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Protected Area Update

Vol. XXVIII, No. 2, April 2022 (No. 156)

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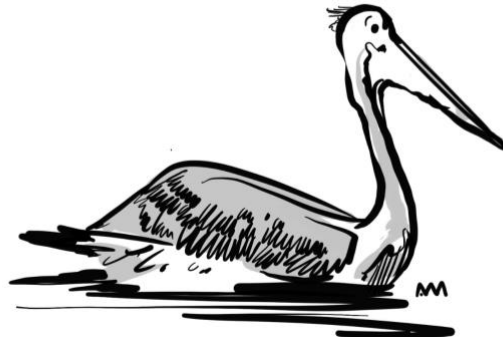
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EDITORIAL

Where will the turtle go?

One of the most fascinating natural phenomenon we experience every winter is the nesting of marine turtles on beaches along the country's coastline. Nothing compares, of course, to the spectacle of mass nesting of the Olive ridleys along the Odisha coastline, but we do know of other nestings in different parts of the country including in the islands of the Lakshadweep and the Andaman and Nicobar.

While the nesting itself is quite an event, intriguing questions remain on where these turtles come from and where they go once they've laid their eggs. We have very limited understanding of this from the Indian context, but what we know suggests a world of great connections and some amazing journeys.

In a first initiative of its kind in Maharashtra (see pg. 7), five Olive ridleys were tagged recently with satellite transmitters as they nested along the Ratnagiri coast. It's been only a few weeks since and we are getting interesting insights already into what these turtles do: nesting again almost immediately on neighbouring beaches, hanging out in near shore waters or beginning journeys that could be 100s of kms long. One of the five seems to have started moving south and will go perhaps to Lakshadweep and beyond, another is moving north and the speculation is she might travel further to Pakistan and onwards to the waters of Oman. So many interesting questions emerge - where will they eventually go? How do they find their routes and their destinations? How and why do they come back? Why do they go where they go? Why do they do what they do?

A similar satellite tagging study of Olive ridleys turtles along the Odisha coast many years ago had provided proof of journeys between here and Sri Lanka and a more recent one by of nesting Giant Leatherbacks in the Andaman and Nicobar (A&N) by Dakshin

Foundation, the Indian Institute of Science and the A&N Forest Department showed connections that are rather incredible. Nesting on the beaches in the islands was followed by journeys that took these creatures as far as the Madagascar coast on one side and to Australian waters on the other – journeys of over 10000 kms each.

One can only marvel at what these ancient creatures are capable of doing and how they make connections between lands we humans might see as conventionally unconnected. There is also the more sombre if not scary realisation when we see what else is happening in our common world. Everything these turtles need - clean waters, food resources, unhindered movement channels, nesting beaches, – are increasingly under threat with every passing day.

We as fellow passengers on planet Earth have a special responsibility; the record, however, does not suggest we are doing a good job of it.



NEWS FROM INDIAN STATES

ARUNACHAL PRADESH

White-cheeked macaque recorded in central Arunachal Pradesh

Scientists have recorded the presence of the White-cheeked macaque in central Arunachal Pradesh. Details were published recently in the journal *Animal Gene*.

Scientists from the Zoological Survey of India (ZSI) led by Mukesh Thakur were searching for Red pandas and Arunachal macaques in central Arunachal Pradesh when

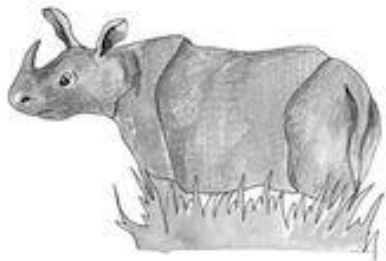
DNA analysis of some faecal samples collected were found to be of the White-cheeked macaque. The researchers then laid transects and deployed a few camera traps in central Arunachal Pradesh, and undertook DNA analysis from different sources to confirm their find of the elusive species that was discovered in China only six years ago.

The species was discovered in 2015 by a group of Chinese scientists from the Modog region in south-eastern Tibet. A photograph of an individual was reported from Anjaw district of Arunachal Pradesh in 2015. That was the only record for India till the latest study.

Source: Shiv Sahay Singh. 'Scientists find White-Cheeked Macaque in Arunachal Pradesh', www.thehindu.com, 09/02/2022.

ASSAM

Rhino numbers up by 200 in last four years in Kaziranga NP; increase also seen in Orang NP and Pobitora WLS



As per the census conducted between March 25 and March 28, earlier this year, the total number of rhinos in the Kaziranga National Park and Tiger Reserve (KNPTR) is 2613. This is 200 more than the number of 2413 that were counted in the last census conducted in 2018.

The survey recorded 750 adult male rhinos, 903 adult females and 170 others whose sex couldn't be determined. It also recorded 116 sub-adult males, 146 sub-adult females and 103, undetermined. The census also found 279 juveniles (1 to 3 years) and 146 calves (0 to 1).

Drones were used for the first time in such a count here. A total of 50 elephants, 64

enumerators, 12 independent observers, 49 media observers and 252 front line forest personnel were also involved in the exercise, that was carried out in 84 compartments of the park.

Poaching too is reported to have come down in Kaziranga in recent years. The park witnessed just one death due to poaching in the year 2021 - the lowest casualty number in 21 years. One rhino was also killed by poachers in January earlier this year.

Earlier in March, rhino counts were also carried out in other protected areas in the state. Orang NP recorded an increase of 24 rhinos from 101 in 2018 to 125 now while in Pobitora Wildlife Sanctuary, the figure went up by 5 - from 102 in 2018 to 107 in 2022.

The census in Manas NP was to be conducted in the first week of April.

Source: 'One-horned rhinos increase by 200 at Kaziranga: Census', www.hindustantimes.com, 30/03/2022.

Kaziranga NP net carbon emitter: study

A recent study by a group of scientists from the Indian Institute of Tropical Meteorology, Pune, and Tezpur University has shown that the Kaziranga National Park (NP) releases more carbon than it sequesters. The researchers had set up a meteorological tower within the park in 2015 to conduct the study under the MetFlux India project sponsored by the Union Ministry of Earth Sciences. A similar analysis of the teak forests in Madhya Pradesh by the National Remote Sensing Centre, Hyderabad, had showed that the forest there acted as a carbon sink.

Kaziranga releases more carbon than it absorbs due to its soil characteristics. There is a large population of bacteria in this soil, which in the process of respiration releases carbon dioxide and adds to the carbon dioxide being emanated by other organisms, including trees. The study revealed that the park absorbed the most amount of carbon during the pre-monsoon season of March, April and May. The photosynthetic activity of trees during the

monsoon decreases due to increased cloud cover. Hence, the ability of the forest to absorb carbon dioxide also decreases. The situation remains the same post-monsoon and in winter months, making the area a net carbon emitter.

The study that was published in February in the journal *Agricultural and Forest Meteorology* shows that as the planet warms further, the ability of the park to absorb carbon would further decrease. This is mainly due to decreasing rainfall in the region, which has already been observed in the last few decades.

The scientists also observed in another study published in the journal *Climate and Atmospheric Science* that in many places in North East India, water being released by trees during transpiration had a greater number of heavier isotopes. The scientists analysed the isotopes in the transpired water and observed a strong link between the water and carbon cycles of the forest. They also witnessed a decreasing trend in the rainfall coming from the transpired water in the pre-monsoon months, which are responsible for the highest carbon absorption. This led them to conclude that global warming would further reduce the capacity of the forests in the region to absorb carbon.

Source: Akshit Sangomla. 'Kaziranga National Park is a net carbon emitter; climate change may make it worse', www.downtoearth.org.in, 09/02/2022.

Construction, encroachment continues in Kaziranga wildlife corridors

The Supreme Court (SC)'s 2019 order banning new construction in nine critical animal corridors of the Kaziranga National Park and Tiger Reserve (NP&TR) continues to be flouted. On January 30, the range forest officer of Kaziranga's Western Range at Bagori wrote to his counterpart in the Salna Range, Nagaon, seeking necessary measures against the clearing of jungles and excavation with heavy machinery on the Kanchanjuri animal corridor. The beat officer of Burapahar had seen some people excavating the corridor used by animals *Protected Area Update* Vol. XXVIII, No. 2

of Kaziranga during high floods to move to and from the hills of Karbi Anglong south of the NP. The activity was in violation of the SC's order; however, this is just one instance of the encroachment and violation, park officials have said.

