

From prehistoric creatures to rare species still being discovered, India is blessed with remarkable richness in biodiversity. Presently, species populations are declining at such an unprecedented rate that some might go extinct even before we hear of them. Habitat preservation and species conservation is, therefore, the need of the hour.

Conservationists' attention towards India's charismatic big mammals often overshadows the lesser-known but equally endangered species. The essence of **The Habitats Trust's** work is to highlight these overlooked species and habitats, and the threats they face. The Trust introduced **The Habitats Trust Grants** in 2018 to support the heroes of conservation - organisations and individuals who work tirelessly against insurmountable odds to protect and preserve India's natural habitats and indigenous species of flora and fauna. This book highlights the **2018 Grants winners**, the **2018 finalists** and the **2019 finalists**. It is a compendium of their work, the stories of their hardships and successes, and their hopes for the future of the species they are striving to protect. Through this book, The Trust aims to recognise the passion of these conservation champions and celebrate their dedicated efforts.



"There are a lot of problems faced by our country of 1.3 billion and wildlife conservation sometimes takes a backseat to people issues. Ours is a lesser-known but an equally important cause."

*- Roshni Nadar Malhotra,
Founder of The Habitats Trust*



THE HABITATS TRUST GRANTS

2018 • 2019



THE HABITATS TRUST GRANTS 2018 • 2019



THE HABITATS TRUST

GRANTS

2018 • 2019



Ratnagiri District, Maharashtra

THE HABITATS TRUST

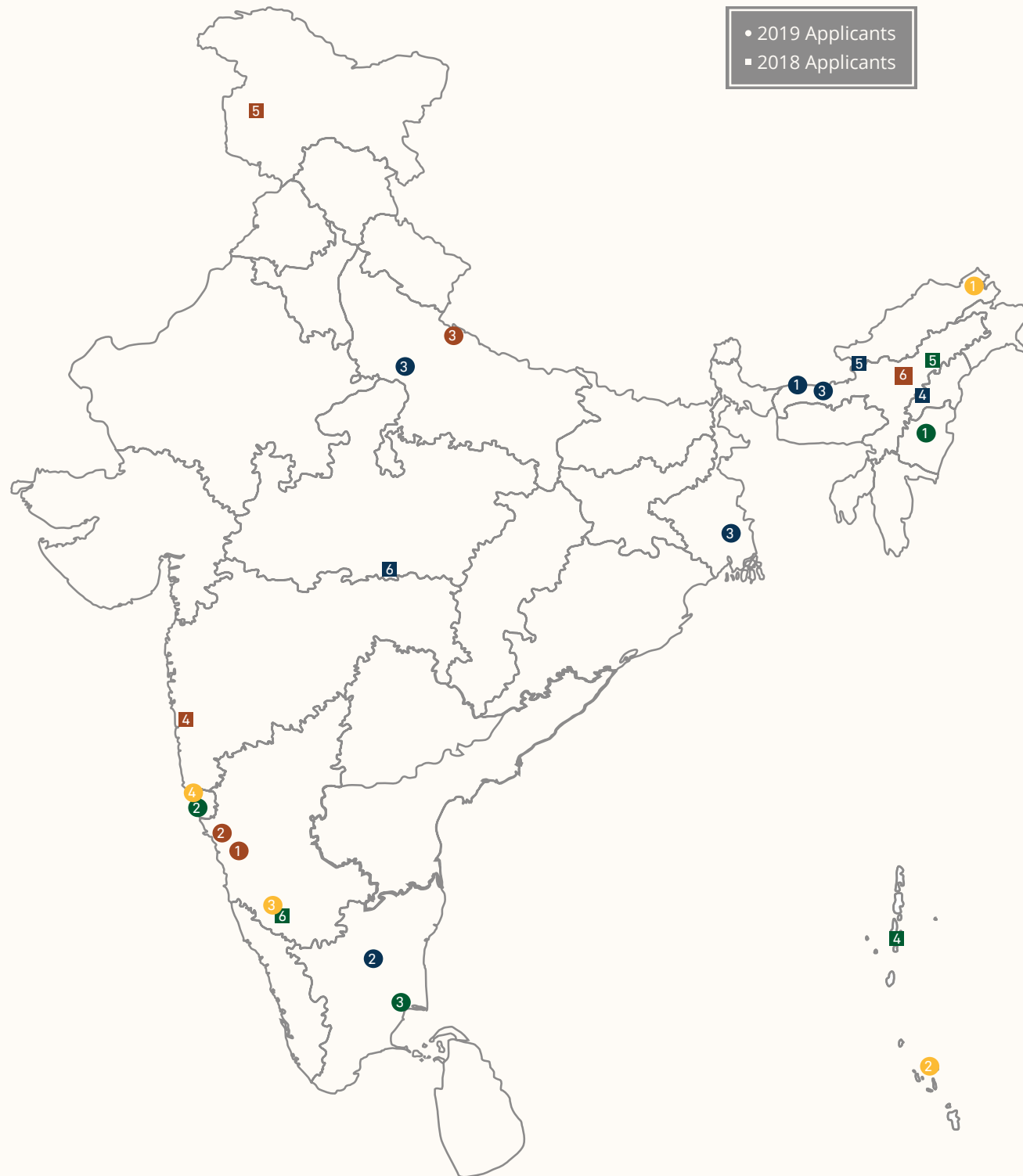
GRANTS

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SHOWCASE
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BIODIVERSITY OF INDIA

BEYOND THE CHARISMA OF MEGAFaUNA

On a winding road cutting through manicured tea bushes, a rather peculiar looking animal bounds across. Its dark round face surrounded by a mane of white along with its lion-like, tufted tail has earned it the name of the 'lion-tailed macaque'. Endemic to the rainforests of southern India, this handsome primate is unfortunately among the most endangered of macaques from around the globe. The lion-tailed macaques rarely step on the ground in undisturbed forests; in this part of India, they are forced to come down to make their way across broken canopies. Speeding traffic on the roads cutting through their habitat is their nemesis. That is why two human watchers employed by a local NGO accompany the troop through the day – their job to ensure that the macaques are not run down by traffic.

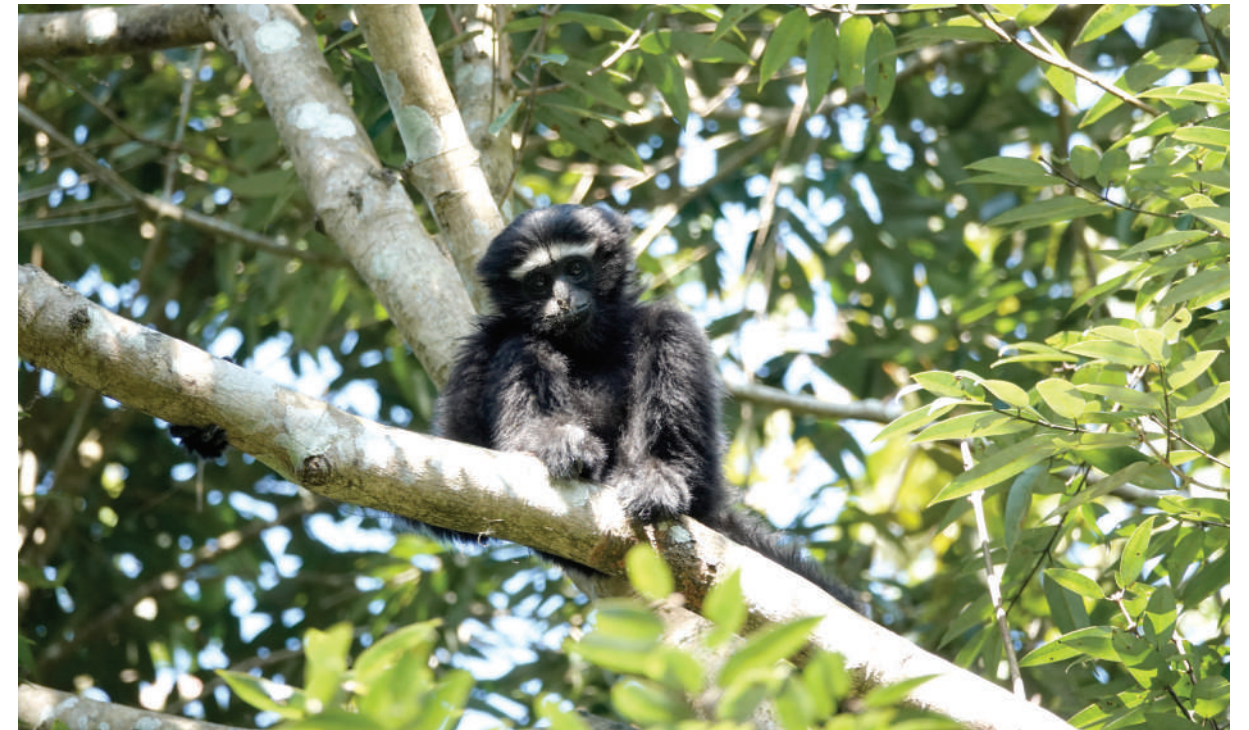
The lion-tailed macaque is not the only unique species found in India, there are hundreds spread across taxa and landscapes. From dancing frogs, the size of a human thumbnail to the hooting hoolock gibbon (incidentally India's only ape species), to the critically endangered Bengal florican bird that jumps like a spring chicken on a trampoline to impress its mate, nature's enigma can be seen at every corner of this rich natural heritage. Recognised as one of the 17 mega-biodiverse countries in the world, India is home to 96,000 species of animals, 47,000 species of plants and nearly half the world's aquatic plants. Four of 34 globally identified biodiversity hotspots: the Himalayas, the Western Ghats, the Northeast, and the Nicobar Islands, are found here.

But this rich diversity is in peril. The Red List of Threatened Species, prepared by the International

Union for Conservation of Nature (IUCN), in 2012 listed 132 species of plants and animals as Critically Endangered. To protect this natural heritage, a number of laws were introduced post-independence. The Wild Life (Protection) Act, 1972 (WLPA) provides a powerful legal framework for prohibition of hunting, establishment of Protected Areas (PAs), regulation and control of trade in parts and products derived from wildlife, and the management of zoos. The several categories of Protected Areas/Reserves include National Parks, Wildlife Sanctuaries, Tiger Reserves, Conservation Reserves and Community Reserves.

More importantly, the WLPA gives the necessary legal protection to species by emphasising that no wild mammal, bird, amphibian, reptile, fish, crustacean, insect, or coelenterate listed in the four schedules of the act can be hunted either within or outside PAs. On conviction, the penalty is imprisonment for a period ranging from three to seven years with fines not less than 10,000 Indian rupees.

In addition to the WLPA, in order to check rapid deforestation due to forestlands being diverted by state governments for agriculture, industry and other development projects (allowed under the Indian Forest Act), the Central Government brought in the Forest Conservation Act in 1980 with an amendment in 1988. The act made the prior approval of the Central Government necessary for de-reservation of reserved forests and for use of forestland for non-forest purposes. This legislation has, to some extent, curtailed the indiscriminate diversion of forestland for non-forest purposes (such as construction of roads, mining projects and hydro-powered dams)^[1].



Hoolock gibbon, the only ape species in India.

Strong wildlife laws are supported by a proactive judiciary that has stepped in to further the cause. Through a series of judgements, orders and directions, the Supreme Court has from time to time made sure that wildlife and biodiversity are protected. For instance, in a landmark order of 2012, the Supreme Court issued a clampdown on mining activities in Goa. Further in 2018, it quashed all 88 mining leases renewed by the state in 2015 to “benefit private mining leaseholders”. This judgement took note of the “rapacious and rampant exploitation” of the state’s fragile ecology. Another judgement, way back in 1996, changed the definition of a forest from merely one that existed on government records to the dictionary meaning of the word ‘forest’, setting the ball rolling for the protection of forestlands, for instance, in the Aravallis, even though they were not listed in government records. In 2000, the apex court gave another significant order directing the government that it could not denotify the PAs without the court’s permission.

COMMUNITIES THAT PROTECT

While judicial orders in favour of conservation have been lauded, the work by communities to protect and conserve trees, habitats and species has gone largely unrecognised. Across India, examples abound of communities that have over centuries protected natural habitats. In 2018, a study conducted by the Wildlife Conservation Society-India with communities living near wildlife reserves in Rajasthan showed a high tolerance for wildlife. Almost 85 percent of respondents believe in protecting the reserves despite negative interactions such as losses in crops by nilgais, jackals and wild pigs or depredation of livestock by leopards and wolves.

In addition to a high level of tolerance towards wild animals, there are a number of instances of communities proactively protecting the forest or a species. An NGO based in Pune – Kalpavriksh documented such initiatives of community-based conservation. The Gond tribal community in Mendha (Lekha) village of Gadchiroli district, Maharashtra,



Lower Dibang Valley, Arunachal Pradesh, in Northeast India is part of the Himalaya biodiversity hotspot.

initiated protection and de facto controls over 1,800 hectares of forest over two decades ago; Jardhargaon village in Uttarakhand has regenerated and protected 600 to 700 hectares forest and revived several hundred varieties of agricultural crops. However, community-led conservation areas, like government supported PAs, have had their share of problems. Many argue that they have not been able to stave off species decline while others have been lost to development pressures.

Another concept that has not received much attention in conservation policy is the role of sacred groves – consisting of patches of forest or natural vegetation – that are usually dedicated to local deities, have helped preserve local flora and fauna that would otherwise have disappeared. More than 13,000 sacred groves have been recorded from different states, such as Meghalaya, Maharashtra, Kerala, Madhya Pradesh, Odisha and Rajasthan. In spite of all the pressures on land, these continue to be preserved for their cultural

reverence, and stand out as repositories of biodiversity over the passage of time.

An amendment to the WLPAs added Community Reserves and Conservation Reserves as two additional categories for declaration of PAs that has enabled greater community participation. In Arunachal Pradesh – the discovery of a critically endangered bird species – the Bugun liocichla, kick-started conservation activities culminating in the declaration of a brand-new Community Reserve in 2017^[2]. Just 14 to 20 of these birds are known to exist and nearly all of them have been observed outside of the Eaglenest Wildlife Sanctuary, sharing their home and name with a local indigenous community – the Buguns. Although the community protected the forest, it did not have any legal protection. Ecologists helped to declare the area as a Community Reserve, and accord legal protection while encouraging ecotourism and improving local livelihoods so the community could further conservation efforts. In January 2017,

the Government of Arunachal Pradesh declared the Buguns’ agreed-upon area as the Singchung Bugun Village Community Reserve. With this, a part of their land – formerly unclassified state forest that could be reclaimed at any moment – got protected in perpetuity. The Reserve thus became a prime example of the government and communities collaborating for conservation.

THE THREATS TO INDIAN WILDLIFE AND HABITATS

Neither state-sponsored nor community-led conservation is enough however to tide the increasing threat to habitats. With the nation’s economy clocking a steady growth rate and the push for moving to a trillion dollar economy, India’s natural resources are witnessing an unprecedented push. With 50 percent of the infrastructure yet to be built, the massive plans for growth expansion will impact this rich biodiversity.

The challenge will be greater for species that are found outside the patchwork of PAs. Wolves with puppies on plateaus that are being spliced open for residential complexes, breeding grounds for birds in wetlands being filled with mud to make way for airports, caracals breeding in areas now marked for road expansion and elephants getting run over by trains that cut through ancient migratory routes, have become part of the daily news cycle. Animals need to move not just for food and water but also to procreate in order to prevent extinction. This brings them in direct conflict with the ever-hungry needs for power, energy, roads and infrastructure; the future of thousands of species hangs by a perilous existence.

MY OWN STORY

Perhaps a better measure of depleting biodiversity is the sounds of silence in our lives. It is represented by the silence of the mornings in our cities where once upon a time a raucous chorus of chirping birds ushered in the morning sunlight, the emptiness of our neighbourhood parks devoid of croaking frogs during the monsoon, or chirruping insects and squabbling squirrels.

My engagement with wildlife conservation began in a rather roundabout way. In my youth I started by visiting hamlets of snake charmers in the states of

Haryana, Uttar Pradesh and Delhi. I spent days with the community, learning about their traditional livelihood and the wildlife laws that did not allow them to use snakes to ply their trade. I learned gradually through my field visits that in a country like India where 200 million people live off the forest, conservation minus people is not possible.

