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Index

Over 6,000 trees illegally cut for tiger safari project in Corbett Reserve, says FSI report.....	2
How can India reduce its impact on global warming.....	4
PM commends Railways for Sculpture made from plastic & pet bottles at KSR Bengaluru Station.	6
New species of catfish discovered from Cauvery river.....	8
Calamity-prone — urban India’s worrying storyline.....	10
Uttarkashi avalanche toll hits 26, search on for 3 missing persons.....	12
Wild tiger that took the lives of nine people in Bihar killed.....	13
Gray whale numbers along North America’s west coast down.....	14
To save California coasts, scientists turn to the humble oyster.....	16
As oceans rise, are some nations doomed to vanish?.....	18
Heat-resilient Red Sea reefs offer last stand for corals.....	21
Explained: What is Delhi-NCR’s action plan ‘GRAP’ to fight air pollution?	24
Bhopal gas tragedy: Centre ‘keen’ to pursue curative plea.....	27
UN Secretary-General, PM to launch initiative on environment in Gujarat.....	28
69% decline in wildlife populations worldwide since 1970: WWF report.....	30
We need a forest-led COP27.....	31
Centre to help set up paddy straw pellet units to arrest stubble burning.....	33
Giraffes brought to India by British may belong to endangered species.....	34
Tamil Nadu’s launches mission to save critically endangered vultures.....	35
PM launches mission to combat climate change.....	36
Central panel to probe ‘illegal’ axing of trees.....	37
Central panel to probe ‘illegal’ felling of trees in Corbett National Park.....	38
Are Indian Bustards migrating to Pakistan?.....	40
Breathing life into a dead river in Odisha.....	41
Grazing animals important in mitigating climate change.....	42
U.N. weather agency: Greenhouse gases reach new record in 2021.....	43
Bats evicted from Manipur cave for tourism, says study.....	46
Countries far off track from their climate vows, says UN.....	48
PM congratulates people of Lakshadweep as Minicoy, Thundi Beach and Kadmat Beach make it to coveted list of Blue Beaches.....	49
Two more Indian Beaches enter the coveted list of Blue Beaches.....	51
‘Burning of fossil fuels killed over 3 lakh Indians in 2020’.....	55
Going green: The Hindu Editorial on Tamil Nadu’s conservation, climate change announcements.....	56
Explained.....	57
Time to pay undivided attention to the raptors.....	59

OVER 6,000 TREES ILLEGALLY CUT FOR TIGER SAFARI PROJECT IN CORBETT RESERVE, SAYS FSI REPORT

Relevant for: Environment | Topic: Biodiversity, Ecology, and Wildlife Related Issues

Destroying environment: Trees being felled for the Pakhru Tiger Safari in the Jim Corbett National Park. Special Arrangement

The much-awaited tiger safari project of the Uttarakhand government is under scanner after a Forest Survey of India (FSI) report stated that over 6,000 trees were illegally cut in the Corbett Tiger Reserve (CTR) against the permission for 163 for the Pakhru Tiger Safari. The State Forest Department, however, denied the FSI's claims, and said that there were some technical issues which needed to be resolved before finally accepting the report.

The FSI was asked by the Uttarakhand Forest Department to access the status of illegal felling in and around the Pakhru Tiger Safari. They were asked to estimate the number of trees felled in the illegally cleared area based on expertise and technology available with the organisation. The Forest Survey Institute was also tasked to scan the area in and around the Pakhru Tiger Safari for illegal felling and to analyse any area within the Kalagarh Tiger Reserve, which was seen to be exhibiting forest cover change.

“After compiling the report in around nine months in Pakhru block, Kalushaheed block, Nalkhatta Block and Kalagarh block, the FSI has come up with an observation that the area cleared under the CTR is estimated as 16.21 hectares. The trees estimated on the cleared area are 6,093 in number with the lower bound of 5,765 and the upper bound of 6,421 with 95% confidence interval and 2.72% standard error,” said a senior official from the department.

Talking to *The Hindu*, Vinod Singhal, Principal Chief Conservator of Forest and Head of the Forest Force, accepted that the FSI found that 6,421 trees were illegally cut. He said the report has not been accepted so far. “After a preliminary examination of this report, there are several technical issues which needs to be resolved before this report to be accepted. There are several serious and important questions on the tabulation of the number of trees allegedly felled and the sampling technique used to arrive at this number,” added Mr. Singhal.

He confirmed that the department had the permission to cut 163 trees in the safari area, and in the primary investigation, it was found that 97 extra trees were illegally cut.

The matter of thousands of trees being felled illegally was highlighted by Gaurav Bansal, an environment-activist and lawyer based in Delhi.

Anoop Singh, Director-General, FSI, could not be contacted even after repeated attempts. Prakash Lakhchaura, Deputy DG, FSI, said that he cannot comment on the reservations of the Forest Department on FSI report as he is not aware of the matter.

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HOW CAN INDIA REDUCE ITS IMPACT ON GLOBAL WARMING

Relevant for: Environment | Topic: Environmental Conservation, Sustainable Development, and EIA

Carbon footprint: India is the second largest producer of rice, wheat, sugarcane, cotton and groundnuts. | Photo Credit: Getty Images

The U.S. Environmental Protection Agency (EPA) has pointed out that since the industrial revolution, which started around 1800, human activities have released large amounts of carbon dioxide (CO₂) due to fuel burning and other 'greenhouse gases' such as methane, nitrous oxide, and compounds of sulphur, phosphorous, ozone into the atmosphere, changing the earth's climate.

Atmospheric carbon dioxide levels have increased by over 40%, from 280 ppm in the 18th century to 414 ppm in 2020, and greenhouse gases level by over these 200 years.

India had 170 million people in 1800, which has risen to 1.4 billion people today. And industrial revolution started only after India's Independence 75 years ago. While it has helped in reduction of poverty, it has also led to rise in atmospheric carbon dioxide and greenhouse gases.

The Food and Agriculture Organisation (FAO) site points out that we have a rural population that constitutes 70% of the country, and their main occupation is agriculture. This gives us a total food-grain production of 275 million tonne. India is the second largest producer of rice, wheat, sugarcane, cotton and groundnuts. It, thus, becomes important that India try and reduce its carbon footprint as much as possible, more in its farming sector.

Farmers have come up with some admirable methods, with the help of agricultural professionals, by using solar panels in their fields, so that they can avoid diesel for groundwater pumps.

Sibi Arasu, an independent journalist from Bengaluru, writes, "Climate-friendly agriculture offers new income sources and is more sustainable" in the journal *Carbon Management* that India's carbon emissions could drop by 45-62 million tonnes annually. The government and professional groups have helped rural farmers put in solar panels to save money and gain greater income.

Indian farmers not only grow rice and wheat but produce other foodgrains as well. They grew about 121.5 million tonnes of rice and 109 million tonnes of wheat during the year 2020-2021. They also produce other foodgrains such as millets (*bajra*), cassava and more. They grow about 12 million tonnes of millets annually. Likewise, the amount of maize produced per year is about 28.6 million tonnes. It may also be added that millets have more proteins (7.3 m per 100 g), fat (1.7 g per 100 g) and fibre content (4.22g per 100g) than rice (protein content 2.7 g per 100 g; fat content 0.3 g per 100 g; and fibre content 0.4 g per 100 g).

It is, thus, healthier for us to add more millets in our diet, besides rice and wheat. And wheat is superior to rice as it has more proteins (13.2 g per 100 g), fat (2.5 g per 100 g), and fibre (10.7 g per 100 g).

India has about 20-39% vegetarians and 70% of the population eat meat — mainly chicken, mutton and fish (*Devi et al*). India, with its many rivers, has a vast coastline which is rich in

fishes. And fishes have high nutritional value and help in reducing carbon footprint (*Nature*, Jude Colman, September 13, 2022 issue). Thus, with farmers, meat sellers and fishermen, each contributing to India in reducing our carbon footprint, we can hope to be an exemplary nation for the EPA.

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PM COMMENDS RAILWAYS FOR SCULPTURE MADE FROM PLASTIC & PET BOTTLES AT KSR BENGALURU STATION

Relevant for: Environment | Topic: Environmental Pollution - Air, Water, Soil & E-waste

The Prime Minister has lauded South Western Railways for Sculpture made from plastic & pet bottles at KSR Bengaluru Station

Quoting their tweet, the Prime Minister tweeted:

“Such efforts are not only innovative and commendable but most importantly remind us of our basic civic duty of keeping our surroundings and public places clean.”

Sculpture made from plastic & pet bottles at KSR Bengaluru Station to create awareness on proper disposal of plastic waste. [@DARPG_Gol](#) [@PMOIndia](#) [@DrJitendraSingh](#) [@RailMinIndia](#)

[#SpecialCampaign2.0](#) pic.twitter.com/1zk5SQjKeb

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NEW SPECIES OF CATFISH DISCOVERED FROM CAUVERY RIVER

Relevant for: Environment | Topic: Biodiversity, Ecology, and Wildlife Related Issues

Pangasius Icaria

Scientists at the National Bureau of Fish Genetic Resources (NBFGR) led by Kuldeep K. Lal, who is director of the Fish Genetics Resources Centre under the Indian Council of Agricultural Research (ICAR), have discovered a new catfish species of the genus *Pangasius*, from the Cauvery. The newly discovered fish species has been named after the ICAR as *Pangasius Icaria*.

The species has been described based on specimens collected through exploration of the river at Mettur in Tamil Nadu and in the upstream of Shivanasamudra Falls at Chamarajanagar in Karnataka.

The fish is known among the local people as *Aie Keluthi* in Tamil and as *Eyegirlu* in Karnataka. The researchers used extensive morphological analysis, skeleton radiography and advanced molecular markers combined with species delimitation computational techniques to conclude that the *Pangasius* specimens from the river are distinct from other species of genus *Pangasius*.

The new species can be distinguished from its congeners known from South and South East Asia due to the presence of widely placed, small rounded vomerine (a thin, flat bone forming the inferior part of the nasal septum), palatine tooth plates, and mandibular barbels (barbels are whiskers-like and are sensory organs), among other features.

A senior scientist from the NBFGR said the discovery of the previously unknown species of genus *Pangasius* from the Cauvery addresses, among other questions, the earlier paleobiogeographic conflict regarding migration of the genus till the southern division of the Western Ghats.

A total of 22 species of *Pangasius* are known from the river basins of South East and South Asia. However, only one species was known from South Asia for over two centuries till the ICAR-NBFGR discovered a new species from the Nagarjuna Sagar in River Krishna in 2017 and named it *Pangasius Silasi*. That discovery has been followed by the most recent one.

The latest species, said the senior scientist, is phylogenetically close to *Pangasius Silasi*. Holotype of this new species is registered at the National Fish Museum and Repository of the ICAR-NBFGR, Lucknow. The name of the species is registered in ZooBank, the online registration system for the International Commission on Zoological Nomenclature (ICZN). The discovery will be published in the international journal *PeerJ*.

Pangasius catfishes are popular for their commercial value in aquaculture and wild capture fisheries and are considered a delicacy. The discovery is an opportunity for future research on the conservation of the species and evaluation of the new fish genetic resource for its characteristics and utilisation potential.

