

# Robin Moore

With the publication of his new book, *In Search of Lost Frogs*, conservationist and photographer Robin Moore has fulfilled a four year campaign to highlight the plight of the world's amphibians – and rediscover some species believed extinct along the way...

*Interview by Keith Wilson*

**W**hen you were growing up, which interest came first, photography or natural history?

My affinity with the natural world was written into my DNA. I don't remember a time when I wasn't fascinated by wildlife. I grew up exploring the moors of the Scottish Highlands for newts and lizards and mesmerised by the BBC natural history programmes. When I turned nine, my mother took me off school one day to go and meet David Attenborough and have him sign my copy of

the book accompanying *The Living Planet* series. To write a sick note for me when I was not sick is testament to how important that opportunity was to me. I remember the experience vividly. One of the highlights of my career was presenting, a quarter of a century later, at an event in London devoted to amphibians at which Sir David Attenborough delivered the keynote address.

My interest in photography really developed later, when I discovered its potential as a means for me to explore and capture the beauty of the natural world.



**A variable harlequin frog (*Atelopus varius*), a critically endangered species that was feared extinct before being rediscovered in 2003 in Costa Rica**  
Canon EOS 5D Mk II, EF 100mm f/2.8 macro, ISO 1250, 1/100sec at f/22, flash



***Has your interest in frogs and amphibians been a life-long fascination?***

Yes, absolutely. The first time I ever saw frogs, in the garden adjacent to my grandparent's home, they fascinated me. I spent my childhood summers visiting the highlands of northwest Scotland with my family – every day I was out scouring the peat bogs and moors for frogs, newts and lizards. These creatures were exotic to me – they seemed to hold so many secrets. They were my entry point to nature. They allowed me to explore and study my own little corner of the world.

***What role did photography have while doing your PhD in biodiversity conservation?***

During my PhD I was very focused on my research project, and didn't make much time for photography. I was pretty sure I wanted to pursue a career in research, and I had my mind set on completing my PhD in three years (which I did, with two days to spare!) I didn't really appreciate at that point how important photography would become to me. I did, however, get a glimpse into the potential power of photography late in my PhD. One of the main findings of my research was that tadpoles of the Mallorcan midwife toad – my study subject – changed shape in response to the presence of predatory snakes, which had been introduced to the island of Mallorca by the Romans some 2,000 years ago. Tadpoles exposed to chemicals from the snakes would, over the course of a couple of weeks, become relatively longer and thinner with a stronger tail muscle – they became turbo tadpoles, able to swim faster to escape the hungry snakes. I snapped an image of the two types of tadpole side-by-side – the short and fat one next to the svelte, muscular one (a phenomenon we dubbed the Laurel and Hardy effect). The story was picked up by some media outlets including Science online and that photo was published widely – it told the story in a way that the data alone could not.

***Can you explain why frogs and other amphibians are so important to the web of life?***

Frogs and amphibians eat the things that we pour money into getting rid of – crop pests and disease vectors such as mosquitoes. They do this for nothing, and without asking for anything in return. They also are vital in the cycling of nutrients, forming a link between the water and the land. Losing a species of frog is often akin to losing two species, because of the roles the tadpoles play in the water (feeding on algae, for instance), and the roles the adults play on the land (feeding on insects). Amphibians are also food for many birds, mammals and reptiles. They are deeply embedded in the food chain.


Amphibians also possess intellectual and emotional value to us. Losing a species may seem like an abstract concept, but the loss of every one represents a diminishing of our world. As a child, scouring bogs for newts and growing tadpoles in my bedroom was a wonderfully rich learning experience. Frogs and newts sparked my curiosity and opened my mind to scientific inquiry. You cannot replace that with video games or iPhones. The experience is incomparable.