In subsequent years, I travelled to villages across northern India campaigning for the rights of the snake charmers. I recognised that perhaps their practices of regaling street audiences with snakes that had their ducts removed was cruel, but equally acknowledged how Western conservation science mixed with animal welfare concerns had demonised the community. I proposed to the government for their skills to be turned around in a way that could be used for conservation. Could their knowledge be used to educate people on protecting different species of snakes? I worked on their musical skills and organised cultural performances in public places (minus, of course, the snakes), enlisted the support of government agencies to help them access loans to set up shops to promote their music. Conservation, if it is to succeed in India, must take communities along. Isolated protectionist forms of conservation cannot succeed for too long.

Emboldened by my experience, I pursued a more formal education in wildlife sciences. For my University degree, I pitched a tent outside the Jersey Zoo, set up by famous naturalist, Gerald Durrell, studying an Amazon primate species for my master’s thesis. I came back to work for a conservation group using the skills I had gathered at University; but yearned for my first love – telling stories. And that is how I ended up being an environmental journalist – a profession that has taken me to ends of the planet to report on some of the most pressing environmental issues of our times.

As India moves at break-neck speed towards growth, the pressures on our land, rivers and wildlife will only increase. Fortuitously, even as we move closer to this extinction crisis, an army of people of all age groups and economic classes is getting ready to speak up in favour of forests, clean air, and fresh water.

– BAHAR DUTT, 2019

THE HABITATS TRUST GRANTS

What do pangolins, pygmy hogs and hoolock gibbons have in common? All three are among India's rare wild animals on the brink of extinction. But despite their diminishing populations and their habitats under severe anthropogenic pressures, these species do not receive the much needed conservation attention that our charismatic large mammals are afforded.

Roshni Nadar Malhotra founded 'The Habitats Trust' in 2018 to draw attention to lesser-known species and habitats that require urgent protection. The Trust intends to adopt a habitat approach to conservation, taking the overall health of ecosystems into account and encouraging local communities living in and around endangered habitats to be the guardians of their forests.

The Habitats Trust – a small team of wildlife lovers – works tirelessly to empower organisations and conservation heroes who fight for India's natural habitats and native flora and fauna. The Trust envisions a future where all species share our planet in all fairness and harmony. They aid the process of building a more sustainable ecosystem by:

- Providing support and recognition to passionate grassroots conservationists
- Ensuring that in both rural and urban communities, the next generation is aware about the importance and purpose of conservation
- Working towards innovative, sustainable and replicable conservation initiatives on-ground to secure our habitats and species.

"It is not a one-person job. Conservation needs to be a collaborative effort to make a long-term impact."

**– Roshni Nadar Malhotra,
Founder of The Habitats Trust**

THE HABITATS TRUST GRANTS

The Habitats Trust Grants is one of the Trust's flagship programmes. The Grants aim to recognise and support organisations and individuals striving to conserve India's natural habitats and indigenous species. Working in a partnership model, the Grants facilitate field activities and provide assistance to make their work more sustainable. Over the two years of the Grants programme the team has visited 43 field sites and interacted with conservationists who work in difficult and remote landscapes with unwavering commitment to the cause. The Grants are divided into four categories:

STRATEGIC PARTNERSHIP - INR 25 Lakhs

LESSER-KNOWN HABITATS - INR 15 Lakhs

LESSER-KNOWN SPECIES - INR 10 Lakhs

CONSERVATION HERO - INR 10 Lakhs

(A new category has been added in 2019 exclusively for individuals)

Grassroots conservationists have been working dedicatedly with little to no support against challenging odds to protect our natural habitats and species. The 'Conservation Hero Grant' recognises these champions and provides them with a platform to expand their activities.

"In particular, the Conservation Hero Grant is one that is very close to our hearts. Meeting these conservationists and hearing their stories inspires and motivates us in all our efforts."

– Trisha Ghose, The Habitats Trust Team

The Grant applications go through a meticulous selection process that measures in depth, the impact of the project, the applicants' capacity to deliver, and sustainability and replicability of the proposed work. After several assessments, a few shortlisted candidates are selected for field visits and rigorous ethical checks. The Habitats Trust team visits the proposed locations and meets the stakeholders to evaluate the proposals in detail. Only the most deserving proposals make it to the Sub-jury round where the field teams present their research and findings to a panel of experts, who choose the final twelve – three in each category – sending them further into the Jury round. This year, as an exception, there are four finalists in the Conservation Hero Grant category because the Sub-jury simply could not ignore the level of impact these individuals were creating. The thirteen finalists from this year will be invited to present their proposals in person to the Jury of eminent conservationists in November 2019. The winners will be awarded at the felicitation event the following day.

The essence of the Trust's work is to highlight lesser-known species and habitats, and the threats they face. Within a year of its inception, The Habitats Trust has funded some unique conservation approaches. From coral reef restoration in the Andaman Islands to helping build strategic plans for the conservation

of lesser-known endangered species like hoolock gibbons in Nagaland and backing anti-poaching initiatives in the Konkan region for the world's most trafficked mammal – the pangolin, they have been working on projects in all corners of the country. They conduct quarterly assessments and field visits to all the winning project sites to check their progress and facilitate collaborations by connecting them to a network of conservationists across the country.

"Roshni and I have always felt very strongly about the cause of conservation and we wanted to start a foundation that would dedicatedly work in this space."

– Shikhar Malhotra, Trustee, The Habitats Trust

One such collaboration within The Habitats Trust family led to 2018 'Lesser-known Species Grant' winner, Bhau Katdare (Founder, Sahyadri Nisarga Mitra), meeting researchers from the 2018 'Strategic Partnership Grant' winner, 'Foundation for Ecological Security', in Nagaland. He used his experience with the Indian pangolin to jointly develop a conservation action plan for the habitat protection of the Chinese pangolin.

"Nature is resilient. Protect the habitat, species will thrive", Dr. Ranjitsinh, one of the eminent jurors of the Habitats Trust Grants said at the 2018 Grants felicitation event. Roshni too is optimistic. "I hope that through our efforts we are able to draw a larger population's attention to the topic of conservation. In the end, we have only one planet – if that is not worth saving, what is?"

THE JURY



BAHAR DUTT

Conservation biologist and environmental journalist, Bahar Dutt, has won over 12 national and international awards for her reportage on environmental issues. While working as a broadcast journalist, columnist, and environment editor with CNN-News18, she reported from the most remote regions across the world, covering stories on climate change, biodiversity and local communities, even going undercover for investigative reports.

Bahar is known for pushing the boundaries of environmental journalism and bringing vital, difficult subjects to prime-time television. She is the author of *Green Wars - Dispatches from a Vanishing World* (Harper Collins) and *Rewilding India* (Oxford University Press) and has written various environmental news columns for *Live Mint*. She has been featured in *Vogue India*, *Verve Magazine* and Al Gore's documentary on climate change, *An Inconvenient Truth*. Bahar has handled projects for several United Nations (UN) agencies such as United Nations Development Programme (UNDP) India, Equator Initiative - New York and UN Environment in Bangkok. Her brave, hard-hitting journalism has had a direct, tangible impact on conservation in India.



BRIAN HEATH

With over 40 years of experience in wildlife management and cattle co-existence projects in Kenya, Brian Heath is an international conservation hero.

As founder and CEO of the not-for-profit Mara Triangle Conservation Area, he has developed a strong team for management and security of the Mara Triangle in the Maasai Mara Game Reserve. For 20 years, as Managing Director of Galana Game and Ranching, he ran one of the most successful cattle and wildlife co-existence projects in Africa. As former member of the Kenyan Wildlife Service (KWS) Board, Brian is also a board member and former founding Chairman of the Mara Elephant Project (MEP), which has significantly reduced elephant poaching in the Mara region, leading to the arrest of over a hundred poachers and ivory dealers.

In 2013, he was honoured by the President of Kenya with the 'Order of the Grand Warrior' (OFW) medal for his contribution to conservation. India and Kenya have a shared history and culture; our wildlife and surrounding communities also face similar challenges. Brian brings his expertise to the jury panel with a unique perspective.



SHIKHAR MALHOTRA

Shikhar Malhotra is a board member and Executive Director of HCL Corporation. He is also the Vice Chairman of HCL Healthcare which began operations in 2014 in Delhi. Under his leadership, the organisation has expanded its operations to seven cities across India, serving over 70,000 families.

As a trustee of the Shiv Nadar Foundation, Shikhar founded the Shiv Nadar Schools in 2012, the Foundation's first foray into urban education. The Shiv Nadar Schools currently operate out of three campuses located in Noida, Gurugram and Faridabad. In a short period of time, the Shiv Nadar Schools have gained a reputation for their differentiated curriculum which focuses on academic excellence with an emphasis on holistic development making it among the most sought after schools in Delhi-NCR.

Shikhar, as Pro-Chancellor of Shiv Nadar University, provides strategic vision and global outlook to the institution. He is also a trustee of The Habitats Trust, which aims to secure key natural habitats and their indigenous species; and an alumnus of Babson College where he studied Entrepreneurship.



DR. M.K. RANJITSINH

Dr. M.K. Ranjitsinh is a pioneer of conservation action in India and is the architect of the Wild Life (Protection) Act of 1972. As the Forest Secretary of Madhya Pradesh, he established nine new national parks and 14 new wildlife sanctuaries in the country.

While serving as Collector of Mandla in the 1960s, he rescued the hard ground swamp deer population through better management and expansion of their habitat - The Kanha National Park. His efforts led to an increase in its population to over 400, from a mere 66. As a tribute, a sub-species of *barasingha* found in Assam has been named '*Cervus duvauceli ranjitsinhji*' after him. As the first director of wildlife preservation of India, he has drafted several ground-breaking policies like 'Project Crocodile' and 'Project Snow Leopard' and has fought equally hard for the lesser-known species, including the critically endangered *gharials* and Manipur brow-antlered deer.

Currently, as Chairman of the 'Task Force for the Reintroduction of the Cheetah in India' by the Ministry of Environment, Dr. Ranjitsinh is working towards bringing back the only large mammal to have gone extinct in Peninsular India in recorded history.

STRATEGIC PARTNERSHIP GRANT

2019 FINALISTS

AARANYAK • 16

SEEDS TRUST • 20

WILDLIFE CONSERVATION SOCIETY - INDIA • 24

2018 WINNER

FOUNDATION FOR ECOLOGICAL SECURITY • 28

2018 FINALISTS

BALIPARA FOUNDATION • 32

CONSERVATION WILDLANDS TRUST • 34



THE HABITATS TRUST GRANTS PROJECT TITLE:
Partnering to Secure and Recover Manas
Grasslands and Threatened Species

PROJECT LOCATION: Manas National Park,
Assam

TARGET SPECIES: Pygmy hog (*Porcula salvania*),
Bengal florican (*Houbaropsis bengalensis*)

*Manas National Park, the last stronghold of a
viable wild population of pygmy hogs in India.*

2019 FINALIST

AARANYAK

RESTORING THE HABITAT OF THE LAST SURVIVING WILD POPULATION OF PYGMY HOGS

*“Our project will act as a model for grassland conservation across the region.”
– Dr. Parag Deka, Manager, Threatened Species Recovery Programme*

Thirty years ago, a group of young nature enthusiasts used to meet and discuss environmental issues every Sunday at a nature club in Assam which they called **Aaranyak**. During the late 1980s-early 1990s’ peak insurgency period in Assam, this dedicated bunch of nature-lovers-turned-conservationists conducted on-foot field surveys in Manas National Park, risking encounters with armed poachers. Over the years, Aaranyak has grown into a leading environment and conservation organisation in the global network.

The organisation’s mission is to protect the Eastern Himalayan biodiversity hotspots using legal and policy research for biodiversity management. The team includes expert environmental scientists, researchers, legal advisors, community workers, and educators.

“Our work encompasses both charismatic and lesser-known species. Some of our species programmes are on rhinos, elephants, tigers, pygmy hogs, hog deer, Bengal floricans, white-winged ducks, white-bellied herons, greater adjutant storks, hoolock gibbons and Gangetic dolphins”, says Dr. Parag Deka, Manager, Threatened Species Recovery Programme, Aaranyak

The tall, wet, sub-Himalayan grasslands are linked to the survival of many endangered species like the Bengal florican, the hispid hare, gaur, *barasingha*, one-horned rhinoceros, the wild buffalo and the world’s smallest and rarest pig – the **pygmy hog**. However, the widespread clearing of land for agricultural use has fragmented the grasslands, threatening the survival of these unique species. Assam’s Manas National

Park, located in the Himalayan foothills, is home to the last known viable wild population of pygmy hogs, which is rapidly diminishing – down to merely 200 individuals. While some conservation activities are ongoing in the National Park, long-term efforts targeted specifically at grassland habitat and species conservation that work alongside the grassland-dependent communities, are absent.

Aaranyak’s primary aim is to devise a management plan for these grasslands. The proposed project, earlier established by Durrell Wildlife Conservation Trust in 1995 in partnership with Government of India and Assam to protect the pygmy hog and its grassland habitat, brings together a series of activities under a single cohesive structure with the goal of protecting the species, arresting and reversing habitat degradation, and improving community wellbeing. They envision sustainable management and restoration of Manas grasslands and its key species.

Having joined the project in 2018, Aaranyak plans to conduct habitat quality and community engagement assessments to aid the strategising and implementation of effective sustainable conservation to restore the grasslands’ health and protect the species dependent on them. They are testing nine different ways of maintaining these grasslands on separate patches of land across the landscape. Their field team comprises locals who provide the much needed support for such an ambitious long-term project. So far, 116 captive-bred hogs have been reintroduced to Manas National Park and their



LEFT, World's smallest and rarest pig - the pygmy hog.

RIGHT (top,bottom), The tall, wet, sub-Himalayan grasslands are linked to the survival of many endangered species including Asian elephants.

camera traps have captured unique mating behaviour in the wild. The organisation has been working with the communities, advising them to graze their cattle responsibly and to start raising species that benefit them and the wildlife of Manas.

Aaranyak engages students from Tata Institute of Social Sciences to test the authenticity of their awareness dissemination strategies. Their willingness to strengthen their methodology if their actions yield unfavourable results, sets them apart. The target species and habitat that Aaranyak is striving to protect are of utmost importance and hence, their long-term success will benefit the overall biodiversity of Manas National Park.





2019 FINALIST

SEEDS TRUST

PROMOTING AN INCLUSIVE MODEL TO PROTECT THE GREY SLENDER LORIS AND ITS HABITAT IN AYYALUR

“We believe that conservation of the slender loris will impact the food chain upwards improving the whole habitat and livelihood of communities dependent on the same [for resources].” – Muthusamy Palanivel, Founder

In 1993, while conducting a cultural awareness programme in Ayyalur, Tamil Nadu, Muthusamy Palanivel found that grey slender lorises were frequently being hunted or killed in road accidents. As a theatre artist who performed street plays to draw attention to issues of biodiversity conservation, he began to use his medium to conduct awareness programmes all over Tamil Nadu. Four years later, **Social Education and Environmental Development Scheme (SEEDS) Trust**, a voluntary social service organisation was born with the vision of enabling communities to become self-reliant and to conserve natural resources for the benefit of present and future generations. They focus on two major areas – women and child development, and biodiversity conservation. Conservation of mangroves and marine ecosystems, wildlife and habitat conservation of species like slender lorises, elephants, tigers and vultures, among others, are some of the initiatives under their biodiversity conservation programme.

The forests of Ayyalur in Tamil Nadu house a patch of dry deciduous and scrub jungles which are home to a tiny, elusive primate that comes out only after sundown – the **grey slender loris**. These tree-dwelling creatures cannot leap, and need continuous canopies of tall trees to move and forage for insects. Tribal communities living in the Ayyalur forest villages depend on non-timber forest products, goat rearing in the hillocks and small-scale vegetable cultivation for income. Due to usage beyond regeneration capacity, the forests here are degrading and can no longer fully

support the community. The slender lorises are worse affected. In the absence of continuous canopies, they are forced to use the road to cross over to the nearest habitat, exposed to fast-moving vehicles, and end up as roadkill. Therefore, the improvement of the forest’s carrying and regenerating capacity which will restore the slender lorises’ means of mobility and sustenance and the tribal communities’ sources of livelihood, requires immediate attention.

