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# CLIMATE NEARS POINT OF NO RETURN AS LAND, SEA TEMPERATURES BREAK RECORDS - EXPERTS

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

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June 30, 2023 05:55 pm | Updated 07:58 pm IST

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The target of keeping long-term global warming within 1.5 degrees Celsius (2.7 Fahrenheit) is moving out of reach, climate experts say. | Photo Credit: AP

The target of keeping long-term [global warming](#) within 1.5 degrees Celsius (2.7 Fahrenheit) is moving out of reach, climate experts say, with nations failing to set more ambitious goals despite months of record-breaking heat on land and sea.

As envoys gathered in Bonn in early June to prepare for this year's annual climate talks in November, average global surface air temperatures were more than 1.5°C above pre-industrial levels for several days, the EU-funded Copernicus Climate Change Service (C3S) said.

Though mean temperatures had temporarily breached the 1.5°C threshold before, this was the first time they had done so in the northern hemisphere summer that starts on June 1. Sea temperatures also broke April and May records.

"We've run out of time because change takes time," said Sarah Perkins-Kirkpatrick, a climatologist at Australia's University of New South Wales.

**Explained | [Why is the 1.5 degree Celsius target critical?](#)**

As climate envoys from the two biggest greenhouse gas emitters prepare to meet next month, temperatures broke June records in the Chinese capital Beijing, and extreme heatwaves have hit the United States.

Parts of North America were some 10°C above the seasonal average this month, and smoke from forest fires blanketed Canada and the U.S. East Coast in hazardous haze, with carbon emissions estimated at a record 160 million metric tons.

In India, one of the most climate vulnerable regions, deaths were reported to have spiked as a result of sustained high temperatures, and extreme heat has been recorded in Spain, Iran and Vietnam, raising fears that last year's deadly summer could become routine.

Jitendra Kumar, a paramedic who travels in ambulance, washes his face with water to cool himself off after dropping a patient at Lalitpur district hospital, in Banpur, in Indian state of Uttar

Pradesh, Saturday, June 17, 2023. | Photo Credit: AP

Countries agreed in Paris in 2015 to try to keep long-term average temperature rises within 1.5°C, but there is now a 66% likelihood the annual mean will cross the 1.5°C threshold for at least one whole year between now and 2027, the World Meteorological Organization predicted in May.

High land temperatures have been matched by those on the sea, with warming intensified by an El Nino event and other factors.

Global average sea surface temperatures hit 21°C in late March and have remained at record levels for the time of year throughout April and May. Australia's weather agency warned that Pacific and Indian ocean sea temperatures could be 3°C warmer than normal by October.

Global warming is the major factor, said Piers Forster, professor of climate physics at the University of Leeds, but El Nino, the decline in Saharan dust blowing over the ocean and the use of low-sulphur shipping fuels were also to blame.

"So in all, oceans are being hit by a quadruple whammy," he said. "It's a sign of things to come."

Thousands of dead fish have been washing up on Texan beaches and heat-induced algal blooms have also been blamed for killing sea lions and dolphins in California.

Warmer seas could also mean less wind and rain, creating a vicious circle that leads to even more heat, said Annalisa Bracco, a climatologist at the Georgia Institute of Technology.

**Explained | [Did climate change really make the U.P. heatwave twice as likely?](#)**

Though this year's high sea temperatures are caused by a "perfect combination" of circumstances, the ecological impact could endure, she said.

"The ocean is going to have a very slow response as it accumulates (heat) slowly but also keeps it for very long."

Climate experts say the extent and frequency of extreme weather is increasing, and this year has also seen punishing droughts across the world, as well as a rare and deadly cyclone in Africa.

The Worldwide Fund for Nature, however, warned of a "worrying lack of momentum" during climate talks in Bonn this month, with little progress made on key issues like fossil fuels and finance ahead of November's COP28 climate talks in Dubai. "It was very detached from what was going on outside of the building in Bonn - I was very disappointed by that," said Li Shuo, Greenpeace's senior climate adviser in Beijing.

"We are really getting to the moment of truth ... I am hoping that the sheer reality will help us change people's moves and change the politics."

Talks between the United States and China could resume next week with U.S. climate envoy John Kerry set to visit Beijing, though few expect it to add momentum to climate negotiations.

"This is more a trust-building exercise," Li said. "I don't think either side will be able to push the other side to say much more than they are willing to do - the politics won't allow that."

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# KING CHARLES AND QUEEN CAMILLA GIVE ENVIRONMENTAL AWARD TO INDIAN CONSERVATIONISTS

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

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July 01, 2023 05:58 pm | Updated 05:58 pm IST - London

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Britain's King Charles III and Queen Camilla presents the members of the The Real Elephant Collective, with their Mark Shand Award and Kartiki Gonsalves, third right, with the Tara Award at the Animal Ball at Lancaster House, in London, on June 28, 2023, to mark the 20th anniversary of wildlife conservation charity Elephant Family. | Photo Credit: AP

Britain's King Charles III and Queen Camilla presented the coveted Elephant Family environmental award to Indian conservationists — filmmaker Kartiki Gonsalves behind [Oscar-winning documentary 'The Elephant Whisperers'](#) and the Real Elephant Collective (TREC) of 70 Adivasi artists — at a ceremony here.

Gonsalves received the Tara Award, inspired by the sacred bond between elephants and humans to recognise extraordinary achievements in storytelling and advocacy for coexistence.

The debut director of *'The Elephant Whisperers'* collected the award, an elephant statuette as a nod to the wildlife conservation charity Elephant Family, from the royals at an Animal Ball at Lancaster House on Wednesday.

"This powerful film explores the profound connection between humans and elephants through the heartwarming story of Raghu, an orphaned elephant from the same herds depicted in TREC's sculptures. Gonsalves dedicated her award to Mother India and the idea of coexistence, emphasising the importance of respect for indigenous communities and empathy towards all living beings," the Elephant Family said in a statement.

*'The Elephant Whisperers'*, which won the 2023 Academy Award for Best Documentary Short Film earlier this year, captures the inspiring journey of an indigenous couple as they nurture and care for Raghu, forming an unbreakable bond with the elephant.

**Also read | ['The Elephant Whisperers' documentary review: A strikingly-lush safari on the co-existence of man and nature](#)**

The Elephant Family said the globally acclaimed documentary stands as a "testament to the beauty of India's wilderness, the wisdom of tribal communities, and the empathy that exists



between people and animals who share the same space”.

“As Kartiki Gonsalves, a true champion for wildlife and nature, receives this esteemed award, Elephant Family honours her unwavering dedication and unyielding enthusiasm towards the preservation of our natural world,” it noted.

Meanwhile, TREC was awarded the Mark Shand Award, named in honour of the late founder of Elephant Family — an international NGO dedicated to protecting the Asian elephant from extinction in the wild.

TREC was conferred the award for their five-year meticulous work in creating the CoExistence Herd of intricate sculptural representations of wild elephants they coexist with.

Led by Shubhra Nayar, a graduate of the National Institute of Design (NID) in Ahmedabad, her husband Dr Tarsh Thekaekara, a pioneering conservationist, and Subhash Gautam, a coffee planter, livelihoods expert, and businessman, TREC’s extraordinary work has had a profound impact, the Elephant Family said.

“The success of TREC has paved the way for the establishment of the CoExistence Consortium, an India-wide group that brings together local experts, ecologists, anthropologists, geographers, and conservationists. Working hand in hand with communities living alongside wildlife, the consortium designs and implements coexistence solutions that prioritise the perspectives and needs of these communities,” the wildlife charity said.

Situated in the Nilgiri Hills of Tamil Nadu, an area with the highest human and elephant density in the world, TREC is credited with fostering a unique understanding and coexistence between people and wildlife.

The sculptures, made from the invasive weed *lantana camara*, provide livelihood opportunities for Adivasi communities while contributing to the removal of this harmful weed from protected areas.

Their efforts have not only benefited the environment but also enhanced the communities’ values, income, and status without compromising their indigenous way of life, according to the Elephant Family.

“Their collaborative efforts have captured the attention of millions, as over 4 million Londoners visited the CoExistence herd in June and July 2021, and the human-wildlife coexistence message reached over 20 million people through media coverage,” it added.

Elephant Family supports a wide range of projects that find ways for humans and animals to live closer together — from securing a network of wildlife corridors which act as bridges between islands of forests, to relocating busy highways that slice through primary forest.

The organisation was founded in 2003 by Camilla’s late brother Mark Shand, who was deeply passionate about protecting and supporting elephants and Asian wildlife and the Tara Award is named after his elephant.

This year’s Animal Ball was a celebration of indigenous communities, hosted by the Elephant Family in partnership with the King Charles-founded charity British Asian Trust.

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# WHITE-RUMPED VULTURE FACES A PERILOUS FUTURE IN NILGRIS' SIGUR PLATEAU

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

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July 03, 2023 12:15 am | Updated 08:13 am IST - UDHAGAMANDALAM

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Research done in the Sigur plateau in the Nilgiris between 2013 and 2017 has shown that the species' population had hovered between 152 individuals in 2013 to a peak of 167 individuals in 2017. Photo: Special Arrangement

Despite the protective measures, the future remains extremely perilous for the critically endangered white-rumped vulture (*Gyps bengalensis*) in the Sigur plateau in the Nilgiris, the last southernmost viable breeding population for the species in India.

A study has highlighted the stagnation of the population in Sigur. It was conducted by Samson Arockianathan for his doctoral thesis, 'Studies on Population, Breeding Ecology and Conservation Threats of Critically Endangered White-rumped vulture in the Mudumalai Tiger Reserve'.

Research done in Sigur between 2013 and 2017 has shown that the population had hovered between 152 individuals in 2013 to a peak of 167 individuals in 2017. Along with the late expert tracker R. Bomman, of Chemmanatham village, Mr. Samson spent the best part of four years studying the species that, along with the long-billed vulture and the Asian king vulture, inhabits the Sigur plateau.

Data from the recent synchronous vulture census in Kerala, Tamil Nadu and Karnataka have shown that the white-rumped vulture population remains roughly in the same range, with very few signs of a significant recovery from the last decade. The white-rumped and other vulture species in India have been decimated by the use of diclofenac and a few other Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) in cattle.

Vultures in Sigur are also becoming the unwitting victims of retaliatory poisoning of tigers and leopards. Mr. Samson's research has also shown that 46 white-rumped vultures died between 2013 and 2017.

"Of them, autopsies could be performed on the carcasses of only eight individuals. It emerged that these eight vultures died after consuming organophosphorus (insecticides) and urea used to poison carnivores," he said.

Anthropogenic pressures, such as cattle-grazing and poorly designed check-dams, have depleted the habitats over the last few years. Mr. Samson said the species could be wiped out from the region in the next decade unless serious protective measures were taken.

“Due to anthropogenic pressures, one of the three nesting sites of the species in the Mudumalai Tiger Reserve have been abandoned by the vultures, while another prime nesting site at Jagalikadavu has been impacted severely by the check-dams along the Sigurhalla river that have restricted water flow, killing off many Terminalia arjuna trees where the vulture nest,” he said.

B. Ramakrishnan, an assistant professor in the Department of Wildlife Biology at the Government Arts College in Udthagamandalam, said the issue of check-dams influencing the vulture habitats was taken up with the Forest Department. “The Chief Wildlife Warden has said future projects in the vulture habitats would be reviewed before approval,” he said.

Mr. Samson said the future would be bleak for the species unless targeted, species-specific conservation measures were taken in the Mudumalai Tiger Reserve. He said there were three distinct populations in the region — Bandipur and Nagarhole, Wayanad and Mudumalai. “The vulture is a colonial species. Due to anthropogenic pressures and the degrading habitat, the species is having to split up into smaller groups across Mudumalai to survive. This will definitely have an impact on how quickly the species can recover, and also on the success of future breeding seasons,” he said. The government should consider making the buffer zone of the tiger reserve into a wildlife sanctuary for vultures so that better conservation efforts could be made, he said.

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# HOW JAPAN PLANS TO RELEASE FUKUSHIMA WATER INTO THE OCEAN

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

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July 04, 2023 04:19 pm | Updated 04:19 pm IST

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Japan is set to begin pumping out more than a million tonnes of treated water from the destroyed Fukushima Daiichi nuclear power plant this summer, a process that will take decades to complete. | Photo Credit: AP

Japan is set to begin pumping out more than a million tonnes of treated water from the destroyed [Fukushima Daiichi](#) nuclear power plant this summer, a process that will take decades to complete.

The water was distilled after being contaminated from contact with fuel rods at the reactor, destroyed in a 2011 earthquake. Tanks on the site now hold about 1.3 million tonnes of radioactive water - enough to fill 500 Olympic-sized swimming pools. Here is how Tokyo Electric Power Company (Tepco) plans to deal with the water:

[Also Read | Japan marks 12 years since 2011 tsunami, Fukushima nuclear disaster](#)

Tepco has been filtering the contaminated water to remove isotopes, leaving only tritium, a radioactive isotope of hydrogen that is hard to separate from water. Tepco will dilute the water until tritium levels fall below regulatory limits before pumping it into the ocean from the coastal site.

Water containing tritium is routinely released from nuclear plants around the world, and regulatory authorities support dealing with the Fukushima water in this way.

Tritium is considered to be relatively harmless because it does not emit enough energy to penetrate human skin. But when ingested it can raise cancer risks, a *Scientific American* article said in 2014.

[Also Read | Dozens rally against Fukushima plant water release plan](#)

The water disposal will take decades to complete, with a rolling filtering and dilution process, alongside the planned decommissioning of the plant.

Tepco has been engaging with fishing communities and other stakeholders and is promoting agriculture, fishery and forest products in stores and restaurants to reduce any reputational harm

to produce from the area.

Fishing unions in Fukushima have urged the government for years not to release the water, arguing it would undo work to restore the damaged reputation of their fisheries.

Neighbouring countries have also expressed concern. China has been the most vocal, calling Japan's plan irresponsible, unpopular and unilateral.

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# WARMING CAUSES MORE EXTREME RAIN, NOT SNOW, OVER MOUNTAINS. SCIENTISTS SAY THAT'S A PROBLEM

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

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June 29, 2023 02:40 pm | Updated 02:40 pm IST

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A warming world is transforming some major snowfalls into extreme rain over mountains instead, somehow worsening both dangerous flooding like the type that devastated Pakistan last year as well as long-term water shortages. Image for Representation. | Photo Credit: PTI

A warming world is transforming some major snowfalls into extreme rain over mountains instead, somehow worsening both dangerous flooding like the type that devastated Pakistan last year as well as long-term water shortages, a new study found.