While additional areas are being added to the 1,300 sq km park, it has become increasingly difficult to clear the animal corridors of human-made obstructions because many influential politicians and businessmen are involved, said an official.

Based on a complaint by an environment activist, the SC's CEC (Central Empowered Committee) had in October 2021 directed the state government to take action against the encroachers and stop all construction activities in the animal corridors. The Assam government had sought three months from 03 November 2021, to take the necessary steps. The deadline expired in the first week of February but reportedly no steps were taken.

The nine officially notified animal corridors of Kaziranga include seven in the Nagaon district - Amguri, Bagori, Chirang, Deosur, Harmati, Hatidandi and Kanchanjuri and two in the adjoining Golaghat district - Haldibari and Panbari. (Also see *PA Updates* Vol. XXVII, No. 4; Vol. XXVI, No. 4; Vol. XXV, No. 3; Vol. XXIV, No. 3; Vol. XXIII, No. 1 and *PA Update* 27)

Source: 'Construction on Kaziranga animal corridors continues', www.thehindu.com, 10/02/2022.

BIHAR/WEST BENGAL

190 Gangetic river dolphins in Mahananda River

A count in November 2021 by two teams of scientists from the Wildlife Conservation Trust (WCT) has revealed the presence of 190 Gangetic river dolphins in the Mahananda River in Bihar and West Bengal. The assessment was conducted from Piyajimore in Darjeeling district, West Bengal, to the April 2022 (No. 156)

confluence of the Mahananda with the Ganges near Manikchak, Malda district, West Bengal. The survey covered a 250 km stretch over 10 days and, over 70% of the 190 dolphins recorded were in the Bihar stretch of the river.

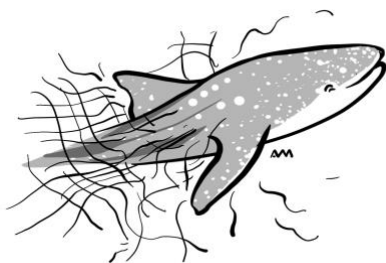
The study recorded a decline in the number of dolphins in Kishanganj district as the number of individuals counted in the stretch from Sonapur Hat to Dauk confluence came down from 14 in the April 2019 to three in 2021. Dolphin mortality due to entanglement in nets and oil-baited hook lines, for which oil extracted from dolphins is used, continues to remain a challenge in addition to those from unregulated sand mining, pollution, solid waste dumping and construction of embankments.

A total of 123 species of birds, including early wintering migratory birds and raptors, were also recorded during the survey.

Source: Seema Sharma. 'Mahananda river survey records 190 dolphins, warns of fishing threats to Red List species', www.india.mongabay.com, 17/02/2022.

GUJARAT

State rescues 1689 whale sharks from fishing nets in 16 years



The Whale Shark Conservation Project (WSCP), a joint venture of the Gujarat Forest Department, Wildlife Trust of India and Tata Chemicals Ltd, has rescued 1,689 whale sharks from fishermen nets in the past 16 years along the Gujarat coast. The highest number of 781 rescues were carried out in 2019-20.

The WSCP began in 2004 with the objective of spreading awareness on the plight

of the species and its protected status among the coastal communities in the state. The project has turned the fishermen into protectors of the whale shark and brought about a change in their attitude towards the species. 50-60 whale sharks are rescued every year on an average here. Each rescue has to be photographed and video recorded and only then are the claims cleared, said a forest official.

Whale sharks, which come to the Gujarat coast from Australian and African waters, were hunted along the shores as their meat is quite popular in China and Europe.

Source: Soumitra Trivedi. 'Gujarat rescued 1,689 whale sharks in 16 years', www.timesofindia.indiatimes.com, 10/02/2022.

Lion sighted near Velavadar NP

A lion was sighted in the month of February about five km from the Velavadar National Park (NP). A senior forest official said that the confirmation came when a truck driver saw the lion and reported it to the forest department. This information matched pugmarks and reports of domestic animal kills in the area.

It appears that the lion came from the Amreli side and not Palitana as the Bhavnagar district staff has not reported any sub-adult lion missing in their area. Lions have been spreading in Gujarat and have been reported in newer areas in recent years - in Surendranagar in April 2020, in Gondal and the outskirts of Rajkot in December 2020, and in Botad district – a new area – in 2021.

The lion sighted near Velavadar was along the Ahmedabad-Dhandhuka-Bhavnagar highway, about 140 km from the city of Ahmedabad.

Source: Himanshu Kaushik. 'Lion spotted mere 140 km away from Ahmedabad city', www.timesofindia.indiatimes.com, 18/02/2022.

HIMACHAL PRADESH

State's first biodiversity park in Mandi dist

Himachal Pradesh's first biodiversity park will be established at Bhulah in the Janjehli valley of Mandi district at an estimated cost of Rs. one crore. It is being created under the National Mission on Himalayan Studies project of the Himachal Pradesh Forest Department and is expected to conduct research and help conservation of endangered Himalayan herbs and also with tourism activities.

A nursery to conserve endangered herbs and amphitheatres are among the infrastructure that has been created. Apart from these, two log huts, a water harvesting structure, a 5 KW power generation project, a foot-bridge and sales centre have also been set up. Other facilities include nature trails about two km long, a 25-foot-high and 160-meter-long tree-walk and seven foot-bridges.

Source: 'Himachal's first biodiversity park to conserve endangered herbs', www.tribuneindia.com, 14/02/2022.

MADHYA PRADESH/MAHARASHTRA

Tigress travels 250 km from Satpura TR in MP to Melghat TR in Maharashtra

A four-year-old radio-collared tigress who had been relocated from the Bandhavgarh to the Satpura Tiger Reserve (TR) in June 2021 was camera trapped 250 km away in the Melghat TR in Maharashtra on 31 January 2022. The tigress was recorded to have started her journey from the Satpura TR mid-December 2021.

The tigress covered the 250 km in 45 days and passed through at least four forest divisions - Hoshangabad, Harda, Khandwa, and Burhanpur - before reaching Melghat. She was recorded on camera traps on January 31 in the Anyar beat under Sonala range of Ambabarwa Wildlife Sanctuary, which is part of the Melghat TR.

While the animal's journey has confirmed that the Keslghat-Hoshangabad corridor continues to be functional, there are concerns over the impact of road widening being taken up here by the National Highway Authority of India (NHAI) without any wildlife mitigation measures. Wildlife conservationists working in the Central Indian Landscape (CIL) are reported to have said that the casual approach of the National Tiger Conservation Authority, MP Forest Department, and NHAI will destroy the vital corridor connecting the Satpura and Melghat TRs, the two largest TRs in the CIL.

Source: Vijay Pinjarkar. 'Radio-collared tigress treks 250km from Satpura to Melghat reserve in Maharashtra', www.thetimesofindia.indiatimes.com, 05/02/2022.

MAHARASHTRA

First satellite tagging of Olive ridleys in Maharashtra

In a first of its kind initiative in Maharashtra, researchers from the Wildlife Institute of India (WII) and the Mangrove Foundation (MF) satellite-tagged five Olive ridley turtles. Prathama and Savani were tagged with platform transmitter terminals (PTTs) on January 25, and Vanashree, Rewa and Laxmi, in mid-February, all in Ratnagiri district. The researchers are monitoring the turtles' movement to understand the migratory pattern of the solitary nesting turtles that are found along the coast of Maharashtra.

While Prathama and Savani journeyed to the north, the two others —Vanashree and Rewa — are reported to be journeying south. Contact was lost with Laxmi, the fifth tagged turtle, in the second week of March. It is suspected that this is either because the PTT is malfunctioning or the turtle has died. Laxmi was fitted with a PTT at Guhagar beach on February 16.

Prathama, the first satellite tagged turtle, had reached 250 km north of Velas

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where she had nested and where she was tagged. After nesting at Velas, she came close to the shore at Guhagar beach but then moved away. Tagged and released from Anjarle beach, Savani laid eggs on February 25 for the second time at the Kelshi beach and possibly a third time too. Kelshi is adjacent to Anjarle. Savani laid 76 eggs on Kelshi beach and 87 at Anjarle. This, according to Dr. Kumar, is the first confirmed record of a turtle nesting again in the same season. Researchers from the WII and the MF had hypothesised that Olive ridley turtles nest multiple times in the same season.