The appearance of the slender loris – long slender limbs, huge eyes, large prominent ears and no tail – has given rise to a number of superstitions. The native people believe that if a pregnant woman even glimpses a slender loris from afar, her baby will be born resembling the animal, prompting the killing of the loris in question. Through this project, the SEEDS Trust team has taken up the challenge to fight baseless myths like these. Adopting an unconventional approach, at one of their project sites they engaged a local woman who agreed to look at a slender loris every day of her pregnancy. When the baby was born healthy and without deformities, people began to open their minds to the team’s efforts to spread awareness on slender loris conservation.

The next intervention targeted pesticide use, as slender lorises feed on insects. The team introduced the concept of bio fencing – surrounding fields with a food plant that would attract insects that the loris can eat – making the loris the farmers’ all-natural pest control. Many communities are already planting bio fences and benefiting from it.

Tribal communities living in the Ayyalur forest villages depend on non-timber forest products and small-scale vegetable cultivation for income.

THE HABITATS TRUST GRANTS PROJECT TITLE: Conserving the Grey Slender Loris and its Habitat in Ayyalur

PROJECT LOCATION: Bhairabkunda, Ayyalur, Tamil Nadu

TARGET SPECIES: Grey slender loris (*Loris lydekkerianus*)



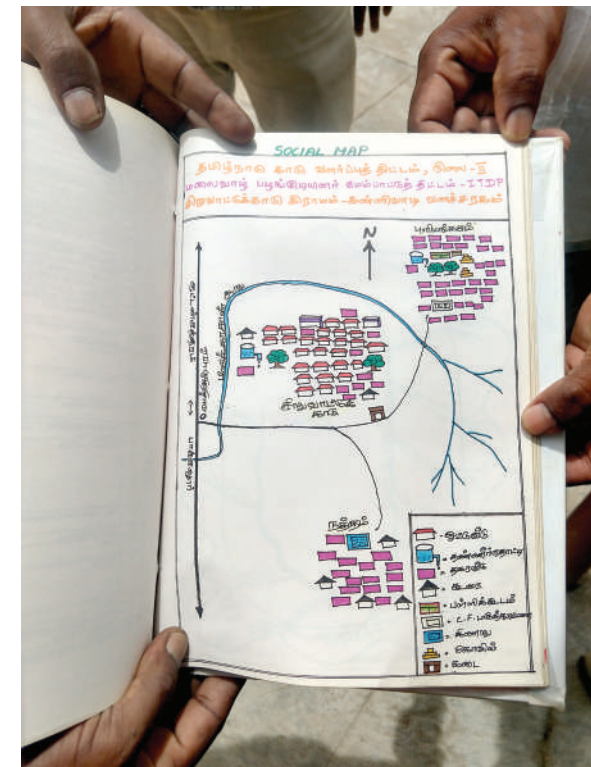
LEFT, Grey slender loris is a tiny palm-sized nocturnal primate.

The proposed project will demonstrate methods for balancing the income needs of the communities with conservation measures. The focus will be on reducing the pressure on forest resources by extracting some of the communities' income and biomass needs – like fodder, manure, etc. – from within the agricultural farms. Sustainable harvesting methods like taking grazing holidays and rotational grazing, and ways to generate more income per unit of the harvested crop, will be introduced.

Through this project, SEEDS Trust aims to decrease the communities' dependence on forest resources. The people engaged in conservation plans are proactive in monitoring and evaluating their forests' biodiversity. The team also hopes to reduce the slender loris' mortality rate by at least 50 percent by planting connected canopies.

RIGHT (top & bottom-left), Through continuous dialogue, the communities are educated about the needs of the slender loris and forest maintenance plans are drafted.

RIGHT (bottom-right), The team introduced the concept of bio fencing – a loris friendly way to get rid of insects.

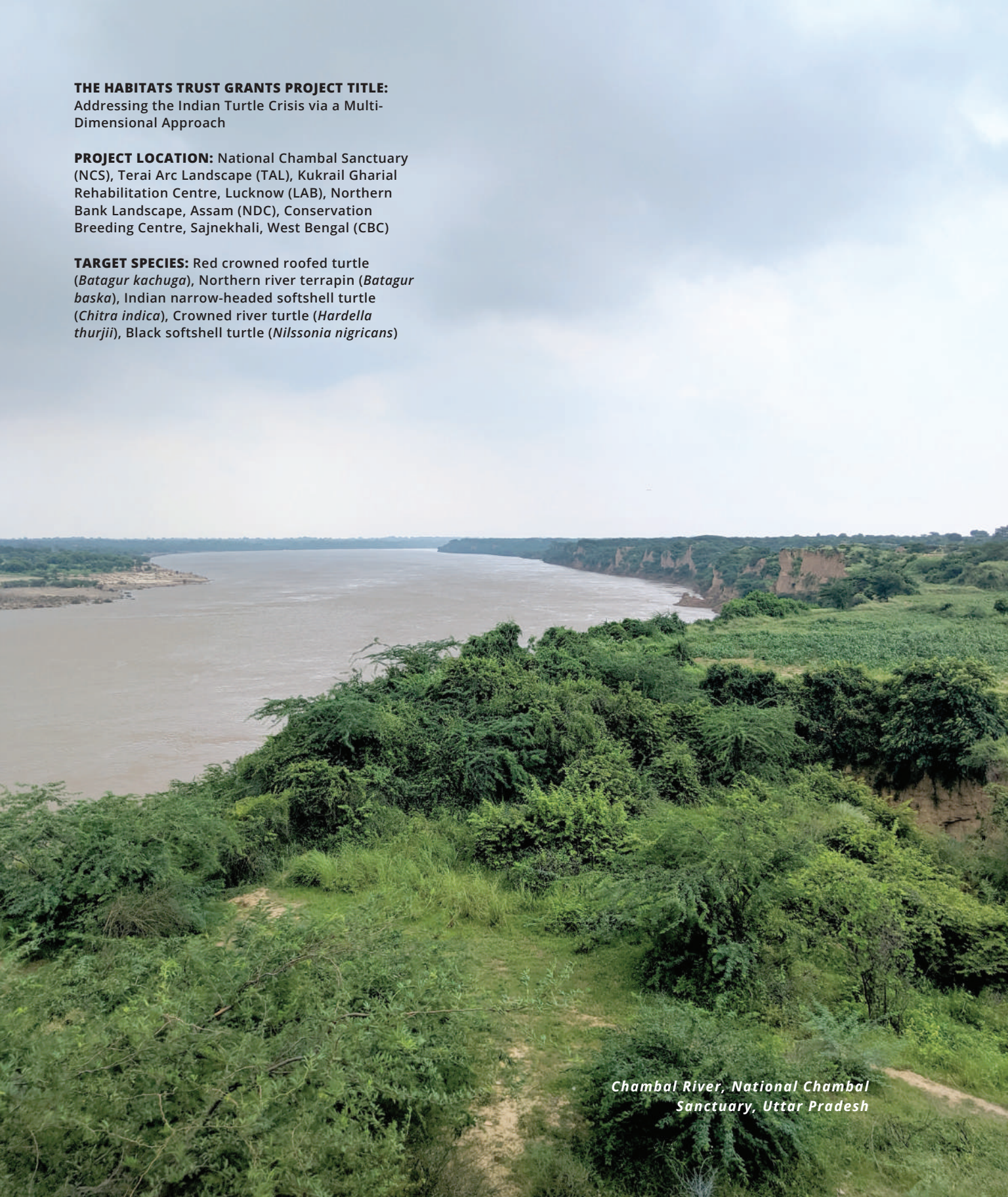


THE HABITATS TRUST GRANTS PROJECT TITLE:

Addressing the Indian Turtle Crisis via a Multi-Dimensional Approach

PROJECT LOCATION: National Chambal Sanctuary (NCS), Terai Arc Landscape (TAL), Kukrail Gharial Rehabilitation Centre, Lucknow (LAB), Northern Bank Landscape, Assam (NDC), Conservation Breeding Centre, Sajnekhali, West Bengal (CBC)

TARGET SPECIES: Red crowned roofed turtle (*Batagur kachuga*), Northern river terrapin (*Batagur baska*), Indian narrow-headed softshell turtle (*Chitra indica*), Crowned river turtle (*Hardella thurjii*), Black softshell turtle (*Nilssonina nigricans*)



Chambal River, National Chambal Sanctuary, Uttar Pradesh

2019 FINALIST

WILDLIFE CONSERVATION SOCIETY - INDIA

PROTECTING INDIA'S FRESHWATER TURTLES THROUGH A MULTI-DIMENSIONAL APPROACH

"Lack of basic knowledge on identifying highly traded species and on husbandry procedures to be administered when encountering confiscated animals often leads to unnecessary deaths. The proposed project aims to address these issues on multiple fronts." – Dr. Shailendra Singh, Programme Director, Turtle Survival Alliance

Wildlife Conservation Society's (WCS) presence in India can be traced back to the first-ever scientific study of tigers in 1963 by renowned conservationist, Dr. George Schaller. The first detailed ecological study of tigers was also initiated by a WCS-India scientist, Dr. Ullas Karanth. Over the years the organisation's work has evolved to address a myriad of species. Today, WCS-India is developing a unique approach to give five threatened but neglected **freshwater turtle species** of India a fighting chance. Through collaborations with the government, NGOs and local communities, the organisation combines wildlife research with community capacity building to implement effective and innovative conservation models.

Freshwater turtles, essential to maintaining ecological stability in river systems, are being dangerously poached for the organised meat and pet trade across India, to be trafficked in national and international markets. Destruction of key habitats, industrial fishing, ecologically insensitive infrastructure projects, sand mining and riverside agriculture are other reasons for the rapid decline in their populations. Out of the 24 species of freshwater turtles in India, 20 are listed as either Vulnerable, Endangered or Critically Endangered on the International Union for Conservation of Nature's (IUCN) Red List. In the river Chambal alone, 10 species are imperilled due to sand mining. One of WCS-India's

target species, the black softshell turtle, was declared 'Extinct in the Wild' about 17 years ago by the IUCN, and now survives only in captivity in temple ponds in Assam.

WCS-India's proposed project addresses the freshwater turtle crisis through a multi-dimensional approach that will not only curb illegal trade but also engage concerned communities in habitat protection and captive breeding conservation programmes. By involving reformed turtle poachers, fishermen and local riparian communities in the conservation of these species, the project aims to establish a viable wild population of the species. Their first strategy is to target the 'illegal trade arc', from Uttar Pradesh to West Bengal, by training Forest Department and other frontline staff working in the trade hotspots. The team will explain the benefits of shifting to possible alternative livelihoods in conservation breeding and research programmes in their workshops conducted for poachers and communities involved in turtle harvesting. The next step would be to strengthen ongoing recovery programmes such as riverside hatcheries, nest protection, rehabilitation and monitoring to ensure long-term survival of freshwater turtles in the wild. To reduce the demand for pet trade, citizen-science initiatives will be promoted. While temple authorities holding captive populations are engaged through breeding programmes, the north-



LEFT (top), Spotted Pond Turtle rescued by researcher, Sreeparna Dutta at Sarju River in Terai Arc Landscape, Gonda District, Uttar Pradesh.

LEFT (bottom), Chambal Conservation Centre in Garaita, Uttar Pradesh.

RIGHT, A female crowned river turtle at Katraghat, Sarju River in Terai Arc Landscape, Gonda, Uttar Pradesh.

eastern tribal communities too will be encouraged to participate in the conservation efforts.

Over the last decade, WCS-India has successfully established four education outreach centres, each located in a key turtle habitat. These centres have reached out to an average of 50,000 people, leading to the protection of over 1,00,000 turtles. In the past six months, the team has helped with the successful rehabilitation of nearly 10,000 turtles rescued from the illegal trade.

In spite of the widespread illegal trade, owing to long-term sustained efforts by the team, WCS-India believes that hope still floats for these endangered species of turtles. They envision a world where freshwater turtles thrive in a safe and healthy habitat, appreciated and protected by communities that live alongside them and get the recognition they deserve across the country.

THE HABITATS TRUST GRANTS PROJECT TITLE:
Ensure Protection of Endangered and Threatened
Species in three Selected Landscapes in Nagaland

PROJECT LOCATION: Mt. Pauna-Dzulike-
Khonoma Landscape, Zanubu-Meluri Landscape,
Satoi Range Landscape, Nagaland

TARGET SPECIES: Blyth's tragopan (*Tragopan
blythii*), Hoolock Gibbon (*Hoolock hoolock*),
Chinese pangolin (*Manis pentadactyla*), Great
Indian hornbill (*Buceros bicornis*)

*Benreu Village, Mt. Pauna
Landscape, Nagaland.*

2018 WINNER

FOUNDATION FOR ECOLOGICAL SECURITY

**EMPOWERING THE 'GUARDIANS OF THE FOREST' TO PROTECT
THEIR COMMUNITY FORESTS AND ENDANGERED SPECIES**

"In a state like Nagaland, where hunting is considered as a traditional right, communities coming forward and extending their unconditional commitment to the protection of wildlife is highly motivating." – Tapas Das, Programme Manager

"Before declaring our CCAs, (Community Conserved Areas), we had two groups of *aku* in our forests, and suddenly one of the groups disappeared. This triggered us to protect the last remaining group in our forest", the Head *Gaon Burha* of Tsuruhu village in Nagaland recalls.

Hoolock gibbons are called *aku* in the local Sumi dialect used in the village. After the disappearance, the villagers realised that the species had been struggling. Nature is integral to Naga society; the communities here are dependent on forests for sustenance. Hunting used to be – and in some parts, still is – a traditional practice. However, the communities are now realising that hunting and overuse of forest resources hurt their wildlife populations. About a third of Nagaland's villages have created Community Conserved Areas (CCAs), which are natural ecosystems that yield significant ecological benefits and are voluntarily conserved by the local communities. Regulations on hunting and tree felling have been imposed in these areas, and since the initiative to protect the *aku* in Tsuruhu, an increase in the numbers of other species in the forests has already been observed.

Foundation for Ecological Security (FES) was set up in 2001 by Dr. Amrita Patel to reinforce the critical task of ecological restoration in India. As 'ecological security' is the foundation of sustainable and equitable development, FES is committed to strengthening, reviving and restoring (where necessary) the process of ecological succession and

the conservation of land, forest, and water resources in the country.

FES has been working closely with communities in Nagaland since 2011 to improve the governance and management of their CCAs. They help them enhance their knowledge and understanding of the biodiversity in their forests through evidence-based research, exposure and dialogue. All the decisions on conservation strategies and interventions are taken by the communities themselves, increasing their ownership of common resources.

Falling in the Indo-Malayan region, Nagaland is a global biodiversity 'hotspot' – home to many endangered and endemic species. Due to decades of habitat degradation, fragmentation and hunting pressure, several threatened species' populations are declining in the landscape.

FES aims to arrest this decline by enhancing community-level capacity, improving human-nature interactions and fostering collaborative platforms with various stakeholders. They are working towards supporting the conservation of vulnerable species in the community-managed forests and improving the interconnectivity of habitats. In each CCA, FES engages locals to design and implement simple monitoring mechanisms to assess species populations, their habitats and threats faced.

The Habitats Trust Grants are helping FES develop this community-led threatened species habitat conservation model which could be replicated in other landscapes.



One of their target species, the Chinese pangolin, is extensively hunted for its scales and meat. When the FES team was in Tsuruhu for their first interaction with the traditional leaders and the village council, they were apprehensive.

“To our surprise, the village council immediately resolved to provide full protection to not just the targeted four, but nine endangered species without any conditions and financial expectations. Such collective actions by communities motivate us to do more for the region.”

In the Satoi landscape in Zunheboto District, the communities of Ikiye-Itovi have taken an oath to protect threatened and endangered species across their village jurisdiction. But this work has not been without its challenges. In the New Peren CCA, the village council was reluctant to extend their protection outside the CCA, fearing community resistance; however, they eventually agreed. Along with the Chinese pangolin, the council has also banned the hunting of three other threatened species: Blyth’s tragopan, the great Indian hornbill and the western hoolock gibbon.

“I asked my son not to hunt anymore. He did not utter a word; he is considered to be the best hunter in the village. I hope he will follow the council rules”, says Mr. Adibe, Secretary of Village Development Board of New Peren Village regarding the hunting ban in the village jurisdiction.