Using rain and snow measurements since 1950 and computer simulations for future climate, scientists calculated that for every degree Fahrenheit the world warms, extreme rainfall at higher elevation increases by 8.3% (15% for every degree Celsius), according to a [study](#) in Wednesday's journal *Nature*.

Heavy rain in mountains causes a lot more problems than big snow, including flooding, landslides and erosion, scientists said. And the rain isn't conveniently stored away like snowpack that can recharge reservoirs in spring and summer.

"It is not just a far-off problem that is projected to occur in the future, but the data is actually telling us that it's already happening and we see that in the data over the past few decades," said lead author Mohammed Ombadi, a Lawrence Berkeley National Laboratory hydrologist and climate scientist.

[Also Read | 28% excess rainfall in India in pre-monsoon season so far](#)

As the world has warmed to the brink of the 1.5 degree Celsius (2.7 degrees Fahrenheit) internationally agreed threshold to stem the worst effects of climate change, this study shows "every degree (Celsius) matters because it comes with an additional 15% increase" in extreme rain over mountains, Ombadi said. That per-degree rainfall boost in the mountains is more than twice the increase the rest of the world gets from warming air holding more water.

The study looked at only the heaviest rains each year over six decades in the Northern Hemisphere, finding that as altitude rose, so did the turbocharging of rain. The biggest increase

in rains were noticed at about 10,000 feet (3,000 meters). That includes much of the American West, where Ombadi said “it’s very pronounced,” as well as parts of the Appalachian Mountains. Another big hotspot in Asia is the Himalayas, Tian Shan and Hindu Kush mountains, with the Alps also affected.

About one in four people on Earth live in an area close enough to the mountains or downhill that extreme rain and flooding would hit them, Ombadi said.

It means more of the type of flooding off the mountains like the one that killed more than 1,700 people in Pakistan and put one-third of the country underwater, Ombadi said. But he noted that they haven’t studied Pakistan’s 2022 floods precisely so there may be some small differences.

[Also Read | Bengaluru receives monsoon showers, rains likely to last for the next five days](#)

The study makes sense and “the implications are serious,” said UCLA climate hydrologist Park Williams, who wasn’t part of the research. Scientists expect more precipitation with warmer temperatures, but heavy snow’s flooding impact is lessened because it takes time to melt and it’s easier to monitor snowpack to see what’s happening, he said.

“But as the proportion of mountain precipitation falling as snow decreases, flood hazards may enhance especially rapidly,” Williams said.

In the American West it hits hard in different ways, said study co-author Charuleka Varadharajan, a hydrologist.

“This kind of extreme rainfall is going to make the floods worse. And then you’ve got to figure out where is that water going?” she said, noting some of the flooding woes the West already dealt with this year in the wake of a series of atmospheric rivers and melting snowpack.

The flooding also can hurt food production, Ombadi said. He pointed to California Department of Agriculture estimates of \$89 million in crop and livestock losses from torrential rains in 1997.

But in the long term, another problem is water supply. When the West gets heavy snowfall in the winter, that snow melts slowly in spring and summer, filling reservoirs where it can be useful when it’s needed later.

“It’s going to decrease your snow, your water supply in the future,” Varadharajan said. “You’re going to have more short-term runoff leading to more floods and less snowpack that recharges the groundwater and the groundwater is ultimately what helps maintain stream flows.”

“These mountainous systems are supplying most of the water in the West so any decreases in water supply would be pretty significant in terms of water management,” she said.

In times of drought – and much of the West is coping with a more than 20 year-long megadrought – water managers like to keep water levels high in reservoirs, which they can do with heavy snowpacks because it melts slowly, Williams said. But they can’t do that with heavy rainfall.

So as warming causes rainier extremes, society is going to have to choose between cutting water use because of low water levels in reservoirs to absorb a possible large sudden mountain runoff event or building expensive new reservoirs, Williams said.

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# IN UNITED ARAB EMIRATES, STRUGGLING SEA TURTLES GET A HELPING HAND

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

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June 29, 2023 01:31 pm | Updated 01:31 pm IST

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Children comfort a sea turtle to release at a hotel on Saadiyat Island of Abu Dhabi, United Arab Emirates, Tuesday, June 6, 2023. As sea turtles around the world grow more vulnerable due to climate change, the United Arab Emirates is working to protect the creatures. | Photo Credit: AP

The baby sea [turtle](#) flapped its flippers as it was lowered into the ocean, only to be pushed back ashore by the strong tide. It tried again, and this time it made it, swimming fast and deep into Persian Gulf waters lapping at a string of beachfront tourist resorts.

Scientists hope the turtle will thrive back in its natural habitat, joining about 500 sea turtles that have been rescued, rehabilitated and released since Abu Dhabi's Environment Agency launched a program three years ago to aid turtles distressed by climate change and other issues.

In the latest release in early June, about 80 turtles were carried to the water's edge by members of the agency's Wildlife Rescue Program, joined by members of the community. Many were outfitted with satellite tracking gear to help scientists better understand migration patterns and the success of rehabilitation methods.

[Also Read | A mega port in India threatens the survival of the largest turtles on Earth](#)

Turtles have historically been hunted for their meat and eggs, with their shells used in jewellery. But plenty of manmade factors figure into a decline in all seven sea turtle species.

"We see issues such as plastic pollution causing harm, vessel strikes, nets causing them to be entangled in them, and coastal development, which reduces the amount of nesting habitat they have available," says Hind al-Ameri, assistant scientist at the Environment Agency Abu Dhabi.

Climate change is a big contributor, researchers say.

Warming oceans harm coral reefs, which turtles need to survive, and shift currents to expose turtles to new predators. Rising sea levels diminish the beaches where the turtles nest and lay their eggs.

Abu Dhabi's isn't the only agency in the Emirates focused on aiding sea turtles. Emirates Nature-WWF launched a pair of marine conservation initiatives more than a decade ago,

studying the behaviour of the hawksbill and green turtles in the region.

And the Dubai Turtle Rehabilitation Project has been helping sick and injured sea turtles for nearly two decades, rehabilitating and returning more than 2,000 turtles to the Persian Gulf in that time.

Scientists say they see evidence that the sea turtles are adapting to climate change.

Turtle gender is influenced by the temperature in which eggs develop, with warmer temperatures producing a higher ratio of female turtles. Al-Ameri said conditions in the United Arab Emirates have become so warm that the male population should be devastated — but it is healthy and reproducing.

“So it’s driving us to understand why our species are adapting the way they are and what it would mean in terms of climate change and would turtles be able to adapt to climate change in the future or not,” she said.

How the planet can limit global warming, and its damaging effects on sea turtles and the rest of the world, will be discussed at length in November when Dubai hosts the next United Nations summit on climate change.

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## EXPLAINED

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July 09, 2023 05:26 pm | Updated 05:26 pm IST

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A pair of excavators dig up coal at a mine in Poland, June 30, 2020. | Photo Credit: Curioso Photography/Unsplash

[Carbon dioxide emissions](#) and the circular economy are both hot topics these days. While emissions are the problem, circular economy could be the solution, at least a partial one.

Our current economy is built on a linear model: we take the required natural resources from the ground, make products out of them, use them, and then throw them away at the end of their lives. This model is not sustainable.

The alternative is the circular model: take, make, use, recycle, reuse. Here, we extend the lives of products and use the waste they create as a resource with which to recreate similar or other products. This way, our dependence on natural resources can go down without compromising on our comforts or economic growth.

Now, can we create a circular economy for carbon dioxide (CO<sub>2</sub>) as well?

As we continue to burn fossil fuels and destroy our natural habitats, CO<sub>2</sub> continues to accumulate in the atmosphere. Heat reflected by the earth doesn't all escape to space; some of it is trapped by atmospheric CO<sub>2</sub> and other greenhouse gases, leading to warmer land and oceans, accelerating ice melt, sea-level rise, and extreme weather events. As a result, we have food shortages, disease, loss of lives and property, forced migrations, and considerable suffering.

We need to stop emitting 'new' CO<sub>2</sub> as well as remove some of the CO<sub>2</sub> piled up in the atmosphere. There are a few ways to do the latter, with natural systems or human-made technologies.

Our planet has a rich biosphere, hydrosphere, and land mass, all of which are capacious carbon sinks. Trees and plants absorb CO<sub>2</sub> as they grow, storing carbon in their biological mass. The oceans absorb and store CO<sub>2</sub> through contact with air. The cycle of marine life – particularly as the mortal remains of fishes and plankton sink to the seafloor, where they are decomposed and the nutrients from their bodies are infused into the ecosystem there – also contributes. Soils hold carbon through microbial organisms and bubbles of air. The global temperature would have risen much more if these natural carbon sinks were not at work.

Then, there are negative emission technologies developed to suck CO<sub>2</sub> out of the atmosphere, called 'direct air capture'. CO<sub>2</sub> emitted as part of industrial processes can also be captured at source using 'carbon capture and utilisation' techniques. The CO<sub>2</sub> thus obtained can be used to make items such as carbonated drinks, dry ice, fire retardants, and some chemical compounds. It can also be used in concrete curing and textile dyeing. These pathways open up the way to a fully circular economy.

The captured CO<sub>2</sub> can also be used to synthesise clean high-efficiency fuel for aviation, shipping or long-distance trucking, where, instead of letting CO<sub>2</sub> collect in the atmosphere, we bring it back and repurpose or resynthesise it as a fuel. Some companies have been able to do this already, although just at lab-scale.

Biofuels, which are made from biomass or biowaste, have also been envisaged as part of a circular economy for carbon. CO<sub>2</sub> is absorbed by plants; the biomass and biowaste from these plants are then converted into biofuels, which can be combusted in engines, causing the released CO<sub>2</sub> to reenter the atmosphere. This atmospheric CO<sub>2</sub> is once again absorbed by plants and the cycle continues. Of course, care needs to be taken that there are no detrimental effects on the environment or society due to land-use change and an incentive to grow plants for fuel rather than for food.

Carbon and CO<sub>2</sub> are an essential part of our life and economy, and we can't wish them away. Energy transition to renewables is a slow process. The shift to electric vehicles will take time and is wrought with issues ranging from the availability and mining of precious metals to the availability of stable battery technologies. Decarbonisation of steel, cement, and plastics manufacturing will also take time. Livestock will continue to emit methane (plant-based meat could be an alternative, such as the product for which the U.S. Food and Drug Administration recently cleared the way). Amidst all this, creating a circular economy for carbon may only be a panacea for the short term.

Creating a true circular economy for carbon will require multiple approaches, methods, experiments, and projects. Some of these experiments and projects are already commercial but only at small scale, while others are still being prototyped and tested.

Right now, the missing piece of the puzzle for generating fuel out of CO<sub>2</sub>, apart from commercial technology, is the energy required to capture and repurpose the CO<sub>2</sub>. There is more energy required to capture CO<sub>2</sub> and convert it into a litre of fuel than the energy that this new litre of fuel will produce. So the day we solve this conundrum, we will have taken the first step towards a truly circular economy for carbon-based fuels. Reducing our fossil fuels consumption thereafter should be easier – and we can also be less stressed about the atmospheric concentration of CO<sub>2</sub>. But note here that the energy we use to capture and repurpose CO<sub>2</sub> should be clean energy.

True to the saying 'what goes up must come down', we can achieve net-zero CO<sub>2</sub> additions by using the stock of atmospheric CO<sub>2</sub> over and over again. The rest of captured CO<sub>2</sub> can be stored in the ground and lie there for aeons.

*Rajan Mehta recently completed a fellowship from Harvard University, where he focused on climate change and circular economies. He can be reached at [rm@climateactionlabs.org](mailto:rm@climateactionlabs.org).*

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# OBJECTIONS OVERRULED, FOREST BILL GOES TO HOUSE UNCHANGED

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

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July 09, 2023 10:16 pm | Updated July 10, 2023 09:44 am IST - NEW DELHI

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A view of Shola forests in Sakleshpur. File | Photo Credit: The Hindu

A Parliamentary committee, set up to examine controversial proposed amendments to the [Forest \(Conservation\) Act, 1980](#), has endorsed the amendment Bill in its entirety. *The Hindu* has viewed a draft copy of the report prepared by the 31-member joint committee on the [Forest \(Conservation\) Amendment Bill, 2023](#) that is expected to be tabled in Parliament ahead of the monsoon session on July 20.

The Bill seeks to amend the pivotal 1980 law which was enacted to ensure that India's forest land is not wantonly usurped for non-forestry purposes. The Act empowers the Centre to require that any forest land diverted for non-forestry purposes be duly compensated. It also extends its remit to land which is not officially classified as 'forest' in State or Central government records.

While the Act has been amended several times in the last few decades — mostly in the spirit of bringing larger tracts of forest-like land under State protection — the latest set of amendments are different. According to the Centre, these amendments are necessary to "...remove ambiguities and bring clarity about the applicability of the Act in various lands."

Some of the proposed amendments specify where the Act does not apply. Other amendments specifically encourage the practice of cultivating plantations on non-forest land that could, over time, increase tree cover, act as a carbon sink, and aid India's ambition of being 'net zero' in terms of emissions by 2070. The amendments would also remove the 1980 Act's restrictions on creating infrastructure that would aid national security and create livelihood opportunities for those living on the periphery of forests.

The report states that the joint committee, chaired by BJP MP Rajendra Agrawal, analysed the Bill "clause by clause" and invited representations from 10 Central Ministries, as well as views from Chattisgarh, Maharashtra and Telangana, from experts, individuals, and representatives of public sector units.

The report notes that objections were raised to various aspects of the Bill, including complaints that the proposed amendments "diluted" the [Supreme Court's 1996 judgement](#) in the [Godavarman](#) case that extended protection to wide tracts of forests, even if they were not recorded as forests. The Environment Ministry refuted this point and argued that provisions in

the Bill guarded against such situations.

Construction of highways, hydel power projects and other such projects in geographically sensitive areas within 100 km of international borders or the Line of Control will no longer require a forest clearance, an amendment that was “deeply problematic”, a member noted. The Environment Ministry responded that such exemptions were not “generic” and were unavailable to private entities.

There were even objection to the proposal to change the name of the 1980 law from the Forest (Conservation) Act to the Van (Sanrakshan Evam Samvardhan) Adhiniyam, which literally translates to Forest (Conservation and Augmentation) Act. The objections were on the grounds that it was “non-inclusive” and left out “vast tracks of population both in South India and also in the North-East.” Environment Ministry officials defended the name change, saying that it stressed the need to not only conserve but also “augment” forests, and that forest conservation involved much more than according “clearances.”

