



2020-2021

**Wildlife
Conservation
Society-India**



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OUR VISION

Wildlife Conservation Society-India (WCS-India) envisions a world where wildlife thrives in healthy lands and seas, valued by societies that embrace and benefit from the diversity and integrity of life on earth.

OUR MISSION

Wildlife Conservation Society (WCS) saves wildlife and wild places through science, conservation action, education, and inspiring people to value nature. WCS has a long track record of achieving innovative, impactful results at scale since our founding in 1895. Wildlife Conservation Society has furthered its global mission in India since 1988.



ABOUT WCS-India

Wildlife Conservation Society-India (WCS-India) is a Section 25 non-profit company incorporated in India and compliant with all Indian regulations. In accordance with the global mission, WCS-India's overarching goal is the protection and conservation of the natural environment, its flora and fauna, and in particular the preservation of wildlife and wild places in India.

We combine wildlife conservation action and strategic policy interventions with rigorous principles of conservation science, and forge long-lasting productive partnerships with governmental and non-governmental partners as well as with local communities. Our conservation action addresses the overarching threats of habitat fragmentation, poaching and wildlife trade as well as human-wildlife conflict, which impacts our biodiversity and its habitats.

Based on these principles, WCS-India's work has facilitated the consolidation of critical natural spaces while also bringing thousands of marginalized people into the mainstream to access a better quality of life.

Considering the ever-changing facets of the issues and challenges associated with wildlife conservation, WCS-India's objectives encompass a range of ecosystems and species across the country — from the dense forests of Karnataka and Kerala, and the tropical deciduous forests of Eastern Ghats, to the arid grasslands of Rajasthan; from the unique riverine habitats of the North and North East India landscape to the vibrant coral reefs of the Lakshadweep Islands.



OUR REACH

WCS-India is currently working across 20 states in India to address a diverse range of conservation issues, which include:

- Consolidation of critical wildlife habitats and corridors in the Protected Area network in Western Ghats and Eastern Ghats landscapes via facilitation of government-sponsored voluntary relocation scheme, private purchase of critical land parcels, and expansion of protected areas.
- Countering illegal wildlife trafficking by capacity enhancement of enforcement agencies and addressing legal and technical gaps.
- Conservation of the marine and coastal ecosystems in India by strengthening the marine protected area network, improving the conservation status of sharks and rays in India, and mitigating bycatch of marine megafauna.
- Mitigating human-wildlife conflict through awareness generation, stakeholder engagement, and community involvement.
- Conservation of India's charismatic and threatened fauna with community involvement and support to government efforts.

We are working in collaboration with the government and other stakeholders to ensure persistence of highly threatened fauna including the Great Indian Bustard in Rajasthan; Leopards (& their Prey) in Maharashtra, Uttarakhand, and West Bengal; Dholes in Karnataka and Kerala; Elephants in West Bengal and the Western Ghats; Tigers (& their Prey) in the Eastern and Western Ghats; Sharks and ray species, marine mammals and sea turtles in India; highly threatened freshwater turtles and tortoise species such as the Red Crowned Roofed Turtle and the Northern River Terrapin in the Terai Arc Landscape, National Chambal Sanctuary as well as the North east including Nagaland; and all wildlife species impacted by illegal wildlife trade in India.





Carnivore & Herbivore Ecology & Conservation

- The Carnivore & Herbivore Ecology & Conservation team continues providing support to tiger-and-prey monitoring by the Eastern Ghats team in the Nallamala landscape of Andhra Pradesh (Nagarjuna-Srisailem Tiger Reserve, Gundla Brahmeswaram Wildlife Sanctuary) and Telangana (Amrabad Tiger Reserve). Due to the COVID-19 pandemic, team members were unable to assist with fieldwork during the 2020-2021 field season, other than with surveys to assess tiger distribution across Telangana. We continued with the processing and validation of field survey data on tigers and their prey from the 2018-2019 and 2019-2020 field seasons.

WCS-India field staff (extreme right) with PTCF staff and PKTR's tiger monitoring team, setting up a camera trap in PKTR. ▼

- We continued building the capacity of state forest department staff to rigorously and reliably monitor tigers, prey and other wildlife, through an online refresher course for the Kerala Forest Department staff and Parambikulam Tiger Conservation Foundation staff. Two highly trained field staff members accompanied Parambikulam Tiger Conservation Foundation (PTCF) staff and the Parambikulam Tiger Reserve (PKTR) tiger monitoring team carrying out camera trap surveys of tigers in PKTR and its buffer areas. As a follow-up, a detailed document was shared with senior officials of the Kerala Forest Department, followed by an online meeting with the officials. During the meeting, our support was strongly appreciated, and there were requests to extend such technical support to other key tiger source sites in Kerala. However, due to the ongoing COVID-19 situation in Kerala, this is yet to happen. Two highly trained team members also assisted forest department field teams at a tiger reserve in Karnataka in carrying out camera trap surveys for tigers.



- Having earlier completed the classification of settlements within forests in the Western Ghats of Karnataka and the southern Mysore plateau using remotely-sensed imagery, we verified these identified settlements using knowledgeable field staff, and digitisation of the classified pixels to polygons, for most of the southern Mysore plateau. The digitisation of enclaves was geographically expanded to include the protected areas and reserved forests in the Western Ghats of Tamil Nadu and Kerala.
- We continued to build the capacity of our staff in various areas, including different aspects and nuances of wildlife population monitoring, occupancy modeling, use of the R programming language and software environment, basics of GIS and mapping, fundamentals of probability and probability distributions.
- Throughout this period the team continued to provide a very wide variety of technical support to other WCS-India teams, to WCS-NY and to collaborators from other NGOs/ research institutions.



▲ WCS-India field staff (left) and PKTR field staff recording data on a form after checking a camera trap.

WCS-India field staff (center and right) with forest department staff setting up camera traps in a tiger reserve. ▼





Conservation of the Lesser Florican and its Habitat in Rajasthan

The Lesser Florican (*Sypheotides indicus*) is a bustard species endemic to the Indian subcontinent. It is the smallest amongst the four bustard species found in India. The preferred habitat for the species includes arid grasslands and near cropland regions in Rajasthan, Gujarat, Madhya Pradesh, Maharashtra, Karnataka, and Andhra Pradesh. The bird breeds in the monsoon. Irregular rainfalls disrupt the breeding cycle.

The species is listed as endangered by the IUCN (2021). Almost 80% decline in population in the last two decades has been reported for this species. The species is threatened due to poaching and hunting. Unethical photography and lack of local awareness about the species have also affected the populations in natural habitats.

Agricultural intensification, changes in cropping patterns, use of grasslands for infrastructure including wind turbines and roads, industries/housing, salt pans, and mining have resulted in the loss of the grassland region. Overgrazing by livestock in grasslands, presence of invasive species (*Lantana*, *Prosopis juliflora*, etc.) in the grasslands are also major factors limiting the natural population of the bird (Dutta et al., 2018).

Our project aims to propose a long-term conservation action plan for lesser florican populations following the florican-friendly model designed by the WCS-Cambodia team for Bengal floricans. The current project is focused on grassland habitats used by lesser florican in the breeding sites occurring in Rajasthan and adjoining areas in Madhya Pradesh. The team is based in the Pratapgarh district of Rajasthan.

Efforts will be made to develop a conservation plan for lesser floricans for breeding and non-breeding (if available) sites in Rajasthan and Madhya Pradesh in collaboration with the forest departments, local communities, farmers, and other stakeholders.

Florican-friendly agriculture practices will be designed and promoted in the regions. Proposed activities also include capacity-building of the frontline staff, removal of non-native, invasive species from the florican breeding sites, preventing unethical practices by tourists and photographers, initiating a community-based citizen science system to monitor the distribution and movement of the lesser florican. The field survey for the species monitoring is scheduled in the monsoon season to identify the breeding sites of the bird in the chosen regions.



▲ Community outreach in Bedma (Pratapgarh district), Rajasthan



▲ Community outreach in Madhya Pradesh



▲ Sarpanch meetings in Dhamotar, Rajasthan



Counter Wildlife Trafficking

Capacity Building:

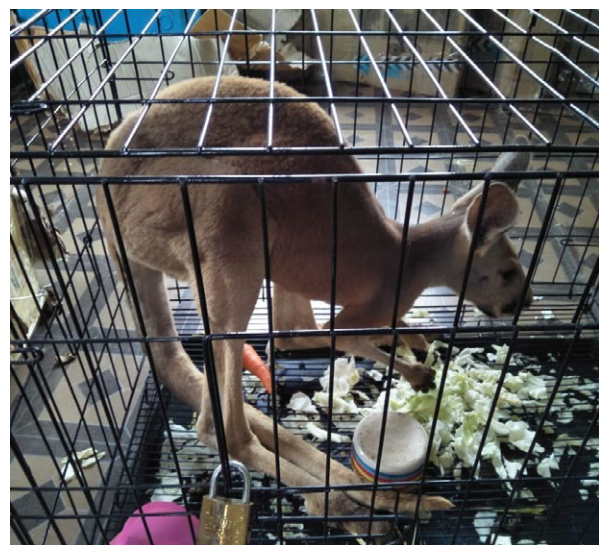
- We conducted 28 webinars and workshops for forest departments of the states of Goa, Meghalaya, Assam, Tamil Nadu, Telangana, Andhra Pradesh, Arunachal Pradesh, Manipur, West Bengal, Gujarat, Karnataka and Maharashtra, and trained over 3,000 forest officials on wildlife law enforcement.
- In a webinar with Assam State Legal Services Authority, we held a stakeholder dialogue with 38 judicial officers about prosecution of wildlife crimes.
- In a webinar with the National Academy of Customs, Indirect taxes & Narcotics- Shillong, we trained 15 customs officers in the detection of wildlife crime and related legal procedures.
- We trained 92 paramilitary officers stationed at Moreh, Manipur and Guwahati, Assam in two workshops on detection of wildlife crime.
- To continue with the educational outreach post workshop, we shared 71 infographics and quizzes over WhatsApp with former trainees. These included investigation tips, legal procedures, species profiles and contraband identification tips.
- Noteworthy:
 - » In a series of 19 webinars conducted circle-wise with the Maharashtra Forest Department, we trained over 2,000 forest officers.
 - » We, in collaboration with Oxpeckers Investigative Environmental Journalism & Earth Journalism Network, organised a webinar titled, 'Investigative Wildlife



- ▲ Officer filling out the pre-evaluation form during a workshop with CRPF in Guwahati.



- ▲ An awareness poster, sponsored by WCS, regarding trade in soft-shelled turtle on display in North-21 Parganas, West Bengal, a hotspot for soft-shelled turtle trafficking.



- ▲ A kangaroo was seized from the Cachar District by the Assam Forest Department.

Trafficking & Conservation Reporting' in August 2020, targeted towards regional environmental journalists working in India and Southeast Asia. The webinar drew 201 participants from 37 countries and 115 different organisations, including several freelance journalists. The event focused on wildlife trafficking and different data sources that could be utilised to carry out investigative journalism.

Intelligence & Analysis:

- We submitted three intelligence reports to Wildlife Crime Control Bureau-Eastern Region about the illegal trade in birds at Galiff Street, Kolkata, rhino poaching events, and insurgency connections to rhino trafficking in Northeast India respectively.
- Utilising artificial intelligence, we initiated an online wildlife crime monitoring system. Results of the same are shared regularly with enforcement.
- Intelligence tip-off from us led to the arrest of 31 offenders in the Northeast region. Seized contraband included softshell turtles, Asian elephant tusks, Chinese and Indian pangolins, deer antlers, sea fans, monitor lizard hemipenis, musk pods and exotic birds. Enforcement agencies involved in seizures included Wildlife Crime Control Bureau, Assam Forest Department, Assam Police, Sashastra Seema Bal and West Bengal Forest Department.
- Noteworthy Assistances:
 - » 50 kg sea fans, 14 musk deer pods, 2 kg musk, 43 pieces of monitor lizard hemipenis and 1.5 kg porcupine quills were seized from Ganeshguri Lakhi Temple and Kamakhya Temple in Guwahati, Assam by Wildlife Crime Department. We provided assistance to the operation by identifying shops and traders that stocked wildlife contraband. Three people were arrested in the case.

