EXPLORERS

DEC2020/JAN 2021

INTO THE WILD
WITH
José Benito Ruiz

FOREST CONSERVATION - MAINE, US

BY ERICA CASSIDY DUBOIS

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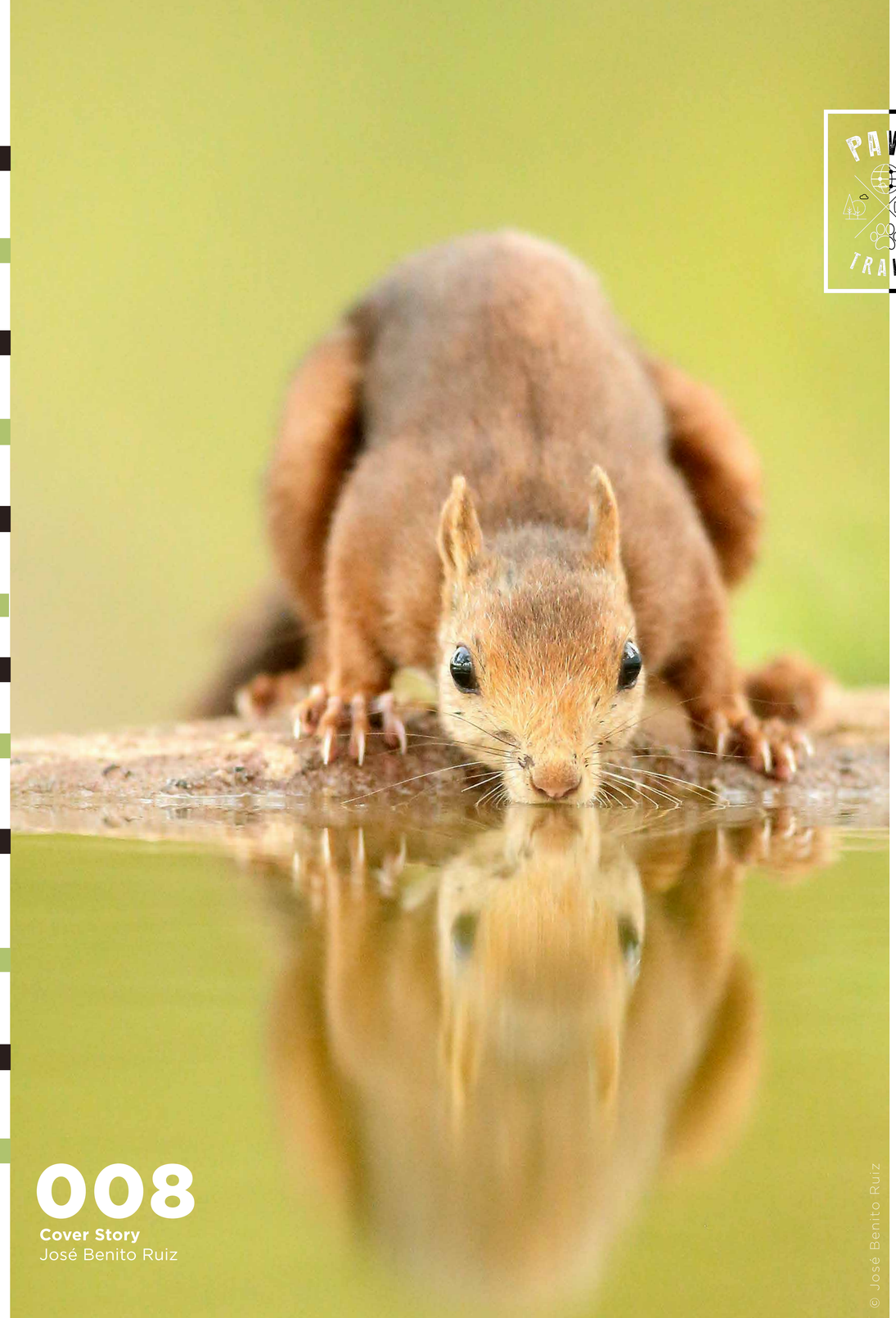
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Cover Story
José Benito Ruiz

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EDITOR'S DEN

Volume 26 is a truly international publication. Articles and photographs have been contributed from North America, South America, Europe and Asia. I edit the articles from Australia where I live. Nisha, our publisher, does the design and layout work from Kenya where she works in the Maasai Mara Reserve. We bring you Volume 26 via our server in the United Arab Emirates.

From Spain, Jose Benito Ruiz tells his story combining his efforts of founding a conservation organization and taking spectacular nature photos to promote the conservation of Spanish coastal areas.

Also, from Spain wildlife artist Ignacio Sevilla Hidalgo discusses his efforts on wildlife art and land and habitat conservation.

From Maine, USA, Erica Dubois writes about the founding of the Forest Society of Maine that has protected over 1,000,000 acres of working forest lands with conservation easements.

Levi Plummer takes us to a visit to the White Mountain National Forest complex in northeastern, Arizona, USA. The National Forest Service manages many forests in the western US for timber, recreation and wildlife habitat.

Dr. Peter Hudson discusses the plight of the Polar Bear in light of climate change and the predicted disappearance of its arctic ice habitat.

Cynthia Bandurek takes us to the Ecuadorian rainforests to observe Glass Frogs.

Argentinian diver Romina Vizcarret shows us stunning photos from her 3,500 divers in many of the ocean's biodiversity hotspots.

Also, from Argentina, Gustavo Costa takes us off shore from the Yucatan Peninsula in the Gulf of Mexico to observe the Whale Shark.

This volume is packed with spectacular wildlife photography for you to enjoy.

PHOTOGRAPHY DIRECTOR'S CHOICE

Shyam Menon
Pharaoh Eagle-owl
(Bubo ascalaphus)

FOUNDERS' NOTE

This is the last edition of PT explorers for the year 2020, a year un-paralleled in the uncertainties it threw at us. There would never have been a time in the recent past when the common man even remotely considered that in this age of development a measly microorganism would hold our entire race to ransom. But that is exactly what a 'flu' virus did, throwing the world order into chaos. Many of us had to shelve our plans, rethink our lives and livelihood, or lost near and dear ones.

When the year is drawing to a close, it is important that we take stock and think this through. What just happened? Or did it just happen or was it in the works for a long time. Was this unknown to us or were we turning a blind eye to the writing on the wall?

We sincerely hope that this year leaves us wiser, and more appreciative of the power and wonder that nature is!

At PawsTrails, we too had to adjust our plans and priorities to cope up with the situation. We had to put on hold all our exhibitions and physical outreach programs and shift to a virtual model. However, we are happy with the results and through our various daily, weekly, and monthly outreach programs we are racing a vast global audience through our social media platforms. Thanks to the global PawsTrails community who stood with and supported us.

Another aspect that suffered was travel, global travel shrunk to unthinkable levels this year. The PawsTrails wildlife photography tours were one of the most exciting of all our programs. This year we were so far forced to cancel all our trips due to restrictions and unsafe conditions. But things are changing, and we were fast to grab the first opportunity. Nisha Purushotaman is now in Maasai mara for an extended trip. Watch out for some exciting announcements from the Mecca of wildlife!

And, if you had enough of confinement and your trigger finger is itching for some action, here is your chance to herald the new year in Mara with both of us. Join Nisha Purushotaman and Hermis Haridas for a wildlife photography expedition in Maasai Mara, Dec 28th to Jan 2nd. The Mara never ceases to amaze!

Hermis Haridas & Nisha Purushothaman
Founders - PT Explorers

COVER STORY

Into the Wild

with José Benito Ruiz

by Cynthia Bandurek

Autumn in Hayedo, Spain.

Jose is a Spanish naturalist, nature photographer, writer, and teacher. At 22 he established himself as a professional selling his images in Spain. In 1993 he began working for the BBC Natural History Unit in London.

His photographs are distributed in 40 countries around the world. Apart from having scripted and directed several documentaries, he stands out for his contribution as a jury in international photographic competitions. As a photographer Jose has received the award for best photography at the 2007 Wildlife Photographer of the Year, among other awards. He has published 15 books related to photography and nature. “The photographer in nature”, “Composition in photography” and “Author photography” are his latest trilogy.

José is a reference in the field of photography in Spanish-speaking countries for his huge project “A year of photography”

Josés photographic work is not only about portraying the natural world but also going further and generating images of high emotional impact to make us reflect.

http://josebruiz.com/
instagram.com/joseb.ruiz/

Golden eagle (*Aquila chrysaetos*)

*INTERIOR WORLDS Project. Vanessa's World. A project about human suffering. Spain, 2013.

Thank you for joining us in our 26th edition of PT Explorers Benito! Would you please introduce yourself to our readers?

Well, I am professional nature photographer since 1988, a long ride. On the way I had a very nice life, working as script and photography director in TV documentaries and series, teaching, sharing, very much involved with associations. I am one of the Spanish Confederation of Photography (CEF) ambassadors, president of IFWP (International Federation of Wildlife Photographers) representing 18 associations and several thousand end members. Former president of AEFONA (Spanish Association of Nature Photographers), so many things but finally I am very proud of having met many of good people, persons involved in Nature conservation that inspired me to do something. So, I have started several projects about nature respect and conservation. One of them is 100% Natural, one of the largest disclosure projects about Nature in Europe. Another one is S.O.S. Spanish Coastline, about the need to preserve what is left of the natural coast in Spain, most of it overbuilt with urbanizations and hotels. I have been with ILCP (International League of Conservation Photographers), no longer active as it doesn´t reach Europe. About my teaching projects this one is in two main servers, 41 lessons, 200 hours teachings, for free:

http://unanodefoto.webcindario.com

https://365diasdefotografia.neocities.org/

You can also find an App for free for

MONUMENT VALLEY, ARIZONA USA

Griffon Vulture (*Gyps fulvus*)

Android:

https://play.google.com/store/apps/details?id=appinventor.ai_rb_arestegui.UADF

Firstly, we would love to know, where did your passion for nature and wildlife photography arise from?

That´s what I´d like to know... Since I was a child of three years my passion for Nature has ruled my life. No family or friend as referent, it simply came to me, books, magazines, Tv programs... At the age of 14, I found some friends and founded an NGO in my city (Alicante, Spain) that made some interesting things in contact with some others at national level.

What would you consider are some of your principles, and how do you bring them into your work? What is your approach in the field in managing ethics and capturing moments?

My ethical work has been also taken to many associations as a Decalogue (https://www.aefona.org/wp-content/uploads/2019/06/Codigo-etico-de-AEFONA.pdf)

But my ethical position here can be briefly explained.

1.- Ethics are personal, cannot be imposed. A lack of ethical values will impoverish you.

2.- First try to understand. Try to be empathetic.

3.- If your photo is going to disturb an animal, consider if it is worth, you have to live with yourself for a long time.

4.- Try not to do anything irreversible for Nature.

In the last several years, climate change and environmental situation awareness has grown. How do you think we as wildlife photographers can work closer towards wildlife conservation?

There are many actions we can take... We can raise conservation projects, we can inspire to audiences, we can deliver powerful images to encourage people, we can work aside scientists, we can show the magnificent dignity of every single wild creature... It is important that any of us now start doing something. As you may already know, everything is connected, the energy flows, we cannot damage the planet without receiving some of the damage back.

Tell us about your Photographic - Conservationist Project: S.O.S Sea Landscapes. What has been the impact on the society and the authorities?

It was great! We achieved joining a huge group of several professions and skills. We made information available about all the coasts in Spain, the landscapes we lost forever and those which can still be preserved. Our goals were such as ruin removals of unauthorized buildings by the coast, downsizing some car parkings according to the cove or beach extension... and finally Greenpeace used our photos and data for the 2015 report about Spanish Coastline.

Tell us something about one of your favorite images and the story behind it.

One of the pictures is entitled “The

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100% NATURAL project. The return of the Angels, Spain 2008

VISUAL NARRATIVE Project. Autumn tells me about you. A training project. Spain,2010

INTERIOR WORLDS Project. the World of Anonymous. A project about human suffering. Spain,2016

forests of the future" and shows a field of huge wind energy generators with a small tree below. It is picture of contrast in the message: the huge and the small, the machine and the living tree, the fragile and the strong... It was taken with a very long focal length (400 mm f/2,8 + teleconverter) in order to comprise the landscape and preserve the scale.

Another one I used to show in an inspiration for conservation presentation with the text "Good planets are not easy to find". It is a tire abandoned on a dry soil. It is so simple a photo, but I feel it delivers the message together with the words.

And one favorite of the audiences, depicts a couple of Bee Eaters (*Merops apiaster*) shaping a colorful heart. Many people feel the wonder of nature when they see the photo.

After winning awards for years in several prestigious international competitions, as a Wildlife Photographer of the Year, Glanzlichter, Asferico among others, you are now often a jury. What do you consider the most important thing when choosing a winning photo?

For those who have experienced working in a recording or filming crew the stress in nature photography cannot exist. It is not a film with actors, nothing can be managed at all, so patience and resilience are good companions. My first experience was when I was 22 years old, filming with a cinema Aaton camera for a documentary called "Habitat", that showed in 1988 how was my province's nature for the province Government. In

INTERIOR WORLDS Project. the World of Anonymous. A project about human suffering. Spain,2016

some of the series we found stories of coexistence between we, human, and wild plants and animals. Another series was shot underwater, showing wilderness and devastation. Some of these works (15 chapters series for TV) took years of recording and were both, delightful and exhausting. Mediterranean is my last work as scriptwriter and photography director, also involving drone recording. It is a 50 min documentary trying to highlight how Nature is, magnificent, sublime. This one is part of myself.

You have spent years promoting and training people about photography. What has inspired or motivated you to share all your knowledge?

The main reason is that it is vocational, I cannot prevent it.