In the last week of March all the tagged turtles were in near shore waters, within 100 km from the shoreline. The researchers believe that the turtles are likely to remain in the nearshore or shallow waters waiting for the ocean currents in order to begin their journey into the deep sea further down to Lakshadweep or drift towards Oman and the Somali coastline and return later in the year in October-November to the nearshore waters again.

The Odisha Forest Department and the WII had fitted four turtles with PTTs at Devi beach in Puri district in 2001. The tracking revealed that one of the turtles had circled the waters and only one have moved south towards Sri Lanka. As opposed to the Olive ridley turtles found along the east coast and especially those who visit beaches in Odisha for nesting, the Olive ridley turtles nesting along the Maharashtra coast are sporadic and a solitary nesting population. In Maharashtra, sporadic nesting of Olive ridley turtles is recorded across three districts – Raigad, Ratnagiri and Sindhudurg. In these three, the highest number of nests and hatchlings are recorded on the three beaches of Guhagar, Velas and Anjarle in Ratnagiri district.

Dr. R Suresh Kumar, senior scientist at the WII, said that there is no social signaling between solitary nesting turtles like there is between the mass nesters and that scientists are attempting to understand migratory patterns of the solitary nesting turtles.

Source: ‘Maharashtra’s 1st satellite-tagged Olive Ridley turtle swims 250 km from state, may soon enter Gujarat waters’, indianexpress.com, 25/03/2022.

[Sanjana Bhalerao](http://www.indianexpress.com) ‘At Velas, two hatchlings of Maharashtra’s first satellite-tagged turtle emerge’, indianexpress.com, 19/03/2022. Prayag Arora-Desai. ‘Researchers lose radio contact with Olive Ridley’, www.hindustantimes.com, 12/03/2022.

[Sanjana Bhalerao](http://www.indianexpress.com). ‘Maharashtra: Tagged turtle returns to lay eggs; confirms nesting behaviour’, indianexpress.com, 26/02/2022. Sanjana Bhalerao. ‘Maharashtra’s first satellite tagged Olive Ridley turtle journeys 75 km south of the state coastline’, www.indianexpress.com, 13/02/2022.

Worker killed in tiger attack in Chandrapur power station in Feb

A 59-year-old contractual worker of the Chandrapur Super Thermal Power Station was killed in a tiger attack in mid-February. The victim was returning from work at night when the tiger attacked him and dragged him into the jungle. The family of the victim was given an initial compensation of ₹ 20,000 (out of the total ₹ 15 lakh); the remaining amount will be paid after completion of the due formalities, said an official.

In the recent past, three to four tigers, as well as some leopards and bears have been sighted in the area raising concerns and leading to a number of suggestions and interventions (see *PA Updates* Vol. XXVII, No. 6 and Vol. XXVI, No. 5) .

Source: ‘Maharashtra thermal power station worker killed In tiger attack’, www.ndtv.com, 17/02/2022.

Over one lakh saplings planted to compensate tree felling for NH-7 widening fail to survive.



Over 20,500 trees were felled between Mansar and Khawasa in 2015 for widening of national highway (NH)-7. A recent study has shown that of the 1.11 lakh trees reportedly planted in 2016 on forest land in South Umred range to compensate for the trees felled, only a handful may have survived. The details were uncovered during a fact-finding mission by Nagpur based organization Swachh Association (SA).

The Nagpur bench of the Bombay High Court (HC) had on 23 September 2013 taken *suo motu* cognizance of a news report of tree felling along NH-7 and subsequently passed various orders to save the crucial corridor between Pench, Kanha, and the Navegaon -Nagzira Tiger Reserves (TRs). The court allowed felling of 20,500 trees on the condition that the National Highway Authority of India (NHAI) would plant five times (1.11 lakh) the number of trees that were to be felled.

As per the NHAI affidavit in court, over 1.11 lakh saplings were planted on 100 ha of forest land. Also, in an affidavit submitted to the court, the FD on October 31, 2017, claimed that these plantations showed a survival rate of 83-97%. However, four spot visits by SA in the first half of February 2022 found that of the 1.11 lakh saplings not even 500 trees may be alive.

The NHAI project director said that the authority had deposited over Rs. 3.73 crore towards the cost of compensatory afforestation, and an amount of over Rs. 3.95 crore towards net present value of around 49 ha

forest land diverted for the highway expansion. The money was remitted in the Compensatory Afforestation Fund Management and Planning Agency - CAMPA account. Further, he mentioned that NHAI approached the forest officials for maintenance of the plantations and paid money to replace saplings that had not survived. The Nagpur deputy conservator of forest, who joined in 2020, said when asked that he would need to conduct a site visit before he could make a comment.

(Also see *PA Update* Vol. XXVI, No. 2)

Source: Vijay Pinjarkar. 'NHAI felled 20,500 trees on NH-7, planted 1.10 lakh, none survived', www.timesofindia.indiatimes.com, 16/02/2022.

PCCF seeks action plan to curb electrocution of wild animals

Taking serious note of the series of tiger and leopard deaths due to electrocution, the Maharashtra's principal chief conservator of forest (PCCF) wildlife, Sunil Limaye, has asked all chief conservators of forests (CCFs) and field directors of tiger reserves (TRs) to draw an action plan for 11KV lines and illegal power fences around farms, and a working model to tackle electrocution.

In a directive issued on February 1 to all forest officials, he asked them to submit a report by February 10. He has also cited a January 2022 ruling by the National Green Tribunal wherein the Tamil Nadu Electricity Board (TNEB) was held responsible for the electrocution of wild animals and asked to pay Rs. 75 lakh to the forest department (FD).

The PCCF has asked to conduct division-level meetings between the FD and Maharashtra electricity board engineers to identify sensitive sections and sub-stations of such feeders, chalk out joint patrolling plans and establish regular communication. He said that patrolling of such sensitive lines can also be integrated with the Monitoring System for Tigers — Intensive Protection and Ecological Status (M-STriPES software) in TRs.

Further, he has asked forest officials to prepare a range-wise list of offenders booked for electrocuting animals in the last five years, and put them under surveillance.

Source: Vijay Pinjarkar. 'PCCF seeks action plan to curb electrocution', www.timesofindia.indiatimes.com, 09/02/2022.

ODISHA

Odisha reports highest human deaths in elephant attacks in country in 2020-21

Odisha reported 93 human deaths due to elephant attacks in 2020-21, while Assam witnessed 91 human casualties, followed by Jharkhand (74) and West Bengal (47). The total number of such deaths in the country was 462. This is a second consecutive year when Odisha has topped the country's human fatalities due to elephant attacks. In 2019-20 too the state had reported maximum casualties with as many as 117 people dying in elephant attacks followed by West Bengal (116), Jharkhand (84), Chhattisgarh (77) and Assam (75).

The Wildlife Society of Orissa (WSO) said that the Odisha Forest Department (FD) has failed to control human-elephant conflict despite crores of rupees being spent on elephant drives. The FD regularly pays private consultants high fees to prepare mitigation plans which remain on paper. Key measures that would save human lives and elephants like controlling mining and quarrying are never executed while more mining clearances are regularly given by the FD, the WSO said.

WSO noted that nearly 25% of human casualties occur when the walls of the huts are toppled by elephants to raid paddy and liquor. The sleeping inmates are crushed under the debris. Therefore, a massive door-to-door campaign needs to be launched by the FD to make people aware about the danger of storing food grains and liquor in houses. It was further noted that almost 60% of human deaths reported in recent months are attributed to

attacks by tusked. There are particular tusked who are marked by aggressive behaviour; however, it is possible to prevent confrontations if these tusked are identified and continuously tracked by expert trackers.

Odisha currently has 1976 elephants spread over 37 forest divisions in the state.

Source: 'Odisha tops India's elephant attack deaths for second year in a row: 20% deaths reported from Odisha', www.thestatesman.com, 12/02/2022.

TAMIL NADU

TN government launches Project Nilgiri Tahr

Naturalists and wildlife researchers in Tamil Nadu (TN) have welcomed Project Nilgiri Tahr, announced recently by the TN Finance Minister PTR Palanivel Thiagarajan as part of the Rs 850-crore budget outlay for programmes related to forests, climate change and the environment. The first-of-its-kind project aims to protect the state animal, endemic to the Nilgiris and the southern portion of the Western Ghats in Tamil Nadu and Kerala, and raise awareness about it.

Rs 10-crore have been earmarked for the project would be spent and the naturalists have said they are keen to see how this money is allocated and what it is going to be spent for.

