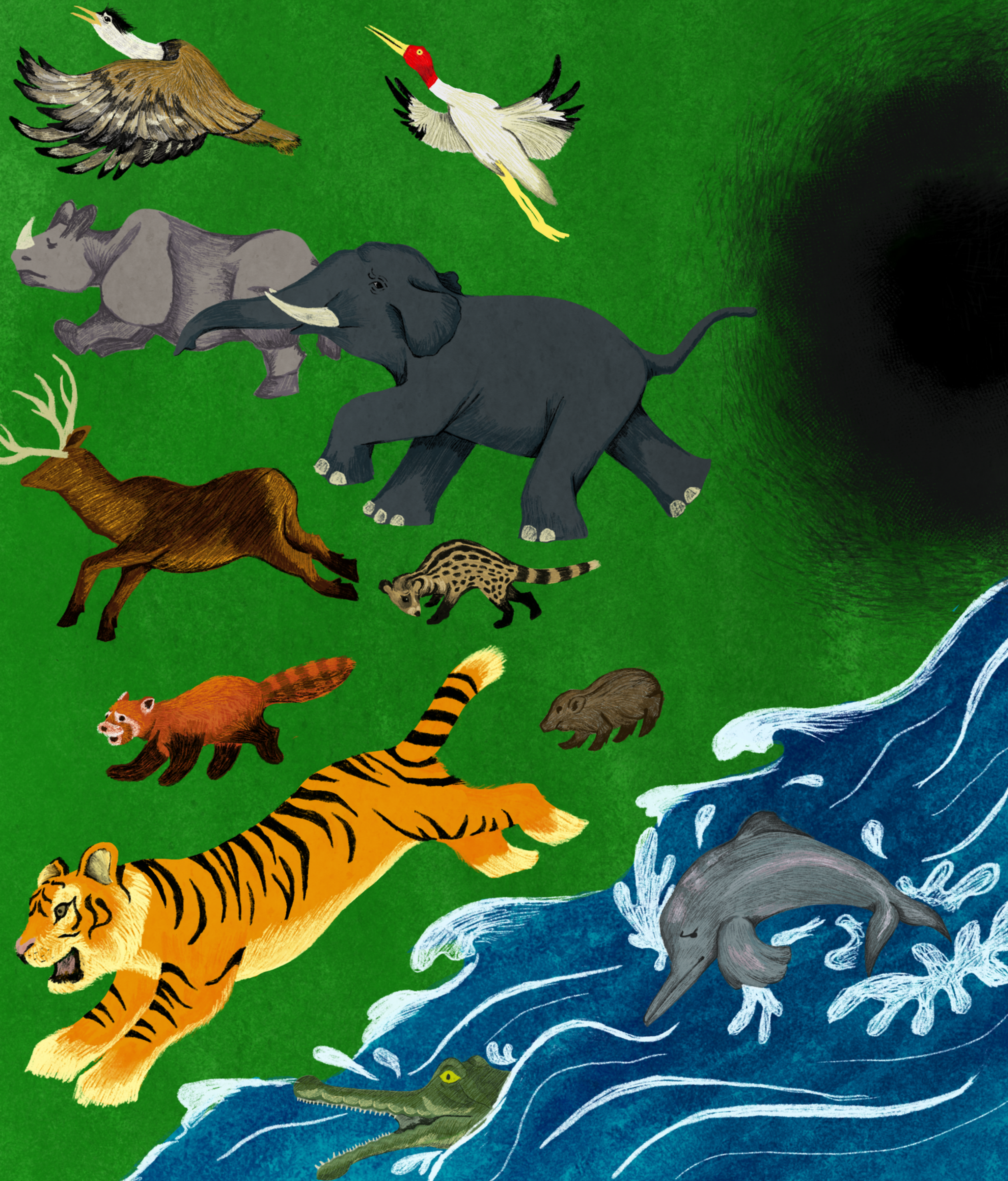


October 2022

Issue 10



YOUTH FOR NATURE

Vanishing: India's Endangered Species

Tigers of the Freshwater

Page 7

Face Your Flying Fears

Page 13

The Endemic Six

Page 35

Editors' Note

We go about our lives, carrying out duties, mundane chores, clocking in and out of work, all while consuming vast amounts of information. We may read in the morning newspaper that a snake species in the Nilgiris has disappeared into extinction. During our afternoon scroll through social media, we find out that a bird species in a remote forest in the North East is critically endangered. While watching the evening news, there is a short segment between the regular programming of heated political debates, informing us that a rare frog species endemic to the Western Ghats has been wiped out of existence forever. All this pulls at our heartstrings for a few minutes at most, but we have to move on as we have more pertinent things to attend to, personal responsibilities to fulfill and lives to lead. There is too much going on in our lives to truly care about the endangerment or extinction of a creature that we were hardly aware of until we heard that it could be gone forever anyway!

It seems that with the 'information age' that has enlightened billions of people on anything and everything, information about something as vital as the environment and fellow creatures that we share the Earth with, has been drowned out by the noise of everything else going on. India is the world's eighth most biodiverse region with endemic species across its six biodiversity hotspots. In 2018, it was found that 132 species of known plants and animals in India were endangered [1]. This alarming number is only growing due to the human impact on climate change and the exploitation of land and forest resources to meet the needs of our growing population and to fuel our consumerist habits. With this edition of the magazine, we aim to do our part and raise awareness on some lesser known endangered species that deserve our attention. We hope that this Wildlife Week edition of the magazine will inspire readers to get involved with NGOs, citizen science groups and environmental activists, to spread the word about protecting India's vanishing wildlife.

-Priya Ranganathan and Nikita Bhat, Co-Editors

YOUTH FOR NATURE

October 2022



LEARNING CORNER

Learn about the elusive Bengal Florican, the Resplendent Shrubfrog, the tigers of freshwater (Mahseer) and the story of the Spiny Tailed Lizard in its sandy abode!

SPECIES IN SPOTLIGHT

We shed the spotlight on some weird and wonderful endangered wildlife from bats in subterranean caves to vultures flying high in the sky!



EXPERIENCES IN THE WILD

Travel with ecologists and go on excursions through swamps, forests and remote parts of India to learn about fascinating animals and insects!

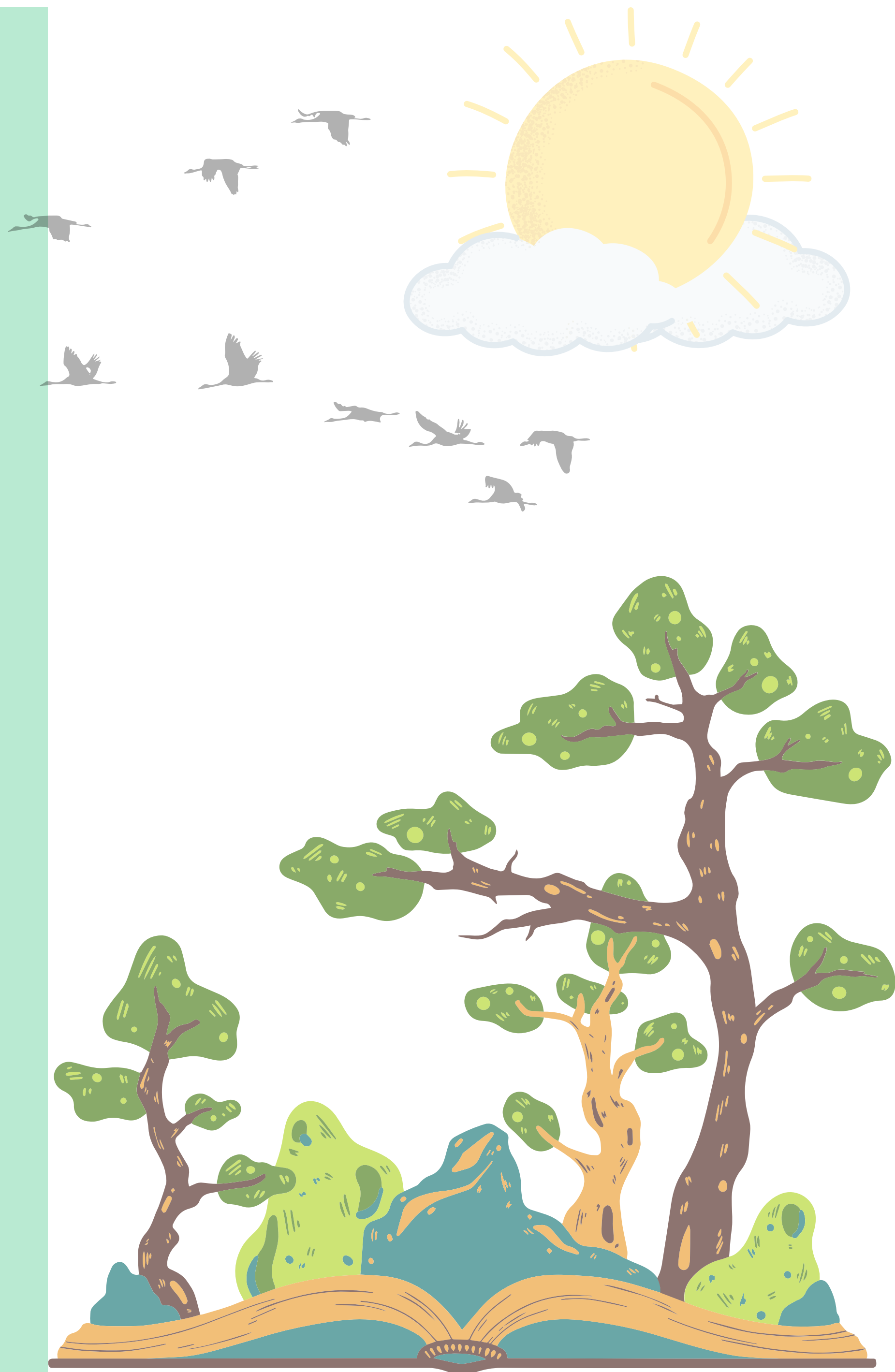


TALES & TRAILS + ACTIVITY CORNER

Attend a meeting of the Forest Council, learn about the Endemic 6 and read an enchanting poem curated for our youngest readers. Don't forget to complete the activity corner!

Table of Contents

The Bustard of Bengal <i>by Nisha Bhakat</i>	1
The Endangered Jewel of India <i>by Adhvikha Sudharshan</i>	4
Tigers of the Freshwater <i>by Samarth Jain</i>	7
Sand and the Sanda <i>by Avik Banerjee</i>	10
Facing Your Flying Fears <i>by Femi E. Benny</i>	13
An Encounter with the Queen <i>by Monika Kumari</i>	16
A Scientist, a Seed, and a Story of Survival <i>by Priya Ranganathan</i>	19
Meet the Tiger Toad <i>by Arjit K. Jere</i>	22
Meet our Sightless Ally <i>by Samarth Jain</i>	26
Meet the Kolar Leaf-nosed Bat <i>by Pratiksha Sail</i>	29
Meet the Egyptian Vulture <i>by Mirza Altaf Baig</i>	32
The Endemic Six <i>by Maria Antony P.</i>	35
The Forest Council Returns <i>by Ankur Singh & Sarika</i>	40
An Evening with Elephants Pt. 2 <i>by Medha Nayak</i>	44
The Solitary Sarus Crane <i>by Nishand Venugopal</i>	47
<i>In Search of Impatiens: In Conversation with Yogesh Bangal</i>	49
<i>On the Trail of the Pangolin: In Conversation with Dr. Vikram Adithya</i>	52
Activity Corner	



The Bustard of Bengal

Nisha Bhakat | Illustration by **Meera Phadnis**

At the foothills of the Himalayas, the Ganga and Brahmaputra rivers together give rise to one of the world's largest alluvial plains. Along the banks of the rivers and its tributaries, lie stretches of moist grassland. The grasslands spread from Uttar Pradesh to Arunachal Pradesh all the way to Nepal and are home to hundreds of bird species including the rare Bengal Florican. It is found in India in a few forests like Dudhwa-Pilibhit, Jaldapara, Kaziranga, Manas, Dibru-Saikhowa and Daying Ering Wildlife Sanctuary.

The Bengal Florican belongs to the bustard family of birds, which also includes the Great Indian Bustard. They are large, ground dwelling birds and the females are larger than males. Males have black heads and necks while females have a more muted, brown plumage. They prefer grasslands with shorter tufts of grass and a scattered cover of bushes.

They even seem to frequent patches that have been burnt recently. These shy birds are difficult to spot amidst the grasses. However, this changes during the breeding season. From March to May, male birds select open patches and exhibit a stunning courtship display to attract females. The male birds fly into the air with their black-white feathers in full display, accompanied with humming calls. Eggs are laid on the ground in small cleared patches. This rare bird is also a slow breeder, laying only one or two eggs each year.

The grasslands they inhabit get inundated regularly and the birds are known to migrate short distances of a few dozen kilometres to escape the floodwaters. In some areas, they are known to move outside national parks and take temporary residence in nearby agricultural fields.



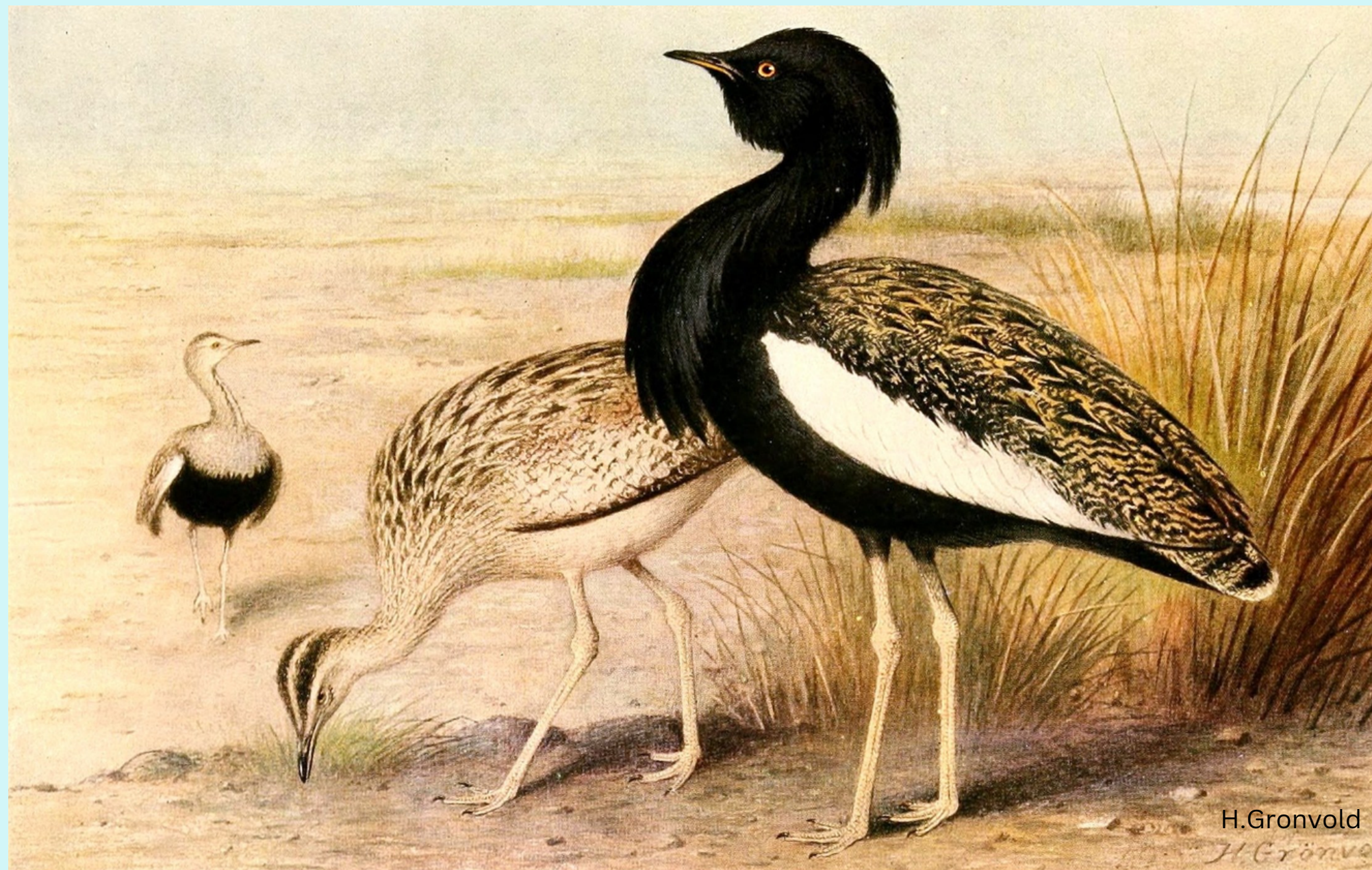


Such is the case of the Kokilabari Seed Farm in Assam near Manas National Park. Here, as many as 25 birds can be seen together, which is about a third of its entire population in Manas. This movement to unprotected areas makes the bird rather difficult to study and conserve as it faces threats within as well as outside protected forests.