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CALAMITY-PRONE — URBAN INDIA'S WORRYING STORYLINE

Relevant for: Environment | Topic: Disaster and disaster management

'There is a need for an environmental protection agency to proactively tackle issues related to climate change' | Photo Credit: AFP

The [recent floods in Bengaluru](#) have [paralysed the city's tech spine](#). The point has been driven home with viral images of some of the city's most influential people being rescued by tractor and lavish villas under water. Unfortunately, pictures of adverse weather phenomena bringing a city to its knees are becoming increasingly common in India, with the urban authorities concerned finding themselves woefully unprepared every time a new disaster hits.

Similar scenes have played out in Delhi ([2013](#), [2021](#)), Mumbai ([2005](#), [2017](#)), Chennai ([2015](#), [2021](#)), and Hyderabad ([2020](#)), leaving behind extensive losses to property and life. In terms of damages, Mumbai reportedly lost 14,000 crore between 2005 and 2015 while the figure for Chennai was an estimated 15,000 crore in 2015 alone. Added to this are the social and human costs, which almost always disproportionately affect the poorer sections of society as they tend to live in the more environmentally vulnerable areas. Even in the case of Bengaluru, while the media primarily focused on the disruption caused to the Information Technology industry, several informal settlements were also destroyed.

These events are usually met with a slew of knee-jerk reactions and politically motivated accusations. More often than not, river/drain cleanup measures, anti-encroachment drives, and stormwater network projects are proposed by the administrators concerned to appease the public and the media.

A 900 crore project was announced in November 2021 by the Karnataka government after flooding in Bengaluru last year. Now, after the recent floods, the municipality has ordered an anti-encroachment drive. While these measures are not unhelpful, they are at best piecemeal solutions to systemic problems stemming from a lack of climate consciousness in the planning process. Unfortunately, the dearth of climate mitigation measures in urban planning and the uncontrolled urban sprawl only make the next calamity more likely.

Bengaluru has not had a master plan to control its development since 2015 and is unlikely to get a new one before 2025. Across India, 65% of urban settlements do not have a master plan. Where these exist, they usually do not address issues of environmental protection or talk of climate change mitigation. Despite the lack of capacity and bandwidth in State governments to undertake this exercise (report by NITI Aayog in 2021), powers to prepare master plans remain with State governments, with city governments reduced to 'stakeholders' without much authority. While some city administrations have developed drainage/flood mitigation plans, these do not have the statutory backing such as a master plan.

The Drainage Master Plan for Delhi was drafted 46 years ago, in 1976, and a new plan is only just being implemented. In the case of Bengaluru, the drainage lines, as per the 2015 Master Plan, vary significantly from the drains mapped by the municipality. The responsibility of maintaining these and the lakes are split among at least 12 agencies/departments at the State and city level. It is no wonder then that city planning and administration have become a nightmare.

Over the last few years, city administrations such as Mumbai, Ahmedabad, and Nagpur (among others) have begun adopting climate action plans. The Mumbai plan is particularly ambitious, covering all aspects of the city's environment — from flooding to air pollution — and aligns itself with the larger national goal of net-zero emissions. However, as the plan lacks any statutory backing, it does not prescribe any regulatory controls and comes across as a series of recommended measures that can be adopted by the authorities/citizens. This crucial flaw is likely to render it toothless. Finally, these plans are usually an expert-driven endeavour, without the critical element of public participation. This further reduces the plan's credibility. The lack of civic consultations also results in a greater focus on proposals such as the removal of encroachments — which disproportionately affect the poor — instead of a focus on other mitigation measures that can be adopted.

What is needed is the creation of a comprehensive climate action plan for all key Indian cities and to give these plans statutory backing by bringing them within the ambit of the city's master plan. This would also institutionalise processes such as public consultations within the plan preparation process. Beyond giving it the credibility to withstand administrative and political opposition, consultations will be effective in highlighting issues of underserved neighbourhoods — which are often overlooked in media narratives and by decision-making bodies.

Further, there is a need for an environmental protection agency to proactively tackle issues related to climate change. To make coordinated action possible, this agency would need to be devised as an overarching body along the lines of the unified transportation authority formed by different cities. Unless we address India's urban planning issues on a priority, the country's uncontrolled urban sprawl will only make the next calamity more likely. And more catastrophic.

Venkat Jayagopi is with Young Leaders for Active Citizenship (YLAC). Venika Menon is with Young Leaders for Active Citizenship (YLAC)

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UTTARKASHI AVALANCHE TOLL HITS 26, SEARCH ON FOR 3 MISSING PERSONS

Relevant for: Environment | Topic: Disaster and disaster management

With the recovery of seven more bodies on Friday, the toll in the Uttarkashi avalanche reached 26. This has turned out to be the highest number of casualties in any mountaineering training/summit in the country. Three people who fell in a crevasse during the training course are still missing.

The Army, ITBP, SDRF and Air Force teams who were engaged in rescue operations recovered four bodies on Wednesday, 15 on Thursday and seven more on Friday. "We airlifted 13 mountaineers from the spot and 17 were rescued on foot. Search will continue for rest of the three-missing people," said Devendra Patwal, Disaster Management Officer Uttarkashi, who added that search and rescue operation will continue even on Saturday, but the success will depend on the weather conditions.

"Heavy snowfall is taking place in the mountain which has affected the rescue even on Friday. Warning of adverse weather is there for next 48 hours," he said. The people who were caught in the avalanche were taking part in the Advance Mountaineering Course organised by the Nehru Institute Of Mountaineering at the Draupadi Ka Danda Mountain peak earlier this week.

Starting on September 14, a total of 61 people, including trainees, instructors and a nursing assistant, were participating in the exercise.

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WILD TIGER THAT TOOK THE LIVES OF NINE PEOPLE IN BIHAR KILLED

Relevant for: Environment | Topic: Biodiversity, Ecology, and Wildlife Related Issues

The carcass of the tiger. Satyendra Narayan Sharma

The tiger, which had claimed nine lives in the last 26 days in West Champaran district of Bihar, was shot dead on Saturday by a team of sharp shooters and forest officials who were on the hunt for him.

A shoot-at-sight order had been issued against the tiger on October 7 by the National Tiger Conservation Authority (NTCA) and the State's Additional Principal Chief Conservator of Forest-cum-Wildlife Warden after the villagers around the Valmiki Tiger Reserve (VTR) in the district started protesting against the forest officials over the wild cat on the prowl.

"An order has been issued to kill the tiger that has caused death to common life. The order has been issued by the department's additional principal chief conservator of forest-cum-chief wildlife warden, Bihar Shri Prabhat Kumar Gupta in which it has been considered necessary to kill the tiger in view of all the circumstances," said the government release.

Ever since the shoot-at-sight order was issued against the tiger, around 500 people comprising forest employees, local police officials, sharp shooters, trackers and the villagers had been searching the area to spot the tiger.

On Saturday afternoon, the tiger was spotted and sharp shooters shot him dead.

Later, a video of the villagers taking pictures of the dead tiger and touching its body emerged on social media platforms.

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GRAY WHALE NUMBERS ALONG NORTH AMERICA'S WEST COAST DOWN

Relevant for: Environment | Topic: Biodiversity, Ecology, and Wildlife Related Issues

A gray whale surfaces during a whale tour in the Laguna Ojo De Liebre on Mexico's Baja California peninsula March 5, 2009. Gray whales make a yearly migration from the icy North Pacific to the warm waters of Mexico's Baja California peninsula. | Photo Credit: REUTERS

The number of gray whales migrating along the Pacific Coast of North America has steadily declined by nearly 40% from a 2016 peak, and the population produced its fewest calves on record this year, according to U.S. research released on Friday.

The 38% drop from the population's 2016 high of 27,000 whales to 16,650 this year resembles previous fluctuations but warrants further attention, the National Oceanic and Atmospheric Research Administration (NOAA) report said.

Researchers at NOAA's Southwest Fisheries Science Center in San Diego said the latest decline, though not fully explained, likely entails several factors including environmental changes that have shifted the whales' food sources of tiny crustaceans and other invertebrates they prey on in the Arctic.

"Given the continuing decline in numbers since 2016, we need to be closely monitoring the population to understand what may be driving this trend," David Weller, director of the center's marine mammal and turtle division, said in comments announcing the findings.

[Also Read | Puny critter shows humble beginnings of magnificent flying reptiles](#)

A spike in gray whale strandings detected along the West Coast of North America from Mexico through Alaska two years ago prompted NOAA Fisheries to declare an "unusual mortality event" for the population in 2019, triggering closer scrutiny of the phenomenon.

Many of the roughly 600 whales found washed up dead on beaches from 2019 to this year appeared malnourished, though some had died from other causes, such as boat collisions or attacks from killer whales, NOAA said.

The overall population slump among West Coast gray whales coincides with diminished reproduction, researchers found.

The most recent count of baby whales that ended in May estimated calf production this year at about 217 newborns, down from 383 calves tallied last year and the lowest number since such counts began in 1994, NOAA fisheries said.

Gray whales, one of the largest animals on Earth weighing up to 41 tons and reaching lengths of 49 feet (15 meters), are known for their visible annual 10,000-mile (16,000-km) migration between feeding grounds in the Arctic and breeding grounds in Baja Mexico.

Gray whales of the eastern Pacific Ocean have seen sharp declines before, as in the late 1980s and early 1990s when their numbers similarly dropped roughly 40% before rebounding to a new high point, according to NOAA.

Commercial whaling once drove gray whales to the brink of extinction, but they have recovered enough to have been removed from the Endangered Species List in 1994.

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TO SAVE CALIFORNIA COASTS, SCIENTISTS TURN TO THE HUMBLE OYSTER

Relevant for: Environment | Topic: Biodiversity, Ecology, and Wildlife Related Issues

Thousands of the tiny molluscs have begun growing on the artificial reefs dropped in the bay as part of a plan to mitigate damage in California's far south. | Photo Credit: AFP

There are no pearls growing on the oyster reefs in San Diego Bay, but scientists hope they will yield an even more valuable treasure: protection against coastal erosion wrought by rising sea levels.

Thousands of the tiny mollusks have begun growing on the artificial reefs dropped in the bay as part of a plan to mitigate damage in California's far south.

"We look at numerous different ways to help combat sea-level rise, and these reef balls are one of the tools in our toolbox to do that," Eileen Maher, director of environmental conservation at the Port of San Diego, told AFP.

The port implanted 360 structures last December, along a peninsula wedged between the salt marshes of Southern California and the Coronado peninsula - home to the naval air base that inspired "Top Gun."

These hemispheres weigh 300 pounds (135 kilograms) and look like huge thimbles.

They are made from a mixture of cement, sand and crushed oyster shells - a crucial ingredient that attracts living oysters to make their home there.

Also Read | [Heat-resilient Red Sea reefs offer last stand for corals](#)

After 10 months in the water, the reefs are covered with a greenish silt, which hides thousands of still-microscopic oysters, says Maher.

Eventually, the dozen scientists working on this pilot project hope to see the formation of real oyster reefs, which they believe will have a genuine impact on their local environment.

The reefs are much more than a natural bulwark against tidal erosion; their bivalve occupants are all miniature filtration plants that are essential to the marine ecosystem.

That's because to capture the nutrients an oyster needs to survive, each one filters around 50 gallons (190 liters) of water every day, said Maher.

"They help remove that turbidity out of the water and help clean the water, which will provide additional benefits to eelgrass, the submerged aquatic vegetation," she said.

Also Read | [Early warning for heatwaves sees huge improvement](#)

"The more eelgrass sits in the bay, the less chance there is of the shoreline eroding, because it helps -- any plant will help prevent shorelines from eroding."