The amendments were only introduced in the Lok Sabha on March 2023 but a draft copy has been in the public domain, for comment, since June 2022. This has invited opposition from multiple quarters, including some north-eastern States who objected that vast tracts of forest land would be unilaterally taken away for defence purposes. There was also opposition from several environmental groups who said that the amendments removed Central protection from vast tracts of so-called ‘deemed forest’ (forested areas not officially recorded as ‘forests’) and would permit activities such as tourism in these areas, compromising their integrity.

The Lok Sabha moved a motion to refer the Bill to a joint committee, which was seconded by the Rajya Sabha. Jairam Ramesh, Congress spokesperson and chair of the Standing Committee on Science, Environment and Forests, had objected to the Bill being moved to a joint committee instead of the standing committee. The 31-member joint committee has 21 members from the Lok Sabha and 10 from the Rajya Sabha. Of these, 18 belong to the ruling BJP.

Explained | [Why is the tribal panel upset with Environment Ministry over forest rights?](#)

‘Forest cover’, in India, refers to land greater than one hectare in size where the tree canopy density is greater than 10%. India’s total forest cover rose to 38,251 sq. km from 2001 to 2021. This increase was mainly in terms of open forest cover, where tree canopy density ranges from 10% to 40%. Forest cover in regions classified as ‘dense forest’ actually decreased during that period. The amendments which encourage plantation cultivation may increase tree cover, but will be unable to stem the loss of dense forests.

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# DON'T WASTE THE WASTEWATER

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

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July 11, 2023 12:15 am | Updated 12:15 am IST

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Untreated wastewater in the Thevara-Perandoor canal in Kochi. | Photo Credit: H. Vibhu

John Snow, a physician in London, found himself in the middle of a devastating cholera outbreak in 1854. In a painstaking investigation in the densely populated Soho district, he traced the source of the epidemic to a contaminated water pump on Broad Street, before knowledge of the causative organism. The epidemic subsided when the pump handle was subsequently removed. Snow's work underscores the potential of disease prevention and control. It also leads us to a tantalising question: What could he have achieved with the tools of today? Could he have sounded the alarm at the earliest stages that an outbreak was imminent?

This hypothetical scenario is now a tangible reality. A recently published study in *The Lancet Global Health* reiterated the promise of using wastewater for public health surveillance. This strategy, originally proposed more than 80 years ago to monitor the spread of poliovirus within communities, played a role in confirming India's victory over poliovirus. It gained fresh relevance during the COVID-19 pandemic, when it was identified as an approach for tracking the spread of SARS-CoV-2.

Wastewater surveillance for known or new health threats offers many benefits for enhancing public health efforts. It is a cost-effective approach that does not rely on invasive samples from individuals with clinical symptoms. While our public health surveillance system has improved in recent years, it still faces many implementation challenges. For instance, according to a recent report by Niti Aayog, the system grapples with issues like uneven coverage and siloed disease-specific efforts. Incorporating wastewater surveillance will not fix these issues, but it could help reduce the reliance on any one source of data. In practical terms, wastewater surveillance in India could involve systematic sampling and analysis of samples from varied sources such as wastewater ponds in rural areas and centralised sewage systems in urban localities. These samples would undergo testing at designated laboratories to identify markers of disease-causing agents, such as genetic fragments of bacteria or viruses. These data could be compiled together with other source of health data to provide real-time insights into community-level disease patterns, sometimes earlier than clinical data.

The integration of wastewater surveillance with existing surveillance mechanisms could help amplify India's epidemiological capabilities. For instance, efforts to strengthen public health laboratory networks could incorporate the testing of wastewater samples into surveillance reporting. This could strengthen the capacity to detect diseases at an early stage, including in areas where access to healthcare facilities and diagnostic testing might be limited.

Additionally, the Ayushman Bharat Digital Mission, which aims to create a seamless online platform for healthcare services, offers an opportunity for the integration of wastewater surveillance. This would allow for real-time tracking of disease spread and facilitate more effective, targeted public health responses. Successful integration will rely on public health professionals trained not only in traditional epidemiological methods, but also in the management and interpretation of data derived from wastewater surveillance.

The promise of wastewater surveillance hinges on data sharing. This is not just a domestic issue, but also an international consideration. It is crucial to cultivate an environment of accessibility and cooperative strategies among appropriate agencies, within and beyond borders. Internally, providing access to wastewater surveillance data to health departments at all levels of government can amplify our capabilities for disease monitoring and response. Sharing wastewater surveillance data with global health agencies could foster collaborative efforts in disease tracking and mitigation. This can be a key element in building a robust global health infrastructure capable of rapidly responding to public health threats.

It is encouraging that India has already championed public health surveillance and mobilised resources accordingly. Current discussions have noted the importance of innovation and implementation. The integration of wastewater surveillance is fully aligned with Niti Aayog's current vision. Other innovative forms of disease surveillance include social media surveillance and occupational health surveillance.

India's leadership at international platforms like the G20 could serve as an opportunity to elevate the significance of innovative approaches to disease surveillance. With the world's attention focused on global health security in the wake of recent pandemics, these forums provide an opportunity to advocate for enhanced public health surveillance that integrates wastewater sampling as an essential component of health infrastructure. By actively pushing this agenda, India could not only call for international commitments and support, but also position itself as a leader and coordinator in this field. Through strategic collaborations and proactive leadership, India can lead the way in integrated public health surveillance, offering a model that is alert, predictive, responsive, and robust. With a dedicated public health and management cadre driving implementation, India can help realise this vision.

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# GREEN WASHING: THE HINDU EDITORIAL ON AMENDMENTS AND THE FOREST (CONSERVATION) AMENDMENT BILL, 2023

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

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July 12, 2023 12:20 am | Updated 01:17 am IST

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The Forest (Conservation) Amendment Bill, 2023, that is being deliberated upon by a Joint Committee of Parliament, is a contentious piece of legislation that signals the complex challenges involved in balancing industrial development and the conservation of forests. While industrialisation inevitably means usurping greater tracts of forest land and ecosystems, the Forest (Conservation) Act, 1980 has been the mantlepiece legislation that has empowered the state to regulate this and impose costs on such industrial exploitation. Originally meant for notified forests, a landmark Supreme Court judgment, in the T.N. Godavarman Thirumalpad case (1996), among other things, broadened the scope of such protection to even those not officially classified so. India's forest cover has seen only marginal increases, as biennial reports of the Forest Survey of India illustrate. Growth in forest cover inside officially recorded forests is stagnant, or at best incremental. It is tree cover in orchards, plantations and village homesteads that has been on the rise and supplementing India's claim that 24% of its area is under forest and tree cover. India has committed to increasing this number to 33% and adding a carbon sink of 2.5 billion to 3 billion tons of carbon dioxide this way, by 2030, as part of its international climate commitments.

The existing Forest (Conservation) Act, 1980 — in the Environment Ministry's reckoning — was insufficient for these ends, as it did not incentivise private agro-forestry and tree plantation activities. From 2019 to 2021, India added 1,540 square kilometres of forest cover of which 1,509 sq. km was outside recorded forest area. The new amendments to the Forest Act gave such incentives by clearly defining the limits of the 1996 judgment. Only land recorded as 'forest' in any government record on or after 1980 would invoke provisions of the Act. Forest land authorised by States for non-forestry uses between 1980-1996 would not invoke provisions of the Act. The amendments effectively mean States can no longer classify unclassified forest land, or patches of trees with forest-like characteristics as 'forest land'. The amendments also allow forest land, up to 100 km near India's borders, to be appropriated, without central approval, for "strategic and security" purposes. The primary criticism is that these amendments do not really contribute to regenerating natural forest, but rather incentivise afforestation for commercial ends. What is worrying is that the parliamentary committee, despite its statutory privileges, has not expressed any opinion or suggestion on the way forward. Grooming private forests might look good in theory but expecting them to be a permanent carbon stock is wishful thinking given that strong market incentives exist to use them as 'carbon credits'. While new climate realities might necessitate changes to the way conservation laws are interpreted, these must be backed by

rigorous scientific evidence.

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# SIX OPPOSITION MEMBERS FILE DISSENT NOTES ON FOREST CONSERVATION BILL

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

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July 11, 2023 09:09 pm | Updated July 12, 2023 08:48 am IST - New Delhi

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The Bill is expected to be tabled in Parliament in the monsoon session that starts on July 20.

File Photo: Special arrangement

At least six out of the 31 members of the Joint Parliamentary Committee on [Forest \(Conservation\) Amendment Bill](#), have filed dissent notes, raising an alarm over exemptions extended to significant tracts of land in the draft legislation, even as the panel [cleared the controversial Bill without proposing any changes](#).

The Bill is expected to be tabled in Parliament in the monsoon session that starts on July 20.

The dissenting members are Congress MPs Pradyot Bordoloi (from the Lok Sabha) and Phulo Devi Netam (Rajya Sabha); Trinamool Congress MPs Jawahar Sircar (Rajya Sabha) and Sajda Ahmed (Lok Sabha); and DMK MPs T.R. Baalu and R. Girirajan. The Bill seeks to amend the Forest (Conservation) Act, 1980, that was brought in to check uncontrolled and unregulated use of forest land for various non-forestry uses.

**Also read:** [Forest \(Conservation\) Amendment Bill, 2023 | Jungle book vs rule book](#)

Both the Congress and Trinamool members have raised objections to amendment that provides exemption for the lands, "situated within a distance of 100 km along international borders or Line of Control or Line of Actual Control," for "construction of strategic linear projects of national importance and concerning national security".

The Congress MPs noted that this clause could prove detrimental to significant forests in Himalayan, trans-Himalayan and north-eastern regions. Clearing such forests without proper assessment and mitigation plan will not only threaten the biodiversity of vulnerable ecological and geologically sensitive areas but also could trigger extreme weather events, they said. Mr. Sircar, the Trinamool MP, recommended that the State governments concerned should also be consulted before clearing the forests in such sensitive areas. He also recommended that instead of extending the exemption to all lands within a distance of 100 km along international borders, it should be limited to area along the "Himalayan" borders.

The Congress and Trinamool have also opposed the amendment that restricts the Forest Conservation Bill's ambit only to the lands that are recorded as forests on or after October 25,

1980. The Congress argued that this amendment will leave out a significant section of the forest land, and many biodiversity hotspots can now be potentially sold, diverted, cleared and exploited for non-forestry purposes.

Members from all the three parties dissented against the move to rename the Bill Van (Sanrakshan Evam Samvardhan) Adhiniyam, instead of the existing Forest (Conservation) Act. Mr. Bordoloi noted that the new terminology leaves out non-Hindi speaking population, while DMK's Girirajan, said that such "Sanskritic terminology is untenable".

The DMK members also said that the amended Act infringed on the State government's rights. Forests and its conservation come under the Concurrent List and the State government has administrative control over it, they said. "Therefore assigning all powers to the Central government infringes on the federal rights of the State governments," Mr. Girirajan said.

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# ONE MORE AFRICAN CHEETAH, TEJAS, DIES IN M.P.'S KUNO NATIONAL PARK

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

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July 11, 2023 08:44 pm | Updated 08:44 pm IST - Bhopal

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A cheetah at Kuno National Park, in Sheopur, on June 6, 2023. | Photo Credit: PTI

One more African cheetah died in [Madhya Pradesh's Kuno National Park](#) (KNP) on July 11, a senior forest department official said.

The male cheetah, Tejas, was brought to KNP in Sheopur district from South Africa in February this year.

“Cheetah Tejas, aged around four years, died in KNP due to suspected infighting,” Principal Chief Conservator of Forest (PCCF) Wildlife J.S. Chauhan told *PTI*.

**Also read: [Death of 2 cheetahs: M.P. Forest Department writes to Centre to seek 'alternate site' for spotted animals](#)**

The feline, brought from South Africa as part of the ambitious cheetah reintroduction programme, was in an enclosure at the time of the incident, the official said.

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# WHAT IS WORSE THAN EXTREME HEAT? EXTREME HEAT PLUS AIR POLLUTION

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

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July 11, 2023 04:56 pm | Updated 06:00 pm IST

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Heat waves and air pollution from wildfire smoke and other sources are each problematic for human health, particularly for vulnerable populations such as older adults. | Photo Credit: AP

Heat waves and [air pollution](#) from wildfire smoke and other sources are [each problematic](#) for [human health](#), particularly for vulnerable populations such as older adults. But what happens when they hit at the same time?

We examined over 1.5 million deaths from 2014 to 2020 registered in California – a state prone to summer heat waves and air pollution from wildfires – to find out.

The number of deaths rose both on hot days and on days with high levels of fine particulate air pollution, [known as PM2.5](#). But on days when an area was hit with a double whammy of both high heat and high air pollution, the effects were much higher than for each condition alone.

The risk of death on those extra-hot and polluted days was about [three times greater](#) than the effect of either high heat or high air pollution alone.

**Also Read | [Bengaluru air five times worse than WHO guidelines, finds Greenpeace India study](#)**

The more extreme the temperatures and pollution, the [higher the risk](#). During the top 10% of hottest and most polluted days, the risk of death increased by 4% compared to days without extremes. During the top 1%, it increased by 21%; and among older adults over age 75, the risk of death increased by more than a third on those days.

There are several ways the combined exposure to extreme heat and particulate air pollution can harm human health.

Oxidative stress is the most common biological pathway linked with particulate air pollution and heat exposure. [Oxidative stress](#) is an imbalance between production of highly reactive molecules known as reactive oxygen species, or ROS, and the body's ability to remove them. It's been linked with [lung diseases](#), among other illnesses.

Antioxidants help clean up these molecules, but particulate air pollution and heat disrupt this balance through excessive metabolic ROS production and lowered antioxidant activity.

Our research also showed that the effects of particulate air pollution and heat extremes were [larger when high nighttime temperature and pollution occurred together](#). High nighttime temperatures can [interfere with normal sleep](#) and potentially contribute to chronic health conditions such as [heart disease](#) and [obesity](#), and disrupt how the body regulates temperature.

Older adults may be more susceptible to effects of extreme heat and air pollution exposure, in part because this stress comes on top of age-related chronic health conditions like heart disease, high blood pressure, diabetes or chronic lung disease. [Impaired body temperature regulation](#) in response to heat can also occur with aging. And older adults may be less mobile and therefore less able to get to cooling centers or to medical care and be less able to afford air conditioning.

This isn't just a California problem. Climate change will increase exposure to high heat and air pollution in many parts of the country.

Yearly average temperatures in the U.S. are already more than 1.8 degrees Fahrenheit (1 degree Celsius) warmer than at the beginning of the 1900s. By the end of this century, global temperatures are on pace to be [nearly 5 F \(2.7 C\) warmer](#). Dangerous extreme heat waves, currently rare, will [become more common](#).