*“As a child, scouring bogs for frogs and newts sparked my curiosity and opened my mind to scientific inquiry.”*



**The Hispaniola yellow tree frog (*Osteopilus pulchrilineatus*), is an endangered species in the Massif de la Hotte, Haiti**  
*Canon EOS 5D Mk II, EF 100mm f/2.8 macro, ISO 125, 1/125sec at f/25, flash*





*“Frogs are at the forefront of a massive extinction event – more than 2,000 species are at risk of extinction”*

A new Granada cross-banded tree frog (*Smilisca phaeota*) from the Choco department of Colombia. The frog is also found in Costa Rica, Ecuador, Honduras, Nicaragua and Panama  
Canon EOS 5D Mk II, EF 17-40mm f/4 at 26mm, ISO 1000, 1/100sec at f/22, flash

***What is the main purpose of your new book, In Search of Lost Frogs?***

The main purpose is to tell stories of adventure, discovery and rediscovery, to convey the wonder and importance of a remarkable group of animals. The photographs of the animals are a visual hook – my hope is that these will draw people into reading the accompanying stories, so that the reader comes away with a deeper appreciation for amphibians.

As conservationists we tend to focus on conveying the magnitude of the crisis affecting our planet. While this is of course important, it is easy for our audience to become fatigued by a constant barrage of doom and gloom. I wanted this book to inspire rather than depress. It's important that we talk about the challenges facing life on our planet, but it is also important to celebrate the wonders of the natural world through stories and images. We need to remind ourselves what it is we are fighting to protect, and photography is a wonderful tool for celebrating the beauty and wonder of the natural world.

***How do you explain the reappearance of frogs after their extinction?***

The reappearance of frogs and salamanders decades after they were thought to have gone extinct is the next chapter in the story of the massive decline and extinction of amphibians, and it is a story I felt compelled to tell, because it fascinates me. Where has the Hula painted frog of Israel been, which disappeared following the draining of its lake home, only to be rediscovered 55 years later? What can the reappearance of the variable harlequin frog in Costa Rica, for years widely believed to be extinct, tell us about all those species that disappeared around it? And what does that mean for the future of these and other frogs? Each and every rediscovery tells a fascinating story and reveals something new about our world. And that to me appeals to an intrinsic thirst for knowledge and understanding.

***There are many quests and discoveries described in the book. Which was the most memorable expedition that you have undertaken?***

This is a toughie! The most memorable may be the expedition in search of the Mesopotamia beaked toad in Colombia. I had invited a journalist, Lucy Cooke (now a BBC natural history presenter) to join us, and the stakes were high as she had secured a feature with The Telegraph Magazine (her words, my photographs). It was my first expedition as part of the Search for Lost Frogs campaign, and I desperately wanted to find the Mesopotamia beaked toad, last seen in 1914.

***Did you succeed?***

We didn't find the toad, which was a crushing disappointment. But as we descended into the steamy jungles of the Chocó, I felt the tingle of excitement of exploring uncharted territory. In two days we found two species new to science, including a new species of beaked toad (which later became TIME magazine's #1 new species of 2010 after I compared it to Monty Burns, the nefarious villain from the Simpsons and it achieved its own fame). Lucy didn't go home with the story she came for, but I think she went home with an equally compelling one.



## Interview

The forest home of the giant palm salamander (*Bolitoglossa dofleini*), was protected through the creation of a new reserve in the Sierra Caral of Guatemala, giving hope to the survival of this threatened amphibian

Canon EOS 5D Mk II, EF 100mm f/2.8 macro, ISO 800, 1/100sec at f/18, flash



*“I typically time my expeditions to coincide with the rainy season – the best time of year for finding frogs, but the worst time of year for photographic equipment”*



*“I use flash quite a lot for my macro work – almost always off-camera with some form of soft box held very close to the subject to diffuse the light”*

A gliding tree frog (*Agalychnis spurrelli*), with mushrooms, found on the Osa Peninsula, Costa Rica  
Canon EOS 5D Mk II, EF 100mm f/2.8 macro, ISO 250, 1/160sec at f/25, flash



***How many ‘lost’ frogs have you found?***

I was part of a team that rediscovered six frog species in Haiti, each last seen around two decades previously. I also found a lost frog in India – in a plastic rubbish bin in a small lodge in a tiger reserve, of all places. That one – the Silent Valley tropical frog – hadn’t been recorded in 30 years. I was part of a team that rediscovered a small emerald green harlequin frog in Ecuador, *Atelopus exiguus*, that had not been seen in over a dozen years and was believed to be extinct.