The Nilgiri tahr *Nilgiritragus hylocrius* inhabits montane grasslands with rocky cliffs at elevations of around 300 to 2,600 m above mean sea level. The animal can be seen in Mukurthi, Glenmorgan of the Nilgiris, Anaimalai, Grass Hills, Coimbatore's Siruvani hills, Dindigul's Palani hills, Megamalai of Theni, Agasthyamalai ranges and Eravikulam in Kerala.

A 2015 survey conducted by TN Forest Department with the help of the World Wide Fund for Nature (WWF) and other non-governmental organisations had estimated 3,122 tahr individuals. The Eravikulam National Park has a 700-strong tahr population while the Anaimalai Tiger Reserve and the

Mukurthi National Park complex have 626 and 463 individuals, respectively.

Source: Nithya Pandian. 'Project Nilgiri Tahr: Activists call for action to conserve grassland ecosystem', www.indianexpress.com 20/03/2022.

Southern duffer butterfly recorded at higher altitude in Nilgiris after three decades

A rarely-seen species of butterfly, *Discophora lepida*, known commonly as the Southern duffer, was recorded recently in the higher elevations of the Nilgiris after more than three decades. A. Samson, a wildlife biologist and one of the researchers who recorded the butterfly, said its range was restricted to habitats in Tamil Nadu, Goa, Karnataka and Kerala in India. The first record of the butterfly in the Nilgiris was in 1888, followed by records in 1935, 1944 and 1987. One of the more recent records was in Coimbatore during a survey carried out between 2013 and 2017.

N. Moinudheen, a wildlife biologist, said that the species relies on bamboo species as their host plant. The upper Nilgiris are not abundant in bamboo species, except for a few species like *Bambusa bambos*, *Dendrocalamus strictus* and *Bambusa vulgaris*. Further studies in areas where these bamboo species grow could lead to more records of the species.

The Wynter-Blyth Association, whose members have been studying butterfly species in the Nilgiris have noted recently that butterfly species usually recorded in lower altitudes were being seen much further up. The reasons for this could be manifold. The host plants these species rely on could be establishing in some of these areas while climate change could also be a contributing factor. Further studies need to be conducted to better understand why these species are being seen at higher altitudes.

Source: 'Southern duffer butterfly recorded in Upper Nilgiris slopes after over 30 years', www.thehindu.com, 10/02/2022.

Bargur Hills tribals, forest dwellers seek protection of traditional rights before creation of TR in Erode

Tribals and other forest dwellers living in Bargur hills in Anthiyur Union have urged the state government to ensure that their traditional rights are protected before the creation of a tiger reserve (TR) in the Erode Forest Division (EFD). The Tamil Nadu Forest Department is in the process of drafting a proposal to create a TR here.

Over 400 people, including representatives of political parties, social welfare organisations and tribal associations, gathered at Thamaraiakarai on 10 February to put forth their demand. Speakers addressing the gathering said that people would lose their rights to offer prayers in temples inside the forest area after the declaration of the TR, would be unable to collect minor forest produce and to take their cattle for grazing in the forest areas, would have to pay a user fee to access forest roads and may be forced to vacate their houses if they came under the core area of the TR.

It was noted that though the Forest Rights Act ensures traditional rights, it had not been implemented in the state in the last 15 years and it was therefore necessary to draw the government's attention to the matter.

Source: 'Tribal people in Bargur Hills want their rights protected before creation of new tiger reserve', www.thehindu.com, 10/02/2022.

Anna Medal for Gallantry for Sathyamangalam TR veterinarian K Asokan

K Asokan, wildlife veterinarian at the Sathyamangalam Tiger Reserve (TR), has been selected for the prestigious Anna Medal for Gallantry for saving wild elephants while protecting people. Asokan has played a key role in capturing wild elephants that have entered into human habitations, in treating

them and releasing them back into forests. He has been serving in Sathyamangalam since October 2016.

In December 2019, a 25-year-old elephant, Chinna Thambi, entered a residential area at Chinna Thadagam, killed seven people and caused damage to property. A team led by Asokan successfully captured the elephant and translocated it to Anaimalai TR. However, the elephant re-entered villages and damaged crops. Based on the Madras High Court order, the elephant was captured after a long-struggle and the court appreciated the efforts of the team involved in it.

In December, 2020, a wild elephant nicknamed 'Shankar' killed three persons in Gudalur forest range, entered forests in Kerala and killed two persons there and caused extensive damage to crops. After many days of intense monitoring, the elephant was finally captured and was shifted to Mudumalai TR.

From 2016 to 2020, the veterinarian rescued and treated 25 wild elephants, also protecting human lives and preventing damage to property in the process. He was involved earlier in capturing the elephant nicknamed 'Moorthy' who had in 1998 killed 28 persons in Gudalur.

Source: SP Saravanan. 'STR veterinarian gets Anna Medal for Gallantry', www.thehindu.com, 27/01/2022.

TN files affidavit rejecting neutrino observatory; says will impact PAs in Kerala as well

The Tamil Nadu (TN) government filed an affidavit in the Supreme Court (SC) on February 17 stating that it would not permit the construction for the proposed Indian Neutrino Observatory at Bodi West Hills in Theni district. The affidavit came two days after the National Tiger Conservation Authority gave a no-objection certificate to the project. The proposed project site is spread across Kerala and TN and the affidavit claimed that if implemented it will impact the flora and fauna

of the Periyar Tiger Reserve (TR) and the Mathikettan Shola National Park (NP).

TN's ruling party, Dravida Munnetra Kazhagam (DMK) and its alliance partner Marumalarchi DMK have resisted the project. However, the Bhartiya Janata Party, which rules at the Centre and Communist Party of India (Marxist), which rules neighbouring Kerala, have strongly supported its implementation, claiming it would help boost scientific research in the country.

Poovulagin Nanbargal, a Chennai-based environmental organisation, had approached the SC seeking its intervention. Representatives of the organisation said that its more than 13-year-old struggle against the project had reached a logical conclusion with the affidavit.

It was noted in the affidavit that tunnelling works for the proposed project involved blasting hard and composite rock in the Western Ghats. An enormous quantity of high-strength explosives will be required to break rocks. In addition, the tunnelling work will involve excavation of 600,000 cubic m of Charnockite rock from the hilly region, said Supriya Sahu, TN's additional chief secretary for environment, climate change and forests. The tunnel and cavern of the project would be built at a depth of 1,000 m from a hilltop. At a depth of 1,000 m, mountain rock would be under tremendous pressure and the vertical stress is expected to be greater than 270 kg per sq. m. This will create problems like rock bust and roof collapse, the affidavit stated.

Sahu added that the proposed site formed part of the catchment of various streamlets and constituted a watershed that supported livelihoods in five districts of TN. The site is located 4.9 km from the Mathikettan Shola NP of Kerala and the area is also part of important wildlife movement corridors. It also links the Periyar TR with the Srivilliputhur Meghamalai TR. In Kerala too, former Chief Minister VS Achuthanandan had taken a strong stand against the project, saying it would spell doom for the PAs, forests and wildlife in the area.

The project was planned in the Nilgiris district of TN but was shifted to Theni following strong public protests.

Source: KA Shaji. 'Tamil Nadu says no to Indian Neutrino Observatory project in Theni', www.downtoearth.org.in, 17/02/2022.

No Project Elephant funds for TN for last two fiscal years

Information made available in response to a right to information (RTI) application shows that no funds were released under Project Elephant to Tamil Nadu (TN) for the last two fiscal years 2020-21 and 2021-22.

The TN chief wildlife warden said that a proposal seeking Rs. 20 crores under Project Elephant was still pending. The delay was due to introduction of Public Financial Management System (PFMS) for all central schemes and the forest department was asked to upload the proposal again in PFMS. Funds were received under Project Tiger, but those under Project Elephant are awaited.

An official with Project Elephant said that different parameters are taken into account before providing funding, including quality of proposals, past performance and fund utilisation; compared to TN, Karnataka and Kerala perform better and also have higher elephant density.

Source: SV Krishna Chaitanya. '100 jumbo deaths annually in TN, but no Project Elephant funds from Centre in 2 years', www.newindianexpress.com, 04/02/2022.

WEST BENGAL

No overnight stay in Buxa TR: NGT

Buxa Tiger Reserve (TR) authorities have issued an order that no visitor can stay overnight in accommodations located within the reserve area. The order was issued

following instructions of the National Green Tribunal (NGT).