» Over a thousand (1,295) Indian flapshell turtles, 16 Indian peacock softshell and Indian soft-shell turtles and one Indian narrow-headed softshell turtle were seized from a truck in South 24 Parganas, West Bengal by the Wildlife Crime Control Bureau and West Bengal Forest Department. We assisted in the identification of the seized species and post-seizure care. The turtles had been sourced from Sultanpur, Uttar Pradesh. Six people have been arrested in the case.

- » We coordinated a joint operation with Assam Forest Department, Assam Police and Wildlife Crime Control Bureau that led to the seizure of almost 6 kg of pangolin scales in two subsequent seizure operations from Hojai district, Assam. A total of five offenders were arrested and are suspected to be a part of a bigger syndicate. Investigations in the case are ongoing.
- » The Intel Team assisted the Assam Forest Department by facilitating communication with the Directorate of Revenue Intelligence and species identification in a seizure of several exotics that resulted in the arrest of two persons. The seized exotic species, one kangaroo, six hyacinth macaws, three Aldabra tortoises and two capuchin monkeys were rescued and have been moved to Guwahati Zoo for permanent care.

Helpline:

The helpline was contacted 68 times for identification of species, legal assistance and situational assistance.

Legal & International Policy:

- We established a network of 12 lawyers who donate their time pro bono to assist enforcement agencies with wildlife crime cases. They received training in a webinar conducted in August 2020.

- In collaboration with the WCS International Policy team, we prepared a detailed draft of three species proposals for uplisting at the upcoming CITES meeting. These include proposals for two species of highly traded sea cucumbers and one for an endangered species of turtle – the Indian narrow-headed softshell turtle – to submit to the Ministry of Environment, Forests and Climate Change.

Noteworthy Achievements of Our Trainees:

- In a joint operation with the Directorate of Revenue Intelligence (DRI), Mizoram Police and Mizoram Forest Department, a former Customs Inspector trainee was involved in a seizure of exotic species which led to the arrest of two persons. The species included a bird of paradise, sun conures, black-capped lorries, and red-eared guenon monkey, which are currently in Aizawl zoo. We also assisted the officer in identifying the seized wildlife.
- One live Indian pangolin and 1.2 kg of Chinese pangolin scales were seized by a former trainee from Meghalaya Forest Department posted in

Jaintia Hills. The pangolin scales were said to be transported from Karbi Anglong in Assam to Meghalaya. Three offenders were arrested and are currently under judicial custody. The investigation is ongoing to dismantle the larger trafficking network.

- A former trainee from Kerala Forest Department seized 2 kg of Asian elephant tusks from one accused in Trivandrum. The accused has been arrested in the matter.
- With a tip-off from a former trainee of WCS workshop for Sashastra Seema Bal (SSB), a clouded leopard skin was seized in Bishnupur, Assam. One person was arrested in the matter. The same officer also facilitated the seizure of two Asian elephant tusks from Chirang district, Assam. One individual was arrested in the case.
- Based on the intel provided by a former trainee, a joint operation was conducted by the 31st Battalion of SSB and Assam Forest Department that led to the seizure of two Asian elephant tusks from Nabinagar. Four accused have been arrested in the matter.

Former trainees of SSB seized two elephant tusks from Nabinagar, Assam. ▼





▲ A month-long operation by former trainees of Telangana Forest Department resulted in four seizure events of pangolin scales.

- Three former trainees of Telangana Forest Department jointly seized a live pangolin from Mandamarri village through an undercover operation. A total of 21 accused, belonging to different states in India, were arrested.
- Through a continuous effort spanning over a month, four former trainees of our workshop for Telangana and Andhra Pradesh Forest Department seized 3.1 kg of and 15 pangolin scales cumulatively during four separate seizures. 12 arrests were made in the case.

The Direction in 2021-2022:

- Given the increase in online trafficking of wildlife, we plan to focus on monitoring cyber wildlife crime in the coming year. Additionally, we will develop expertise on tackling cyber wildlife crime and build capacity of enforcement about the same.
- We will develop expertise on the application of forensics to wildlife crime and build capacity of enforcement on the same.
- Taking a concerted approach to counter wildlife trafficking, we will be expanding the scope of our project to work with communities at trafficking hotspots.
- We will be baselining and studying trade in marine species across India, and will be developing a strategic plan to tackle marine wildlife trafficking.
- We will initiate a research cell within the team to develop research outputs that enhance the understanding, operations, drivers and enforcement capacity of wildlife trafficking within India.
- We hope to review our current capacity-building workshop modules to incorporate more preventive measures.

हरिभूमि

बिलासपुर - कोरबा भूमि
28 Jan 2021

पृष्ठ 1

करतला वन परिक्षेत्र के श्रीमार गांव से पकड़ा था पैंगोलिन

विलुप्त प्रजाति के पैंगोलिन की तस्करी करने लाखों में हुआ था सौदा, 7 गिरफ्तार



इन चित्रों द्वारा पकड़ा गया पैंगोलिन।

हरिभूमि वृद्ध ४४ कोरबा

विलुप्त प्रजाति के पैंगोलिन की तस्करी करने के लिए 20 लाख में सौदा कर लिया था। जून 2020 में कोरबा के श्रीमार गांव से पकड़ा गया था। तस्करी करने वाले 7 लोगों को गिरफ्तार किया गया है।

पैंगोलिन की तस्करी करने के लिए 20 लाख में सौदा कर लिया था। जून 2020 में कोरबा के श्रीमार गांव से पकड़ा गया था। तस्करी करने वाले 7 लोगों को गिरफ्तार किया गया है।



पैंगोलिन की तस्करी करने वाले 7 लोगों को गिरफ्तार किया गया है।

समूहों से सौदा और तस्करी

पैंगोलिन की तस्करी करने वाले 7 लोगों को गिरफ्तार किया गया है।

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पैंगोलिन की तस्करी करने वाले 7 लोगों को गिरफ्तार किया गया है।

▲ Seven people were arrested in Chhattisgarh by a former WCS trainee, as they were trying to capture and sell an Indian pangolin.



Dhole Programme

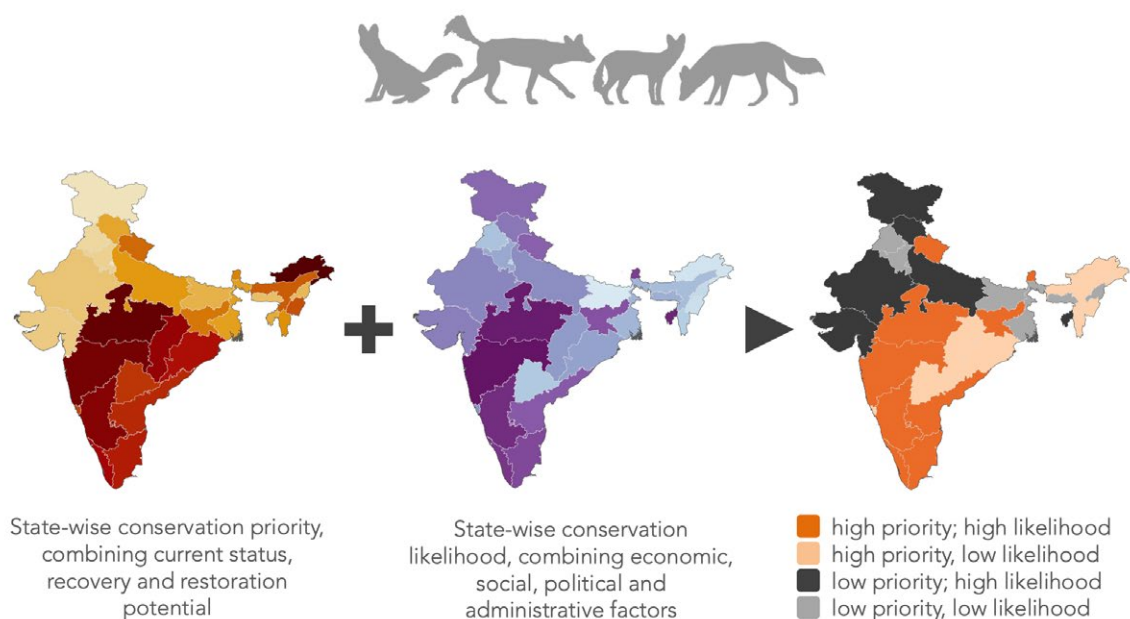
- In July 2020, we published a paper (journal: Mammal Review) that offers analysis and synthesis of dhole ecology in India, incorporates economic, political and administrative dimensions, and provides a roadmap for creating a national level dhole conservation plan (*graphic from the paper pictured below ▼*)
- In September 2020, team member, Ryan Rodrigues, presented results from countrywide dhole connectivity analysis at the Students' Conference of Conservation Science, Bengaluru (virtual event).
- We undertook a multi-scale, multi-method assessment of dhole population connectivity across India; the results of the assessment would serve as a blueprint for planning the creation and maintenance of habitat corridors to conserve dhole metapopulations. The paper based on the study is currently under review.

- In February 2021, we published a paper presenting the first-ever estimates of dhole population size in the wild (journal: Biological Conservation). The project was a collaborative effort with the National Centre for Biological Sciences (NCBS) and the Kerala State Forest Department.
- We are currently working in collaboration with NCBS to examine and map phylogeography of dholes across their distribution range, understand historical demography and predict the future of isolated populations.
- We are working with the IUCN Dhole Working Group to produce a review and synthesis paper on the best field, lab and analytical practices to estimate and monitor dhole populations in the wild.



▲ Team member Ryan Rodrigues interviewing local residents in Arunachal, scouting for dhole tissue samples for his rangewide phylogeography paper.

A road map for dhole *Cuon alpinus* conservation in India





Eastern Ghats and Central India

Spanning over 75,000 sq.km., from Odisha to southern Tamil Nadu, the Eastern Ghats is home to wide expanses of tropical, deciduous and semi-evergreen forests as well as threatened animal populations of tigers, elephants, leopards, gaurs and sambars.

The Eastern Ghats also contains the Nallamala landscape, one of India's largest and most complex Protected Areas sprawling 5,600 sq.km. The part of Central Indian landscape in Telangana is spread across 6000 sqkms and we have been actively involved in Kawal Tiger Reserve and its adjoining areas which is identified as Tiger corridor.

Since 2012, our team has been working to address a range of wildlife issues, including conflict mitigation, consolidation of wildlife habitats in Protected Areas

(PAs), capacity building workshops for law enforcement agencies, legal interventions, community-based conservation interventions, and strengthening protected areas. We work alongside forest departments in the wildlife corridors to strengthen monitoring and enforcement. Our long-term goal is to ensure there are thriving populations of all species in the Nallamala landscape and Central India.

Most of our activities this year were impacted due to the COVID-19 pandemic. The survey work was abruptly withheld during the peak field season in summer due to government-imposed lockdown and other restrictions. Activities involving documentation of potential threats and information gathering networks were severely hampered due to the lockdown as it depended on interactions with people.

Key Geographies: Amrabad Tiger Reserve, Kawal Tiger Reserve, Nagarjunsagar-Srisailem Tiger Reserve and Gundla Brahmeswaram Wildlife Sanctuary in Telangana and Andhra Pradesh

Gundla Brahmeswaram Wildlife Sanctuary (GBM) and its corridors ▼



Outcomes of the Programme:

1. Amrabad Tiger Reserve (ATR)

Research: Monitoring tiger movement is crucial for its conservation and prevention of man-animal conflict. In this regard, camera traps were deployed to collect data on tiger movement and identification. With the help of long-term transects, surveys for monitoring tiger prey densities were conducted. Although the COVID-19 pandemic and government-imposed lockdown impacted our full-fledged activity yet our teams managed to support the forest department monitoring March 2020 to April 2021. The data on identification of individual tigers and their territories in the landscape compiled from the camera traps were submitted to the National Tiger Conservation Authority (NTCA) as is required. Anthropogenic disturbances, presence of livestock and snaring activities were documented at the park level and snares were removed from 28 locations.