And like the oysters, these long-filament seagrass beds will also provide a crucial food source

for the 80 species of fish and 300 varieties of birds that make their home in the area.

By 2050, sea levels around California are expected to have risen 20 centimeters (eight inches), according to a National Oceanic and Atmospheric Administration (NOAA) study released early this year.

This would drastically increase the frequency of flooding on the West Coast, which will also occur more often due to storms and heavy rainfall events exacerbated by human-caused climate change.

And rising seas will worsen the erosion that threatens California's coastline.

Around San Diego, this future is already apparent.

To the south, the streets of Imperial Beach are regularly flooded during high tides. An hour's drive to the north, the rail line that carries the "Pacific Surfliner" has just been closed at San Clemente, where the rocks that support it are sinking because of erosion.

In this context, "We have to make sure that we're resilient," said Jason Giffen, vice president of planning and environment for the Port of San Diego.

The \$1.3 million oyster reef project is being evaluated over five years. Similar schemes have been established in San Francisco and New York.

The oyster barriers work only in areas of shallow water, Giffen said.

Elsewhere, the port is exploring other solutions.

In the northern part of the bay, small hollow reinforcements have been attached to the piers.

They not only offer stability but provide refuge to algae, fish and shellfish, helping to bolster biodiversity.

Currently, about 70 percent of the shoreline around San Diego Bay has some type of artificially constructed rock protection.

"We can look at replacing in the long run that infrastructure with something that's more biologically and environmentally sensitive and actually would be a value-add in terms of environmental quality," said Giffen.

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AS OCEANS RISE, ARE SOME NATIONS DOOMED TO VANISH?

Relevant for: Environment | Topic: Disaster and disaster management

Salt contamination to water and land will make many atolls uninhabitable long before they are covered over by the sea. | Photo Credit: Getty Images

If rising seas engulf the Maldives and Tuvalu, will those countries be wiped off the map? And what happens to their citizens?

The prospect is no longer science fiction as global warming gathers pace, posing an unprecedented challenge to the international community, and threatening entire peoples with the loss of their land and identity.

"This is the biggest tragedy that a people, a country, a nation can face," Mohamed Nasheed, former president of the Maldives, told AFP.

According to UN climate experts, sea levels have already risen 15 to 25 cm (six to 10 inches) since 1900, and the pace of rise is accelerating, especially in some tropical areas.

If warming trends continue, the oceans could rise by nearly one additional meter (39 inches) around the Pacific and Indian Ocean islands by the end of the century.

Also Read | [Heat-resilient Red Sea reefs offer last stand for corals](#)

This is still below the highest point of the smallest, flattest island states, but rising seas will be accompanied by an increase in storms and tidal surges: Salt contamination to water and land will make many atolls uninhabitable long before they are covered over by the sea.

According to a study cited by the UN's Intergovernmental Panel on Climate Change, five nations (the Maldives, Tuvalu, the Marshall Islands, Nauru and Kiribati) may become uninhabitable by 2100, creating 600,000 stateless climate refugees.

It is an unprecedented situation. States have, of course, been wiped off the map by wars. But "we haven't had a situation where existing states have completely lost territory due to a physical event, or events, like sea-level rise, or severe weather events," noted Sumudu Atapattu, of the University of Wisconsin in Madison.

But the 1933 Montevideo Convention on the Rights and Duties of States, a reference on the subject, is clear: A state consists of a defined territory, a permanent population, a government and the capacity to interact with other states. So if the territory is swallowed up, or no one can live on what is left of it, at least one of the criteria falls.

"The other thing that I argue is that statehood is a fiction, legal fiction we created for purposes of international law. So we should be able to come up with another fiction to encompass these deterritorialized states," Atapattu added.

Also Read | [Brazilian Amazon deforestation breaks September record](#)

That is the idea behind the "Rising Nations" initiative launched in September by several Pacific

governments: "convince members of the UN to recognize our nation, even if we are submerged under water, because that is our identity," the prime minister of Tuvalu, Kausea Natano, explained to AFP.

Some people are already thinking about how these Nation-States 2.0 might work.

"You could have land somewhere, people somewhere else, and government in the third place," Kamal Amakrane, managing director of the Global Centre for Climate Mobility at Columbia University, told AFP.

This would first require a "political declaration" by the UN, then a "treaty" between the threatened state and a "host state," ready to receive the government in exile in a kind of permanent embassy. The population, which might be in that state or even a different one, would then have dual nationality.

Amakrane, a former UN official, also draws attention to an ambiguity in the Montevideo Convention: "When you speak about territory, is it dry or wet territory?"

With 33 islands scattered over 3.5 million square kilometers (1.3 million square miles) in the Pacific, Kiribati, tiny in terms of land area, has one of the largest exclusive economic zones (EEZs) in the world.

If this maritime sovereignty were preserved, then a state would not disappear, some experts say.

While some islets are already being engulfed as shorelines recede, freezing the EEZs would preserve access to vital resources.

Also Read | [Early warning for heatwaves sees huge improvement](#)

In an August 2021 declaration, the members of the Pacific Islands Forum, including Australia and New Zealand, proclaimed that their maritime zones "shall continue to apply, without reduction, notwithstanding any physical changes connected to climate change-related sea level rise."

But even with rising ocean levels, some would simply not consider leaving their threatened country.

"Human beings are so ingenious, they will find floating ways... to live exactly in this location," says Nasheed, the Maldives' former leader, suggesting people could resort to floating cities.

How these states would find resources for such projects is unclear. The question of financing the "loss and damage" caused by the impacts of global warming will be a burning issue at COP27 in Egypt in November.

Even as experts like Amakrane defend "the right to remain" for people who don't want to leave their heritage, he adds: "You always need to have a plan B."

In this vein, he has called for launching "as soon as possible" a "political" process to preserve the future of uninhabitable states, "because it gives hope to people."

Otherwise, he warns, the current state of uncertainty "creates bitterness and disarray, and with that, you kill a nation, a people."

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HEAT-RESILIENT RED SEA REEFS OFFER LAST STAND FOR CORALS

Relevant for: Environment | Topic: Environmental Degradation - GHGs, Ozone Depletion and Climate Change

The sunlight illuminates a coral reef in the Red Sea offshore of the King Abdullah University of Science and Technology (KAUST) near the city of Jeddah, Saudi Arabia. Image for Representation. | Photo Credit: Reuters

Beneath the waters off Egypt's Red Sea coast a kaleidoscopic ecosystem teems with life that could become the world's "last coral refuge" as global heating eradicates reefs elsewhere, researchers say.

Most shallow water corals, battered and bleached white by repeated marine heatwaves, are "unlikely to last the century," the Intergovernmental Panel on Climate Change said this year.

That threatens a devastating loss for the hundreds of millions of people worldwide who depend on the fish stocks that live and breed in these fragile ecosystems.

Even if global warming is capped within Paris climate goals of 1.5 degrees Celsius above pre-industrial levels, 99 percent of the world's corals would be unable to recover, experts say.

But Red Sea coral reefs, unlike those elsewhere, have proven "highly tolerant to rising sea temperatures," said Mahmoud Hanafy, professor of marine biology at Egypt's Suez Canal University.

Scientists hope that at least some of the Red Sea corals -- five percent of the total corals left worldwide -- could cling on amid what is otherwise a looming global collapse.

"There's very strong evidence to suggest that this reef is humanity's hope for having a coral reef ecosystem in the future," Hanafy said.

Also Read | [Disasters like Ian pose extra risk for fragile older people](#)

Eslam Osman from the King Abdullah University of Science and Technology in Saudi Arabia said: "It is crucial that we preserve the northern Red Sea as one of the last standing coral refuges, because it could be a seed bank for any future restoration effort."

The impacts of coral loss are dire: they cover only 0.2 percent of the ocean floor, but are home to at least a quarter of all marine animals and plants, helping sustain livelihoods for half a billion people worldwide.

Global warming, as well as dynamite fishing and pollution, wiped out a startling 14 percent of the world's coral reefs between 2009 and 2018, according to the Global Coral Reef Monitoring Network.

Graveyards of bleached coral skeletons are now left where once vibrant and species-rich ecosystems thrived.

Recent studies have shown the northern Red Sea corals are better able to resist the dire impact of heating waters.

"We have a buffer temperature before the coral sees bleaching," Osman said. "One, two, even three degrees (Celsius) of warming, we're still on the safe side."

Osman said one theory explaining the corals' apparent resilience to heat is due to "evolutionary memory" developed many thousands of years ago, when coral larvae migrated north from the Indian Ocean.

"In the southern Red Sea, coral larvae had to pass through very warm waters, which acted as a filter, only letting through species that could survive up to 32 degrees Celsius (89 degrees Fahrenheit)," Osman said.

However, scientists warn that even if Red Sea corals survive surging water temperatures, they risk being damaged from non-climate threats -- pollution, overfishing and habitat destruction including from coastal development and mass tourism.

Also Read | [Gray whale numbers along North America's west coast down nearly 40% since 2016](#)

"When non-climate threats increase, the vulnerability to climate change increases as well," Osman said.

Reefs off Egypt are hugely popular among divers, and some Red Sea dive sites are operating at up to 40 times their recommended capacity, Hanafy said.

Fishing, another huge pressure, must drop to a sixth of current rates to become sustainable, he said.

For Hanafy, protecting the reef is a "global responsibility" and one which Red Sea tourism businesses -- which account for 65 percent of Egypt's vital tourism industry -- must share.

Local professionals say they have already witnessed damage to parts of the delicate ecosystem.

One solution, Hanafy said, is for the environment ministry to boost protection over a 400-square-kilometre (154-square-mile) area of corals known as Egypt's Great Fringing Reef.

More than half already lies within nature reserves or environmentally-administered areas, but creating one continuous protected area would support the coral by "regulating activities and fishing, implementing carrying capacity plans and banning pollution", Hanafy said.

Further south, off Sudan, a near absence of tourism has shielded pristine corals from polluting boats and the wandering fins of divers.

But, despite their greater resilience, the corals are far from immune to climate change, and the reefs there have experienced several bleaching events over the past three decades.

For Sudan, a country mired in a dire economic and political crisis including a military coup last year, monitoring the coral is "difficult" without funding, Sudan's Higher Council for the Environment and Natural Resources said.

Off both the Egyptian and Saudi coasts, corals face the threats of coastal development, including sewage and sedimentation from construction runoff, Osman warned.

The great irony, he said, is that, while the natural wonders of the Red Sea corals that have

drawn tourists and developers, the increased man-made pressures are in turn accelerating their destruction.

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EXPLAINED: WHAT IS DELHI-NCR'S ACTION PLAN 'GRAP' TO FIGHT AIR POLLUTION?

Relevant for: Environment | Topic: Environmental Pollution - Air, Water, Soil & E-waste

Delhi and neighbouring areas in Haryana, UP, Punjab struggle with pollution year-round, but the problem becomes acute during winter months. The images above, shot in October 2018, give an indication of how bad Delhi's air quality can get in just an hour. | Photo Credit: Reuters

The story so far: A [revised action plan to fight the serious challenge of air pollution](#) in Delhi and the National Capital Region (NCR) has come into force after a sudden dip in air quality in the capital and its neighbouring areas.

On October 6, the first stage of the revised Graded Response Action Plan, or GRAP, was implemented, with the Commission for Air Quality Management (CAQM) asking the authorities in Delhi-NCR to enforce strict measures, including a ban on all construction and demolition activities in plots of sizes equal to or more than 500 square metres that aren't registered on government-mandated web portals.