An environmental activist had filed a petition in the NGT, saying that the number of establishments have gone up in the reserve area which are illegal. The area has a total 69 private accommodations and 20 accommodations which are under the management of the state government here, the petitioner had pointed out.

The NGT order has led to BTR authorities regulating the number of tourists entering through the entry gate at Rajabhatkhawa. The forest department (FD) is also reported to have demolished three illegal constructions of private accommodations within the reserve area.

The developments have left the stakeholders of the tourism industry worried. Their representative said that they are thinking of filing a petition with the NGT and would also approach the state FD.

Source: 'After NGT order, Buxa Tiger Reserve officials ban night stay', www.telegraphindia.com, 19/02/2022.

NATIONAL NEWS FROM INDIA

Satellite data reveals more than 33% of Indian coast is eroding



A 28 year study (1990-2018) using satellite data by the National Centre for Coastal Research indicates that 33.6% of the Indian

coast is eroding with varying rate of change, the Earth Sciences minister, Jitendra Singh, informed Lok Sabha in a written reply on February 2.

The Indian National Centre for Ocean Information Services (INCOIS) has published an atlas of Coastal Vulnerability Index (CVI) of the entire coastline of India at 1:100000 scale using data on sea level rise, coastal slope, shoreline change rate, coastal elevation, coastal geomorphology, tidal range, and significant wave height.

In Tamil Nadu, 65 km of coastline, which is 6.38% of the coastline of the state ranks very high on CVI, followed by West Bengal (49 km, 2.56%), Karnataka & Goa (48 km, 9.54%), Odisha (37 km, 7.51%), Andaman Islands (24 km, 0.96%), Kerala (15 km, 2.39%), Nicobar Islands (8 km, 0.97%) and Andhra Pradesh (6 km, 0.55%).

Source: '33.6% of Indian coast under varying rate of erosion, says govt.', www.business-standard.com, 02/02/2022.

3100 wolves in India

The first scientific population estimate of the Indian peninsular wolf *Canis lupus pallipes*, suggests there are 3100 individuals of this animal in India. The highest concentration of wolves was reported by Madhya Pradesh (772), followed by Rajasthan (532), Gujarat (494), Maharashtra (396) and Chhattisgarh (320).

The study found that India can still nurture as many as 423 to 540 packs of wolves, with at least three wolves in each pack. Roughly 364,425 sq. km land forms a potential habitat for wolf occupancy and wolf habitats across all landscapes are connected with no barriers for dispersal, the study said. The

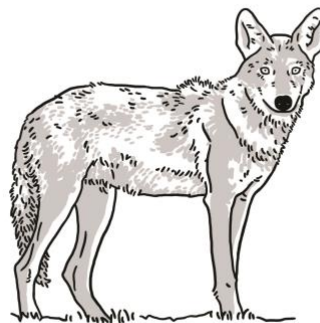
largest potential for wolf occupancy was in the contiguous Saurashtra-Kutch-Thar landscape.

The study also noted that wolf have been recorded recently in several areas from where they had been exterminated or were not known to exist in the past such as the Rajaji Tiger Reserve (TR) in Uttarakhand, Bangladesh, the Indian Sundarbans, the Valmiki TR, and Kaveri Wildlife Sanctuary. Their population has at the same time dwindled in their previous strongholds in Kutch and parts of Rajasthan.

The study used data generated by one of the largest camera trap surveys to date which covered a 121,337 sq. km area in combination with known wolf locations obtained from radio-telemetry and authenticated records. Subsequently, the population size was estimated based on territory size and pack size estimates in occupied and breeding habitats.

Dr YV Jhala, Dean Wildlife Institute of India (WII), and main author of the study noted that wolves are threatened by habitat loss due to development, hybridisation with dogs, fast-traffic roads, diseases, and severe persecution by pastoralists.

Source: Shivani Azad. 'Wolves as endangered as tigers in India; only 3,100 left', www.timesofindia.indiatimes.com, 31/03/2022.



OBITUARIES

Dharmaraj Patil – Denizen of nature

An influential wildlife biologist, environmental educator, a sensitive poet, a writer, and a budding film producer left us on 1st March 2022. It was great loss not only to his family and friends but also to society at large.

I first met Dharmaraj Patil in 1996 during my first year BSc, where we were classmates for Botany and Zoology. During our university days - he majoring in environment and me in Zoology - we spent most of our time on the university campus watching birds and memorizing Latin names. We also enjoyed reading Henry David Thoreau, Ralf Waldo Emerson, Charles Darwin, William Hamilton and Richard Dawkins. This shaped our world view and crystalized our philosophy of nature conservation.

Dharmaraj attempted a career in the civil services but decided eventually to follow his inner calling and moved to wildlife research. Between 2004-2006 he worked on a vulture advocacy programme, on human animal conflict and a survey of the Forest owl in Central India. His work found two new sites for the bird in Madhya Pradesh that were not known historically. He realised however, that research is not enough and reaching out to the people is necessary.

He joined the Centre for Environment Education (CEE), Pune in 2006 and our paths crossed again when I too joined CEE in 2008. We worked together briefly for the Bt Brinjal consultation process, Science Express and for Climate Change Education. His biggest contribution was developing a final consultation report of Green India Mission. We both joined Watershed Organization Trust (WOTR) in 2011 on a very ambitious climate change adaptation project. Dharmaraj was instrumental in implementing people's biodiversity registers (PBRs) in 33 villages of Maharashtra and Madhya Pradesh. He also

developed a Children's Biodiversity Register for engaging school children in biodiversity data collection. This book quickly became popular in the villages and more than 2500 copies were distributed. We also celebrated the 'Shiswad Biodiversity Festival' which turned out to be a big event in the history of Akole taluka of Ahmednagar. More than 20,000 people attended.

In 2015, he and other likeminded friends started 'Jeevitnadi', a people's initiative that took up issues of river conservation. In 2019, he led a campaign to save the Salim Ali Bird Park, a small patch of the Mula Mutha river in Pune that Dr. Salim Ali and Dr. Prakash Gole had both thought was worth protecting as a bird sanctuary. He also joined the Raintree Foundation, Pune, as manager of its environment unit. He initiated biodiversity mapping, formation of biodiversity management committees, PBRs, and environment education in nine villages in Velhe taluka of Pune. The Covid-19 pandemic created unexpected hurdles and I could see his frustration and his helplessness.

Dharmaraj was a prolific writer and a talented artist. He published more than 10 scientific papers, articles and reports and wrote widely in Marathi magazines and newspapers on environmental issues. He was also regional editor of eBird Maharashtra chapter and a life member of Maharashtra Pakshi Mitra. He loved sketching birds and animals and regularly drew portraits of such legends as Charles Darwin, Henry David Thoreau and Salim Ali. He penned more than 350 poems in Marathi and was awarded the *Kavi Manmohan Natu Kavya Puraskar* for one of his poems. He was also felicitated by his village in 2012 for his achievements in the field of the environment

In, 2018 he formed a film production company called Dharmali Creations which was instrumental in producing short films, web series and music videos. In 2019, one of his productions titled 'Padur' received the award for best movie, best screenplay, best actress and best music in The Empty Monsoon Film

Festival. His music video released in 2021, titled 'Gokharu' also got several accolades. His upcoming comedy web series is being released soon. Dharmaraj was a multi-talented personality and his untimely death has left several of his conservation dreams incomplete. I will miss him and I doubt that anyone who have interacted with him would say anything different. Thank you Dharmaraj for enriching our lives.

- **Girish Jathar** is Deputy Director, Srushti Conservation Foundation, Pune.
Email: girishjathar@gmail.com

Eric Ramanujam Wildlifer and artist par excellence

I was just a year into conservation education when I got an opportunity to visit the Pitchandikulam Forest in Auroville. This was 2009 and meeting Eric there opened a whole world for me in conservation communication. Mario Eric Ramanujam, with a background in the advertising industry was a wildlife illustrator for close to three decades and headed the design and art studios in Pitchandikulam.

My initial 3-day visit to Pitchandikulam was sufficient to inspire me and I returned carrying a handful of illustrated posters Eric had shared and a mind filled with new ideas. The posters on Pond Life, Common Snakes of Tamil Nadu and Wildlife of the Tropical Dry Evergreen Forest, beautifully illustrated with pen and ink, decorated my wall. Eventually they became the inspiration behind the very first posters I developed on common snakes and amphibians of Karnataka during my stint at the Ashoka Trust for Research in Ecology and the Environment.

