

Together For Wildlife

PHOTOGRAPHS BY **JOEL SARTORE**

NATIONAL GEOGRAPHIC
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Wildlife Reserves Singapore Group





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Black-backed Jackal
Canis mesomelas

IUCN STATUS: LEAST CONCERN

Water Strider

Gerris lacustris

IUCN STATUS: NOT EVALUATED

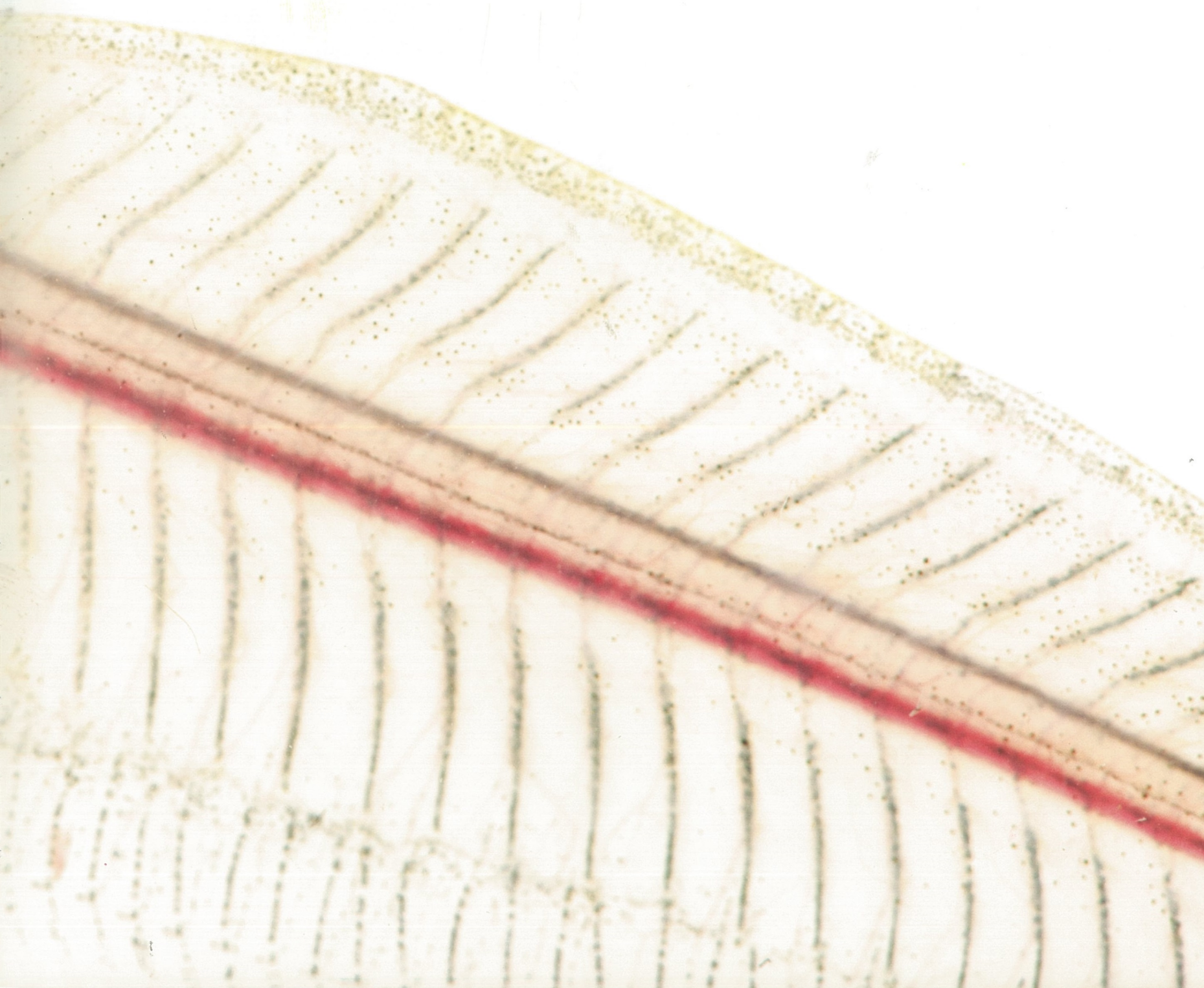


Desert Warthog
Phacochoerus aethiopicus

IUCN STATUS: LEAST CONCERN



Glass Catfish
Kryptopterus bicirrhus
IUCN STATUS: LEAST CONCERN





Indian Wolf
Canis lupus pallipes

IUCN STATUS: LEAST CONCERN

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Foreword

JOEL SARTORE

National Geographic Photographer

As a wildlife photographer for the National Geographic for the past 27 years, the number one question I get is: Have you ever come close to being killed on an assignment? I've even been asked if I had gotten killed on assignment. Well, not yet. Though I did come pretty close to it at Singapore Zoo. A lightning bolt struck a building that I was literally standing right next to. I heard it sizzle for a split second before the thunder boomed.

Thunderstorms are a relatively common occurrence in this part of the world, and apparently more so in this part of Singapore. The staff at Wildlife Reserves Singapore (WRS), which manages Singapore Zoo, Night Safari, River Safari and Jurong Bird Park, have an affectionate term for it - zoo weather. It is this warm and wet equatorial climate that produces the lush surrounding vegetation that you will find at

Singapore Zoo. Quite naturally, it was conceived of as a 'rainforest zoo' from the outset. Its mission? To bring people closer to nature.

The majority of the human population now live in cities. Our connections with nature decrease with every new generation. Zoos are some of the few places where we can still smell, see, hear and perhaps even touch animals. Without zoos, we could completely lose our connections with the natural world. Without zoos, a lot of conservation work would not have been done. It would not have been possible to bring China's pandas back from the brink of extinction. Or North America's whooping cranes. Or South Africa's cheetahs.

Increasingly, zoos are serving as conservation centres. In many cases, they're the only things that