As a result of the interventions under the grant, the councils of 12 villages have now resolved to strengthen the protection of the four targeted species and their habitat through the implementation of village-level solutions and have introduced a complete ban on hunting in their village jurisdictions. The community’s active involvement and participation in each activity reflects an acceptance of the project objectives of FES.

The Foundation strives for a future that is based on a holistic understanding of the principles that govern the relationships between various life forms and natural systems. The essence of these efforts lies in the intertwining principles of nature conservation and local self-governance in order to accelerate ecological restoration, as well as improve the living conditions of the local communities.



LEFT, FES engages the local community in identifying species and threats, and assists them in developing targeted conservation plans.

RIGHT (top), About a third of Nagaland’s villages have created Community Conserved Areas, voluntarily preserved by the local communities.

RIGHT (bottom), Nagaland is a global biodiversity ‘hotspot’ and is part of the Eastern Himalayas Endemic Bird Area that represents high concentrations of globally threatened species.





2018 FINALIST

BALIPARA FOUNDATION

CREATING COMMUNITY-LED FORESTS IN THE FOOTHILLS OF THE EASTERN HIMALAYAS

"We really believe that we can create a reality in which development doesn't come at the cost of ecological damage, and human aspirations continue to grow and flourish along with our natural inheritance." – Ranjit Barthakur, Founder

Ranjit Barthakur founded **Balipara Foundation** in Assam in 2007 with a vision to preserve the natural heritage of the Eastern Himalayas. Through a series of experiments in ecological protection and restoration, Balipara Foundation has developed a model to work with rural communities in the region to bridge the gap between ecology and economy sustainably. "Access to natural resources is a right for every individual and they shouldn't have to choose between nature and economics." With this philosophy in mind, Balipara Foundation works towards creating interdependence between the two through an approach they call 'Naturenomics™'.

The Foundation's project site in the Bhairabkunda Reserve Forest in Assam has had a long and successful history of community-led afforestation and conservation efforts. The 1989 flash-floods had a devastating effect on the Reserve Forest, completely washing out what was once a thriving habitat for wild fauna. The area also provides refuge to 40 percent of the entire Asian elephant population in India. Until 2005, the land was unresponsive and corrosive; then Balipara Foundation began their 'Rural Futures - Habitat Restoration' project, introducing the concept of Naturenomics™. Two major project sites were identified for the implementation of this project - Balipara Reserve Forest in Sonitpur District and Bhairabkunda Reserve Forest in Udalguri of Assam. These regions were chosen due to their rich

biodiversity with over 10,000 plant and animal species, out of which 163 are on the verge of extinction. The project sites lie on historical elephant corridors and therefore support the Foundation's common aim of rebuilding lost habitats and providing safe passage to elephants and other large mammals.

Balipara Foundation believes that by providing livelihood opportunities, community-led afforestation projects have the potential to aid in the socio-economic development of underprivileged rural communities. Therefore, they have planted more than 1.5 million indigenous saplings under the project in the last three to four years, enabling the communities to generate a direct income of over 1 crore Indian rupees. The communities have also benefited through vocational training workshops, creation of self-help groups, provision of solar lamps, better educational institutions within the villages, handloom and handicraft workshops, market linkages and equal pay for women.

Along with improving the quality of life of the local communities, Balipara Foundation's reforestation approach has resulted in tremendous growth in the number of species recorded in their man-made forests. This shift towards co-dependence between communities' livelihoods and ecological health has brought these once barren forests of the Eastern Himalayas back to life.

THE HABITATS TRUST GRANTS PROJECT TITLE:
Rural Futures: Udalguri Landscape Mission

PROJECT LOCATION: Bhairabkunda Reserve Forest, Udalguri District, Assam

TARGET SPECIES: Asian elephant
(*Elephas maximus*)

Bhairabkunda Reserve Forest, Assam

THE HABITATS TRUST GRANTS PROJECT TITLE:
Community Based Wildlife Conservation

PROJECT LOCATION: Pench Tiger Reserve,
Madhya Pradesh and Maharashtra

TARGET SPECIES: Bengal tiger
(*Panthera tigris tigris*)

*CWT works with communities that share
their boundaries with the tiger habitat
and are most affected by co-existence.*

2018 FINALIST

CONSERVATION WILDLANDS TRUST

EMPOWERING RURAL COMMUNITIES TO BE THE
'CUSTODIANS' OF THEIR FORESTS

"Gaining the trust of the communities was a major obstacle when we began our work but their acceptance of CWT due to our persistent and genuine work was our turning point."

- Reshma and Harshvardhan Piramal, Founders

Our national animal, the majestic **Bengal tiger** is the face of wildlife conservation in India. While the wild tiger population has increased by 33 percent in the last four years, their habitat continues to shrink and therefore the tigers continue their struggle for survival. Reshma and Harshvardhan Piramal started **Conservation Wildlands Trust (CWT)** in 2012 to protect not just the dwindling number of tigers but also their habitat.

CWT's flagship project, 'Community Based Wildlife Conservation' through which they work with the local communities living in the peripheries of the tiger landscape to protect tigers and their habitat, was launched in 2013 in Central India, home to 40 percent of India's tiger population.

Pench Tiger Reserve, spread across Maharashtra and Madhya Pradesh, was chosen for implementation; and 10 socio-culturally and economically diverse villages on the border of the Critical Tiger Habitat (CTH) of the Reserve were identified to run awareness campaigns.

The Pench landscape acts as an integral corridor that connects ecologically important forest areas in Central India. This connection, however, is becoming increasingly vulnerable and fragmented due to encroachment and human disturbance.

Involving the local communities was initially a challenge for the organisation. For centuries, they

have lived off the forest, taking what they need for food and shelter. So when CWT showed up to their villages, they were wary that measures to save tigers would obstruct their reliance on the forests and cost them their livelihoods.

Over the last few years, slowly, but successfully, CWT has gained the trust of these communities. They have launched several livelihood projects like sewing schools, village tourism, handmade paper and reusable sanitary pads production, and permaculture. Each intervention is chosen to compliment a self-sustaining economy and promote ecological restoration. In addition, about 10 self-help groups have been established for women, with over a hundred members each. To groom future generations as custodians of their surrounding ecology, a two-year education module has been introduced in local schools. The financial security and improved lifestyle that CWT has facilitated has made these communities more receptive to the ecological concerns of the area.

Their objective is to make the project self-sustaining by creating leaders within the community and developing a sense of stewardship among the people so that this system continues to function when the organisation's intervention is complete. Conservation Wildlands Trust hopes to solidify this approach and establish a symbiotic relationship between anthropogenic and ecological nourishment.

Coral reefs are among the oldest ecosystems on Earth.

LESSER-KNOWN HABITATS

2019 FINALISTS

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2018 FINALISTS

DR. NARAYAN SHARMA • 54

THE HABITATS TRUST GRANTS PROJECT TITLE:
Mainstreaming Community Conserved Areas for
Biodiversity Conservation in Manipur

PROJECT LOCATION: Zeilad Wildlife Sanctuary,
Manipur

TARGET SPECIES: Hoolock gibbon (*Hoolock
hoolock*), Hog deer (*Axis porcinus*), Great pied
hornbill (*Buceros bicornis*), Manipur bush-quail
(*Perdica manipurensis*), Dendrobium orchid



***A dragonfly in Zeilad Wildlife Sanctuary.
While the common species of dragonflies
are still around, the numbers of those
that live around streams and lakes have
declined due to pesticide pollution.***

2019 FINALIST

CENTRE FOR ENVIRONMENT EDUCATION

MOBILISING COMMUNITIES TO TAKE OWNERSHIP AND BRING BACK SUSTAINABLE TRADITIONAL PRACTICES IN ZEILAD WILDLIFE SANCTUARY

*“Wildlife conservation cannot take place without considering rural needs, especially of
fringe villages and communities which interact with the species and environment.”*

- Pradeep Boro, Programme Officer

Centre for Environment Education (CEE) was established in 1984 (as Centre of Excellence in Environment Education) by the Ministry of Environment, Forests and Climate Change, Government of India, with a mission to enhance the understanding of sustainable development and integrate it with education as a key driver for change. They aim to help communities strengthen management plans to guide biodiversity conservation.

Pradeep Boro, the Programme Officer of CEE's proposed project, was moved by the enchanting beauty of the Zeilad Wildlife Sanctuary in Manipur when he visited it for the first time in 2008 for a hoolock gibbon conservation education programme. Among one of the first outsiders to explore the wilderness which, at the time, was cut off for non-Manipuris due to active insurgency, he felt the need to work for the development of the fringe villages and communities facing extreme economic hardship, and a lack of basic healthcare and education.

When Pradeep started interacting with the people, he discovered that hunting was a major threat to the region's rare wildlife. As he spent more time travelling in Manipur, he realised that there were challenges to protecting the endangered species of this region that were not even acknowledged yet. One of the ways to tackle these was to make the livelihood security of fringe communities a priority.

Indigenous communities in Manipur have

always protected their biodiversity by virtue of their traditional conservation practices. Known as the 'Land of Hornbills', Zeilad Wildlife Sanctuary along with the contiguous Jiri-Makru Wildlife Sanctuary and Bunning Wildlife Sanctuary are areas rich in bird diversity and several endemic species with a potential for discovery of countless new species, threatened by the dizzying pace of forest degradation and rampant hunting. These regions have not been studied extensively and conservation initiatives have been insufficient. Furthermore, tree felling and reduced *Jhum* cultivation (slash and burn - which ensures soil potency) are taking a serious toll on the biodiversity.

Introducing Community Conserved Areas (CCAs) here has brought hope. CEE aims for CCAs to ensure proficient forest management by enforcing strict rules against hunting and tree felling. These forests connect nearby sanctuaries; thus, protecting this ecosystem will ensure conservation and restoration at the landscape level and allow smooth movement of animals across the landscape, preventing species fragmentation.

The proposed project stems from CEE's earlier wildlife conservation education projects. They now plan to strengthen community-conservation by linking CCAs within six neighbouring villages of Zeilad Wildlife Sanctuary which do not have CCAs or community-conservation initiatives. They have observed that regardless of the hostile conditions and



LEFT, Zeilad Lake in Zeilad Wildlife Sanctuary.

RIGHT (top), Villagers crossing the Barak river.

RIGHT (bottom), A camping activity organised by CEE for school students in Imphal.

the absence of basic amenities, the villagers here are keen to work towards expanding the conservation and restoration efforts for globally threatened species but require help in the mobilisation and development of ecotourism initiatives. CEE will provide the resources to realise the aspirations of the community and identify tourism activities that will benefit both the people and the land. Possible activities could include hornbill safaris, exhibiting traditional dances, and handlooms and handicrafts. Hospitality training will also be imparted, thus developing holistic ecotourism packages.

It is estimated that the forest areas under each village will reap the profits from this project directly. Several threatened species like hoolock gibbons, great pied hornbills, Himalayan black bears, slow lorises, leopards, Indian pythons, several turtle species, among others, will also benefit by conservation activities in CCAs, and legal recognition of CCAs will ensure long-term security of the land.





THE HABITATS TRUST GRANTS PROJECT TITLE:
Coral Transplantation Aids for Preservation of
Coral Patches off Goa

PROJECT LOCATION: Grande Island, Goa

TARGET SPECIES: Corals (*Anthozoa*), Sea fans
(*Alcyonacea*), Nudibranchs (*Nudibranchia*),
Reef fishes

*Table corals in
Grande Island, Goa.*

2019 FINALIST

COASTAL IMPACT

RESCUING AND RESTORING CORAL REEFS IN
GRANDE ISLAND

"My heart breaks every time I rescue fish from ghost nets. It makes me angry and pushes me to do everything I can to save the ocean and its inhabitants."

- Venkatesh Charloo, Founder Trustee

Venkatesh Charloo quit his banking job in Hong Kong, moved to Goa to start recreational scuba diving and later became a researcher. Once, while conducting an underwater survey, he was confronted with the fact that reams of data on conservation issues is frequently buried due to pressures from vested interests. Thus, he established **Coastal Impact** in 2009 with the intention of collating all relevant information pertinent to the environment and its conservation onto a common, accessible platform. While work on building this platform is underway, Venkatesh motivates people to experience diving and partake in saving Goa's precious marine life as its 'ocean ambassadors'.

Coastal Impact studies and monitors Goa's rich ecosystems, supports awareness, outreach, research and conservation action and generates interest about the marine world among the local communities and tourists. The NGO wishes to make a difference by using diving as a research tool; they have annual reef combing programmes, removing ghost nets and plastic garbage that is dumped on reefs.

Healthy coral reefs are among the most diverse ecosystems on Earth. While the Gulf of Kutch, the Gulf of Mannar, Andaman & Nicobar Islands and Lakshadweep are the major regions with coral reefs in India - most of these protected under the Indian Wild Life (Protection) Act, 1972; a small colony of corals that grows four to eight metres beneath the surface of the sea off Goan shores at the Grande Island archipelago, goes largely unnoticed. This

reef has not yet been included in any conservation strategies. The island supports several coral species, reef fishes, endangered species of dolphins, sea cucumbers and sea fans. The need to regulate diving tourism and introduce conservation plans to protect the shoreline and the island's marine biodiversity is therefore urgent, and brings with it an array of employment opportunities for local communities. Reef tourism, if managed sustainably and ethically, can provide alternative sources of income for coastal communities in India.

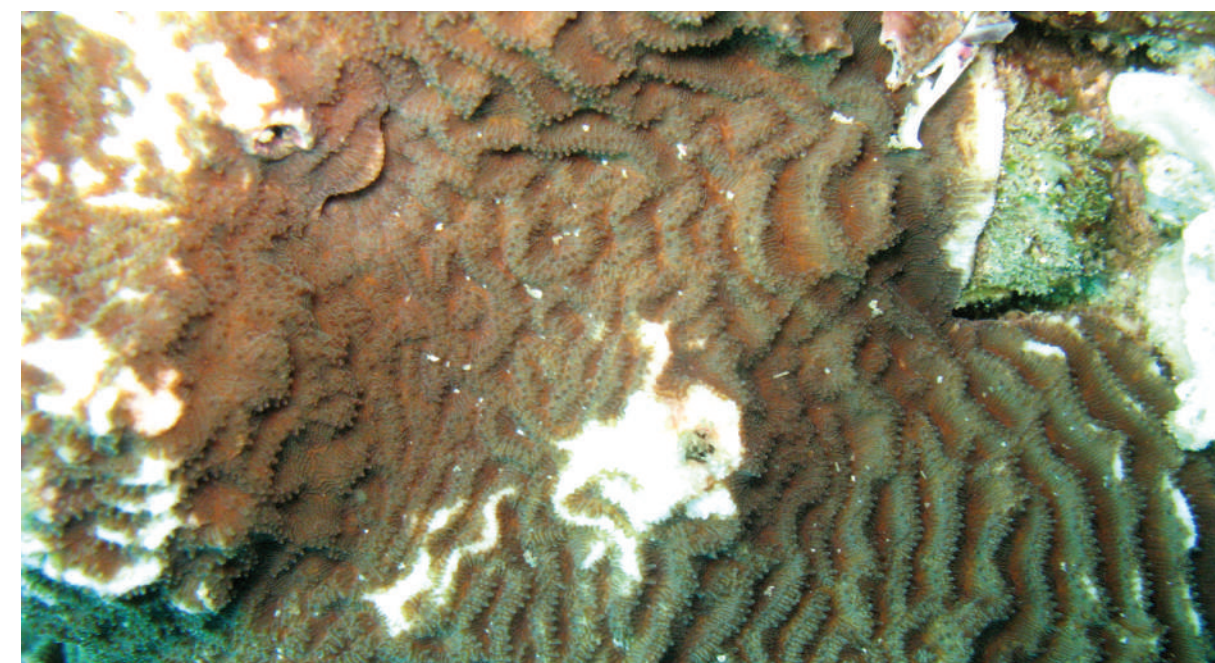
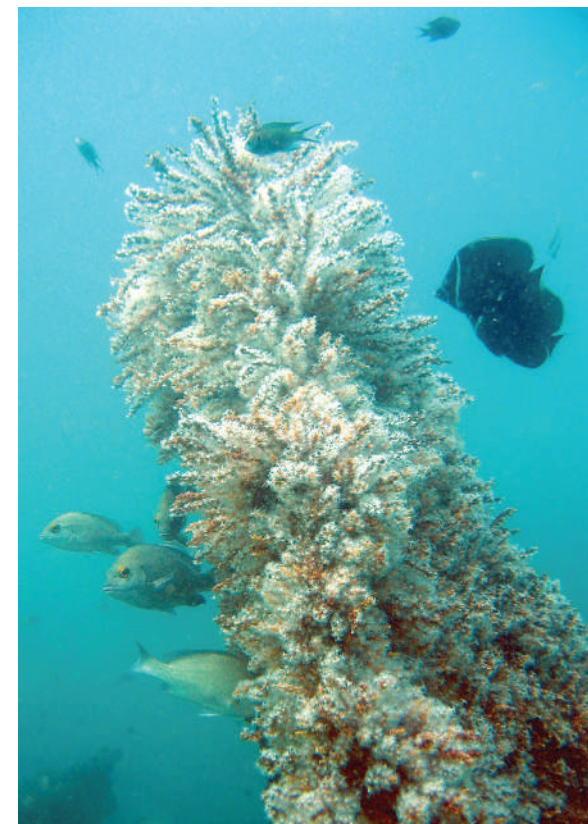
A key personnel on the proposed project, Dr. Chandran Rethnaraj, is an expert in the transplantation of corals with reduced resilience and has restored a 1050 sq.km. coral stretch of locally extinct and degraded corals in the Gulf of Kutch. Coastal Impact's proposed coral transplantation involves continuously monitoring and rescuing fragmented corals and physically relocating them from inhospitable sites to favourable habitats where the coral is more likely to thrive. By creating more resilient coral ecosystems through this process, the team expects an immediate increase in live coral cover and decelerated island erosion. The process will rely on the selection of an appropriate site, identification of donor reefs, selection of species, fragment transferring, and regular monitoring in a cost-effective and environmentally sustainable fashion. In this way, in-situ nurseries will be maintained for planting the corals in their original habitats.