To deal with the multi-faceted risks linked to air pollution, the Central Pollution Control Board (CPCB) submitted a list of measures to address different levels of air pollution to the Supreme Court in January 2016. These measures coalesced into a Graded Response Action Plan — a set of anti-air pollution measures followed in Delhi and its vicinity according to the severity of the situation.

The GRAP was approved by the SC after modifications and notified by the Ministry of Environment, Forests and Climate Change on January 12, 2017, for the “prevention, control and abatement” of air pollution in Delhi-NCR. The Environment Pollution (Prevention and Control) Authority (EPCA) was the designated agency to implement the plan.

With multiple State and central bodies working on the problem, a need was felt to consolidate resources to efficiently tackle the problem of toxic air. In 2020 and 2021, ordinances were promulgated for the constitution of a commission for “better coordination, research, identification, and resolution of problems related to air quality” in the NCR and adjoining areas in Haryana, Punjab, Rajasthan and Uttar Pradesh. On August 12, the Commission for Air Quality Management in NCR and Adjoining Areas Act, 2021 received the President's assent. The Centre dissolved EPCA and set up the Commission for Air Quality Management in National Capital Region and Adjoining Areas.

The powerful body, which coordinates with other States to plan and execute strategies to prevent and control air pollution in the NCR, has been enforcing the GRAP since 2021.

On August 5, the Commission for Air Quality Management [issued statutory directions](#) for the implementation of the revised schedule of the GRAP. Under the [revised action plan](#), restrictions on polluting activities will be dependent on Air Quality Index (AQI) rather than PM2.5 and PM10 concentration. Measures can be taken up to three days in advance based on forecasts, the revised plan states.

Earlier, measures were implemented only after the PM2.5 and PM10 concentrations (micrograms per cubic metre) reached a certain threshold.

As per experts, the “finer” version of GRAP could prevent the air quality crisis in Delhi-NCR after Diwali. “Stubble burning peaks in November and Diwali is on October 24. This is a crucial factor. So, it may not lead to a severe situation on Diwali provided all other measures are followed strictly...The government has provided more machines for the management of stubble this year. We hope for better results,” Dr Mahesh Narang, the head of the farm engineering department at Punjab Agricultural University told *PTI*.

The GRAP for Delhi-NCR is divided into four stages of air quality — Stage 1 for “poor” Air Quality Index (AQI) ranging between 201 and 300, Stage 2 for “very poor” AQI of 301-400, Stage 3 for “severe” AQI of 401-450 and Stage 4 for “severe plus” AQI more than 450. As per the plan, actions under Stages 2-4 are invoked at least three days in advance of the AQI reaching the projected levels.

Stage 1: In this stage, besides a ban on construction and demolition activities at specific sites, agencies must ensure that all solid waste is lifted from dedicated dump sites, and none is dumped on open land. Heavy fines are to be imposed for openly burning municipal solid waste and biomass. Roads will be mechanically cleaned and water sprinkled from time to time.

Authorities, meanwhile, will ensure that thermal power plants comply with emission norms and that industries use approved fuel. Guidelines for use of anti-smog guns at construction sites are also to be issued. The ban on firecrackers should be followed as per the directions of respective courts.

Social media is to be used to update people about pollution levels and control room contact details so that violations can be reported to the authorities.

Stage 2: In stage 2, mechanised sweeping of roads will be done daily, while water will be sprinkled using dust suppressants at least on alternate days. The use of coal and firewood in eateries would be banned.

Authorities would need to ensure an uninterrupted power supply to discourage the use of generators. Diesel generators might be allowed only in certain cases. Parking fees may be raised to discourage private transport. Resident Welfare Associations would be required to provide electric heaters to security staff during winter to prevent the burning of solid waste or biomass.

Stage 3: The frequency of cleaning roads intensifies in this stage. Water would be sprinkled daily before peak traffic hours. Authorities will levy different rates on public transport services to encourage off-peak travel. A strict ban will be enforced on all construction activities, except ongoing construction of railway, metro, airport and hospital projects. Non-polluting activities like plumbing, interior decoration and electrical works, however, would be permitted. Industries not using approved fuels would be allowed to operate only for a maximum of five days a week. The State government will be empowered to impose restrictions on BS-III petrol and BS-IV diesel light motor vehicles (4-wheelers).

Stage 4: When the air quality rises to dangerous levels, entry of all trucks except those carrying essential commodities, or providing essential services is to be stopped into Delhi. This will be followed by a ban on plying of diesel-operated medium goods and heavy goods vehicles in Delhi, except those carrying essential items. Four-wheeler diesel LMVs would also be banned in the NCT of Delhi and Districts of NCR bordering Delhi, except those used for essential or emergency services. All construction and demolition activities would have to be stopped.

The respective governments could, meanwhile, take a call on allowing public, municipal and private offices to work on 50% strength. If required, the Centre can allow work from home for

central government employees.

Additional emergency measures like closing schools and other educational institutes, non-emergency commercial activities and plying of vehicles on an odd-even basis may also be enforced.

Along with instructions for authorities, the GRAP includes a graded advisory for the public. Measures include properly tuning the engines of their vehicles, ensuring accurate air pressure in tyres and [updating PUC \(pollution under control\) certificates](#). “Do not idle your vehicle and turn off the engine at red lights; do not dispose of waste or garbage in open spaces; report air pollution activities through apps 311, Green Delhi, SAMEER,” instructions under Stage 1. read.

For Stages 2, 3 and 4, the Commission advises the public to opt for public transport, or work from home if required.

Children, the elderly and those with respiratory, cardiovascular, cerebrovascular or other chronic diseases are advised to avoid outdoor activities and stay indoors once Stage 4 is implemented.

Besides GRAP, the Arvind Kejriwal-led AAP government in [Delhi has also launched a 15-point action plan this year](#) to tackle the issue of pollution in NCR. As per Delhi Environment Minister Gopal Rai, the winter action plan will focus on stubble management, dust pollution, vehicular emission, open burning of garbage, industrial pollution, pollution hotspots, smog towers, public participation, firecrackers and joint action with neighbouring states among other aspects.

Measures include the installation of anti-smog guns at construction and demolition sites larger than 5,000 square metres. Earlier, such guns were deployed in sites larger than 20,000 sq m. Over 500 teams will be formed to check the burning of garbage in the open and ensure that the GRAP is implemented on construction sites in the city. The Delhi government has also launched an “advanced Green War Room” to monitor air pollution and ensure effective implementation of its winter action plan”.

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BHOPAL GAS TRAGEDY: CENTRE 'KEEN' TO PURSUE CURATIVE PLEA

Relevant for: Environment | Topic: Disaster and disaster management

The Centre on Tuesday informed the Supreme Court of its resolve to pursue its nearly 12-year-old curative petition seeking enhancement of compensation to the victims of the Bhopal gas tragedy, over and above the \$470 million already paid by Union Carbide. "The government is very keen to pursue this matter... It is a concern of the government that we cannot abandon the victims," Attorney-General R. Venkataramani submitted before a Constitution Bench led by Sanjay Kishan Kaul. In its curative petition, the Centre had contended that the compensation, determined in 1989, was arrived at on assumptions of truth unrelated to realities.

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UN SECRETARY-GENERAL, PM TO LAUNCH INITIATIVE ON ENVIRONMENT IN GUJARAT

Relevant for: Environment | Topic: Environmental Conservation, Sustainable Development, and EIA

The programme will be organised by the Niti Aayog. PTIPTI

United Nations Secretary-General Antonio Guterres will travel to India next week to attend the launch of a special environmental programme along with Prime Minister Narendra Modi and External Affairs Minister (EAM) S. Jaishankar at the Statue of Unity in Kevadia, Gujarat, in the presence of hundreds of officials, and over a hundred diplomats and heads of Indian missions worldwide. The programme, which is part of the “Lifestyle for Environment” (LiFE) initiative announced by Mr. Modi in June this year, will be organised by the NITI Aayog.

Sources confirmed that Mr. Guterres, who will be in India from October 18 to 20 for his second visit during his tenure, will participate in the LiFE event, and also visit a field project to highlight climate change challenges and solutions for the world. In addition, the UN Secretary-General will deliver a public address to students at the Indian Institute of Technology, Bombay, where his focus is expected to be on global environmental crises.

During a visit to Pakistan last month, where he called those affected by devastating floods in that country as victims of a “grim calculus of climate injustice”, Mr. Guterres said, “Climate chaos is knocking on everyone’s door”, and needed a global response.

The event at Kevadia will kick off a number of other governmental plans to mark Sardar Patel's birthday on October 31 as National Unity Day. From October 25 to 31, the government will launch “Unitea” marches in all 750 districts of the country to highlight health and environment issues as well.

Prior to the LiFE event, Indian Ambassadors and High Commissioners are expected to congregate in Kevadia for the annual Heads of Mission (HoM) conference. The HoM conference is expected to include several special programmes to celebrate India's 75 years of Independence, the Azadi Ka Amrit Mahotsav, and will mark the second visit by Dr. Jaishankar this month. The Minister had invited more than 50 foreign diplomats based in Delhi to Vadodara to participate in Navratri festivities and Dandiya in the city in early October, and had also taken them for a tour of Kevadia and the Statue of Unity.

An official told *The Hindu* at least 120 HoMs would participate in the Kevadia conference from October 19 to 22. According to the official, Dr. Jaishankar will be in Gujarat from October 17 and will attend the inauguration of the Defence Expo being held in Gandhinagar, before travelling to Kevadia. The events in Gujarat are seen as a special attempt by the government to highlight the State in the run-up to Assembly election due in December this year. Mr. Modi, who completed a three-day visit to various Gujarat cities where he addressed public rallies and inaugurated a number of infrastructure projects.

In October 2019, World Bank President David Malpass had visited to address probationers of the Civil Services at the Tent City in Kevadia near the statue.

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69% DECLINE IN WILDLIFE POPULATIONS WORLDWIDE SINCE 1970: WWF REPORT

Relevant for: Environment | Topic: Biodiversity, Ecology, and Wildlife Related Issues

This picture taken on March 7, 2022, shows the current condition of the coral on the Great Barrier Reef, off the coast of the Australian state of Queensland. The IUCN Red List shows corals are declining the fastest owing to habitat loss and barriers to migration routes. | Photo Credit: AFP

Wildlife populations monitored across the globe have declined by a massive 69% between 1970 and 2018, according to the WWF's Living Planet Report (LPR) 2022.

Featuring almost 32,000 populations of 5,230 species, the Living Planet Index (LPI) provided in the report shows it is within tropical regions that monitored vertebrate wildlife populations are plummeting at a staggering rate.

"Latin America and the Caribbean regions have seen the largest decline of monitored wildlife populations globally-- an average decline of 94% during the period," the report said.

Wildlife populations have dipped by 66% in Africa and 55% in the Asia Pacific. Freshwater populations have declined by 83% on average compared to other species groups, according to the report.

The IUCN Red List shows cycads are the most threatened species, while corals are declining the fastest, followed by amphibians.

Habitat loss and barriers to migration routes are responsible for about half of the threats to monitored migratory fish species, the WWF said.

The report said the main drivers of wildlife population decline are habitat degradation and loss, exploitation, introduction of invasive species, pollution, climate change and disease.