stand between many rare species and extinction. Take the Singapore freshwater crab for example. With only an estimated few hundred mature individuals in the wild, it's a race against time to save these critically endangered freshwater invertebrates. It's a species found nowhere else in the world and Singapore Zoo is playing an instrumental role in bringing them back from extinction. And they're just one of the many species being cared for by WRS. From elephants in Sumatra to snub-nosed monkeys in Vietnam, they've gone beyond the shores of Singapore to support the conservation cause around the region.

It's been 45 years since Singapore Zoo first opened its doors to guests. With the addition of the other parks, each featuring a unique living collection, WRS is now able to offer more opportunities than ever for people to appreciate the amazing diversity of life forms that we share our planet with. All these years, the mission of Singapore Zoo has always been to connect people and nature. It has stayed the course for close to half a century. That's a long time. It's only been slightly more than a decade since I started the Photo Ark with that first photo of a naked mole rat at the Lincoln Children's Zoo. Will I get to complete my mission of photographing all 12,000 species currently in human care? I don't know. A project of such magnitude takes time. It will take at least another 12-15 years. I'll go on as long as I can.

As it turned out, that building struck by lightning was made of metal and I lived to tell the tale. Over

the next 12 days I went on to photograph some 150 species in WRS' four wildlife parks. I returned on a second trip to photograph more species. This book presents a selection of the photographs. It was also at Singapore Zoo that I crossed the halfway mark of my quest.

A handsome proboscis monkey by the name of Jaka became the 6000th species to board the Photo Ark. Only my first stop in Southeast Asia and I've had the chance to photograph animals ranging from the Singapore freshwater crab to the gentle wildebeest to a tiny insect, the water strider. I was both humbled and thrilled.

Scientists say we are in the midst of the sixth mass extinction event in the history of Earth. Every species has immense value in the grand scheme of things. How many species are we going to kill off before we kill ourselves? We are the only species able to do something about this. The Photo Ark project is my way of doing the right thing. What about you, what are you going to do? Picking this book up was a useful first step. In the pages that follow, you'll find out more about WRS, their living collection, the threats faced by species in the wild and actions that you can take to make a difference. I hope you'll be inspired enough to do the right thing as well.

The time to act is now.

Let's not miss the boat on this one.