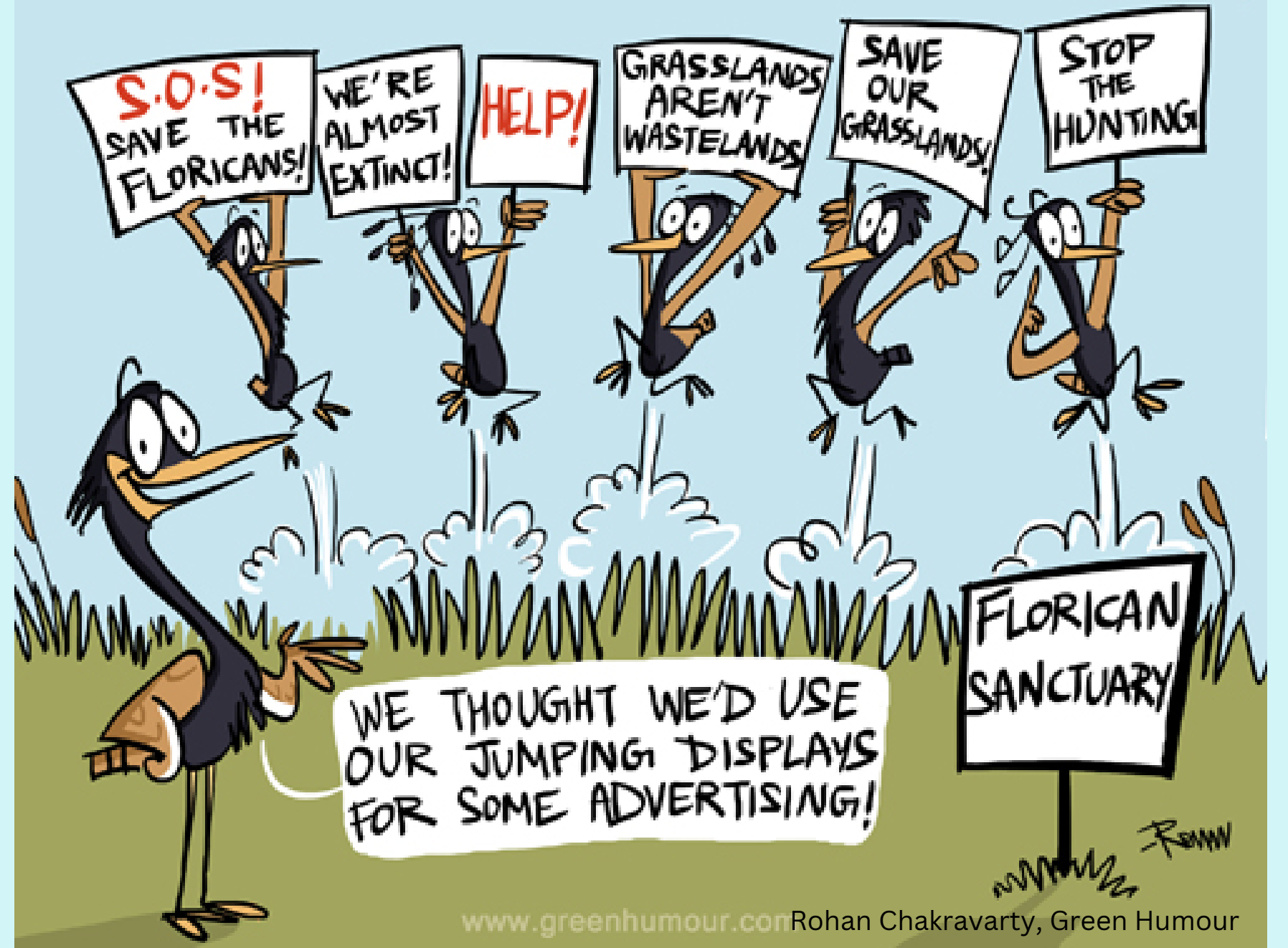
The grasslands themselves are threatened by changing rainfall patterns owing to climate change. The breeding cycle of this bird is held in delicate balance with its movement and flooding patterns. Major changes can cause failure to breed, pushing this species closer to extinction. They are also prone to collisions with power lines during their migration. Additionally, their habitats, that is grasslands, are also being converted to agricultural lands. The species is listed as critically endangered, with a global population between 250 and 1000. Outside the Indian subcontinent, it has one stronghold in the Tonle Sap Lake floodplains in Cambodia. However, that population is also declining.



In India, the bird is protected under Schedule 1 of the Wildlife Protection Act, giving it the same protection status as the tiger. Conservation of the species will need collaboration between the scientists who study them, the forest departments that protect the grasslands they live in, and the local people around the forests whose fields the birds frequent. The Bengal Florican is a flagmark of a healthy riverine grassland ecosystem, and its future can be secured only by saving the health of these dynamic habitats.



Jeremy Holden/FFI



www.greenhumour.com Rohan Chakravarty, Green Humour

The Endangered Jewel of India

Adhvikha Sudharshan | Illustration by **Shreya Mehra**

Deep in the Western Ghats of India lives an incredible species, unique only to that region. It can be found within the mountains of Kerala and has a very distinctive appearance. You couldn't miss it even if you tried! So, what is this amazing species? The Resplendent Shrubfrog, otherwise known as *Raorchestes resplendens* (a real tongue twister!) This frog was only recently discovered in 2010, and it has already been labelled as critically endangered.

Now imagine this: You are walking in a jungle, located on a mountain. You see a blur of orange, and being curious, you follow it. You brush a few vines aside, trying to keep up with the blur, when the world suddenly opens up to a lush green paradise. Vines and trees surround you, the sky above is clear blue.

Everywhere you look, you see little orange frogs perched in the trees. Mesmerized by this magical place, you stay for a while and observe how these frogs behave.

So, what do Resplendent Shrubfrogs look like? They are as bright orange as can be, with yellow bumps on black patches all over their body. They also have large, amber eyes. Some might even find these little critters cute. Within its scientific name, the term *resplendens* specifically means 'bright coloured or glittering,' referring to their bright orange colouration. These frogs are a ground-dwelling species and have a pronounced crawl when they want to move from one place to another. This is due to their short limbs.

Female frogs tend to bury their eggs inside the bases of bamboo clumps under the forest floor. This is most likely to keep the eggs warm. While you may think that all frogs have a tadpole stage, this species does not and directly hatches from the egg in 3-4 weeks.



There are only two known locations where you can find this unique little frog. Both sites are within Eravikulam National Park, with one site only spanning a small part on the summit of Anamudi Peak. Since these frogs enjoy living in lush places, we assume these sites form the perfect habitat for them.

After making your observations, you leave the magical place along with its frogs. It suddenly hits you – how few of them remain in the world and how easily they could become extinct. You wonder how a species as special as this one can be saved. There are several ways that you can help prevent the extinction of an endangered species (not just the Resplendent Shrubfrog) by keeping the environment and their habitat pristine and unpolluted!

- Littering- Animals can often choke on trash left on the ground, so leave rubbish where it belongs – in the trash can.
- Plastic pollution- Plastic takes thousands of years to break back down in the environment and is harmful to all animals. Avoid plastic products as much as you can and encourage others to do so too.



- Reduce buying excessive disposable products. Try and be more aware of the products you buy and what they are made of (e.g., buying soap bars instead of body washes in plastic bottles, buying bamboo toothbrushes instead of plastic toothbrushes). Encourage your friends and family to do the same.
- Deforestation (or the general destruction of greenery)- This destroys the habitats of many animals and can result in their death. While you may not be able to do anything about mass deforestation at the moment, try to be considerate of any green space that you visit including your local park or your house garden. If your school or a local NGO is working to protect the environment, sign up to volunteer and join in to do your part for the environment!



Tigers of the Freshwater

Samarth Jain | Illustrations by author & **Asiem Sanyal**

When you hear the word endangered, the first few animals that come to mind are likely the Greater One-Horned Rhinoceros, the Royal Bengal Tiger or even the Asiatic Lion, but not a fish species. Well, after reading this article I am sure you will also add the precious 'Mahseer' to the above list.

Mahseer is found in the freshwater of Southern Asia, especially the Indian subcontinent. Its name derives from 'Mahi' and 'Sher' meaning fish and tiger respectively and hence they are referred to as the 'Tigers of the Freshwater'. This is because it is quite tedious to catch them because of the fight they muster to wriggle off the hook. Few species of these fishes reach about 1.5 - 2.5 metres in length and can weigh up to 50 kgs! Out of around 16 species of true Mahseer, six or seven species are found in India, of which the elegant Golden Mahseer and the Hump-backed Mahseer are perhaps the

best-known species. These species are now endangered and critically endangered respectively.

But why this decreasing population, you ask? Well, what else but human interference! Over the decades, the Mahseer has been an important 'game fish' which also fetched high prices in the fish market due to its immense size. The Golden Mahseer (*Tor putitora*) is a big and attractive fish with a shiny golden colour on its dorsal (upper) side and reddish-yellow fins. Also, this fish is characterized by large scales and thick powerful lips with relatively longer barbels (sensory hair-like organs in front of the mouth). It lives in fast-moving waters like hill streams and rivers with rocky and stony substrates but now, it has also been introduced to lakes and large reservoirs in favourable temperatures between 5°C and 25°C. The Golden Mahseer is found in the foothills of the majestic Himalayas, the





Asiem Sanyal

Indus, Ganga and Brahmaputra basins and can also be found down south in the Cauvery, Kosi and a few other southern rivers. Upon maturity, the adults migrate upstream in the monsoon season or during floods to reach suitable spawning grounds where they breed and later spawn over rocky, gravel substrate. This large fish is carni-omnivorous, its diet comprising not only crustaceans, small fishes and frogs but also algae and fruits that fall from trees overhead.

Since they are environmentally sensitive, Mahseer act as indicators of river ecosystem health and water security. Apart from that, Mahseer also play a role in the history and culture of India. In the Gupta Empire, they were given the status of 'God's fishes' due to their size and attractive appearance. Their carvings have been observed in the pottery of the Indus Valley Civilisation. Even today, they are worshipped in local temples of Karnataka near the Tunga River. Many states of India like Arunachal Pradesh, Himachal Pradesh and Uttarakhand have Golden Mahseer as their state fish to promote them as a 'Flagship species.'



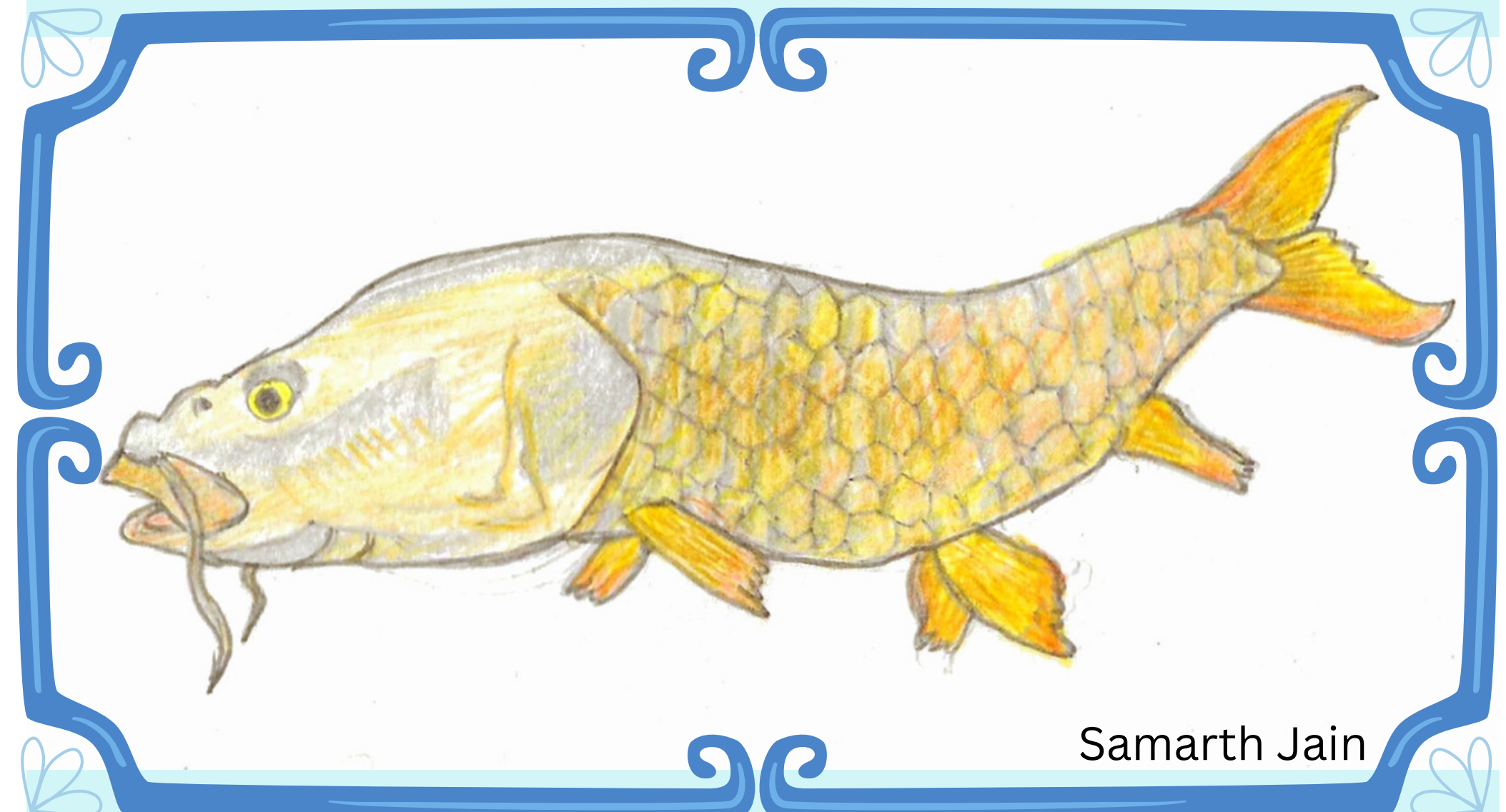
Even after such historic, cultural and environmental significance, the population of this species are declining rapidly due to overfishing. They have also been affected by pollution, habitat degradation, river construction projects, toxic waters and competition from invasive species. According to a 2010 report, the Golden Mahseer is estimated to have declined by more than 50% in recent years. Sadly, freshwater fish are hardly on the radar of policymakers or the general public, and their decline receives little attention.

Conservation efforts, though late, have been initiated to protect the Mahseer and similar species. Tata Powers has made a significant contribution to the conservation effort by successfully breeding these fishes in captivity and then releasing them into natural freshwater sources.



A Golden Mahseer found in Sarda River, Uttrakhand

These efforts by Tata Powers for over 50 years have made the Blue-finned Mahseer a least concern species from an endangered species. We too can contribute as responsible citizens by keeping our rivers and lakes clean of plastic and other contaminants along with creating awareness about this charming species.



Know the terms:

1. Carni-omnivorous species – A species which is omnivorous, but most of its diet consist of animal food (meat, fish, etc.)
2. Flagship species - Species that are chosen to raise support for biodiversity conservation in a given place or social context.



Sanda and the Sanda

Avik Banerjee | Illustration by **Rama Narayanan H.**

This is not a story of India's so-called 'iconic' animals, such as the majestic Asiatic lions of Gujarat or the royal Bengal tigers of Sundarbans. This is not about the greater one-horned Rhinos of Assam or the mesmerizing snow leopards of Ladakh. This is the story of Sanda. Also known as the Indian spiny-tailed lizard, it is the only herbivorous (or vegetarian) lizard of India, primarily found in the semi-arid regions of Thar in Rajasthan or Kutch in Gujarat.