Marco Lambertini, Director General of WWF International, said: "We face the double emergencies of human-induced climate change and biodiversity loss, threatening the well-being of current and future generations.

"WWF is extremely worried by this new data showing a devastating fall in wildlife populations, in particular in tropical regions that are home to some of the most biodiverse landscapes in the world."

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WE NEED A FOREST-LED COP27

Relevant for: Environment | Topic: Environmental Conservation, Sustainable Development, and EIA

The Pobitora Wildlife Sanctuary in Assam. | Photo Credit: Ritu Raj Konwar

In September, a study published in the journal *Science* said [earth may have already passed through five dangerous tipping points](#) due to the 1.1°C of global heating caused by humanity to date.

Calls for developing and transferring technologies to support action on climate change have become louder worldwide. Technology has become a survival strategy for our species, but the degree of techno-determinism that exists in the strategy to reverse climate change is alarming. Technology alone is unprepared to deal with the challenge, which requires a societal overhaul and a zero emission strategy.

History is on the side of technological innovation. Norman Borlaug, for instance, ushered in the Green Revolution, which fed billions of people and increased yields. But we may need a few million climate Borlaugs to tackle the problems staring at us.

COP26 at Glasgow also fuelled technological optimism. There was an observation that every technological solution discussed at COP26 depends on just three resources: nelectricity (non-emitting electricity generated by hydropower, renewables or nuclear fission), carbon capture and storage (CCS) or biomass. The total demand for those resources required by the plans discussed at COP26 cannot be met by 2050.

We currently have 4kWh/day of nelectricity per person. But the COP26 plans require 32 (range 16-48). We currently have 6kg of CCS per person per year, but the COP26 plans require 3,600 (range 1,400-5,700). We eat 100kg plant-based food per person each year, but producing enough bio-kerosene to fly at today's levels requires 200kg of additional harvest. There is no possibility that our supplies of these will be near the levels required by the plans discussed at COP26.

In 2003, Ken Caldeira at the Carnegie Institution found that the world would need a nuclear plant's worth of clean-energy capacity every day between 2000 and 2050 to avoid catastrophic climate change. In 2018, MIT Technology Review reported that at the given rate, the world will take nearly 400 years to transform the energy system.

Tech-centric mitigation conversations leave forest economies and subjects such as conservation and forests, which are the best carbon removal instruments, to the ideological fringes of climate conversation. Climate action requires the same amount of investment in conservation as we see in shiny new technology transfers.

Editorial | [Sticking to commitments: On India's climate change goals](#)

While there was the deforestation-ending climate commitment at COP26, the nature of the pledge was vague. Countries may easily attempt to achieve their 'net zero deforestation goals' through monoculture farming. But this won't be of much help: scientists, in a commentary in *Nature*, have stated that naturally preserved forests are 40% more effective than planted ones.

Our climate crisis is intertwined with other complex issues. This means that we must insist on multi-pronged, interconnected climate solutions. Forests shine here too. Nothing exemplifies this

more than the intersection of the climate change crisis and the biodiversity crisis. Forests, which are home to 80% of terrestrial wildlife, are at this intersection.

Forests absorb a net 7.6 billion metric tonnes of CO₂ a year. A new study has found that their biophysical aspects have a tendency to cool the earth by an additional 0.5%. The conservation of forests, along with other nature-based solutions, can provide up to 37% of the emissions reductions needed to tackle climate change. The Dasgupta Review-Independent Review on the Economics of Biodiversity reports that green infrastructure (salt marshes and mangroves) are 2-5 times cheaper than grey infrastructure (breakwaters).

Another study estimated that the annual gross carbon emissions from tropical tree cover loss between 2015 and 2017 was equivalent to 4.8 billion tonnes. This causes more emissions each year than 85 million cars do in their lifetime. In 2019, approximately 34% of total net anthropogenic greenhouse gas emissions came from the energy supply sector, 24% from industry, 22% from agriculture, forestry and other land use, 15% from transport and 6% from buildings.

The IPCC Land Report estimates that land serves as a large CO₂ sink. There is a growing body of evidence that a large proportion of the required removals could be achieved by conserving natural sinks, improving biodiversity protection, and restoring ecosystems. Preserving earth's cyclical processes by protecting terrestrial ecosystems and natural sinks and transformative agricultural practices under the leadership of indigenous people and local communities is a far more equitable and cost-effective way of tackling the climate crisis than it is being done now.

We need to realise that the climate crisis is just a symptom; our real problem is that human consumption and activity have exceeded the regenerative capacity of our planet. Technology, at best, can assist us, not lead us, on the pathway to a sustainable, regenerative and equitable world.

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CENTRE TO HELP SET UP PADDY STRAW PELLET UNITS TO ARREST STUBBLE BURNING

Relevant for: Environment | Topic: Environmental Conservation, Sustainable Development, and EIA

A farmer burning stubble in a field near Amritsar.AFP/AFP

With winter approaching and instances of stubble burning in Punjab and Haryana rising, the Union Environment Ministry announced a Rs. 50 crore scheme on Thursday to incentivise industrialists and entrepreneurs to set up paddy straw pelletisation and torrefaction plants.

Paddy straw made into pellets or torrefied can be mixed with coal in thermal power plants. This saves coal as well as reduces carbon emissions that would otherwise have been emitted were the straw burnt in the fields, as is the regular practice of most farmers in Punjab and Haryana.

New units set up after Thursday would be eligible for government funding in the form of capital to set up such plants. The estimated cost of setting up a regular pelletisation plant, which can process a tonne per hour, is Rs. 35 lakh. Under the scheme, the Centre will fund such plants to a maximum of Rs. 70 lakh subject to capacity.

Similarly, the cost of establishing a torrefaction plant is Rs. 70 lakh. Under the scheme, it is eligible for a maximum funding of Rs. 1.4 crore. Torrefaction is costlier but can deliver a product whose energy content is much higher and theoretically substitute for more coal in a power plant.

One-time measure

The Centre has underlined that this would be a “one-time only” scheme and regular pellet plants would be eligible for Rs. 40 crore of the overall pie.

Every year, about 27 million tonne of paddy straw is generated in Punjab and Haryana. The problem is that about 75% or 20 million tonne is from non-basmati rice that cannot be fed to cattle because of its high silica content. “About 11 million tonne can be managed in the field and the rest is usually burnt which adds to the air pollution crisis in Delhi,” said MM Kutty, Chairman, Commission Air Quality Management (CAQM), at an event here to announce the scheme.

Through the years the government has attempted to dissuade farmers from burning straw through penalising them as well as incentivising them.

“The Environment Ministry has so far been seen as an organisation that stops everyone. But I’d like to congratulate the Central Pollution Control Board for devising this scheme that will help convert waste to wealth and provide job opportunities to our rural youth in Punjab and Haryana,” said Environment Minister Bhupender Yadav.

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GIRAFFES BROUGHT TO INDIA BY BRITISH MAY BELONG TO ENDANGERED SPECIES

Relevant for: Environment | Topic: Biodiversity, Ecology, and Wildlife Related Issues

Tracking the roots: A genome sequencing study was conducted on 10 giraffes in Kolkata's Alipore Zoological Garden. PTISwapan Mahapatra

About 150 years ago, British colonialists brought batches of what they thought were a single species of the northern giraffe to India, from their other colonial possessions in Africa. These now comprise a captive population of 29 northern giraffes across the country.

A recent genealogical study of the largest captive herd in India at the Alipore Zoological Garden in Kolkata has confirmed that the giraffes in this facility, at least, are most likely "critically endangered" Nubian giraffes (*Giraffa camelopardalis camelopardalis*) or the endangered Rothschild giraffe (*Giraffa camelopardalis rothschildi*).

Speaking to *The Hindu*, R. Sanil, Associate Professor, Molecular Biology Laboratory, Government Arts College, Udhagamandalam, where dung samples of the 10 giraffes from Kolkata were analysed, said that the Nubian giraffes are believed to be among three sub-species of the northern giraffe, according to a whole genome sequencing study conducted in 2021. He pointed out that there were giraffes in captivity in Mysuru, Chennai, Patna, Guwahati, and Hyderabad, and it was imperative to identify their species too.

A genetic distance analysis of the giraffes in Alipore showed that they were most closely related to Nubian and Rothschild giraffes. "As both the Nubian and Rothschild giraffes are listed as 'critically endangered' and 'endangered' by the IUCN [respectively], we think it's imperative that the Central Zoo Authority conducts further studies of giraffes in captivity so that the species are not interbred with each other and the giraffes' germplasm is preserved," Mr. Sanil added.

Sulekha J. Backer, research scholar and one of the lead authors of the paper titled 'Captive giraffes in Alipore Zoological Garden, Kolkata are Nubian!', said "stud-books" maintained in zoos across India had little to no information on where the giraffes brought from Africa had been captured; so the only way to identify the species would be through a mitochondrial gene study.

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TAMIL NADU'S LAUNCHES MISSION TO SAVE CRITICALLY ENDANGERED VULTURES

Relevant for: Environment | Topic: Biodiversity, Ecology, and Wildlife Related Issues

Feathered friend: A white-backed vulture being trained to fly in Siryur near Mudumalai Tiger Reserve. M. Sathyamoorthy

Alarmed at the 96% decline in India's vulture population between 1993 and 2003, the Central government put into place two action plans to protect the species at the national level — the first in 2006 and the second, ongoing plan for 2020-2025. One of the important action points in this nationwide plan is the formation of State-level committees to save the critically endangered population of vultures.

Acting on it, the Tamil Nadu Government formed a State-level Committee to set up an institutional framework for the effective conservation of vultures, which almost went extinct in the country at the beginning of the 21st century. A formal order was issued by Supriya Sahu, Additional Chief Secretary, Environment, Climate Change and Forests, on Wednesday.

In Tamil Nadu, four species of vultures are found — the Oriental white-backed vulture, the long-billed vulture, the red-headed vulture, and the Egyptian vulture. "The first three are residents and can be found in the landscapes of the Nilgiris and Sathyamangalam," S. Bharathidasan, secretary of Arulagam, which works for vulture conservation, said. "There is evidence of Egyptian vulture breeding only at one site in Dharmapuri," he said.

The committee, apart from the senior officials of the Forest Department, also has other experts, including K. Ramesh from the Wildlife Institute of India, S. Muralidharan of SACON, Vibhu Prakash of the Bombay Natural History Society, and two locals involved in conservation — B. Ramakrishnan of the Government Arts College, Uthagamandalam, Mr. Bharathidasan of Arulagam. The committee, which has a two-year tenure, will take steps for monitoring the conservation and recovery of existing vulture sites.

Vultures play a key role as nature's scavengers, keeping the environment clean. Their social and ecological significance cannot be underestimated, Ms. Sahu said, adding "It is the last level scavenger."

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PM LAUNCHES MISSION TO COMBAT CLIMATE CHANGE

Relevant for: Environment | Topic: Environmental Conservation, Sustainable Development, and EIA

Setting up solar power plants, installing solar panels on canals or taking steps for water conservation in drought-prone areas were meant to fight the environmental-related calamities while setting the trends for sustainable development, he said.

He described Mission LiFe as a global initiative by India to help the world in its fight against climate change and lead to a sustainable way of life to achieve the sustainable development goals. The fight went beyond policy making and needed wider support from individuals and community, he said and advocated the concept of 'reduce, reuse and recycle'.