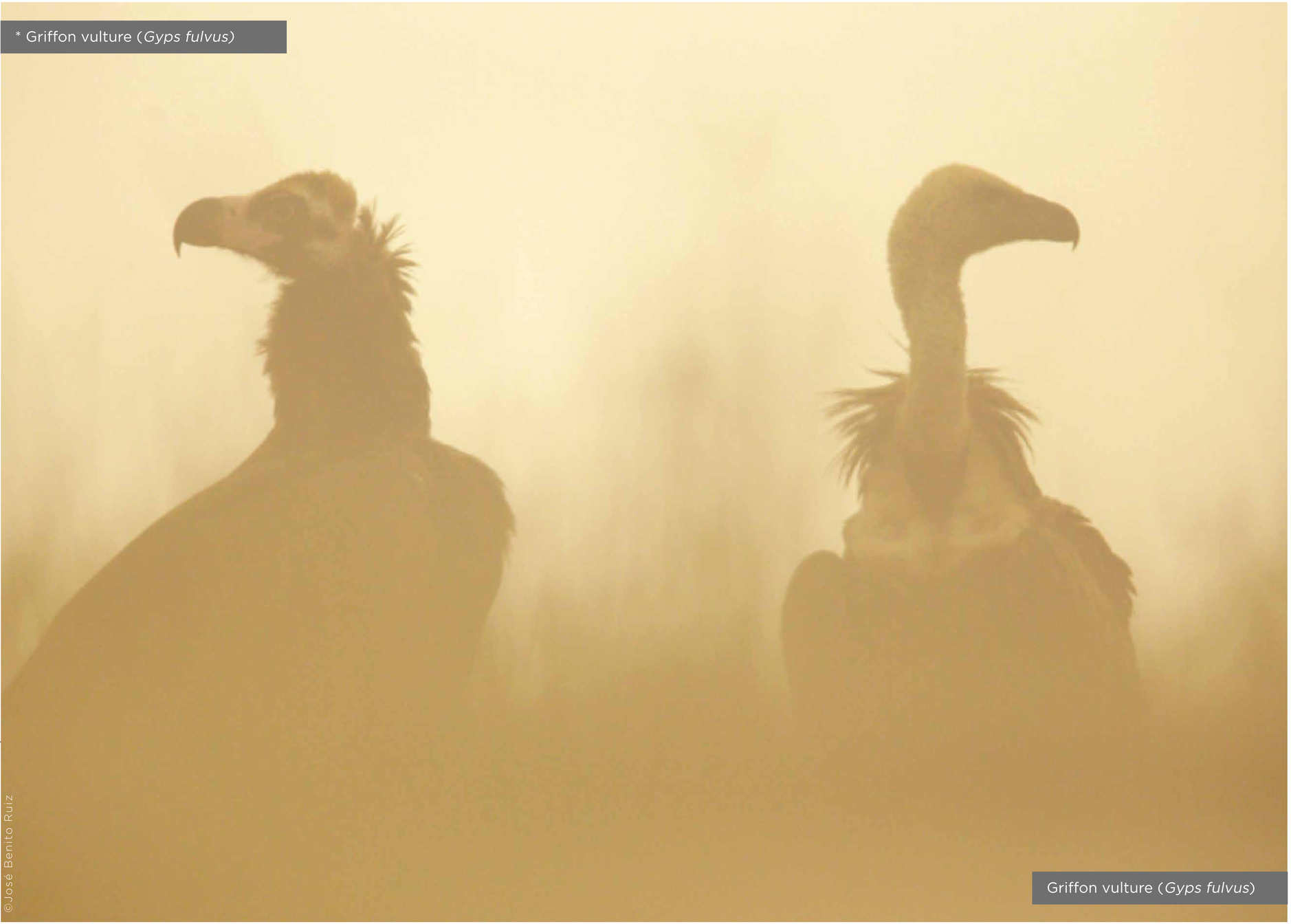
I have been doing this hardly for so many years and now I feel that I have influenced a generation in my country. I feel so happy about this. Many people have learnt that a picture never justifies disturbing a wild animal, that we don´t photograph for ourselves, that we have to be an example for the young ones, that it is so nice to share, so nice to contribute with our images to make a better world... Photography, music, sculpture, painting... are creative processes, creative also for creation, we create, we construct, we contribute to inspire. Such a nice life creating and not destroying.

What do you think is one of the greatest difficulties for someone trying to get into the field of wildlife and conservation photography?

I think the main thing is to feel that your

Jellyfish (*Cotylorhiza tuberculata*)

OPEN YOUR EYES Project. When you make up your mind... An environmental awareness project. Italy, 2014



* Griffon vulture (*Gyps fulvus*)

Griffon vulture (*Gyps fulvus*)

life is going to be dedicated to this, maybe not fulltime, maybe not straight from the beginning, but you better feel deeply what you do, because good times and bad times come and go. Another important thing is to learn working in teams, together with scientists, researchers, conservationists... Learn to be part of a bigger thing. Another is to make it sustainable, if you involve so much that forget about yourself, you will impoverish, is important to take care of yourself, don´t leave you welfare for tomorrow as you doing important things for the rest. So, find to make it a job (stock agencies, NGO´s, conservation companies...) and get some earnings, that is also taking care of yourself, nobody else will pay your expenses or rest your body and mind.

What about the gear you use?

It is simple, inexpensive and old. I used to teach a funny thing: it is not the arrow that kills you, but the person. It is a way to say that the gear is not important if you know how to use it.

I have a camera 11 years old but makes what I need.

I work with two main lenses, not stabilized, 20 years old:

17-40 mm f/4 and 70-200 f/2,8.

Both can be bought for USD 1,000 second hand.

For some special photography I purchased cheap and share with friends a 180 mm macro and a 400 mm telephoto.

A few words on your future projects and goals.

THE INHABITED LANDSCAPE Project. Shepherdess of llamas in the Altiplano. Bolivia, 2018

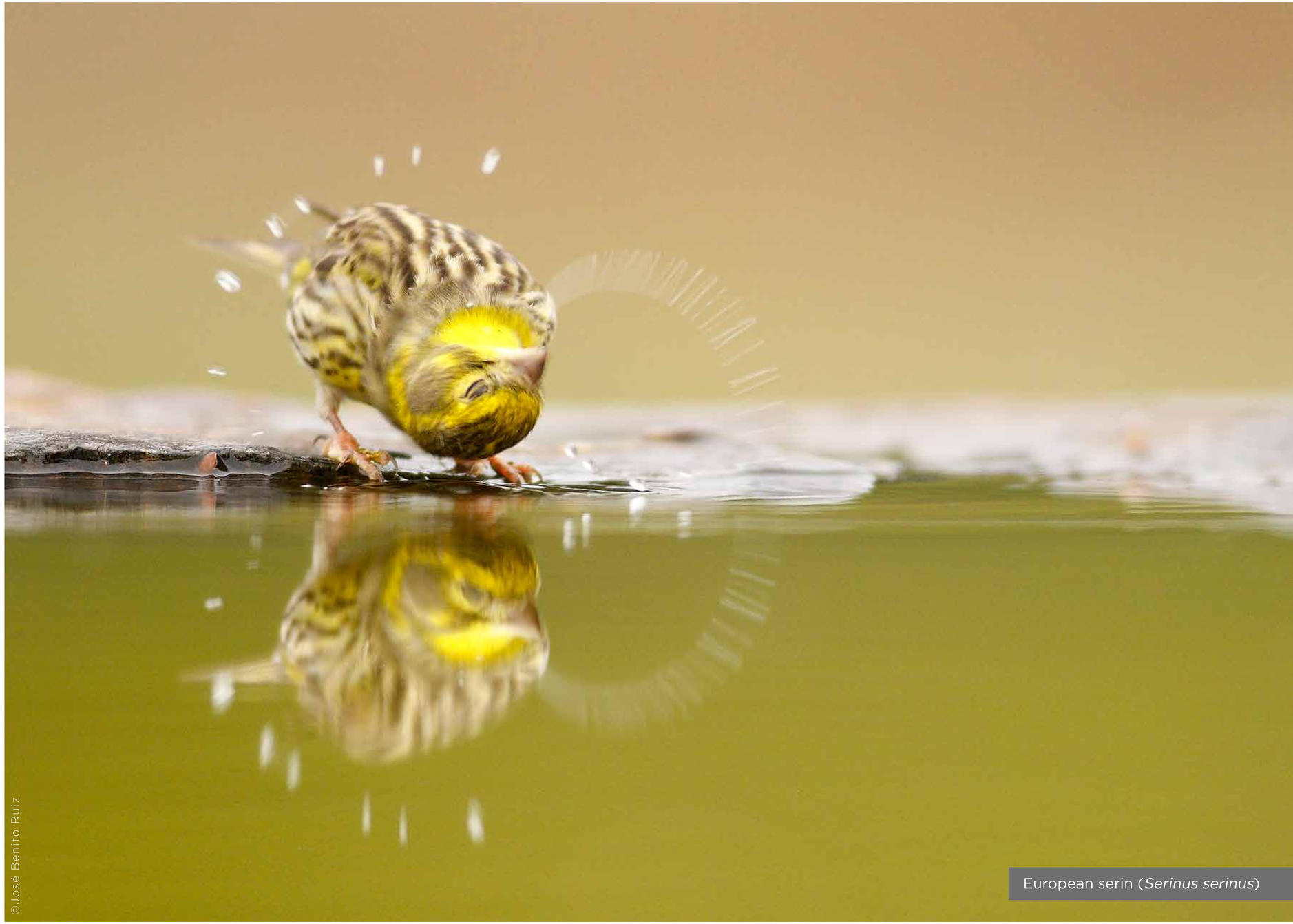
I am working on a long-term project about how we, human beings, face difficulties in life. It is a portfolio of pictures taken outdoors focusing on the hands of a person. Every picture has to make us understand how the person showing the hands is feeling. Under any of these pictures there is a drama, trying to communicate strongly.

Finally, is there anyone in the wildlife photography field you look up to for their work or has been an inspiration to you?

Inspiration There are many, and many do not know how they inspired, not only me, but so many others as well. We are not conscious about what we change, we simply pass by. In Europe I have so many referents very much unknown in America.

Of course, those pioneers in nature photography, Emerson, Fox-Talbott, Karl Blossfeldt... also the American conservationists: Carleton Watkins, William Henry Jackson, and later Ansel Adams. But first of them it was the Hudson River School of painter which started the conservation movement, specially Thomas Moran and his paintings of Yellowstone.

I prefers paintings to photographs when I look for. For contemporary photographers I admire the works of my friends Klaus Nigge, Niall Benvie, Jan-Peter Lahall, Pal Hermansen... so many referents I have, I´m afraid.



©José Benito Ruiz

European serin (*Serinus serinus*)

100% NATURAL project. Colorful love. Spain, 2008.

THE INHABITATED LANDSCAPE Project, Caravan in the Desert, Morocco 2019

Jellyfish (*Pelagia noctiluca*)

FEEL THE LANDSCAPE Project.The sacred mountain. Iceland, 2013

CONSERVATION

Forest Conservation - Maine, US

By Erica Cassidy Dubois

Photos by: Forest Society of Maine & Paul Cyr

Erica Cassidy Dubois is a forestland steward for the Forest Society of Maine. She has a B.S. in Forest Ecosystem Science and a master's in Community Planning & Development.

Erica Cassidy Dubois's essays and stories have been published in magazines and journals in the U.S. and Canada. Erica grew up in Maine's least populated county and currently lives in Bangor, Maine.

A Forest Accord - How one land trust conserved more than 1 million acres of the last great forest in the American East

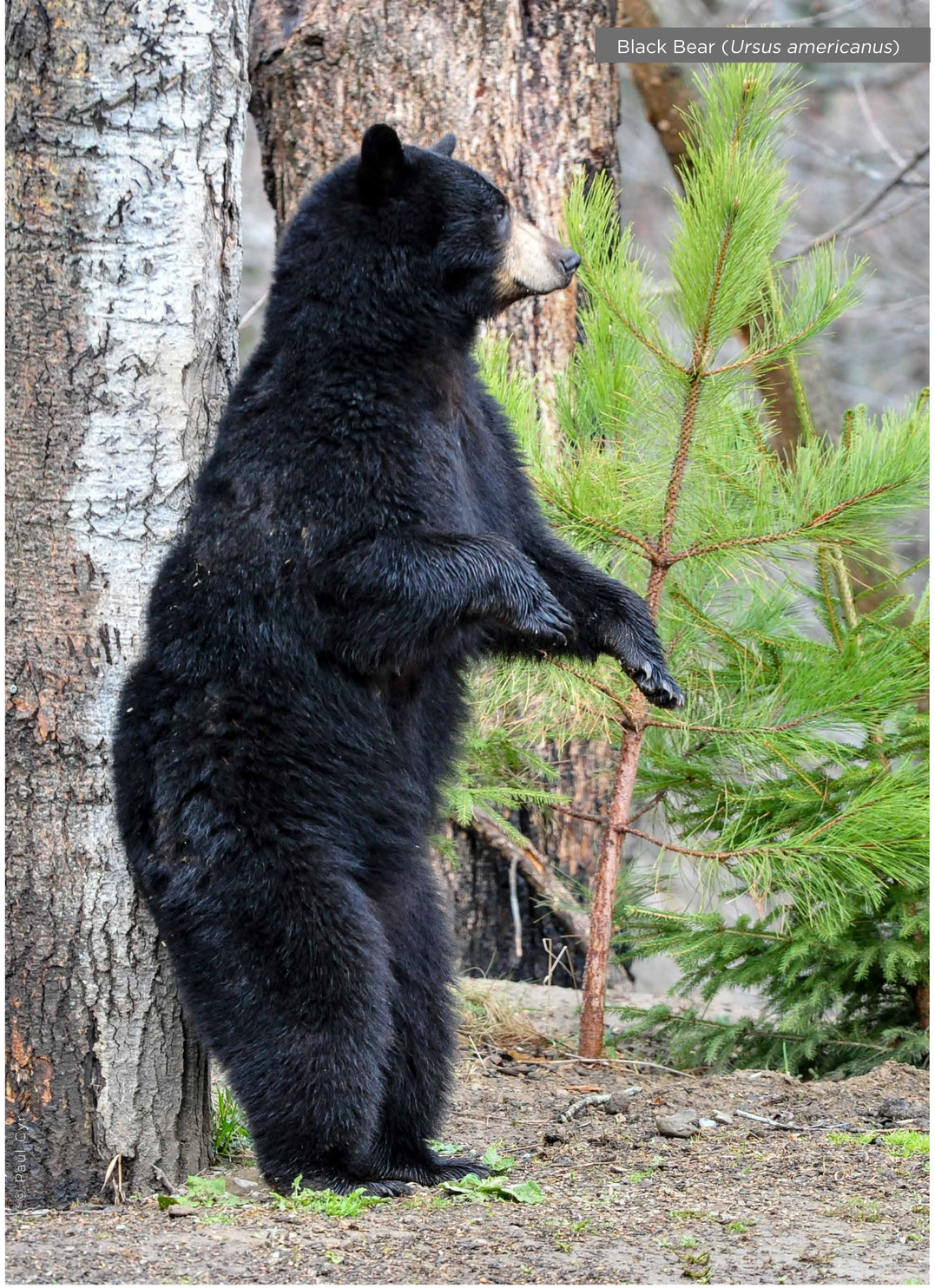
It is a warm June day in Maine, in the North American East, and you decide to hike on the Appalachian Trail. You pick a moderate mountain, about a kilometer tall. At first, the path winds through hardwood forest—mostly maples (*Acer spp.*), beech (*Fagus Americana*), and birch (*Betula spp.*). You cross a small stream, hopping over Trillium flowers and lady's slipper orchids (*Cypripedium reginae*) that have popped up through the leaf-duff. You begin to climb, and the forest changes; now it is mostly spruce (*Picea spp.*) and balsam fir (*Abies balsamea*). You pick your way around gray granite boulders that have cleaved off the mountainside, or were left behind, thousands of years ago, by glaciers. You swat at black flies.

Forests stretch out in every direction, except where it's wet—kettle bogs, river floodplains, wetlands, peatlands, streams, lakes, and ponds—all flowing with clean, cold water.

Maine's North Woods is the largest block of forestland that remains in the American East, the heart of the New England/ Acadian Forest of the United States and Canada. Maine is a Northern Forest state—along with Vermont, New Hampshire, and New York—which, together, form the largest continuous forest in the eastern U.S. In Maine, 12 million acres of virtually unbroken woodlands contain 5,000 lakes and ponds, more than 4,000 miles of rivers and streams, and hundreds of mountain peaks. These woods are home to an abundance of fauna rarely, if ever, found in southern New England: the American marten (*Martes americana*), North American moose (*Alces alces*), Eastern brook trout (*Salvelinus fontinalis*), and Canada lynx (*Lynx canadensis*). It is one of the few places left in the American East with near-pristine night skies, yet unpolluted by urban lights.