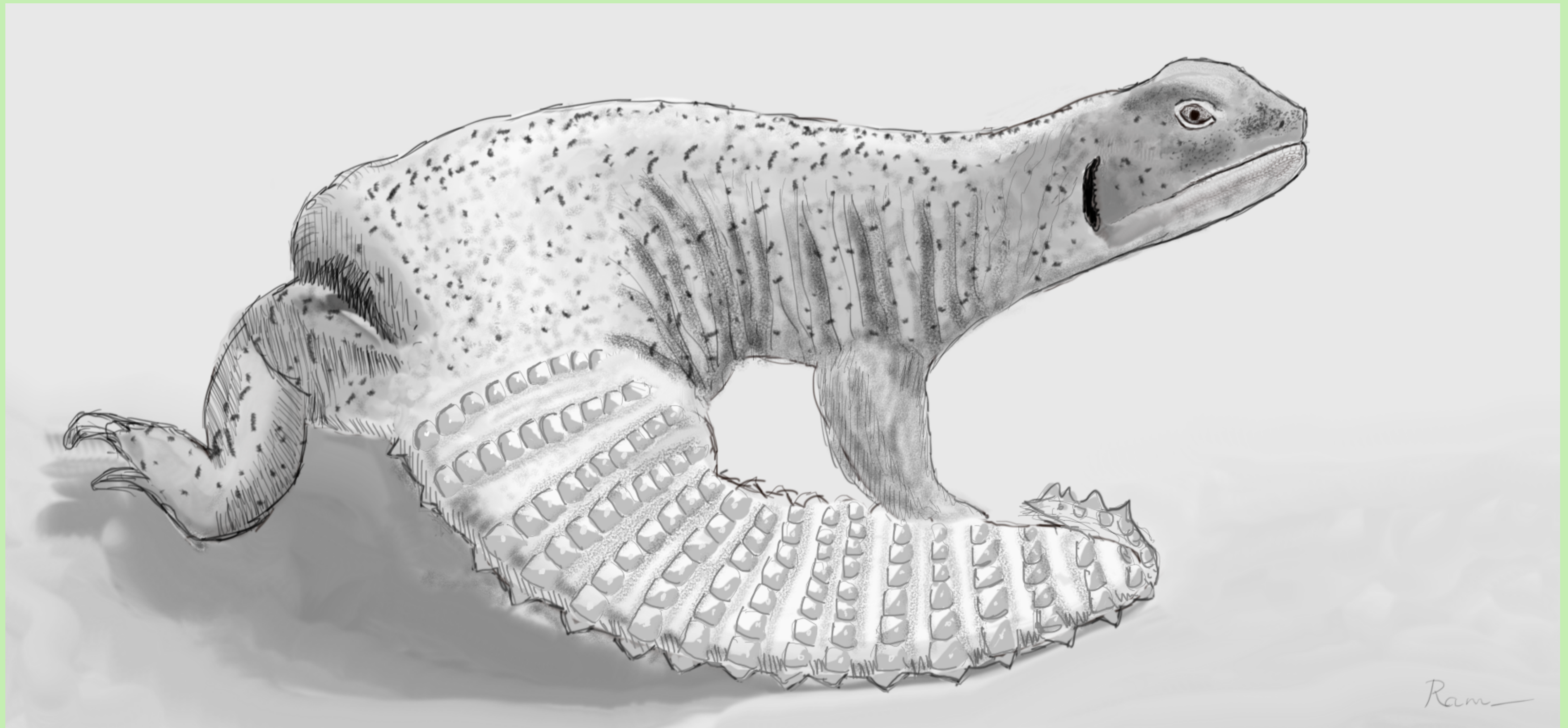
'Sanda' is its local name. These are diurnal, ground-dwelling lizards which are yellowish-green or sandy in colour. Their head is round, with a blunt snout. The body is elongated and covered in loose skin. Adults usually measure about 35-50 cm in length; males are larger and possess longer tails than females. Tails are fat, usually bluish-grey, and covered with spiny scales on the sides, hence called the spiny-tailed lizard.

Sanda lives in colonies. They prefer open-ground habitats with grass, herbs, and short shrubs. Each Sanda digs an individual burrow into the soil and takes shelter in them. Burrows are 6-8 cm in diameter and could be more than 2 meters long. They have a single opening which extends into a twisted spoon-like tunnel that ends in a small chamber. The burrows protect them from predators and the extremely high temperatures of the desert. The spiny-tailed lizards also spend their entire winter hibernating inside their burrows.

Sanda is herbivorous. They are active between March to September and majorly feed on fruits and flowers of khair plants, seeds of the khejri plants, grasses, and herbs. Sanda (especially juveniles or young ones) also feed on insects, particularly beetles, especially during the summer. However, plants still contribute to most of their diet.

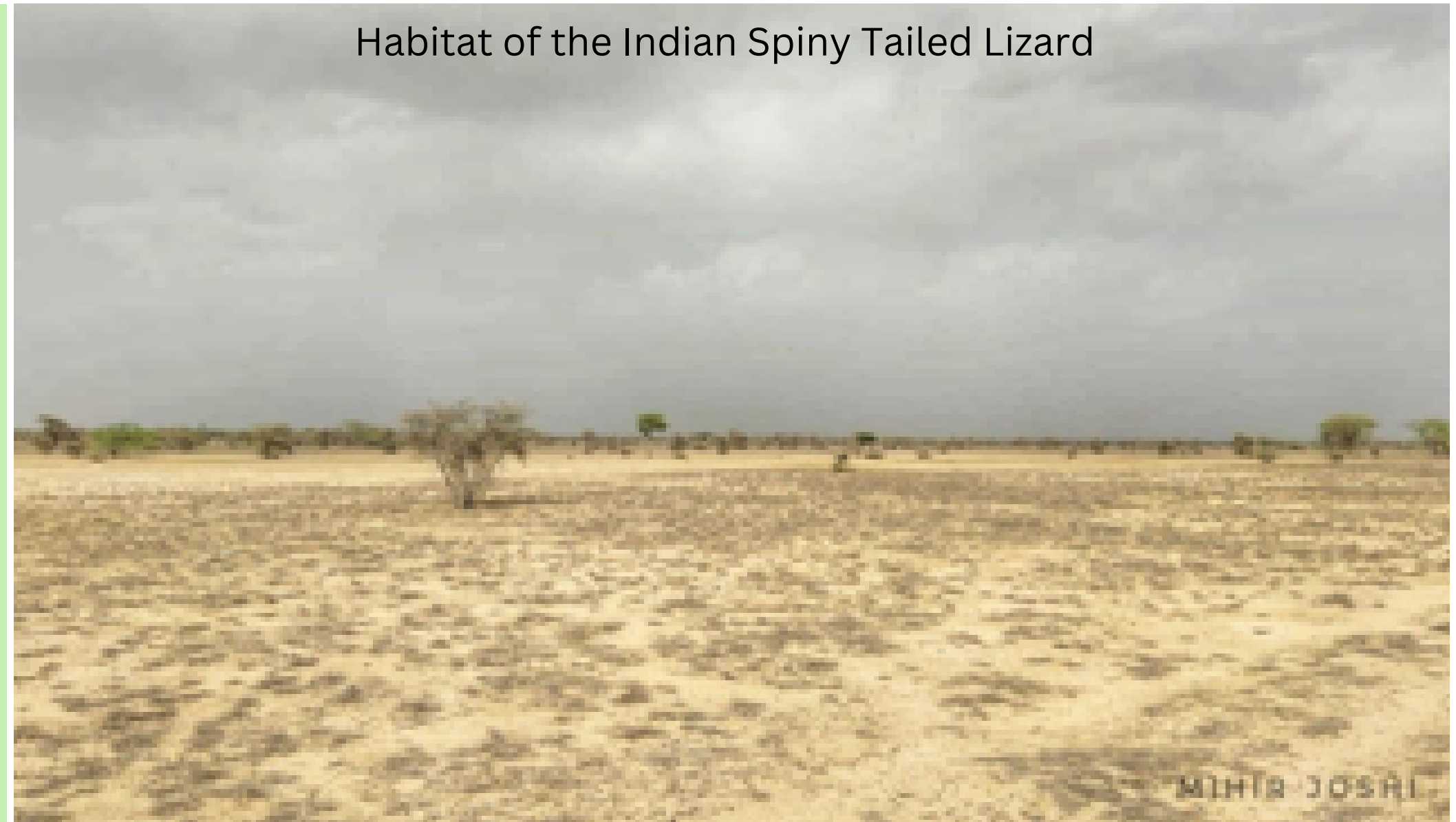


Sanda has a wide variety of predators. They include raptors, foxes, cats, snakes, and even larger lizards such as the desert monitor lizards. However, Sanda is extremely alert to its surroundings. They mainly come out of their burrows to bask under the sun and feed on plants. They feed near their burrows and do not move far out. At the slightest sign of predators, spiny-tailed lizards quickly move into their burrows and close their opening with loose sand, preventing the predators from entering into them. If they still get caught, they use their large spiny tails to hit their predators and escape from them. Though, it is not always successful. Also, during occasional rains in the desert, the burrow opening is closed to prevent the entry of rainwater.



Sanda is under serious threat from nomads and poachers. In India, they are illegally hunted for their meat, skin, and oil. The meat is popular among many local communities, and the tail, which stores a lot of fat, is considered a delicacy. Their body fat is used to prepare a kind of oil which, the locals believe, has medicinal properties, such as a pain relief ointment, and is therefore used in traditional medicine preparation. Moreover, expanding agricultural lands and road networks, setting up new solar or windmill farms or other urban developments have contributed to habitat loss for the spiny-tailed lizards. It has become locally extinct in some parts of the country. And it is on the verge of extinction in some other parts mainly due to illegal poaching, habitat loss and degradation, climate change and roadkill.

Habitat of the Indian Spiny Tailed Lizard



Indian Spiny Tailed Lizard near its burrow



Facing Your Flying Fears

Femi Benny | Illustration by **Ujali Raghunath Shirodkar**

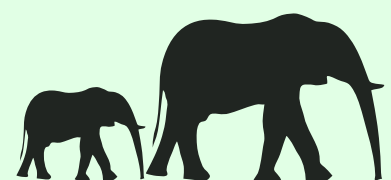
What insect do you fear the most? What is the insect your parents ask you to stay away from?

I am sure for most kids it will be the medium to large sized, yellow and black striped ones....yes the hornets! As a person working on this group of insects, I feel it is important to bring to you the story of wasps, right from their role as apex predators to a nutrient-packed food source.

Back during my postgraduate studies, we had to collect various insects belonging to different orders. So to make my insect box attractive, I decided to go for various colourful insects. Catching butterflies and beetles used to be an easy task, and so with that boost of confidence, I went ahead to catch a hornet I spotted while walking through the botanical garden.

With a swift move of the insect net, I caught the one I had spotted. Now the difficult task was transferring this buzzing beauty into the vial. Since that was the first time I had handled a live hornet, I took it all so casually and went ahead with transferring it to the vial without much caution. To my anguish, it escaped and stung me on my thighs.

For a second, I went numb with the excruciating pain and sat down on the ground. I watched the hornet fly away and could imagine the sigh of relief it must have let out. But this little amateur experience made me read more about hornets and their ecology. I came to know that I was dealing with the greater banded hornet (*Vespa tropica*), a very common species that you will find in the South Indian landscape. After completing my studies, hornets still were one of the insect groups that fascinated me. Hornets are the largest among the

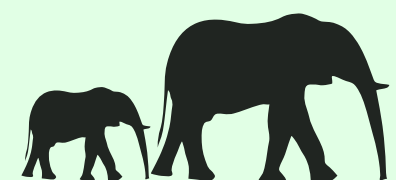




social wasps. By social wasps, I mean the wasps that live in colonies led by a dominant female and lots and lots of workers in her army.

There are 15 hornet species found in India, most of them distributed in the North East. They live in big colonies, mostly underground and occasionally above ground. The colony will have teams of insects organized to perform different tasks like foraging, cleaning, nursing, defending etc. and they perform their duties strictly.

Hornets are the apex predators of the insect world. They hunt a wide range of agricultural pests, forest pests and other smaller insects, thus playing an important role in maintaining the ecological balance. In any ecosystem, the natural enemies are crucial in the smooth functioning of the ecosystem. Hornets, being predators, are among the most important natural enemies. Having an inherent sweet tooth, they keep visiting flowers for nectar and act as occasional pollinators as well.



Hence, perfumes having fruity and floral scents tend to lure these insects and are the major underlying reason why random human-hornet conflicts happen.

When I decided to do research on edible insects of North East India, little did I know that hornets are among the most valued edible insects. Of the 15 hornet species found in India, 13 of them are documented to be edible. Not just edible, they are considered local delicacies! They are said to have a grilled cheese-like flavour. People semi-domesticate hornets and harvest them in a span of 6-8 months. This is a part of rural livelihood for some of the communities in North East India.

Although it is true that there is a lot of alarm going on about hornets, they are not as murderous as they are proclaimed to be. Well, I would definitely give the disclaimer that they are not insects that one should go playing around with, but they certainly are equally or even more important than the usual well-acclaimed pollinators. They are among the less charismatic, under-appreciated insects that we must learn more about.

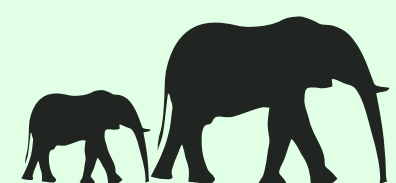


iNaturalist

Hornets are considered a delicacy in some parts of India



Thejavikho Chase, Current Conservation



An Encounter with the Queen

Monika Kumari | Illustration by **Kshiti Mishra**

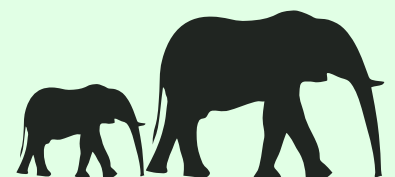
My excitement knew no bounds when I was assigned to go to Pench Tiger Reserve with a team of six other researchers. It was more beautiful than I had imagined it to be! We would struggle from dusk to dawn to do our research. At dinner we would share our experiences from the field and discuss the next day's plans and activities.

Everyone in the team had been lucky to have seen a tiger at least once but I was still unlucky. It was rather unfortunate not to have one glimpse, being a researcher in the 'Project on Tiger' and being in the jungle on foot every day for all those months. It was disheartening that I would soon be returning to Dehradun without a single Tiger sighting.

Pench was pleasant in February when we arrived, March-April were a little warmer but May was turning out to be unbearably hot. As my despair of not seeing

a tiger was rising, so was the temperature in Pench and even the frequency and duration of power cuts in our base station. This time it was three days since we had any electricity. I had spent three sleepless nights and had a really bad headache in the morning. I somehow managed to walk a carnivore sign survey of 5 kms and on finishing, sat on a small rock on the side of the mud road where my ride back to the base station had to arrive. I rested my head on my lap as I sat, and tried to relax. My field assistant and a forest guard sat some distance away on the mud road.

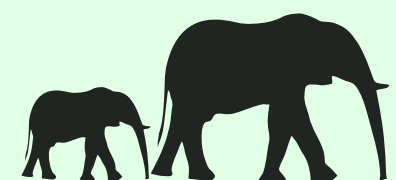
The jungle looked dry and withered. Trees had lost their green leaves so yellows and browns were the only shades of the jungle. The ground was covered in dry leaves, which rustled with just a light breeze. Suddenly, there was uneasiness and restlessness in the jungle.



I could sense the movement of a predator very close, it was making prey animals run for their lives. Langurs were hopping around and so were Chitals. I looked around while my assistant and forest guard were busy chatting away. I waited for some time, then laid down my head again while closing my eyes, trying to forget my headache.

A Chital jumped past me, I lifted my head startled by the sudden movement. I tried to adjust my tired eyes to the woods around me as alarm calls got sharper. On the opposite side of the mud road, there was a big patch of flat rocks. Something appeared to move stealthily there and before I realized it, a tiger appeared! So well camouflaged, one could hardly spot it. I couldn't believe my eyes, I was finally seeing a tiger!

