

## Nature Mates-Nature Club

6/7 Bijoygarh, Jadavpur, Kolkata-700032

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# Annual Work Report: 2021-2022

## About Nature Mates

### Vision

A world, where all human and non-human entities live in harmony with mutual respect.

### Basic Background

Nature Mates-Nature Club is an organisation of dedicated, like-minded people seeking knowledge about the mysterious natural world and are willing to serve for ensuring sustainability in natural world. Started as a Nature Club under WWF in 1995, NM-NC got registered as an NGO in 2006. The initial days of work revolved around awareness against consumption and sale of wildlife in the local bazaars of Kolkata, to increase our services for the distressed animals that needed to be rescued in and around Kolkata.

From the very beginning, the focus of Nature Mates was Wildlife Research and Conservation. We focus on various conservation aspects of wildlife hoping to protect the rich biodiversity of India by complimenting and supporting government agencies, collaborating with the local stakeholders and several other non-governmental organizations.

## Areas of Expertise

- Species and Community Level Research
- Wildlife Conservatories
- Biodiversity Assessment: Surveys, Census, Environmental Impact Assessment
- Tree Plantation, Transplantation and Restoration
- Ecological Restoration: Wetland Restoration and Creation
- Alternative Livelihood Generation
- Animal Rescue and Welfare
- Disaster Management
- Awareness and Enrichment
- Health and Hygiene
- Publication
- Naturalist & Nature Guide Training

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Society Registration Number: S/1L 40938 of 2006-2007

80G Registration Number: CIT(EXMPTION), KOLKATA/80G/2018-19/A/10405 dtd.22.02.2019

FCRA Registration Number: 147121056 dtd.11.04.2017

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### Response to “Very Severe Cyclone” Yaas

May 26<sup>th</sup> 2021 was another unfortunate day for the coastal belt of West Bengal as Cyclone Yaas made its landfall at Balasore, Odisha, but the impact in Sundarban Biosphere Reserve was huge. The wound of Amphan didn't even heal when just within a year Yaas again broke the spine of the landscape, this time with catastrophic ingress of water. Houses were washed away, agricultural fields and freshwater ponds were flooded with saline water and thousands of people were waterlogged for weeks with almost no food and drinking water. What added more to the crisis was the breakout of several diseases after the water level was reduced.

### Steps Undertaken

#### Pre-cyclone Measures

Thanks to IMD, they identified and warned about the impending disaster which helped in reducing the damage significantly as certain precautions were stringently taken. **Just after the alert was issued, our team engaged out team in perusal of strengthening the river bank embankment in Dakshin Shivganj Village of Pathar Pratima Block from 23<sup>rd</sup> May 2021 which turned out to be very beneficial for the local villagers.** Team Nature Mates kept on Coordinating with the Local Administrative bodies and physically helped the villagers in the work and constantly was present in the locality to ensure as much safety as possible.

#### Post Cyclone Measures

Measures undertaken:

- Community kitchen service in three villages of Sagar Island.
- Supply of drinking water in three villages of Sagar Island.
- Supply of drinking water in three villages of Pathar Pratima Block.
- Providing food relief in three villages of Pathar Pratima Block.
- Providing basic medicine in Three Villages of Pathar Pratima Block.
- Undertaking freshwater pond restoration initiatives in four administrative areas in Patharpratima Block.
- Mangrove plantation for reducing erosion of banks in 7.7 acres of land.
- Providing Vegetable seeds to 400 families in Patharpratima Block.
- Providing Fruit tree saplings to 450 families in Patharpratima Block.
- Supply of Calcium Chloride for water purification in Mousuni Island.
- Specialized medical camp facilities provided in six different villages of Sundarban Biosphere Reserve.
- Distribution of Mosquito Nets to families in distress
- Number of mangrove saplings planted: 15000+
- Number of total human beneficiaries: 4500+

### Human-Elephant Conflict Mitigation Measures

The project attempts to inform local populations about the importance of taking safety procedures to prevent unintentional elephant encounters. The safety trainings were conducted in a number of tea farms and delicate communities. Handheld flashlights were distributed to more than 2000 recipients. These flashlights should be used by anyone going out at night so they can see elephants from a distance and prevent any mishaps. The programme was implemented in various districts of the state, including Bankura, Darjeeling, Alipurduar, and Jalpaiguri.

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### Wildlife Rescue

Wildlife rescue has from the inception been an integral part of Nature Mates. The last year was also no exception from that. The Wildlife Rescue team of Nature Mates went beyond their limit in this time period and tried to help the distressed wild animals as much as possible in collaboration and support of the esteemed Department of Forest, Government of West Bengal. Nature Mates created a bigger network this time by coordinating a lot of rescue calls over phone with the help of local forest administrations and reached wherever it was feasible to be physically present. The ones which survived were released back to wilderness after a certain monitoring.