This is not a landscape that can be described as "wilderness"—wild, yes, but not wilderness. Visitors are welcome, but they must be self-reliant. Maine's North Woods are no national park—you'll find no flush toilets, giftshops, or wi-fi hot-spots, here. The forest is crisscrossed by a maze of gravel roads, ruled by trucks that can be loaded with more than 400,000 pounds (200,000 kilos) of wood or pulp. It is a patchwork of stands in various stages of harvest and regrowth, where most trees are less than fifty years old. It is a landscape owned by industrial

Canada Lynx (*Lynx canadensis*)



Black Bear (*Ursus americanus*)

© Paul Cyr

groups, and a handful of private families and individuals. It is also a place where millions of acres have been conserved.

More than four million acres in Maine is held in conservation, roughly 20% of the state. It's a number that has grown, according to a 2019 report, four-fold in only three decades. But what's particularly striking about land conservation in Maine is the widespread use of conservation easements.

Conservation easements are deed restrictions that permanently prohibit development. Landowners enter into easement agreements, voluntarily, and are typically compensated for the sale through a cash payment or in federal and state income tax reductions. More than half of Maine's conserved lands are protected by no-development easements, and the vast majority of these transactions have been negotiated by land trusts—not-for-profit, non-governmental organizations that use private donations and grants to conserve land.

Most easements require years of negotiation to bring to fruition. They are written to last "in perpetuity," so their terms require careful consideration. Many land trusts retain a "forever" responsibility to uphold and enforce easements' terms.

One such trust is the Forest Society of Maine (FSM). In 36 years, FSM has conserved, with the help of its partners, more than one million acres—all with a staff of less than ten individuals. More than 90% of lands that FSM has conserved are working forests. The trust's unique mission—to conserve a slate of ecological, economical, recreational, and cultural values—helped grow it into a national leader in working lands conservation, at the exact moment that Maine needed it, most.

In 1988, paper-making giant Diamond International Corporation placed one million acres in the Northern Forest states on the market. It got the attention two federal legislators, Senators Warren Rudman of New Hampshire and Patrick Leahy of Vermont. The magnitude of the sale concerned them, but they were more worried by the way the lands were marketed—not just for growing and cutting timber, but for other, non-forest uses, like real estate development.

Senators Leahy and Rudman pushed Congress to launch a federally funded study. The results were published in 1990. A key recommendation was to create a Northern Forest Lands Council—consisting of representatives of all four states, and the federal government—to continue the study's work. Fundamental changes seemed to loom on the horizon, and there was little agreement about what to do, next. In 1994, they published thirty-seven recommendations in *Finding Common Ground: Conserving the Northern Forest.*

The impact of the report was manifold. It identified easements as an important tool for conserving private lands. It called on the federal government to invest in Northern Forest conservation. (Since 1994, Maine has received some $76 million in federal funds to conserve working

forests.) It also gave voice to thousands of stakeholders, and united a diversity of interests—environmentalists, landowners, recreationists, foresters, rural community members, and others—around a common goal: to shape the future of their forest.

One lesson learned from the Diamond sale was that turnover of land could be an opportunity for conservation. Significant purchases had been made by land trusts and state governments in New Hampshire, New York, and Vermont. It stood to reason that similar opportunities might be possible, in Maine, where changes in ownership were reaching seismic levels. A report to the Maine State Legislature in 2000 stated that more than nine million acres of Maine forestlands changed hands between 1990 and 1999.

“But it was clear that there wasn’t the land trust infrastructure in the Maine woods to take advantage of it,” says Jay Espy, Aan award-winning conservationist based in Maine.

There’s was, however, a precedent for conservation. In 1984—a full ten years before Finding Common Ground—deed restrictions were placed on 20,000 acres in Attean Township in far western Maine. After generations of managing forests, the landowning family was ready to move on. Still, they wanted certain assurances: that their family’s land would not subdivided and developed, that timber harvesting would continue, and that the woods and waters would remain open to the public for recreation.

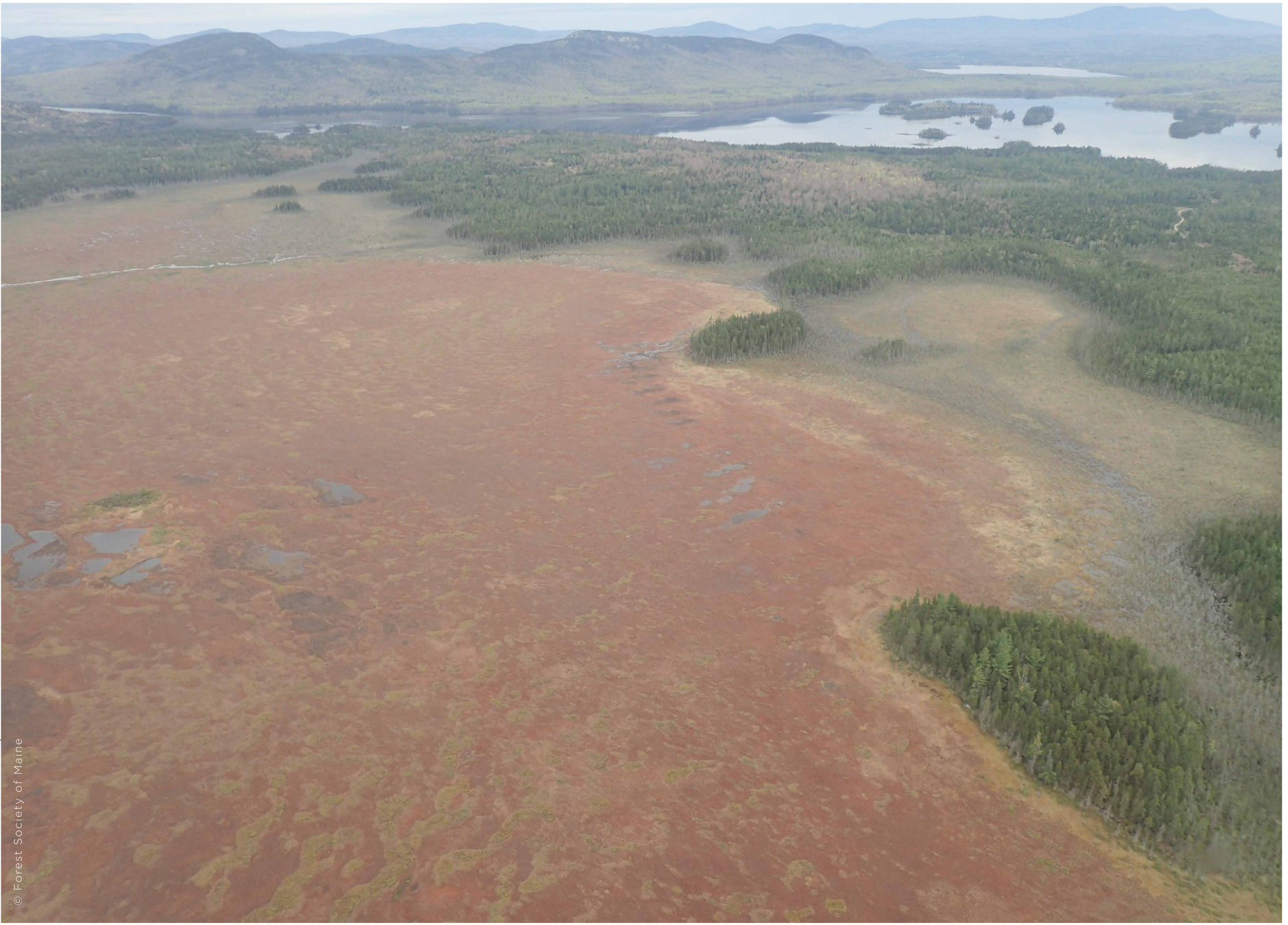
There was, at the time, no land trust for the forests of Maine, but there was

Canada Lynx (*Lynx canadensis*)

© Paul Cyr

Moose (*Alces alces*)

© Paul Cyr



© Forest Society of Maine

one in neighboring New Hampshire. The Society for the Protection of New Hampshire Forests (SPNHF) recognized the exceptional qualities of the Attean lands and agreed to take the easement on. In order to legally hold conservation interests in Maine, SPNHF created—on paper—a new organization called the Forest Society of Maine.

“The executive director at SPNHF came to us and said, ‘Maine Coast Heritage Trust should take this Attean easement on,’” says Espy, who was the executive director of MCHT at the time. “But we had plenty of work on the Maine coast, and a lot invested in the concept. So, we got people around the table and asked, ‘Is there a better approach?’” Espy believed that Maine needed a new land trust. “An organization,” he says, representative of the kinds of landowners it would work for. “People recognized that there would need to be a land trust different from any other that had come before.

The decision to create a new organization “was not unanimous in the land conservation community,” says Jerry Bley, a land conservation consultant. “But there was this sense that changes were afoot in the Maine woods and that conservation should be a part of that.”

The decision to create a new organization “was not unanimous in the land conservation community,” says Jerry Bley, a land conservation consultant. “But there was this sense that changes were afoot in the Maine woods and that conservation should be a part of that.”

One million acres. It’s a big number, and

Black Bear (*Ursus americanus*)

© Paul Cyr

a big story—so big that naming every person who had a hand in making the Forest Society of Maine what it came to be—one of the largest land trusts in America, in terms of acres held—is impossible to do, here. But this record will not omit one of the foremost figures in FSM's history: Alan Hutchinson, its first executive director.

Beginning in 1997, Hutchinson liked to joke that his original FSM office was his kitchen table. Alan's first project was 21,000 acres of forest land along Nicatous Lake. In 2003, he took on the West Branch project, which placed 282,000 acres in easement and transferred more than 50,000 acres in conservation to the state. There was the 359,000-acre Moosehead Region project, in 2009, and dozens more—in his twenty years at FSM, Hutchinson helped to facilitate some of the largest land conservation deals in U.S. history. He died, unexpectedly, in August 2017.

Maine Senator Angus King, in remarks archived in the U.S. Congressional Record, called Hutchinson a "tireless environmental advocate" who "dedicated his life to preserving Maine's most precious land, water, and wildlife."

The Forest Society of Maine holds easements on more than 800,000 forest land acres, and manages easements covering another 200,000 acres for other organizations – protecting a total of over 1,000,000 acres.

Karin Tilberg, current executive director at the Forest Society of Maine and a conservation attorney who has worked in the Northern Forest states for decades, was deeply involved in the Council's regional and state discussions.

"Maine people knew what they valued—access to land, managed forests, habitat for fish and wildlife, a tradition of private ownership, and opportunities outdoor recreation," she recalls. "Conservation projects that secured these central values brought along strong public support." (Maine citizens have voted six times in referendum to fund state conservation through public bonds.) Available funds, common goals, and conservation easements were "a unique recipe," Tilberg says, that "helped bring about an incredible surge of conservation."

Conservation work continues. A recent report by the Maine Forest Service shows that, for the first time in over a century, the state is losing wooded land. Development creeps ever-northward. Global climate change only raises the stakes: keeping forests as forests is fundamental to offset human carbon emissions. Conserving the last great forest in the American East has become an effort of international import.

Maine people know what they want—they want to live in the woods, in close-knit communities, far away from urban life. They have embraced easements as a way of protecting what they already have. Rugged mountains. Working woods. Cold water. Fish. Wildlife. And many, many trees.

Reference: www.fsmaine.org


© Forest Society of Maine

Moose (*Alces alces*)

© Paul Cyr

Pine Martin (*Martes americana*)

SPECIES

Polar bear

(*Ursus maritimus*)

By Dr. Peter Hudson

P

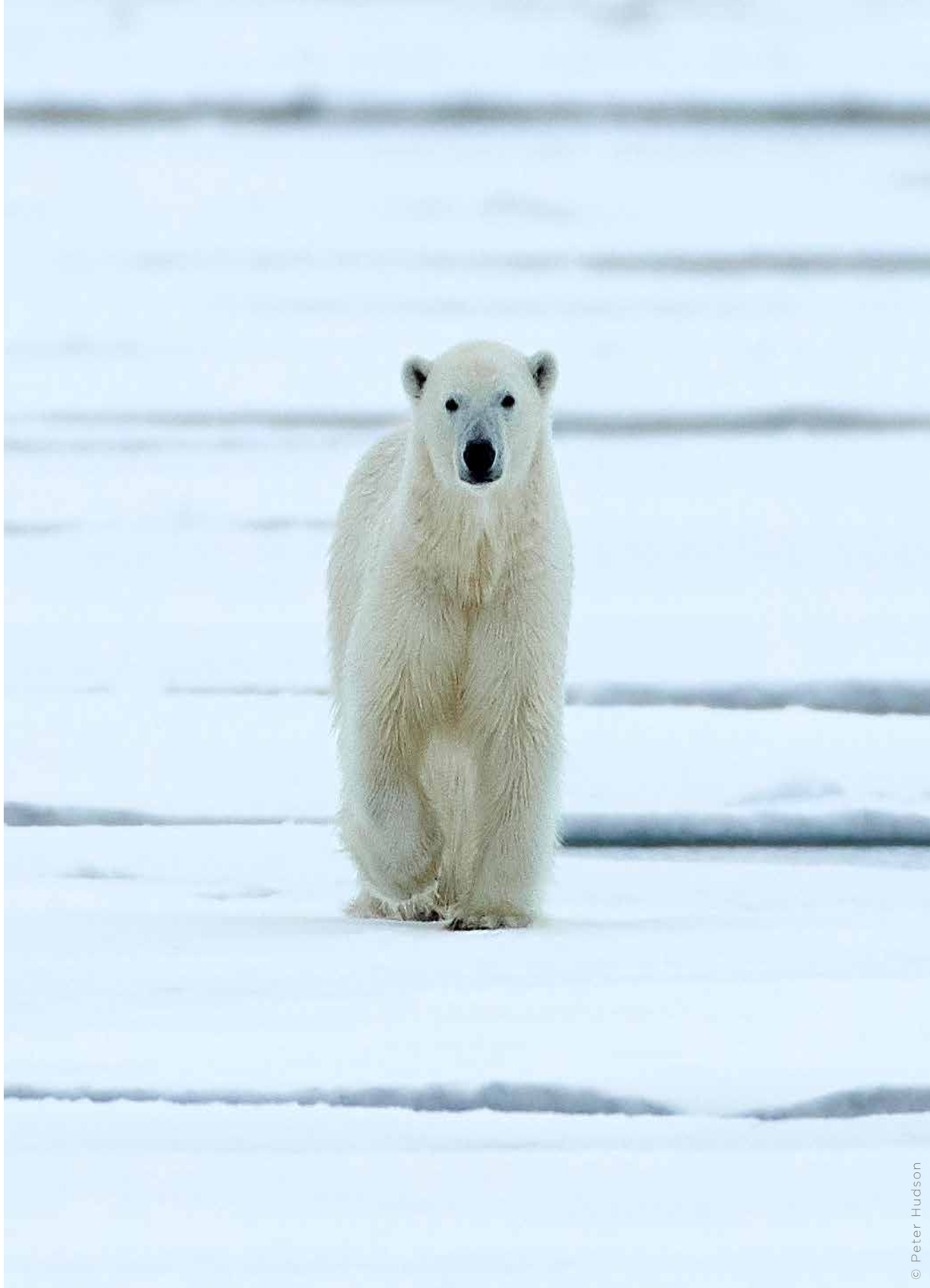
Peter Hudson is a scientist, photographer and conservationist. He undertook his first scientific expedition to Africa at the age of 21 and has been a regular visitor ever since. Passionate about nature,he manages his own 36-hectare nature reserve in Pennsylvania which is home to bears, bobcats and other animals.

