When home in Cape Town, I continue to paint with watercolours – landscapes, gardens, and of course the unique fauna and flora of South Africa. I also offer art retreats in Southern Africa, France and Morocco.

My favorite brand paints are Daniel Smith, for papers I use Fabriano or Arches and for Sketchbooks I favor Hahnemuhler and Moleskin.



©Yvonne Ankerman

©Gabriel Balorani



Black Browed Albatross



King Penguins, South Georgia

YVONNE ANKERMAN



YOUR GALLERY



Shahul Hameed Valasy
Malabar Pit Viper (*Trimeresurus malabaricus*)
Thattekad Bird Sanctuary, India



YOUR GALLERY



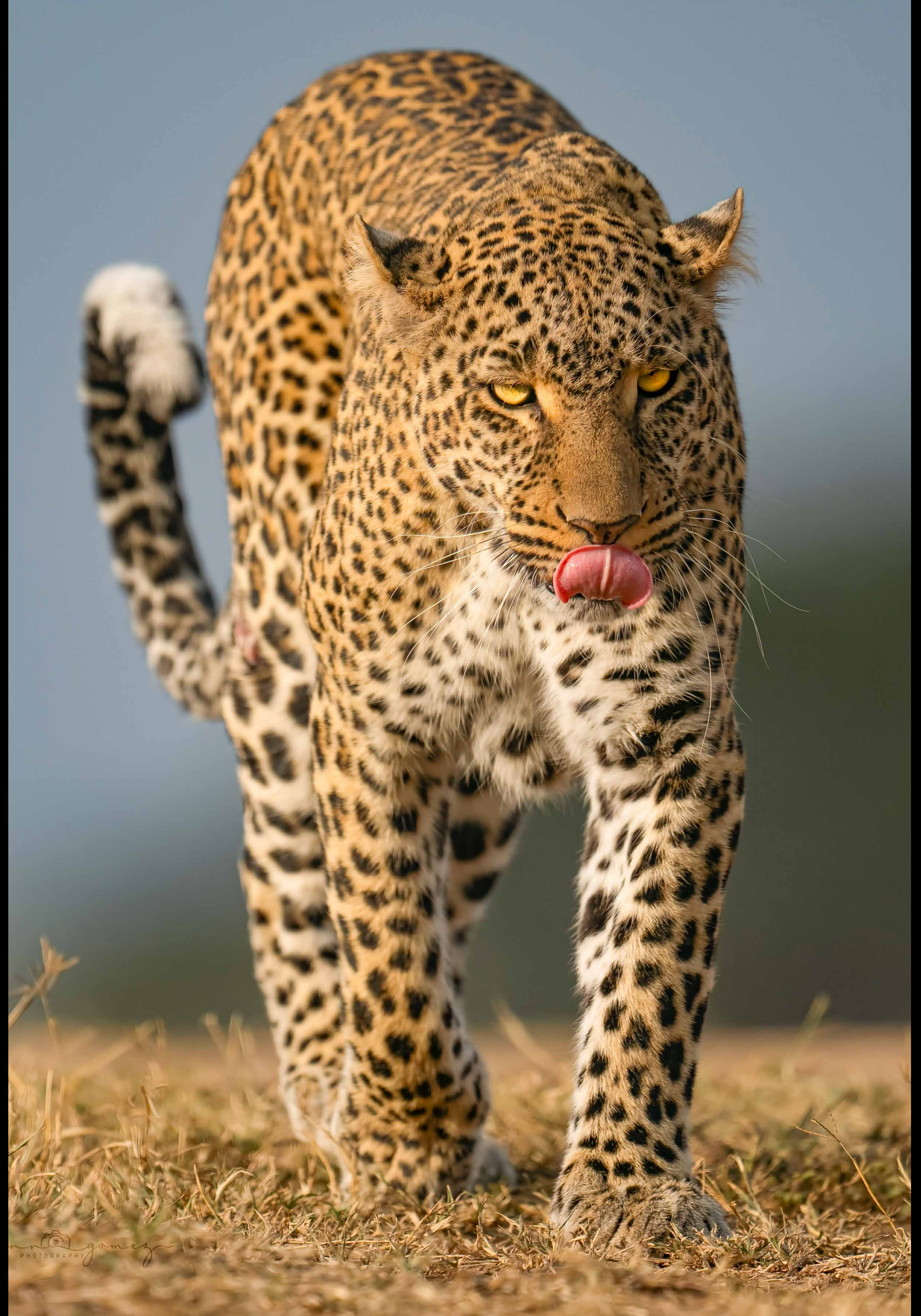
Venki Ramasubramoni
Serval (*Leptailurus serval*)
Masai Mara, Kenya