LEFT, Coastal Impact, along with Barracuda Diving India organises annual underwater and beach cleanups where their trained divers collect glass, plastic, polystyrene, rubber, medical waste and assorted rubbish, and send it to a recycling centre after segregation.

RIGHT (top), A small colony of coral reefs that grows four to eight metres beneath the surface of the sea off Goan shores at the Grande Island archipelago.

RIGHT (bottom), Coral bleaching observed in the coral patches of St. George and Grande Islands.



The team will reach out to the fishing communities, diving centres and water-sports operators who bring tourists to Grande Island for day picnics. The divers will be trained to install permanent mooring buoys (a large floating material) as an alternative to dropping anchors to avoid damage to corals. They will also administer seeding (the sowing of coral substrate onto the reef floor) and monitor the new corals on a regular basis. The fisherfolk will be involved in the overall security of the site.

Coastal Impact believes that having a permanent facility for repairing coral reef damages and conserving the reef habitat of Goa is essential to a long-term plan of conservation.

THE HABITATS TRUST GRANTS PROJECT TITLE:

Community-based Seagrass Habitat Conservation and Monitoring in Palk Bay

PROJECT LOCATION: Palk Bay Coast covering three districts in Tamil Nadu

TARGET SPECIES: Dugong (*Dugong dugon*), Spotted seahorse (*Hippocampus kuda*), Green sea turtle (*Chelonia mydas*), Hawksbill sea turtle (*Eretmochelys imbricata*), Indo-Pacific finless porpoise (*Neophocaena phocaenoides*)



Seagrass covering the shoreline at Velivayal beach. These will decompose and provide nutrients to marine life.

2019 FINALIST

OMCAR FOUNDATION

ENGAGING YOUTH FROM THE FISHING COMMUNITIES IN SEAGRASS TRANSPLANTATION IN PALK BAY

"It is impossible to conserve seagrass beds without the support of the fishermen who actually live and earn from the nearshore seagrass beds every day." – Dr. Vedharajan Balaji, Founder Director

At the young age of 17, Dr. Vedharajan Balaji built his own underwater camera and snorkelling equipment to explore the mysterious worlds within the ocean. A year later, he conducted his first independent research on seahorse exploitation and began exhibiting his photographs to school children and locals, educating them about the marine ecosystem. He went on to become a marine biologist and undertook a 1,200 kilometre bike ride along the coast of Tamil Nadu to understand the relationship between the people and the ocean in 549 fishing villages in his state. In 2007, he started **Organization for Marine Conservation, Awareness and Research (OMCAR) Foundation** in a small coastal village, Velivayal in Tamil Nadu, meeting children from the fishing communities and speaking to them about the value of mangroves, seagrass and the coral habitats of Palk Bay.

In 2011, he established the OMCAR Palk Bay Conservation Centre with a special focus on preserving dugongs and their marine habitat in Palk Bay, bringing attention to the plight of the less than 240 dugongs that remain in Indian waters. Today, thousands of rural school students visit the OMCAR Palk Bay Conservation Centre to experience marine life, scuba demonstrations, watch underwater films and learn about marine conservation rescue and research.

Nestled between India and Sri Lanka, Palk Bay offers abundant sunlight, a shallow seabed and

waveless shores. The bay houses 14 distinct species of seagrass, spread up to eight kilometres off the shoreline along the 200 kilometre coast. The seagrass habitat of Palk Bay supports several endangered marine species including dugongs (commonly called the sea cows), sea turtles and porpoises, along with seahorses, pipefish, sea cucumbers and many other fish of commercial value to small-scale artisanal fishermen.

In the last five decades, due to India's growing demand for seafood owing to a rapidly increasing human population, Palk Bay's resources have been abused. Mechanised boats and trawlers have replaced the traditional craft of fishing – a shift that is no more sustainable severely degrading the once pristine seagrass habitat and the marine life it supports.

OMCAR Foundation started rescuing stranded dugongs in 2009 but soon discovered that only a large continuous seagrass bed could ensure long-term survival of the remaining population. To this end, the Foundation has been creating awareness among the fishing communities, training forest officials in seagrass transplantation, and restoring degraded mangroves in Palk Bay. The proposed project will be the next step in strengthening the relationship between key stakeholders involved in seagrass conservation and developing field conservation skills within the local community. The project will be executed on the coast of Palk Bay in Tamil



LEFT, A bamboo shark hides behind seagrass in OMCAR's seagrass rehabilitation site.

Nadu, covering three districts – Ramanathapuram, Pudukkottai and Thanjavur – which have the largest continuous seagrass beds in this area in India.

Under this project, 30 young people from the fishing community will be chosen for three technical skill-based training workshops and scuba-diving certification. They will be directly involved in seagrass transplantation and annual monitoring, and will participate in establishing three micro seagrass rehabilitation sites in each of the three districts, thus initiating a long-term grassroots conservation intervention, led by the community.

OMCAR Foundation hopes to instill a sense of responsibility in future generations to conserve the seagrass habitats that they live near and rely on for their livelihood.



RIGHT (top), Many fascinating sea creatures are found in Palk Bay like this pipefish.

RIGHT (bottom), Children undergoing scuba diving demonstrations at the OMCAR Palk Bay Conservation Centre in Thanjavur.



THE HABITATS TRUST GRANTS PROJECT
TITLE: Re(ef) Generate: Rehabilitating Coral
Reefs in the Andaman Islands

PROJECT LOCATION: Chidiyatapu, South
Andaman Island

TARGET SPECIES: Coral reefs

*A false cleaner wrasse, one of
the inhabitants of the reefs.*

2018 WINNER

REEFWATCH MARINE CONSERVATION

PROTECTING INDIA'S 'RAINFORESTS OF THE
OCEAN' – THE CORAL REEFS

*“Seeing the effects of anthropogenic activities on the health of the reef on a first-hand basis,
I was driven to act for their conservation.” – Nayantara Jain, Executive Director*

A 21-year-old scuba diver was on a self-discovery path when she first came to the Andamans a decade ago, but what she witnessed during her diving adventures moved her so deeply that she decided to work for the conservation of irreplaceable underwater habitats. From being a professional diving instructor with no scientific background, Nayantara Jain dove into her Masters in Marine Biodiversity and Conservation from the Scripps Institution of Oceanography in San Diego. She came back to India to contribute to the restoration of coral health, and in 2014, joined **ReefWatch Marine Conservation (RWMC)**, based in the Andaman Islands, as their Executive Director. The founders, Prahlad and Mitali Kakar, were happy to support Nayantara's vision.

The first project under Nayantara's leadership, and her personal favourite, 'Ocean Art Sundays', was started under a shelter made of a borrowed tarpaulin and four bamboo poles. Under this programme, underprivileged children from coastal villages were taught swimming, diving, and snorkelling to engage them with the marine ecosystem and urge them to discover their own personal connection with it. In just five years since the project's inception, RWMC now has three fully functional bases and a range of ongoing projects for active conservation, awareness, and education. They are also working towards sensitising local youth and training them to be self-sufficient as ecotourism guides and homestay owners. Nayantara

believes that the most affected should have a voice and agency in conservation.

Coral reefs are among the oldest ecosystems on Earth. They cover less than 0.02 percent of the ocean floor and yet, are home to about a third of all known marine species. Their spectacular biodiversity abundance has led to them being referred to as "tropical rainforests of the sea" that function as living, breathing, underwater cities.

These are also among the most threatened habitats on Earth. Today, 75 percent of the world's coral reefs are threatened. Corals thrive only in specific environmental parameters and even slight imbalances can be detrimental to their survival. With the rate at which sea surface temperatures are rising in the archipelago of the Andaman islands, coral bleaching – the event in which corals expel the algae that are responsible for their colour and nutrition, making the corals vulnerable to starvation and death – has become a common occurrence.

El-Nino, in 2016, dealt a huge blow – the sudden loss of more than 23 percent of India's corals. The once vibrant reefs that Nayantara loved were now experiencing near mortality within the course of a few months. Witnessing the extent of its impact made her step up to further protect this fragile ecosystem.

The 'Re(ef)Generate' project is a conservation programme to restore and rehabilitate coral reefs in the Andamans and create conditions for them to

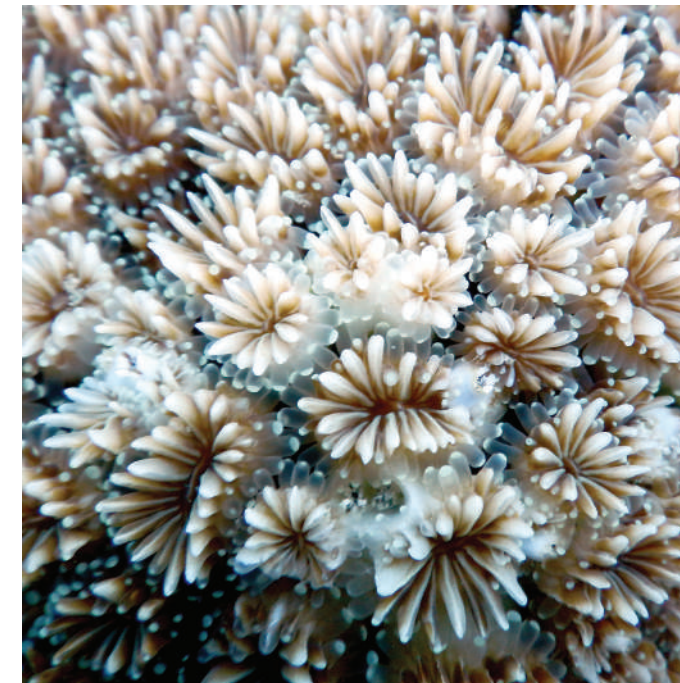
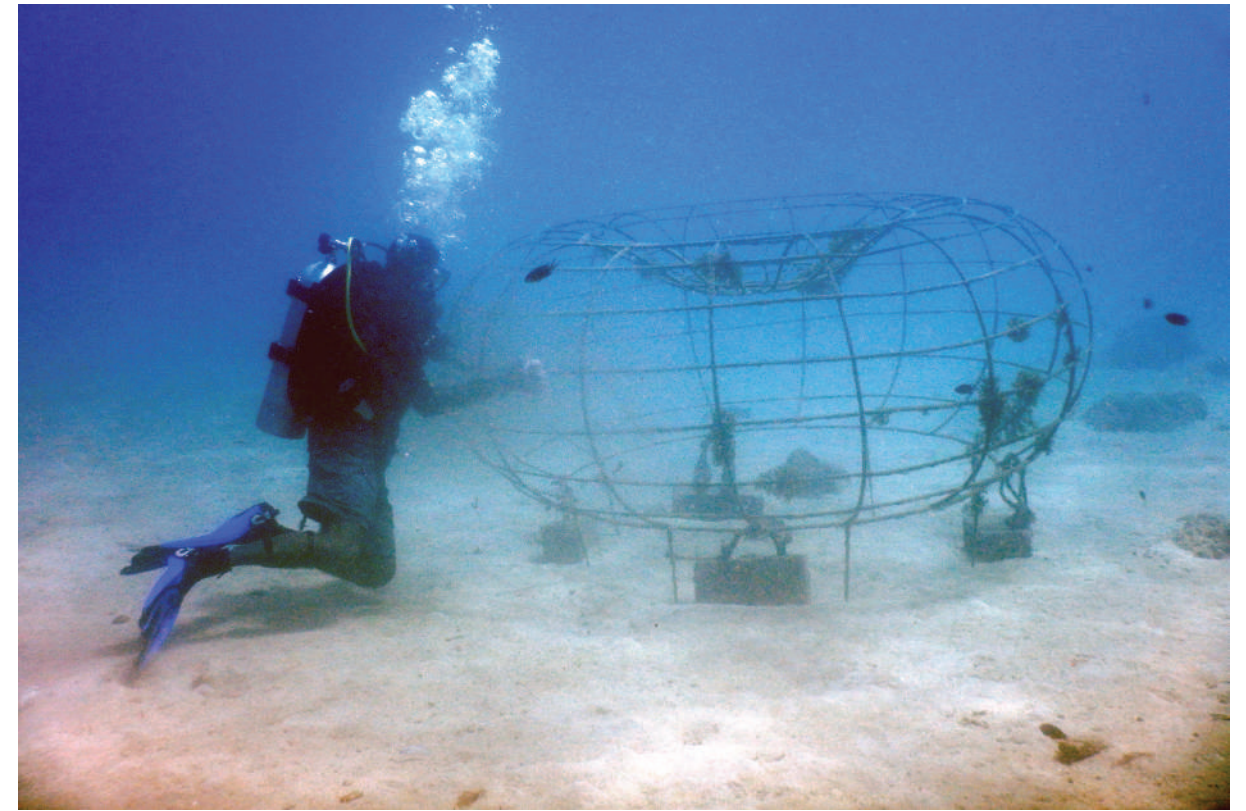


thrive. Corals are colonial organisms which reproduce primarily asexually to grow larger, or repair damaged areas. The RWMC team uses this feature to grow new coral colonies by rescuing naturally broken coral fragments and regenerating them into artificial reefs through mineral accretion technology – a technique that uses low voltage electricity to improve the health and growth rates of corals. They have also created nurseries to grow coral for transplantation and are researching a rare natural phenomenon called coral spawning – a mass sexual reproduction event – to see if they can use their natural behaviour to grow more resilient coral. This approach is little known in our country and has never been used in India before.

RWMC's capacity building initiatives with the local communities have led to unique collaborations.

For instance, Abhishek Das, a construction worker from the community who previously used to work on a fishing boat has now joined them and helps them drive their research *dungi* (boat), while receiving swimming, snorkelling and diving lessons from RWMC, so he can eventually help the team monitor the artificial reefs.

“**The Habitats Trust Grants** helped us expand our Re(ef)Generate project and explore a variety of techniques that are used globally but as yet are untapped when it comes to coral restoration and conservation in India”, Nayantara shares about how the Grant has helped their conservation efforts so far. Their next step is to expand this project to Havelock Island (officially Swaraj Island) in the Andamans.



LEFT, The RWMC team has collaborated with the local community, engaging them in the monitoring and maintenance of artificial reefs.

RIGHT (top), Artificial reef structure deployed at Chidiyatapu, South Andamans.

RIGHT (bottom), A close up of Galaxea coral.