In his professional career, Peter is the Willaman Professor of Biology at Penn State University. The focus of his research has been the infectious diseases of wildlife and in particular how new diseases emerge. He has been running scientific studies on the wolves in Yellowstone, tortoises in the Mojave Desert and bighorn sheep in Idaho. He is currently involved in a major project in Australia investigating the viruses associated with bats.

Peter established a new global health institute at Penn State that seeks to develop the concept of One Health, whereby the future health of humans is dependent on that of the environment,livestock management and the conservation of wildlife.He is an adjunct. Professor at The Nelson Mandela African Institute of Science and Technology based in Arusha, Tanzania and a Fellow of the Royal Society Institute of Science and Technology based in Arusha, Tanzania and a Fellow of the Royal Society

peterhudsonphotos.com

instagram.com/peter_hudson018



The end of the Polar Bear?
Why they are on the edge of extinction?

In many of the identification guides and textbooks, Polar bears are considered sea mammals. Even their scientific name, Ursus marinus, means bear of the sea and yet they are the most specialized and remarkable animals with fantastic adaptations to living on the ice. Really a more suitable name would have been Ice Bear and a scientific name to match, "*Ursus glacies*". Their whole biology and their future existence depend on ice.

Of course, they are camouflaged with a white coat and this coat has incredibly long guard hairs to keep them warm and they also carry a layer of fat that can be 11cm thick. There is a great story told by the polar biologist, Ian Stirling, about how scientists tried to find bears using heat sensing cameras but they totally failed and were astounded when they discovered the bears only give-off heat through their nose and mouth. This means that Polar Bears are more than happy being in the frozen polar desert and suffer more from over-heating more than the cold, when they run or being exposed on a sunny day. Ice is their habitat – they need it to find seals, their main prey and almost everything they do – well almost everything – requires ice.

It is this one characteristic that makes me speculate that polar bears could be on the very brink of being wiped out in parts of their distribution. There are 26,000 bears remaining, the IUCN lists them as vulnerable and the current expectation with climate change is there will be about 9,000 fewer by 2050. My opinion, as a

biologist is that there could be many fewer. Let me explain...

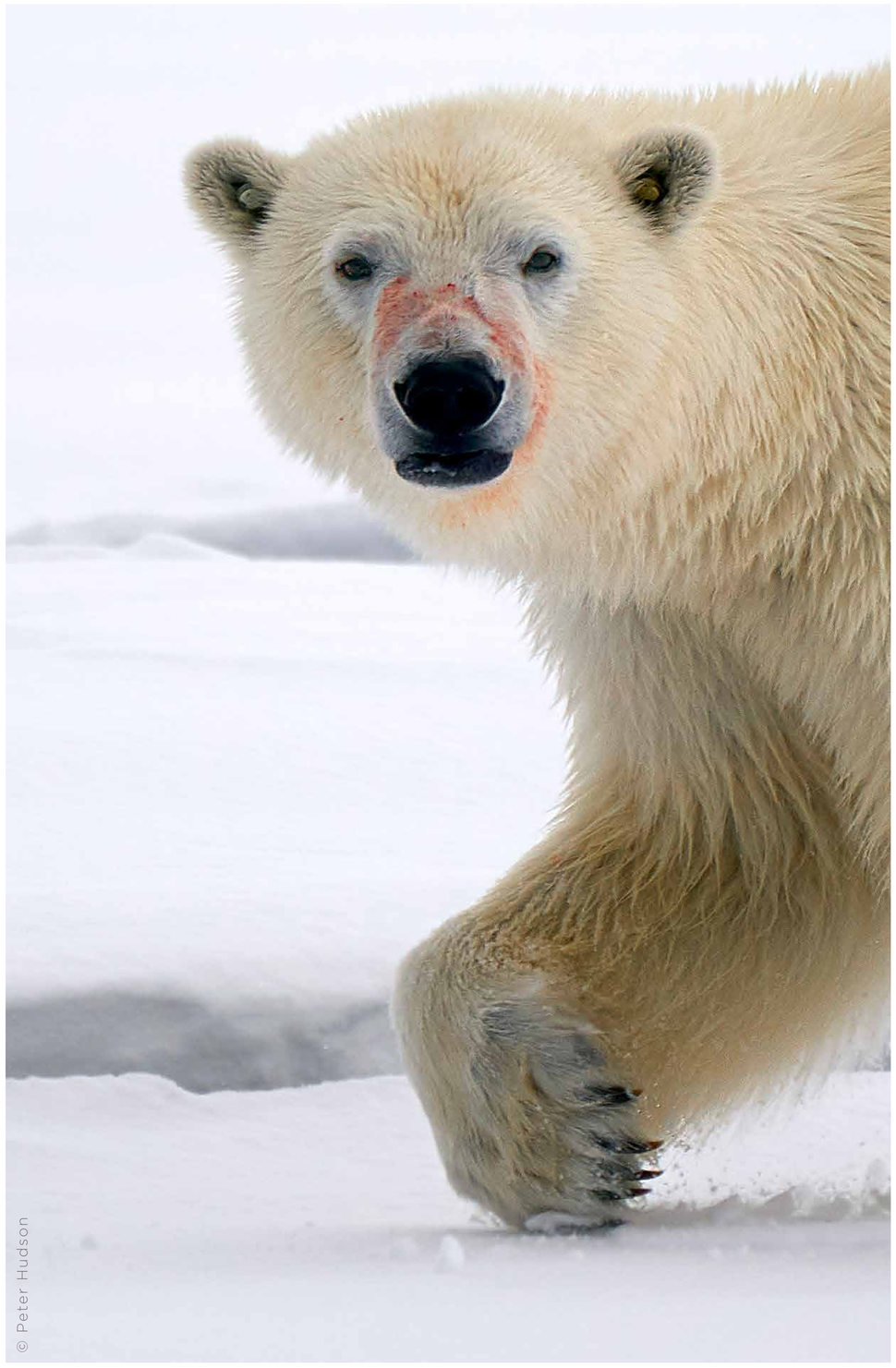
Female mating biology

Just as seabirds can spend all their adolescence at sea and most of the year far from shore, the polar bear must return to land to make a snow hole and breed. They are tied to the land since they need to dig deep snow caverns where they can rear their baby cubs to a size that will allow her to return to the ice and hunt seals.

The biology behind this reproduction is truly fascinating. Polar bears are solitary – they can't predict where the ice is going to be and they can't predict where the baby seals or adult seals will be on the ice, so they don't have a regular home range but wander many miles back and forth across the ice, using their extremely sensitive nose to just get a whiff of seal, that they can try and kill. Since mothers keep their cubs with them, and provide rich milk for two and a half years, only 1 in 3 of the adult females are available for mating every spring. In March and April, the males start looking for these females out on the ice, wandering 60km a day in the hope of finding some footprints of a female. He is so focused on the female that he will often go weeks without food. He seems to recognize a female ready for mating as soon as he smells her footprints – maybe there is a smell from her urine or even scent glands on the feet – and once he smells her footprints he is off – moving fast across the ice to find her.

Of course, the female does not know if and when a male is going to turn up and if he is good enough to father her offspring, so she doesn't come into season like most mammals but exhibits what we call induced ovulation. When the male finds her, he consorts with her for days, chasing and playing and trying to get close to her and this courtship behavior induces the female to ovulate so he can then mate with her and father her offspring. That is assuming no other male has turned up. Other males are on the prowl for females and invariably turn up and then there will be massive battles between the males for dominance. The bears really fight hard and they often have bad scars and most of them have damaged canine teeth. The males are often twice the size of females, sometimes three times bigger and this sexual dimorphism is without question associated with the fact that big males are more successful at winning females. To become this big, the males must be good hunters and so it is proof to the females that he is a good quality dad and these characteristics will help her offspring become great bears one day.

During mating, the egg is fertilized but these early embryos, known as blastocysts, don't embed in the uterus wall but remain there in a dormant state until October. This is another adaptation for the polar breeding known as delayed implantation, since this then gives the female the summer to get her reserves together before she heads off for 6 to 8 months without food or water into her snow den. Quite a few species of mammal exhibit delayed implantation including the marsupials like kangaroos and koalas and also some of the mustelid



© Peter Hudson

species like badgers and skunks and also roe deer and armadillos. After mating and before heading off to the den, the female can increase her weight 4-fold, going from about 100kg to as much as 400kg. I suspect, but cat find evidence to support this contention, that if she doesn't do very well during this period she will simply abort and try to get enough reserves to see her through the long winter months.

Off to the den and the birth of the cubs

Polar bears don't hibernate and during the dark cold winter, the males and the mothers with cubs stay out on the ice, trying to catch seals in the darkness and the icy wind. The pregnant females move away from the sea ice by the end of October and then set off to find a suitable snow drift in which she can make a den. Remember, the high arctic is a polar desert and there really isn't that much snow so she must find a location on the leeward side of a mountain where the snow blows over and falls into deep drifts. These special slopes can be as much as 40 km from the ice and there are so few that it is not unusual to have 12 or more dens in one big snow field. Sadly with climate change, many of these special denning areas no longer get the depth of snow the mothers need. They often return to areas that they used the year before, and I suspect the females may have a fair idea where their own mothers raised them.

The mothers dig an entrance and then burrow uphill a couple of meters before making their chamber – this means that the warm air from her body stays in the chamber and doesn't leak out of the entrance. The expectation is that more

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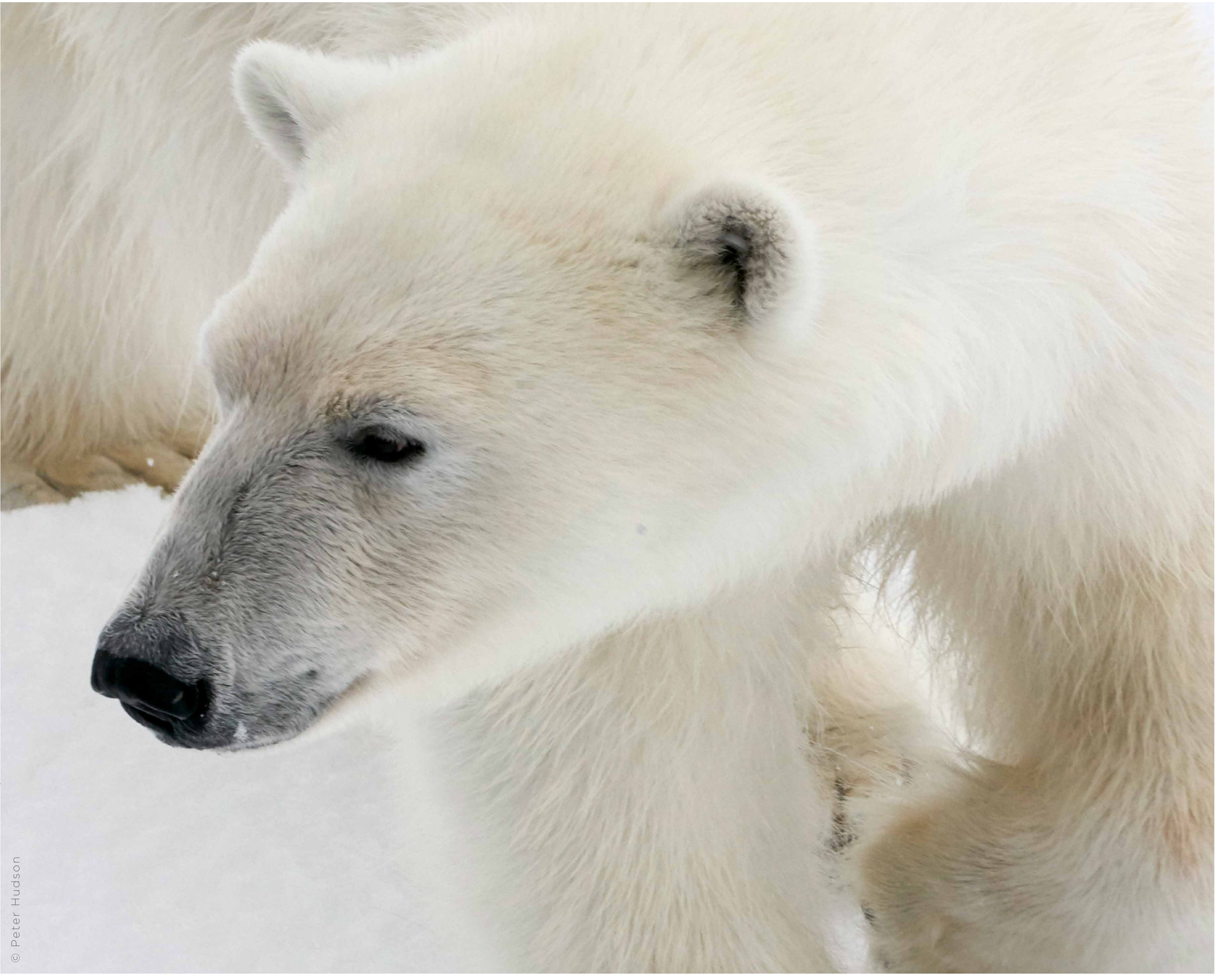
snow will fall and drift that can both block the entrance and provide more insulation for her and her cubs.

She settles down into her den in November and gives birth just a few week later in December producing two or three cubs, that are tiny. They weigh about 800 grams – hundreds of times smaller than she is, and she stays with them in the den until April. Once again, the polar bear exhibits phenomenal physiological adaptation. Why does she have the cubs when they are so small? During her time in the den she doesn't feed or drink water and must survive on her fat reserves she acquired the previous summer. While the cubs are in the womb, she must process both their waste and her own. To provide them with energy from her fat she needs to use glucose as an oxidizing agent, and she derives this from her own body protein. This places huge strain on her condition and she gets around this problem by having the babies when they are very small and then she can feed them outside her body where she doesn't have to process their waste. Once born the cubs can be given the fatty acids via the milk and she doesn't have to do this at the cost of her own body protein. When she emerges from the den six or more months later, she is in bad shape and needs to get food for herself and to keep producing the nutritious milk for the cubs.

This is a hazardous journey – not only can she be many kilometers from the coast, but she must also reach the sea ice where she can hunt and catch seal cubs and adults to recover.



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Climate change and the Polar bear dilemma

This is the central issue the polar bear faces – can she get her cubs to the ice, so she can hunt and feed them?

Let me lay out the issues:
• She hasn't eaten for 6 or more months; her reserves are depleted, and she must get nutrients soon or she and her cubs will die.

• She is on the land, emerging from her snow hole and she needs to get to the ice to hunt

• The cubs are small and vulnerable to the cold – she can't let them swim for very long, or they will freeze to death.

• Climate change has resulted in extensive ice loss and every year the sea ice is further and further from the land and where she gives birth.

• If she remains on land, she may catch a few birds and wi• If she remains on land, she may catch a few birds and with some luck she may find a dead whale – but every day she doesn't go to the ice, it recedes further from the land and the more likely her cubs and herself will perish.

In the scenario of climate change and the continual shrinkage of the ice, there is only one outcome – the polar bears get to a point where the mothers can't get from the dens to the ice. At this juncture we reach a tipping point – what scientists call a bifurcation – breeding production of polar bears ceases at this location and we end up with a population of ageing adults and no young polar bears being recruited into the population. We will see populations like Svalbard's population die relatively fast. This is not a slow process – we just reach the tipping point and these population get wiped out.