Long-tailed Macaque
Macaca fascicularis

IUCN STATUS: LEAST CONCERN



First words

It seemed innocuous enough. A ball of wide-eyed cuteness with furry arms splayed in seeming enjoyment of a good tickle. YouTube videos showing pet slow lorises being tickled have resulted in netizens the world over clamouring to bring one of these cuddly creatures home.

But look deeper into those dewy eyes and you might get a sense of its woe.

These shy, nocturnal primates are supremely unsuited to life as domestic pets. For one, they're venomous. The act of raising its arms above its head when it is tickled is not an act of enjoyment. Far from it. The slow loris is in fact attempting to access a venomous gland on its elbow - an act of self-defence.

Slow lorises lick the toxin secreted from glands in their elbows and mix it with their saliva, to be used when they bite. Those with young may also lick their offspring all over with it, possibly as a way to protect them from predators.

The toxin causes anaphylactic shock in people, which can be potentially fatal. If you see a tickled loris raising its arms, it probably wants to give the person doing the tickling a nasty bite if it had the chance - and if it still had its teeth.

In all probability, it wouldn't have them.

Slow lorises caught for the pet trade often have their canine and incisor teeth pulled out with pliers or clippers. This is done to protect their potential

Previously, well-meaning animal welfare groups have rescued lorises from pet markets and immediately released them back into nearby forests. These groups didn't know better. Given that there are five species of slow lorises, cross-breeding between different species might have resulted when these rescued animals were unwittingly thrown into the wrong habitat. The genetic integrity of the lorises becomes compromised when hybridisation happens.

Action is needed. Well-informed action.

The next time you watch a video of a slow loris being tortured by tickling, bear in mind that the onus is on you, on all of us, to do the right thing for the animal. Post a comment that highlights the true nature of the behaviour. It only takes a couple of minutes at most. But it may very well make a world of difference.

Read on to learn more. As they say, knowledge is power. Don't doubt that you, too, have the power to do more for wildlife.



A close-up photograph of a Starlight Bristlenose Pleco (Ancistrus dolichopterus) against a black background. The fish's head is on the left, showing its large, circular mouth with orange-yellow, fleshy lips. The body is covered in small, white, star-like spots. The most prominent feature is the long, dark, spiny appendages (bristles) that extend from the back and sides of the head, each adorned with small white spots. The overall texture of the fish appears bumpy and granular.

Starlight Bristlenose Pleco
Ancistrus dolichopterus
IUCN STATUS: LEAST CONCERN

Singapore Freshwater Crab
Johora singaporensis

IUCN STATUS: CRITICALLY ENDANGERED





Nature at our doorstep ➤

Singapore Freshwater Crab *Johora singaporensis*

IUCN STATUS: CRITICALLY ENDANGERED

This freshwater crab is uniquely Singaporean. It is not found anywhere else on Earth. Located only in three small streams, it is one of the 100 most threatened species in the world. Habitat loss, aquatic pollution and siltation are likely threats to its survival. A slight change in its habitat could wipe out the already fragmented population.

To save this species from extinction, the Singapore Freshwater Crab Working Group was formed in 2014. We are a member of the working group, whose mission is to strengthen multi-agency collaboration, study and breed *Johora singaporensis* for future reintroduction.

WRSCF also funds a project that involves monitoring the population of the freshwater crab, the findings have led to the introduction of the crab in a new location. We have set up a facility to house the species, and hopefully in time, to breed it for release into the wild.



Nature at our doorstep

It used to be that mentioning Singapore and crab in the same breath only serves to conjure up images of the signature dish Singapore chilli crab. We formed the Singapore Freshwater Crab Working Group together with representatives from National University of Singapore (NUS) and the National Parks Board (NParks) to ensure the Singapore freshwater crab finally gets the right kind of attention.

At first glance, this tiny brown crustacean is hardly impressive. A full-grown specimen is about the size of half your finger. Yet it is one of the top 100 most threatened species in the world. Critically endangered on the IUCN Red List. And only found in Singapore.

When we hosted the Roundtable on Freshwater Crab Conservation in March 2014, various stakeholders, including representatives from NParks, NUS and IUCN, got together to firm up a conservation plan for the Singapore freshwater crab. It became the first crustacean species to have an official conservation strategy document for it.