THE HABITATS TRUST GRANTS PROJECT TITLE:
Prioritise Habitat Fragments and Implement
Conservation Strategies for Western Hoolock
Gibbon in Upper Assam

PROJECT LOCATION: Upper Brahmaputra Valley,
Assam

TARGET SPECIES: Western hoolock
gibbon (*Hoolock hoolock*)

*A male Western hoolock gibbon
in Bherjan-Borajan-Padumoni
Wildlife Sanctuary, Assam.*

2018 FINALIST

DR. NARAYAN SHARMA

CONSERVING THE HABITAT OF THE ENDANGERED WESTERN HOOLOCK GIBBON THROUGH RESEARCH LED ACTION

"I'm fascinated by primate behaviour - their hierarchy, social dynamics... if you ask me, I can watch them from morning to evening, every single day." - Dr. Narayan Sharma

Dr. Narayan Sharma is a primate specialist and assistant professor, in the Department of Environmental Biology and Wildlife Sciences at Guwahati's Cotton University. During the early days of his research, when he and his team could not find a single primate in Padumoni forest (a part of the Bherjan-Borajan-Padumoni Wildlife Sanctuary, known for its rich primate population), he was shaken. "This really made me think, what is going on? Other species are getting so much attention, but no one knows what happened to the primates here", he recalls. Having studied six species of primates in Northeast India over the years, he is aware of the threats that habitat fragmentation poses to these tree-dwellers. His study in 2009 concluded that out of the 32 fragments they surveyed in the Upper Brahmaputra Valley in Assam, over two-thirds had lost one or more primate species over the last three decades.

The tropical lowland rainforests of the Upper Brahmaputra Valley of Assam are one of the world's most biodiverse regions, and are getting fragmented at an alarming rate leading to an irreversible loss of biodiversity. This region is home to about 50 percent of the global population of the **western hoolock gibbon**. Dr. Sharma's surveys revealed that there was an over 70 percent decline in western hoolock gibbon population in Borajan and were found to be locally extinct in Bherjan and Padumoni. In Hollongapar Gibbon Wildlife Sanctuary however, their population

had increased by three times. While the species' presence has been recorded, their density and demographic structure - needed to assess their conservation status across the valley - is still largely unknown. Dr. Sharma proposes to rigorously assess the conservation status of the western hoolock gibbon and its habitat, and initiate relevant strategies to mitigate the threats it faces.

Dr. Sharma recalls an incident from his visit to the Garo Hills, "The gibbons were completely trapped inside a village. Their habitat was completely gone; they'd started living with villagers who used to feed them. There was no way they could go back to the forest so they just hung out there". The absence of corridors is proving to be a high extinction risk for the species, making population documentation and assessment of fragmented habitats across their distribution range vital. The results of Dr. Sharma's studies will be essential to implement necessary intervention measures such as ecological restoration and providing alternative livelihood options to communities co-existing with the species.

Dr. Sharma's vision is to train more locals in the Northeast by making Guwahati and Cotton University a hotspot for wildlife researchers. He believes that this way the next generation of researchers will be better engaged and more invested - even emotionally - towards conserving wildlife.

A photograph of four Assam roofed turtles basking on a large, light-colored rock by a pond. The turtles are arranged in a line from top-left to bottom-right. The water is calm and reflects the sky. The turtles have dark, patterned shells and are looking towards the right.

LESSER-KNOWN SPECIES

2019 FINALISTS

ASHOKA TRUST FOR RESEARCH IN
ECOLOGY & THE ENVIRONMENT • 58

METASTRING FOUNDATION • 62

UNIVERSITY OF SCIENCE &
TECHNOLOGY, MEGHALAYA • 66

2018 WINNER

SAHYADRI NISARGA MITRA • 70

2018 FINALISTS

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*Assam roofed turtles basking
together in Kaziranga National Park.*



Kalasa is a holy temple-town located on the banks of the Tunga River in Karnataka.

2019 FINALIST

ASHOKA TRUST FOR RESEARCH IN ECOLOGY & THE ENVIRONMENT

RESEARCHING TO SAVE FRESHWATER OYSTERS - THE ENDEMIC ANCIENT LIVING FOSSILS OF THE WESTERN GHATS

"This will be a seed grant for further in-depth research on reproductive ecology and conservation genetics to understand species interaction of the surviving populations of freshwater oysters."

- Dr. Aravind Neelavar Ananthram, Principal Investigator

From the tiniest of organisms to elephants, from aquatic ecosystems to grasslands, **Ashoka Trust for Research in Ecology and the Environment (ATREE)** scientists work on a gamut of organisms and habitats. Set up by Dr. Kamaljit S. Bawa in 1996 as a research institute in Bengaluru to combat India's critical environmental challenges, ATREE has produced quality research on a wide range of issues, from social and environmental concerns at the grassroots level to matters of global policy.

Their mission is to generate rigorous interdisciplinary knowledge that will enable citizens, academics and bureaucrats to address the environmental crisis. The proposed project will address crucial issues related to one of the most zoologically and ecologically valuable freshwater mollusc species of the Western Ghats in India - the freshwater oyster.

In the quaint little town of Thirthahalli, behind the famous Rameshwara temple, on the banks of river Tunga, an ancient mollusc population struggles to survive. The water here is often used for washing, bathing and waste disposal, disturbing the rare endemic freshwater oysters.

While most mollusc species are free-living, these unique oysters live parasitically on the gills of fish

until they are adults. Once fully grown, they attach themselves to rocks. Their population is restricted to the stretches of two tributaries of river Krishna - Tunga and Bhadra. With their closest relatives found in Africa and South America, these approximately 120 million-year-old freshwater oysters could be relics from the ancient supercontinent, Gondwanaland. Today, only less than 5,000 of these living fossils exist in the wild, scattered across five known locations. Unfortunately for these oysters, all identified habitats are found outside Protected Areas, robbing them of the formal protection that other endangered species enjoy.

During a field visit, the ATREE team observed a subpopulation completely submerged due to an increase in the height of a dam across Tunga in Mandagadde near Shimoga in Karnataka. In other regions, the oysters are also threatened by polluted water and fishing methods that require the use of chemicals and dynamite. Their high sensitivity to pollution, changes in oxygen levels and chemical composition of water makes freshwater oysters important indicators of water quality. Until recently, there have been no species-specific conservation measures in place, leaving a huge gap in our understanding of the species.

THE HABITATS TRUST GRANTS PROJECT TITLE: Ecology and Conservation of Freshwater Oyster of the Western Ghats

PROJECT LOCATION: Kalasa, Kasravalli and Thirthahalli, Karnataka

TARGET SPECIES: Freshwater oyster (*Pseudomulleria dalyi*)



Through the proposed project, ATREE aims to map the distribution of freshwater oysters and evaluate the status of the surviving populations in Tunga and Bhadra. The team will determine the species' habitat preference and will assess the threats that they face. Through these findings, a comprehensive conservation plan and strategy to mitigate the identified threats will be prepared for their long-term survival in the human-dominated landscapes of central Western Ghats. A basic survey of the existing population has already been carried out, during which, a few samples were collected for genetic analysis. A discussion has been initiated with the locals in Kalasa District

in Karnataka, but the aim is to extend awareness to other surrounding communities and prepare a Conservation Action Plan for the Forest Department and the village panchayats. ATREE plans to engage the temple authorities in Thirthahalli in awareness campaigns, enabling them to start a dialogue with the local communities.

Although this project is proposed for one year, the research team estimates that a detailed understanding of the ecology and conservation issues will take at least three more years. The project will kick-start a much needed study on these neglected ancient organisms.



LEFT, Tunga river in Thirthahalli is one of the two tributaries of river Krishna which houses a population of endemic freshwater oysters.

RIGHT (top), Exposed and dead freshwater oysters attached to rocks in Thirthahalli.

RIGHT (bottom), A freshwater oyster – an ancient living fossil.



The Malabar tree toad is endemic to the Western Ghats.



THE HABITATS TRUST GRANTS PROJECT TITLE: Citizen-based Conservation of the Malabar Tree Toad

PROJECT LOCATION: Western Ghats of Maharashtra, Goa, Karnataka, Kerala, and Tamil Nadu

TARGET SPECIES: Malabar tree toad (*Pedostibes tuberculosus*)

2019 FINALIST

METASTRING FOUNDATION

ASSESSING CONSERVATION STATUS AND NEEDS OF MALABAR TREE TOAD THROUGH CITIZEN-BASED FIELD SURVEYS

“Currently, our understanding of the conservation status of amphibians in the Western Ghats is mostly based only on expert opinion. This project will collect first-hand data on the distribution and ecology of the MTT [Malabar tree toad] through citizen participation.”

– Ravi Chellam, Chief Executive Officer

India’s plummeting wild species’ populations are in dire need of innovative ways to effectively deal with the impending crisis. Bengaluru based **Metastring Foundation**, previously known as Strand Life Foundation, is striving to do exactly that. The organisation has been working to create crowd-sourced biodiversity portals through which citizens can directly contribute to science, putting technology to excellent use in making conservation research and action a more inclusive endeavour.

The Metastring team is credited with developing **India Biodiversity Portal (IBP)**, a free access platform where citizens can contribute, access, and verify information on Indian biodiversity, with a goal to start the largest democratised digital data revolution in history.

In 2014, the ‘Mapping the Malabar Tree Toad’ programme was launched via IBP to gather information about the creature’s distribution and natural history through public participation.

The proposed project will be a first of its kind in the Western Ghats – a global biodiversity hotspot, especially rich in amphibian diversity. The Ghats are home to 179 recorded amphibian species, 80 percent of which are not found anywhere else, with many yet undiscovered. The **Malabar tree toad (MTT)**, endemic to the Western Ghats, is an endangered species that spends most of its life on trees, coming to the ground

only during the first monsoon showers to mate. There is no reliable information on its ecology, population, and distribution, but it is believed to be threatened due to anthropogenic pressures on its habitat.

Amphibians around the world are undergoing a catastrophic decline due to habitat loss, climate change and a life-threatening fungal disease, chytridiomycosis, which has wiped out amphibian species in several parts of the world. Although epidemics have not been reported in the Ghats, *Batrachochytrium dendrobatidis (Bd)*, the fungus responsible for the disease, has been detected in the region. Vigilant monitoring of amphibian populations is therefore necessary.

Metastring Foundation’s project sites will cover the Western Ghats in Kerala, Karnataka, Goa and Maharashtra – regions where MTTs have previously been found. The study will collect occurrence and ecological data on the MTT by establishing a network of key amphibian enthusiasts and training them through field-based workshops and awareness programmes. Five teams comprising 105 members from local communities and the Forest Staff will be trained to survey known and potential MTT habitats. These individuals will then be directly involved in on-ground data collection based on the seasonal behaviour of the species using a previously tested methodology mapping the presence, behaviour and

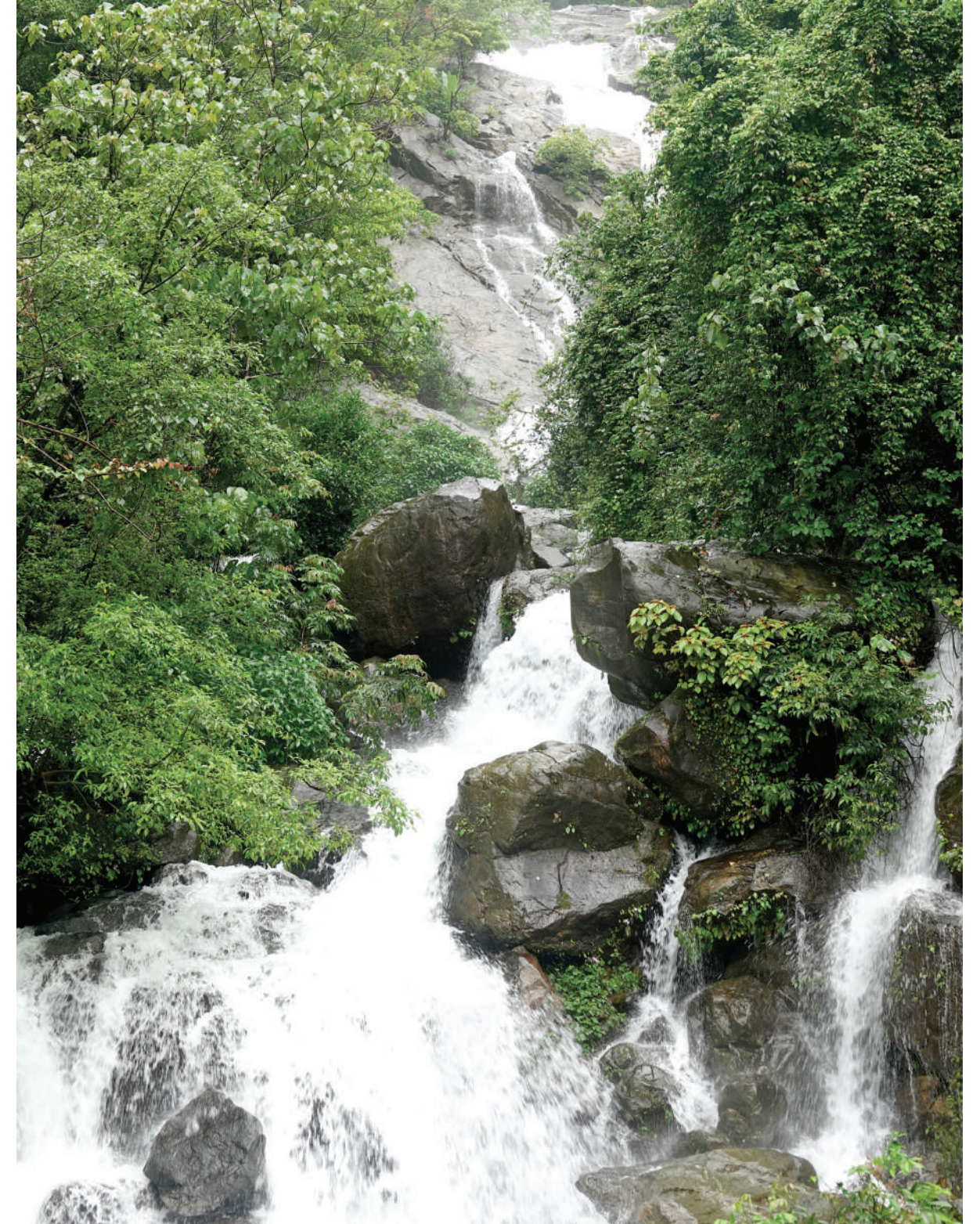


LEFT, Team Metastring looking for Malabar tree toads with Range Forest Officer, C.R. Naik in Kadra, Karnataka.

RIGHT, The proposed project will be the first of its kind in the Western Ghats – a global biodiversity hotspot, especially rich in amphibian diversity.

ecology of the Malabar tree toad. Participants will be equipped with mobile devices with the 'MTT app' for uploading photos and adding information to the IBP portal. The technology created for the project and the networks formed are intended to be instrumental in further studies on endemic amphibians and their conservation. All the data and images recorded will be under a creative commons license and may be used to reassess the threats and conservation status of the Malabar tree toad.

Through the project, a network of citizen-scientists trained in monitoring amphibians will be created, giving the people involved a greater sense of ownership of local biodiversity. In a landscape such as the Western Ghats, where significant biodiversity is found outside Protected Areas, fostering a sense of responsibility within the people who share these habitats is a necessity for long-term conservation.



Uttar Pradesh's Dudhwa Tiger Reserve is one of the most pristine habitats found in the Terai belt of India.

2019 FINALIST

UNIVERSITY OF SCIENCE & TECHNOLOGY, MEHGALAYA

RESEARCHING ONE OF THE LEAST KNOWN ENDANGERED MAMMALS – HISPID HARES – IN DUDHWA TIGER RESERVE

"The frontline Forest Staff has a major role in the protection and conservation of this lesser-known species; hence, conservation training will be imparted to them."
– Dr. Prabal Sarkar, Principal Investigator

Established in 2011, the **University of Science & Technology, Meghalaya (USTM)** is the first private science and technology university in the north-eastern region of India. The University's Botany and Zoology departments often sanction studies with the potential for creating perceptible impact in the field of wildlife protection and conservation. One such study is Dr. Prabal Sarkar's proposed project concerning a rare member of the rabbit family – the **hispid hare**. A wildlife researcher who has been conducting surveys for higher education institutions for over 25 years, Dr. Sarkar believes that since the concepts of conservation are not taught in books, conservationists must find more effective ways to share their knowledge and experience with future generations.