YOUR GALLERY



Glenn Gomez
Lion (*Panthera leo*)
Masai Mara, Kenya



YOUR GALLERY



Glenn Gomez
Leopard (*Panthera pardus*)
Masai Mara, Kenya



YOUR GALLERY

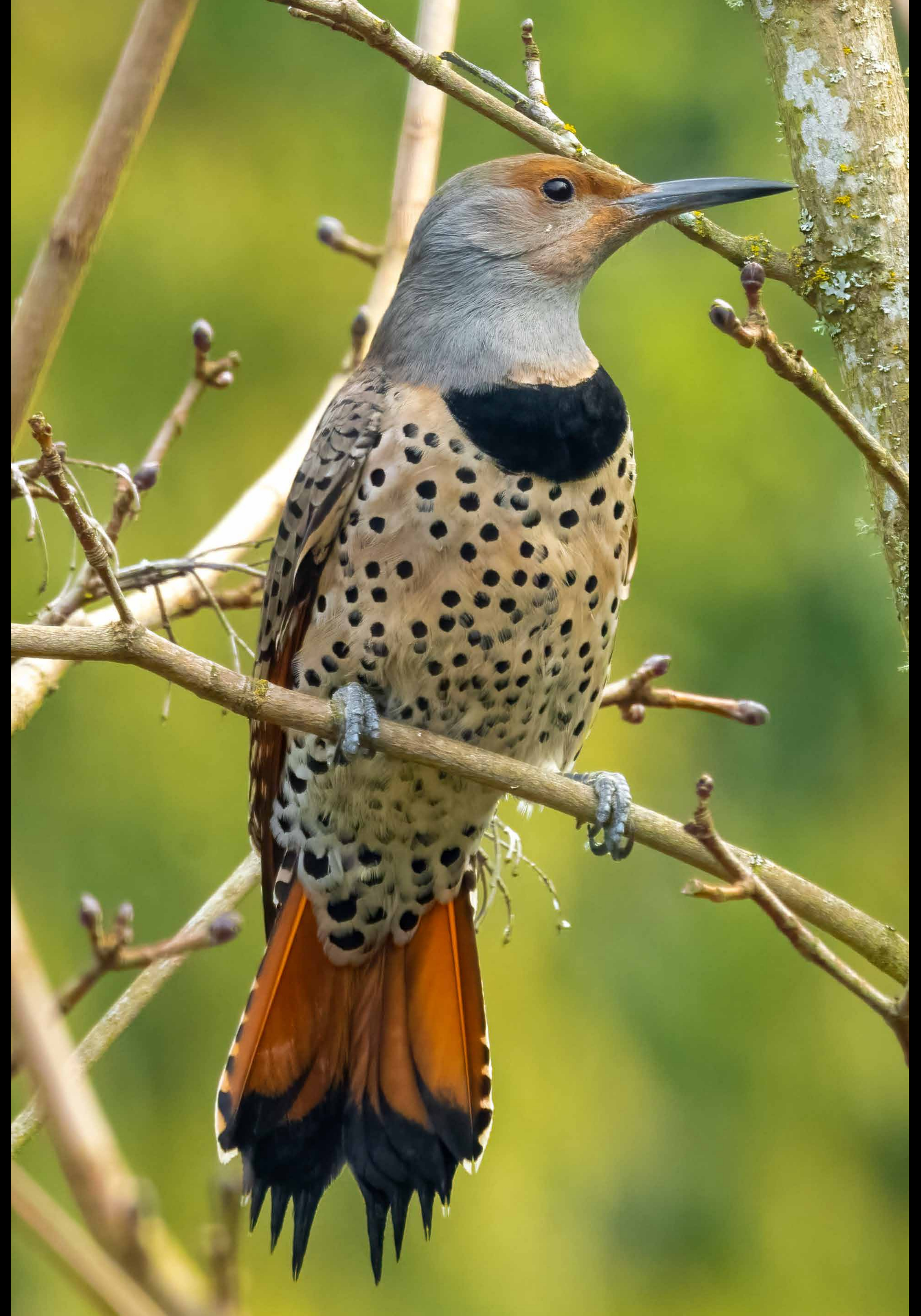


Venki Ramasubramoni
Lion (*Panthera leo*)
Masai Mara, Kenya



YOUR GALLERY

Thirukenkatakrisshnan Sankaran
Bald Eagle (*Haliaeetus leucocephalus*)
Seabeck, USA



YOUR GALLERY

Thirukenkatakrisshnan Sankaran
Northern Flicker (*Colaptes auratus*)
Sammamish, USA





YOUR GALLERY



Dharmendra Padhiyar
Blue Banded Bees (*Amegilla zonata*)
Medha Village, Songadh, Gujarat, India



YOUR GALLERY



Dharmendra Padhiyar
Weevils (*Curculionoidea*)
Sayan, Surat, Gujarat, India



YOUR GALLERY



Dharmendra Padhiyar
Painted Grasshopper (*Poekilocerus pictus*)
Medha Village, Songadh, Gujarat, India



YOUR GALLERY



Shyaam Maniraj
Indian Skipper Frog (*Euphlyctis cyanophlyctis*)
Coimbatore, India



YOUR GALLERY



Debashis Ghosh

Great White Pelican (*Pelecanus onocrotalus*) and Indian Cormorant (*Phalacrocorax fuscicollis*)
Keoladeo Ghana National Park, Bharatpur, Rajasthan, India

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EXPLORERS

UPCOMING
FEATURES

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INTO THE WILD

With Cynthia Bandurek

© Anagha Peethambaran



HER VIEWS & VISUALS

By Anagha Peethambaran

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Socotra Cormorant

By Manu Rajan