**Also Read | [Curbing air pollution in India needs efforts across South Asia: World Bank report](#)**

Changing climate is also [affecting levels](#) of outdoor fine particulate pollution – for example, through weather changes such as air stagnation events, wind and dust storms, and drier and warmer conditions that [contribute to increasingly frequent and intense wildfires](#).

Further research is needed to better understand these effects, such as the full impact of wildfire smoke exposure. However, enough is known that people should take measures to reduce their risk of harm during periods of extreme heat or air pollution.

That means staying [well hydrated and keeping cool](#). Shopping malls and other air-conditioned public spaces can provide a refuge from heat. Home air conditioning, especially during nighttime, can reduce mortality. A portable air filter in the bedroom can [markedly reduce particle pollution levels](#).

People with [symptoms of heat stress](#), such as headache, nausea, dizziness or confusion, especially the elderly, should seek medical care.

Many county and state health departments already provide alerts about extreme heat and extreme air pollution. Developing a special category of alert during co-occurring extremes may be beneficial to public health.

Governments also need to take steps now to avoid the worst future climate change scenarios. Some best practices for cities include creating cooling shade cover and green space that will also reduce particle pollution.

[Erika Garcia](#), Assistant Professor of Population and Public Health Sciences, [University of Southern California](#); [Md Mostafijur Rahman](#), Postdoctoral Scholar and Research Associate in Environmental Health, [University of Southern California](#), and [Rob Scot McConnell](#), Professor of

Population and Public Health Sciences, [University of Southern California](#)

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# WESTERN GHATS LOST 5% EVERGREEN FOREST COVER, SHOWS ANALYSIS

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

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July 14, 2023 10:45 pm | Updated 10:57 pm IST - Bengaluru

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IISc.'s Energy and Wetlands Research Group launched the Western Ghats Spatial Decision Support System (WGSDSS), which has been designed as part of the ongoing ecological research in the Western Ghats. This, researchers say, enhances governance transparency while meeting societal needs, which helps in the prudent management of ecologically and hydrologically vital Sahyadri hill ranges. | Photo Credit: Special arrangement

The Western Ghats, which is among 36 global biodiversity hotspots, saw a loss of 5% evergreen forest cover with an increase of 4.5% built-up cover, and 9% agriculture area, according to the spatiotemporal analyses of land use, highlighting anthropogenic induced developmental thrust. Fragmentation analyses also highlight that interior forest constitutes only 25% of the forest landmass, depicting the fragmentation pressure, impacting local ecology.

These revelations come from the Indian Institute of Science's Energy and Wetlands Research Group launched the Western Ghats Spatial Decision Support System (WGSDSS), which has been designed as part of the ongoing ecological research in the Western Ghats. This, researchers say, enhances governance transparency while meeting societal needs, which helps in the prudent management of ecologically and hydrologically vital Sahyadri hill ranges.

Web-based spatial decision support system (WSDSS) is designed by integrating free and open source software (GeoServer, PostgreSQL, GeoTools, OpenLayers, and integration of spatial information of Open Geospatial Consortium (OGC) standards to carry out a multiple criteria analysis. Features such as Web Map Service (WMS), and Web Feature Service (WFS) would help in accomplishing effective dissemination of the ecological, socio, economic, biodiversity, and environmental information, said the researchers.

Ecological sensitivity or fragility refers to permanent and irreparable loss of extant life forms or significant damage to the natural processes of evolution and speciation with the alterations in the ecological integrity of a region. Grid wise analysis portrays 32% of the area under ESR-1 (ecologically sensitive region) denoting very high ecological fragility, 16% (373) grids under ESR-2, which has potential to be ESR-1, 34% (789) and 18% (412) under ESR-3, and 4 respectively, with moderate and least ecological fragility. ESR analysis depicts 63,148 km<sup>2</sup> area under very higher ecological fragility, 27,646 km<sup>2</sup> under high ecological fragility, 48,490 km<sup>2</sup> as moderate and 20,716 km<sup>2</sup> as low ecological fragility.

Dr. T.V. Ramachandra from the Energy and Wetlands Research Group, Centre for Ecological Sciences, IISc said, the comprehensive knowledge of the ecological fragility of a region is quintessential for evolving strategies for conserving the area, which entails identifying factors responsible for ecological sensitiveness, including landscape dynamics, and visualising future transitions to mitigate the problems of haphazard and uncontrolled development approaches.

“The region witnessed large-scale land cover changes during the past century due to unplanned developmental activities with industrialisation and globalisation. This necessitates implementing mitigation measures involving stakeholders to address the impacts through location-specific conservation measures. Framing conservation and sustainable developmental policies entail delineation of ecologically sensitive regions by integrating bio-geo-climatic, ecological, and social factors representing dynamics of socio-ecological systems, impacts, and drivers. Analyses of ecologically sensitive regions in the Western Ghats, one among 36 global biodiversity hotspots using temporal remote sensing data, highlight serious concerns on the status of forests and conservation options,” he said, adding that the deforestation and mismanagement of these pristine ecosystems evident from deforestation and the current extent of forest ecosystems have been threatening water security with severe challenges to people’s livelihood in peninsular India.

The researchers hope that the system and its findings will help in decision making at decentralised levels, ecological researchers, students, and environment activists about the significance of the region.

Anyone can use the system. To access it, log on to <https://wgbis.ces.iisc.ac.in/sdss/wgsdss/index.php>

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## EXPLAINED

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

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July 16, 2023 04:25 am | Updated 08:25 am IST

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Tribal and forest-dwellers stage a demonstration in Bhubaneswar to submit a memorandum against the Forest Conservation Amendment Bill 2023. | Photo Credit: ANI

**The story so far:** The [Forest \(Conservation\) Amendment Bill, 2023](#) is [likely to be tabled in the monsoon session](#) of Parliament which is slated to begin from July 20. A Joint Parliamentary Committee (JPC) which was looking at amendments to the Bill has approved the version sent by the government with almost no comment, revisions or suggestions.

The Bill seeks to amend the [Forest Conservation Act, 1980](#). This is the legislation enacted to protect India's forests and empowers the Central government to regulate the extraction of forest resources — from timber and bamboo to coal and minerals — by industries as well as forest-dwelling communities. A separate Act, the Forest Rights Act, protects the rights of tribals and forest-dwellers dependent on forests for their livelihood. From 1951-1975, about four million hectares of forest land has been diverted for various non-forestry purposes. From 1980 to 2023, under the purview of the Act, only a million hectares have been diverted — a sign of its impact in reducing the pace of forest appropriation. However, such protection was only available for areas already marked out as 'forest' in Central or State government records. A Supreme Court judgment in 1996, in the *Godavarman Thirumulpad* case, expanded the scope of such protection. Under it, even areas not formally notified as 'forests' but conforming to the 'dictionary' meaning of forests were protected. There is no all-encompassing definition of a 'forest' and the *Thirumulpad* judgment directed States to define and demarcate forests using their own criteria. Not all States did, and over the years there has been considerable debate over the extent to which the judgment abetted forest conservation. India's forest policy of 1988 prescribes a third of the country's geographical area to be under forests. Realistically, only 21% is under such cover and it is about 24% if one also accounts for tree cover outside areas under recorded forest, plantations, orchards. It is to address this latter issue, the Environment Ministry says, that amendments were required to the Act.

The key changes to the Act include inserting a 'preamble' that underlines India's commitment to preserving forests, their biodiversity and tackling challenges from climate change and amending the name of the Act to Van (Sanrakshan Evam Samvardhan) Adhiniyam (translated as Forest Conservation and Augmentation) from the existing Forest (Conservation) Act. The amendments also say that the Act would only apply to lands notified in, any government record, as 'forest' on or after 1980. If notified forest land was legally diverted between 1980 and 1996, for non-forest use, the Forest Conservation Act would not apply.

## Editorial | [Green washing: On amendments and the Forest \(Conservation\) Amendment Bill, 2023](#)

Forest land situated 100 km away from international borders and to be used for “strategic projects of national importance” or land ranging from 5-10 hectares for security and defence projects would also be exempted from the Act’s stipulations. These amendments were necessary, in the Environment Ministry’s view, because private parties who wanted to develop plantations in degraded forests or restore tree patches were disincentivised to do so. A private plantation, or a reforested piece of land that wasn’t officially marked out as forest could be retrospectively earmarked — under the provisions of the Act — as such, forcing the developer of such a plantation to lose rights associated with that patch. This was an ‘impediment’ to India’s plans of developing a ‘carbon sink’ of three billion tonnes by 2030 in line with its commitments under the Paris Agreement.

On the other hand, States were also apportioning forest tracts meant for plantations to companies for mining operations — a contravention of the Act’s intent. The amendments, thus were necessary, in the Centre’s view, to craft new solutions beyond the Act’s original intent of only keeping forests from being exploited for industrial uses and, to aid reforestation.

The JPC consists of 31 members, 18 of whom are from the Bharatiya Janata Party. Usually bills that are sent to the Standing Committee or Select Committees of Parliament are thoroughly investigated by members who in their report present their own independent assessment of views put forth by multiple stakeholders. While a final report is yet to be tabled, a draft version viewed by *The Hindu* suggests that the committee has made no collective, independent assessment. There are dissent notes filed by six members — all incidentally from Opposition parties including the Congress, the Trinamool Congress and the Dravida Munnetra Kazhagam. The amendments have been in the public domain since June 2022 and has invited thousands of comments from non-governmental organisations, think tanks and tribal communities. The key objections are that the exemptions could be detrimental to significant forests in the Himalayan, trans-Himalayan and northeastern regions. Clearing such forests without an appropriate “assessment and mitigation plan” will threaten the biodiversity of “vulnerable ecological and geologically sensitive areas” and trigger extreme weather events. Other objections are that restricting the legislation’s ambit only to areas recorded as forests on or after October 25, 1980 would mean leaving out significant sections of forest land and many biodiversity hot spots to be potentially sold, diverted, cleared, and exploited for non-forestry purposes. There is also dissent against the move to rename the bill as Van (Sanrakshan Evam Samvardhan) Adhiniyam, on the grounds that it was “sanskritik (sic) terminology...and untenable.” Some objections have come in from experts invited to depose before the committee who have said that the Act waters down the *Godavarma* judgment and a few State governments have said that forest conservation comes under the domain of both the Centre and States, which means it is in the Concurrent List, and the amendments tilted the balance towards the Centre.

After the JPC tables its report in Parliament — expected to be in the beginning of the Monsoon session — the Bill is likely to be placed for debate. The Environment Ministry has submitted detailed explanations to the Committee, trying to address concerns that have been raised. It emphasises that the new amendments do not dilute the *Godavarma* judgment and that there are provisions in place to ensure that land will not be “misused.” It underlines that proposed exemptions along the international borders are not generic exemptions and would be restricted to “specific linear projects of strategic importance” identified by the Central government. These exemptions wouldn’t be available to private entities.

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# CHEETAHS TO REMAIN IN KUNO, WON'T BE RELOCATED: UNION FOREST MINISTER BHUPENDER YADAV

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

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July 15, 2023 07:30 pm | Updated July 16, 2023 12:44 am IST - Bhopal

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Rajesh Gopal, the head of the cheetah monitoring committee set up by the NTCA, said the reason for the cheetahs' death could be septicemia from radio collar. | Photo Credit: ANI

Union Minister for Environment, Forest and Climate Change Bhupender Yadav on July 15 said the cheetahs will continue to remain in the Kuno national park in Madhya Pradesh and asserted that the project will be successful.

"We are in touch with experts, including international experts. Our team will visit there. The cheetahs will not be relocated and will remain in Kuno only," the Minister said.

Mr. Yadav's comments came amid concern expressed by some experts on the cheetah project and that some [recent deaths](#) could possibly be due to infection caused by radio collars though that is highly unusual and collars have been used in wildlife conservation in India for over two decades.

Other experts, however, said only the post-mortem report will determine the exact cause.

Rajesh Gopal, the head of the cheetah monitoring committee set up by the NTCA, said the reason for the cheetahs' death could be septicemia from radio collar.

"It is highly unusual. I have also seen it for the first time. It's a cause for concern and we have directed (MP forest staff) to check all the cheetahs," he said.

He said it is possible that aberrations, humid weather can lead to infection from radio collar use.

"We have been using collars in wildlife conservation for around 25 years in India. I have never come across such an incident. We have good, smart collars available these days. Still if such an incident is happening, we will have to bring it to the notice of manufacturers," Mr. Gopal added.

A South African expert also suggested that septicemia caused by radio collars could be a possible reason behind the death of two male cheetahs in MP this week.

Male cheetah Suraj, translocated from South Africa, died at the Kuno National Park (KNP) in Sheopur on Friday, while another translocated male cheetah Tejas died on Tuesday.

Vincent van der Merwe, the South African cheetah metapopulation expert, said extreme wet conditions are causing the radio collars to create infection and possibly that was the reason behind the cheetahs' death.

The death of two cheetahs has pushed the fatality count to eight, including three cubs, in less than four months.

Asked about the fate of the cheetah project in India, Mr. Merwe sounded optimistic. "We still have 75 per cent of the founder population alive and well in India. So all is still on track with observed mortality well within normal parameters for wild cheetah reintroduction," he added.

KNP director Uttam Sharma said they have sent the post-mortem reports of the two cheetahs to the senior authorities in Bhopal.

On Friday, MP Forest Minister Vijay Shah said the exact cause of Suraj's death will be known from the post-mortem report. When asked about the fatalities, he pointed out that the three cubs that died were malnourished from birth itself, while other deaths were from fights during mating or eating, which is common among animals.

Sheopur district, which houses the KNP, has received 321.9 mm rainfall between June 1 and July 15 whereas the normal rainfall for this period was 161.3 mm, the India Meteorological Department's Bhopal Centre Duty Officer S N Sahu said.

Eight Namibian cheetahs — five female and three male — were released into quarantine enclosures at KNP on September 17 last. In February this year, 12 more cheetahs arrived at KNP from South Africa.

The birth of four cubs had taken the total count of cheetahs to 24, but eight deaths have brought the number down to 16.

The fastest land animal was declared extinct in the country in 1952.

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# ONLY 25% OF ALL SNAKES ARE POISONOUS, AND IT'S IMPORTANT TO PROTECT THEM, SAY SNAKE LOVERS

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

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July 15, 2023 07:23 pm | Updated 10:17 pm IST - Visakhapatnam

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A cobra and its 19 hatchlings rescued from the Vigilance Office in the administrative building of Visakhapatnam Steel Plant, by snake catcher Rokkam Kiran, in Visakhapatnam recently | Photo Credit: K.R. DEEPAK

It's an irony that in a nation where cobras are worshipped as God, the very sight of a snake repels people, and they do not hesitate to kill them. There were quite a few instances of cobras being killed on 'Nagula Chavithi' day in the past.