Eric illustrated using various media such as pen and ink, watercolours, oil, acrylic and enamel paint. Whether he created illustrations or a sculpture, his wildlife subjects were thoroughly researched and executed in such detail that every scale, feather and hair was replicated to scientific exactitude.

What connected me to Eric's work deeply was that he was not just an artist but

also a wildlife researcher and conservationist - a path I was treading myself. He had been involved since 1997 in conservation and was part of a team which undertook wildlife surveys in the Kaliveli region near Puducherry, in the Eastern Ghats and the Adyar wetland complex in Chennai. Eric was fascinated by the Indian Eagle owl *Bubo bengalensis* and spent several years studying them. He has several scientific publications on the natural history of the bird including a recently published book by the Bombay Natural History Society titled *In Achilles' Footsteps - Adventures with the Indian Eagle Owl*.

Given that I had my initial training in the fine-arts and was pursuing a career in wildlife research and conservation I could think of no better person than Eric to look to for guidance. Hence, I returned to Pitchandikulam in 2012 to learn more about using art for enhancing conservation awareness using evidence-based methods.

Eric believed that if zoomorphic representation had to survive in this age of photography newer trends must be encouraged and sustained. It has to become more user-friendly and functional. The experiments in Pitchandikulam have attempted to address this. Under the leadership of Eric, a group of local craftsmen created nature art at Pitchandikulam using various forms including wildlife mural on Kadapa stones, mosaic murals, engraving and painting on stone and stone sculptures to enhance landscape architecture.

When I initially started researching on art-based methods for conservation education the only publications from India were by Eric & Joss Brooks (founder of Pitchandikulam) and the experiments conducted at Pitchandikulam. Despite being a senior by age and experience Eric was always the one to keep in touch and was always appreciative of us younger artists. His humility is something I will cherish, and his work will continue to inspire me.

- **Abhisheka Krishnagopal** is with the Nature Conservation Foundation, Mysuru.
Email: abhishekaop@ncf-india.org

IMPORTANT BIRD AREAS UPDATE

NATIONAL NEWS

International Owl Centre special achievement award for Prachi Mehta

The Minnesota, USA, based International Owl Centre has chosen Prachi Mehta, Pune based researcher and director, Wildlife Research and Conservation Society, for its 2022 special achievement award. The award will be given during the International Festival of Owls that will be held on April 30-May 1, 2022.

Prominent among Mehta's work is the study of the endangered Forest owl in Madhya Pradesh and Maharashtra since 2005.

Source: Letter from International Owl Centre dated 17/02/2022.

Wetlands in Kerala, Punjab & Bihar to get funds for integrated management

Sasthamcotta Lake in Kerala, Harike Lake in Punjab, and Kabartal in Bihar are the three lakes that have been included in the Integrated Management of Wetland, Biodiversity and Ecosystem Services project being funded by the Global Environment Facility Trust Fund (GEFTF). A total amount of Rs. 19.02 crores has been allocated for the three lakes for a period of five years. The money is to be divided equally between the three states. The total money allocated for the overall project is Rs. 31.13 crore for the five year period.

A project management unit (PMU) and National Project Steering Committee have been constituted to monitor progress of the project. The PMU has conducted a technical appraisal of the plans submitted by the state governments, analysing the incorporation of ecosystem services and biodiversity values, and mapping the interventions with the threats. A framework has been designed to update existing management plans and disburse funds to the state governments for the three demonstration sites.

Information related to the project was provided by Ashwini Kumar Choubey, minister of state for environment, forest and climate change, in a written reply to a question in the Rajya Sabha on February 10.

Source: 'Integrated project for wetlands, biodiversity allocated ₹31 crore for 5 years', www.livemint.com, 10/02/2022.

ANDHRA PRADESH

FD seeks help from wildlife organizations to curb pelican deaths at Telineelapuram

With deaths of Spot-billed pelicans continuing since December 2021 at Telineelapuram in Srikakulam district, the Andhra Pradesh Forest Department (FD) sought support from a number of organisations including the Wildlife Institute of India (WII), Zoological Survey of India (ZSI), and the Bombay Natural History Society (BNHS) to help deal with the situation. While a FD personnel put the toll in early February at 78, locals said that more than 100 birds had died. Senior forest officials said the deaths were mainly due to parasitic infections as per post-mortem reports.

The FD also sent samples to the WII, ZSI and BNHS seeking suggestions to prevent the mass mortality and to explore solutions for the infestation. It also sent specimens of the dead birds to the National Avian Forensic Laboratory, Salim Ali Centre for Ornithology & Natural History for examination and wrote to the fisheries and veterinary departments to explore solutions as the bird feeds on the fish and worms found in the fish were found in the dead birds as well.

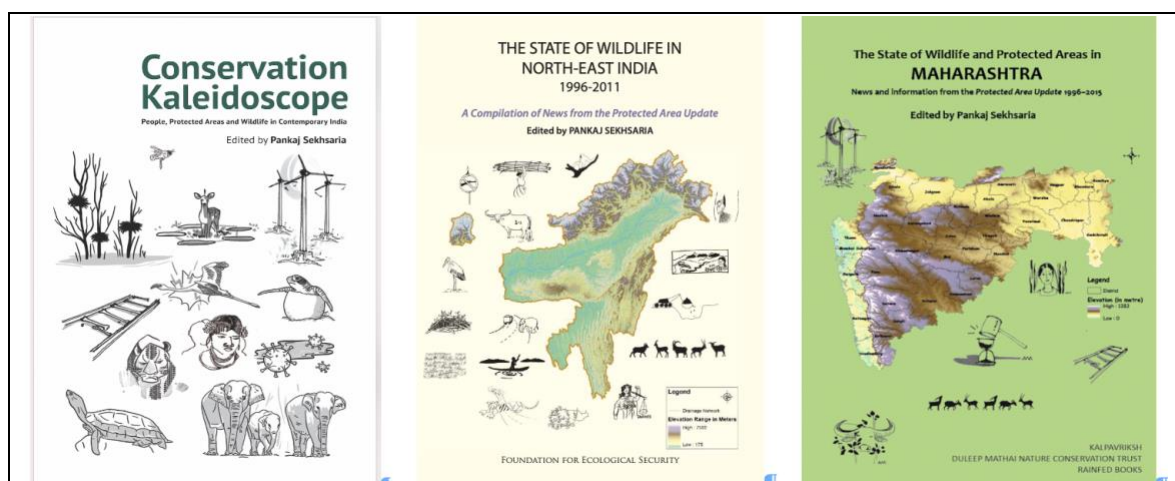
Source: Nalla Babu. 'Andhra Pradesh forest department seeks help to stop pelican deaths', www.timesofindia.indiatimes.com, 04/02/2022.

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A rough draft of conservation history

A review by T R Shankar Raman of *Conservation Kaleidoscope: People, Protected Areas and Wildlife in Contemporary India*

<https://india.mongabay.com/2022/04/book-review-a-rough-draft-of-conservation-history/>

Newspapers, as someone famously said, publish the first rough draft of history. If this is right, then the book under review can be said to provide a first rough draft of the conservation history of India from the mid 1990s to the present. *Conservation Kaleidoscope: People, Protected Areas and Wildlife in Contemporary India* by Pankaj Sekhsaria contains a selection of news items from mainstream media and accompanying editorials that first appeared in the bimonthly newsletter *Protected Area Update* edited by the author and published by the environmental organisation Kalpavriksh.

PA Update, still in publication, typically focuses on news and issues concerning India's wildlife sanctuaries, national parks, tiger reserves, conservation and community reserves, and surrounding landscapes. The newsletter began publication as the *JPAM UPDATE News on Action Towards Joint Protected Area Management* in September 1994 and matured over the years into its present 24-page bulletin form. The book covers the period from around 1996 to the present day, bringing out conservation news, issues, and opinions, kaleidoscopic in their diversity.

Distilled yet diverse themes

The period covered by the book was marked by a huge churn in India, as conservation moved from its protectionist origins to grappling with diverse challenges and threats, some old — such as dams and human-wildlife conflicts — and many new — such as linear infrastructure intrusions and mining. The foremost among these trends is the rise of the neoliberal state and the trampling of environmental and livelihood concerns under the iron wheels of untrammelled economic and industrial growth. This juggernaut rolls on, watering down or whittling away environmental laws and

regulations, and obliterating sections of protected areas (PAs) or entire PAs denotified, to make way for destructive development.