I looked at my field assistant, he could make out what I had just seen. We silently got up, hurried towards the patch of rocks, all while managing to hide ourselves. From our hiding spot, I eagerly observed the tiger.



She was a well-built, bold, elegant and magnificent tigress. She walked with such grace. I was in no grip of fear, or maybe I was so amazed that I just couldn't react in fear. I was enjoying my most memorable sighting. It was at that moment that I realized how fortunate I was to work for the conservation of this majestic species. It was a conviction that I still take pride in.

The tigress turned her head to look at us, the memory of her piercing eyes and gaze still gives me goosebumps! At that time, she was only 7 to 8 metres away from us, for her it was merely two jumps. I had the camera in my hand but I did not dare to take a picture. She was in some kind of confusion, it seemed like she was trying to make a hard decision about what to do with us.

My mind flashed back to a few days before this incident, while working in another range. A Safari Jeep had passed by, slowed down and an old gentleman in the Jeep had asked me,

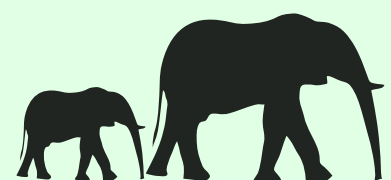
“Hi dear! You must be a researcher from Dehradun? You're walking in this jungle on foot, what will you do

in case a tiger shows up?”

I had promptly replied, “I am in their territory, it is they who will decide what to do with me!”

The tigress looked sternly at us for some time. Eventually, she turned her head away from us and started treading softly on a different path, being alert in case we attacked her. Once she crossed the mud road to the other side, she swiftly disappeared into the jungle.

I later learnt that she was the legendary Big Mada (Big Mother) of Pench and it was her territory that we were in. She was on her daily track to the waterhole a few meters ahead of the patch of rocks when we encountered her. That was one of the most exciting encounters I have had and I will continue to work and promote the protection of the majestic Queen of the Jungle.



A Scientist, a Seed, and a Story of Survival

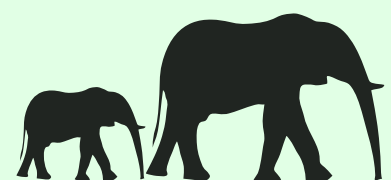
Priya Ranganathan | Illustrations by **Asmita Sapre Ranganathan**

Decaying leaves crunched softly beneath my feet as I entered the dark swamp. The gentle hooting of a spotted owlet mingled with the whispering of the wind rustling the trees and the gurgling of the small stream. *Chiiirp.....chiiirp.....chiiirp*. I craned my neck to look for the source of that birdsong. Ah! A white-cheeked barbet sang blithely in the low branch of a nearby tree. And what a strange tree it was. I stepped over knee roots, taking care to place my foot exactly in the right place to not twist my ankle or harm the tree, and crouched by the raised root system of the swamp tree.

To the uninitiated, a *Myristica* tree could be mistaken for a mangrove due to its fascinating prop roots. This adaptation allows this tree to stay above the standing water that remains in a swamp all year, letting the tree breathe. Prop roots look a lot like a

a very bushy broom, the kind my grandmother uses to sweep our family home. *Myristica* trees, just like their coastal cousins, the mangroves, have adapted to living in a flooded land.

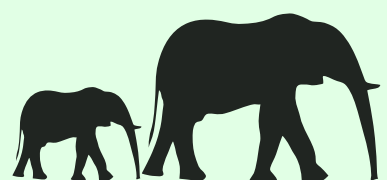
The tree wasn't very tall, but it was brimming with life. The barbet, of course, was still perched on it, its beady eyes observing me closely. I heard the creaky-croak of a frog – was it a dancing frog? These tiny frogs, placed by taxonomists under the genus *Micrixalus*, wave their hind legs to win mates during the monsoon. Standing in the swamp just before the advent of the rains, I wondered if a few excitable frogs would consider displaying this unique behaviour just for my satisfaction. But no, Mother Nature has a strict schedule, and the dancing frogs remained hidden from my sight.



I kept my eyes peeled for any signs of macaques. Lion-tailed macaques are often spotted in Myristica swamps. These shaggy, black monkeys are larger than our regular bonnet or rhesus macaques and sport a thick white mane around their wizened faces, just like the lion they are named for. The tail of this macaque is long and has a perky tuft at the end. Remember the tuft on the end of little Simba's tail in The Lion King? Well, imagine a monkey with that same tail, and you'll easily identify the lion-tailed macaque.



These macaques feed on the red fleshy seed covering of *Myristica fatua* seeds, as these coverings are highly nutritious. But isn't that bad for the tree, you might ask? Well, when animals like the macaque eat the fleshy part of the *Myristica* seed, this triggers the seed to begin germinating, or sprouting, as we like to call it. The fleshy covering does not allow the seed to sprout, so once it is eaten, the seed is free to grow.

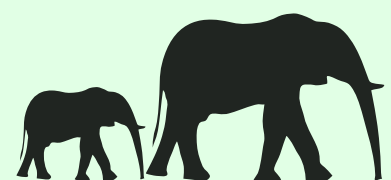


This is all part of the parent tree's plan, you see. Macaques feed at many different Myristica swamps and leave behind seeds from different trees in new swamps through their poop. The poop acts as a fertilizer for the seed to sprout, and a new Myristica sapling will eventually grow, allowing the swamp to survive. Life finds a way, as they say!

Whoooooooooooooooooosh

A shadow blocks the already-weak light filtering through the towering trees. I gasp as the beating of strong wings stirs the leaves into a frenzy. A majestic bird swoops down to perch on a branch of the nearest Myristica tree, shaking out its colourful feathers before tucking them in carefully. A Great Hornbill! These black and yellow birds mostly feed on fruits and seeds and are the other important player in the dispersal of Myristica seeds. Just like the macaques, hornbills crack open the seeds and spit them out after eating the fleshy outer covering. The seed falls to the ground and germinates in the water, starting its new life.

Looking at the hornbill, I wonder if it knows that I, too, am here because of the Myristica trees. But now, when I return to the swamps, I will be going for another sight of the magnificent hornbill as well!



Meet the Tiger Toad

Arjit K. Jere | Illustration by **Tanmaye G.**

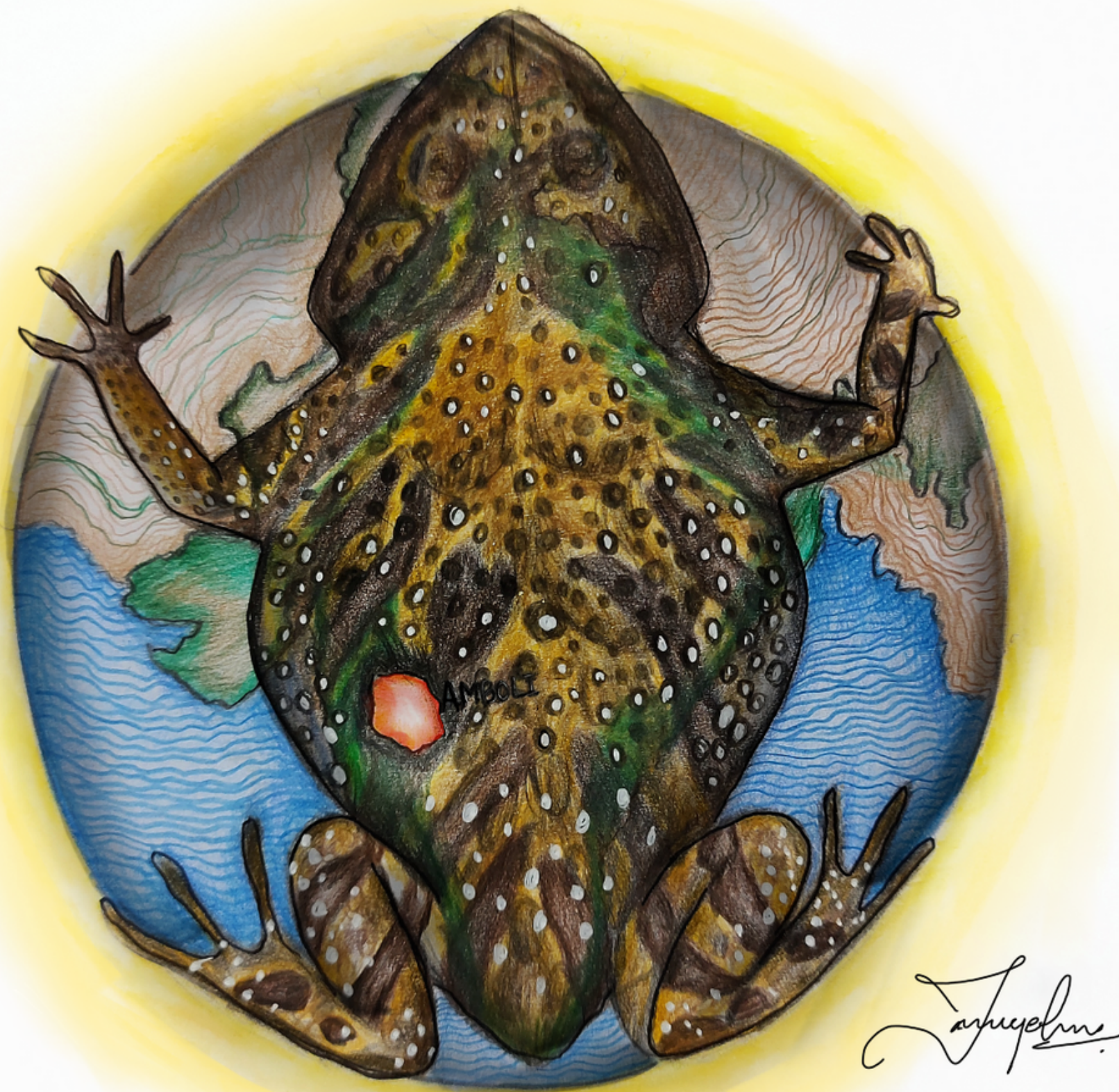
When I was doing my MSc. in Biodiversity, I distinctly remember my first field trip to Amboli. It is a little village surrounded by the dense forests of Southern Maharashtra. It lies on the northern side of the mighty Western Ghat Mountains, which then flatten as we move towards the beaches of Goa. When we were on the field trip, it was the peak of monsoon and the lush evergreen forest was drenched in rain. Our night walks were the most fun. Usually hidden or quiet during the day, nighttime was the time for insects, reptiles, and amphibians to take center stage.

Armed with huge torches, I was amazed to see the variety of fauna around me. The Malabar Pit Viper slithered in the branches, its green body coiled like a rope. It was dinnertime for the snake, and it was waiting patiently to strike its next target to eat. The forest was abuzz with the chorus of grasshoppers and their insect relatives, the crickets. The “treak-

treak” call was made not by their mouth but by rubbing their legs together! The forest had now come to life. This is not a story about these forest animals, but about a species whose life is spent around rocks and water.

After walking through the dense forest, the rain started to pour down heavily as we arrived at an exposed rocky region. The greenery had changed so much. The only plants in this area were the mosses covering some of the red soil. Even in this downpour, we saw some small black and yellow colored toads emerging from rocks, hopping around. This color pattern is specifically observed in males during the mating season. It will remind you of a tiger coat! It is this color pattern that inspired the Latin official scientific name of this animal - *Xanthophryne tigerina*! Xantho means yellow, phryne means toad, and tigerina - well, take a guess!





Did you know that wildlife researchers only gave it this name in 2009?

We were thrilled! We had just stumbled across a toad that was not found anywhere else in India!

The Amboli Toad (Tiger Toad) is a critically endangered species found only in the Amboli locality of the Northern Western Ghats. Its life is spent in both the land and water, making it an amphibian. This creature lives under the rocks of this area, which are the lifeline for these amphibians. Why are rocks so important for this animal? You will know the reason as you read the rest of this toad's tale. You must be wondering, what makes this animal a toad and not a frog? Its skin has large lumps, like one of the custard apples in your kitchen. On the other hand, frogs have smooth, slippery skin.

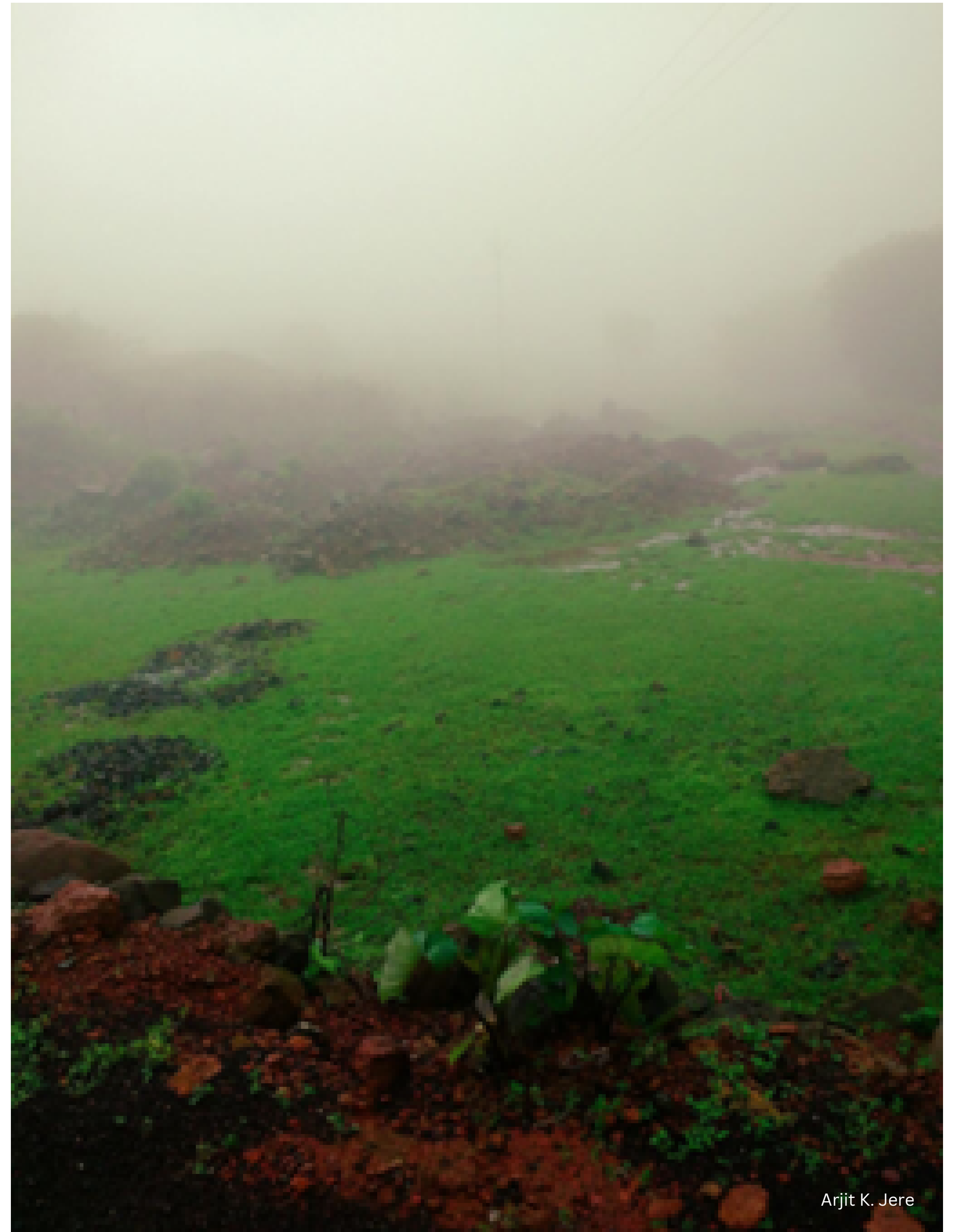
The toad, like many other toads, starts its life in the form of legless, tailed forms known as tadpoles. Tadpole forms, when swimming, look like little balls with tiny threads hanging from it. They love puddles, as many kids do! They playfully swim in them and then eat aquatic plants known as algae. These little tadpoles then grow into adults within a few weeks. Adult toads have been observed to eat insects but there is still a lot of scope to study their feeding behavior!