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CENTRAL PANEL TO PROBE 'ILLEGAL' AXING OF TREES

Relevant for: Environment | Topic: Biodiversity, Ecology, and Wildlife Related Issues

Over nine months, the FSI compiled a report on the tree cover in the Pakhro, Kalushaheed, Nalkhatta, and Kalagarh ranges in the forest area.

The report, which was published in September, observed that 6,093 trees had been illegally felled in the tiger reserve, a senior official of the Uttarakhand forest department, who did not wish to be named, told *The Hindu*. According to the report, around 16.21 hectares of land in CTR had also been allegedly cleared by forest officials.

The State forest department, however, refuted the FSI's claims and said there were some technical issues that needed to be resolved before the report could be accepted. Mr. Singhal accepted that the FSI report found that over 6,000 trees were illegally cut, but maintained that the forest department had some issues with the report and had not accepted it yet. Former State Forest Minister Harak Singh Rawat had laid the foundation stone for the Pakhro tiger safari project in December 2020. He said the project would be the State's first tiger safari and the world's longest.

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CENTRAL PANEL TO PROBE 'ILLEGAL' FELLING OF TREES IN CORBETT NATIONAL PARK

Relevant for: Environment | Topic: Biodiversity, Ecology, and Wildlife Related Issues

Habitat protection is key for tigers to thrive in the wild. Getty Images/ISTockPhoto

The National Green Tribunal (NGT) on Friday told the forest officials of Uttarakhand that it would direct the Union government to form a committee to initiate an investigation into “illegal tree cutting” in Jim Corbett National Park.

The apex green court’s move came after it had taken cognisance of *The Hindu’s* report on the felling of trees in the Corbett Tiger Reserve (CTR). The report had quoted a Forest Survey of India (FSI) report stating that over 6,000 trees were illegally cut to pave the way for the Pakhro tiger safari project at the tiger reserve.

Samir Sinha, Chief Wildlife Warden of Uttarakhand, who appeared before the NGT on Friday, told *The Hindu* that the State government had informed the court about the steps taken by the government over the “alleged illegal tree cutting”. “The court said it would direct the Centre to form a committee to investigate the allegations,” Mr. Sinha said.

Vinod Singhal, the Principal Chief Conservator of Forest and Head of the Forest Force, said the forest department had permission to cut only 163 trees for the safari project, but during preliminary investigation, it was found that 97 extra trees were illegally cut in the area.

The fact that thousands of trees had been cut for the project was highlighted by Gaurav Bansal, an environment activist and lawyer based in Delhi. In a complaint to the National Tiger Conservation Authority, he alleged that a large number of trees were axed in the protected area.

Taking cognisance of the complaint, the State government asked the FSI to conduct a survey of the number of trees felled in the designated area for the Pakhro tiger safari project inside the tiger reserve. The Forest Survey Institute was also tasked with scanning the area for illegal felling and change in forest cover in the Kalagarh forest division.

Over nine months, the FSI compiled a report on the tree cover in the Pakhro, Kalushaheed, Nalkhatta, and Kalagarh ranges in the forest area.

The report, which was published in September, observed that 6,093 trees had been illegally felled in the tiger reserve, a senior official of the Uttarakhand forest department, who did not wish to be named, told *The Hindu*. According to the report, around 16.21 hectares of land in CTR had also been allegedly cleared by forest officials.

‘Can’t accept report’

The State forest department, however, refuted the FSI’s claims and said there were some technical issues that needed to be resolved before the report could be accepted. Mr. Singhal accepted that the FSI report found that over 6,000 trees were illegally cut, but maintained that the forest department had some issues with the report and had not accepted it yet.

Former State Forest Minister Harak Singh Rawat had laid the foundation stone for the Pakhro tiger safari project in December 2020. He said the project, spread over 106 hectares, would be

the State's first tiger safari and the world's longest. He said "100% sighting" of tigers would be ensured at the safari.

Even Prime Minister Narendra Modi, during his visit to the Jim Corbett National Park in 2019 for the shooting of the adventure TV show *Man Vs Wild* with host Bear Grylls, had spoken about developing a safari in the area to enable visitors to have confirmed tiger sightings.

Spread across 500 sq. km, the reserve is home to 230 tigers and has the world's highest tiger density — at 14 tigers per hundred sq. km.

The NGT took cognisance of the matter following a report published in *The Hindu* and said it would direct the Union government to form the committee

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ARE INDIAN BUSTARDS MIGRATING TO PAKISTAN?

Relevant for: Environment | Topic: Biodiversity, Ecology, and Wildlife Related Issues

As Rajasthan shares the international border with Pakistan's Sindh and Punjab provinces, it is suspected that the GIBs might have flown across to the neighbouring country's desert amid fears that they could become easy prey for the poachers there.

DNP Deputy Conservator of Forests Ashish Vyas told *The Hindu* that several GIBs had been tagged for behavioural studies and monitoring of their movements. "They forage in the Thar desert area, which is their natural habitat, and no GIB from the Indian side has migrated to Pakistan," he said. Tourism & Wildlife Society of India (TWSI) secretary Harsh Vardhan said the GIBs reaching Cholistan was a possibility if one considers the likelihood of their stoppage at several places to consume feed and replenish their energy lost in flying.

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BREATHING LIFE INTO A DEAD RIVER IN ODISHA

Relevant for: Environment | Topic: Environmental Conservation, Sustainable Development, and EIA

Though the target of reviving a dead river in span of six months sounded ambitious, the green tribunal had made its intent clear. “The government is readying plans to rejuvenate Sukapaika river,” Suresh Chandra Mohapatra, Odisha Chief Secretary, told *The Hindu*. Mr. Mohapatra recently held a high level meeting of engineers and discussed various aspects on breathing life into Sukapaika. The government has, however, set a target to complete the renovation within 18 months. Engineers involved in planning and execution said it was possible. “The government has approved Rs. 49.67 crore for rejuvenation of Sukapaika River. This is not a huge amount and so the government need not show reluctance. But it requires government’s determination to make it happen,” said Sisir Das, counsel for the petitioner in the NGT.

Dr. Pratap Chandra Rath, a Hyderabad-based cardiologist who hails from the region, was among the first to encourage people to build a movement for rejuvenation of Sukapaika. Subsequently, grassroots-level representatives gathered and resolved to exert pressure on government for the cause. “What made people realise the need for revival of the river was that most tube-wells were becoming defunct due to depletion of groundwater. Irrigation was the biggest casualty. The situation came to such a pass that people were not able to use any waterbody to perform last rites as they were dry. Traditional fisherfolk became jobless. Villagers encountered a host of problems without the river,” said Nrusingha Prasad Das of Bodhapur village. In 2019, a people’s march for the river’s restoration attracted the attention of authorities. As the movement gained momentum, public hearings were held, comments were sought and there was overwhelming support for breathing life into Sukapaika again. Emotional about river’s rejuvenation, villagers say it will touch lives of 10 lakh people in 425 villages.

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GRAZING ANIMALS IMPORTANT IN MITIGATING CLIMATE CHANGE

Relevant for: Environment | Topic: Environmental Conservation, Sustainable Development, and EIA

Image for representational purposes only. | Photo Credit: G. Ramakrishna

Grazing animals can have a significant impact on the stability of soil carbon in grazing ecosystems, finds a study. Researchers from Indian Institute of Science, Bengaluru (IISc), observed that experimentally removing grazing animals from the ecosystem resulted in higher fluctuations in soil carbon from one year to the next. The research has been published in *PNAS*.

The researchers, with the support of the Himachal Pradesh State government, local authorities and the people of the Kibber village in Spiti, established some fenced plots where grazing animals were excluded and adjacent plots where animals like yak and ibex grazed. Sumanta Bagchi from the Centre for Ecological Sciences and Divecha Centre for Climate Change, IISc, and his students examined soil samples, year after year, over the decade following 2005 when the study began.

They found that soil carbon in the fenced plots fluctuated 30%-40% more than that in the plots where animals were allowed to graze.

Grazing ecosystems, such as grasslands, shrublands, and steppes savannahs cover about 10% of India and about 40% of the world, says Dr. Bagchi, in an email to *The Hindu*. Historically, these ecosystem support nearly all megafauna around the world and are home to reptiles, birds, amphibians.

Such “drylands” have been threatened by alternate land use. “Drylands seem to lack a legitimate standing in our policy due to the unfortunate ‘wasteland’ tag which originated during our colonial past that was enamoured by forests. Many Indian ecologists, including my colleagues, are trying to change this mindset,” he says.

“Grazing ecosystems store carbon in the soil and therefore decarbonise the atmosphere. Large mammals are crucial for all this. Unfortunately, wild mammals are confined to a few parks and reserves. Elsewhere wildlife has long been replaced by domestic livestock,” he explains.

The questions that come up are: While this replacement is inevitable for livelihoods and food security, are livestock ecological substitutes of the wild mammals they have displaced? Can livestock provide equivalent carbon services, and how can they be managed? These aspects are missing in current policy on livestock, and we do not have all the answers yet. “We need to protect land which has wildlife and restore degraded lands. We need to better manage livestock,” he says.

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U.N. WEATHER AGENCY: GREENHOUSE GASES REACH NEW RECORD IN 2021

Relevant for: Environment | Topic: Environmental Degradation - GHGs, Ozone Depletion and Climate Change

People cross a canal during heavy rain and wind and walk to the nearest cyclone center in Bangladesh, during Tropical Storm Sitrang on October 24, 2022. Climatologists and environmental advocates have been raising their voices for years about the impact of climate change, by pointing to vast changes in the weather in recent decades like forest fires in China and western United States, drought in the horn of Africa and unprecedented flooding in Pakistan – to name only a few. | Photo Credit: AP

The three main greenhouse gases hit record high levels in the atmosphere last year, the U.N. weather agency said on Wednesday, calling it an “ominous” sign as [war in Ukraine](#), rising costs of food and fuel, and other worries have elbowed in on longtime concerns about global warming in recent months.

“More bad news for the planet,” the World Meteorological Organisation said in a statement along with its latest annual Greenhouse Gas Bulletin. It’s one of several reports released in recent days looking at several aspects of humanity’s struggle with climate change in the run up to the U.N.’s latest climate conference, in Sharm el-Sheikh in Egypt.

Of the three main types of heat-trapping greenhouse gases — carbon dioxide, methane and nitrous oxide — the biggest jump from 2020 to 2021 was in methane, whose concentrations in the air came in with the biggest year-on-year increase since regular measurements began four decades ago, WMO said.

“The continuing rise in concentrations of the main heat-trapping gases, including the record acceleration in methane levels, shows that we are heading in the wrong direction,” said WMO Secretary-General Petteri Taalas.

Methane is more potent at trapping heat than carbon dioxide, but doesn’t stay in the atmosphere nearly as long as carbon dioxide and there’s 200 times more carbon dioxide in the air than methane. Over a 20-year time-period, a molecule of methane traps about 81 times the heat as a molecule of carbon dioxide but over a century it goes down to trapping 28 times more heat per molecule than carbon dioxide, according to the Intergovernmental Panel on Climate Change.

Since pre-industrial times, which WMO sets at around the year 1750, CO₂ concentrations in the air have increased by nearly 50% to 415.7 parts per million, with the U.S., China and Europe responsible for the bulk of emissions. Methane is up 162% to 1,908 parts per billion, and nitrous oxide — whose human-made sources are things like biomass burning, industrial processes and fertiliser use — is up about one-quarter to 334.5 parts per million.