Our little crab was receiving treatment usually reserved for the pandas and the tigers, the charismatic faces of wildlife conservation. This turn of events took many by surprise. Among them was Professor Peter Ng. He noted that the very fact that a “tiny, unsexy, boring-looking small animal without a backbone” was now deemed worthy of conserving marked a dramatic mindset shift over the years. Professor Ng is the same crab expert who discovered the Singapore freshwater crab back in 1986. “It is not a bad goal. It will be a tough goal. And they may well fail,” he remarked on the crustacean conservation effort.

And we may very well succeed. Local species have been revived, as it is, literally from the dead. Extinct in Singapore by 1855, the Oriental pied hornbill made a surprising comeback in 1994, first on Pulau Ubin and then on mainland Singapore. Thanks to our collaborative efforts with NParks, Nanyang Technological University (NTU) and Singapore Avian Conservation Project, the bird is re-establishing healthy colonies here.

As part of the project, we have also released hornbills that were bred for reintroduction back into the wild. Continued tracking and monitoring of the birds have found them adapting supremely well to their new environment. Sada and Lili, a prolific breeding pair, have successfully raised their brood in the wild. Their offspring - Angel, Bobby, Christine, Dennis, Emily and Freedom (note the alphabetical naming!) - are all fully fledged and some have even gone on to start their own families.

Besides conservation of the species in the wild, we also work to rescue abandoned eggs and chicks of these hornbills. Recently, three eggs were rescued from Pulau Ubin and hatched at our breeding and research centre, an incubation success that was a first for the species. If you have been to the Hornbill Chitchat sessions at Jurong Bird Park, you'd probably have met Sally the Oriental pied hornbill, who's a regular there. Orphaned as a chick, she was rescued from an abandoned nest and hand-raised by our avian vets.

Many visit our parks to come up close and personal with wildlife. Yet, for some people in Singapore, it is the other way round. Animals are the ones paying them a visit, oftentimes uninvited. The Siglap and Opera Estate area in Singapore is known as a 'musang magnet' - 'musang' being the Malay name for civets. They are also sometimes called civet cats, though they belong to the civet family, not the cat family. Like other civets, the common palm civet has a pair of scent glands near the base of its tail from which it secretes a strong-smelling liquid when threatened. These civets have been sighted at dawn, dusk and the wee hours of the morning. Walking across power cables, trampling across rooftops and

even making their way into residents' attics, the civets venture into the estate to look for food, in large part attracted by the number of fruit trees planted in the area.

Residents who have caught the civets feasting off their fruit trees sometimes consider these 'masked bandits' a nuisance. Some have resorted to trapping them. Trapped civets may sustain serious injuries while trying to escape, or end up trapped for days before they are handed over to the local authorities and sent to our Wildlife Healthcare and Research Centre (WHRC), Singapore's official centre for rescued wildlife.

The rescued civets undergo a thorough health check at the WHRC, where they receive treatment for any injuries sustained. Wounded animals may have to be cared for by our staff for a longer period of time. Being native to Singapore, those that have fully recuperated are released back to the wild, after our vets have given them a clean bill of health.

At times, baby palm civets are brought in. As they are too weak to survive on their own, WRS vets and keepers have to double up as their 'nannies'. The babies are painstakingly bottle-fed every few hours and continue to be cared for till they are able to fend for themselves and deemed ready for release.

These are animals in our own backyard. Yet not much is known about them. Besides assisting an NUS project team with civet population surveys, WRS staff and volunteers have worked to develop a public education programme for Singaporeans. The aim is to promote greater awareness and acceptance of

Blue-rumped Parrot

Psittinus cyanurus

IUCN STATUS: NEAR THREATENED

This beautiful parrot is a very rare bird species in Singapore, with restricted distribution in the Central Nature Reserves and the forests of Bukit Timah. In fact, it is considered critically endangered locally although its global conservation status is Near Threatened. As part of Nparks' nature conservation master plan, the blue-rumped parrot has been identified as one of the candidates for a species recovery programme.

Blue-rumped parrots are difficult to observe as they prefer to feed in tree canopies. They have been documented to consume starfruit seeds.