The period also stands witness to the tension of shifting from exclusivist ideas of pristine and inviolate protected areas to more inclusive views of people as partners in conservation. Another landmark in this period was the Forest Rights Act of 2006 that created new opportunities to redress historical injustice, park-people conflicts, and empower forest dwellers to challenge destructive development in their lands. The increase in protected area coverage in some parts of India and the establishment and growth of vibrant civil society organisations focused on research, on-ground efforts, and community-based conservation, must be counted on the positive side.

The book is organised in 14 chapters that distil the news and editorials into thematic (Law, Policy, and Governance; The Developmental Threat; Tourism), species-oriented (Fate of the Elephant; Tigers and Tiger Reserves), and ensemble chapters (A Colourful Mosaic; Specific Geographies). The coverage is inevitably selective. What sets the tone of the book are the accompanying editorials that present these in the immediate context, while linking them to wider currents and cross-cutting issues in conservation.

Protected areas and beyond

In these editorials, Sekhsaria speaks up for wildlife not just inside PAs, but for the wildlife outside PAs. He talks about involving people living inside PAs in their management, and on sensitising people outside PAs, including city dwellers and urban conservationists, into the realities and needs of conservation. He decries the focus on a few charismatic species or reserves, and champions the cause of diversity in species, landscapes, and conservation strategies. Often, the editorials accompanying

each chapter devolve into a series of probing questions triggered by the news: questions that must be asked by and of policymakers, conservationists, and other citizens.

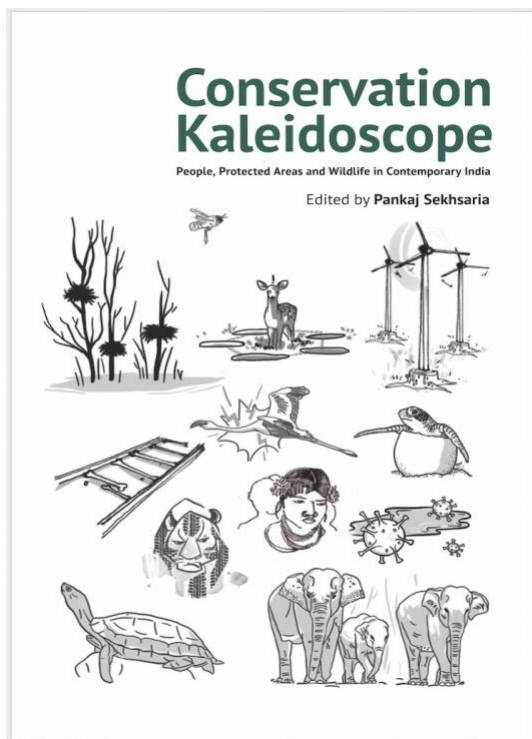
Case studies in a staccato rhythm

Built as it is largely on news on conservation that manage to appear in mainstream media, the picture that emerges from the book of India's conservation history is more like a series of rapidly-projected slide photographs rather than a moving film with a clear beginning, a narrative flow, climax, and denouement. This staccato presentation of news and opinion can be unsettling and difficult to read or grasp as a coherent narrative. And yet, while it presents no grand panorama, the book is nevertheless revealing in its particulars, in the details that emerge from a focus on myriad individual cases: a reserve forest denotified in Andhra for industrial use; a road cleared through a PA in Uttarakhand; mass bird deaths in a Rajasthan lake; police firing in Wayanad, Kerala; a conference on bees in Tamil Nadu; human-elephant conflict in Jharkhand; and so on.

A reference for wildlife history in India

Where the book inevitably falters is in providing depth and completeness. A news event on a threat in a new area is flagged, but the reader is often left with little idea of what came later. The section on the Forest Rights Act is insubstantial: with little news or analysis of cases where the FRA has been implemented or deliberately disregarded. Another major gap in the book is the paucity of reports or editorials about wildlife research in and around PAs. In India, there has been a remarkable growth of institutions and scholars engaged in wildlife research since the 1990s, with better understanding on wildlife conservation issues, numerous new discoveries and findings

coming to light, and increasingly brought to the public by excellent science communicators and journalists. Recent issues of *PA Update* do carry a section about research, but this very significant aspect remains a dark patch in the otherwise colourful conservation kaleidoscope. Despite these limitations, this book is a worthwhile read and reference for a wide spectrum of people concerned with politics, development, wildlife and



environment in India.

Book Details: Price: 650; 450 pp, 140 line drawings by Ashvini Menon Visual Design Studio. ISBN: 9788195410026

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Contemporary research in & around protected areas: An overview

1. Gastrointestinal Helminth Parasites of Wild Ungulates In Hirpora Wildlife Sanctuary, Kashmir, India

Author(s): Rouf Ahmad Bhat, Hidayatullah Tak, Bilal A. Bhat, Riyaz Ahmad, Jahangir Ahmad Dar

Keywords: Wild ungulates, helminth parasites, prevalence, EPG, mixed infection, Hirpora Wildlife Sanctuary

Summary: Seven helminth parasites were recorded from fresh excreta of musk deer and markhor during the post livestock grazing period of 2018 and 2019.

47.05% of the 85 samples contained at least one parasite.

Link:

<https://doi.org/10.21203/rs.3.rs-1216666/v1>

2. Abundance and diversity of butterflies in Raimona National Park of Assam, India

Author(s): Nazrul Islam, Tanisha Chhetri, Udiya Borkataki, Sanswarg Basumatary, Moklesur Rahman

Keywords: butterfly, host plant, abundance, diversity, Ripu RF, Raimona NP

Summary: In the newly created Raimona National Park, researchers recorded 150 species of butterflies belonging to six families. The species richness differed between the four ranges of the protected area.

Link: <https://tinyurl.com/yuzs8x6n>

3. Genetic evidence indicates the occurrence of the Endangered Kashmir musk deer *Moschus cupreus* in Uttarakhand, India

Author(s): Ajit Kumar, Bhim Singh, Subhashree Sahoo, Kumudani Bala Gautam, Sandeep Kumar Gupta

Keywords: Control region, India, Kedarnath Wildlife Sanctuary, *Moschus cupreus*, *Moschus leucogaster*, mtDNA, musk deer, Nanda Devi Biosphere Reserve

Summary: Genetic analysis of musk deer' tissue samples from Ganderbal district in Jammu and Kashmir and Uttarakhand's

Kedarnath Wildlife Sanctuary and Nanda Devi Biosphere Reserve revealed a close genetic relationship between them. Thus, the study indicates the presence of Kashmir musk deer too, along with Himalayan musk deer, in Uttarakhand. The authors recommend further research to validate and update the information.

Link:

<https://doi.org/10.1017/S0030605321000417>

4. A cross taxonomic comparison of bird and butterfly communities of Tamhini Wildlife Sanctuary across two decades

Author(s): Shawn Dsouza, Anand Padhye

Keywords: Functional diversity; landscape change; conservation management; indicator species

Summary: A comparative study between two time periods indicated an increase in bird and butterfly diversity. 105 bird- and 66 butterfly species were recorded in 2016-17 as compared to 70 and 45 species respectively in 1998-2001.

Link:

<https://doi.org/10.1101/2022.01.30.478416>

5. Patterns in plant species diversity along the altitudinal gradient in Dhauladhar mountain range of the North-West Himalaya in India

Author(s): Natasha Sharma, Chandra Prakash Kala

Keywords: Dhauladhar mountains, species diversity, altitudinal gradient, forests

Summary: A total of 184 plant species were recorded from the subtropical, temperate and subalpine forests in the Kangra district of Himachal Pradesh. The species diversity varied across the three forests.

Link:

<https://doi.org/10.1016/j.tfp.2022.100196>

6. Leopards in the City: The Tale of Sanjay Gandhi National Park and Tungreshwar Wildlife Sanctuary, Two Protected Areas in and Adjacent to Mumbai, India

Author(s): Nikit Sanjay Surve, Sambandam Sathyakumar, Kalyanasundaram Sankar, Devcharan Jathanna, Vikas Gupta and Vidya Athreya

Keywords: leopard, human-carnivore interactions, Mumbai, domestic dogs, carnivore, density, city

Summary: An assessment of densities of leopards, their prey and diet was carried out in two adjacent protected areas revealed a significant difference between the two.