World Snake Day is observed on July 16 every year to create awareness among the public about the importance of snakes in the ecosystem. Snakes can be broadly classified into 'poisonous' and 'non-poisonous'. Though nearly 3,500 species of snakes are said to be found around the world, barely about 25% of them are poisonous.

"Among the venomous snakes, the King Cobra (*Ophiophagus Hannah*) is the most deadliest. It is mostly confined to the hilly areas. It can jump from tree to tree and can eject its venom into the air. A person can go blind if the venom falls into his/her eyes," says D.E. Babu, who has retired as Principal of Andhra University College of Science and Technology.

"They are found in the forests of Vizianagaram, Visakhapatnam and Maredumilli in Alluri Sitarama Raju districts. They generally avoid human habitation. It's only humans, who invade their habitations as cities and towns expand, and blame the poor reptiles," he says.

**Also Read | [The dos and dont's in rescuing a poisonous snake](#)**

"Cobra (*Naja Naja*) lives alongside human habitations. They feed on rats in the paddy fields of farmers and save their crops. The other poisonous snakes include the Viper, which has oval or diamond-shaped patches on its body. Its venom can cause blood clots and muscle decay. Krait is another poisonous snake with a horizontal white or yellow stripe. Kraits eat insects and control pests," Professor Babu says

"Sea snakes like *Hydrophis* and *Enhydrina* are very poisonous. They mostly live in the deep waters but sometimes swim in the shallow water and accidentally get caught in the nets of

fishermen. The largest non-poisonous snakes are the pythons, which swallow their prey and coil around trees to crush their prey to death,” says Prof. Babu.

Snake catcher Rokkam Kiran Kumar of Snake Saver’s Society caught a mother cobra and her 19 hatchlings in the Town Administration Building of Visakhapatnam Steel Plant (VSP) recently.

“In the past, people used to kill them fearing that they would bite them. Due to growing awareness, people are calling snake catchers and asking us to hand over the reptiles to the zoo or release them in the jungles,” he says.

Mr. Kiran can be reached on his mobile no. 8866368899 for professional help.

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# CHINA EVENT RAISES CONCERN OVER INDIA'S ONLY APE

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

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July 17, 2023 02:03 am | Updated 02:26 am IST - GUWAHATI

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Hoolock gibbon. Photo: Special Arrangement

**GUWAHATI** The conservation status of India's only ape was a cause for concern at a global event on gibbons held a week ago in China.

Gibbons, the smallest and fastest of all apes, live in tropical and subtropical forests in the southeastern part of Asia. The hoolock gibbon, unique to India's northeast, is one of 20 species of gibbons on Earth.

The estimated population of hoolock gibbons is 12,000.

"Like all apes, they are extremely intelligent, with distinct personalities and strong family bonds. Unfortunately, the current conservation status of gibbon species is alarming – all 20 species are at a high risk of extinction. Since 1900, gibbon distribution and populations have declined dramatically, with only small populations in tropical rainforests," the Global Gibbon Network (GGN), which had its first meeting at Haikou in China's Hainan province from July 7-9, said.

Dilip Chetry, a senior primatologist who heads the primate research and conservation division at Aaranyak, an Assam-based non-profit conservation organisation, gave an account of the conservation status of the hoolock gibbon in India.

The hoolock gibbon faces threat primarily from the felling of trees for infrastructure projects.

"GGN was founded with a vision to safeguard and conserve a key element of Asia's unique natural heritage — the singing gibbon and their habitats, by promoting participatory conservation policies, legislations, and actions," Dr. Chetry said.

Aaranyak, he said, was one of the 15 founding organisations of the GGN from seven countries.

## One species, not two

American naturalist R. Harlan was the first to describe the hoolock gibbon, characterised by their vigorous vocal displays, from Assam in 1834.

Over the decades, zoologists thought the northeast housed two species of the ape — the eastern hoolock gibbon (*Hoolock leuconedys*) found in a specific region of Arunachal Pradesh and the western hoolock gibbon (*Hoolock hoolock*) distributed elsewhere in the northeast.

A study led by Hyderabad-based Centre for Cellular and Molecular Biology (CCMB) in 2021 proved through genetic analysis that there is only one species of ape in India. It debunked earlier research that the eastern hoolock gibbon was a separate species based on the colour of its coat.

The CCMB study concluded that two populations of the western hoolock gibbon and the assumed eastern hoolock gibbon split 1.48 million years ago. It also estimated that the gibbon divergence from a common ancestor occurred 8.38 million years ago.

However, the Red List maintained by the International Union for Conservation of Nature categorises the western hoolock gibbon as endangered and the eastern hoolock gibbon as vulnerable.

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# IS THERE A LINK BETWEEN AIR POLLUTION AND A DROP IN GLOBAL INSECT NUMBERS?

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July 16, 2023 09:15 pm | Updated 09:15 pm IST

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A study has found that an insect's ability to find food and a mate is reduced when its antennae are contaminated by particulate matter from industry, transport, bushfires, and other sources of air pollution (*Nature Communications*). Using a scanning electron microscope, the researchers found that as air pollution increases, more particulate material collects on the sensitive antennae of houseflies. This material comprises solid particles or liquid droplets suspended in air and can include toxic heavy metals and organic substances from coal, oil, petrol, or woodfires. They exposed houseflies for just 12 hours to varying levels of air pollution in Beijing and then placed the flies in a Y-shaped tube 'maze'. Uncontaminated flies typically chose the arm of the Y-maze leading to a smell of food or sex pheromones, while contaminated flies selected an arm at random, with 50:50 probability. Neural tests confirmed that antenna contamination significantly reduced the strength of odour-related electrical signals sent to the flies' brains — it compromised their capacity to detect odours, says a release.

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# TIGER ORCHIDS, LARGEST ORCHID SPECIES, BLOOM AT KERALA'S JAWAHARLAL NEHRU BOTANIC GARDEN

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

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July 20, 2023 01:01 am | Updated 01:01 am IST - THIRUVANANTHAPURAM

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*Grammatophyllum speciosum*, popular as the 'Tiger Orchid,' is the largest orchid species in the world. Photo: Special Arrangement

It's that time of the year when the spotlight is on the Tiger Orchids at the Jawaharlal Nehru Tropical Botanic Garden and Research Institute (JNTBGRI), Palode.

The orchid variety, native to South East Asia, is in bloom at the Palode institute.

*Grammatophyllum speciosum*, popular as the 'Tiger Orchid,' is the largest orchid species in the world, JNTBGRI officials said. They are so called because of their splendid flowers which sport striking brown spots against a yellow backdrop, bringing to mind tigers.

This species is native to Malaysia, Indonesia, Thailand, Myanmar and Laos.

Flowering starts in June and lasts till August. This three-month period is also a time when orchid lovers flock to the institute to have a peek.

The huge size of this orchid in the natural habitat produces five cm-thick stems that grow up to three metres in length. "The plant was listed by the Guinness Book of World Records as the world's tallest orchid, with specimens recorded up to 7.62 metres in height," the institute said.

After 8-12 years of growth, Tiger orchids produce flowers in alternate years in its natural habitat. Photo: Special Arrangement

The inflorescence, standing three metres high, can have 80-100 flowers each.

After 8-12 years of growth, *Grammatophyllum speciosum* produces flowers in alternate years in its natural habitat.

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# SUPREME COURT URGES CENTRE TO TRANSFER CHEETAHS TO ANOTHER LOCATION

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

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July 20, 2023 07:26 pm | Updated 09:39 pm IST - NEW DELHI:

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A Bench headed by Justice B.R. Gavai urged the government to move the big cats to a more conducive environment, if required, and not make it a “prestige issue”. File | Photo Credit: PTI

The Supreme Court on Thursday told the Union Government that the deaths of 40% of the 20 [cheetahs brought from South Africa and Namibia to the Kuno National Park \(KNP\)](#) in under a year does not present a good picture.

A Bench headed by Justice B.R. Gavai urged the government to move the big cats to a more conducive environment, if required, and not make it a “prestige issue”.

“Eight cheetahs dying out of a total 20 brought here in just one year does not present a good picture. Last week alone two died. You should look at other possibilities, like transferring them to other sanctuaries irrespective of which State government is running them.. Why are you making this a prestige issue?” the court asked the government.

**Also Read | [One more cheetah dies at Kuno National Park](#)**

Additional Solicitor-General Aishwarya Bhati, for the Centre, said the deaths though unfortunate were expected. She said there were several reasons leading to the deaths. The cheetah project was prestigious and the authorities are exploring various options for the well-being of the animals.

“If the project was so prestigious for the country then so many deaths in less than a year does not present a good picture,” the Bench reacted.

The court asked the law officer to file a detailed affidavit on the circumstances leading to the deaths and posted the case for further hearing on August 1.

On July 14, a male cheetah named Suraj, translocated from South Africa, died at KNP. This took the total number of cheetah deaths at the park in Sheopur district since March to eight. Another male cheetah, Tejas, brought to KNP from South Africa in February had died on July 11.

Besides these two deaths, six cheetahs, including three cubs born to Namibian cheetah ‘Jwala’, have died at the national park since March, in a setback to the reintroduction programme

launched with much fanfare in September last year.

The court had on May 18 expressed serious concern over the cheetah deaths at KNP and asked the Union government to rise above politics and consider shifting them to Rajasthan.

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# NILGIRI TAHR SUCCESSFULLY TRANSLOCATED TO ERAVIKULAM NATIONAL PARK

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

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July 21, 2023 10:23 pm | Updated July 22, 2023 07:48 am IST - IDUKKI

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The Nilgiri tahr that was captured at the Palappetty Kudi tribal settlement in Marayur on Friday. | Photo Credit: SPECIAL ARRANGEMENT

The Forest department on Friday successfully translocated a [Nilgiri tahr that attacked two forest watchers](#) at the Palappetty Kudi tribal settlement, near Marayur, in Idukki. Officials said the animal was shifted to the Eravikulam National Park (ENP) in Munnar.

Munnar Wildlife Warden S.V. Vinod told [The Hindu](#) that the tahr was caught using a net and shifted to a cage.

“In the absence of a proper road, the cage was carried over five km to Vannathurai and from there to Munnar by vehicle,” said Mr. Vinod.

“After inspection by a forest veterinary doctor, it was released to the core area of Anamudi under the ENP,” he said.

Last week, a high-level [meeting decided to relocate the animal](#) from Palappetty Kudi to the ENP.

Officials said the watchers sustained injuries after the animal attacked them on July 10 and July 11. The animal had attacked three tribal women in the settlement three months ago.

Forest officials said the male tahr was isolated in the tribal settlement four years ago. “It is suspected that the absence of a female companion for mating resulted in the animal turning violent. The new spot is a habitat of Nilgiri tahrs,” said Mr. Vinod.

Besides Mr. Vinod, Marayur Divisional Forest Officer M.G. Vinod Kumar, and Chinnar Assistant Wildlife Warden Nidhin Lal, among others, led the translocation operation.

**Also Read | [Rise in Nilgiri tahr numbers in Eravikulam National Park](#)**

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July 23, 2023 09:54 am | Updated 09:54 am IST

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Wildfires and scorching heat battered Europe and other parts of the world over the week. At 52.2 degrees Celsius, a village in China's Xinjiang region recorded the hottest mid-July in the country's history. The previous record was 50.6 degrees Celsius set in 2017. In the U.S., Death Valley, where the hottest temperature on earth was recorded at 56.7 degrees Celsius in 1913, became a marker for the rest of the country. Furnace Creek in the area saw the mercury touch 53.3 degrees Celsius on July 16. Tourists flocked for a photo with the digital thermometer at the location, turning an occasion portending climate catastrophe into a festive affair.

Various parts of Europe sizzled in one of the most intense summers on the continent. Greece is battling wildfires at a region near Athens, and officials have employed water bombers to aid in the effort. However, strong winds are hampering the fight. A summer camp with more than 1,200 children had to be evacuated. The Acropolis, one of Greece's top tourist destinations, had to be partially shut owing to heatwaves.

Italy and Spain bore the brunt of the heat. Tuesday became Rome's hottest day on record, witnessing 41.8 degrees Celsius. Zoo animals were fed frozen food and fruit popsicles. More than 4,000 people had to be evacuated after a fire tore through Spain's La Palma and burned down 3,500 hectares of land.

July 3 was the hottest day ever recorded globally, show data from the U.S. National Centers for Environmental Prediction. The average global temperature reached 17.01 degrees Celsius on that day, surpassing the August 2016 record of 16.92 degrees Celsius as heatwaves sizzled around the world.

Canada on alert: An air tanker drops fire retardant, as a fresh wildfire starts outside Vanderhoof in the province of British Columbia in Canada on July 17.

Tree loss: A view of the Young Creek wildfire in Tweedsmuir South Provincial Park, British Columbia. Canadian wildfires have burned more than 10 million hectares this year.

Tired out: A man rests during a hot day in Madrid. Most of Spain is under alert for extreme heat with forecasts predicting temperatures of 43 degrees Celsius along the Ebro River.

In good hands: Greek policemen helps move a child from an area affected by wildfire in the village of Agios Charamlabos, near the capital Athens on July 18. Health authorities have sounded alarms from North America to Europe and Asia, urging people to stay hydrated.

Grey smog: A boat passes by Battery Park, New York, amid a smoky haze from wildfires in Canada.

Quenching thirst: A person fills a bottle at Fontana della Barcaccia at the Spanish Steps during a heat wave across Italy.

It's mine: Polar bears gather around a block of ice at Asahiyama Zoo in Asahikawa, Hokkaido, northern Japan.

Brief respite: A woman takes a breather at a cooling mist spot in Tokyo.

Small mercies: People eat free ice cream given to them by restaurant staff as they wait for a table during a heatwave in Beijing.

Staying safe: A vendor sells face masks at the Staten Island Ferry amid a smoky haze from wildfires in Canada.

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# INVASIVE WEED THREATENS ELEPHANT HABITATS IN TAMIL NADU

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

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July 22, 2023 11:43 pm | Updated 11:59 pm IST - COIMBATORE

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An elephant herd with a calf at a swamp with aquatic weed *Ludwigia peruviana* at Valparai in Tamil Nadu's Coimbatore district. Photo: Special Arrangement

An aquatic weed native to some countries in Central and South America, including Peru, is threatening elephant habitats and foraging areas in Valparai, a Tamil Nadu hill station close to the Kerala border, and reviving the risk of human-elephant conflicts in the region.