Conservation: In order to curb poaching, hunting and other illegal activities within the park, we constantly patrol and conduct threat assessment surveys in the fringe of the tiger reserve. In this regard, our team volunteered and patrolled the fringe areas with the frontline forest department staff and covered 1,220 kms in ATR.

Community Engagement: Given the circumstances of the pandemic, our team actively distributed face masks in five Chenchu villages close to ATR. In consultation with local sarpanches, we distributed about 2000 masks in the village as a preventive measure for the spread of COVID-19.



▲ Camera trapping in Amrabad Tiger Reserve (ATR)



▲ Community engagement in Amrabad ▼



2. Nagarjunasagar Srisailem Tiger Reserve (NSTR)

Research: Thirty transects were marked for conducting surveys on tiger prey monitoring at the beginning of the year 2020. These were routinely surveyed for prey density, indirect signs of tiger presence and threat assessments and the report was prepared in the reporting period, this was the first ever reliable estimate of tiger prey. During the government-imposed lockdown, due to the absence of vehicular movement, the team installed cameras on NH 565 to track the movement of wildlife. Species such as tigers, leopards, sloth bears and other herbivores were captured on camera during this time. On analysing the tiger data from the camera traps in NSTR and corridors to Seshachalam, a total of 63 individuals have been identified in the region. With regards to the threat assessment surveys, electric lines were mapped in 12 areas around NSTR.

Conservation: During the patrols, snares were reported to the forest department and removed. The DFO was also informed about encroachments and illegal felling of trees in Gandhinagar. Four persons were prosecuted in the district court with the information provided by our team, after they were caught in a case of pangolin poaching.

Community Engagement: As part of the community engagement, the team organised awareness sessions on COVID-19 and distributed masks to Chenchu tribes residing inside the core area of NSTR. The team also visited villages in Jollapatar to gauge their opinion on voluntary relocation.

Outreach: A tiger album was created with the staff of Biolab for the occasion of wildlife week celebrations.

3. Kawal Tiger Reserve (KTR)

Research: In KTR and its corridors, 276 patrols covering 2,279 kms resulted in the detection of 461 poaching incidents that included snaring, live electric lines, traps and poisoning. Prey populations in two tiger reserves were assessed with an effort of about 1,120 kms. Data on primary threats to wildlife in and around ATR and KTR were collected. About 165 kms of electric lines in KTR and corridor areas were mapped.

Conservation and Capacity Building: A total of 1,650 snares were recovered from KTR. Signs of

poaching were also recorded and the detection of any attempts were reported directly to concerned authorities. We could not find any imminent threat of poaching of tigers, but retaliatory killing of tigers was continuously nullified. Our team also monitors the livestock depredation incidents in the Kawal-Tadoba landscape. Close to 79 cattle kills were reported during the reporting period and we ensured timely compensation in 80% of the cases to avoid retaliatory killing.

Community Engagement: We helped in developing livelihood support for local communities by distributing 1,40,000 fish seeds in three villages tapping the government scheme for fisheries in village lakes. The government pension scheme was sanctioned for 42 eligible people from seven villages. As part of a health drive, we also distributed 1,700 masks to 9 villages around the KTR. In June 2020 we began work in a Gond village in Gangannapet and tried to avail of different government schemes such as Ujwala gas connections and caste certificates.

4. Kawal and Tadoba Corridors (KTCR)

Conservation and Capacity Building: In the month of November 2020, we actively played part in a case to reaffirm whether a tiger had made two human kills. We assisted the forest department in tracking and monitoring the conflict tiger, procuring baits, identifying suitable locations for setting up trap cages and camera traps and also in collecting scats. As a precautionary measure, we procured about 2,500 face masks to distribute among the villagers who work in cotton fields and cattle herders who venture into the forest. Alongside the forest department staff, we actively carried out awareness programmes across vulnerable villages to sensitise the villagers about the conflict tiger and communicated the precautionary measures listed out in a standard operating procedure (SOP) created by us, to avoid conflict. We also alerted our informer network across the corridor to keep a check on any violent outbursts from local communities. Based on the data collected, the tiger was identified to be A2.

Community Engagement: In the voluntarily relocated villages in the corridor areas of Kawal Tiger Reserve, the team distributed vegetables and groceries during the lockdown. As a measurement to reduce man-animal conflict, we came up with an innovative solution of a car-

battery operated electric fence that dissuades wildlife from entering the fields. This fence was distributed in villages in the Kawal-Tadoba wildlife corridor.

5. Gundla Brahmeswaram Wildlife Sanctuary (GBM)

Research: The team undertook regular patrolling and surveys as part of the tiger monitoring component. Timely action was taken to avoid conflict when the team reported movement of the tiger T21F near Chelam village to the forest department. Following this incident, we also deployed camera traps in this region. During the threat assessment surveys, snares and bird-traps were removed from five locations after reporting to the forest department. We also identified electric fencing around the farms during our patrols and these were reported to the forest department. The team had a direct sighting of a pack of dholes during the tiger monitoring surveys.

Conservation: The team reported two cases of bamboo smuggling to the forest beat officer. Our team assisted the forest department staff in the capture and release of a leopard near the Mahanandi temple.

Community Engagement: We are working closely with villages in GBM to facilitate government-sponsored voluntary relocation. In this regard, we held awareness sessions in five villages citing examples from the voluntary relocation programme in Nagarhole National Park.

Community Engagement in Gundala Village:

We have a close relationship with Gundala tribal village, which is located on the fringe of Kawal Tiger Reserve. We have been working with this village to involve local communities in wildlife conservation and adopt a sustainable livelihood. The work for the tourism project was initiated by the marking of routes and repair of huts for accommodation purposes. A gram sabha was held in which it was decided to form an NGO for the conservation of wildlife. The registration formality and filing for this society was completed and it is now named as Adivasi Abhivrudhi and Adavi Samrakshan Samshta. In order to set up a manufacturing plant for natural leaf plates, our team visited the Integrated Tribal Development Agency (ITDA) Project Officer's office and applied for the permits. The leaf plate

unit will not only act as a source of income but also reduce the dependency of the villagers on the forest. With the help of the concerned district fisheries authority, our team distributed fish seed to encourage pisciculture as an alternate source of livelihood in the village. Currently we are working on a proposal to introduce backyard poultry in the village. A joint self-help group for the members of the Kollam tribal community was also formed. We also assist the community with official government related documents, one of which is the issuance of birth certificates to children under the age of 10.

Training Workshops:

A large part of conservation success depends on the active participation of the forest department. In this regard, we conduct regular training for forest officers of all levels on topics such as camera trapping, counter wildlife trafficking and voluntary relocation. In the year 2020, we conducted close to six workshops that were attended by 249 officers.

The details of the workshops are provided below:

- A workshop on Large Cell Occupancy was conducted in Telangana at the Mulugu division office with all FROs and FDOs of warangal circle. Nearly 30 officers attended the workshop in January 2021.
- The team also initiated a workshop on camera trapping techniques for wildlife monitoring for Beat and Section officers in Telangana. 15 officers attended the training session at Telangana Forest Academy, Dhoolapally, in January 2021.
- The team conducted a division-level training workshop for all staff members at Tadvai. About 70 members participated including FROs, FSOs, FBOs, & FDO Tadvai in March 2021.
- The team conducted a training workshop for frontline staff (10 members) at Gangaram Range office and distributed sign survey manual to the staff in March.
- The KTCR team conducted a training programme for 60 frontline forest officers on wildlife crime monitoring and law along with

our counter wildlife trafficking team in May 2020.

- The NSTR team conducted a training session class for FRO trainees from Telangana Forest Academy on camera trapping that covered aspects of design, planning, monitoring and interpreting results in December 2020. Another training session was conducted for frontline staff that was attended by 64 officers.

Meetings with Government Officials:

Through the year our team has had close to 101 interactions with government officials including the Principal Chief Conservators of Forests (PCCF), Chief Conservator of Forests (CCF), District Forest officers (DFO), on issues related to tiger movements and monitoring, man-animal conflict, progress of voluntary village relocations and alternate livelihood sources for the beneficiaries of voluntary relocation or communities living on the fringes of Protected Areas.

Below are some of the important ones:

- The team worked with the wildlife wing of Andhra Pradesh (AP) Forest Department and helped in answering queries for the Eco-Sensitive Zone of NSTR. Final proposal and maps were sent for approval and for declaration of Eco-Sensitive Zone.
- Sridhar Dupadu from our team met the Special Chief Secretary of AP and took him around GBM. He also discussed the road realignment from corridor areas.
- The team met the CCF Warangal and finalised the field work strategy to survey entire Warangal forests for tiger and other large mammals. A training session for every RFO, Forester and Beat Officer was planned range-wise.
- A bird guide with a list of 120 different birds was designed by Sridhar Dupada and presented to the forest department, to be made available for tourists who visit GBM for birdwatching and other tourism activities.
- The team attended a press conference after the

attack on a range officer in Khanapur of Kawal Tiger Reserve.

- The team conducted a presentation with the CCF-Wildlife, on the tiger issues in Nallamala landscape.
- The team attended an online meeting for BioSAP (State CAMPA) committee meeting as an empanelled member of the same and gave suggestions.
- The team participated in BioSAP (Andhra Pradesh CAMPA) meeting and finalised the minutes of the meeting.
- Imran Siddiqui was appointed to the committee for human-tiger conflict in Kawal Corridors. As part of this, he visited the field site of the attack and assured support to the victim's family and engaged with political leadership for ensuring no backlash.
- Being an NTCA nominee, Imran Siddiqui and the Kawal (corridor) team actively participated in a committee meeting held on 30 November 2020 at Kagaznagar division regarding the tiger kills that took place.
- The team conducted a field visit programme for the Minister of Forests and PCCF of Telangana. Our team accompanied them to the field and also attended a workshop with the officers.
- The team proposed a meeting between the Kawal Tiger Reserve and Tadoba Tiger Reserve officials and attended the meeting at Chandrapur.

Outreach Related Activities:

- The team conducted a workshop at Tata Institute of Social Sciences (TISS), Hyderabad on the occasion of the World Wildlife Day. We spoke to the Natural Resource Governance staff about wildlife conservation with an emphasis on our work on tiger monitoring in the Eastern Ghats.
- The team worked on an article for the Times of India on the delay in voluntary village relocation. The publication of the article

resulted in some movement for the voluntary village relocation project.

- The team participated in a workshop with Andhra Pradesh and Telangana Forest Departments for International Tiger Day.
- The team helped the Nandyal forest division in the preparations for the celebration of International Tiger Day and Van Mahotsav in NSTR.
- The team addressed an awareness session on tiger conservation with students.
- The team gave three talks for Wildlife Week at Osmania University, LF College and Coastal Impact.
- The team spoke to CCF, Rahul Pandey, about Wildlife Week and participated in the Wildlife Week programme.
- The team got two media articles done about Eturnagaram to be declared as Tiger Reserve.

Other Meetings:

- Attended the COP meeting at Gandhinagar and met officers from NTCA, AP and Telangana, and also met scientists from various institutes.
- Met the people of Lakshmipur to ask about their lands for CA purchase. They have 50 acres of standing forest and another 50 acres of other land bordering Kawal Core.
- Conducted meetings in Maisampet and Rampur along with Kanaka Lakke Rao, ITDA Chairman, for relocation process. He promised that he would take this issue to the Forest Minister.
- Earth Quotient Collaboration for roads and development projects in Amrabad Tiger Reserve.
- Attended an online meeting as committee member for Tiger Conservation Foundation of Andhra Pradesh and gave suggestions.
- Attended IFS workshop and presented about NGO role in voluntary relocation work in Andhra Pradesh and Telangana.