An overview of Wildlife Rescue and Rehabilitation throughout the year –

Category	Number of Individuals rescued	Number of Individual Survived and Released	Success Rate (%)
Mammals	10	8	80
Reptiles	16	16 (including safety measures suggested for successful escape of the snakes)	100
Birds	26	13	50

\*\*This list includes all the rescue activities including the direct and indirect ones.

### Environmental Impact Assessment

Since 2014 Nature Mates is actively taking part in Environmental Impact Assessments, a process of evaluating the likely environmental impacts of a proposed project or development, taking into account inter-related socio-economic, cultural and human-health impacts, both beneficial and adverse. These surveys also give our researchers ample scope to get some potential data from all over India on Birds, especially in the migration cycle. Thus these impact assessment projects also are helpful for our research works.

List of Environmental Impact Assessments for the Year			
Sl. No.	Project Name	Place	Month
01	Biodiversity Survey for wind power project	Kasar Sirsi, Maharashtra	March 2022
02	Rapid Biodiversity Survey for 300MW wind power project	Kallam, Maharashtra	December 2021-January 2022
03	Rapid Biodiversity Survey for 400MW wind power project	Naregal, Karnataka	December 2021-January 2022
04	Habitat assessment for SECI-VIII, IX and NTPC projects; 300MW Solar	Baap, Maharashtra	November-December 2021
05	IESA and Bird Survey for 80MW Solar Project	Limbdi, Surendranagar, Gujarat	July-November 2021
06	Biodiversity Survey for 300MW wind power project: RTC-II	Chandwad, Maharashtra	October-December 2021
07	Biodiversity Survey for 300MW wind power project: RTC-I	Homball, Karnataka	October-December 2021
08	Biodiversity Survey for 300MW wind power project: RTC-III	Homball, Karnataka	October-December 2021
09	Rapid Biodiversity Assesment report at proposed development site	Amrelli Gujarat	March-October 2021

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### Butterfly Conservatories: The Success Story of a Research and Conservation Model

We promote establishment of butterfly conservatories in urban areas as well as in adjacent to protected areas in and around the state of West Bengal and in India, as a tool for bottom-up conservation model. Creating a habitat for butterflies not only aids in creation of a reservoir of well accepted group of plants but also attracts several insect species, reptiles, amphibians, birds and even few lesser mammals. Our aim is to spread awareness about the importance of butterflies and its conservation among urban people as well as among rural and forest-fringe villagers. We also establish open-air butterfly conservatories in various schools and college premises and involve students in this conservation activity. We also train local, economically backward communities in laboratory work and recruit them as staff in our conservatories. Our mission is to create an uninterrupted butterfly corridor and we wish for everyone's support in this effort. We strongly believe in our mantra, 'Save Butterflies to Save the Tigers'.

Over the years Nature Mates is now regularly supervising five different butterfly conservatories in different geographic zones of West Bengal apart from monitoring the progress of some other butterfly gardens which have recently been formed or under the preparation phase. These five conservatories are:

- Rajabhatkhawa Butterfly Conservatory (Alipurduar District)
- Ramsai Butterfly Conservatory (Jalpaiguri District)
- Banabitan Butterfly Conservatory (Kolkata)
- Kulik Butterfly Conservatory (North Dinajpur District)
- Eco-tourism Park Butterfly Garden (Kolkata)

These Conservatories also work as our research stations. Rearing and life cycle data of butterflies are daily collected from there. Mark-recapture data, Behaviour Studies, Distribution Studies, Specimen Collection, Sex Ratio Determination, Butterfly Migration Study all these scientific studies and observations are being regularly carried out by our researchers. Scientific Publications are also made on the basis of these research works. Our Lepidoptera researchers and interns work in laboratories in these conservatories to make our research initiatives a success.

An overview of work done at the five conservatories from April 2020 to March 2021:

Serial No.	Name of Conservatory	Total Emergence in financial year Apr 20-Mar 21
1	Rajabhatkhawa	3592
2	Ramsai	1617
3	Kulik	1956
4	Ecopark	9217
5	Banabitan	987

Total butterflies emerged in the financial year April 2021-March 2022 is **17369 with a success rate of 65.3% with respect to the total number of collection.**

These Butterfly Conservatories also have become home to several Birds, Mammals and Reptiles. These conservatories have turned into potential green corners and thus became safe adobe of wild lives which contributes in maintaining the ecological sustainability of the region quite significantly. In this way the idea of creating a butterfly garden has now successfully grown into a conservation model which can be adapted in any geographic region, even within the claustrophobic concrete jungles of urban landscape.