*Ludwigia peruviana*, which grows fast along water bodies, has infested the majority of the hill station's swamps, locally known as *vayals*, where elephants used to find lush grass even in the summer. However, the Forest Department says that most of these swamps are located in private estates, which are responsible for the tricky process of removing the weed; if not done correctly, trying to pull it out will simply help it spread even more.

The rapid large-scale spread of the weed — which was probably introduced as an ornamental plant for its tiny yellow flowers — has shaken the balance of these perennial foraging grounds, limiting the growth of grass and native plants that are palatable to elephants and other animals including gaur.

T.R. Shankar Raman, wildlife scientist with the Nature Conservation Foundation (NCF) in Valparai, has been watching the weed's increasing spread over the past five years. "It mainly spreads along the swamps in the middle of the tea estates and forms thickets. These swamps are known for excellent grass covers, sedges and water sources that are very good for herbivores like gaur and elephant in particular," he says. Even in the dry months, one could find some water in the valley and grasses and sedges all along the swamps, but the dense thickets of *Ludwigia* now suppress such edible forage. "Now as there is no forage, it is likely that they may come in closer contact with people," explains Mr. Raman.

Located within the Annamalai Tiger Reserve, Valparai's mosaic landscape of tea estates and fragmented forest patches still serve as key habitats for the elephants that move between Tamil Nadu and Kerala. The hill station, which used to be a terrain known for human-elephant conflicts, has seen a difference due to the joint efforts of the Forest Department's rapid response team and NCF's early warning system. The last human death due to elephant attack on the plateau occurred more than two years ago, on June 4, 2021.

The NCF, which has over two decades of experience in Valparai, has been flagging the *Ludwigia* invasion to the Forest Department and estate managements.

“Swamps are unique habitats that support amphibians and otters besides the large herbivores. They act as water storage areas that need to be preserved. If *Ludwigia* colonises, it completely chokes swamps and does not allow grasses to grow. The wildlife that had been depending on such swamps will move to other areas and it might lead to negative interactions,” says Srinivasan Kasinathan, restoration ecologist and senior programme manager with NCF.

Though *Ludwigia* is among the 22 priority invasive plants in Tamil Nadu, the State’s drive to remove exotic species from its forests is now largely focused on *Lantana camara*, *Senna spectabilis* and *Acacia mearnsii* (wattle).

“The spread of *Ludwigia* has come to the Department’s attention. Most of these swamps are located in private estates. Estate managements have an obligation to do conservation activities under the Tamil Nadu Preservation of Private Forests Act. The Department will give them appropriate directions,” says S. Ramasubramanian, Conservator of Forests and chairperson for the District Level Implementation Committee for invasive species.

Unlike other invasive plants, *Ludwigia* poses a unique challenge as it grows in swamps and there is little scope to use machinery which may further destroy the ecosystem. Even if *Ludwigia* is pulled out manually, the soft plant easily breaks and it spreads again from the root or broken stems that fall in the swamp.

Mr. Raman says there is an urgent need to map all the swamps in Valparai, grading them as heavily invaded, invaded, getting invaded, or free of *Ludwigia*. “Not all the swamps are invaded and some swamps are heavily invaded and it is difficult to tackle them. There are some swamps where it is just coming in with just a few clumps. The focus should be on containing the spread by preventing invasion in swamps where smaller numbers are coming up,” he adds.

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# CAPTIVE-BRED VULTURES FLYING HIGH IN FOREST EXPANSES

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July 22, 2023 09:52 pm | Updated July 23, 2023 12:02 am IST - Chandigarh

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One of the Oriental white-backed vultures that were released into the wild at the Jatayu Conservation Breeding Centre in Haryana's Pinjore. Photo: Special Arrangement

In 2020, eight critically endangered Oriental white-backed captive-bred vultures were released into the wild for the first time ever in India from the Jatayu Conservation Breeding Centre in Pinjore, Haryana. Close to three years later, five survive and two have paired and successfully nested, in the untamed habitat of the Shivalik range in the foothills of the Himalayas. This has received a hurrah from wildlife enthusiasts working towards protecting the vultures that have been under threat of extinction since the 1990s.

There has been no report of veterinary non-steroidal anti-inflammatory drug (NSAID) related mortality. This too is a relief for ornithologists, who had over the years been worried about the uncontrolled veterinary use of NSAIDs especially the illegal use of the banned drug diclofenac that has caused vulture deaths. These are given to livestock and are toxic to vultures if they feed on their carcasses.

"Nesting is a very important milestone and an encouraging sign for the re-induction programme. Also, the fact that there has been no mortality is inspiring and indicates increasing vulture safe zones," said Kishor Rithe, the interim director at Bombay Natural History Society (BNHS) said.

After the release from Pinjore, 31 Oriental white-backed vultures were released in batches in West Bengal in 2021. "All the birds fly every day and have started locating their own food. Our teams have been monitoring the released birds. Of the 31, as many as 29 are surviving," Mr. Rithe said.

In 1993 there was an estimated population of 40 million vultures in India, as per a BNHS study. The population of three species — the Oriental white-backed, the long-billed, and the slender-billed — has declined by over 97% since the 1990s. The Oriental white-backed vulture prevalence has gone down by an astonishing 99.9%. All three species are classified as critically endangered by the International Union for the Conservation of Nature (IUCN), composed of both government and civil society bodies. The species come under schedule 1 of the Wildlife Protection Act, 1972, meaning they enjoy the highest level of protection.

The BNHS and Royal Society for Protection of Birds (RSPB) have been managing four Jatayu

conservation breeding centres across the country in partnership with the State governments of Haryana, Madhya Pradesh, West Bengal, and Assam. Through this conservation breeding programme, the BNHS-RSPB has bred more than 700 birds in captivity since 2004.

The birds 'wear' tracking devices, through which the team has found that one of the Oriental white-backs released from Rajabhatkhawa in West Bengal flew into Nepal, re-entered India, and then reached Bhutan, and is now back in India. "So, this bird is moving between Nepal, Bhutan, and India," Mr. Rithe said.

Prompted by the success, BHMS has already started the construction of soft release centres in Madhya Pradesh, Assam, Rajasthan, and at three tiger reserves in Maharashtra. Mr. Rithe said tiger reserves have become free from humans and livestock, and have sufficient wild prey that are free from NSAIDs, hence BNHS now intends to use these inviolate areas to release the captively bred vultures. A vulture-safe zone is an area of 30,000 sq km that is declared free from the drug diclofenac, says the IUCN.

Conservationists believe that a ban on NSAIDs which are toxic to vultures will go a long way in vulture conservation. Dr. Vibhu Prakash, an independent raptor researcher and formerly associated with Pinjore's conservation centre, said that the Drugs Technical Advisory Board (DTAB), a government body, had recently recommended a ban on the use, sale, and manufacture of veterinary drugs Aceclofenac and Ketoprofen, for animal use.

The DTAB in its meeting on May 10, 2023, agreed to prohibit the manufacture, sale and distribution of the drugs Ketoprofen and Aceclofenac, and their formulations for animal use. "Once a notification regarding the ban is out, it would really help in vulture protection, as vultures feeding on cattle carcasses treated with these drugs suffer mortality due to visceral gout and kidney failure. The complete ban would help to stop this," he said.

The DTAB also suggested that a list of all drugs which affect animal health or the environment be prepared for further action, and recommended constituting a sub-committee to examine the matter in detail and submit its report to the Board.

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## EXPLAINED

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July 26, 2023 05:45 am | Updated 05:45 am IST - SRINAGAR

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Kashmiri men pile rocks and boulders to stop floodwaters from entering their field after a cloudburst on the outskirts of Srinagar, Indian-controlled Kashmir, July 22, 2023. Such intense rainfall events, especially when more than 10 centimetres (3.94 inches) of rainfall occur within a 10 square kilometres (3.86 square miles) region within an hour are called cloudbursts and have the potential to wreak havoc, causing intense flooding and landslides that affect thousands in mountain regions. | Photo Credit: AP

Last Saturday, Mohammed Aslam was working in his kitchen garden when he heard his fellow villagers shouting that water was coming from the nearby foothills in the southern Kulgam area in Indian-controlled Kashmir. Within moments, the farmer said, mud and muck from gushing water swept through the village, damaging scores of homes.

“It was sudden and swift,” Aslam said.

A cloudburst followed by flash floods hit nearly a dozen villages in Kulgam, filling homes with mud and washing away some cattle.

A day before, on Friday night, another cloudburst in the neighbouring arid, cold desert region of Ladakh triggered flashfloods and inundated parts of its major town, Leh. The floodwaters entered the town’s main market, damaging shops, sweeping away vehicles and leaving its streets a muddy mess.

Intense rainfall in the Himalayan regions of India’s Kashmir State and the adjacent mountainous cold desert of Ladakh last week destroyed roads and caused flooding of dozens of villages.

Cloudbursts are a common occurrence in Himalayan regions but experts are alarmed by the increase in extreme weather-related events.

Intense weather events, especially when more than 10 centimeters (3.94 inches) of rainfall occurs within a 10 square kilometers (3.86 square miles) region within an hour, are called cloudbursts. They have the potential to wreak havoc, causing intense flooding and landslides that affect thousands of people in mountainous regions.

Last year, a cloudburst triggered flash floods during an annual Hindu pilgrimage to a Himalayan Mountain cave in southern Kashmir, leaving at least 16 people dead.



In 2010, dozens of villages and the main town of Leh in Ladakh were hit by the worst floods in its recent history. Homes and farm fields were devastated and over 250 people were killed.

Experts say the frequency of such events has been increasing in recent years partly due to climate change. They say damage caused by cloudbursts is also increasing because of unplanned development in mountain regions.

Cloudbursts are like a “a huge bucket filled with water that is toppled over,” said Anand Sharma, a retired meteorologist with the Indian Meteorological Department, the country’s weather agency. Born in the Himalayan region, Sharma has closely observed this phenomenon over his three-decade career.

Sharma says cloudbursts occur when cumulonimbus clouds—enormous water-filled, cauliflower-shaped clouds—empty their contents because of cold air pushing the water down. “Normally there are drafts flowing both up and down but in certain conditions, especially when the cloud grows up vertically, sometimes up to 16 kilometers (9.94 miles), cold air enters the cloud and the air flow moves only downwards,” he said.

Mukhtar Ahmed, an official at IMD’s Kashmir office said global warming is increasing the frequency of cloudbursts. “We are witnessing flash floods, cloudbursts and unusually high temperatures more often now,” he said.

Sharma said “Global warming is leading to more evaporation of water and because of this dense cumulonimbus clouds are forming, resulting in intense rainfall.” While some regions receive intense rainfall, he said global warming is resulting in prolonged droughts in other regions.

Experts say excessive deforestation and unplanned developments should be avoided in climate-vulnerable regions such as the Himalayas.

“The chances of landslides increase when there is excessive deforestation. Similarly, when there are known flood paths, it is best to avoid any construction in those regions,” said Mahesh Palawat a meteorologist with Skymet Weather, a private weather forecaster in India.

“It is important for people living on foothills or slopes to be moved to higher ground when heavy rains are likely to occur to minimize loss of life,” Palawat added.

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# FSI SURVEYS REVEAL SIZEABLE NUMBER OF DOLPHINS ON THE EAST COAST ALONG INDIAN EEZ

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July 26, 2023 08:12 pm | Updated July 27, 2023 02:39 am IST - VISAKHAPATNAM

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The pantropical spotted dolphin sighted during the survey by the Visakhapatnam Zonal Base of the FSI. | Photo Credit: BY ARRANGEMENT

There are a good number of dolphins and a few whales on the East Coast of India, if the sample marine mammal stock assessment survey, conducted by the Visakhapatnam Zonal Base of the Fisheries Survey of India (FSI), is any indication.

The survey had commenced in July 2021, and would continue up to June 2024.

In all, 2,703 dolphins and four whales were sighted during the survey conducted from Latitude 14° North to 21° North and Longitude 82° East to 89° East in the upper East Coast of India along the Indian Exclusive Economic Zone (EEZ), covering Andhra Pradesh, Odisha and West Bengal (12 to 200 nautical miles).

The larger marine mammal sighting survey was conducted by various FSI zonal bases on the East and West coasts, and the one in Port Blair, using the FSI fleet, all along the Indian EEZ, under the guidance of R. Jeyabhaskaran, Director-General, FSI, Mumbai.

The Risso's dolphin spotted during the survey by the Visakhapatnam Zonal Base of the FSI. | Photo Credit: BY ARRANGEMENT

A total of 10,443 marine mammals, which included 10,416 dolphins of 16 species and 27 whales of four species, were sighted in the survey.

The survey was conducted as part of the Pradhan Mantri Matsya Sampada Yojana (PMMSY), which had been launched on September 10, 2020, with the objective of bringing in the 'Blue Revolution' through sustainable development of the fisheries sector for five years from 2020 to 2025, with a total outlay of 20,050 crore.

The research programme titled, 'Marine Mammal Stock Assessment in India (MMSAI)', was enabling India to export seafood to the United States, which helped the nation earn valuable foreign exchange to the tune of US \$2,632.08 million during 2022-23.

The US Department of Commerce was insisting on other countries to comply with the provisions

of the Marine Mammal Protection Act (MMPA) for export of fish and fish products to the U.S.

“The survey aims at assessing the marine mammals along the Indian coast, and the methods to mitigate bycatch in the Indian fishing sector. Water samples are collected after every 50 nautical miles, and the water temperature and other parameters are recorded to determine the quality of water in the area. The three-year project, which started during 2021-22, has to be completed by June 2024,” D. Bhami Reddy, Head of Office, FSI Visakhapatnam Zonal Base, told *The Hindu*.

“For the first time in India, a total of 150 Risso’s dolphin (*Grampus griseus*) were sighted at 105 nautical miles south-east of Paradeep on October 25, 2021. We have spotted a large number of dolphins off Krishnapatnam, but they are in a few numbers off Visakhapatnam coast,” said G.V.A. Prasad, Junior Fisheries Scientist, FSI, Visakhapatnam Zone, who was the cruise leader.

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# LOK SABHA PASSES FOREST CONSERVATION (AMENDMENT) BILL

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July 26, 2023 10:34 pm | Updated July 27, 2023 12:37 am IST - NEW DELHI

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Tribal and forest dwellers during a demonstration against the Forest Conservation (Amendment) Bill in Bhubaneswar. File | Photo Credit: ANI

Amidst pandemonium, the Lok Sabha passed the [Forest Conservation \(Amendment\) Bill](#) on July 26, [without any changes](#) from the version first introduced on March 29. The contentious Bill was introduced to amend the [Forest Conservation Act, 1980](#).