His team on the proposed project has been conducting wildlife surveys and research for 26 years and has experience working with tigers, elephants, rhinos, wild buffalos and other species in conflict-prone zones. In the past, they have been involved with wildlife rescues, human-tiger conflicts, train-hit projects, awareness programmes and anti-poaching initiatives in the proposed project site.

Nestled between the foothills of the Himalayas and the plains of the Indian subcontinent, Uttar Pradesh's Dudhwa Tiger Reserve is one of the most

pristine habitats found in the Terai belt of India. Previously a hunting playground, Dudhwa's dense sal woodlands that open into a blanket of grasslands, marshes and wetlands host a remarkable variety of species. The fine grasslands here are home to the target species, the hispid hare. Believed to be extinct in the mid-1960s, a live specimen was rediscovered in Assam in 1971, confirming that the species still persisted.

These shy and reclusive animals are convenient prey for several small carnivores like jackals and hyenas, and therefore indispensable to maintaining the viability of grassland ecosystems. The primary threat they face is habitat loss caused by encroaching agriculture, logging, summer flooding, and unsustainable human development. The hares take refuge amidst tall grass; thus, the increasing fragmentation of elephant grass in their primary habitat puts them in jeopardy. Furthermore, the grasslands here are annually set on fire for ecosystem management, which, without proper planning, is devastating to the hares and other small wildlife.

Listed as 'Endangered' in the International Union for Conservation of Nature's (IUCN) Red List, the hispid hare is a high-priority species for conservationists everywhere, but the available research is insufficient for substantial conservation action. Historically,

THE HABITATS TRUST GRANTS PROJECT TITLE:
Population Modelling and Identification of Breeding Stock for Hispid Hare

PROJECT LOCATION: Dudhwa Tiger Reserve, Uttar Pradesh

TARGET SPECIES: Hispid hare
(*Caprolagus hispid*)



hispid hares were distributed along the foothills of the Himalayas across India, Nepal, Bangladesh and Bhutan, but their population is now fragmented into smaller pockets. Their population status remains unknown in northern India despite reports of their presence in the foothills in Uttar Pradesh, Bihar and North Bengal. Recent surveys conducted in Manas National Park and other known habitats in Assam and Arunachal Pradesh have only confirmed a critically low population.

However, a recent study conducted in Royal Shuklaphanta Wildlife Reserve has reported the presence of a viable population in Nepal, signalling a high possibility of a population enduring in the bordering Dudhwa Tiger Reserve in Uttar Pradesh. The population here has not been studied at all. The project aims to draw a population distribution model of hispid hares and identify their breeding stocks for initiating a 'Conservation Breeding Programme'

for future re-introduction or restocking to their distribution range in India.

The USTM team plans to conduct thorough population status and habitat selectivity surveys through camera trapping and site assessments. They will be using direct and indirect sightings of hispid hare nests and scat pellets to analyse their range. Another major aspect of their project is to conduct specialised sensitisation workshops and training for the Forest Department staff who, owing to their close proximity to the hares, are pivotal to the conservation efforts in Dudhwa. They will be trained in grassland management methods and controlled breeding plans by Dr. Sarkar with the objective of shielding the hares from the grassland fires. By understanding more about the species, Dr. Sarkar hopes to accelerate future conservation action for these unique bristly rabbits and secure their next generations in the wild.




LEFT, The grasslands of Dudhwa Tiger Reserve are home to USTM's target species, the hispid hare.

RIGHT (top), Hispid hares are also known as the bristly rabbits because of their coarse brown fur. They have shorter ears as compared to other members of their family.

RIGHT (bottom), The fertile Indo-Gangetic plains of Dudhwa Tiger Reserve are remarkably rich in biodiversity.





THE HABITATS TRUST GRANTS PROJECT TITLE:
Conservation of the Indian Pangolin through
Community Participation in the Konkan Region
of the Western Ghats, Maharashtra

PROJECT LOCATION: Sangameshwar, Dapoli
and Mandangad Blocks of Ratnagiri District

TARGET SPECIES: Indian pangolin
(*Manis crassicaudata*)

*Part of the Western Ghats,
Ratnagiri District, Maharashtra
is home to an array of
threatened flora and fauna.*

2018 WINNER

SAHYADRI NISARGA MITRA

FIGHTING FOR THE WORLD'S MOST
TRAFFICKED MAMMAL

"The only thing that motivates me, which I consider as our true success, is when communities step up for conservation on their own." – Bhau Katdare, Founder

Most people retire from their jobs to spend the rest of their lives in comfort. A former *kabaddi* player, Vishwas Katdare, lovingly called Bhau, had other plans. His father, a birder, inspired him to dedicate his life after retirement to wildlife conservation. In 1992, in a small village in Maharashtra, without adequate funds but bound by their mutual love for nature, Bhau joined hands with a group of like-minded individuals to start an organisation that would work to conserve nature through research and education across the Konkan belt. Thus began the journey of **Sahyadri Nisarga Mitra (SNM)**, an NGO that has single-handedly tackled the threats facing endangered and endemic wildlife in the region and transformed the lives of local communities that live alongside them.

Over the last 27 years, SNM has worked on several environmental projects. One of their flagship projects, the 'Olive Ridley Sea Turtle Hatchling Conservation Model', managed to convert poachers and smugglers from 22 villages across the 720 kilometre Konkan coastline into dedicated turtle conservationists. A unique eco-tourism model that was conceived in 2006, the 'Velas Turtle Festival', saw, for the first time in India, tourists watching local 'conservation heroes' release newborn turtles into the sea – a result of providing former poachers with an alternative source of income and educating them.

SNM has since trained villagers to maintain artificial hatcheries for threatened turtle eggs. Before their intervention, 99 percent of eggs would get

stolen, but over the last 17 years, they have released over 80,000 hatchlings. The villagers now handle the project independently, with direct income from homestays and wildlife tours.

During one of their regular field visits, the SNM team had a heart breaking encounter. They saw pangolin burrows left dug up and empty, a clear sign that the anteaters had been poached. The **Indian pangolin** is listed in Schedule I of India's Wild Life (Protection) Act, 1972, offering the species the highest degree of protection – equivalent to tigers. About 1,00,000 Indian pangolins are hunted and sold to Vietnam, China and the United States each year. From pangolin scales being used for traditional Chinese medicines to embryos served as delicacies to being smuggled live for the illegal pet trade, no part is spared.

While tribals and forest dwellers are oblivious to what hunting these pre-historic creatures means, they know the forests better than anyone else, making it easy for urban middlemen and illegal wildlife trade syndicates to exploit their skills and knowledge for poaching. Bhau believes that given a choice and an alternative source of income, the villagers will not harm wildlife. SNM has come up with sustainable, nature-based livelihoods and trained former hunters in beekeeping and eco-tourism.

The organisation has mobilised local communities in 955 villages in Maharashtra and rescued 12 pangolins so far in collaboration with



LEFT, Pangolins are mammals covered from head to tail with scales made out of keratin. They turn into a tight ball when they feel threatened, exposing the sharp edges of their scales to predators.



RIGHT (top), Bhau Katdare (left) collecting field data on pangolin sightings in Ratnagiri District, Maharashtra.

RIGHT (bottom), Ratnagiri in Maharashtra, where a number of camera traps have been deployed by SNM.

the Forest Department. To study the ecology and distribution of the species across their project area, they conduct camera trap surveys using traditional knowledge. As a part of their awareness campaigns, anti-poaching boards have been put up across the region and pangolins have now made it to the school curriculum, with their story reaching about 1.6 million students in Maharashtra.

SNM has demonstrated effectively that conservation is truly successful when the local communities are included in the effort. Bhau has only one motive which his entire team wholeheartedly believes in – “For a better future, conserve nature”.



Fewer than 200 hanguls remain in the wild.



THE HABITATS TRUST GRANTS PROJECT TITLE:
Saving the Hangul

PROJECT LOCATION: Dachigam National Park,
Kashmir

TARGET SPECIES: Hangul
(*Cervus hanglu ssp. hanglu*)

2018 FINALIST

EARTH DAY NETWORK INDIA

FIGHTING FOR THE SURVIVAL OF THE 'CRITICALLY ENDANGERED'
HANGUL IN ITS LAST REMAINING HOME, KASHMIR

"Listening to the locals while sipping hot kahwa under the shade of the Chinar tree and explaining to them why the hangul is precious helped build strong ties with local communities."

- Karuna A. Singh, Country Director

Earth Day Network (EDN) was formed in the United States of America on the first ever Earth Day, 22 April 1970, to diversify, educate and activate the environmental movement worldwide. Today they engage more than 50,000 organisations in about 195 countries. EDN launched in India in 2010 to take the movement forward.

The rapidly shrinking populations of Kashmir's state animal, the **hangul**, caught their attention about four years ago. The hangul, also called the Kashmir stag, is known for its magnificent antlers and is only found in Kashmir - mostly restricted to Dachigam National Park near Srinagar. It is estimated that there are less than 200 individuals surviving in the wild today, and the species has been listed among the top 15 species of high conservation priority by the Government of India. The urgent need for action to conserve and rehabilitate hangul population prompted EDN India to launch their 'Saving the Hangul' project in collaboration with local NGO, Wildlife Conservation Fund.

Hangul populations have become isolated due to human settlements that surround, and occasionally encroach upon their habitat. Nomadic tribes set up camps in the forested area and as a result, villages have sprung up, intercepting traditional hangul passage corridors. The effects have been devastating for this deer species, which is very sensitive to movement, and even a slight disturbance at a few yards' distance may cause it to shy away from mating. The harvest season for *guchhi* (wild mushroom) coincides with that of hangul fawning and when gatherers of this

Kashmiri delicacy descend upon Dachigam National Park, the shy hanguls are driven away from the nutritious meadows that the offspring require at this critical stage of development.

It is now crucial to sensitise communities that have settled in areas too close to the hangul habitat. EDN India has begun open dialogues with these communities with the aim of relieving pressure on hangul habitats. They have established eco-clubs in schools to educate students about this rare and vulnerable deer. Innovative presentations, illustrated lectures, games, exposure visits to catch a glimpse of the elusive hangul have inspired the local students to pledge to save it. The village headmen and tribal chieftains have been advised to encourage their people to move herds away from where hanguls graze, to nurture and preserve the animal's favourite shrubs and grasses, and to report any signs of poaching. EDN regularly interacts with the Wildlife and Forest Departments to ensure safe transit passages and undisturbed habitat for hanguls.

Today, the 'Saving the Hangul' initiative has reached cities where awareness campaigns and activities are organised to inspire urban children to be a part of this conservation endeavour.

These efforts have proven effective. For the first time in decades, the Kashmir stag was sighted beyond its primary habitat near conservation areas around Khrew and Khanmoh, suggesting that their habitat has expanded by approximately 15 kilometres beyond Dachigam National Park.

Juvenile Assam roofed turtles basking in the muddy Brahmaputra River, Kaziranga National Park.



THE HABITATS TRUST GRANTS PROJECT TITLE:
Conserving Freshwater Turtles of Brahmaputra River System through Capacity Building and Community Participation

PROJECT LOCATION: Dhubri & Beki River, Kaziranga National Park, Assam

TARGET SPECIES: Black softshell turtle (*Nilssonina nigricans*)

2018 FINALIST

HELP EARTH

RESCUING BLACK SOFTSHELL TURTLES FROM EXTINCTION

“The Habitats Trust Grants were a game-changer with a specific category devoted to lesser-known species which exactly matched our work with overlooked flora and fauna.”

– Dr. Jayaditya Purkayastha, General Secretary

India’s lesser-known species have often been overshadowed by its charismatic megafauna. Dr. Jayaditya Purkayastha, snakes and freshwater turtles specialist, came across many species of Schedule I category in the Wild Life (Protection) Act that needed urgent attention. In October 2006, he got together with six others who shared his concerns and founded **Help Earth** in Guwahati, Assam with the aim of bringing attention to threatened species that were being overlooked.

Since their inception, they have run conservation programmes for several species of birds, amphibians and reptiles. While their primary project focuses on the conservation of **freshwater turtles** in the Brahmaputra river system, they also actively assist numerous government and other non-government organisations with the scientific data to back policy formulation.

The Brahmaputra river system is vital to the biology of freshwater turtles. It is because of this river system and the altitudinal gradient of Assam that the state has the highest freshwater turtle diversity. Assam is home to 20 out of 28 species of turtles found in India, about 80 percent of these are threatened. One of these, the black softshell turtle has been declared ‘Extinct in the Wild’ by International Union for Conservation of Nature’s (IUCN) Red List. Help Earth works towards the conservation of all varieties of turtles found in Assam with a particular focus on the black softshell turtle.

As black softshell turtles are considered an incarnation of Lord Vishnu, the religious significance attached to them has proved beneficial to the conservation effort. Apart from awareness

campaigns, Help Earth has also launched a breeding programme where they have identified 16 temple ponds across Assam as suitable for the cause. The hatchlings are nurtured in a nursery facilitated by the Assam State Zoo and then released into Protected Areas to repopulate. In the early days, Help Earth was denounced as ‘turtle smugglers’ by temple authorities, until, over time, a better understanding was achieved through extensive dialogue.

This year, they have incubated over 200 eggs and are currently nurturing over a hundred hatchlings that are getting ready to be released into the wild. These hatchlings embody hope for ecological efforts throughout the country.

The current status of turtles is more complex. There has been a severe decline in turtle populations in the Brahmaputra river system due to habitat loss caused by sand mining along the riverbank, nest destruction due to unprecedented floods, and the illegal meat and egg trade. Where one freshwater turtle species has been rescued from extinction, the others are grappling their way through the black market. Despite the fact that most of these species fall under Schedule I of the Indian Wild Life (Protection) Act, they are openly traded for consumption through the north-eastern regions. The fisherfolk are aware of where the turtle nests are located, but reluctant to share the information. Help Earth aims to not only build a relationship with these communities but also provide them with the means for turtle conservation. Their main objective is to be able to map the turtle sightings within the river system and protect the nests through community participation.

*Restricted demon, a butterfly
photographed in Zeilad Wildlife
Sanctuary, Manipur.*



CONSERVATION HERO


2019 FINALISTS

ANOKO MEGA • 80

DR. BANDANA AUL ARORA • 84

NEETHI MAHESH • 88

PUJA MITRA • 92



Mehao Wildlife Sanctuary is the prime habitat of the Mishmi Hills hoolock gibbon.

THE HABITATS TRUST GRANTS PROJECT TITLE:

Conservation of the Mishmi Hills Hoolock Gibbon in Mehao Wildlife Sanctuary

PROJECT LOCATION: Mehao Wildlife Sanctuary, Lower Dibang Valley, Arunachal Pradesh

TARGET SPECIES: Mishmi Hills hoolock gibbon (*Hoolock hoolock mishmiensis*)

2019 FINALIST

ANOKO MEGA

PROVING THAT ONE MAN CAN
CREATE A HUGE IMPACT

“Even if I am not fully successful, I wanted to at least start doing something that my generation would be able to follow.” – Anoko Mega

About ten years ago, after rescuing hog deer fawns from a neighbour and handing them over to the Forest Department, **Anoko Mega** decided to translate his love for wildlife into conservation action. A native of the Idu-Mishmi tribe of Lower Dibang Valley in Arunachal Pradesh, Anoko is paving the way for the conservation of the recently discovered subspecies of the western hoolock gibbon, the **Mishmi Hills hoolock gibbon**. As a member of the State Board of Wildlife, he is actively involved in wildlife rescues, having conducted around 14 himself.

Anoko has collaborated with a local conservation group, the Abralow Memorial Multipurpose Society, to educate locals on the need for environmental protection. Having learnt wildlife filmmaking from the renowned Green Hub in Tezpur, Assam, he also spends his time documenting the biodiversity of Mehao Wildlife Sanctuary. His film highlighting the rampant wild meat trade of hoolock gibbons helped individuals within the community adopt a different attitude towards hunting. “Unknowingly, I too used to hunt and eat wild meat but I have now stopped and try to spread awareness wherever I go”, Anoko confesses. There is no exact word for conservation in Idu-Mishmi but their cultural superstitions forbid hunting the hoolock gibbons. According to folklore, killing, or even mimicking the hoolock gibbon brings bad luck; and if the gibbon appears in your dreams, the evil eye is upon you. So while superstition works in favour of the Mishmi Hills hoolock gibbons, hunting is not the sole threat they face.