Earlier on Wednesday the U.N.’s climate office said current pledges to cut greenhouse gas emissions put the planet on course to blow past the limit for global warming countries agreed to in the 2015 Paris climate accord.

It said its latest estimate based on 193 national emissions targets would see temperatures rise to 2.5 degrees Celsius above pre-industrial averages by the end of the century, a full degree higher than the ambitious goal set in the Paris pact to limit warming by 1.5°C.

“We are still nowhere near the scale and pace of emission reductions required to put us on track toward a 1.5 degrees Celsius world,” the head of the U.N. climate office, Simon Stiell, said in a statement. “To keep this goal alive, national governments need to strengthen their climate action plans now and implement them in the next eight years.”

The report found that emissions will also increase by 10.6% by 2030 from 2010 levels, a slight decrease from the 13.7% estimates last year.

A report published Wednesday by Climate Action Tracker who track nations' pledges to reduce warming found that of 40 indicators for reducing emissions — like weaning off coal, ramping up electric vehicles or reducing deforestation — the world wasn't on track for any of them to match the levels of emissions reductions scientists say are needed to limit warming to 1.5°C. Over half of the indicators showed the world is “well off track” to cutting emissions but added that promising progress has been made.

Climatologists and environmental advocates have been raising their voices for years about the impact of climate change, by pointing to vast changes in the weather in recent decades like forest fires in China and western United States, drought in the horn of Africa and [unprecedented flooding in Pakistan](#) — to name only a few.

CO₂ remains the single most important greenhouse gas generated by human activity — mainly from burning of fossil fuels and cement production — amounting to about two-thirds of the warming effect on the climate, known as radiative forcing. Over the last decade, carbon dioxide has been responsible for about four-fifths of that warming effect.

Methane accounts for about more than one-sixth of the warming effect, said WMO. Three-fifths of methane reaches the atmosphere through the burps and farts of livestock, rice farming, use of fossil fuels, biomass burning and landfills; the rest comes from natural sources like wetlands and termites.

Rob Jackson, who heads the Global Carbon Project, suggested that the spikes in methane over the last two years were “mysterious” — either blips related to the coronavirus pandemic, which temporarily dented emissions, or a sign of “a dangerous acceleration in methane emissions from wetlands and other systems we've been worrying about for decades.”

“Concentrations of methane and nitrous oxide are not just rising, they're rising faster than ever. While not losing our focus on carbon dioxide, we need to pay more attention to the ‘other’ greenhouse gases,” he added. “Fortunately, methane is beginning to get the attention it deserves” through initiatives like the Global Methane Pledge, a capping effort supported by the U.S. and European Union, among others.

Nitrous oxide remains “mostly ignored,” he added.

Taalas, who has been repeating warnings about global warming for years, says the focus should remain on CO₂.

“As the top and most urgent priority, we have to slash carbon dioxide emissions which are the main driver of climate change and associated extreme weather, and which will affect climate for thousands of years through polar ice loss, ocean warming and sea level rise,” he said.

NASA announced that an instrument on the International Space Station designed to look at mineral dust turned out to be a useful tool to find “super emitters” of methane from orbit. NASA shared three images showing plumes several miles long that are spewing methane.

A group of a dozen leaks from pipeline and other gas infrastructure in Turkmenistan is leaking 55 tons of methane per hour, about the same as the infamous 2015 Aliso Canyon leak, drilling in New Mexico that's spewing 18 tons per hour and a landfill in Iran that's emitting 8 tonnes per hour.

"We're looking in places where no one is planning to look for methane," said NASA instrument scientist Robert Green. "If it's there we'll see it."

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BATS EVICTED FROM MANIPUR CAVE FOR TOURISM, SAYS STUDY

Relevant for: Environment | Topic: Biodiversity, Ecology, and Wildlife Related Issues

New bat found in Manipur SPECIAL ARRANGEMENT

A colony of bats was evicted from a Manipur cave system with a Palaeolithic past to make it tourist-friendly, a zoological study that recorded new fauna in the State has said.

The Khangkhui, locally called Khangkhui Mangsor, is a natural limestone cave about 15 km from Ukhrul, the headquarters of Ukhrul district. Excavations carried out by Manipur's archaeologists had revealed the cave was home to Stone Age communities.

The cave was also used as a shelter by the local people during World War 2 after the Japanese forces advanced to Manipur and the adjoining Nagaland. More importantly for conservationists, the cave housed large roosting populations of bats belonging to the Rhinolophidae and Hipposideridae families.

A study published in the Journal of Threatened Taxa by researchers from the Zoological Survey of India (ZSI) cited local guides as saying that the bats were killed and evicted from the Khangkhui cave after 2016-17 purportedly to make it "more tourist-friendly".

The researchers – Uttam Saikia and A.B. Meetei, both from ZSI's North East Research Centre in Shillong – recorded Blyth's horseshoe bat in the Khangkhui cave during two extensive field surveys covering nine districts of Manipur in 2019 and 2021.

This bat was one of 12 new species added to Manipur's mammalian fauna. The others included the ashy roundleaf bat, the intermediate horseshoe bat, the northern woolly horseshoe bat, the greater false vampire bat, the hairy-faced bat, Hodgson's bat, Hutton's tube-nosed bat and the round-eared tube-nosed bat.

Shanngam Shaliwo, the Divisional Forest Officer of the area, denied any planned extermination of the flying mammals. "No such killing of bats has been reported in our office," he told *The Hindu*. He said the cave has been steeped in the folklore of the dominant Tangkhul community, whose ancestors believed it was the abode of a protective deity.

The study also mentions places in Manipur where bats are eaten for "supposed medicinal properties or as a supplementary source of protein".

"In Wailou village in Chandel district, we were informed that people do occasionally hunt bats in a nearby cave although this practice is not widespread throughout the state. Another serious threat we noticed is the death of bats as unintended victims of illegal bird trappings," the study said.

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COUNTRIES FAR OFF TRACK FROM THEIR CLIMATE VOWS, SAYS UN

Relevant for: Environment | Topic: Environmental Degradation - GHGs, Ozone Depletion and Climate Change

International climate pledges remain far off track to limit temperature rises to 1.5 degrees Celsius, according to a UN report released on Wednesday, less than two weeks ahead of high-stakes negotiations to tackle global warming.

With the planet already battered by climate-enhanced heatwaves, storms and floods after just 1.2 degrees Celsius of warming, experts say the world is still failing to act with sufficient urgency.

When nations met in Glasgow last year for a previous round of climate negotiations, they agreed to speed up their climate pledges to cut carbon pollution this decade and increase financial flows to developing nations. But only 24 countries, of 193, had updated their plans at the time of the report.

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PM CONGRATULATES PEOPLE OF LAKSHADWEEP AS MINICOY, THUNDI BEACH AND KADMAT BEACH MAKE IT TO COVETED LIST OF BLUE BEACHES

Relevant for: Environment | Topic: Environmental Conservation, Sustainable Development, and EIA

The Prime Minister, Shri Narendra Modi has congratulated, particularly the people of Lakshadweep as Minicoy, Thundi Beach and Kadmat Beach make it to coveted list of Blue Beaches, an eco-label given to the cleanest beaches in the world. The Prime Minister highlighted India's remarkable coastline and lauded the passion among Indians to further coastal cleanliness.

Sharing a tweet by Union Minister of Environment, Forest and Climate Change, Shri Bhupendra Yadav, the Prime Minister tweeted;

"This is great! Congratulations, particularly to the people of Lakshadweep, for this feat. India's coastline is remarkable and there is also a great amount of passion among our people to further coastal cleanliness."

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DS/TS

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TWO MORE INDIAN BEACHES ENTER THE COVETED LIST OF BLUE BEACHES

Relevant for: Environment | Topic: Environmental Conservation, Sustainable Development, and EIA

In yet another recognition of India's commitment to protect and conserve the pristine coastal and marine ecosystems through holistic management of the resources, the globally recognized and the coveted International eco-label "Blue Flag", has been accorded to two new beaches – Minicoy Thundi Beach and Kadmat Beach- both in Lakshadweep. This takes the number of beaches certified under the Blue Flag certification to twelve (12).

Proud moment!

Two more Indian beaches have made it to the list of Blue Beaches. Minicoy, Thundi Beach and Kadmat Beach - both in Lakshadweep - are the proud entrants in the coveted list of Blue Beaches, an eco-label given to the cleanest beaches in the world. pic.twitter.com/i2bTdB5tJi

Announcing this proud moment in a twitter message, Minister for Environment, Forest and Climate Change, Shri Bhupender Yadav expressed happiness and congratulated everyone stating that it is a part of India's relentless journey towards building a sustainable environment led by Prime Minister Shri Narendra Modi.



Kadmat Beach



Thundi Beach

The Thundi Beach is one of the most pristine and picturesque beaches in the Lakshadweep archipelago where white sand is lined by turquoise blue water of the lagoon. It is a paradise for swimmers and tourists alike. The Kadmat Beach is especially popular with cruise tourists who visit the island for water sports. It is a paradise for nature lovers with its pearl white sand, blue lagoon waters, its moderate climate and friendly locals. Both the beaches have designated staff for beach cleanliness and maintenance; and for safety and security of swimmers. Both the beaches comply with all the 33 criteria as mandated by the Foundation for Environment Education (FEE).

The other Indian beaches in the blue list are Shivrajpur-Gujarat, Ghoghla-Diu, Kasarkod and Padubidri-Karnataka, Kappad-Kerala, Rushikonda- Andhra Pradesh, Golden-Odisha, Radhanagar- Andaman and Nicobar, Kovalam in Tamil Nadu and Eden in Puducherry beaches.

Background:

Foundation for Environment Education in Denmark (FEE) accords the globally recognized eco-label - Blue Flag certification. In order to qualify for this prestigious award, a series of stringent environmental, educational, safety-related and access-related criteria must be met and maintained. The mission of Blue Flag is to promote sustainability in the tourism sector, through environmental education, environmental protection and other sustainable development practices.

MJPS/SSV

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'BURNING OF FOSSIL FUELS KILLED OVER 3 LAKH INDIANS IN 2020'

Relevant for: Environment | Topic: Environmental Degradation - GHGs, Ozone Depletion and Climate Change

An estimated over 3,30,000 people died in India due to exposure to particulate matter from fossil fuel combustion in 2020, says the 2022 report of *The Lancet countdown on health and climate change: health at the mercy of fossil fuels*, released on Tuesday. The report adds that from 2000-2004 to 2017-2021, heat-related deaths increased by 55% in India.

The new findings presented in the seventh annual global report of the *Lancet Countdown on Health and Climate Change* also pointed to the fact that governments and companies continue to follow strategies that increasingly threaten the health and survival of people, and future generations.

Among other findings in the report, 45% of urban centres in India are classified as moderately green or above. Giving an indication of the economic loss, the report states that in 2021, Indians lost 16,720 crore potential labour hours due to heat exposure with income losses equivalent to about 5.4% of the national GDP.

Stating that climate change is amplifying the health impacts of multiple crises, the report further found that from 2012 to 2021, infants aged under one experienced a higher number of heatwave days.

Additionally, it added that the duration of the growth season for maize has decreased by 2%, compared with a 1981-2010 baseline, while rice and winter wheat have each decreased by 1%.

Warning that governments are not focusing on the issue as much as required, it said that in 2019, India had a net negative carbon price, indicating that the government was effectively subsidising fossil fuels.