Any damage to these puddles will kill off the poor tadpoles. So travelers have to be careful where they walk! In the wild, the toad has natural enemies-birds and snakes that like to prey on it. However today, the Amboli Toad faces newer, bigger threats to its existence - from humans.

This animal is found in a very small area- a small rocky patch of 10 x 10 km. Now, its home is sadly getting damaged by human activities. New buildings keep coming up near its home, threatening the health of its beloved puddles. Iron mining is destroying the very rocks it uses as shelter. New roads that are being built in Amboli also threaten the lives of individual toads. The roads are gray and flat, just like the rocks the adults live around. Mistaking roads for their home, these poor toads then become victims of roadkill. Any irresponsible driver who could be driving too fast on such a road could kill several toads in a short time! Thus, drivers need to be very careful when driving in Amboli.

Another possible threat to the Amboli Toad, which was only recently discovered, is a fungus species.

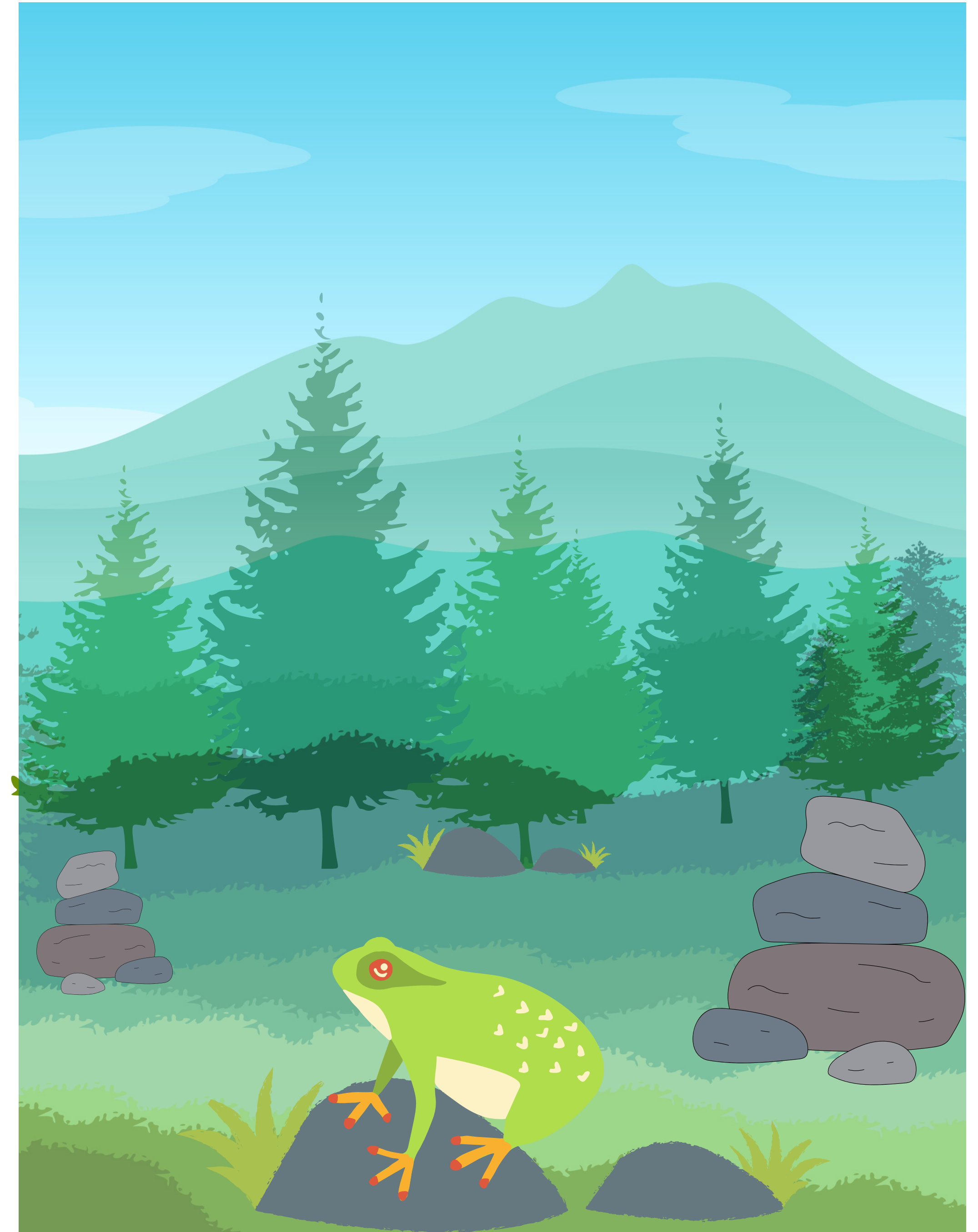


Arjit K. Jere



This fungus has already made its way inside other toad species, making them ill and in the worst cases, killing them. The future of the Amboli toad depends on how we humans ensure the protection of its rocky home. Amboli needs to be a reserved forest area, and not just any other travel destination.

Why should we care about amphibians like the Amboli Toad? These sensitive animals are good indicators of the health of the region they inhabit. A high amphibian diversity indicates an environmentally healthy, clean region with low pollution!



Meet our Sightless Ally

Written & Illustrated by **Samarth Jain**

In the holy water of the Ganga, a unique creature is found which has excellently adapted to its environment. The murky water of the Ganga is a challenging habitat to survive in but these uncommon animals have found solutions to every problem, except the pollution that is degrading their habitat.

This mysterious survivor is none other than India's National Aquatic Animal - The Gangetic Dolphin.

Also known as the Ganges River Dolphin, South Asian River Dolphin or Susu (popular name in the local areas), this is one of the rarest freshwater dolphin species in the world. Its population is distributed in the Ganges-Brahmaputra-Meghna and Sangu-Karnaphuli River systems in India, Nepal, and Bangladesh. It favours deep pools and upstream and downstream parts of midchannel islands.

Ganges river dolphins are usually tan, chocolate brown or light blue in colour, with females being larger than males. They have an elongated, slender snout with a lot of sharp and very pointed teeth, similar to most river dolphins. The snout is followed by a rounded belly and rectangular dorsal fin. Their flippers and tail flukes are large and broad. This species reaches 2.2-2.6 metres (7-8 ft) in length. The life span is around 25-30 years. When a calf is born, it stays with its mother for one year.

The term 'sightless' in the title reflects the fact that these aquatic mammals have a poor sense of sight. Well, in the cloudy and brownish water of the Ganges and Brahmaputra, sight doesn't help much anyway! Thus, these dolphins have evolved to have small eyes but a large head which is used for echolocation. Given the



dolphin's blindness, it produces an ultrasonic sound that is echoed off by other fish and water species, allowing it to identify prey. This process is termed echolocation. Using this process, this dolphin feeds on prawns and fish such as carp and mahseer. They have also been recorded preying on waterbirds and turtles.

The second term in the title 'ally' (meaning friend) refers to the fact that these dolphins are very useful to the environment and therefore indirectly to humans. They are a reliable indicator of the health of the entire river ecosystem. They are very sensitive to changes in their aquatic environment, and hence if you spot



them, it means that the water of that area is pure and pollution free. If the river has dolphins, you can be sure that things are working well and that the ecosystem is in balance.

Gangetic dolphins are also associated with the deity Ganga, whose divine vehicle called the Makara has the head of a crocodile and the body of a river dolphin.

Even after being such special creatures, the population of these magnificent beings are decreasing dramatically. The reason includes direct killing, bycatch fishing, habitat fragmentation by dams and barrages, pollution such as the release of toxic waste without treatment and plastic waste disposal into rivers. Overfishing of smaller fish reduces available prey for this dolphin, leading to a drop in the dolphin population. Mostly, these intelligent dolphins are caught as bycatch (the unwanted marine creatures trapped by commercial fishing nets during fishing for a different species) and die after getting entangled in nets.

Dolphins and their conservation issues are now entering the spotlight. The 1985, the Ganga Action Plan indirectly ensured this creature's survival, and recently, on 15th August 2020, the Prime Minister announced the government's plan to launch Project Dolphin. This 10-year project will focus on both river and sea dolphins. Additionally, 5th October is celebrated as 'National Ganges River Dolphin Day' to raise further awareness about this unique species. Since the Gangetic dolphin is at top of the food chain in the river ecosystem, protecting the species and its habitat will ensure the conservation of the aquatic species of the river.

We as responsible citizens can do our part by creating awareness about such species and keeping our rivers free of pollution. This small effort will make sure that we share our future with our 'sightless ally'!



Meet the Kolar Leaf-nosed Bat

Written and Illustrated by **Pratiksha Sail**

Buried under a granite cave in Kolar, a district in Karnataka famous for the precious metal gold, lives a bat oblivious to the vast landscape. A two-foot-wide entrance leading to a subterranean (underground) hollow at the base of a hill is the only address it knows. The Kolar leaf-nosed bat (*Hipposideros hypophyllus*) has been found in two locations in the world, namely, Hanumanhalli and Therahalli caves in Kolar District, Karnataka. It was first discovered by taxonomist Dieter Kock and ecologist H.R. Bhat.

For 19 years following its discovery, the Kolar Leaf-nosed bat received zero attention, almost lost in oblivion. In 2013, Dr. Bhargavi Srinivasulu, a bat biologist from Hyderabad, and her team revived its study. They took it upon themselves to track this bat down. To their astonishment, Therahalli no longer harboured any Kolar leaf-nosed bat colonies.

They have disappeared completely from there, restricting themselves to a single subterranean cave in Hanumanhalli now. This cave houses between 150 - 200 individuals who share the roost with three other bat species- the Fulvous leaf-nosed bat (*H. fulvus*), Schneider's leaf-nosed bat (*H. speoris*) and Dusky leaf-nosed bat (*H. ater*).

The Kolar Leaf-nosed bat is a medium-sized bat weighing 4 grams. Its body colour changes periodically in a year from fawn to golden to pale grey. They are old-world bats named so due to the flat structure on their muzzles that often resemble a leaf.

The Kolar Leaf-nosed bat is on the brink of extinction today. It is listed as Critically



Endangered. An endemic (found only in the place of its origin) animal, confined to one location in the entire world, faces the threat of extinction in the near future due to various factors. Its habitat, 'a cave' is the most fragile habitat receiving the least attention for discovery or study. The caves housing these bats are just wide enough for a human to crawl through, with its floor cushioned in bat droppings called 'guano'.

Why has the Kolar Leaf-nosed bat vanished from Therahalli cave? There are many possible reasons. The cave roof is used to dry millets and other grains and is a picnic spot used regularly which could have caused disturbances to the bats residing in the cave. Caves are unique ecosystems. Cave fauna (animals) live in a microclimatic environment, susceptible to disappearance over tiny fluctuations in their environment. The Hanumanahalli rock was also illegally mined for granite for several years. Through the sheer determination of researchers studying and documenting this bat, mining has been banned in the area since 2015. Hanumanahalli cave is the last

refuge for this endemic species. Upon realising the pressures and need for conservation, the cave and 94 hectares of the area around it were demarcated as a conservation reserve in 2019. This brings some protection, however the ultimate goal is far from reach.

The Covid - 19 pandemic brought illness, death and a bad reputation for bats. Bats have been under intense scrutiny and debate for their alleged role in virus transmission, but are completely ignored for the benefits that they provide.

Therahalli Cave, Kolar, Karnataka



Rajesh Puttaswamaiah



Bats are excellent pest controllers; they pollinate plants and disperse seeds. Bats in all habitats are under threat. Habitat alteration and human disturbance have shrunk the Kolar Leaf-nosed bat's home to a single subterranean cave. If the current scenario persists, the Kolar Leaf-nosed bat, the last single population of this species in the entire world, could soon become extinct.



Dr. Bhargavi Srinivasulu and T A Shah



Meet the Egyptian Vulture

Mirza Altaf Baig | Illustration by **Varnika Walvekar**

I first saw a vulture while birdwatching in the field near my university department in 2018. I had previously only heard tales about vultures from my professors and older family members. Since I grew up in cities like Delhi and Noida, I always wanted to see these scavengers at least once, but I never had the chance because their population substantially fell in the late 1990s and early 2000s.

That exciting day, I saw a large white coloured bird with black flight feathers and a wedge-shaped tail flying just above the department premises, and one of my seniors told me “Look, an Egyptian Vulture is flying by!” I looked up and kept gazing until it moved beyond my sight.

From that day, spotting an Egyptian Vulture became an addiction and my eyes kept looking for this majestic bird whenever I used to go

birdwatching. While reading about it from various books and websites, I came to know that it is the smallest vulture species among a total of nine species recorded in India so far. The body length ranges from 54-70 cm and the weight is 1600-2400 grams. Its wingspan ranges from 146-175 cm. The other eight vulture species include Himalayan Griffon, Eurasian Griffon, Bearded Vulture, Slender-billed Vulture, Red-headed Vulture, Indian Vulture, Cinereous Vulture, and White-rumped Vulture.

The Egyptian Vulture (*Neophron percnopterus*) is a resident species and occasionally migrates altitudinally up to an elevation of 2500 m. At present, its distribution is greatly affected by the presence of food and human waste and it lives as a scavenger near or even in towns. It is normally seen alone or in pairs, sometimes in groups comprising dozens of individuals and very



occasionally more than 100. Once, I recorded a maximum of 35 individuals in Aligarh district, Uttar Pradesh during 2019. Last year, I saw a nesting pair of Egyptian Vultures at Kerwa Dam, Bhopal, Madhya Pradesh.

This vulture feeds mainly on carrion (dead creatures), including all types of dead vertebrates, from birds and small mammals to livestock, dead dogs, and large wild animals. It normally eats only scraps of large carcasses rejected by the other vultures.

The breeding season ranges from February to mid-June. Cliffs are generally preferred as nesting habitats. Sometimes, it occupies the old nests of other raptor species. A stick nest with a deep central cup is constructed by both partners. The nest is usually lined abundantly with wool, hair, rags, and food remains. Pairs often have several nests, alternating between them annually, but sometimes re-use the same nest in consecutive breeding seasons. Normally, they lay two eggs, but sometimes there may be one or three. Eggs are incubated (kept warm for hatching) for 42 days



and both the partners participate in incubation and feeding the chick. They can reproduce at the age of 4-6 years and they are known to live up to 37 years in captivity.



The ecosystem services provided by the Egyptian Vulture include organic waste removal that results in disease regulation. Other services are sanitation and nutrient recycling respectively.

This bird is facing threats such as climatic disturbance, poisoning, collisions with wind turbines, electrocution, food scarcity, habitat loss, and the toxic veterinary anti-inflammatory drug Diclofenac in carcasses that it feeds on. Due to these threats, it qualifies as 'Endangered' in the IUCN Red List category due to its recent and extremely rapid population decline in India.