Papikonda landscape in the Eastern Ghats ▼





Great Indian Bustard (GIB)

We initiated a long-term programme in January 2020 to save the critically endangered Great Indian Bustard (*Ardeotis nigriceps*) from extinction. The project focuses on the in situ conservation of the GIB and its habitats in the Thar Desert, in collaboration with the Rajasthan Forest Department, Wildlife Institute of India, and other NGOs working in the landscape. The project addresses different threats to the bird through a broad multi-pronged approach and community-based interventions.

Key Geography: Jaisalmer district of Rajasthan

The Outcome of the Programme:

- To mitigate the issue of collisions with power lines, our team identified and installed bird diverters over a 6.5-km stretch of high-tension power line that the GIB population was especially vulnerable to (pictured below ▼).

by experts from the International Union for Conservation of Nature (IUCN) Species Survival Commission's (SSC) Bustard Specialist Group have been installed in this stretch. The team is monitoring the stretch to check the diverters' efficacy in preventing bird collisions, and so far, it has not found any bird carcasses or injured birds as a result of a collision with the power line.

Bird diverters being installed on power lines. ▼



- To ensure that the water guzzlers inside the enclosures built by the forest department for the GIB in the Desert National Park do not run dry, we aided the department to repair and replace a defunct portion of the water supply line that reaches their Sudasari Protection Hut. This will ensure that the enclosures remain a safe space for the birds where availability of food and water is guaranteed.
- We have also initiated stakeholder engagement by conducting animal health camps in selected villages in order to initiate trust-building with the local communities and to have an inclusive dialogue on GIB and grassland conservation. The Thar landscape in western Rajasthan is home not only to the GIB, but it also boasts the highest livestock population in Rajasthan, and some of the best quality sheep wool is collected from the region. An initial survey done on the status of livestock in the villages around DNP revealed that the livestock management practices were quite poor as veterinary health centres are not present in most of the villages. As a result, no routine vaccination, dosing, dusting, and veterinary care was available for the livestock. Hence by initiating the provision of veterinary services on a regular basis, this lacuna is being filled and we have provided treatment to 13,324 animals from 20 villages and their surrounding hamlets. The local people have been very happy to receive advice and assistance on their livestock and interact positively with our team.
- Being an arid zone, the primary source of livelihood of the people in the region is livestock rearing as, traditionally, it had very large tracts of community grazing pasture lands. Jaisalmer ranks first in livestock population in the state of Rajasthan and this creates extensive grazing pressure on the grassland habitat of the GIB. With the aim to conserve and rejuvenate the habitat, our team facilitated the training of twenty-nine agro-pastoralists from 10 villages at the Krishi Vigyan Kendra (KVK), the technical extension wing of the Agriculture University in Jaisalmer.



▲ Repaired water supply line for the forest department's Sudasari Protection Hut in Desert National Park



▲ Animal health camp



▲ Desert National Park landscape

The participants returned enriched and well-informed on alternate methods to grazing like fodder development and stall feeding, restoration of gochars (community pasture lands) with prime focus on rejuvenating the degraded Sewan grasslands of the Thar landscape, nutritional requirements and intake of cattle etc. Our team is in the process to help them put into action what they have learned.

- Our team has partnered with schools as stakeholders in order to raise awareness among the community youth about the plight of the last remaining GIBs in the wild. We have provided 300 sets of tables and stools to five schools in and around Desert National Park to enable students to study and learn with ease and comfort.



▲ Fodder development training for agro-pastoralists from 10 villages at the Krishi Vigyan Kendra (KVK).



▲ Children using the provided tables and stools at one of the supported schools around Desert National Park.

Great Indian Bustard (*Ardeotis nigriceps*) ▼





Human-Wildlife Interactions:

- The radio telemetry project in Mumbai was initiated and two leopards were collared.
- Funds were raised from Rohini Nilekani Philanthropies and Reliance Foundation for the radio telemetry project in Mumbai.
- Workshops were held with the forest department and media in Mumbai.
- We contributed to the IUCN human-wildlife conflict task force group via finalising and reviewing guidelines and attending numerous meetings online.

Leopard being collared as part of the radio telemetry project in Mumbai, Maharashtra. ▼

- Had meetings with the forest department in Uttarakhand who were interested in obtaining our help for human-leopard conflict resolution, but because of COVID-19 (both the years), this did not take off.
- Worked on three manuscripts (one on the Mumbai camera trapping work, the second on the Himachal Pradesh work and the third on the Mumbai Waghoba work).





Livelihood Programme

Our Western Ghats conservation team is committed to the cause of conservation of wildlife and forests and the wellbeing of forest-dwelling communities by providing livelihood support and consolidating wildlife habitats. We support families willing to voluntarily relocate from protected forest areas under government-sponsored voluntary relocation schemes, offer livelihood support at the post voluntary-relocation phase and empower the forest-dwelling communities. We also work towards the purchase of private properties situated in the strategic locations inside Protected Areas (PAs) and wildlife corridors using private funding, and surrendering these private properties to the forest department for consolidation of PAs.

Geographies: Nagarahole Tiger Reserve, Kali Tiger Reserve, Kudremukh National Park, Malai Mahadeshwara Wildlife Sanctuary, Cauvery Wildlife Sanctuary of Karnataka, Wayanad Wildlife Sanctuary of Kerala and Mudumalai Tiger Reserve of Tamil Nadu.

Outcomes:

Resettlement: A total of 424 families expressed their wish to avail the government-sponsored relocation programme at Kali Tiger Reserve and Kudremukh National Park.

- A total of 28 families from Kali Tiger Reserve and Kudremukh National Park were supported for the application process for the government-sponsored relocation programme.

Progressive Farmer Dasappa (left) and WCS-India staff Govindappa HL (right) at Sollepura. ▼



- In the post-relocation phase, the beneficiaries are required to change addresses in existing documents to avoid discrepancies. Our staff supported in changing addresses, correcting documents and applying for new documents. A total of 450 families from Kali Tiger Reserve, Kudremukh National Park and Wayanad Wildlife Sanctuary were supported.
- Our staff helped 96 families to receive relocation compensation and 34 families to physically move out of the PAs at Kali Tiger Reserve and Kudremukh National Park.
- At Kali Tiger Reserve and Kudremukh National Park, the beneficiaries received rupees 8,27,23,000.00 as compensation for relocating from the Protected Area.
- A total of 13 families were supported under this project to relinquish land to park under Compensatory Afforestation (CA).
- A total of 77 families in Kali Tiger Reserve were provided with horticulture and agroforestry plants (Species: coconut, mango, arecanut, lemon, sapota, cinnamon, pepper, cashew, jackfruit and nutmeg)
- At Nagarhole Tiger Reserve, 360 beneficiaries were provided with horticulture and agroforestry plants (pepper, coconut, guava and sapota).
- At Kudremukh National Park, 58 beneficiaries were provided with horticulture and agroforestry plants (arecanut, coconut, cashew, cocoa, rambutan, mango and coffee).
- At Wayanad Wildlife Sanctuary, a total of 133 beneficiaries were provided with horticulture and agroforestry plants (arecanut, coconut, sapota, mango, litchi, pepper, jackfruit and avocado).
- Beneficiaries were also provided with timber-producing agroforestry plants (silver oak, mahogany and neem). A total of 39 beneficiaries at Nagarhole Tiger Reserve, 28 beneficiaries at Kudremukh National Park and 24 beneficiaries Wayanad Wildlife Sanctuary were provided with these types of plants.

Post Voluntary Resettlement:

- A total of 84 families were provided with (maize) seeds.

RBS Agricultural equipment support for Ragavan and family, a beneficiary from Narimanthikolli hamlet of Wayanad Wildlife Sanctuary. ▼



- At Nagarhole, 24 families were provided with vegetable saplings (tomato, green chilly, cabbage and drumstick) for income generation.
- At Kali Tiger Reserve, 13 families were provided with bee boxes.
- A total of 20 families at Nagarhole Tiger Reserve were supported to avail funding from Government for establishing compost pits and 19 families were supported to avail funding from Government for farm ponds.
- At Nagarhole Tiger Reserve, our staff also provided marketing support to the beneficiaries. A total of 1,05,644 kg of produce was marketed, and rupees 15,93,044.00 was earned by 56 families.
- Our field staff from the Livelihood Support team were trained to use the 'Locus Map' mobile application at the training programme held on 8 October 2020. Mr. Jibithosh from the VNV Advisory Services, Bengaluru, was the resource person. Locus Map is a multi-functional outdoor navigation application and is used to obtain geo-polygon maps from the beneficiary sites. This application helps in better monitoring of the saplings provided for the purpose of carbon sequestration.
- Two of the beneficiaries received awards for their efforts in agriculture with our support and from other donors:
 - » Dasi: Dasi, a resident of Sollepura relocation center and a beneficiary under this project, received the 'Phalashreshtha Award' from the University of Horticultural Sciences, Bagalkot. Dasi voluntarily relocated from Nagarhole Tiger Reserve in 2007.
 - » Vijaya: A beneficiary under this project and resident of Sollepura relocation center was honoured as a 'Superstar Farmer' by the Kannada newspaper, Vijaya Karnataka, in Mysuru on 27 November 2020.



▲ Relocated family with WCS staff during harvesting. Sollepura, Nagarhole.



▲ Distribution of silver oak plants - L&TI - Shettihalli Relocation Centre, Nagarhole.



▲ Award to Dasi - Kannada Prabha



▲ Honor to Dasi from the University of Horticultural Sciences, Bagalkot

- The third-party VNV Advisory appointed by the donor Larsen & Toubro Infotech (LTI) evaluated the carbon credits generated, and the field data was collected by our staff. Evaluation was done on plants provided in FY 2019-20 and FY 2020-21. The following is the summary of the report provided by VNV (up to December 2020).

Table 9. Summary of the report:

Total survived (FY 2019 to FY 2021)	89706
Trees considered for sequestration FY 2019-2020 (as of July 2020)	28912
Not considered trees (herbs, climbers, non-woody trees) (as of July 2020)	10614
Trees considered for FY 2021 (as of December 2020)	50180
Trees with carbon rights	79092
Estimated sequestration of trees having carbon rights (tCo2) (as of December 2020)	574.52

- Our staff distributed maize seeds to 84 beneficiaries from Nagarhole Tiger Reserve. Within four months, the crops were ready to harvest and yielded 3,164 quintals of maize. Our staff also helped in marketing the harvest resulting in rupees 29,73,660 income generation for the community.
- Our staff supported a total number of 12 families to physically move from Mudumalai Tiger Reserve to the Ayyenkolli relocation centre.
- Due to the follow-up by our staff, the local Grama Panchayat has developed a flexible system for issuing the house number to the voluntarily relocated families in Ayyenkolli relocation centre, Mudumalai Tiger Reserve. This has resulted in a smooth system of beneficiaries getting power connections from the electricity board and benefits under government-sponsored schemes

MLA Belthangadi distributing benefits - RBS - Kudremukh National Park ▼



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Funds Leveraged:

Apart from our regular donors, our staff also liaises with various government departments to avail of additional funds for the betterment of the voluntarily relocated forest-dwelling communities. Following are the details of the funds leveraged between April 2020 and March 2021:

SN	Protected Area	Line Department	Purpose of funds sanctioned	Number of beneficiaries	Total Amount
1	Kali Tiger Reserve	District Relocation Committee, Uttara Kannada	Voluntary relocation package to 96 families	96	7,60,00,000.00
2	Kudremukh National Park	Agriculture Department, Belthangady	Support to buy a tractor	1	6,00,000.00
3	Nagarahole Tiger Reserve (TR)	Savayava Krishikara Sangha, HD Kote	Cattle shed and compost pit construction	59	9,18,000.00
4	Nagarahole TR	Chokkadanahalli Grama Panchayat	Cattle shed construction	2	86,000.00
5	Nagarahole TR	Rotary Club, Mysuru	Distribution of school uniform and TV and UPS	30	58,000.00
6	Nagarahole TR	Social Forestry Department, Mysuru	Cylinder distribution as COVID-19 relief material.	58	59,000.00
7	Nagarahole TR	Agriculture Department, Hunsur	Crop compensation and jet support	23	2,55,000.00
8	Nagarahole TR	Agriculture Department, HD Kote	Crop compensation	26	1,30,000.00
9	Nagarahole TR	Social Welfare Department, HD Kote	Support for cattle, goat, seeds and fertilizers purchase, unemployment pension, borewell, land development support and polyhouse construction	29	41,93,000.00
10	Nagarahole TR	Social Welfare Department, Hunsur	Fertilizers	13	2,50,000.00
11	Nagarahole TR	Seva Bharathi Trust, Mysuru	Bedsheets to relocated beneficiaries	120	24,000.00
12	Nagarahole TR	University of Mysore	Seeds, fertilizers and drums support relocated beneficiaries	10	90,000.00
13	Nagarahole TR	Gram Panchayat Kadamanuganahalli	Toilet and cattle-shed construction	02	60,000.00

Resettlement:

SN	Activity	Protected Area	Total Number
1	Number of families provided with information about Government Sponsored Relocation Programme	Kali TR-402 Kudremukh-22	424
2	Number of families supported for getting documents	Kali TR-348 Kudremukh NP-96 Wayanad WLS- 06	450
3	Number of families supported to receive relocation compensation	Kali TR-96 Kudremukh NP- 04	96
4	Number of families physically moved out of the park	Kali TR-26 Kudremukh NP- 04 Wayanad WLS-04	34
5	Total amount received by the beneficiaries as compensation for relocating from the Protected Area	Kali TR, Kudremukh NP and Wayanad WLS	8,27,23,000.00
6	Number of families supported to relinquish land to park under CA	Kali TR-13	13

Post Resettlement:

SN	Activity	Protected Area	Total Number
1	Number of families provided with seeds	Nagarahole TR	84
2	Number of families provided with horticulture plants and species distributed	Kali TR	77- Species-Coconut, Mango, Arecanut, Lemon, Sapota, Cinnamon, Pepper, Cashew, Jackfruit and Nutmeg
3	Number of families provided with horticulture plants and species distributed	Nagarahole TR	360- Pepper, Coconut, Guava and Sapota
4	Number of families provided with horticulture plants and species distributed	Kudremukh NP	58- Arecanut, Coconut, Cashew, Cocoa, Rambutan, Mango and Coffee
5	Number of families provided with horticulture plants and species distributed	Wayanad WLS	133- Arecanut, Coconut, Sapota, Mango, Lichi, Pepper, Jackfruit and Avocado
6	Number of families provided with agroforestry plants and species distributed	Nagarahole TR-39 Kudremukh NP- 28 Wayanad WLS- 24	Silver , Mahogany and Neem
7	Number of families provided with vegetable saplings	Nagarahole TR	24- Tomato, Green chilly, Cabbage and Drumstick
8	Number of families provided with bee boxes	Kali TR	13
9	Number of families provided with compost pits	Nagarahole TR	20
10	Number of families provided with farm pond	Nagarahole TR	19
11	Number of families provided with marketing support with the quantity sold and amount earned	Nagarahole TR	Quantity=1,05,644 Kg. No of Families= 56 Amount earned- 15,93,044.00



Marine Programme

India has a diverse set of marine systems within its jurisdictional waters, with an exclusive economic zone (EEZ) of 2.02 million km². The rich marine life within these ecosystems has earned the country a spot among the world's top 17 megadiverse nations. The past few decades, however, have been characterised by rapid habitat loss, unchecked advances in mechanised fisheries, and inadequately informed resource extraction.

We have initiated efforts to address some of the key challenges to marine conservation in India by working with fishing communities, partner organisations and government agencies using interdisciplinary approaches. In particular, our team is focusing its efforts on six broad themes, which are:

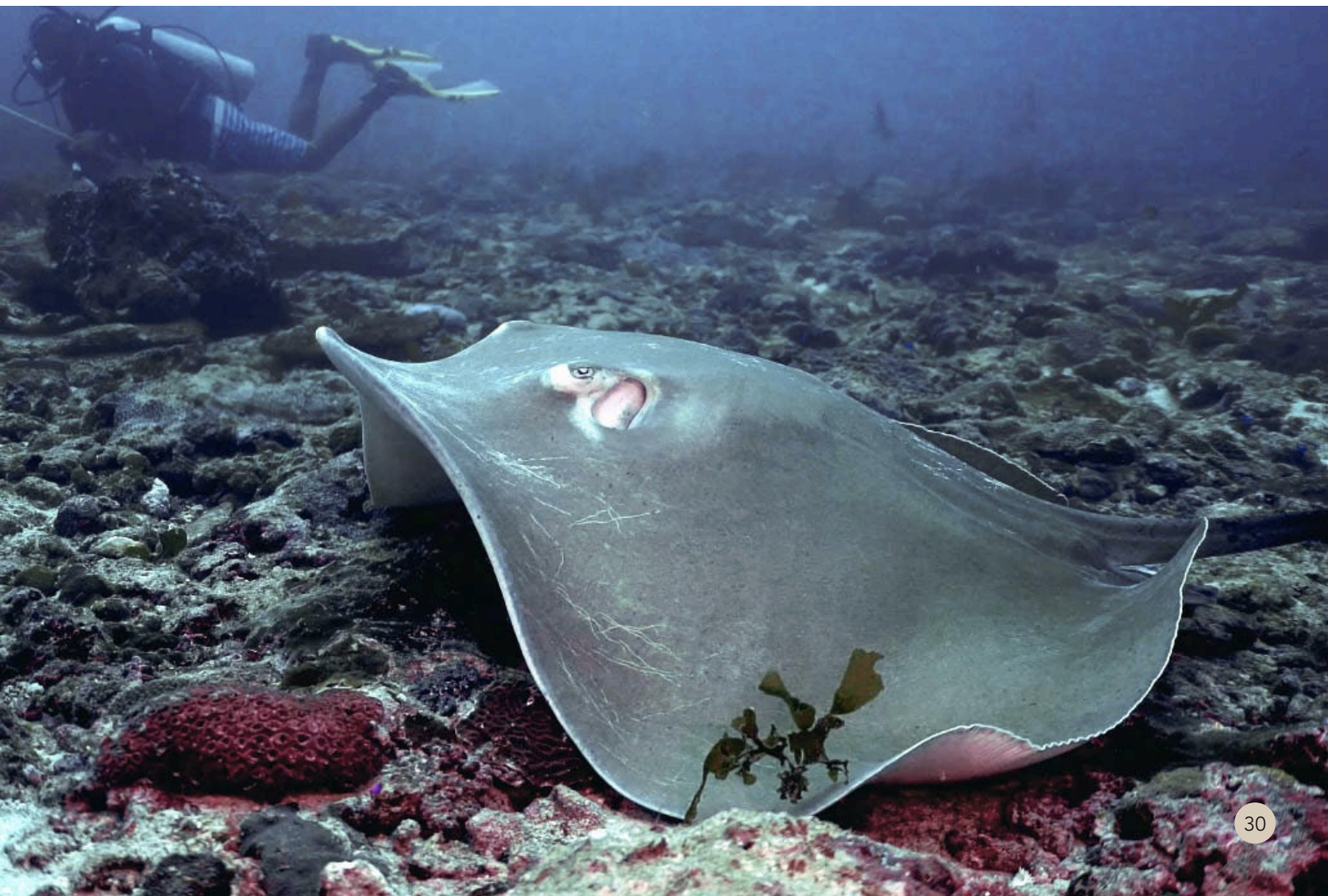
(1) strengthening the existing Marine Protected Area (MPA) network, (2) combating the illegal trade of marine wildlife, (3) conservation of marine megafauna – marine mammals, sea turtles and elasmobranchs, (4) addressing unsustainable fisheries and bycatch reduction, (5) marine law, policy and issues related to their implementation, and (6) promoting sustainable marine tourism.

Key Geographies: Maharashtra, Karnataka, Andhra Pradesh, Lakshadweep Islands and Kerala

Marine Protected Area (MPA) Fund:

- Our team has been regularly following up with forest departments, State Government of Maharashtra and The Ministry of Environment, Forest and Climate Change and Ministry of External Affairs, Government of India, to help with expediting the notification process of Angria Bank as a 'Designated Area'.

Sting ray at Angria Bank, off the southern coast of Maharashtra. ▼



- Our team has initiated stakeholder consultation over the telephone and is reaching out to officials in governmental organisations such as the Maharashtra Forest Department, Fisheries Department, Tourism Department and relevant researchers and conservationists.

Rural India Supporting Trust (RIST) (MPAs):

- Our team conducted a recce visit to Kerala to assess the site suitability for Kolavipalam and Kole Wetlands as potential Marine Protected Areas between 7 and 11 December 2020.
- Our team initiated the Kerala trip report. The final trip report includes detailed observations from the two shortlisted sites – Kolavipalam and Kole wetlands – and a preliminary assessment of site suitability as MPAs.
- Our team has been liaising with several governmental and non-governmental organisations in an effort to build partnerships towards facilitating the formation of effective MPAs.

RIST (Bycatch):

- Our team has conducted a secondary analysis of available information to help select sites for this component of the project.
- Team members have reached out to potential partners and consultants who can assist the team with bycatch-specific objectives.
- Our team has initiated work towards publishing the review paper conducted during the marine scoping study.

Tiffany & Co. (Coral reef conservation in the Lakshwadeep islands):

- Our team finalised a descriptive methods document after discussing the objectives and choosing appropriate methods to fulfill the same. Additionally, we sought and received ethical clearance from our ethics committee in order to conduct interviews with dive operators and tourists. We also procured equipment comprising two underwater cameras, camera housing and GPS to facilitate photo-documentation and data collection.

Dwarf Hawkfish (*Cirrhitichthys falco*) in the Andaman islands. ▼



- We conducted a comprehensive literature review on corals, associated species and threats to reefs in the Lakshadweep islands. We also added a short section on marine megafauna – marine mammals, sea turtles and elasmobranchs – found in the Lakshadweep waters. This exercise served as useful in understanding the functioning and dangers to the reef and reef-associated marine organisms in the islands.
- Due to the relaxation of the COVID-19 lockdown during the initial months of 2021, we were able to initiate fieldwork in April 2021. So far, we have completed two out of three components in the Kavaratti and Kadmat islands. We have completed marine debris and dive operator surveys at both islands while we could only complete reef surveys at two popular dive sites in the Kavaratti islands due to Covid-19 restrictions.
- We have also created a small brochure that describes the 'DOs and DON'Ts' of diving with relevant illustrations. After getting recommendations from the dive operators in the Lakshadweep islands, we aim to circulate it widely on the islands.
- Our team published three blogs – two focused on marine life and its conservation at the Lakshadweep Islands and the third looking at the interplay between scuba diving and marine conservation. While the former two were published on our blog, the latter is currently being reviewed for publication in a children's magazine.

Combating Illegal Wildlife Trade – Marine:

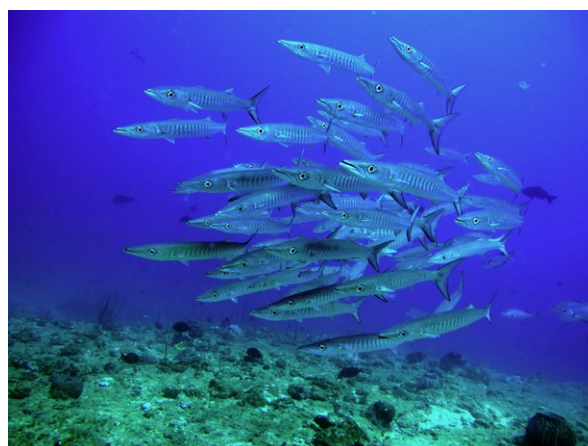
- Work under the Counter Wildlife Trafficking (CWT) Marine umbrella began in September 2021.
- To date, we have created training materials for workshops to be conducted with the Indian Coast Guard as well as different State Forest Departments.



▲ Expedition team members at Angria Bank.