***Do you have a favourite frog?***

I would say the harlequin frogs are my favourite – and if I had to choose one species, it would be the variable harlequin frog. These are such enigmatic, beautiful frogs. With their slender limbs, upright posture and purposeful movements, they look regal. They are beautifully coloured – lemon yellow to flame red set against a mottled black. As a group harlequin frogs are exceedingly and increasingly rare. Out of over 120 known species, only a handful are doing well. Dozens of species have disappeared throughout Central and South America, victims of a lethal cocktail of disease, climate change and habitat loss. But some have also reappeared, against all odds – notably the variable harlequin frog.

***Which species would you most like to rediscover?***

I think it would have to be the gastric-brooding frog of Australia. No other species can come close to the gastric-brooding frog for a truly unique and bizarre behaviour. The frog – of which there were two species – was able to convert its stomach into a womb and give birth to live froglets through its mouth. When this frog disappeared in the mid-1980s, a unique and bizarre mode of reproduction went with it, as did the opportunity to understand exactly how it managed this amazing feat.

***The tropics are the favoured climatic region of many frog species, what are the major challenges for photography in these conditions?***

Rain and humidity are the biggest challenges. I typically time my expeditions to coincide with the rainy season – the best time of year for finding frogs, but the worst time of year for photographic equipment. Another challenge is light. I spend a lot of time in rainforests, which are dimly lit and – where the sun does penetrate to the understory – very contrasty, making it difficult to get the right exposure. Also, because the sun rises and sinks quickly near the equator, that beautiful morning and evening light – the ‘magic hour’ – can be very fleeting.

***Which cameras and lenses did you use and how did they cope with the humidity?***

I use Canon – most of the book I shot with the Canon EOS 5D Mk II. In Costa Rica, the humidity was so high that it wet the bed sheets. I spent several days on the Osa Peninsula before I started shooting, enough time for the humidity to seep into my camera, which died on the first day of shooting. I stuck it in a Ziplock bag of rice but it never came back to life. I turned to Facebook to see if anyone could help me track down another 5D Mk II or equivalent in Costa Rica, and I was blown away by the response. The closest I came to tracking down an equivalent camera in Costa Rica was a message I got from a friend of a friend who had seen a 5D Mk II for sale the previous day in a store near the border with Panama. They then confirmed it had sold that morning!



Interview

I always carry a backup body – in this instance I had my old EOS 40D, one of my most trusty workhorses. It has never failed me, and seems to handle the humidity well. I got some of my favorite shots in my book using that camera. As soon as I got back from Costa Rica I invested in a 5D Mk III. I have since used this in Guatemala in the rainy season, with no problems.

***In what instances do you use flash and non-flash?***

I use flash quite a lot for my macro work – almost always off-camera with some form of softbox held very close to the subject to diffuse the light. I find it really helps to bring out colour and detail that is hard to capture using only natural light. It also opens up many more possibilities for shooting under different conditions: I am often shooting at night, when most frogs are active, or in the dim understory. Sometimes, I will use one off-camera flash and a softbox to provide some fill-in, especially when shooting wideangle macro to include habitat in the shot.

***Which lens do you tend to use most?***

For macro I use a 100mm f/2.8, which also doubles up as a nice portrait lens. It is probably my most used lens – and it is tack sharp. I also use my 17-40mm f/4 with extension tube for wideangle macro.

***I think frogs are very appealing subjects for the camera. Are you surprised that frogs aren't more popular with wildlife photographers?***

People do generally seem to gravitate towards the furry and the feathered, but I agree that frogs are extremely photogenic. Many species come out at night, and they like wet conditions – which don't tend to be so conducive for photography. Sometimes, when I am crouching in a stream, neck craned, sheltering my camera – which is trained on a tiny frog on a leaf just inches from the water – and wrestling my flashes, cables, brackets and soft boxes into position, I daydream about photographing dolphins or turtles. The beach seems very appealing in those moments!