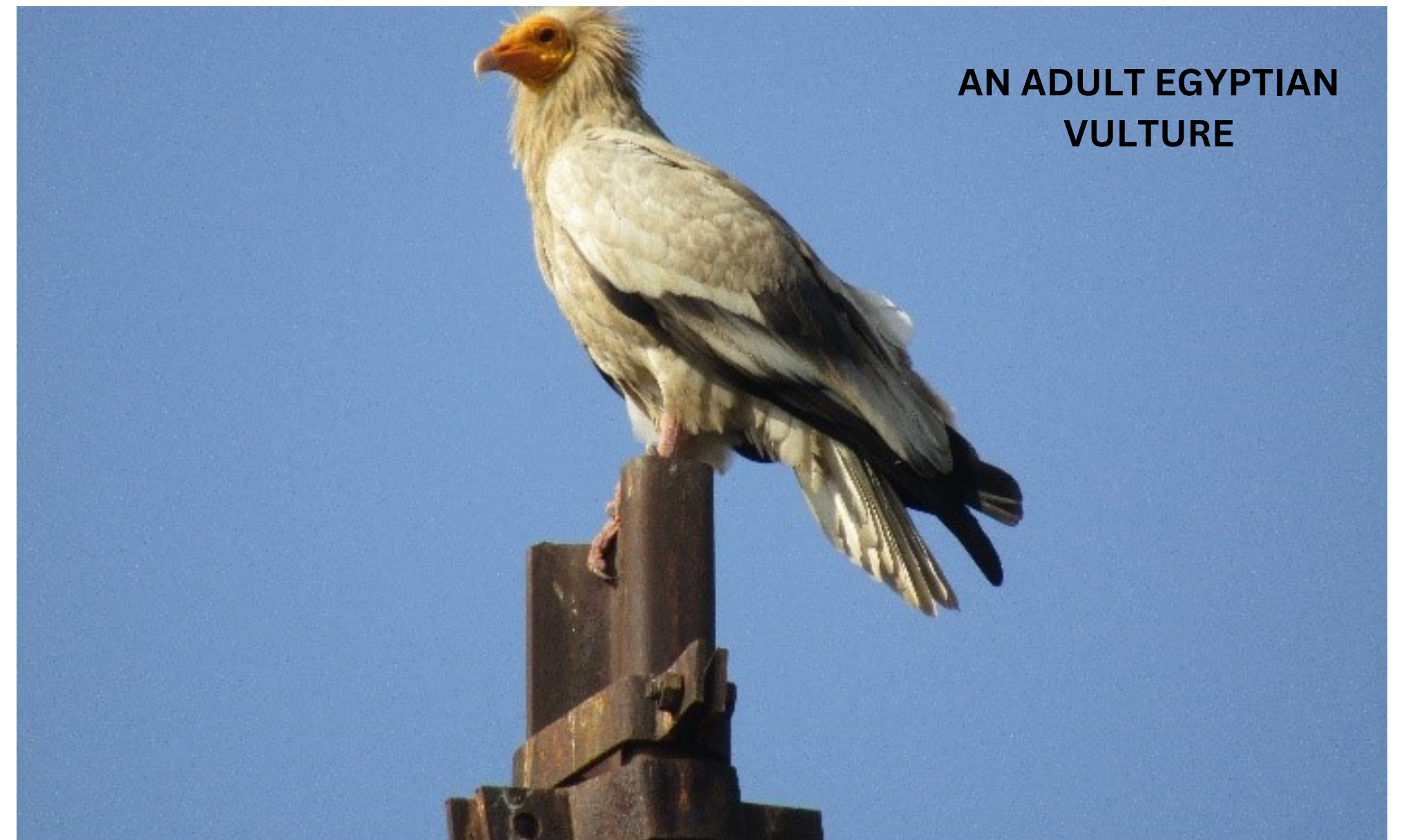
**PREFERRED HABITAT
OF VULTURES**



**A JUVENILE EGYPTIAN
VULTURE**



**AN ADULT EGYPTIAN
VULTURE**



The Endemic Six

Maria Antony P. | Illustrations by author & **Shreya Juyal**

It was a drizzly, cool evening in the wet evergreen forests of KMTR. A reed brake at the wooden bridge near Nalumukku Tea Estate waved gently, the coo of Lion-tailed macaque could be heard faintly from the canopies of Cullenia trees, and golden sun rays dissolved into the dark clouds. The evening was getting darker, and water rustled through the pebbles and rushed down towards the stream.

A feeble voice piped up from the brake by the bridge. **Reed, a flute bamboo** who lived close to the stream, bobbed lightly. “I’m starting to feel the arrival of the winter. Do you feel it too, Spot?”

Spot, a sincere White-spotted bush frog was guarding his eggs inside a tiny slit present in the lower end of an internode of an Ochlandra Reed stem. He preferred this spot as it would not collect

water during the rains. “Yes, I do feel the shift, Reed,” he answered.

Meanwhile, a tiny rat-like creature with a bushy, tufted tail tip and spiny fur on its back appeared from the nearby woods. **It was the Malabar spiny dormouse named Spine.**



Maria Antony P.

“Hello, Reed and Spot! Sorry to interrupt your long conversation,” said Spine the dormouse.

“No, no, you’re always welcome, Spine!” replied his two friends.

“How are your eggs?” asked Spine to Spot.

“They are fine and healthy, Spine. I’m on the lookout for some tasty ants or cockroaches for dinner.”



SPOT

Maria Antony P.

“Good luck! I wanted to taste Reed’s fruit, but I don’t want it now, as our friend won’t live for long once she flowers and produces fruits like her cousins, the bamboos. Ah, we will miss our good friend, Spot,” Spine sighed. “I will be happy with the fruits of *Myristica* and other trees instead.”

“Yes, Spot, my species flowers together and produces seeds all at once before we die and our seedlings replace us,” added Reed.

“I can’t believe it!” Spot replied sadly.

“Spot, why don’t you come out and get some bugs? Nothing’s going to come by your hole,” Spine suggested.

“If I come out, I will lose my protein rich eggs to my cannibalistic fellow frogs, which will eat my poor eggs to ensure that their children rule this spot.”

“Oh my god! Are you CANNIBALISTIC!?!” Spine exclaimed. “You would eat your own species? I know cats, spiders, and mantises are cannibals, but I didn’t know this about you frogs!”



“Spine, Spot!” called Reed, who had been busy bobbing up and down looking at herself. “Yesterday, an elephant and a gaur came to eat some of my young tender shoots, and they were talking about your species, Spot!”

“About my species? What did they say?” Spot yelped.

“They were saying that a scientist named Albert C. L. G. Günther, a German-born British zoologist, first described and named your ancestor in 1876, but after that, no one has seen your species and thought you guys were extinct for 136 years! Then, in 2011, your species was rediscovered by the renowned botanist Dr Ganesan R from ATREE, Bangalore with his team Dr. Seshadri KS and Dr. Biju SD.”

“Wow!” gasped Spine.

“Also, Dr. Seshadri KS further studied the breeding behaviour of your species and discovered a new breeding method where your eggs will directly

develop into froglets instead of tadpoles! Apparently only two species do this!”

Suddenly, the group was distracted by a nibbling sound from the thicket.

“I think **Stripe** the **Nilgiri striped squirrel** is biting the stalks in the thicket,” Spot remarked.

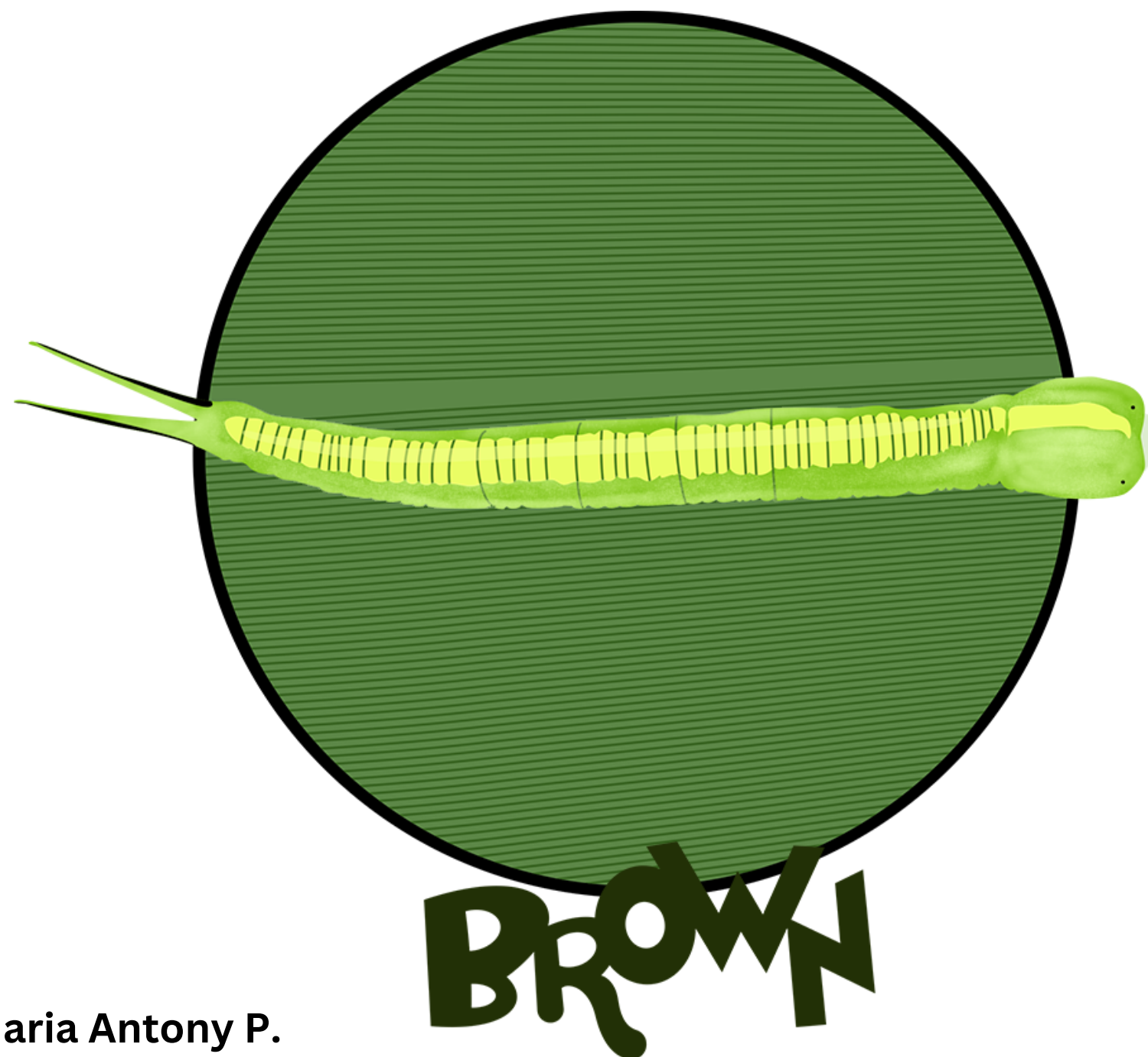


“We use the holes Stripe and stem-boring insects create, you know.”

“It’s been a while since I met him,” said Spine.

Reed spotted movement in the tall grasses. “Wait, Spine, I think he’s coming here!”

“Hello, here I am!” Stripe greeted them. “Haven’t seen you in a while, Spine!”



Maria Antony P.

While the four friends were giggling about their interesting adventures, Reed suddenly sensed danger approaching. The others were still busy with their conversation, unaware of what lay ahead.

Reed was silent, watchful and very alert, and suddenly, she spotted **Scale, a large-scaled pit viper**, lying poised to strike in the thicket. “Stripe.. Stripe, JUMP!” shouted Reed.

Stripe sprang onto another stalk and froze, just as Scale struck. Reed’s timely shout had just saved Stripe from becoming the viper’s lunch!

Scale missed the opportunity and lost her meal and her balance too. She fell from the thicket and into the wet leaves and slithered away slowly, grumbling.

The four friends breathed a sigh of relief. “You saved me, Reed,” said Stripe gratefully.

“Don’t worry about it,” said Reed. “Let’s forget

about it. She doesn't strike like that unless she's very hungry. Now look under my leaf; Brown's eggs are hatching into strange tiny little green and yellow caterpillars!"

"Wow, how cute they are!" exclaimed Stripe, his shock quite forgotten.

"Who's Brown?" Spine asked.

"Brown is a Travancore evening brown butterfly," Spot answered. "Did you know, Spine, one common thing that you, me, Reed, Stripe, Brown and even Scale share is that we all are endemic to the Southern Western Ghats! And unfortunately, most of us are endangered as our populations fade away and our homes are destroyed."

"We should be grateful to our beloved Reed, our keystone species who gave us this nice home where we can raise our young ones and eat good food," said Spine. "I'm scared that the uncontrolled chopping of Reed and her thicket is going to put us all in danger."

The others nodded their heads in agreement.

The shadows grew long, and the chill winter breeze picked up speed. Spine leapt up a nearby tall tree and scurried away in search of fruits, waving goodbye. Stripe moved further into the dense thicket for a good night's sleep, and Spot squeezed his head back into his hole, waiting for prey and the hatching of his froglets. Brown's little caterpillars started wriggling into a line to taste their first meal.

And Reed, with a gusty sigh, drooped her leaves to rest for the night.

The night grew silent even as little creatures began to stir.

The Forest Council Returns

Ankur Singh & Sarika | Illustration by **Parinitha P.**

Amidst the golden glow of the morning sun, the heart of the forest was buzzing with the chattering of the forest dwellers. They had gathered for an urgent meeting called by Mr. Bear, the head of the Himalayan Forest Council. The avian members were perched on the branches of the mighty Juniperus, while the animals sat chattering around it. The rumor of bad news from the Deccan Council was circulating amongst the members. Some tried to guess what could be on today's agenda.

Suddenly there was complete silence as Mr. Brown Bear appeared on the ancestral stone, accompanied by his ministers Mr. Elephant and Mr. Yak.

“Sisters and Brothers of the forest!” announced Mr. Bear. “Last evening Mr. Pigeon brought a letter from

the head of the Deccan Forest Council. The news is puzzling to me. I am informed that there has been a strange step taken by the bipedal humans regarding the forest. They appear to have brought a new species to live in the forest.” With this announcement, the crowd, which had been listening patiently until then, started murmuring amongst themselves.

“Quietttttt,” trumpeted Mr. Elephant. “Before you make up your mind, you must have all the facts at hand. Mr. Panda, I would like you to disclose the research you have done till now on the matter.”

Hearing this, Mr. Red Panda who was sitting in the front row stood up and started. “Friends, this new species that Mr. Bear is talking about is called

Cheetah. They are distant relatives of Mr. Leopard. They have been brought to the Kuno National Park from Namibia of the African continent, under a project called 'Project Cheetah', which was initiated



by the government of the Indian bipeds. The Cheetahs once used to roam free amongst us in the past century, but the greedy humans hunted them to extinction in our lands by 1952. They are hoping that these relatives of Mr. Leopard will slowly become an integral part of our forest ecosystem -”

“-BUT!” chimed in Ms. Thar, “We know nothing about them; they might be a part of a serious conspiracy of those bipeds who themselves hunted the relatives of Mr. Leopard to extinction.”

“Or they might be trying to spread new disease amongst the forest dwellers, as during the pandemic...” Mrs. Monal voiced her suspicion.

Everyone agreed with Mrs. Monal. “How can we trust those bipeds?” they voiced in unison, and the murmuring started again.

Learned Mr. Owl who was perched on the lowest branch said, “Perhaps we must allow Mr. Panda to

complete sharing his information on the matter first, and then we can decide what must be done.”

Everyone turned to Mr. Panda again, who swelled up. “The transportation of this new species was also covered extensively by the biped media, which I feel was an attempt of political popularism.”

Mrs. Pigeon replied, “That must be true because the media rarely focuses on conservation of endangered and critically endangered species of our forest.”

Mr. Panda continued. “Many bipeds who call themselves experts in forest matters believe that these new species might be unfit for our forests as they are bigger in size than our ancestral Asiatic Cheetah, have different genes than our ancestors and require a much larger hunting ground for survival.”

“Yes!!” Mr. Yak who was silent till now affirmed. “I remember my grandparents telling stories of relatives of Mr. Leopard, who used to be much

leaner and taller than them. They used to be the fastest-running members of the forest and hunted smaller grass-eating animals and birds in the wild, but kept away from larger forest animals and were competitors for the family members of Mr. Tiger and Mr. Lion.”

Hearing this comparison of Cheetah with Mr. Leopard, Mrs. Leopard became a little anxious and said, “Perhaps the arrival of these new members to our forest might not be all bad for us. Remember, in the last meeting we discussed how some bipeds are good and working for the conservation of our forest and have only good intentions in their heart?”

“This might be true, but we must remain vigilant and keep a close eye on these newcomers,” said Mrs Eagle. A unified “Yes” was heard from the forest dwellers in response to her wise words. “Then it is clear,” announced Mr. Bear. “I will respond to this letter and convey our opinion on the matter. We believe that all forests must remain careful with the new members; however,

they must not be alienated from forest matters. We must interact with these members and judge them for what they are, on the basis of our experience with them, not on the basis of speculations and guesses. This council announces the end of today's meeting, we will meet again on the next full moon day.”

With this final announcement from Mr. Bear, all forest dwellers made their way back to their respective homes.