▲ Angria Bank expedition team and ship crew.

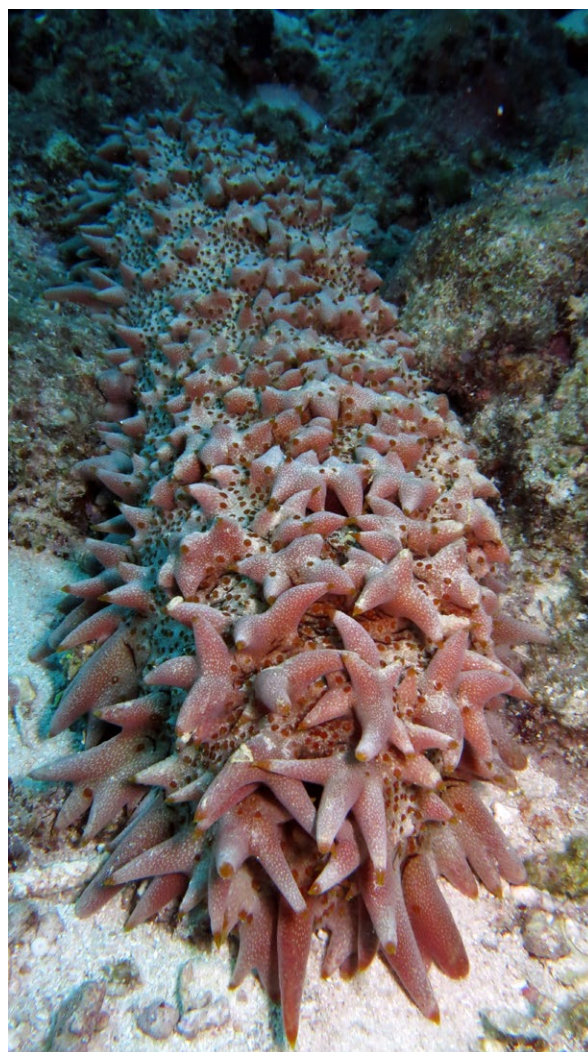


▲ Barracudas at Havelock, Andaman Islands



▲ *Goniopora* coral (commonly called flowerpot coral) - a genus of colonial stony coral.

- The first invite for a capacity-development workshop has been sent to the Forest Department, State Government of Tamil Nadu.
- We are in the process of creating training materials for State Fisheries Departments. Interaction with fisheries departments will also focus on introducing conversations on marine conservation within the fisheries sphere.
- We have completed and compiled state-wise research of the organisational structure and specific laws of fisheries departments of all coastal states.
- The design team has created infographics and has shared these with forest departments via CWT helpline groups on commonly traded marine species.
- The CWT marine team finalised proposals for the inclusion of three species of sea cucumbers – *Holothuria scabra*, *Holothuria spinifera* and *Thelenota ananas* – in Appendix II of the CITES convention (Appendix 1 & 2). This proposal was shared as our position statements for CBD SBSTTA-24 and SBI-3 and CITES SC73 with relevant government officers.
- Our team conducted a series of talks with experts in the marine conservation space.



▲ Pineapple sea cucumber (*Thelenota ananas*) from Lakshadweep archipelago

View of a marine protected area in the Andaman islands. ▼





Riparian Systems of Western Ghats

Present Conservation and Mitigation Model:

Tribal nursery: A pilot small-scale, riparian nursery through sustainable harvesting, has been set up at the Jenu Kuruba settlement in Dubare Forest to provide native riparian tree species for restoration work. This nursery, employing three Jenu Kurubas, is host to six species, namely: *Mangifera indica*, *Syzygium heyneanum*, *Madhuca neriifolia*, *Salix tetrasperma*, *Hopea parviflora* and *Vitex leucoxydon*.



Restoration, September 2019: Phase 1

Building climate resilience through riparian planting for restoration on either side of Siddapur bridge in collaboration with the Nelliahudikeri Government High School and residents affected by the flood in 2019.



Restoration, June 2020:

Virajpet Taluk and Madikeri Taluk, in collaboration with the Forestry College and Temple committee

towards a joint effort for restoration around the Guhya Agastheshwara temple site:

The site poses the challenge of a degraded riparian zone due to tree felling and clearing of riparian vegetation, replaced by a wall. The river turns into a canal which increases the velocity of the floodwater during the monsoon, causing devastation downstream.

The temple committee requested for native trees to be planted along the riparian margin of the river in two different areas. One location has illegal sand mining operations on the opposite bank.



Recent Threats to the Riparian Zone, Kodagu District:

A small village named Hacchinad, close to the Kadkani resort in Virajpet Taluk, has been faced with anti-social elements causing trouble by illegal felling of riverbank trees, to build walls along the river. The local community has been fighting against this move supported by a local politician and has managed to stall further destruction of the habitat. As expected, the zone where trees were bulldozed, experienced flooding in August 2020.

Saplings from the Jenu Kuruba nursery have been distributed to the local community for reforestation at the affected zone. We requested the forest department's support in helping the community safeguard the saplings, as efforts to plant grasses before the monsoon to stabilise the river bank were hampered by unknown people removing the grasses.



Turtle Survival Alliance India Programme (TSA India)

Turtle Survival Alliance India Programme (TSA India) functions as a division of Wildlife Conservation Society-India and is committed towards addressing threats and conservation actions for freshwater turtles and tortoises and other endangered aquatic wildlife such as Gangetic River Dolphins and Crocodilians. We are engaged in conducting conservation programmes in 4 of the 5 Turtle Priority Areas across the country, spanning the Terai Arc Landscape, National Chambal Sanctuary, Kaziranga National Park, and Sundarban Tiger Reserve, implementing state-of-the-art research activities while ensuring participatory conservation initiatives.

Key geographies: Terai Arc Landscape, National Chambal Sanctuary, Kaziranga National Park, and Sundarban Tiger Reserve

Outcomes:

- The team rescued 2581 turtles (of two species – Indian flapshell turtle and Indian softshell turtle) that were confiscated along with 30 kg calipee in a joint operation by Etawah Social Forestry and Safai police at Mainpuri - Etawah Road. Our quick response team provided immediate help in identification, health assessment along with Society for Conservation of Nature (SCoN) before their release back to the wild.
- A citizen Science initiative- Indian Turtle Conservation Action Network (ITCAN) was launched on 15th May 2021 with the aim of increasing awareness about the freshwater and marine turtles and tortoises of India, followed by a launch of a turtle tracker application named "KURMA" on 23rd May 2021 to report sightings of turtles and tortoises from different regions of India.



▲ Three-striped Roofed Turtle (*Batagur dhongoka*) in Haiderpur Wetland, Uttar Pradesh



▲ Brown Roofed Turtle (*Pangshura smithii*), Nagaland



▲ Northern River Terrapin (*Batagur baska*) juveniles in the Sundarbans



▲ Black Softshell Turtle (*Nilssonia nigricans*), Assam

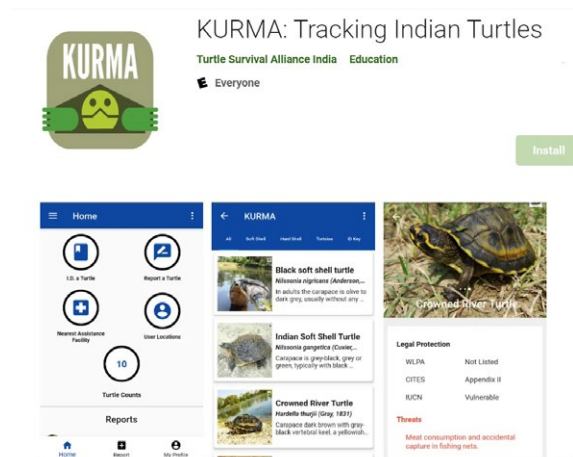
- The stranding of Gangetic dolphins within the extensive canal systems of Northern India is among the significant threats they face. This year, the team rescued six dolphins from the canals of Barabanki and Shrawasti, performing tedious operations jointly with Uttar Pradesh Forest Department taking the tally up to the 25th Gangetic Dolphin rescue by us in seven years since 2013.
- 27th April 2020: An 8.3 ft. female Marsh Crocodile (*Crocodylus palustris*) was rescued and treated for severe wounds on cranium that she sustained during the conflict situation.
- 80 gharials (*Gavialis gangeticus*) were released in the Ghaghara River by the Bahraich Forest Division of Uttar Pradesh on 2nd May 2020, in between the nationwide lockdown due to the COVID-19 followed by a second release on 5th December 2020. 40 gharials were released at Ghaghara river (December, May).
- A population survey was initiated in Haiderpur wetland, the backwaters of the upper stretch of Ganga, during late September and concluded in mid-October 2020 that aimed at understanding turtle diversity in and around the wetland, followed by a semi-structured questionnaire survey conducted among fishermen to understand the distribution, habitat, and extent of exploitation essentially to document the fisherman perceptions regarding turtles and conservation issues.
- An intensive workshop was conducted along the Wetland on 30th September 2020 for 20 forest frontline staff. Dr. Shailendra Singh enlightened the participants about the unique turtle diversity of Gangetic plains. Ms. Sreeparna Dutta provided hands-on training on the KURMA application while Ms. Arunima Singh dealt with turtle identification and proper handling methods. The event was followed by releasing a comic book, "Turtle Day out," on 5th October 2020 by Shri Rajiv Ranjan Mishra, Director General, National Mission for Clean Ganga.

Gangetic Dolphin rescue ▼



- A dedicated snakebite management, turtle rescue, and training were conducted on 1st Oct 2020 for 30 frontline forest staff of Bahraich and Katarniaghat Forest Division.
- The project team kick-started a series of training workshops for the Ganga Taskforce of Gorkha Rifles with support from Namami Gange. A unit of 60 men of GTF were trained through a three-day workshop from 28th to 30th January in Prayagraj.
- A three-day intensive training for over 100 frontline forest staff was conducted in Kanha Tiger Reserve. In a three-day Annual Rescue Squad training cum review workshop, Dr. Shailendra Singh delivered turtle rescue and identification talks. In contrast, Ms. Arunima Singh talked about rescue and safe handling of Crocodilians. Participants were also provided with hands-on experience of KURMA - a turtle tracking application.
- A one-day training was conducted on 22nd February for Zookeepers and veterinarians at White Tiger Safari and Zoo, Madhya Pradesh. Around 30 participants were briefed about enclosure designing, husbandry skills, and critical veterinary interventions for captive reptilians.
- Former Hon'ble Minister, EF & CC, Govt. of India, Shri Prakash Javadekar, tweeted about the KURMA application - highlighting it as a unique tool for tracking and reporting Indian turtles. He also emphasized the role of this citizen science initiative in conserving the rich biodiversity of the country.
- Two webinars on 'Freshwater Turtle and Tortoise Diversity and Conservation' and "National Webinar on Conserving Turtles: Indicators of Wetland Health" organized under ITCAN for KBC, North Maharashtra University, Jalgaon and Eco-Club, Vivekanand College, Thakurpur on 6th and 12th September 2020 respectively. The guest speakers of the webinars were Dr. Gowri Mallapur, Dr. Saurabh Dewan, Sreeparna Dutta, Dr. Priyanka Halder (Vidyasagar University).
- Jointly with Uttar Pradesh Forest Department, the rapid team rescued 1326 Indian Flapshell Turtles heading to Kolkata from Etawah Uttar Pradesh. The

team provided triage and immediate medical aid to the injured turtles prior to their release into the wild.



- ▲ Turtle tracker application "KURMA" launched to report sightings of turtles and tortoises from different regions of India.



- ▲ Three-day intensive training for over 100 frontline forest staff in Kanha Tiger Reserve.