"India allocated a net 34 billion USD [around Rs. 2,80,000 crore] to this in 2019 alone, equivalent to 37.5% of the country's national health spending that year. Biomass accounted for 61% of household energy in 2019, while fossil fuels accounted for another 20%. With this high reliance on these fuels, average household concentrations of particulate matter exceeded the WHO recommendation by 27-fold nationally and 35-fold in rural homes," the report said.

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GOING GREEN: THE HINDU EDITORIAL ON TAMIL NADU'S CONSERVATION, CLIMATE CHANGE ANNOUNCEMENTS

Relevant for: Environment | Topic: Environmental Conservation, Sustainable Development, and EIA

Ensuring sustainable development requires more than good intentions and verbal commitments. And yet, commitment is that crucial first step. [Tamil Nadu has struck out clearly for a future](#) that would be climate conscious, greener, with a series of announcements this year — in the form of government orders and via the Budget. Apart from getting the [Ramsar Site](#) declaration for a record number of ecological zones as a well-planned and implemented initiative, it has also declared its intention to create green parks in 100 villages, that would cater to local requirements too. Also proposed are an elephant reserve at Agasthiyarmalai in the south, a dugong conservation park in the Palk Bay, a new bird sanctuary at Tiruppur, and establishing India's first-ever wildlife sanctuary for the slender loris in Dindigul and Karur district. While these and similar incremental efforts made possible with political will, if implemented well, will lend themselves to a visibly greener landscape, the bolder initiatives have been conceptualised within the challenging field of climate change, where conviction is the driver. The recently appointed [governing council on Climate Change](#), which has experts including Montek Singh Ahluwalia, Nandan Nilekani and Erik Solheim, for instance, is an example of good intent followed by a solid tool to aid implementation. It will provide policy directives to the Climate Change Mission, advise on climate adaptation and mitigation activities, provide guidance to the State Action Plan on Climate Change and provide strategies for implementation. The setting up of a Green Climate Fund corpus is a further indication of commitment. Additionally, a special purpose vehicle, Tamil Nadu Green Climate Company, has been set up to advise on managing three important missions — Climate Change, Tamil Nadu Green and Wetlands.

But pursuing climate change has not been easy, not now, not ever. As per United Nations data, only 26 of 193 countries that agreed to enhance climate change action last year have followed up with concrete plans. For, indeed, the challenges are daunting. Environmental evangelism will have to drive these projects, so that the passion, urgency and seriousness that the parent institution (Environment and Climate Change department), brings to the table are absorbed by other departments. All modern states are beset by challenges in the sectors of energy transition, mobility transition and agricultural transition. It is crucial to build capacity capable of fashioning local solutions, and ensure that the announcements are all implemented, in a time-bound manner.

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EXPLAINED

Relevant for: Environment | Topic: Environmental Conservation, Sustainable Development, and EIA

Smoke rises from a coal-powered steel plant at Hehal village near Ranchi, in Jharkhand. | Photo Credit: AP

The story so far: Leaders from around 200 countries will gather in the Egyptian city of Sharm El-Sheikh from November 6-18 for the [27th round of the Conference of Parties, or COP27](#), to deliberate on a global response to the increasing threat of [climate change](#). The annual summit comes at a crucial juncture against the backdrop of global inflation, energy, food and supply chain crises, fuelled by an ongoing [war in Ukraine](#) and exacerbated by extreme weather events, with data showing that the [world is not doing enough](#). At COP27, negotiations are likely to focus on efforts to decarbonise, finance climate action measures and other issues related to food security, energy and biodiversity.

The participants at COPs are signatories to the United Nations Framework Convention on Climate Change, or UNFCCC, adopted 30 years ago. At present, the UNFCCC has 198 members. The first COP was held in 1995 in Berlin. Since then, a few COPs have stood out with historic agreements. For instance, the Kyoto Protocol, adopted at COP3 in 1997, committed industrialised economies to limit and reduce greenhouse gas emissions. COP21, another significant conference, ended with the 2015 Paris Agreement in which member countries agreed to keep global warming below 2°C, ideally no more than 1.5°C, compared to pre-industrial levels. The previous summit, hosted by Glasgow, ended with the Glasgow Climate Pact that called for the 'phasing down' of unabated coal power.

COP27 will seek to strengthen a global response and deliberate if wealthy nations emitting carbon dioxide should compensate for the loss to developing countries with a lower carbon footprint. Broadly, the summit seeks to "accelerate global climate action through emissions reduction, scaled-up adaptation efforts and enhanced flows of appropriate finance" through its four priority areas of mitigation, adaptation, finance and collaboration. As per the presidential vision statement, COP27 will be about moving from negotiations and planning to the implementation of promises and pledges made. Experts say the conference could emerge as an "in-between COP," since climate change goals have either passed or are not due soon, giving COP27 a platform to push forward issues that developed economies pass over.

The world has changed since the last COP in Glasgow. Extreme weather events and scientific reports are a stark reminder of the devastating impact of human pressure on the climate and the inefficiency of existing plans. These reports, likely to leave an impact on political agenda and environmental diplomacy, have built momentum for the Egypt summit.

A recent UN report has warned that "efforts remain insufficient" to limit global temperature rise to 1.5°C, as per the Paris Agreement. The UN Climate Change report says the world is failing to act with urgency to curb greenhouse gas emissions despite the planet witnessing climate-enhanced heatwaves, storms and floods after just 1.2°C of warming. Even if the countries meet their pledges, we are on track for around 2.5°C of warming, which will be disastrous. The findings are based on an analysis of the latest Nationally Determined Contributions (NDCs), or country-specific action plans to cut emissions and adapt to climate impacts. The report adds that emissions compared to 2010 levels need to fall 45% by 2030 to meet the Paris deal's goal.

This year's [Intergovernmental Panel on Climate Change \(IPCC\) assessment report](#) stated that climate change has produced irreversible losses to natural ecosystems and has warned of

severe consequences to food supply, human health and biodiversity loss if carbon emissions from human activity are not sharply reduced. As per the report, 3-14% of all species on earth face a very high risk of extinction at even 1.5°C, with devastating losses at higher temperatures in the current situation. It adds that limiting warming to around 1.5°C requires global greenhouse gas emissions to peak before 2025 and be reduced by 43% by 2030. Coal-fired power plants operating without technology to capture and store carbon would need to be shuttered by 2050, a warning relevant to India which operates roughly 10% of global capacity.

The [World Resources Institute](#) also paints a grim picture in its report. It suggests that the world needs to curb emissions six times faster by 2030 than the current trajectory to meet the 1.5°C target. Of the 40 indicators examined, none is on track to reach the 2030 target. “Unabated coal-based electricity generation, although declining worldwide, continues to expand across some regions, while unabated fossil gas-based electricity, is still rising globally,” it notes.

Mitigation measures to keep temperatures below 2°C and the need for climate change adaptation mentioned in these reports are likely to come up for discussion at the COP27. “Raising ambition and urgent implementation is indispensable for addressing the climate crisis. This includes cutting and removing emissions faster and a wider scope of economic sectors, to protect us from more severe adverse climate impacts and devastating loss and damage,” COP27 President-designate Sameh Shoukry has said. He believes that the 27th summit will be the world’s watershed moment on climate action.

India is one of the 197 countries that has promised to limit the increase to no more than 1.5°C by 2030. It is also working on a long-term roadmap to achieve its target of net zero emissions by 2070. [Prime Minister Narendra Modi had committed at the Glasgow summit](#) that the country would get its non-fossil energy capacity to 500 GW by 2030, meet half of its energy requirement from renewable sources and reduce carbon emissions. India is the third-largest greenhouse gas emitter in the world. Though India updated its climate pledges in line with commitments made at the previous summit, experts have slammed New Delhi for not setting ambitious targets. The [Climate Action Tracker](#), an independent analysis that tracks government climate action classifies India’s action as “highly insufficient”. It says India’s continued support to the coal industry undermines a green recovery. India had previously come under intense criticism over its stand to “phase down” coal power, instead of phasing it out, at COP26. “While stronger on paper, India will already achieve these targets with its current level of climate action and the new targets will not drive further emissions reductions,” the tracker notes.

Also read | [Loss and damage will be major topic at upcoming COP27, says Bhupender Yadav](#)

The country is, however, expected to play a key role at COP27. A government official told *Associated Press* that a key issue for India at the summit will be financing both — adapting to climate change and limiting fossil fuel emissions. The official said the country wants the \$100 billion-a-year pledge of climate funds for developing countries, a promise that remains unfulfilled.

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TIME TO PAY UNDIVIDED ATTENTION TO THE RAPTORS

Relevant for: Environment | Topic: Biodiversity, Ecology, and Wildlife Related Issues

A greater spotted eagle taking the same low perch at Perumbakkam wetland. | Photo Credit: Prince Frederick

Once at the Perumbakkam wetland, this writer was an unintentional eavesdropper, soaking up morsels falling off a good-humoured banter between two seasoned birders.

Standing at the extreme end of Classic Farms Main Road, the two friends were chin-wagging over how winter-visiting raptors cutting across species-lines displayed an orderliness, one that kept them from getting into each other's bristling feathers.

Looking at distant land-marking concrete stakes, one of the two birders noted which raptor would take which stake. This chitchat and the eavesdropping took place before the pandemic. And on hindsight, these stakes were an equivalent of designated, painted social-distancing spots that greeted shoppers at the height of the global health crisis. The raptors were naturally practising social distancing much before it became a necessity for survival for homo sapiens.

So, there is a touch of irony to a report of how two raptors from two different species almost clawed each other, over a "property" dispute, as recently as this Diwali day. On October 24, Umesh Mani, a seasoned birder and a member of Madras Naturalists Society, watched an airborne Osprey heckling a Greater Spotted Eagle off a perch within the boundaries of the wetland.

By no stretch of the imagination can skirmishes between raptors of different species be called an oddity. They do happen but far more rarely than the irritated peckings that routinely take place among birds found in massive mixed flocks, usually waders.

Only that whatever the raptors do now at the Perumbakkam wetland catches the eye unfailingly as the waders are still thin on the waters. As a result, there is fewer distractions eating into the spotlight enjoyed by these birds of prey.

Sightings by birders at the Perumbakkam wetland this season include the marsh harrier, the greater spotted eagle, the osprey, and the peregrine falcon. There is also a record on eBird of a pied harrier (juvenile) sighting.

KVRK Thirunaranan of The Nature Trust, which works closely with the Forest Department and documents the bird life in the Pallikaranai marsh (which the Perumbakkam wetland is a part of) adds to the list: Red-necked falcon and booted eagle.

"Around the time we first sighted the marsh harrier this season, we also sighted garganey. Based on observations over the last five years, there is a pattern, one that suggests a synchronicity between the arrivals of the garganey and the marsh harrier. They check in around the same time, underlining an impressive prey-predator diversity at the Pallikarani marsh," says Thirunaranan.

At the Perumbakkam wetland, the pintail, the northern shoveler and the garganey are now sighted, but their numbers need to pick up.

Thirunaranan notes the common teal has also arrived, being found in the core area of the Pallikaranai marsh. “An impressive number of Eurasian wigeons is also seen in the core area, and this species’ arrival at this hour indicates a great birding season is ahead of us,” he elaborates.

A flock of black-winged godwits was sighted on October 28 at the Perumbakkam wetland. But generally, waders are coming across as laggards this season.

Until the time the waterbirds mass up at the Perumbakkam wetland, nature enthusiasts can pay their undivided attention to the raptors.

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