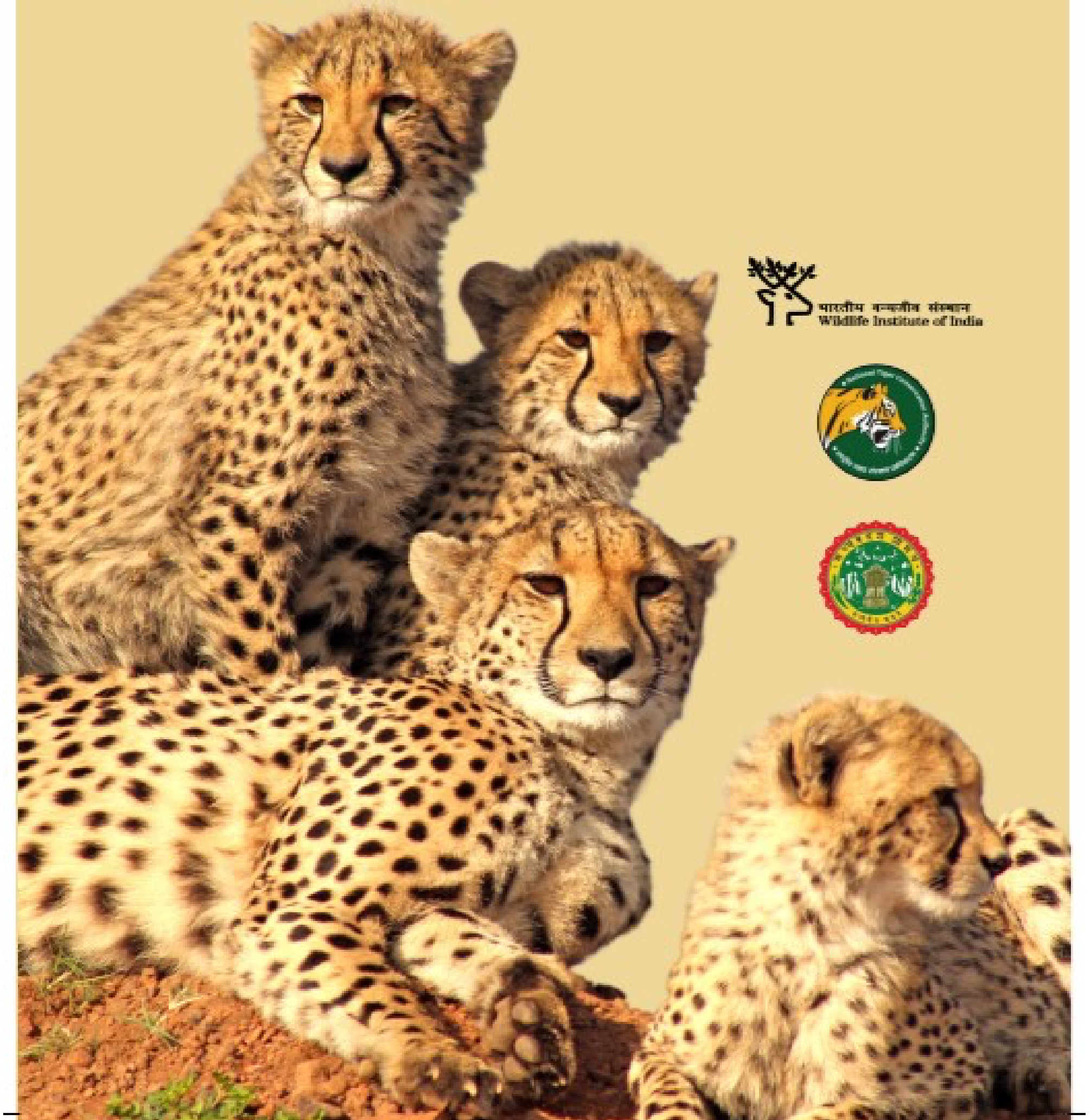


Wikimedia Commons

Handlers pose with the Indian Cheetah, a species now extinct, in Baroda, Gujarat in the 1890s

Action Plan for Introduction of Cheetah in India

(With Emphasis on the First Release Site- Kuno National Park)



An Evening with Elephants Pt. 2

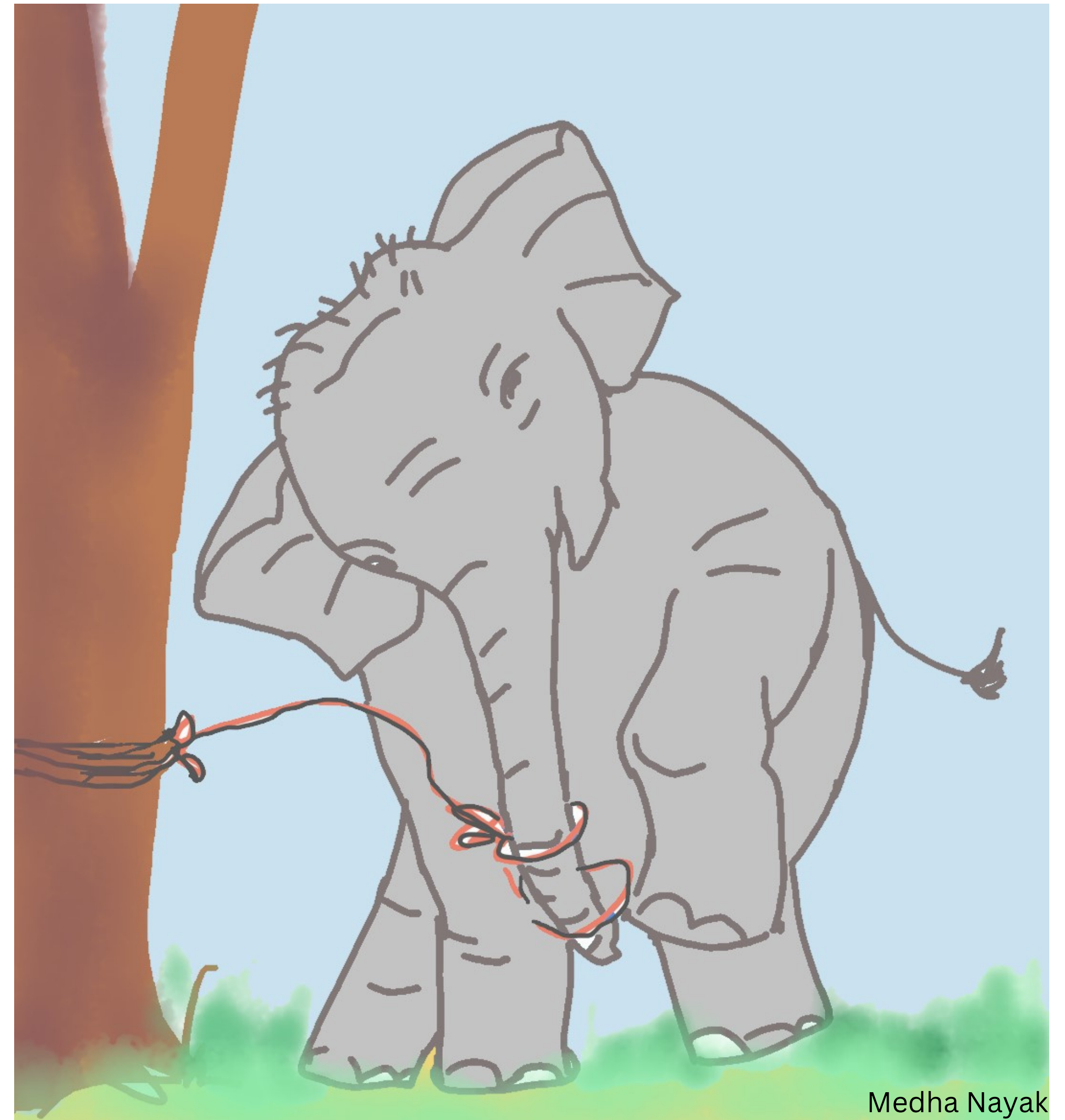
Medha Nayak | Illustrations by author & **Adyasha Nayak**

On a misty morning before dawn, Ravi and his father walked to the pond to get ready for the day. Suddenly they heard some strange sounds. They looked around trying to identify the voice or trace its source. They began to hear the sound and reached the farmlands abutting the forest.

Ravi cried out “ Father, look there is a baby elephant!”

They spotted a baby elephant caught in the snare. Its trunk was badly entangled in the wire and it was crying for help while struggling to free itself.

Ravi ran towards it to help but his father pulled him back and warned “Ravi, don’t go. Older elephants or possibly its parents could be around. Apprehending fear and being oblivious to your noble intentions, they could harm you Ravi.”



Medha Nayak

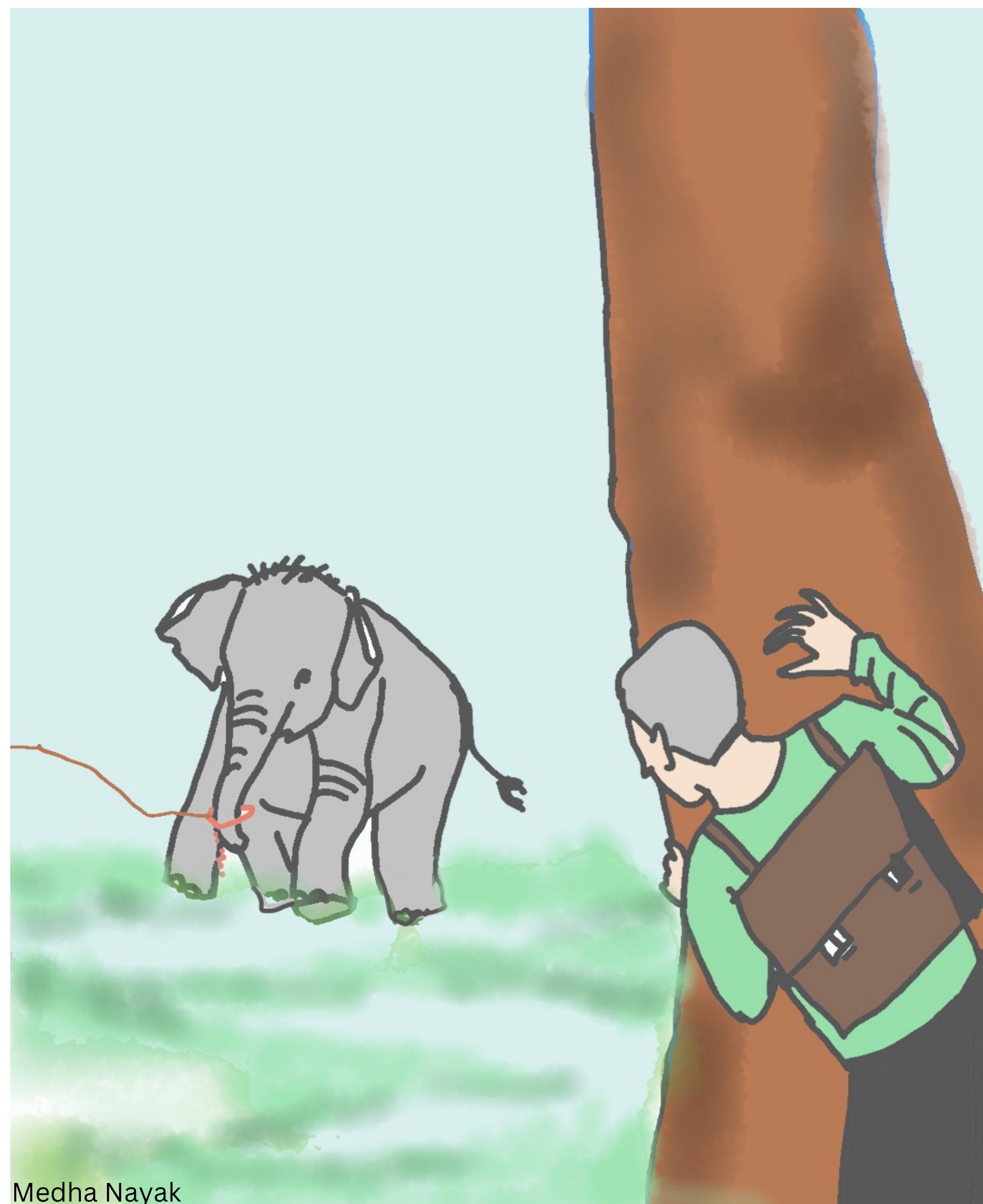
Being protective of his only son, Ravi's father dragged him away from there towards safety. Ravi couldn't bear the baby elephant's misery and said, "Father, the baby elephant needs help. Can't you see how much it is crying? We should do something about it!"

Ravi's father explained, expressing helplessness, "I wish we could do something. The elephant calf is caught in a snare set for wild boars who destroy our crops, so if we inform the forest department then the person who had set the trap might harm us."

"Ravi, all we can do is hope that the elephant calf frees itself or someone comes to its rescue. Unless someone dares to inform the forest department." Father added.

Ravi went to school after, but his mind was stuck on the trapped elephant. He thought of the elephant's parents and friends, if they were trying to help it or if they even knew that it was stuck. Several such thoughts distracted his attention from the classroom. As soon as the recess bells rang, he rushed to see the elephant. Maintaining a safe

distance, hiding behind a tree, he watched the elephant. The wire had made deep cuts on its trunk



Medha Nayak



Adyasha Nayak

and it was still struggling to free itself.

Ravi darted to the nearest forest administrative office that his father had once shown him.

Upon receiving the information, forest department staff rushed to the spot along with Ravi. More staff and veterinary support was immediately called for. By this time, the news of the calf had spread like wildfire and a huge crowd gathered around the spot. The forest department staff cordoned off the area and began to treat the elephant. After many hours of tireless effort, they could free the calf from the wire and attend to it with medical care.

Just about the time when the sun was preparing to set, the baby elephant seemed to recover from the traumatic experience as it started looking around, possibly for its mother. Ravi was relieved to see it had regained its strength.

Without any further delay, the forest department rewarded Ravi for his concern and compassion to wildlife. His family and friends felt very proud of him.

Soon after, the calf was released from the care unit. Later, in the distant horizon against a beautiful sunset, everyone witnessed the ethereal scene of a happy reunion between mother and calf.

For Ravi, that was the best reward.

The Solitary Sarus Crane

Poetry by **Nishand Venugopal** |

Illustration by **Nidhisha Modi**

A wetland covered with fog,
Hoping that it is not the noxious veil of smog.
It was a chilly winter morning,
A good time for a birder to set out exploring.

Watching the migrant birds,
Observing the presence of these visitors,
Our attention was drawn towards bird call.
I saw a solitary Sarus crane behind the misty wall.

Though it was a sight and moment to relish,
But its call felt like a wail of anguish.
A species in such a vulnerable position,
Looking for habitats to subsist its population.

Making their nests on the ground,
Their calls are quite loud,
Even crop fields with sufficient water sources are a
refuge for their subsistence,
Their nesting grounds need local communities
respect, care and assistance.

Even those who travel to see them should
approach these places with reverence,
Given priority to comfort and privacy of the
species is an act of benevolence.
With the recognition of being the tallest flying bird,
Never undermine the significance of this bird in
this world.

A muse for myths, stories and native folklores,
There is a moral responsibility for humans to
address its woes.

Scientific name of this species is *Antigone
antigone*,

Wetlands are necessary to raise their progeny.

A place which is free from traps, plastic and
harmful chemicals,

Away from the fear of pesky people and free
ranging or feral animals.

Survival of their chicks is their species' priority,
Finding viable new ranges is also a possibility.

Observing and protecting their space is a
compassionate gesture,
This bird is known for interesting courtship
behaviour.

Is that a call for its mate?

Looking to pair before it's too late.

The bird is getting tired of this fruitless wait,
I watched it flying away to face its unknown fate.



In Search of Impatiens: In Conversation with Yogesh Bangal

Deep in the lush wet forests of the Western Ghats, a tiny, perfect flower blooms, a flash of pale pink in a sea of green. Well, today we meet Yogesh Bangal, whose PhD research focuses on this rare little plant, scientifically known as Impatiens.



What is your study species and why is it important ecologically?

I study a tiny plant known as *Impatiens*. It occurs in various forms like herbs, shrubs, and epiphytes (growing on the trunks of trees). *Impatiens* are rare ornamental plants and have several medicinal uses. Usually, fruit of any plant appears in different colours, but *Impatiens* has a green coloured fruit and when we touch the fruit, it splashes its seeds everywhere. This behaviour gave the species its Latin name *Impatiens*.

This plant is important for us to understand phytogeography (the geography of plants) and endemism (where a species is native to). While it is very good at helping us understand the way plants in India evolved over time, it is very hard to preserve and find in the wild because it has a very tiny flowering season.