- ▲ Turtle training workshop



- ▲ Webinars organized under ITCAN

Red-crowned Roofed Turtle (*Batagur kachuga*) Recovery Project, Lower Chambal, Uttar Pradesh

- The Chambal project focuses on two species of *Batagur*: Red-Crowned Roofed Turtle (*B. kachuga*) and Three Striped Roofed Turtle, (*B. dhongoka*). In the last 14 years, the *Batagur* project has protected and released over 110,000 hatchlings of both species (with *B. kachuga* representing less than 10%) back into the river. In 2020 as a result of an extensive nest protection programme through riverside hatcheries, 6835 hatchlings emerged in May, with a success rate of 94.6%.
- A small subset of the 100 emergent *B. kachuga* hatchlings are retained at the TSA India rearing facility in Garhaita village near Etawah as part of the Head Starting Programme.
- Rapid health assessment survey for five days on 6th April 2020 was conducted by the quick response team constituted by the Divisional Conservator of Forests Agra for disease surveillance cum patrolling exercise from Pinahat ghat to Pali village. The team encountered 340 gharials and over 100 *Batagurs* of various size classes, and only one Gharial (ca. 1 meter) was found slightly sluggish and malnourished opposite to Shitlamata Mandir (approximately 4 km downstream Nadgawn boat dock), while there was no report of death or die-off in any other river vertebrate.
- The team organized two Teachers Training Workshops - one in Upper Chambal in Pinhat, Agra, and one in Jaitpur, Agra. Over 30 teachers participated in each workshop.



▲ Red-crowned roofed turtle (*Batagur kachuga*).

Population Monitoring and Community Initiatives at Terai Arc Landscape

- The Terai-Arc Landscape is a rich turtle diversity hotspot with rivers and wetlands harboring nearly half of India's 29 freshwater turtle species. It was identified as one of five Turtle Priority Areas by the National Turtle Conservation Planning Meeting organized in 2010. TSA India's on the ground team since a long has been monitoring the turtle population in the Ghaghara-Sarju River system. A total of 1813 individuals representing eight species - Indian Eyed Turtle (*Morenia petersi*), Indian Softshell Turtle (*Nilssonina gangetica*), Indian Roofed turtle (*Pangshura tecta*), Indian Tent Turtle (*P. tentoria flaviventer*), Indian Flapshell Turtle (*Lissemys punctata*) and Indian Peacock Softshell Turtle (*N. hurum*), *H. thurjii* and *G. hamiltonii* were recorded through dedicated sampling across three sites along the Ghaghara-Sarju River chiefly supplemented by examining by-catch of local fishermen.
- Sarju Cleanup Campaign was expanded in the light of the International Day of Action for Rivers on 14th March, 2021. The team conducted an awareness rally on the Katraghat Bridge (an important turtle habitat) to discourage locals from throwing waste in the river.
- An initiative to improve the resiliency of floodplain communities through the food and nutritional security of the women and their families in Chudipurwa hamlet of Tappesipah village was initiated. Following the incentivization programme to combat the community's resiliency, the women were sensitized about the importance of indigenous crops and their nutritional value. Five vertical prototype and five mini kitchen gardens were set up to overcome their nutritional needs during flood season.
- A turtle School and a small rural library were established by the community intern at RCC in July - August 2020 at Chudipurwa hamlet in Tape Sippah village for the non-school going village kids. The children learned the basics of personal hygiene and sanitation, considering the COVID-19 situation alongside an hour of primary education.

As of December 2020, over 80 non-school going students from nearby villages are enrolled in the turtle school, led by our Assistant Project Officer, Mr. Rahul Kumar. The School was expanded into four more hamlets Chuddipurwa, Gulampurwa, Lodhanpurwa, and Dhobinpurwa, enrolling 27, 22, 64, and 70 children, respectively, in March 2021.

- A survey of the Kanjar community at Gandhinagar Village in Amethi District. The project aimed to engage communities in open, positive dialogue and identify essential skills that can be promoted and honed towards alternative livelihood.
- A training on wildlife crime was conducted at Barabanki Forest Division by Dr. Shailendra Singh on 28th December 2020, informing participants on efficient ways to curb illegal turtle trade in the state.
- The project team was invited to the first Police Chaupal on 16th January 2021 under Mission Kayakalp in Village Pakri at Sultanpur chapter. The project is scoping a full-fledged rehabilitation programme in the village inhabited by around 150 'Kanjar' community families.
- A multi-species survey was conducted from 17th to 22nd February 2021 along Ghaghara River, covering a range of 119 km, focusing mainly on documenting Gharial and dolphin population marked the start of the survey. It also included an awareness survey for the fisherman community.

Laboratory for Aquatic Biology (LAB) Project at Kukrail Gharial Centre, Lucknow

- A significant success was achieved in incubating eggs of *M. tricarinata* and *H. thurjii*. A flurry of 34 hatchlings of *Hardella thurjii* and nine hatchlings of *M. tricarinata* were hatched this year.
- A workshop sensitizing kids about the aquatic biodiversity of Uttar Pradesh was hosted jointly with Uttar Pradesh Forest Department on 8th February 2020. Thirty-one kids from primary schools participated in this educational camp.



▲ Turtle School, Terai



▲ Outreach Programme, Terai Arc Landscape



▲ Women Incentivization Programme, Terai



▲ Surveys with the fishing community

- Another camp was organized on 27th February 2021 with the 42 students of secondary classes from the Vigyan foundation. The students were taken on nature trails and were explained about turtles and crocodilians through various interactive ways. A quiz competition was also organized for the students on aspects related to aquatic biodiversity.
- An Aquatic wildlife rescue training workshop was conducted at Kukrail Gharial Rehabilitation Centre on 20th February 2021. A total of 38 frontline staff from the various districts participated in this workshop.
- Dr. Shailendra Singh delivered a talk on the importance of forestation along with the riverine areas and Gangetic Dolphin rescue in an invited event, 'Afforestation in Namami Gange,' organized by Awadh Division of Uttar Pradesh Forest Department on 6th March 2021.

Conservation Breeding Programme for Asian Giant Tortoise at Dimapur Zoo, Nagaland

The team continuously monitors the cohort of *M. emys* comprising 16 adults, 01 juveniles, ten yearlings, and 61 hatchlings. With active captive interventions, the team aimed to repatriate these species to their native habitat. (pictured below ▼)



Turtle Conservation Project in Assam, North-east India

- The regional turtle project team conducted a nest search of Black Softshell Turtle (*Nilssonina nigricans*) near Nagshankar temple in April and found a total of 23 nests containing 262 eggs. The eggs were carefully taken out from the nests, marked with

specific codes, and kept inside thermo-boxes with sand as a substrate for creating an artificial incubation environment. Later, after attaining a proper weight, 22 individuals were released in the wild for the time in mid-December 2020.

- On the request of the Kaziranga Park Administration, pre-flood village level awareness programmes were conducted in six villages along the Eastern Range of Biswanath Wildlife Division on 13th and 14th June 2020. Also coordinating with the officials of the Naogon Wildlife Division, the team assisted in the distribution of leaflets, running public announcements in the 23 fringe villages of Laokhowa and Burhachapori Wildlife Sanctuaries as a part of two-day Wildlife Rescue Awareness Programme.
- An outreach programme was conducted on 28th November 2020 at Ghaigaon for over 100 fishing community members, aimed to spread awareness on the importance of turtles while collecting information on turtle sightings and discussions on alternative livelihood.
- To reduce the donation of live turtles to temples while not hurting religious sentiments, turtle clay models were designed and procured through local artisans. Distribution of clay models to stalls outside Nagshankar Temple was conducted on 18th February 2021 in the presence of Local MLA, Shri Padma Hazarika, DFO Biswanath Wildlife Division, Mr. Mukut Chandra Das, and other officials of Forest Department, temple authorities and other stakeholders.
- Four capacity building training programmes were organized on turtles, identification, rescue protocols, framing reports, introduction to KURMA App and wetland management at Orang National Park and Territorial Division, East Sonitpur, Biswanath Wildlife Division, and Nagaon Forest Division, respectively, where over 81 Forest Frontline Staff attended the programmes.
- Two training programmes for the fishing community were organized on 4th December 2020 and 22nd January 2021 at Nature Discovery Centre (NDC), Biswanath Ghat and Orang

National Park. 120 fishermen from the community attended the programmes. The community was informed to inform the project team and forest team whenever they come across any entangled turtles and dolphins in their fishing net. Several other awareness programmes were also organized at Nagshanker temple to sensitize the locals, tourists, and the stakeholders about the native turtle species and their conservation.

- Two training programmes were organized for the Sakhi (self-help group) women weavers at NDC, Biswanath Ghat on 21st December 2020 and Baruwapathar (Gamiri Ghat) on 03rd March 2021. 13 participants attended the first, whereas 22 weavers participated in the second training programme. Mr. Hemanata Barua, from the Govt. Handloom Department, Biswanath discussed various weaver schemes and prospects of turtle-themed Gamochas.
- Initiating the cluster level education programme for the year, selected teachers from 16 schools were invited to a 'Teacher Training Programme' on 18th December 2020 and provided training on introducing conservation learning into the school curriculum. The day's highlights were environment-themed games and activities such as 'Web of Life' and 'Roll the Dice'. Additionally, two sessions of the Teachers Training Programme on freshwater turtles and tortoises were organized on 18th and 23rd December 2020 at NDC and Halem Chairali LP School, respectively, where 30 teachers from different schools participated. Over 5000 students were benefitted from this training programme.
- As youth play an important role in any participatory conservation approach, we are scoping volunteers under our 'Youth Volunteer' programme. On 3rd March 2021, over 200 students from 11-12th standard and graduation degree at Biswanath Commerce College were reached for the purpose. 23 students registered with the programme.
- The Northeast team conducted the second phase species survey between 27th January to 2nd February 2021, involving forest staff in covering around a 90 km stretch of Bramhaputra River on boat, from Biswanath Ghat to Shyampur. Over 280

hardshell turtles were recorded, with 62 identified as *Pangshura sylhetensis* and remaining as *P. tentoria* and *P. smithii*. It also included an awareness survey for the fisherman community.



▲ Clay turtle models, Assam



▲ Pre-flood awareness, Assam

Recovering India's most Endangered Turtle Species (*Batagur baska*) in Sunderbans, West Bengal





- Two soft release facilities were developed at Jhila and Chamta and one incubation facility in Sanjnekhali by the STR administration prior to the release of 10 sub-adult *B. baska* from the conservation colony with technical inputs from Dr. Shailendra Singh.
- The year was very challenging due to the unprecedented COVID-19 situation, hampering project deliverables due to various restrictions. Later the study site experienced Amphan, a super cyclonic storm, which hit coastal West Bengal and our project sites in May 2020. Fortunately, the facility survived the wrath of the storm, and none of the animals escaped. The team welcomed 12 hatchlings in June 2020 from two of the four breeding females nesting this year. These were carefully monitored with regular health checkups.