The 1980 legislation has empowered the Centre for the last four decades, to ensure that any forest land diverted for 'non-forestry' purposes is duly compensated. It extends its remit to land even beyond what is officially classified as 'forest' in State and Central government records.

Editorial | [Green washing: On amendments and the Forest \(Conservation\) Amendment Bill, 2023](#)

The amendments made by the Bill now passed by the Lok Sabha include clauses that specify the types of land where the original Act is inapplicable. The amendments encourage the practice of cultivating plantations on non-forest land, which can increase tree cover over time, act as a carbon sink and aid India's ambitions of having 'net zero' carbon emissions by 2070. They also seek to remove restrictions imposed by the Act in creating infrastructure that would aid national security and create livelihood opportunities for those residents on the periphery of forests.

Objections were raised on various aspects of the Bill when it was first introduced, prompting a Joint Parliamentary Committee (JPC) to investigate it threadbare. Nearly 1,300 representations from a multitude of groups — including tribal rights groups and independent think-tanks — were sent to the JPC, objecting to clauses of the Bill. However, as *The Hindu* reported on July 10 July, these objections were deliberated upon but ultimately dismissed by the JPC.

Explained | [Why is there a controversy on the forest Bill?](#)

There were objections that the amendments "diluted" the Supreme Court's 1996 judgement in the Godavarman case that extended protection to wide tracts of forests, even if they were not recorded as forests. There were objections to the Act's new name — Van (Sanrakshan Evam Samvardhan) Adhiniyam, translated as Forest (Conservation and Augmentation) Act, instead of the existing Forest (Conservation) Act — on the grounds that it was "non-inclusive" and left out

many among the “(non-Hindi speaking) population both in South India and also in the North-East.” There were also objections that large parcels of forest land near the borders would no longer be protected.

“We have made provisions in the Bill that would enable our soldiers stationed in sub-zero temperatures at Ladakh to access better roads and infrastructure,” Environment Minister Bhupender Yadav said in reply to questions raised in Parliament on the Bill. “Despite our attempts to improve social forestry, people are hesitant to plant private plantation for fear that the forest laws will prevent them from cutting those trees. India is an importer of timber... We have made changes, via this Bill, to improve agro-forestry,” he added, noting, “This Act will be a milestone one for India.”

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# THE HORNETS' NESTS IN THE FOREST AMENDMENT BILL

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July 28, 2023 12:08 am | Updated 01:42 am IST

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'The Bill excludes some of India's most fragile ecosystems as it removes the need for forest clearances for security-related infrastructure up to 100 km of the international borders' | Photo Credit: Getty Images/iStockphoto

The [Lok Sabha passed the Forest \(Conservation\) Amendment Bill, 2023](#), on July 26, with no substantive changes from the original version introduced in March. It ignores strong public objections that highlighted a number of concerns. The Bill commences with a promising Preamble, [expressing a commitment to achieving net zero emissions by 2070](#), creating a carbon sink, increasing forest cover, and improving the livelihoods of forest-dependent communities. However, the operative part of the Bill shows little connect with the Preamble. Instead, it excludes entire categories of forest from the ambit of the law and, ironically, even facilitates the destruction of forests.

The Forest Conservation Act of 1980, which this Bill aims to amend, admittedly and justifiably adopted a rather protectionist stance which made forest clearances time consuming and costly to obtain. While current development needs and priorities must be recognised, this Bill deviates in a significant manner from the spirit of the original law. Three points that emerge from the Bill have caused considerable consternation among environmental experts: the narrowed definition of forests under its scope; the exclusion of significant tracts of forest areas; and the granting of sanction to additional activities that were regulated earlier. These need to be better explained.

Editorial | [Green washing: On amendments and the Forest \(Conservation\) Amendment Bill, 2023](#)

The Bill will significantly restrict the application of the landmark [Godavarman judgment of 1996](#) which had extended the scope of the 1980 Act to the dictionary meaning of 'forest' — that is, areas with trees rather than just areas legally notified as forest. The present Amendment restricts the Forest Conservation Act to only legally notified forests and forests recorded in government records on or after October 25, 1980. This change could potentially impact around 28% of India's forest cover, encompassing almost 2,00,000 square kilometres. While these forests include fruit orchards and plantations, they also encompass forests of exceptional quality and conservation value. An instance is the category of Unclassed Forests in Nagaland, that have so far not been officially recorded or deemed forests despite centuries of protection and use by autonomous clans. Perversely, States that have refused to identify important forest areas

despite the [Godavarman](#) judgment, may now be free to allow the destruction of these forests for construction and development. For the same reason, large swathes of the Aravalli Hills in the Delhi National Capital Region which are considered ecologically significant, apart from being critical to the water security of this region, may be affected by the amendment.

Second, the Bill excludes some of India's most fragile ecosystems as it removes the need for forest clearances for security-related infrastructure up to 100 km of the international borders. These include globally recognised biodiversity hotspots such as the forests of northeastern India and high-altitude Himalayan forests and meadows.

Third, the Bill introduces exemptions for construction projects such as zoos, safari parks, and eco-tourism facilities. Artificially created green areas and animal enclosures are very different from natural ecosystems which provide a bouquet of ecosystem services that contribute significantly to human well-being. What is worrying is that the Bill also grants unrestricted powers to the Union government to specify 'any desired use' beyond those specified in the original or amended Act. Such provisions raise legitimate concerns about the potential exploitation of forest resources without adequate environmental scrutiny.

Another important concern is that the Bill makes no reference to other relevant forest laws. For instance, the Scheduled Tribes and Other Traditional Forest-dwellers (Recognition of Forest Rights) Act, 2006 finds no mention. Instead, the exclusion and ease of diversion of forest areas will mean that forest people's institutions no longer need to be consulted. This is not just a matter of equity. In neighbouring Nepal, the handing over of forests to local community forest user groups is credited to have helped the country increase its forest cover from 26% to 45% over just three decades. If India is to meet its net zero carbon commitments and increase forest cover (as the Bill envisages in its Preamble), it would be wise to further the participation of forest people, rather than disenfranchise them.

The system of forest clearances under the FCA (1980) may have been flawed but this Bill does little to rectify these deficiencies. Instead, it just excludes certain privileged sectors from its ambit. When democracy's gears grind a little too slowly, it is better to fix them than to dismantle them. These systems provide an essential check to assess the impact of projects which change land use and to mitigate the impacts resulting from environmental destruction.

Yes, exceptions are needed. The objective of fast-tracking strategic and security related projects is a fair ask. Administrative processes can and should be speeded up and needless delays in environmental clearance avoided. However, giving blanket exemptions from regulatory laws is not the answer. The importance of India's natural ecosystems must be valued. India's northern borders, where exemptions will perhaps be most used, are framed by the geologically active Himalaya. Recent events in Joshimath (Uttarakhand) have shown the need for proper geological and environmental assessments for all development projects.

Forests and other natural ecosystems cannot be considered a luxury. They are an absolute necessity.

***Rajesh Thadani is a forest ecologist. Ravi Chellam is CEO, Metastring Foundation and Coordinator, Biodiversity Collaborative***

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# NO UNITED STATES PRESIDENT CAN WALK BACK ON CLIMATE CHANGE COMMITMENTS NOW: JOHN KERRY

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

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July 27, 2023 01:05 pm | Updated 06:46 pm IST - NEW DELHI

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United States Special presidential Envoy for Climate John Kerry gestures during an interview to *The Hindu* in New Delhi on July 26, 2023. | Photo Credit: Sushil Kumar Verma

*According to United States Special Presidential Envoy for Climate, John Kerry, no future American President can walk back from climate change commitments now. Mr. Kerry has blamed former U.S. President Donald Trump for walking out on the Paris agreement and rescinding climate financing offers. In an interview to The Hindu, Mr. Kerry, who is in India for a G20 meeting on climate change issues, said he was still hopeful about a consensus statement, but wouldn't commit to the U.S. compromising over language on the Ukraine war in order to reach such a consensus.*

## **How far along are talks on climate change ahead of the G20 summit, and particularly since we're a couple of months away from the CoP28 meeting in Dubai?**

On the CoP28, I think that the parties are working hard, meeting pretty regularly and a considerable amount of progress has been made. There are three outcomes that are already predetermined: we have to have a stocktaking; we have to have an adaptation report. And in addition, we have a loss and damage fund that's been created that has to now take shape. So, those are three already in the pipeline. Because of what's happening in the planet — and the science and evidence, we have an imperative to try to raise ambition, speed and quantity. And we have an imperative to try to establish a better finance track in order for emerging economies and less developed countries to be able to make the transition. So it's a big agenda.

We had an excellent meeting between Prime Minister [Modi] and President [Biden] in June that really set the stage for a level of cooperation that will make a difference. I think that India and the United States really have a synergy right now. Recognising that we need to push technologies, we need to reduce greenhouse gas pollution as rapidly as we can. We need to improve our supply chains, particularly, so that we're not being held hostage by any place in the world. And I think that there was a real understanding between Prime Minister Modi and President Biden, about the commonality of the agenda and the way they see the world.

**What does that mean in climate terms? India, for example, has not accepted a mid-Century Net Zero target. Prime Minister Modi himself has only spoken about 2070 so far...**

Well, I think India is showing a great deal of ambition. India has of its own volition set a very ambitious goal of deploying 500 gigawatts of renewable energy by 2030. That's a big goal. And we're very supportive of that. We've invested very heavily in a new solar plant that's here in India. I think our leaders agreed that it would be really good for us to be able to come to agreement on a national fund that we're both contributing to in order to accelerate the transition. I think that there are great skill sets in India with respect to technology, science, research and development. And we see some really, very positive ways in which we're able to cooperate to bring new technologies to scale, whether it's hydrogen or battery storage, turbines, solar panels. This transition does not have to be frightening to people. It is an exciting moment where there's more economic opportunity globally than there has been since the industrial revolution in the 1800s.

**That's on a bilateral scale. But when it comes to the multilateral, India is part of the developing world, the U.S. is part of the developed world. What is the U.S. willing to pay to the Loss and Damage Fund? I ask this because, earlier, there was a U.S. commitment to help raise \$100 billion every year, between 2020 and 2025. We haven't seen that come through yet.**

The reason we haven't seen it yet is that we had a President [Trump] who pulled out of the Paris agreement a number of years ago, and who didn't put any money into the Climate Fund. So, when President Biden [took charge], he began the first year of his presidency with Donald Trump's budget, not his own. He didn't get to do his own budget until last year, and now this is his second budget. And we do have money in there to be able to try to reach the \$100 billion. That's a real obligation that the United States obviously will make good on. And the President has been very clear about that.

**What about the future? If Mr. Trump or the Republicans return to power in next year's U.S. election and decide to walk out of whatever deal your government signs? Have any guardrails been put in place to ensure that the U.S. doesn't walk out as it did once from the Paris Agreement?**

Well, there's no way to pre-handicap the ability of any President to prohibit some particular action. But look. I predicted that Joe Biden would be elected President last time, and I'm quite confident that he's going to be re-elected again, because of the outstanding legislative record that he has. I'm not allowed to get into the politics of all of this. But I will say this. No President, whatever party, whenever, could come in now and stop what is happening. It's too big.

CEOs of major companies of the world, Google, Apple, Microsoft, Salesforce, Boeing, financial institutions, have all made the decision that people need to take climate seriously. So, I don't see Ford Motor Company or General Motors, which have now retooled their factories to make electric cars, going backwards. The days of the internal combustion engine are numbered, and people are going to transition because it's clean. India will produce many of those vehicles and so will the United States and other countries. I think it's a great moment. And the world is just waking up to all of these possibilities.

**At the G20, we have seen other differences between the developed world and the developing world — for example, on why developed countries only speak of cutting coal, when all fossil fuels are non-renewable? India also wants the term “phase down” for coal rather than “phase out”. Will there be a common text on climate change at the G20?**

I can't tell you what the common language will be.... [But] I don't believe that we can't find some common language that respects the reality that we must reduce emissions: either capture them and do something constructive with them, or not to make them in the first place. It's one or the

other. And, and what we need to do is find the way as fast as possible to empower people to transition out of unabated fossil-fuel-burning, because that's what's killing people and creating fires, and massive storms, and unbelievable floods. And, the quality of air that kills about 8 million people a year on the planet. This is not rocket science. I think it should be fairly easy for responsible nations to come to the table and say, "This is what we have got to do". Now, some people feel that fossil fuel has had its day, but I think the marketplace is going to decide what happens in that regard.

**The G20 joint communiqué, or leaders' declaration, is stuck over the language on Ukraine. Some G20 countries suggest that G7 countries should realise that the real priority right now are climate change, energy transitions, and development, and take a step back from its position on including Ukraine, so that a joint communiqué can be issued?**

The climate crisis is a global crisis, even as Ukraine has its global components, because it's a reflection of international law. And that international law says that you don't invade nations simply to expand territory and kill people in ways that remind you of the worst of World War Two. So, I think that there's a reason people are concerned about expressing something about the inappropriateness of an unprovoked invasion of another country...

**China, for example, says geopolitical issues should not be put on this forum, which is geared towards development. Russia says, well, if you're going to discuss this war, why not all the other wars that have taken place in the last 20 years? Would you recommend pulling back on some of the Ukraine language, in order to bring a joint statement?**

I need to see the latest iteration of the language and where we are and make recommendations based on it. It's important for global meetings, and countries that they adhere to international standards, the UN charter, the Universal Declaration of Human Rights. And I think that in great democracies, particularly, we should not shy away from speaking out. But I don't want to prejudge the outcome.

**On the subject of democracies, over the last few years, we've seen the Indian government shut down funding for NGOs — Greenpeace, Sequoia, European Climate Fund, etc. Have you discussed this with Indian authorities?**

Sure. Well, we in the United States believe in free speech and the ability of people to be able to voice their concerns. I know in India, you have a very, very active democracy, and you have a very hearty, ongoing, regular debate. I've seen it. I've seen its vitality. I'm not going to comment on some individual situation that I'm really not directly familiar with. But I'm quite confident that India is going to continue to make its contribution to the democratic process and I'm sure that activists here in India will continue to work through that as we do in the United States on a regular basis.

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# G20 ENVIRONMENT MEETING ENDS WITHOUT AN AGREEMENT ON CLIMATE CHANGE; OUTCOME DOCUMENT STRESSES ON SUSTAINABLE BLUE ECONOMY

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

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July 29, 2023 12:01 am | Updated 05:22 am IST - CHENNAI

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Dignitaries speaking at the meeting of the Ministers at the Environment and Climate Sustainability Working Group on Friday. | Photo Credit: Special Arrangement

The fourth and final G-20 Environment and Climate Sustainability Working Group (ECSWG) and Environment and Climate Ministers meeting concluded on Friday without a final communique on climate change.