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### **Pakhibitan – The story of restoring a birds paradise**

Scientific intervention, based on field knowledge can change an area into a habitat for birds. Pakhibitan, of Eco Park, New Town, Kolkata is one such initiative which is maintained by Nature Mates, where we aspire to enhance the quality of habitat for birds to thrive comfortably. Due to speedy urbanization and rapid reduction of this patch which was previously an extended grassland, a huge number of birds and other wild animals were facing the threat of habitat loss. This led to the idea of Pakhibitan in Eco Park, where a small undisturbed patch was converted into a bird habitat.

This new habitat for birds had become a great awareness point, where we guide the park visitors about various aspects of this wonderful life form, their need and their importance. This project is one of the most important futuristic approach towards conservation measures for avifauna within a congested urban landscape.

Other than birds this landscape has become a peaceful refuge for many other wild animals like civets, jungle cats, jackals, mongoose, monitor lizards, turtles, snakes and so on. The local forest administration has also chosen this place for releasing rescued animals regularly in this landscape. Thus when a place was about to lose its ecological balance completely, Pakhibitan has become a solution model which can be replicated in other places as well. Over the last year so far 162 species of birds has been recorded from this place including both Resident and Migrants. The place has also become an important stopover site for long flying migrants Siberian Rubythroat.

### **Hornbill Study – A research initiative to conserve the threatened hornbill population**

The Hornbills are called the farmers of the forest for their biological habit of seed dispersal. But the global population of Hornbill is gradually decreasing. Nature Mates from 2017 is working in collaboration with Nature Conservation Foundation to contribute as much as possible in conserving hornbills. The working area includes hilly terrain with hard stony soil with an elevation gradient ranging from 150m-1750m of Buxa Tiger Reserve.

A dedicated researcher, two dedicated field assistants tirelessly work in this landscape and their works are gradually bringing the expected fruits. The study is carried out in following scientific methodology and the team is working hard to develop a conservation model which includes local community participation to protect the hornbills especially from poaching.

The regular works include:

- Estimating the density and abundance of all the four species of hornbill found in Buxa TR.
- Identifying hornbill nests and monitoring them throughout the breeding season which will help to enumerate the nesting period, nesting success, visitation rates by the parent bird and diversity of food item delivered at the nest.
- Roost site monitoring specially in the non-breeding season to calculate their numbers and trying to distinguish between male, female, juvenile.
- Building a local conservation network, with the state forest department and local villagers to protect the hornbills with regular interactions and exchange of research findings from the project.
- Studying the vegetation structure and composition of Buxa TR.

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### Tree Transplantation

We often face the challenge of development vs. environment. Though, tree transplantation is not an answer to this but definitely a tool to minimize the damage. We have introduced this in West Bengal during 2012. In cases where a tree got damaged or there were no other alternative available for a tree from being logged, due to various reasons, we went for transplantation. Lots of trees were restored for several reasons since then all over West Bengal especially in the southern regions.

**This year we've successfully transplanted Seven Trees all around Kolkata with a success rate of 100%.**

### Other Research works and published papers at a glance

This year the National Lockdown helped us in other ways. We were able to concentrate more on research oriented studies and paper works.

A list of Research Works in the last year

- Study of life cycle histories of different common butterflies are being carried out. (PhD Project)
- Study of polyphenism in *Catopsilia pomona* has been initiated. (PhD Project)
- Mark-recapture to determine sex ratio of common species.
- Nectaring data of Eco Park is being taken on a weekly basis.
- From February 2022 Nature Mates Started Working on Habitat and Threat Assessment of Waders, migrating to the selected coastline of Sundarban Biosphere Reserve in West Bengal, India. (Fellowship Funded by: Earthwatch India under the Fellowship Programme on Citizen Science and Nature Conservation, 2022).

Publication of Scientific Paper:

- **Baidya, S. , Roy, S. , & Roy, A. B. (2021). Scientific Note: A new aquatic host plant of *Junonia atlites atlites* (Lepidoptera: Nymphalidae) from India**

### Santragachhi Jheel Restoration – an Effort to ensure winter comfort for the avian guests.

For decades the Santragachhi Jheel adjacent to the Santragachhi Railway Station, Howrah has hosted a significant numbers of Migratory Birds every winter. But the dominance of water hyacinth and the uncontrolled waste disposal in the waterbody interrupted the bird migration and the number went down to a mere 800 in the 2017-2018 migration season. The lake which was a warm shelter to Trans Himalayan Migratory Birds like Baikal Teal, Ferruginous Pochard, Gadwall etc. was gradually becoming a waste disposal ground when Nature Mates with the assistance of the State Biodiversity Board and Howrah Municipal Commission started the restoration work of the jheel to make it suitable for the migratory birds once again.