SCIENTIFIC PUBLICATIONS




- **Athreya V**, Isvaran K, Odden M, Linnell JDC, **Kshetry A**, Krishnaswamy J, Karanth UK. (2020). The impact of leopards (*Panthera pardus*) on livestock losses and human injuries in a human-use landscape in Maharashtra, India. *PeerJ* 8:e8405. [Link](#)
- Barhadiya, G. and **Singh S**. (2020). Cultural Use of Turtle Shell an Underrated threat in Turtle Conservation: A Case study in Assam, India. *Reptiles & Amphibians Conservation and Natural History*, 27(2), 213–215. [Link](#)
- Barhadiya, G., Singh, G., Ghosh, C., & **Singh, S**. (2020). Nocturnal emergence of small freshwater turtles in temple ponds in Assam, India: A strategy to avoid aggression and predation by large softshells? *Reptiles & Amphibians Conservation and Natural History*, 27(3), 426–427. [Link](#)
- Barhadiya G, **Singh S**, Ghosh C, Basumatary R and Purkayastha J. (2020). Diversity and Conservation Potential of captive chelonian colonies at temple ponds in north-east India. *The Herpetological Bulletin* 154,12-17. [Link](#)
- Chawla, M.M., **Srivathsa, A.**, Singh, P., Majgaonkar, I., **Sharma, S.**, Punjabi, G.A., Banerjee, A. (2020). Do wildlife crimes against less charismatic species go unnoticed? A case study of Golden Jackal *Canis aureus* Linnaeus, 1758 poaching and trade in India. *Journal of Threatened Taxa*. 12(4): 15407–15413. [Link](#)
- **Dubla R, Singh S**, Riedle J and Walde A. (2020). Note on unusual melanistic morph of Indian Peacock Softshell Turtle *Nilssonia hurum* (Gray, 1830). *Herpetological Review*, 51(4), pp 835-836. [Link](#)
- **Dutta S** and **Singh S**. (2020). Paper on Stranding Incidences of Gangetic Dolphin (*Platanista gangetica*) in India. (Submitted to Wildlife Institute of India).
- **Dutta S**, Dubla R, **Singh S** and Walde A. (2020). Natural History Notes: *Hardella thurjii* (Crowned River Turtle). Basking Behaviour. *Herpetological Review*, 51, pp 831. [Link](#)
- **Dutta S, Singh A**, Singh S and Louies J. (2020) KURMA Tracking Indian Turtles- A citizen science tool for turtle conservation in India. CitSci Conference, 28th September. [Link](#)
- **Jathanna, D.**, N. S. Kumar, A. Kumar and K. U. Karanth (2020). Summary and highlights of small carnivore photo-captures during a field season in the central Western Ghats, India. *Small Carnivore Conservation* 58: e58017. [Link](#)
- **Kshetry, A.**, Vaidyanathan, S., Sukumar, R., **Athreya, V**. (2020). Looking beyond protected areas: Identifying conservation compatible landscapes in agro-forest mosaics in north- eastern India. *Global Ecology and Conservation*. Volume 22, June 2020, e00905. [Link](#)
- Kumar, A., Karanth, K. U., **Jathanna, D**. (2020) Tigers and leopards coexist despite similarities in space use and habitat selection. *CATnews* 71: 20-23. [Link](#)
- Lele, A., Arasumani, M., Vishnudas, C. K., Joshi, V., **Jathanna, D.**, V. V. Robin (2020). Elevation and landscape change drive the distribution of a montane, endemic grassland bird. *Ecology and Evolution* 10: 7755– 7767. [Link](#)

- Mallick, N., **Singh, S.**, Chatterjee, D. and Sharma, S. (2021). Conservation breeding of Northern River Terrapin *Batagur baska* (Gray, 1830) in Sundarban Tiger Reserve, India. *Journal of Threatened Taxa*. 13, 6 (May 2021), 18544–18550. [Link](#)
- **Pareek, P.**, & **Singh, S.** (2021). Species composition and perceptions of snakes in a village within the National Chambal Sanctuary, Uttar Pradesh, India. *Reptiles & Amphibians*, 28(1), 118–123. [Link](#)
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- **Singh S, Dutta S** and **Singh A.** (2020). Diversity and Distribution of Freshwater Turtles in and around Haiderpur Wetland Complex along Upper Ganges, Uttar Pradesh. Technical Report, Turtle Survival Alliance India (TSA-India), pp 1- 25. [Link](#)
- **Singh, S.**, Srivastava, S., **Dutta, S.**, Dubla, R., **Singh, A.**, **Dixit, B.**, **Dewan, S.**, Singh, S.P., Singh, A. & Sharma. R., (2021). Guide to Safe Rescue and Release of Stranded Ganges River Dolphins. Turtle Survival Alliance India Programme and Uttar Pradesh Forest and Wildlife Department, 43 pp. [Link](#)
- **Srivathsa, A.**, Majgaonkar, I., Sharma, S., Punjabi, G.A., Singh, P., Chawla, M.M., Banerjee, A. (2020). Opportunities for prioritizing and expanding conservation enterprise in India using a guild of carnivores as flagships. *Environmental Research Letters*, 15: 064009. [Link](#)
- **Srivathsa, A.**, Sharma, S., Oli, M.K (2020). Every dog has its prey: Range-wide assessment of links between diet patterns, livestock depredation, and human interactions for an endangered carnivore. *Science of the Total Environment*, 714: 136798. [Link](#)
- **Srivathsa, A.**, Sharma, S., Singh, P., Punjabi, G.A. and Oli, M.K. (2020). A strategic road map for conserving the Endangered dhole *Cuon alpinus* in India. *Mammal Review*, 50: 399-412. [Link](#)
- A six-month progress report on KURMA Application and ITCAN (India Turtle Conservation Network) was developed and sent to the advisory board.

FINANCIALS

WILDLIFE CONSERVATION SOCIETY - INDIA 551, 7th Main Road Rajiv Gandhi Nagar 2nd Phase Kodigehalli Bangalore 560097 CIN: U74999KA2011NPL058034 CONSOLIDATED BALANCE SHEET AS AT 31ST MARCH 2021			
(Amount in Rs.)			
Particulars	Note No	As at 31.03.2021	As at 31.03.2020
I. EQUITY AND LIABILITIES			
(1) Shareholders' Funds			
(a) Share Capital	2	-	-
(b) Reserves and Surplus	3	1,85,76,623	1,49,81,873
(c) Money received against share warrants		-	-
(2) Non-Current Liabilities			
(a) Long-term borrowings		-	-
(b) Deferred tax liabilities (Net)		-	-
(c) Other Long term liabilities		-	-
(d) Long-term provisions	4	39,70,010	14,58,893
(3) Current Liabilities			
(a) Short-term borrowings		-	-
(b) Trade payables			
(i) total outstanding dues of micro enterprises and small enterprises		-	-
(ii) total outstanding dues of creditors other than micro enterprises and small enterprises.		-	-
(c) Other current liabilities	5	1,47,39,418	1,81,61,899
(d) Short-term provisions	6	4,30,627	1,52,475
Total		3,77,16,678	3,47,55,140
II. ASSETS			
(1) Non-current assets			
(a) Property, Plant & Equipment			
(i) Tangible assets	7	1,05,58,756	79,75,004
(ii) Intangible assets		-	-
(iii) Capital work-in-progress		-	-
(iv) Intangible assets under development		20,01,134	10,71,884
(b) Non-current investments	8	39,70,010	14,58,893
(c) Deferred tax assets (net)		-	-
(d) Long term loans and advances		-	-
(e) Other non-current assets		-	-
(2) Current assets			
(a) Current investments	9	4,30,627	1,52,475
(b) Inventories		-	-
(c) Trade receivables		-	-
(d) Cash and cash equivalents	10	1,58,99,228	1,94,53,154
(e) Short-term loans and advances	11	16,27,096	15,64,993
(f) Other current assets	12	32,29,827	30,78,738
Total		3,77,16,678	3,47,55,140
Significant Accounting Policies 1 For and on behalf of the Board of Directors <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 45%;">  P.M. Muthanna Director DIN: 08888150 </div> <div style="width: 45%;">  Killivalavan Rayar Director DIN: 07555843 </div> <div style="width: 45%; text-align: right;"> As per our Report of even date For G. Anantha & Co. Chartered Accountants FRN: 00 5160 S  G. Anantha N.R. Partner Membership No: 214318 UDIN: 21214318AAAAEU7377 </div> </div> <div style="display: flex; justify-content: space-between; align-items: flex-start; margin-top: 20px;"> <div style="width: 30%;">  Date: 6th August 2021 Place: Bangalore </div> </div>			

FINANCIALS

WILDLIFE CONSERVATION SOCIETY - INDIA 551, 7th Main Road Rajiv Gandhi Nagar 2nd Phase Kodigehalli Bangalore 560097 CIN: U74999KA2011NPL058034				
CONSOLIDATED STATEMENT OF INCOME AND EXPENDITURE FOR THE YEAR ENDED 31ST MARCH 2021 (Amount in Rs.)				
	Particulars	Note No	For the year ended 31.03.2021	For the year ended 31.03.2020
I.	REVENUE FROM OPERATIONS:			
(a)	Revenue Grant recognised		11,13,96,291	11,40,78,615
(b)	Capital Grant recognised to the extent of Depreciation		48,52,575	26,34,334
(c)	Donations		1,83,911	6,55,702
(d)	Interest		3,26,738	4,43,901
(e)	Other Income		-	81,062
	Total Revenue		11,67,59,515	11,78,93,614
II.	EXPENSES :			
(a)	Cost of operations	13	8,37,89,598	8,68,32,167
(b)	Employee benefit expenses	14	1,75,58,898	1,76,40,927
(c)	Other expenses	15	1,04,06,694	93,15,708
(d)	Depreciation	7	48,52,575	26,34,334
	Total Expenses		11,66,07,766	11,64,23,135
III.	Surplus/(Deficit) before exceptional and extraordinary items and tax (I - II)		1,51,749	14,70,480
IV.	Exceptional Items		-	-
V.	Surplus / (Deficit) before extraordinary items and tax (III - IV)		1,51,749	14,70,480
VI.	Extraordinary Items		-	-
VII.	Surplus / (Deficit) before tax (V- VI)		1,51,749	14,70,480
VIII.	Tax expense:			
(1)	Current tax		-	-
IX.	Surplus/(Deficit) from the period from continuing operations (VII - VIII)		1,51,749	14,70,480
X.	Surplus/(Deficit) from discontinuing operations		-	-
XI.	Tax expense of discounting operations		-	-
XII.	Surplus/(Deficit) from Discontinuing operations (X - XI)		-	-
XIII.	Surplus / (Deficit) for the period (IX + XII)		1,51,749	14,70,480
XIV.	Earning per equity share: Not Applicable			
(1)	Basic		-	-
(2)	Diluted		-	-
For and on behalf of the Board of Directors <div style="display: flex; justify-content: space-around;"> <div>  P.M Muthanna Director DIN: 08888150 </div> <div>  Killivalavan Rayar Director DIN: 07555843 </div> </div>			As per our Report of even date For G.Anantha & Co. Chartered Accountants FIRM NO 5160 S  Ratn N.R Partner Membership No: 214318 UDIN: 21214318AAAAEU7377	
Date: 6th August 2021 Place: Bangalore				




FINANCIALS


WILDLIFE CONSERVATION SOCIETY - INDIA
 551, 7th Main Road Rajiv Gandhi Nagar 2nd Phase Kodigehalli
 Bangalore 560097
 CIN: U74999KA2011NPL058034

Consolidated Receipt and Payment account for the year ended 31st March 2021


Receipts	Amount in Rs	Payments	Amount in Rs	
Opening Balance		Fixed Assets		83,65,576
Cash-in-hand	2,806			
Cash at Bank:		Salaries & Allowances	1,76,13,552	
In Current & Savings account	18,61,699	Travelling & Conveyance	48,85,860	
In Deposit account	1,75,88,649	Software Development	2,12,400	
		Professional fees	5,79,23,686	
		Project consumables & Field expenses	2,15,59,518	
		Postage ,Courier & Freight	1,36,612	
		Insurance & Utilities	22,61,791	
Grant received	11,68,20,861	Rent / Lease - Field	20,81,645	
Donation received	1,83,911	Rent Office	24,10,576	
Interest received	3,63,730	Communication expenses	3,41,907	
		Audit fees	4,51,970	
		Printing of Training materials	2,39,906	
		Repairs and Maintenance	11,86,060	
		Books and Periodicals	2,37,028	
		Rates & Taxes	2,10,056	
Income Tax Refund				11,17,52,567
		Net movement in Current Assets & Liabilities		8,59,755
		Closing Balance		
		Cash-in-hand	6,409	
		Cash at Bank:		
		In Current & Savings account	25,88,780	
		In Deposit account	1,33,04,039	1,58,99,228
Total	13,68,77,126		Total	13,68,77,126


For and on behalf of the Board of Directors


 P M Muthanna
 Director
 DIN: 08888150


 Killivalavan Rayar
 Director
 DIN: 07555843

As per our Report of even date
 For G.Anantha & Co.
 Chartered Accountants
 FRN: 00 5160 S




 Rani N.R.
 Partner
 Membership No: 214318
 UDIN: 21214318AAAAEU7377

Date: 6th August 2021
 Place: Bangalore