***What are the greatest threats to the future of frogs?***

Frogs are at risk from a lethal cocktail of threats that are raining down upon them as a result of our actions – habitat loss, climate change, pollution and disease. They are at the forefront of a massive extinction event – more than 2,000 species are at risk of extinction. Habitat loss represents the most pressing threat to the longterm survival of amphibians, impacting nine out of every ten threatened species. The loss of frogs is a symptom of our continued abuse of our planet. At the root of this I believe is human exceptionalism: the misguided notion that we are somehow above or separate from nature.

***What has to be done to save them?***

We need a fundamental shift in the way that we treat the planet. We need to stand up to the greedy and the corrupt and protect our natural heritage. Regardless of what pulls the trigger on a species and drives it to extinction, each and every loss is a symptom of a crisis of values. We need to value and protect the ecosystems that are the heart and lungs of our planet. We need to recognize and respect the value of each and every species to future generations, and stop robbing our children and grandchildren of these natural treasures.

A baby American crocodile (Crocodylus acutus), a vulnerable species from threatened by a major Chinese-funded, trans-shipment port planned for the protected area of Goat Islands in Jamaica – the subject of a campaign by Robin Moore  
Canon EOS 5D Mk II, EF 100mm f/2.8 macro, ISO 640, 1/125sec at f/16, flash





**How optimistic are you?**

I remain optimistic, because it is not too late for many species, and because I think the needle is moving in the right direction. It often takes a crisis to spark people into action, and I believe we are reaching that crisis point. People are starting to wake up to the real threats posed by the rampant loss of biodiversity and climate change, and the army of those willing to fight for the preservation of species and ecosystems is growing. Importantly, people who advocate for conservation are not always operating on the fringes of society. The possession of an environmental conscience, once reserved for ‘hippy tree-huggers’, is becoming increasingly accepted – and even encouraged – by society. That’s an important turning point.

**You are an ardent and active conservationist: who are your heroes, the people that inspire you, and why?**

Sir David Attenborough has been a lifelong hero. Growing up, I wanted to be him. I still do. His ability to infuse others with passion and excitement for the natural world is incredible. He opened my eyes to the world beyond my doorstep and inspired in me a burning desire to see the jungles of Costa Rica and the plains of Africa. Few things have been as effective at conveying the magnificence and wonders of the natural world as the BBC natural history programmes.

Cristina Mittermeier is a big hero. I met Cristina soon after she founded the International League of Conservation Photographers, and both she and her partner in crime at the ILCP, Jenny Nichols, opened my eyes to conservation photography. Individually they oozed charisma, passion and

commitment, and together they were a dynamic duo. What impressed me most, however, was how genuinely encouraging Cristina was to me in those early days. When I met her I had just returned from Haiti with my new entry-level DSLR. I didn’t even know what shooting in RAW meant. But this didn’t stop her from taking the time to sit down with me, to advise and encourage me to tell the story through my images. She saw potential and that was infinitely inspiring.

**You are leading a campaign to save Jamaica’s Goat Islands from development. What exactly is the threat?**

The government of Jamaica is planning to sell Goat Islands, part of the country’s largest protected area, to a Chinese conglomerate to build a massive trans-shipment port. As well as flattening Goat Islands the

development will involve dredging of the sea and building an associated logistics hub on the mainland.

**Which species are threatened and what is their significance?**

The development will destroy some very fragile ecosystems, such as mangroves and limestone forest, home to more than 20 threatened species including the iconic Jamaican iguana and American crocodile. Since the 1970s, Goat Islands (there are two islands, a short distance from the mainland) have been earmarked as a safe haven to reintroduce the critically endangered Jamaican iguana. This flagship species has been the subject of a 25-year recovery program, with significant investment from international partners. This development will see all those efforts go up in smoke.