This year we started the monitoring a bit early which actually brought the sweet fruit. The cleaning of Water Hyacinth, making small islands with the hyacinths as suitable roosting sites all these works were done early and as a result the official tally of bird count inflated up to 6742 which includes 14 species of water birds including four winter migrants. Though our work was repeatedly hampered by rain, it was successful. We aspire to do this work every year as hosting the migratory birds is always a good sign for any waterbody and its surroundings. And obviously we love to see them in floating colours.

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### Medical Camps in Sundarban Biosphere Reserve

Sundarbans is a remote area with severe communication problems in terms of connectivity and transport; hence the locals are deprived of proper medical services. Right after the cyclone “Yaas” things even worsened and a lot of people needed medical help to revive from the impact. We with the support of the State Forest Department organized specialized medical camps in six different Villages of Sundarban Biosphere Reserve to help the local people who were in absolute distress.

Camps were executed at Ramganga Range, Raidighi Range, Namkhana Range and Bhagabatpur Range under the South 24 Parganas Forest Division with a total beneficiary number tallying up to 750+.

### A glance of other works of Nature Mates in this time frame:

- We had conducted field works in Buxa Tiger Reserve, Kulik Wildlife Sanctuary, Ramsai Butterfly Conservatory and Jhargram. Field work in Jhargram was to conduct butterfly and host-plant survey in this landscape prior to setting up a conservatory here. We had recorded 96 species from this area in mere 5 days, showing immense potential of this habitat.
- We helped to coordinate the Bengal leg of Big Butterfly Month (Sept 2021).
- We had conducted 5 webinars as a part of Big Butterfly Month.
- Migratory Waterfowl Census at, Santragachhi Jheel (Howrah), Bhaluka Beel (Nadia), Bamunpukur Wetland (Nadia), and wetlands of East Medinipur District.
- The Green Corner at Eco Space is running quite good. Birds are coming more and more. The Common Kingfisher, Common Kestrel, Indian Cormorant, Bulbul, Black Drongo, Indian Pond Heron Indian Silverbill etc. are now a regular visitor at the place. Ducks are doing well and are in good health.
- We took part in the Backyard Bird Count event organised by e-Bird for three days in several places of Kolkata to look for the bird diversity in the city
- Our Team Members participated in the Annual Buxa Bird Festival and Mahananda Bird Festival as experts and field personnel.
- We had our stalls in Kolkata Book Fair and New Town Book Fair where all our publications were available and books were sold.
- We arranged canvas painting campaign at Kolkata Book Fair where enthusiasts were invited to draw conservation art works.
- Adoption and maintenance of Green Verge with an intention to create suitable green habitat patch for local biodiversity in the New Town area was another important work in this time period.
- We organised the Spider India Meet at Auroville in December 2021.
- Publication of Book: Praying Mantis-der Kotha.
- Publication of Book: Aranya Mangal.
- Awareness for restricted use of plastic in different streets of Kolkata.

### Facilitations:

- Facilitated by Sundarban Tiger Reserve and Received a Certificate of Excellence

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## Photo Gallery



Mangrove Plantation



Mangrove Seeds



Torch Distribution: Human Elephant Conflict Mitigation



Torch Distribution: Human Elephant Conflict Mitigation



Community Kitchen: Post Cyclone Initiative



Community Kitchen: Post Cyclone Initiative



Pakhibitan: an Urban Bird Refuge



Purple Sunbird at Pakhibitan

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Drinking Water Supply at Sundarbans



Drinking Water Supply at Sundarbans



Relief Materials Supplied at Sundarbans



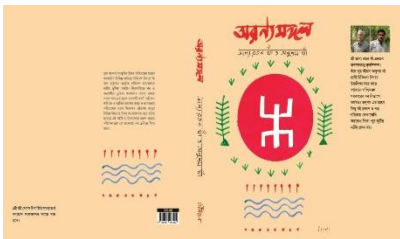
Medical Camps at Sundarbans



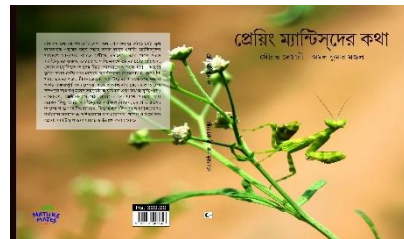
Bank Strengthening at Sundarbans



Mosquito Net Distribution at Sundarbans



Aranya Mangal: Book Cover



Praying Mantis-der Katha: Book Cover

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Plastic Uses awareness campaign on Streets



Canvas Painting at Book Fair Stall



Butterfly Research & Awareness Activities



Butterfly Research & Awareness Activities



Wildlife Rescue



Tree Transplantation

Thank you



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