Link:

<https://www.frontiersin.org/articles/10.3389/fcsc.2022.787031/full>

7. Dietary composition of the Indian pangolin (*Manis crassicaudata*) in Gir National Park, India

Author(s): Mohan Ram, Darshit Mesariya, Dushyant Vasavada and Dhawal Mehta

Keywords: Indian pangolin, Gir National Park, diet, faecal matter analysis

Summary: The faecal samples collected from tropical dry deciduous forest resulted in

identification of foods consumed by Indian pangolin. It constituted insects majorly followed by grit and plant matter.

Link:

<https://link.springer.com/article/10.1186/s41936-022-00266-x>

8. First record of the Great Crested Grebe (*Podiceps cristatus*) from Sundarban Tiger Reserve, West Bengal, India

Author(s): Souryadeep Mukherjee

Keywords: Biosphere reserve, Sundarban, geographical distribution, Great crested grebe, mangrove

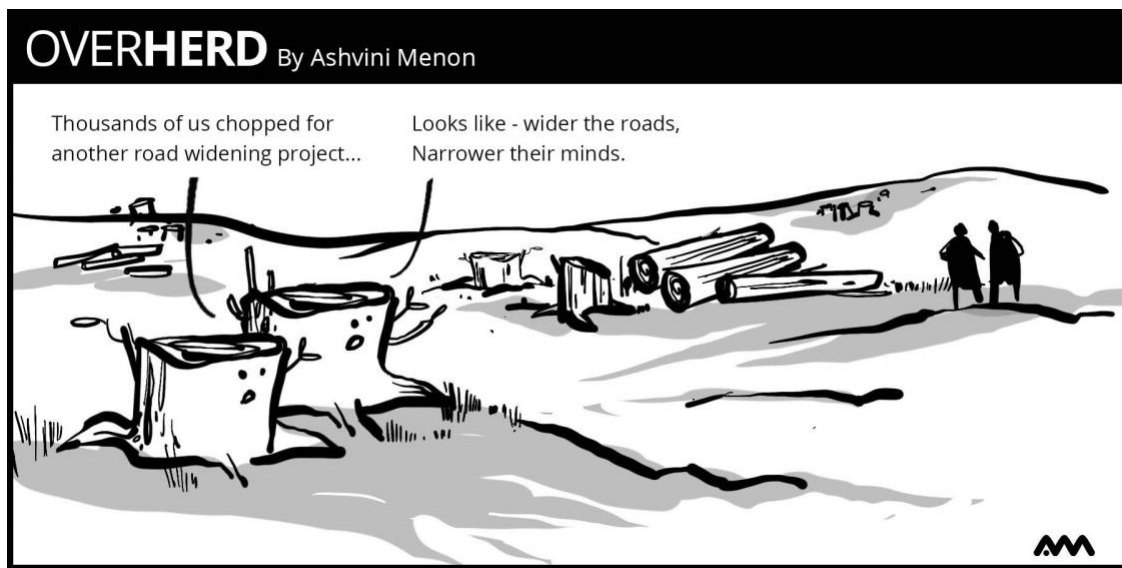
Summary: The first ever sighting of a Great crested grebe is reported from Sajnekhali Wildlife Sanctuary, the northern part of the Sundarban Tiger Reserve.

Link:

<https://journals.aesacademy.org/index.php/aaes/article/view/07-01-013>

- This section has been collated by Anand Pendharkar and Aradhya Sardesai (SPROUTS Environment Trust, Mumbai).

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ODISHA

Number of Irrawaddy dolphins in Chilika drops to 145

The number of Irrawaddy dolphins in Chilika has dropped to 145 from an estimated 156 last year and 158 in 2010. The latest figures were made available after a census in January earlier this year. The number of calves has, however, increased from four in 2011 to 11 this year.

The census was conducted using the line transect method. A team of three persons carried out sampling of dolphin/group of dolphins in each of the 18 transects. 90 people from different organizations including the state government's wildlife wing, the World Wide Fund for Nature (WWF)-India, the Odisha Watershed Development Mission, Bombay Natural History Society, the Regional Museum of Natural History, Bhubaneswar, Centre for Environment Education, Bhubaneswar, Wildlife Society of Orissa, the Chilika Wildlife Division, animal resource development department, local NGOs and local motor boat associations participated in the census operation. In addition, 40 local volunteers were deployed in 18 boats.

According to the chief executive of THE Chilika Development Authority (CDA), the slight reduction in the number of dolphins compared to the last two years could be due to migration of species from the lake, though so far it has not been established through visual observations. The CDA is planning the setting up of a permanent station, equipped with a highly efficient hydrophone array, developed by Tokyo University, Japan, at the mouth of the lake so that the movement of dolphins can be studied. A memorandum of understanding has been signed between CDA and the Tokyo University and work is likely to start in April.

Source: 'Number of dolphins in Chilika drops to 145', *The Times of India*, 20/01/2012.

Orissa to set up elephant-friendly electricity structures

The Orissa government has decided to replace single and double electricity poles with elephant-friendly structures in districts have died due to electrocution. Narrow based lattice structures (NBLs) will be set up in Dhenkanal, Angul, Keonjhar and Mayurbhanj by replacing the single and double poles in all 11 KV and 33 KV lines in future.

The Chief Wildlife Warden (CWW) had a round of meetings with distribution companies as well as the top officials of Rural Electrification Corporation (REC) Ltd in this context recently. It was decided that the new structures will be installed in Keonjhar district on a pilot basis. The task would be carried out by the distribution utilities in consultation with the Divisional Forest Officers (DFO). It will be replicated in all elephant corridors in phases subsequently.

Additionally, all the 11 KV and 33 KV lines under the Rajiv Gandhi Gramin Vidyutikaran Yojana will be constructed along with vacuum circuit breakers (VCBs). The CWW has directed that maintenance of all the existing lines in the forest areas must be taken up on an urgent basis. The companies have been directed to initiate prompt action against illegal hooking in the overhead lines which often results in sagging and cause deaths. At least 39 elephants have been killed by electrocution in the last eight years in Orissa. 17 cases were reported in 2004-05 alone making Orissa the state with the highest number of electrocution cases in India.

Source: 'Now, new structures to stop jumbo electrocution', *The New Indian Express*, 30/01/2012

PERSPECTIVE

Campus Bird Count 2022 - The IIT Bombay story

The Campus Bird Count 2022 (part of the Great Backyard Bird Count 2022) results are out, and the Indian Institute of Technology (IIT) Bombay, figures first in Maharashtra and eighth in India in terms of species recorded. It's a remarkable achievement for an institution located in a city such as Mumbai, one it should be proud of.

What makes this possible, apart from a growing band of birders, is the presence of varied ecosystems within the nearly 500 acres of the institute that enables species richness. This, despite the institution's emphasis on infrastructure development to meet its growing demands. Locked within a hill marked by deciduous vegetation on one side and a wetland system on the other, IIT Bombay has an enviable green cover harbouring rich wildlife. A biodiversity survey conducted by the World Wide Fund for Nature (WWF) - India in 2008 listed 843 species of flora and fauna here. Over the years, however, many green pockets have made way for development, and in the absence of environmental assessments since 2008, accounting for biodiversity loss is only possible through personal anecdotes. However, the recent creation of a new post of Associate Dean (Infrastructure and Planning) exclusively for 'green campus initiatives' offers a spark of hope.

There is a growing realisation that educational institutions would benefit substantially from incorporating biodiversity values and concerns in their development scheme? It is widely known, for instance, that improving the physical environment of a campus adds to the well-being of its residents. One only needs to step into IIT Bombay after being through the streets of Mumbai to experience a change of air, a dip in

temperature. Campuses with access to natural habitats carry the responsibility of maintaining these green lungs. Focusing on inclusive growth also makes business sense, which campuses seldom explore. A green policy that makes it binding for all infrastructure development on the campus, executed through an official institutional mechanism with members drawn from various fields, could be the first step in that direction. It should be compulsorily part of the vision and mission of every such institution.

The International Union for Conservation of Nature stresses the need to create new space for nature within the urban fabric in the form of Urban Protected Areas and believes educational institutions have a crucial role in this endeavour. Declaring green pockets within campuses like IIT Bombay as 'Urban Protected Areas' will a good step in that direction that can be emulated by other institutions - a model for inclusive growth where both humans and biodiversity can co-exist and stand to gain.

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