How did you become interested in this species?

The biogeography of *Impatiens* is very interesting. They are mostly present in South China, Southeast Asia, Western Ghats, Himalayas, Africa, and Madagascar. Some past studies suggest that this genus might have originated somewhere in the southern part of China or Southeast Asia and later migrated to India and via Europe, it went to Africa.

I am interested to know the evolution and biogeography of *Impatiens* in Peninsular India. When did this plant come to India? How did they diversify (become different species) in Peninsular India? I have so many questions! Also, I am trying to understand about any linkages between climate and epiphytic *Impatiens* and the impact of climate change on vegetation, especially our rare plants.

Why is it endangered and how will your research help in its conservation?

Many species of *Impatiens* occur in specific climatic conditions. They have a very narrow elevation

elevation range where they can grow and, they are moisture-loving plants. Now, due to fluctuating climatic conditions, some *Impatiens* species are restricted to specific geographic areas only. Why are these places important for this plant, and how can we protect these areas to keep *Impatiens* from going extinct? My goal is to understand the habitat where we find *Impatiens* to help protect these forests and therefore help this plant.



Shruti Samanta



What advice would you give youngsters who might be interested in working on endangered species or research that can help conserve rare species?

As forests begin to vanish around India, many species of plants that we barely know about will start to go extinct. In my opinion, we should not wait until species become endangered to start worrying about them and trying to understand the conditions in which they live. By that time, we will already be too late. All species present in nature like plants, animals, and microbes are products of evolution. They have survived in varied climatic conditions, and they are also part of the evolutionary tree of life. We need to help people care about nature, not just about its economical value, so that they understand its importance and help conserve it. This sort of awareness begins with passionate young people, like you!



On the Trail of the Pangolin: In Conversation with Dr. Vikram Adithya

In the rugged hills of the Eastern Ghats, a scientist tracks the most trafficked wild animal in the world - the pangolin. Join Team YFN in conversation with Dr. Vikram Aditya, a senior researcher who has a wealth of experience working with endangered wildlife in some of India's least studied landscapes.



Why do you study pangolins? What made you interested in them?

I did not know anything about pangolins some years back. During my PhD fieldwork from 2013-2016, I saw that hunting was widespread in the Northern Eastern Ghats region where I worked. I talked to several villagers and learned that the pangolin was one species that was widely targeted for hunting and was not extremely rare. That made me interested in pangolins and studying what kind of impacts hunting had on them. In a sense, I wanted to do something to help them if I could, and that's why I started studying them.



What did you study to help you reach your current position?

I studied Bachelors in Geography and Geology in Osmania University and then did a Masters in Zoology in Kuvempu University. I also worked in WWF India for four years immediately after completing my Masters.

What is your current position and what do you typically do in a day at work?

I am currently between jobs, I completed my Ph.D. in 2019 and worked as a postdoctoral research associate in ATREE for three years. I will be joining the Center for Wildlife Studies (CWS), a Bangalore-based NGO next month. This month, I am finishing some of my pending work at ATREE. Typically during the day, I do a mix of things such as working on reports, writing manuscripts or reviewing others' manuscripts, organizing and analyzing my field data, writing proposals for grant applications, and some accounts work - usual office work. I also spend about two weeks a month visiting different field sites.



Tell us why we should care about the pangolin!

Pangolins, like every other species, have evolved uniquely for their lifestyle of burrowing and eating ants and termites over the course of millions of years. There is no other animal like the pangolin. It is the only mammal covered with scales that evolved from modified hair to protect their bodies from the stings of ants. Not only pangolins, but every other species that you look at would also be equally beautifully adapted to its particular lifestyle and niche in the great food web, and this would have taken millions and millions of years in the making. Once extinct, a species is lost permanently and can never evolve again in the same way even. Extinction is the disappearance of not only a species, but the loss of millions and even billions of years of evolutionary history, of all the battles that the species emerged from, of nature in the making. Just like we do not let our built human history disappear, evolution is a part of our history, and we and all the other species are living monuments to this history that we cannot lose.

Who is your conservation hero or someone who inspired you to get involved in conservation?

I read a lot of popular science and natural history books growing up, and was greatly inspired by them. Some of my favorite writers have been Richard Dawkins, Jared Diamond, David Quammen, and Gerald Durrell and I strongly recommend them to anyone wishing to get involved in conservation work. In particular, I recommend everyone to read *The Song of the Dodo* by David Quammen and *The Ancestor's Tale* by Richard Dawkins.



If children in India are interested in getting involved in conservation work, how do you recommend they get started?

I think children should start engaging with nature and wildlife as early as possible. I was fortunate to be part of the WWF nature club in my school which allowed me to join several nature camps and trails. Many schools have nature clubs now, and I suggest kids who want to get involved in conservation work, to join these nature clubs. If there's no nature club, some kids can get together and request their school to start one. Another important thing is to visit nearby forests or any natural areas around as frequently as possible, as this creates a natural interest and fascination with nature. And of course, most of us have had very good memories watching nature documentaries on natural history channels like NGS and Discovery.



ACTIVITY CORNER

Name: _____

Created with TheTeachersCorner.net Word Search Maker

Check out our fun word search and learn the names of some of India's endangered animals! One of these rare animals is the answer to the quiz question below - email or DM us with your answer to enter a raffle to win a Wildlife Week Prize!

This graceful animal can live without water for months, only relying on moisture in vegetation.

Hiding in Plain Sight

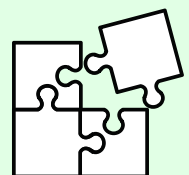
Find these endangered animals of India!

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P E P P D O B L H T D X O P P H S V M L
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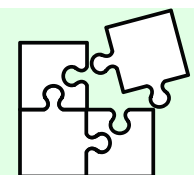
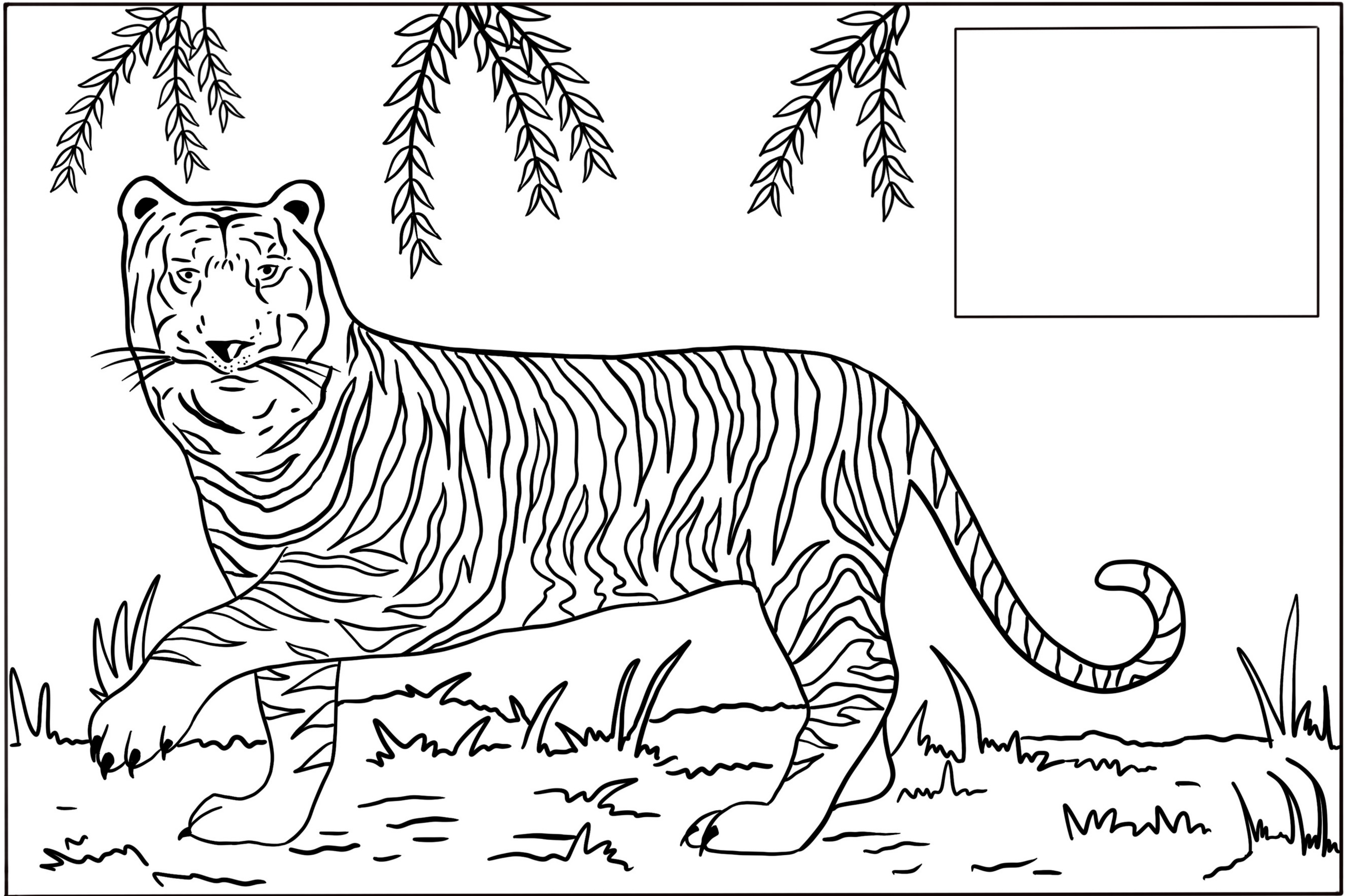
PANGOLIN
DANCING FROG
GHARIAL
HANGUL
BLACKBUCK
CLOUDED LEOPARD

DHOLE
KING COBRA
CARACAL
TAKIN
CHINKARA

PALLAS CAT
MAHSEER
FOREST OWLET
ARGALI
INDIAN RHINOCEROS



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Meet our Writers

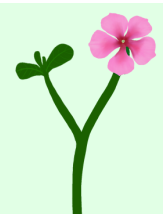
Adhvikha Sudharshan is 16 years old and studying in CS Academy. She finds the concept of less well known and rare species of animals quite interesting and exciting.

Ankur Singh is pursuing his PhD at the Indian Institute of Technology (Indian School of Mines) Dhanbad. He enjoys writing blogs and articles apart from research manuscripts.

Arjit K. Jere is a popular science writer with experience in animal ecology research. He is interested in studying the natural history of India's animal species. He likes to write about wildlife for a variety of audiences. His past articles have featured in SAEVUS wildlife magazine.

Avik Banerjee is pursuing a PhD at the Center for Ecological Sciences, Indian Institute of Science, Bangalore. His research includes understanding behavioural and nutritional ecology of lizards. Avik is a nature enthusiast who loves to travel around and learn new things. He also has a keen interest in nature photography.

Femi E Benny is a doctoral researcher at Ashoka Trust for Research in Ecology and the Environment (ATREE), Bangalore. An entomologist by training, she works on edible and therapeutic insects of northeast India. Her primary research interests lie in the fields of insect conservation, entomophagy, insect dispersal etc. Apart from research, she is also interested in cooking, planting, insect photography, tennis and pet keeping.



Maria Antony P. is a nature educator working for ATREE - ACCC. He is interested in wildlife, illustration and education.

Medha Nayak is a PhD in Humanities and Social Sciences. She worked on understanding human-elephant interactions in Odisha. Currently, she is heading human-wildlife conflict mitigation division at Wildlife Trust of India (WTI).

Mirza Altaf Baig is a Ph.D. research scholar at the Department of Wildlife Sciences, Aligarh Muslim University, Aligarh, Uttar Pradesh. He is currently working on the biodiversity of Ranikhet region, Kumaon Himalayas, Uttarakhand.

Monika Kumari has been working as a Researcher since last 12 years in different projects on Wildlife, climate change, mapping of plant resources, vegetation sampling, and digitalizing databases on bio-resources. She is a passionate nature lover, loves to walk free in the jungle, loves wilderness and serenity.

Nisha Bhakat is a wildlife biology student at National Centre for Biological Sciences. She has a particular weakness for the Eastern Himalayas and

its foothills. She is drawn to wildlife living outside our protected areas.

Nishand Venugopal is a nature enthusiast who quit his 15-year-old job as a producer in a leading English news channel to pursue his passion for nature and wildlife conservation. He's an avid nature photographer, writes poetry and prose that focus on nature and conservation, and uses his website nishandphotoark.com and social media channels to encourage people to observe and conserve nature.

Pratiksha Sail is a researcher, educator and natural history illustrator. She works as an Assistant Professor of Zoology at Carmel College for Women, Goa. She is interested in wildlife research and exploring historical ecology.

Priya Ranganathan is a wetland ecologist and geologist by training who works in the wild Western Ghats. Check out her website '[On Life and Wildlife](#).'

Samarth Jain is currently pursuing his Bachelor's degree in Zoology. Since childhood, he had a keen interest in wildlife. He looks forward to have a career in future where he can conserve and research about the wonderful creatures inhabiting our earth.

Sarika is an environmental researcher turned PhD student at the Ashoka Trust for Research in Ecology and the Environment (ATREE). She enjoys writing articles and blogs when not writing research papers.

Meet our Artists

Adyasha Nayak's (@the.monk.seal) work is derived from current research in conservation. These are focused on species conservation, based on field surveys and published research. Having worked with indigenous communities around protected areas, coexistence is a prominent theme in her art.

Asiem Sanyal is a marine biologist and conservationist, a creative, and a PADI instructor. He has worked in different islands around the world, from Cape Verde and Madagascar, to more recently Timor-Leste. When he is not busy devouring books, writing, or creating art, he posts as @asiemov on Instagram.

Asmita Sapre Ranganathan is a doctor, Sanskrit teacher, artist, poet, and writer from Mumbai currently based in the USA.

Kshiti Mishra is pursuing a PhD in physics in the Netherlands and occasionally likes to dabble in different kinds of art.

Meera Phadnis is a 10th grade student in Moraga, California. She enjoys art, reading books, Kathak, and playing tennis for her school team.

Nidhisha Modi is a high school student who enjoys anything creative and is always ready to experiment or try new mediums. Using creative mediums for her work allows her to engage with the process more and makes it more enjoyable and rewarding at the same time.

Parinitha P. enjoys warm sunshine, blue skies, coffee and making art. She currently work in development and she's always had a deep-rooted passion for the environment. She likes working with both traditional and digital media.

Rama Narayanan H. is a wildlife biologist with the Nature Conservation Foundation, Bangalore. Recently, he started developing interest in nature illustration and started appreciating Indian wildlife through his artwork.

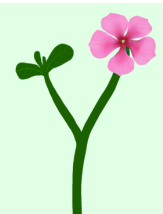
Shreya Juyal is a student who likes to take pictures of nature to reference while dabbling in digital or on-paper painting.

Shreya Mehra is interested in learning more about conservation and environmental issues. She likes to explore and depict the same through her illustrations. Shreya has completed her masters in Environment and Development.

Tanmaye G is a student keen on understanding wildlife and expressing her love for wildlife through illustrations and short write ups. She is interested in pursuing research in wildlife as a career.

Ujali Shirodkar is an Ecologist and self-taught artist based in Mumbai. She works as a Biodiversity Specialist at Terracon Ecotech, an ecological consultancy based in Mumbai. She mostly spends her time creating art and exploring outside. Her main inspiration has always been nature, and in 2015, she started doing butterfly paintings in order to become better at identifying them. This collection of paintings has since gone far beyond butterflies and continues to grow. She creates watercolor paintings using tiny paintbrushes for fine details and careful research for accuracy, albeit giving the animals a friendly smile and a twinkle in their eye.

Varnika Walvekar is a Master's in Conservation Practice student at ATREE, Bangalore. She loves art, music and writing and always wonders if she can be a jack of all trades and master of one. YFN's reach amongst children got her interested in the magazine. She hopes to help expand it further!





A Voice for Children

Youth for Nature focuses on bringing current environmental news, informative pieces on India's wildlife and wild places, and engaging activities to bring children closer to nature. We take pride in showcasing the work of children as well as professionals working to save India's wilderness to inspire youth to speak for our natural world.

Contact us at yfn.magazine@gmail.com with queries or if you would like to write/illustrate/translate into regional languages in upcoming issues.



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