Work with us and become climate aware. Take on actions to reduce your own impact on climate change. Vote in elections for the candidates that will do something about climate change and vote with your wallet in what you buy and your way of life.

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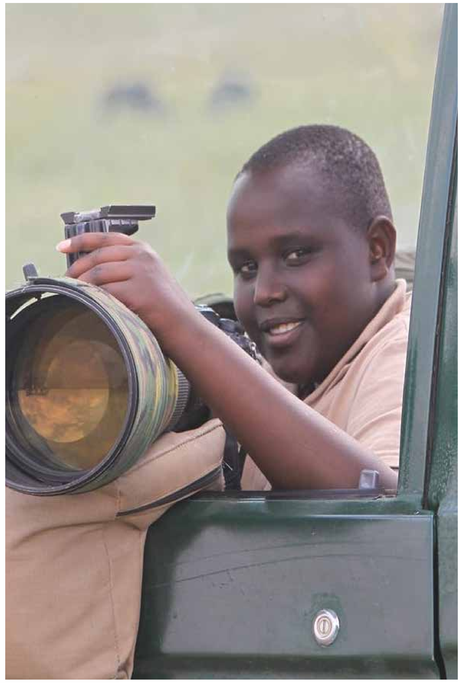
Magical Masai Mara

by Brian Tira

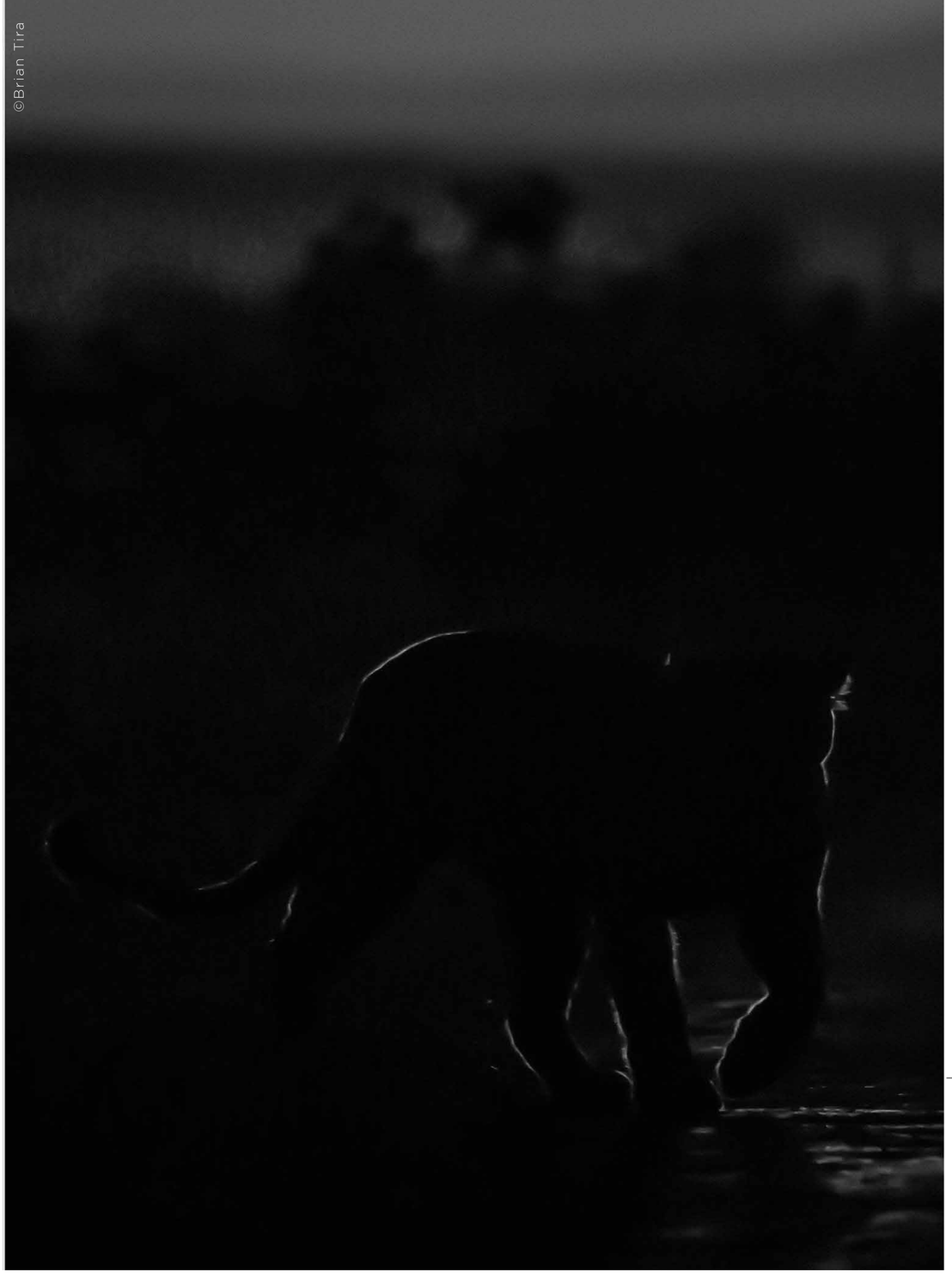
CUB'S CORNER



Brian Tira, a 15 year old, was born and raised in Kenya. A scion of the Masai tribe Brian's childhood was practically in and around the Savannah of Mara. His father is into photography and wildlife conservation and hence Brian was exposed to both wildlife and photography at a very young age. He picked up photography after when he was given his first camera at age four and has not looked back since. He has been photographing the wildlife at Mara for a decade now. He has improved leaps and bounds over the years and is an avid wildlife photographer now raising awareness for conservation and his tribe.

instagram.com/brian.tira/

facebook.com/brian.tira.581



©Brian Tira

Her Views & Visuals

By Romina Viscarret

Manta (*Manta sp*)

Romina is an Argentinian Underwater Photographer and Scuba Diving Instructor. She is committed to Conservation and the animal's rights!

With more than 3,500 dives She has dived in the waters of Galapagos, Brazil, Argentina, Micronesia, Mexico, Thailand, Indonesia, Honduras, Belize, Venezuela, the Dutch Caribbean, and Antarctica.

instagram.com/romiviscarret.fotosub/

Her Views and Visuals

© Romina Vizcarret

Sea Lion (*Otaria flavescens*)

Clownfish (*Amphiprion ocellaris*)

How did your interest in wildlife arise and especially for the subaquatic one?

I had a special connection with animals since I was a child, they were great companions to me. Nature has always amazed me. When I started diving, and later became a dive instructor, I discovered a whole new world and I needed to show people what was there below. A blue ambience, so many colorful animals, corals, textures, caves, it was like being on another planet.

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

I never planned to be a photographer, on the contrary, photography has found me. As I was impressed by nature photography became the natural tool for me to express myself and show how I feel in the presence of a sunset, a manta ray or a light beam coming through the blue water. I'm far away from producing the ideal photos I would like to produce, but I think this is not only about quality and standards for me, it goes beyond: it is part of a process and a personal development adventure. Photography is my way to get to know myself more and more, every day. Although photos are something for others to see, it comes from the deepest corners of yourself.

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

I think we are highly aware of the problems, but most of us are still disconnected.

Glasseyes (*Heteropriacanthus sp*)

© Romina Vizcarret

Sea Lion (*Otaria flavescens*)

Green Sea Turtle (*Chelonia mydas*)

The world is experiencing a global crisis, as humans, we are contaminating, polluting, destroying, and extinguishing animal species with our daily habits. I feel we should question our relationship with nature much more deeply and responsibly. As wildlife photographers I believe we have a great chance to wake people up from distractions, to send a clear message, to show them there are many sentient beings besides us that have the same interest in living, just like ourselves.

I was often in touch with animals, but I could not make a connection between my habits and the suffering of many of them. When I was diving twice a day, I could see the different behaviors in fish. Having fun and making profit out of the ocean and still eating fish was a great personal contradiction that led me to quit eating fish. 90% of the big fish of the planet were gone by 2006 according to a UN Report.

We cannot deny the terrible impact that eating animals has on the planet. It's responsible for 14% of the green gas emissions, deforestation in high scale, both leading to climate change, water usage, habitat degradation and a big decrease of some of the wild species as well. Overfishing and ghost fishing, plus plastic contamination are destroying the ocean's life.

It is fact that using animals is cultural, but I don't think it is right, and I became a vegan which made me feel I was in the right place, where I wanted to be.

Through my photographic work I hope

Manta (*Manta sp*)

Clownfish (*Amphiprion ocellaris*)

Whale Shark (*Rhincodon typus*)

to get people to think how wonderful animals are. I also hope to inspire others to realize that the best conservation effort we can make is not to support animal exploitation in any way.

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

Underwater photography might be very different depending what you want to shoot, big or small animals, ambience, shipwrecks.

The common rule is to get as close as you can. Water is 800 times denser than air and we need to minimize the distance between the lens and the subject in order to have sharpness, get good strobe coverage and reduce backscatter.

Get the right lens, macro, or wide angle. You can use a 60mm or 100mm for underwater macro shots and 10-17 or similar for wide angle photography.

If you have the chance, buy a housing for your camera that is not acrylic, something strong and reliable.
Make sure you can access all the manual settings of the camera (you want to have the capacity to change all the important values underwater).

Use artificial light, two good strobes are ideal since natural light gets filtered in the first 5 meters/15 feet of depth. Be careful with the position of the strobes in order to avoid backscatter (lightening the particles suspended in the water).

Be patient. Underwater photography is still wildlife photography. Being calm and waiting for the right moment applies to underwater shooting as well.
Get to know every species' behavior. It will give you best chances and also it will stop you from interfering with natural behaviors.

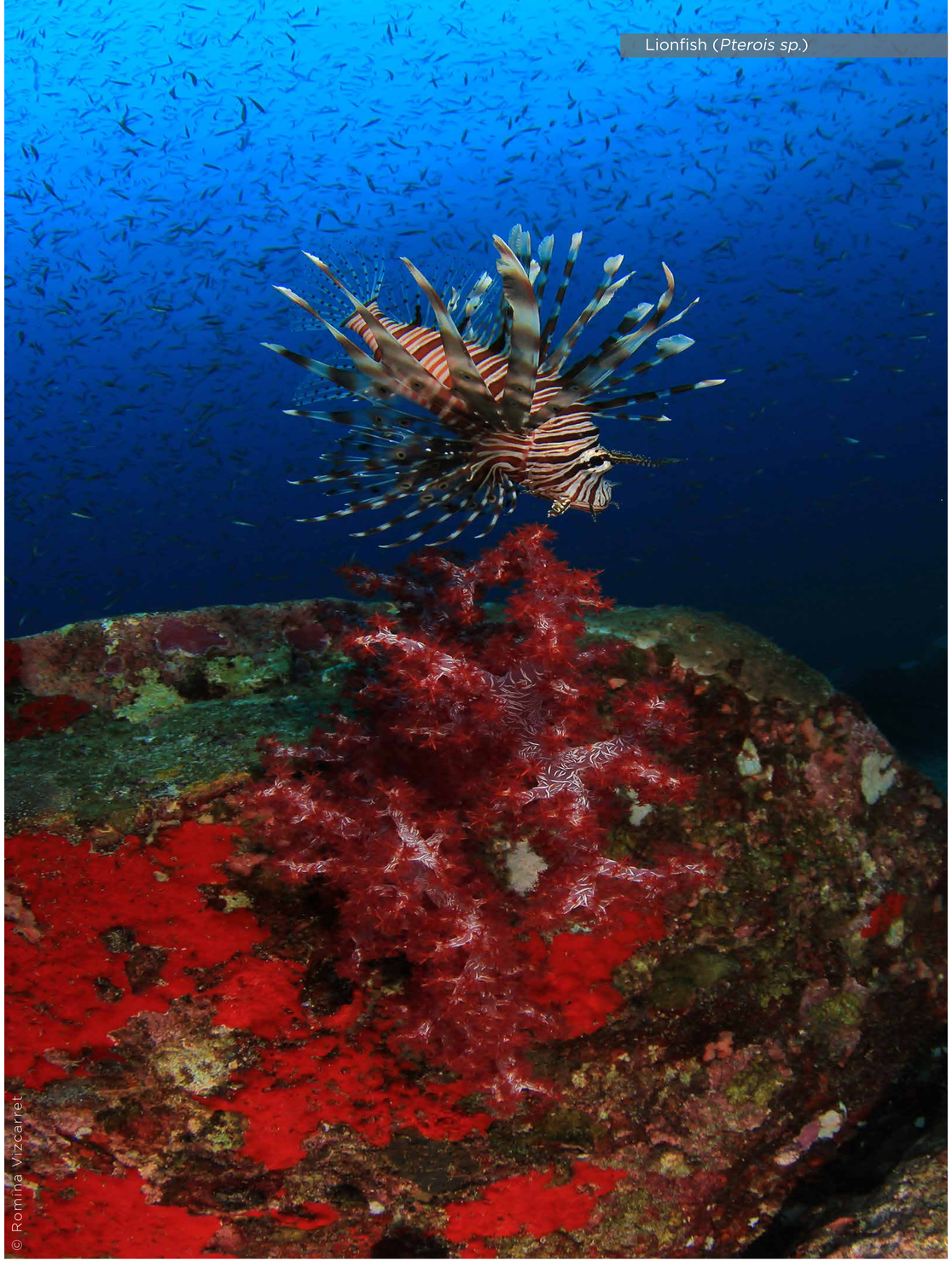
Be respectful. The best photo is worthless if we leave a damaged environment or a stressed animal behind it.

Be a great diver before you start with underwater photography. Being able to control your buoyancy is crucial to be a good photographer and minimize our impact in the underwater environment. Keep it safe, underwater photography is a multi-task practice. Be safe, be aware of your non decompression limits, breathing gas consumption and safety stops. You can always go back to another wonderful dive.

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

I would like to start doing macro underwater photography and visit many diving spots in Argentina. Going back to Asia is always a dream and I also would like to visit the Red Sea for the first time. As an activist for animal rights I would love to become an animal photojournalist.

Tell us something about the gears you use. I use a Canon DSLR camera, she's an oldie but I can afford to replace it in case the system floods. I use a Tokina 10-17mm lens for wide angle photography. I'm a Sea & Sea user for housing with 2 strobes with optic cables.



Lionfish (*Pterois sp.*)

Humphead Parrotfish (*Bolbometopon muricatum*)

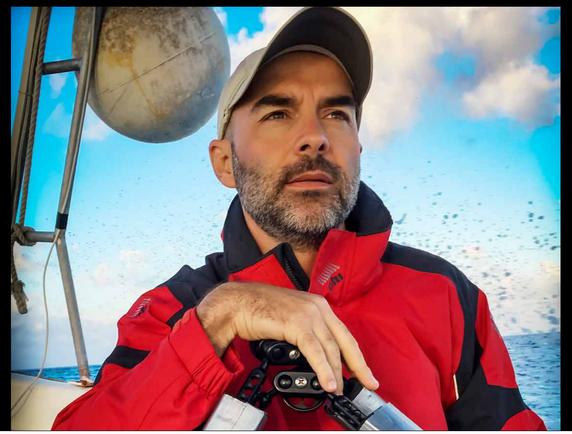
Black Margates (*Anisotremus surinamensis*)

Cuttlefish (*Sepia sp.*)

WHALE SHARKS THE GENTLE GIANTS OF THE OCEANS.