*“The possession of an environmental conscience is becoming increasingly accepted – and even encouraged – by society. That’s an important turning point”*



**A Palawan horned frog (*Megophrys ligayae*), an endangered species from the Philippines**  
Canon EOS 5D Mk II, EF 17-40mm f/4 at 32mm, ISO 200, 1sec at f/22, flash



Although the Jamaican iguana is a natural flagship species for the impact of the project, I think the overall significance is that an area that was deemed important enough to be declared a national protected area by the government of Jamaica in 1999, and significant enough to be under consideration as a UNESCO Biosphere Reserve, can be sold off for a quick profit. It just blows my mind that that can happen, and people just sit back and watch. It makes me wonder, what does declaring a protected area even mean?

**How effective has your campaign been so far?**

I was called in by some environmental groups to help raise international awareness of the issue, which hadn't received any attention outside of Jamaica. While I was in Jamaica shooting I did a takeover of National Geographic Creative's Instagram account (I posted a day behind so that I couldn't be tracked, as I was advised that I would likely get intercepted by the authorities). This put the cat amongst the pigeons – word spread that there was a National Geographic photographer on the loose! Upon my return from Jamaica, the story was featured by National Geographic Newswatch, Huffington Post, The Guardian and CNN. I produced a short video telling the story of a local character called Booms – one day I noticed it had received over 35,000 plays, and I found out that Ziggy Marley had posted it on his Facebook page. A few weeks later I met Ziggy Marley in person, and snagged a photo of him with a 'Save Goat Islands' T-shirt. One night, a few weeks after my return, I projected images and the video onto the front of the Jamaican Embassy in Washington, DC – a somewhat guerilla tactic to get the message in front of my audience. I tried to be as creative as I could to get the story in front of the right audience and generate some outrage. As a media strategy I think it was fairly effective.

**And what has been the response from the Jamaican government?**

I recently heard that the Chinese company was wavering because of the negative publicity. But exploratory drilling has now started, which is an ominous sign. The government is releasing very little information on the plans, which has been one of the biggest sources of frustration (it is not clear why the port needs to be within a protected area). Greed and corruption, and the geopolitical ambitions of the Chinese in the region, are powerful forces that we are up against.

**What can the public do to help?**

Spread the word – share the images and the video and voice outrage – go to **www.savegoatlands.org** to take a stand against the decimation of this beautiful protected area.

**What has been the most memorable moment so far in your life as a photographer and conservationist?**

Wow, big question! There are so many memorable moments. When I met Cristina Mittermeier in early 2007, I realized for the first time that I could combine photography and

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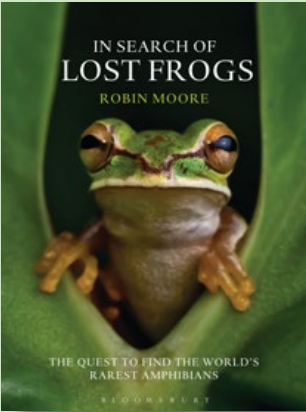
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conservation. I vividly recall sitting down with her, leafing through my slim portfolio, and feeling the hairs stand on my neck as she invited me into the ILCP family. That was a huge turning point – I felt as if an enormous door had opened, and I was resolute to make the most of it. Another moment that stands out is when I realized that the Search for Lost Frogs campaign had snowballed into a media sensation. The day it launched, on August 9 2010, it was picked up by close to 150 news outlets, including the BBC, Guardian, Al Jazeera and National Geographic, with around 200 million potential viewers. That blew my mind. That week was a blur of media interviews as I was shuttled from one studio to the next. And now, almost exactly four years later, the book is about to be released – this represents a culmination of my journey so far in search of lost frogs. The campaign really hit home the power of visual storytelling to engage an audience in your cause. Can four years constitute a moment?! 🍋

*All pictures © Robin Moore*



**Robin Moore** is an award-winning photographer, author and conservationist, renowned for his work on the plight facing the world's amphibians. He has a PhD in biodiversity conservation and is conservation officer for the Amphibian Survival Alliance, Rainforest Trust and Gobal Wildlife Conservation. Robin is an Associate Fellow of the International League of Conservation Photographers and his images published in numerous publications including National Geographic traveler, The Guardian, Telegraph Magazine, Terre Sauvage and Wanderlust.  
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