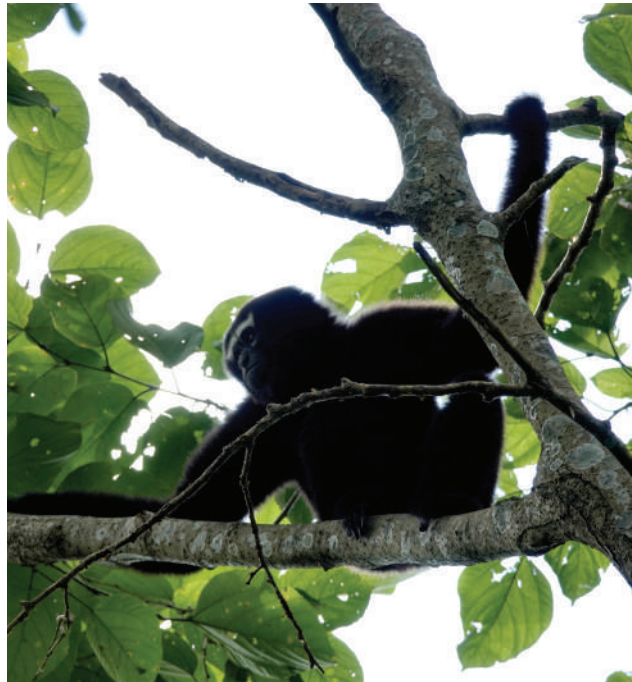
Mehao Wildlife Sanctuary is the prime habitat of the Mishmi Hills hoolock gibbon but due to developmental activities, some of the fringe areas inhabited by a viable population are now disconnected. These severely fragmented private lands are putting the arboreal creatures under tremendous pressure by exposing them to threats like electrocution by overhead power lines which have replaced the trees they once used for brachiation, and dog attacks when they are forced to come down to the land for movement. Gibbon families are left stranded in very small pockets, with one such family limited to merely two trees. The research on this subspecies is relatively nascent, their population is unknown but severely threatened, and so there is an urgent need to protect them.

Generating scientific data on the Mishmi Hills hoolock gibbon will be instrumental in the implementation of site-specific conservation plans. Anoko plans to adopt a community-based approach to sensitise and involve the local tribes in conservation and simultaneously create sustainable livelihood options for them to reduce anthropogenic pressures on gibbon habitats. He wishes to conduct personal interviews with the villagers to gather secondary information about the threats faced by the gibbons, which will also reveal people’s attitudes towards, and their interactions with, the animal.

Anoko and his team often organise nature walks and plantation drives for school children, taking them to watch gibbons and truly understand the species.



LEFT (top), A female Mishmi Hills hoolock gibbon, a newly discovered subspecies of the western hoolock gibbon.



LEFT (bottom), A male Mishmi Hills hoolock gibbon

RIGHT, Anoko planting fast-growing Mekai (Shorea assamica) saplings for habitat connectivity of the Mishmi Hills hoolock gibbons.



It was during one such trip that he got the idea to make this an eco-tourism venture. "I wanted to create a successful model at a fragmented gibbon spot and set an example for other such areas. I realised that the farmers will need some incentive to protect the gibbon habitat, so we bring tourists to sight gibbons in the area and the money goes to the farmers who own the land". The tourists also engage in planting trees, which he hopes will be used by future generations of gibbons for mobility. Anoko's project has the potential to become a sustainable long-term model with high replicability. It will help to secure and restore the

gibbon habitats and connect the isolated gibbon populations through dedicated corridors.

Anoko chuckles at being called a conservation hero and does not believe he is doing something extraordinary. "It is everyone's responsibility to initiate conservation efforts that others can follow", he says.

As corridors for the endemic gibbons of Mishmi Hills are gradually being rebuilt, for the time being, Anoko's tireless efforts have mobilised the local people to secure gibbon families and the fragmented forests they inhabit.

THE HABITATS TRUST GRANTS PROJECT TITLE:

Bats, the Neglected Taxa – Protecting the Endemic Nicobar Flying Fox

PROJECT LOCATION: Central Nicobar, India

TARGET SPECIES: Nicobar flying fox
(*Pteropus faunulus*)

2019 FINALIST

DR. BANDANA AUL ARORA

THE 'BATWOMAN' OF NICOBAR

“Dwindling numbers of the Nicobar flying fox, a key seed dispersal species for around 22 fruiting trees, would have a cascading effect on the survival of other wild species in the islands.” – Dr. Bandana Aul Arora

Believed to possess the supernatural ability to communicate with bats, **Dr. Bandana Aul Arora** can be found with her echo-locators, night vision cameras and traps, lurking in the shadows at night in the remote Nicobar Islands of India. She is striving to save an endemic species of bat, the Nicobar flying fox.

Dr. Arora, a consulting mammologist with the Bombay Natural History Society, has been working in the field since 2002. Her first study was on spotted deer in South Andaman Islands. In time, she switched to bats, determining the status, distribution and ecology of 32 species of these neglected flying mammals in the Andaman and Nicobar Islands.

Even though the islands' geographical seclusion renders them suitable for studying and researching the species in isolation, any conservation effort in the Central Nicobar Islands is daunting. The remoteness, lack of amenities and transport, and the locals' mistrust of outsiders do not make it any easier. Not just bats but most endemic species in the islands have small populations and a lack of sustained effort for conservation is pushing many to near extinction.

Dr. Arora along with her team rediscovered the Nicobar flying fox in 2002 in a Central Nicobar archipelago. For a century, the species was known to be extinct even in its original home range in Car Nicobar (where she now wants to conduct surveys to determine if it can be reintroduced). There is

limited research to ensure its long-term survival. Her proposed project will unearth fascinating information about these rare bats and help in understanding the reasons for their return.

Dr. Arora fears that the dwindling numbers of the Nicobar flying fox – that disperses seeds of around 22 fruiting trees in the region – would have a cascading effect on the survival of other wild species of plants and animals that depend on these trees.

Through this project, she hopes to radio-collar at least 10 individuals to track them to study their foraging range, roosting sites and the threats they face. While tracking an individual during her last attempt with this approach, she was led to a hunter's house on Kamorta Island. When the team asked the local if he had hunted a Nicobar flying fox, he was embarrassed and bewildered. How did they know he had eaten the bat? Thus spread the rumour that Dr. Arora dreamt about bats and heard them, alerting the hunters to the possibility of getting caught. The incident confirmed the threat that hunting poses, urging Dr. Arora to involve hunters in her conservation plan, and she assigned data collection and monitoring to them. Since the Indian Wild Life (Protection) Act, 1972 grants special hunting rights to the indigenous communities of the Nicobar Islands, hunting for survival needed to be redefined keeping their practices in mind.

A Nicobar flying fox grooming itself.



LEFT, RIGHT (top), Dr. Bandana Aul Arora at work. She has determined the status, distribution and ecology of 32 species of bats in the Andaman and Nicobar Islands.

RIGHT (bottom), The Nicobar Flying fox is endemic to the Central Nicobar Islands. Dr. Arora's research team rediscovered the species after almost a century.

Dr. Arora's relationship with the communities is an integral part of her success in the region.

Her work has led to the locals waking up to the importance of conserving the unique species and imposing a voluntary ban on hunting in foraging areas. Educational outreach programmes by local influential individuals have commenced in 11 villages on Kamorta and Nancowrie Islands, helping build a network of local conservationists, ensuring a long-term conservation plan for the Nicobar flying fox.





Riparian area on the banks of the river
Cauvery, Karnataka.

THE HABITATS TRUST GRANTS PROJECT TITLE:
Riparian Habitat Conservation along the
Cauvery River, Coorg District

PROJECT LOCATION: Cauvery River, Coorg
District, Karnataka

TARGET SPECIES: Riparian flora,
Khudree mahseer (*Tor khudree*)

2019 FINALIST

2018 Finalist For Lesser-known Habitats

NEETHI MAHESH

REVIVING TRADITIONAL KNOWLEDGE TO RESTORE THE RIPARIAN HABITAT ALONG THE CAUVERY RIVER IN KARNATAKA

“The Habitats Trust played a vital role by recognising efforts in the field to mobilise riparian habitat conservation in Coorg District. Going up to the final round for the ‘Lesser-known Habitats’ category gave the project much needed leverage and monetary support to start a nursery with the local Jenu Kuruba tribals.” – Neethi Mahesh

Five years ago, a group of scientists, NGOs, the Fisheries Department and Forest Department came together to highlight the plight of a large freshwater fish of the carp family – **khudree mahseer**, and its riverine habitat. What followed was a first of its kind freshwater fish telemetry (the technology that automatically transmits data collected from remote habitats to receiving equipment) initiative in India, a turning point in the life of river ecologist, **Neethi Mahesh**. She has since been working in the Western Ghats, focusing on riparian (land-river interface) habitats with the endangered mahseer fish as a flagship species.

Neethi was a runner-up of The Habitats Trust Grants 2018 under the ‘Lesser-known Habitats’ category, and has expanded the scope of her project this year as a finalist for the Conservation Hero Grant in 2019.

Once an abundant game and food fish in India, the mahseer is now on the list of endangered species, with an extremely limited range. Through their telemetry project, Neethi and her colleagues were able to study the needs and behaviour of the mahseer, but barely scratched the surface in the understanding of our freshwater ecosystems.

River Cauvery, the eighth largest river in the Indian subcontinent, flows through Kodagu District

(Coorg District) in Karnataka, where Neethi’s project is located. The Cauvery catchment is fragmented into forest and agroforest zones that include community protected forests known as *Devara Kadu* or sacred groves. The increasing shift in land use, with people switching from native tree species to a monoculture of silver oak, has the potential to change the hydrology and soil composition of the catchment area, making slopes unstable. In addition, unregulated tourism, sand mining and overfishing are detrimental to the river’s health, which worries the nature-worshipping local community. The riparian vegetation operates as a wildlife corridor which fish, birds and mammals use for dispersal, migration and movement. It also supports the livelihoods of tribals, fishermen and other locals. Riparian habitat restoration is hence, crucial.

The proposed conservation project uses a holistic landscape-level approach. The first step was a meticulous flora survey in Dubare Reserve Forest. Through her collaborations with the Jenu Kuruba tribals (honey collectors) who collect seeds by harvesting saplings directly from the riparian zone, Neethi is preparing a field guide of riparian species that can be used for habitat restoration. While plantation drives are popular in Coorg District, native riparian saplings and seedlings have never



been available to citizen groups. Neethi and her team have set up a seed bank and tribal-based nursery of native riparian species to plant in areas identified for restoration. Neethi has also collaborated with the Forest Department nursery to ensure a sustainable source of saplings and to facilitate long-term revegetation.

Future generations will inherit a river ravaged by anthropogenic stress and climate change. To enable the community's custodianship over their river and to change its fate, Neethi works with government

schools in the surrounding areas to assess the water quality in catchment areas through a citizen-science-based Cauvery river monitoring network. Water quality testing kits are distributed among eco-clubs in schools and children are trained to regularly monitor the water quality.

Neethi's work in Dubare Reserve Forest focuses on reviving traditional knowledge of riparian habitats and lost native species at the grassroot level while taking the immediate necessity of conservation measures into consideration.



LEFT, Neethi's seed bank of native riparian species.

RIGHT (top), Neethi is working alongside Jenu Kuruba tribals (honey collectors) to restore riparian habitats.

RIGHT (bottom), Water quality testing kits are distributed among eco-clubs in schools to regularly monitor the water quality.



THE HABITATS TRUST GRANTS PROJECT TITLE:
Enabling Responsible Marine Wildlife Based
Tourism Livelihoods in Goa

PROJECT LOCATION: Sinkerim-Aguada Bay,
Goa

TARGET SPECIES: Indian Ocean humpback
dolphin (*Sousa plumbea*)



*Almost 400 operators conduct unregulated
dolphin-watching tours in North Goa alone.*

2019 FINALIST

PUJA MITRA

INTRODUCING ETHICAL DOLPHIN TOURISM IN GOA

“Since they [the boat operators] have operated one season in this manner [ethical dolphin watching], they are already seeing the value in this change of approach, in terms of saving fuel, earning a higher income and feeling more confident.” – Puja Mitra, Founder Director, Terra Conscious

From Arambol beach in the north to Galgibaga in the south, Goa has 105 kilometres of coastline and 25 beaches. Its residential wildlife ranges from large marine mammals, marine fish species and otters to crocodiles and pelagic birds, among others. Tourism is vital to the state’s economy, but lately, ‘overtourism’ has been harming its ecology.

The pollution caused by tourists thronging to the beaches has been hurting a sensitive member of the ocean that lives in the shallow waters near the shore – the **Indian Ocean humpback dolphin**. Since these are not Protected Marine Areas with guidelines for boat operators, almost 400 operators have been conducting dolphin-watching tours in North Goa alone. After one such dolphin-watching trip, **Puja Mitra**, a Commonwealth Scholar with an MSc. in Biodiversity, Conservation and Management from the University of Oxford, felt that these tours could be organised in an eco-sensitive way. Thus, she founded Terra Conscious, a conservation-oriented social enterprise focusing on responsible travel and marine conservation education and outreach.

With one of the most specific habitat preferences and restricted distributions of any marine megafauna, the Indian Ocean humpback dolphin is vulnerable to environmental change and anthropogenic threats. Concentrated within 2 kilometres off the shore, they are often sighted a few hundred metres from land when they emerge to draw breath, inviting tourists’ attention. With growing competition among boatmen, dolphin-watching has gone from being a wildlife experience to a water sport. A 2015 World

Wide Fund for Nature (WWF) – International Union for Conservation of Nature (IUCN) study reported that the dolphins were displaying signs of stress and avoidance behaviour around tourist boats due to being continuously chased and harassed, sometimes leading to injuries, or even deaths of these beautiful marine mammals.

At Terra Conscious, Puja has been working with nine boatmen in the Morjim bay. Descending from nearly three generations of fishermen, these boatmen had to switch to operating tour boats when mechanised fishing seized their livelihood. Puja’s work has been transforming them into ethical tour operators in accordance with internationally accepted dolphin-watching guidelines. She now proposes to expand to other areas to engage about 400 operators. The project focuses on the Sinkerim-Aguada Bay in North Goa, a part of the popular Candolim-Calangute-Baga beach stretch which is affected by mass development and overtourism. If unchecked, in the long term, anthropogenic stressors will further threaten the population of dolphins in this stretch.

Puja’s team is placing information signs at relevant locations, and building awareness and marketing campaigns to connect conscious travellers with trained operators. They have set strict regulations under which the operators must shut the engine as they approach the dolphins, decreasing their carbon footprint, increasing their fuel efficiency and causing minimal stress to the dolphins. Terra Conscious’ rules dictate that the tourists maintain



a quiet environment, respect the boat operators and do not litter. Unlike unregulated boat trips with 45 minutes of reckless dolphin chasing, these trips, called 'Ocean Biodiversity Experience' last for four hours and are considerate of the marine ecosystem.

While customer feedback has been positive, the visibly diminishing marine and beach litter is a quantifiable impact. The operators are also making more money which is another incentive for them to collaborate with Terra Conscious.

Puja is presenting the benefits of ethical wildlife watching as a livelihood opportunity to urge tourism authorities to implement better regulations. The project hopes to create an inter-generational impact

where the future will see the children of the boat operators run ethical tourism businesses with a sense of ownership and pride.

After her nationwide campaign to ban dolphinarium in India led to landmark legislation, Puja is now pushing for policy-level changes to promote ethical tourism practices across the state. She believes that by altering tourist behaviour, it is possible to achieve a cleaner, more habitable environment for dolphins in Goa.

One cannot always say no to 'development', and sometimes, the answer lies in collaborating with people to save a species.



LEFT, If tourists are lucky, they get to observe undisturbed Indian Ocean humpback dolphins breaching during Terra Conscious' 'Ocean Biodiversity Experience'.

RIGHT (top), Puja conducting a workshop for lifeguards in Goa with her Terra Conscious team.

RIGHT (bottom), A large stretch of mangrove forest in the Sinquerim-Aguada Bay in North Goa.

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TEXT

Gunjan Menon

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