(Rhincodon typus)

By Gustavo Costa



Gustavo is a Professional photographer and scuba diving instructor. Born in Argentina, he moved to the Yucatan Peninsula, Mexico, 15 years ago. His objective is to create evocative images that capture the public's interest in the natural aspects of the planet and thus raise awareness of the importance of its conservation.

https://www.gustavocostaphotography.com/
https://www.instagram.com/gustavocostaphotography/
https://www.facebook.com/gustavo.martin.costa

The boat pulls away and I am left floating alone in the middle of the ocean with my snorkeling gear.

I dip my head into the water and all I can see is the blue-greenish hues of the sea, particles floating in the water, and little else. Visibility is poor, no more than 4 or 5 meters, due to the high concentration of particles, largely fish eggs and plankton, which are precisely responsible for the fact that at this time of year these waters are visited by an extraordinary creature.

Suddenly, emerging from the blue mantle, I am surprised by a gigantic mouth almost a meter wide that advances open wide towards me. Surprised, I barely have time to flap my fins and move away to let the biggest fish on Earth pass me by.

My first experience swimming with the Whale Shark was a moment indescribable in words, but it was so exhilarating and

memorable that it has forced me to return to do it again and again.

The Whale Shark (Rhincodon typus) is a species of elasmobranch, the only member of the Rhincodontidae family. Considered the largest fish in the world, with registered individuals of more than 12 meters in length, it inhabits the tropical and subtropical waters of the planet although here, in the vicinity of the island of Holbox, north of the Yucatan Peninsula, the greater concentration of individuals, sometimes reaching more than 400 specimens, can be encountered.

During the period between the months of May and September, a huge concentration of plankton is produced in these waters, the preferred food of these sharks, which they swallow in large quantities by filtering the water they collect as they pass.

Swimming with the “domino fish”, as it is popularly known for the color and design of its back, is not an easy task. Although they seem slow swimmers observed from the boat, once in the water it is very difficult to keep the pace with them, especially if you carry your photographic equipment, so the most efficient strategy in these cases is to observe the behavior and direction of swimming of the animals before the guide gives the call to stealthily slip into the water and wait for them on the trajectory line.

These gentle giants of the seas can live for almost 100 years and are considered to reach sexual maturity only in their 30s. The population of this species is unknown, but it is considered by the IUCN as an endangered species, due to the fact that in the last fifty years the average temperatures of the oceans are increasing, and this trend is expected to increase. As the water warms, it affects the distribution of species, including larvae and plankton, that the whale shark feeds on. Another threat that this marine species suffers from is massive fishing since the whale shark is considered a delicacy in the diet of many areas of the planet. Fortunately, in Mexico it is a protected species, and its fishing is prohibited. However, the increase in tourist activities related to this species in this area and the transit of boats interrupt their eating habits and cause injuries when they collide with boats.

Photographing whale sharks tends to be a top bucket list item for many underwater image-makers, but it is a difficult achievement. Whale sharks are massive!!! It seems obvious for the fish considered the largest on the planet, but you really get the dimension of it once you are in the water next to it. It is as if you are swimming next to a bus! Therefore, the photographer will have to equip himself with the widest lens he can. Ideally, it should be a fixed or zoom fisheye lens: both offer a field of view of up to 180 degrees and reduce the minimum focusing distance, which means you can get as close to the shark as possible and still capture it in its full.

Artificial lights are a valuable asset in most diving conditions: the light disappears quickly at depth and the flash can add color and contrast. However, when swimming with whale sharks, you want to be as mobile and agile as

© Gustavo Costa

© Gustavo Costa

possible. And, since whale sharks feed on the surface, you can shoot completely in ambient light. So, leave the lights on the boat or at the resort. You will be able to swim faster, maneuver faster, and have fewer settings to worry about.

Encounters with these huge animals tend to be fleeting, but if time is on your side, you may want to try taking photos of different aspects of the animal or try different types of framing or techniques. Look for close-ups of the animal's huge open mouth as it feeds, paying special attention to correctly focusing its small eyes. For this, you will have to be very close to the animal, but always respecting the distance so as not to touch or disturb it.

Whale sharks are inherently shy animals that have never been seen to mate or give birth, so if you are lucky enough to come across any of these behaviors shoot like a possessed photographer, as that material will not only be photogenically incredible, it will also constitute an invaluable documentary record.

On some occasions, when sharks find large amounts of food, they tend to feed in an upright static posture, known among locals as "bottling". These occasions are ideal to make different images without so much physical effort.

Another interesting technique when it comes to large animals is to try to make silhouettes, since this type of photography is relatively easy. To do this, you must dive down a few meters deep and wait for the body of the shark to block the sunlight. It is important to note that here in Mexico, diving while swimming with the whale shark is prohibited and this can only be done with special permits granted by the environmental preservation authorities.

Finally, try to take photos of the back of the animal seen from above. Although this type of photography is not very attractive, it can be of invaluable information for scientists, since the pattern of each shark is unique and serves to identify each individual. Helping science with these photos is an important contribution that we can make as underwater photographers for the conservation of the species.

Also do not forget to make both horizontal and vertical frames, and also try to achieve some images with people that will serve as a scale so that the true dimension of these colossi can be appreciated in our photos.

Interacting with marine life is always a fascinating experience. Doing it with Whale Sharks is on another level all together. They are huge creatures and they have crossed our oceans for 65 million years, so if you have the chance to see them in person, swimming freely and in their natural environment, consider yourself extremely lucky to be able to witness one of the great natural spectacles of our fascinating Planet Earth.

CAUTION: Shark-watching tourism is also causing serious damage. Many individuals have been injured by boat propellers

TRAVELOGUE

White Mountains National Forests – Arizona, USA

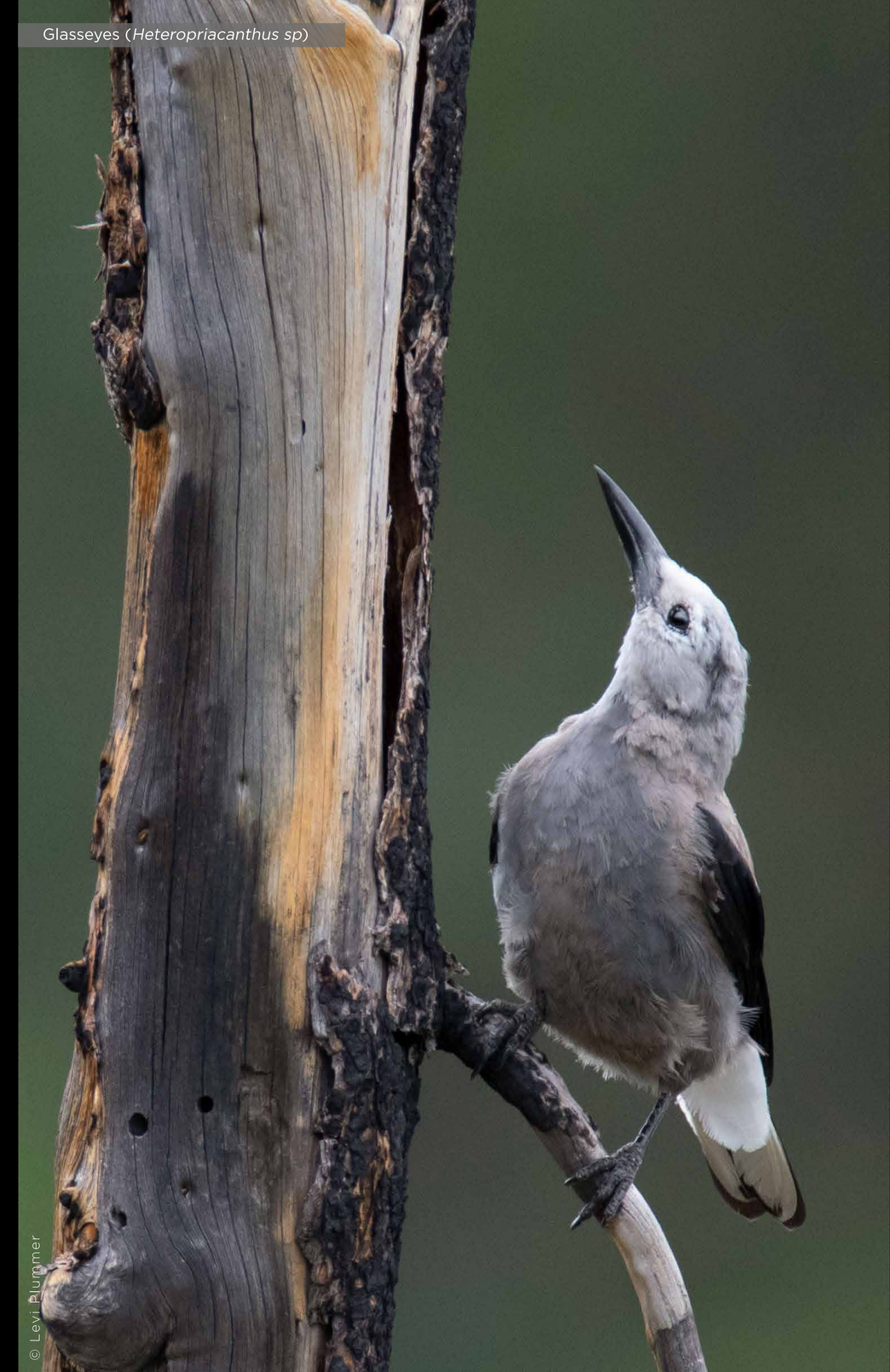
By Levi Plummer

Levi Plummer **is a 17 year old homeschool student from Glendale, Arizona, USA. He has been interested in photography since he was 12. He especially enjoys photographing birds, and is an avid birder. Besides photography he enjoys Ultimate Frisbee, mountain biking, and being outdoors.**

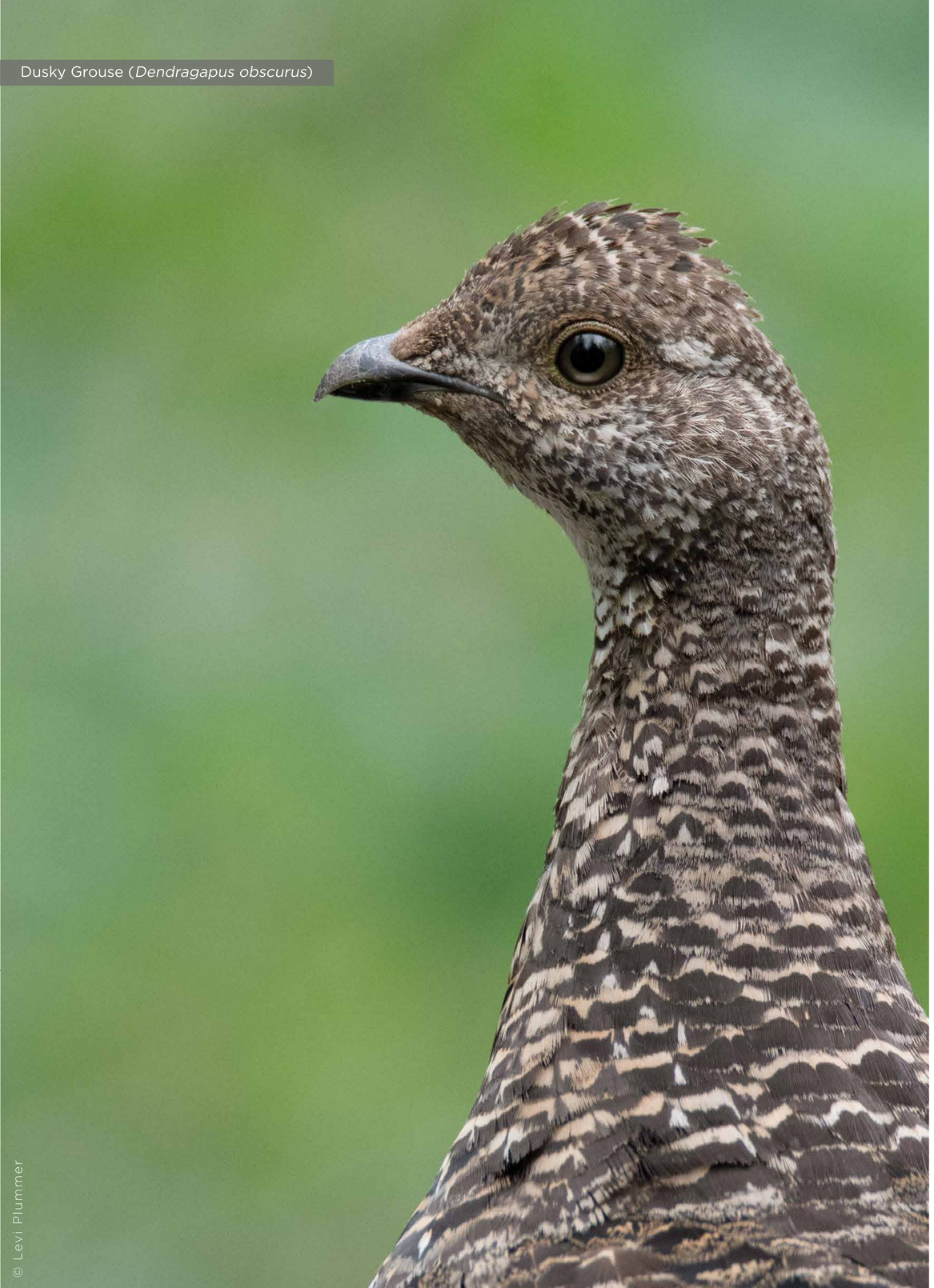
facebook.com/levi.plummer.370

Since I was twelve years old, I have always wanted to go to the White Mountains in northeastern Arizona, USA Whether it was for scenic hikes, birding, photography, or just cool weather, there were so many things that enticed me to visit this special place.

In August 2020, I finally had the chance to take this long-awaited trip. While our family had originally planned to go to Olympic National Park in Washington State this summer, due to COVID-19 we switched our focus and spent five days exploring all of the treasures found in the White Mountains. My family consists of my dad, who supports my photography and is a creation-lover like myself; my mom, who loves hiking, being outdoors, and always makes sure I eat enough (as I tend to forget to when I'm focused on photographing wildlife), and my brothers who also enjoy being out in creation, and although they are generally against waking up at dawn they are great to have along and have found many cool animals



Rufous Hummingbirds (*Selasphorus fufus*)



and birds over the past couple years.

The White Mountains of Arizona cover approximately 5,015 square miles (1,298,879 hectares). They are owned under three types of land: State Land, National forest Land and Native Land. And while you need to acquire special permits for hiking on Native Land, I found that there is plenty to explore without going on the reservation. At the highest point (Mt. Baldy), the elevation reaches 11,421 feet (3,481 meters), the second highest in the state. This mountain range boasts the best opportunities for finding high elevation bird species in Arizona, such as Dusky Grouse (*Dendragapus obscurus*), American Dipper (*Cinclus mexicanus*), Pine Grosbeak (*Pinicola enucleator*), American Three-toed Woodpecker (*Picoides dorsalis*), Gray Catbird (*Dumetella carolinensis*), Canada Jay (*Perisoreus canadensis*) and Clark's Nutcracker (*Nucifraga columbiana*). This range is also an important refueling area for migrating hummingbirds in late summer. There are nearly forty lakes and reservoirs in this region which provide vital stopover and wintering locations for many species of waterfowl and shorebirds.

Because of its high elevation, this area has not only stunning fauna but exquisite flora. Quaking Aspen (*Populus tremuloides*), with their white trunks create a wonderful contrast with many species of pine and conifers. The creeks are lined with lush green grass and willows in summer, while in autumn, the aspen foliage turns a shimmering gold color that is incredibly striking. Although some of the area is fire-scathed from the 2011 Wallow fire which encompassed 469,407 acres (189,962 hectares), it is still ruggedly beautiful. Additional tree species include Quaking Aspen (*Populus tremuloides*), Ponderosa Pine (Pinus ponderosa), Douglas-fir (*Pseudotsuga menziesii*), White fir (*Abies concolor*) and many others. The true splendor of this area is realized when hiking the Mt. Baldy No. 94 trail.

This scenic 16-mile round trip hike follows the Little Colorado river and climbs about 2,000 feet (610 meters), from around 9,200 feet (2804 meters) to 11,200 feet (3414 meters), as it winds its way through corridors of aspen and conifers as well as open meadows filled with wildflowers. It is a spectacular and picturesque hike, arguably one of Arizona's most beautiful. We started the hike at 6:50 am and hiked for four hours to the end of the West Baldy Trail which was about two hundred feet from the summit. Because the land at the summit is owned by the White Mountain Apache tribe this area cannot be accessed without a special permit.

One of my target birds for the trip that I wanted to photograph was the elusive Dusky Grouse (*D. obscurus*). This large gallinaceous bird is seldom seen though highly sought after. I was lucky enough to find a pair along the trail, and once found these grouse are quite tame, which allowed me to make some nice photos. I also found a pair of American Three-toed Woodpeckers (*P. dorsalis*), two American Dippers (*C. mexicanus*), four Canada Jays (*P. canadensis*), and many more. The Canada Jays (*P. canadensis*) were particularly photogenic because of their habit of hanging around people for handouts. These jays are also gregarious; they travel in groups of four to six making

Semipalmated Plover (*Charadrius semipalmatus*)

them much easier to locate. Nevertheless, Canada Jays (*P. canadensis*) are an exquisite, inquisitive, high-elevation specialty species.

The American Dippers on the other hand were quite skittish, not allowing close approach. Over the course of about half an hour with plenty of patience and stealth however, they gradually became used to me crawling up to them on my stomach. Consequently, I obtained some very pleasing images. Along the Baldy Trail there were also numerous active chipmunks, squirrels, and a pair of Mule Deer (*Odocoileus hemionus*) that posed for me. It rained the entire hike back; the rain was both a blessing and a curse. We were soaked to the skin and quite cold, but on the other hand lots of birds and animals became more active during the rain and I was able to get a cool shot of a male Western Tanager. I had an amazing time hiking this wonderful trail!

On one of our days in the White Mountains we decided to explore Sipe White Mountain Wildlife Area. Sipe is one of many wildlife areas well-managed by the Game and Fish Department. This area is a major migration stopover for hummingbirds. Sipe lies near the foothills of Escudilla Mountain where one of Arizona's last known Grizzly Bears (*Ursus arctos horribilis*), a large boar named "Old Bigfoot" was killed.

While we were at Sipe, I tallied at least 120 individual hummingbirds. There were four different species: Rufous Hummingbird (*Selasphorus rufus*) by far the most abundant and aggressive, Black-chinned Hummingbird (*Archilochus alexandri*) (there were only a few individuals of this species as we were there before the bulk of the Black-chinneds rolled in), Calliope Hummingbird (*Selasphorus calliope*) (the smallest hummingbird in North America), and Broad-tailed Hummingbird (*Selasphorus platycercus*) (a hummingbird with a large tail and distinctive wing trill).

It was a surreal experience watching and listening to dozens of hummingbirds at any one time flying around and competing for a place at the feeders. It was like a swarm of bees! For a time, I just watched these wonderfully designed little creatures, captivated by their incredible flight maneuvers and fiery dispositions. I then began taking photos of these flying jewels focusing especially on the striking male Rufous and Calliope Hummingbirds (*S. rufus*) and (*S. calliope*) respectively. The occasional cloud cover made for the perfect conditions for photographing them. Cloud cover diffuses the light and sends it in all directions thus illuminating the male hummingbird's gorget from all sides. Although the hummingbirds were very busy feeding, I was able to photograph some that held still for a couple seconds.

Another draw to Sipe Wildlife Area was the chance to see Pronghorn Antelope (*Antilocapra americana*), the fastest mammal in North America. Although this time we failed to find any pronghorn, we did see a large herd of Rocky Mountain Elk (*Cervus elaphus nelsoni*) and I am hopeful that next time we will find some pronghorn. During our time at Sipe, I recorded fifty-four species of birds including Peregrine Falcon (*Falco*

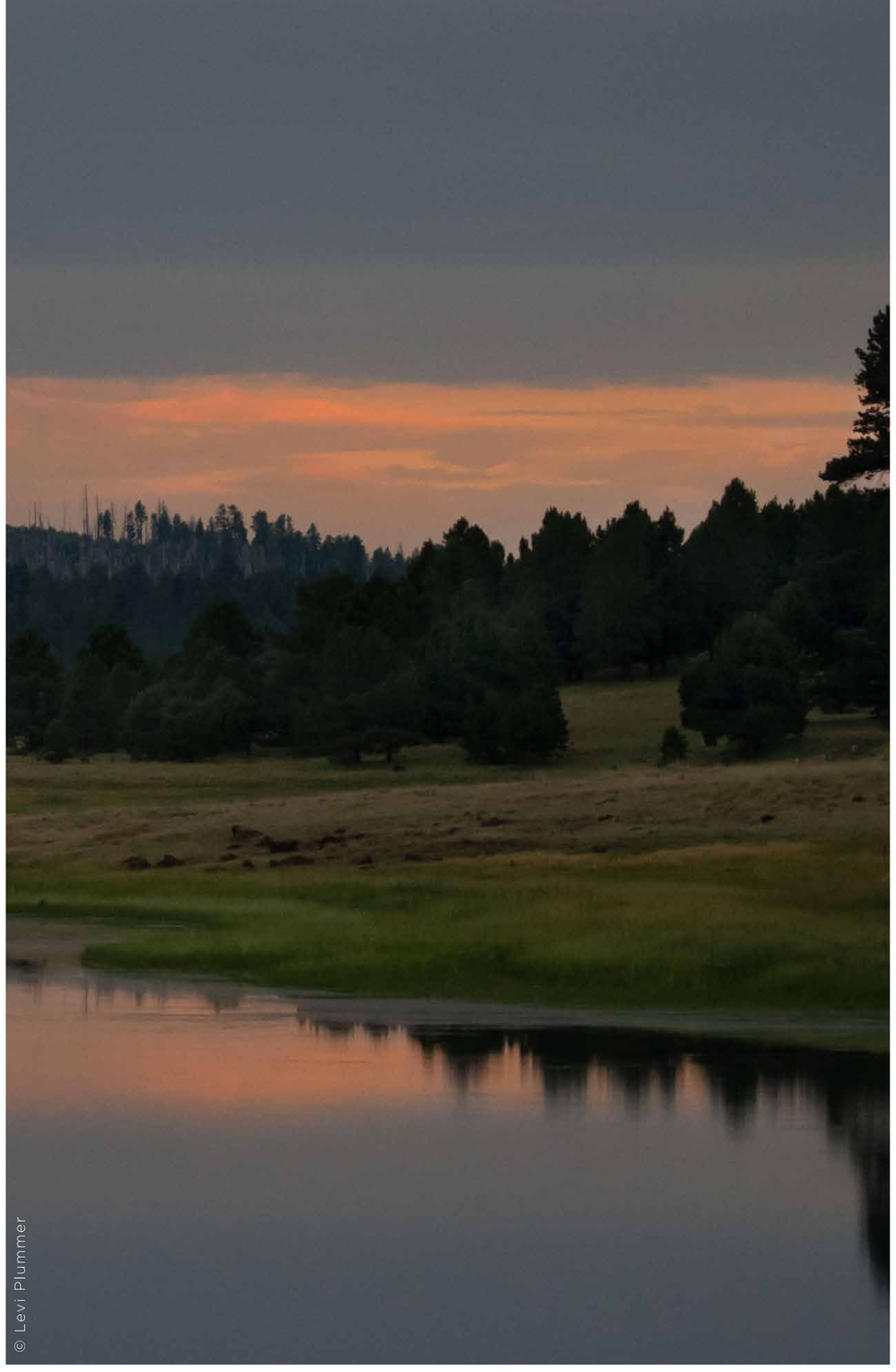
Osprey (*Pandion haliaetus*)

Dusky Grouse (*Dendragapus obscurus*)

peregrinus), Willow Flycatcher (*Empidonax traillii*), Lazuli Bunting (*Passerina amoena*), and Barn Swallow (*Hirundo rustica*).

My family and I also explored the three miles or so of expansive forest similar to Mt. Baldy behind the place where we camped. In this area I found yet another pair of Dusky Grouse (*D. obscurus*), this pair being even more photographically cooperative than the first. The female grouse allowed me to get within eight feet before calmly walking away! (I know this because the minimum focus distance on the lens I was using is eight feet and could not focus on her)! This goes to show that while these grouse may be difficult to find, if you're patient and spend enough time in their preferred habitat, you will inevitably run into them. This beautiful area also yielded a breeding pair of Green-tailed Towhees (*Pipilo chlorurus*) which were busy feeding fledglings, a family of Cordilleran Flycatchers (*Empidonax occidentalis*), and many Mountain Chickadees (*Poecile gambeli*). Other photographic opportunities that I had in this area were rabbits, chipmunks, squirrels, horny toads, tiger beetles, and Mule Deer (*Odocoileus hemionus*). I also set up a hummingbird feeder and succeeded in attracting Rufous, Calliope, and Broad-tailed Hummingbirds (*S. rufus, S. calliope, and S. platycercus* respectively) to it. This allowed me to photograph the speedy hummers right in our campsite.

Adding to this already stellar adventure, we spent time on Rainbow Lake near the Pinetop/Lakeside area of Arizona. This privately owned lake is unique because its muddy shoreline is especially appealing to numerous migrating shorebirds. Each morning of our stay, I packed my camera and binoculars in my dry bag and headed out on the lake at sunrise in a kayak, searching for water birds to photograph. Being in a kayak allowed me to glide up to shorebirds silently and at eye-level. I have noticed that shorebirds are much less wary of approach from water than by land. This allowed me to get incredibly close to some usually skittish species such as Long-billed Dowitcher (*Limnodromus scolopaceus*) and Semipalmated Plover (*Charadrius semipalmatus*). Other species that I was able to photograph were Osprey (*Pandion haliaetus*), Neotropic Cormorant (*Phalacrocorax brasilianus*) and Virginia's Warbler (*Leiothlypis virginiae*). Photographing Osprey is especially interesting--watching them dive into the water to capture a fish and then seeing them shake off the water is an awesome experience. Osprey are not the only fish-loving birds at this lake. Other visitors whose main diet is fish are cormorants (*Neotropic and Double-crested*), Great Blue Herons (*Ardea herodias*), Green Herons (*Butorides virescens*), and Belted Kingfishers (*Megaceryle alcyon*). Like all trips it felt like this one went way too fast. All to soon it was time to pack up and make the four-hour drive back home and leave the cool mountains for the 110-degree temps (43 degrees Celsius) of the Sonoran Desert we call home. Our family had a wonderful time hiking, exploring, and photographing this wonderful mountain range--the White Mountains of Arizona. One thing is for sure, we will be back.



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SNIPPET

Charismatic and enigmatic, the Glass frogs (*Centrolenidae*) are one of the highlights when you visit the rainforest of Central and South America. They have an amazing characteristic; a translucent skin that makes their insides visible. Simply looking through their underbelly gives a view of their intestines, lungs, and sometimes even their beating heart.

Most Centrolenidae are a shade of green, ranging from light lime green to dark green but the abdominal skin of some members of this family is transparent. Some of them also have green bones because of green bile salts. Studies have shown that certain glass frogs contain a unique pigment in their skin that reflects the same wavelength infrared radiation that plants do. Infrared reflectance may confer adaptive advantage to these arboreal frogs both in thermoregulation and infrared cryptic coloration.

There is another feature that makes this group of amphibians striking animals. Parental care is common among glass frogs, and the males oversee that task. Males sometimes guard multiple clutches. Small clutches of eggs are laid above the water on leaves, rocks, or bromeliads. When the tadpoles hatch, they fall into the water below, and live in the muck and leaf litter on the bottoms of streams. The male glass frogs are particularly territorial when it comes to guarding eggs against potential threats. It releases loud squeaking noises meant to ward off predators like wasps and other frogs, and sometimes can start a fight with potential predators.

Glass frogs are nocturnal and spend their days hidden under leaves and among branches. They are mostly arboreal, typically inhabit the exuberant vegetation of the rainforests by rivers and streams.

There are about 130 known species of glass frogs, but in the tropical rainforest, scientists are often discovering new species.

New studies showed that the translucent

Glass Frogs

By Cynthia Bandurek

Emerald Glass Frog (*Esparadana prosoblepon*)

SNIPPET

Emerald Glass Frog (*Esparadana prosoblepon*)

skin can be useful as a cryptic strategy to avoid predators. The study found that porcelain skin can adapt to become brighter or darker to blend in with their surroundings. They also found that the frog's legs were more translucent than its body, which helped diffuse the outline of its silhouette and shield it from the gaze of predators. But there is still so much to know about these magical creatures hidden in the tropical jungles.

Of the 134 species in this family, the World Conservation Union (IUCN) considers sixty to be at risk, and another forty-nine to be Data Deficient, which means too little information is available to make a judgment about the threat of extinction. Of the sixty at-risk species, six are Critically Endangered and face an extremely high risk of extinction in the wild.

They are threatened or at risk of becoming threatened with extinction in the future. Habitat loss and possibly infection with a fungus, called chytrid fungus, are likely causing many of the problems for these frogs.

Species: *Sparadana prosoblepon*, pictures taken in Ecuador, both sides, Chocó Forest, and Amazon jungle at night in the vegetation by the streams. I used a macro lens 100 mm 2.8 canon with a flash and a handmade diffuser.

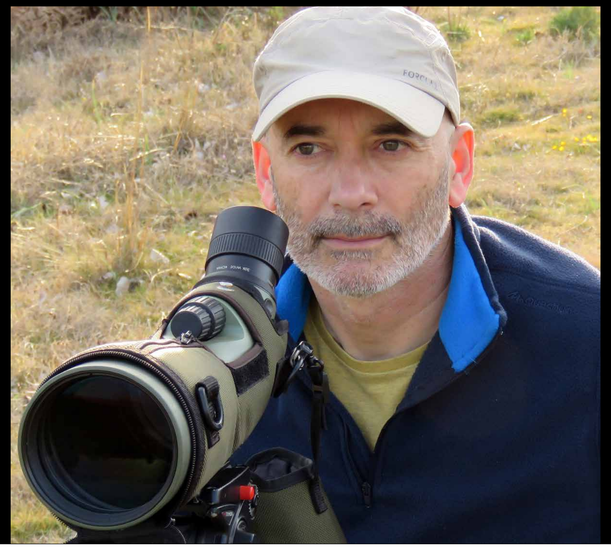
Cynthia Bandurek is an Ecologist, naturalist, and nature photographer focusing on Conservation. She is also a Contributing editor for PT Explorers

Emerald Glass Frog (*Esparadana prosoblepon*)

SNIPPET

Naturalistic Art, A Tool For Conservation By Ignacio Sevilla Hidalgo

Ocellated lizard (*Timon lepidus*)



Ignacio was born in the sixty's decade of the past century in Madrid. His grandfather and grandfather's brother were artists and they worked as painters of big murals for the city cinemas and theatres. Undoubtedly, they were Ignacio's first inspiration in the artistic world. Later he began to combine his drawing skills with the knowledge of nature that surrounded me. Since there, he has had his works exhibited in several places around his country home, and contributed scientific illustrations in different magazines, studies, and other publications as well. Ignacio's last plates of birds is featured in "GUIA DE AVES DE ÁVILA", published in 2019. Nowadays, he works as a freelance artist and bird watching guide in Spain.

Facebook: Nacho Sevilla Illustrations

IG: Nacho Sevilla

Despite living in a city like Madrid, I spent most of my childhood in contact with nature. My family had a holiday home, which my grandfather had it built in a small town in the province of Ávila. He was very keen on hunting, and by extension, country walks. He encouraged his grandchildren to share his expeditions. There, we enjoyed weekends and long summer holidays and it was unusual for us not to contemplate nature. I would spend hours watching swifts flying

©Ignacio Sevilla Hidalgo

Kea (*Nestor notabilis*)

Common Carp (C*yprinus carpio*), Black Bass (*Micropterus salmoides*), European Pike (*Esox lucius*), Pumpkinseed (*Lepomis gibbosus*), Rainbow trout (*Oncorhynchus mykiss*)

over my head, noisy sparrows fighting for a piece of bread, and conflicts that occurred when a praying mantis came across a line of ants who got to and from their anthill. Moreover, I was very lucky to visit the next pine forests and the pastures sprinkled with trees that surrounded our country house. The rich fauna that I could find in every corner stimulated my infant imagination and raised my desire to know the secret life of those creatures and name them.

I cannot remember the first time I took a pencil to try to reproduce on a sheet of paper some of the images I had contemplated during the walks with my grandad. Perhaps, it was when I first saw a woodpecker or, that afternoon, when I observed a collared-water-snake eating a little fish on the bank of a river. Since I can remember, I have always been trying to capture personal experiences and imprison them on my drawings, most of the time related to nature and mainly to birds. Attempting to draw what I saw, was a way to keep the memories, to live the experiences through those sketches and apprehend what surrounded me. Furthermore, through my pictures, I could also share those magic moments with others, talk about them and learn from the exchange. For me, representing nature was one more path to knowledge.

My first efforts, and those which came next, were really discouraging. My hand was not able to imitate properly the image I had in my brain and the results were far from what I expected. My family and friends praised my work, which was cold comfort, so I felt motivated enough to continue. Over time, I discovered that others, before me, had experienced the same necessity and had left their legacy in the way of “field notebooks” an essential tool of every naturalist and a concept I immediately felt hooked with. The famous “field notebooks” by Felix Rodríguez de la Fuente were a source of inspiration, as well as the old Natural History Treaties we had at home, which were full of fabulous illustrations representing ecosystems, hunting scenes and exotic species of extraordinary beauty. I copied again and again those images, trying to imitate the great artists who had provided their work for the dissemination of nature.

Through self-study, many hours of dedication and little by little, I became satisfied with some of my results. I broadened my catalogue of techniques through trial and error and I went from color pencils to inks, watercolors, charcoal... feeling that mixture of joy and frustration which defines the progress of human learning. This journey has not finished yet, I am still experimenting, trying new methods, and seeking for inspiration in my colleagues. Fortunately, it is always possible to include new acquisitions to our skill baggage.

After my veterinary studies, my first steps in the labour market were focused on environmental education. I am still working in such an important field, since once you have been involved, it is almost impossible to cease. The need to communicate with my students enabled to discover new possibilities. I included my drawing skills into the teaching activity, without high artistic standards, but to make more attractive and understanding the contents for the students, and later on for the teachers.

Little owl (*Athene noctua*)

Iberian wolf (*Canis lupus signatus*)

Cinereous Vulture (*Aegypius monachus*)

©Ignacio Sevilla Hidalgo

Thanks to that, I could go on combining not only education, but also naturalistic art and direct contact with the environment, three fundamental pillars to achieve the goal of conservation.

In recent years, I have managed to devote more time and effort to emphasize my work as a wildlife illustrator. Thus, I have taken part in solo and group exhibitions, I have cooperated in several publications and my works have also supported informative materials and environmental awareness-raising campaigns. Besides, I have attended and participated in various trade fairs in Spain related to ornithological and nature tourism. Since 2018 I have been involved in the organizing team of Ornitocyl, in the province of Ávila (Castile-León). In this fair I am in charge of the “Wildlife Artists” coordination, fostering workshops, live shows and group art exhibitions. This kind of great events are a unique opportunity to show the work of wildlife artists and bring pieces of art, not common in art galleries, closer to the general public. Visitors have the opportunity to buy replicas, different items at affordable prices and merchandising products such as mugs, T-shirts, backpacks... printed with the artist’s works. What is more, you can get inexpensive original pieces of art. This fact differs from the idea of the elitist conception of some kind of markets.

The models of my illustrations are usually the Spanish flora and fauna, in particular birds. I rarely draw species I have not been in contact with or observed in their natural environment. Therefore, previous field research, the drafts from natural models, constitute the base in which I start to build the image. Most of the backgrounds are clear and neat, highlighting the main subject, since I believe that every species is an artistic expression in itself.

I pursue to idealize the shapes and spotlight the details that I consider most relevant, just to highlight the subject in an uncluttered environment. For that purpose, I use various techniques like charcoal, graphite, ink, color pencils... but watercolor allows me such a fresh and subtle coating making it my favorite option. I do not choose large formats, as most of my drawings will become part of divulgation works, which will be published in small size, what makes it easy to scan and treat digitally.

Today, I do not see the idea of education without supporting images. I strongly believe that natural illustration should also be considered a real art form at the service of knowledge and conservation.

Cinereous Vulture (*Aegypius monachus*)

European nightjar (*Caprimulgus europaeus*)

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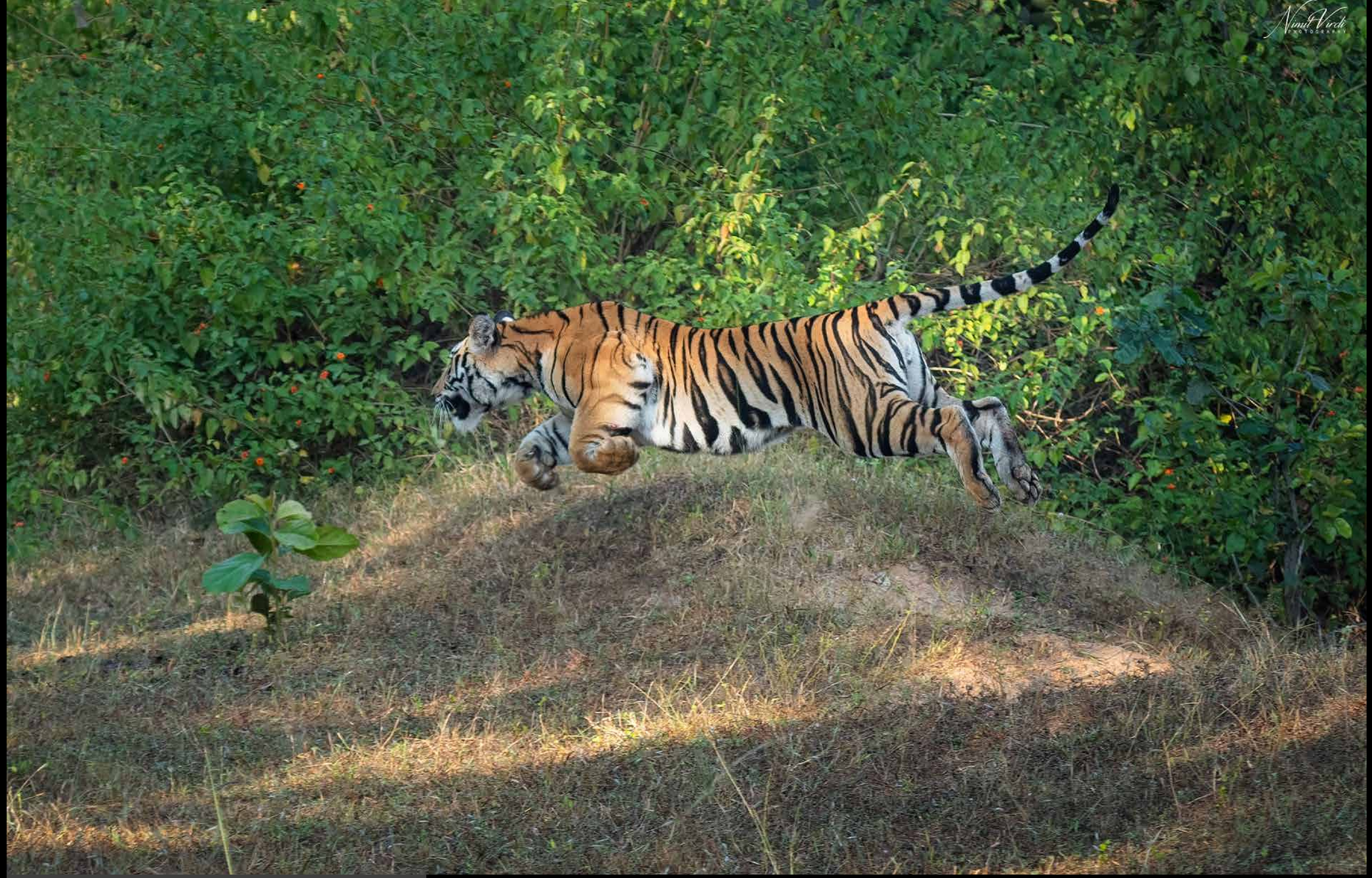
Blue tit (*Cyanistes caeruleus*)



YOUR GALLERY

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Nimit Virdi

Tiger (*Panthera tigris*)

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Shyam Menon

Steppe Eagle (*Aquila nipalensis*)

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Israel Sade

Little Owl (*Athene noctua*)

YOUR GALLERY

Kamal Bownaan

Agama Agama (*Agama batu kepala merah*)

YOUR GALLERY

Akhil George

Stonechat (*Saxicola torquatus*)

YOUR GALLERY

Nick

Grey Hypocolius (*Hypocolius ampelinus*)

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Sreejith Karimbil

European Roller (*Coracias garrulus*)

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Mukund Kumar

Great Egret (*Ardea alba*)

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Sanjeev Kumar

Chital (*Axis axis*)

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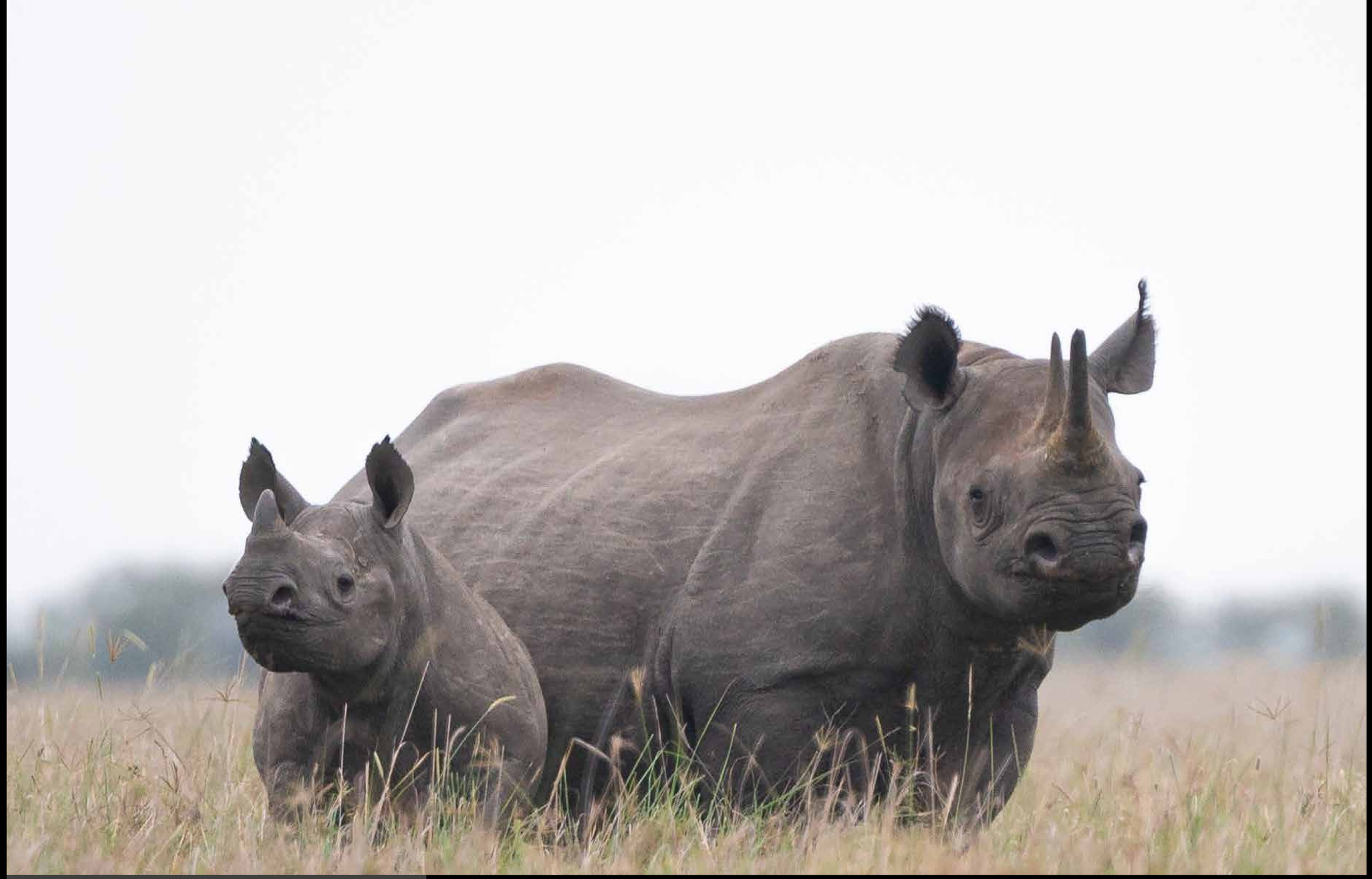
Shine Balan

Streaked Weaver (*Ploceus manyar*)



YOUR GALLERY

Solomon Rajkumar

Black Rhinoceros (*Diceros bicornis*)

YOUR GALLERY

Sujit Jose

Black Swan (*Merops orientalis)*

YOUR GALLERY

Vignesh Ramachandran

Cheetah (*Acinonyx jubatus)*

YOUR GALLERY

Munib A Chaudry

Leopard (Panthera Pardus)

EXPLORERS

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INTO THE WILD

With Steve Winter

WILD TENDER MOMENTS

By HERMIS HARIDAS

TALES OF A POLKA-DOTTED ZEBRA

By Nisha Purushothaman