In the Outcome Document, G20 nations announced the adoption of principles for a robust blue economy by prioritising ocean health, promoting social and intergenerational equity and sustainable use of the marine environment.

The 'Chennai High-Level Principles for a Sustainable and Resilient Blue/Ocean-based Economy' stresses on a sustainable ocean-based economy, strengthening international cooperation to tackle shared maritime challenges, and enhancing ocean finance.

"Recognising the criticality of the ocean and its resources, and the growing threats to the marine environment and biodiversity from climate change, marine pollution, unsustainable exploitation and illegal activities that affect the marine environment, the G20 High-Level Principles may be implemented by the G-20 members, on a voluntary basis, as per national circumstances and priorities, considering appropriate support for developing countries," says the document. It will be submitted for consideration to be annexed to the G-20 New Delhi Leader's Declaration 2023.

The document says a sustainable ocean-based economy contributes to achieving the goals and targets of the Kunming-Montreal Global Biodiversity Framework (KMGBF), including taking urgent action to ensure and enable that by the year 2030 at least 30% of terrestrial, inland water, and coastal and marine areas are effectively conserved and managed. The principles include the recognition of promoting social and intergenerational equity and protecting indigenous knowledge.

Further, the document touches upon marine spatial planning (MSP) and blue economy monitoring mechanisms. "In order to be effective in the long term, it is important for marine

spatial plans to take into account the changing climate and build resilience and contribute to halt and reverse biodiversity loss and fight against pollution,” it says.

The three themes outlined in the ECSWG meetings were arresting land degradation, accelerating ecosystem restoration, enriching biodiversity and water resource management; promoting a sustainable and climate-resilient blue economy; encouraging resource efficiency and circular economy.

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# INTERNATIONAL TIGER DAY 2023

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

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July 29, 2023 04:10 am | Updated 08:41 am IST - New Delhi

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**Kolkata:** A Tiger-themed taxi after flagging off at Victoria Memorial during 'Tiger Conservation-The Road Ahead' campaign on the eve of International Tiger Day, in Kolkata, Friday, July 28, 2023. | Photo Credit: PTI

One tiger and scores of tourists in open jeeps asking each other in piercing whispers to be quiet as they train their binoculars and cameras on it, getting perilously close to the animal while they do so.

The all too familiar scene captured in innumerable social media posts could be from Ranthambore or Corbett, Tadoba or Kanha - a snapshot as it were of the human-animal dilemma that has seen the number of tigers in India go up while their habitat shrinks and often brought humans just too close to the big cats.

The [rising tiger population](#), which has also spotlighted the development versus ecology debate, is cause for celebration and also concern, experts said ahead of International Tiger Day on Saturday.

With 3,167 tigers according to the 2022 tiger census, about 75% of the global numbers, the once elusive bright orange fur and distinct low rumbling roar are not so rare anymore. Scripting a remarkable story of conservation, [Project Tiger started 50 years ago](#) in 1973 when the count was just 268.

However, it has come with increasing human interference in wildlife corridors, thinning prey density, a worsening quality of India's forest cover and changes in policies, all of which can offset the gains, the experts said.

"This achievement of conservatising tigers, despite our population density and other pressures hasn't come easy and it's been a gradual process since the onset of Project Tiger. We can be justifiably proud that the tiger continues to thrive in India, even as it is unfortunately extinct in some range countries. This success can be attributed to our people's tolerance, political will and a strong legal and policy framework, one of the strongest in the world," wildlife conservationist Prerna Bindra told *PTI*.

Over the last few years, however, the legal framework is being "diluted", she alleged, citing the recent proposed amendments to the Forest Conservation Act, 1980, or "passing of detrimental development projects in protected areas, mining in tiger habitats, and projects like the Ken



Betwa river link in Panna tiger reserve”.

“You can’t say you are committed to conserving the tiger while allowing Panna to be drowned in a river linking project, and there are a number of similar examples such as mines and linear infrastructure in the central Indian tiger landscape. Highways are being expanded in the Kanha-Pench corridor and Rajaji National Park, and there is a push for a highway through the core of Corbett Tiger Reserve,” Bindra said.

Qamar Qureshi, senior scientist at the Wildlife Institute of India, gave a counter view and said corrective measures are being taken.

“We have to think of development in an ecological sense. While making highways, we are now thinking of creating safe passageways for tigers and other animals to pass through. It is already happening at several places in India,” Qureshi said, citing recent infrastructure projects, including in Uttarakhand, Maharashtra and Madhya Pradesh.

A government report on 50 years of Project Tiger noted that the National Tiger Conservation Authority (NTCA) has ensured any land use change in a tiger corridor likely to have a barrier effect requires approval from the National Board of Wildlife.

But the many stumbling blocks remain.

The Ken-Betwa river linking project, for instance, has faced the ire of environment activists and organisations long before it was approved by the Centre in December 2021.

It is claimed that the Daudhan Dam built as a part of the project will submerge 4,141 hectares of Panna Tiger Reserve, according to the proposal submitted by the Water Resources Ministry.

Human interference can also lead to imbalance in the predator-prey ratio. The balance is naturally maintained by predators like tigers dispersing out of the areas where they are born based on the availability of their prey, noted scientist and former Wildlife Institute of India dean Y V Jhala said.

This natural tendency to move out of their native area is affected when infrastructure like highways, railways, mines, fenced resorts, and orchards become barriers to dispersal within corridors.

“Human-tiger conflict usually happens when tiger prey is depleted and there is no place for tigers to disperse (corridors are lost). Also, conflict happens when humans venture into forests that hold a high density of tigers,” he noted.

The tiger conservationist suggested that proactive dispersal of young tigers and very old tigers (that usually attack humans) in community forests and monitoring them by camera traps and radio-telemetry can be useful in identifying potentially dangerous tigers, which can then be managed before they attack humans.

Tiger-bearing habitats have been divided into five major landscapes - Shivalik-Gangetic plains, Central India and Eastern Ghats, Western Ghats, North Eastern Hills and Brahmaputra Flood Plains, and the Sundarbans.

The initial number of nine tiger reserves across 18,278 sq km of land in 1973 has now expanded to 53 tiger reserves cumulatively protecting an area of 75,796.83 sq km, approximately 2.3 per cent of the country’s geographical area, according to a government report.

**Editorial | [Burning bright: on the latest quadrennial census of India's wild tiger population](#)**

While there has been an overall increase in tiger population compared with the last census in 2018 (2,967), there has been a decline in tiger occupancy in Western Ghats (from 981 to 824), and North Eastern Hills and Brahmaputra Flood Plains (from 219 to 194). The decline in these areas has been attributed to human activities, including habitat loss and fragmentation, poaching, illegal wildlife trade, human-wildlife conflict, and invasive species, said the Status of Tigers 2022 report.

Tiger population in the Shivalik-Gangetic plains, which hosts several key tiger reserves, including Corbett, Rajaji, Pilibhit, Dudhwa, and Valmiki, has increased from 646 in 2018 to 804 in 2022. Similarly, the number of the big cat has increased in Central India and Eastern Ghats, which has tiger reserves like Panna, Sariska and Kanha, from 1,033 in 2018 to 1,161 in 2022.

As reports come in of the big cat straying into villages and towns far from its habitat, maneaters targeting vulnerable villagers and boundaries between human settlements and forests blurring, Qureshi said it is important to look after tribals.

They are, he argued, among the country's poorest citizens for whom forests make up for their livelihood and food sources.

To increase the land reserved for tiger conservation and rehabilitate tribals, the government incentivised relocation under [the Wildlife Protection Act](#), 2006 amendment. It made a provision for a monetary package of Rs 10 lakh per adult in the family to relocate from within the core areas of tiger reserves after the settling of their legal rights.

The package was later upgraded to 15 lakh per adult in the family. Project Tiger has since relocated at least 19,478 families, according to the '50 Years of Project Tiger' report.

While long years of arduous conservation efforts are in India's rear view mirror, there is still a long way to go. As Bindra put it, "We cannot rest on our laurels and conserving tigers does not happen overnight. It is a steady commitment that is critical to conserving tigers".

***July 29 is International Tiger Day.***

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# MERCURY RISING: THE HINDU EDITORIAL ON THE 'ERA OF GLOBAL BOILING' REMARK BY U.N. CHIEF ANTÓNIO GUTERRES

Relevant for: Geography | Topic: The Earth and the Solar System

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July 29, 2023 12:10 am | Updated 09:02 am IST

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The United Nations Secretary-General, António Guterres, this week reiterated the consequences of the climate catastrophe that has enveloped the globe. The earth had passed from a warming phase into an “era of global boiling”, [he said at the U.N.'s headquarters](#) in New York. His comments come even as scientific evidence converges on the conclusion that [July is set to be the hottest month](#) in the last 12,000 years. This was a “disaster” for the whole planet, he said, noting that “short of a mini-Ice Age over the next few days, July 2023 will shatter records everywhere”. Scientists from the World Meteorological Organization (WMO) and the European Commission’s Copernicus Climate Change Service described conditions this month as “rather remarkable and unprecedented”, with July seeing the hottest three-week period on record. Average July temperature so far has been 16.95° Celsius, 0.2° C warmer than in July 2019 — a record in the 174-year observational data of the European Union.

With ocean temperatures on the rise and the Central Equatorial Pacific Ocean transitioning from La Niña conditions — where average sea surface temperatures are below normal — to El Niño conditions, the opposite, it was widely expected that temperatures would be warmer than that in the last three years (when La Niña prevailed). However, it is the distribution and impact of the 16.95° C, which includes temperature in northwest China touching 52° C; wildfires in Greece and the baking heat in the United States’ Southwest. The extraordinarily high rains in north and western India, while largely due to prevailing monsoon conditions, were also due to the warm air increasing atmospheric capacity to hold moisture resulting in short torrential bursts, causing floods and devastation. While climate prognostication induces pessimism, Mr. Guterres said that it was still possible to limit global temperature rise to 1.5° C and avoid the very worst of climate change but only with “dramatic, immediate climate action”. At a G-20 ministerial meet in Chennai the same day, the COP28 President-designate, Sultan Ahmed Al Jaber, also emphasised that the world’s largest economies should be more ambitious with emission cuts. While Prime Minister Narendra Modi has promised to make India the “third largest economy” if his party is re-elected in the general election, it will also mean greater pressure on India to take on a greater share of greenhouse gas mitigation responsibilities. This could mean advancing its net zero commitments from 2070 to 2050, as Mr. Guterres says, and generating fossil-free electricity by 2040. While these are the testy points on which climate negotiations hinge, the climate — it bears reminding — waits for nobody.

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# KARNATAKA HAS THE POTENTIAL TO HARBOUR OVER 1,300 TIGERS, SAYS ULLAS KARANTH

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

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July 28, 2023 10:07 pm | Updated 11:47 pm IST - MYSURU

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Experts agree that the scope of expanding tiger population in Karnataka in the low-density areas is substantial. | Photo Credit: M.A. Sriram

Scientists at the Centre for Wildlife Studies (CWS), including tiger expert K. Ullas Karanth, have said that Karnataka has the potential to harbour over 1,300 tigers in the wild if sincere efforts were made in the future.

They were reacting to the Karnataka Forest Department's tiger survey report which was released on Thursday and indicated that the minimum [tiger estimates in the State was 435](#).

Taking note of the extremely low densities of tigers except in a few reserves like Nagarahole and Bandipur with long histories of protection, the CWS experts said they concurred with the views in the report that the scope of expanding tiger population in Karnataka in the low-density areas was substantial.

Mr. Karanth, who is Emeritus Director of the Centre for Wildlife Studies, and N. Samba Kumar, Senior Research Fellow, said in a release that they had argued in a recent scientific paper that Karnataka could potentially harbour a population of over 1,300 wild tigers if sincere efforts were made in the future.

The release said a key conservation strategy that improved the prey base and habitat while reducing human pressure on both subsistence and developmental types, was the voluntary and fair resettlement of enclaved human habitations away from critical wildlife habitats and corridors.

“Karnataka led the nation in these efforts until about a decade ago and since then these efforts have slackened except in the Kali Tiger Reserve recently. It remains unaddressed even in important areas like Nagarahole and Kudremukh, while Madhya Pradesh and Maharashtra have forged ahead,” according to Mr. Karanth and Mr. Kumar.

The release also noted certain lacunae in the report and the experts provided technical suggestions on addressing them. It said the CWS had developed a slew of methodologies and it was encouraging to note the details of implementation of some of these methodologies in the recent survey report by the Karnataka Forest Department.

The present relatively improved status of tigers rested on a solid foundation of conservation efforts made through the vigorous implementation of the Wildlife Protection Act 50 years ago by a pioneer generation of foresters of all ranks, led by the then Forest Minister the late K.H. Patil , said Mr. Karanth and Mr. Kumar.

“Establishment of most national parks and sanctuaries – a process now politically frozen in Karnataka, reduction in forest exploitation, intensification of protection and initiation of voluntary relocation of forest-dwelling families are all critical actions that originated in that vital period,” the release added.

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# PM MODI URGES G-20 TO WORK ON LEGALLY-BINDING INSTRUMENT TO END PLASTIC POLLUTION

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

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July 28, 2023 08:32 pm | Updated 08:32 pm IST - CHENNAI

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Prime Minister Narendra Modi addresses the G20 Environment and Climate Sustainability Ministerial meeting, on July 28, 2023. [Twitter/@narendramodi](https://twitter.com/narendramodi)

Prime Minister Narendra Modi called on G-20 nations to work constructively for an effective international legally-binding instrument to end plastic pollution in his virtual address at the G-20 Environment Ministers' Meeting in Chennai on July 28.

Detailing India's progress with regards to the climate action plan 'Nationally Determined Contributions' (NDCs), PM Modi said the country achieved its installed electric capacity from non-fossil fuel sources nine years ahead of the target of 2030. He also mentioned that India is one of the top five countries in the world in terms of installed renewable energy capacity and informed that the country has set a target of attaining 'Net Zero' by 2070.

He stressed the need to enhance action on commitments under the 'UN Climate Convention' and the 'Paris Agreement' as it can be crucial in helping the Global South fulfil its developmental aspirations in a climate-friendly way.

My remarks at the G20 Environment and Climate Sustainability Ministerial Meeting. [@g20orghttps://t.co/xeRPaRF8xB](https://t.co/xeRPaRF8xB)

Referring to the 'Small Island States' as 'Large Ocean Countries', the PM said that the oceans are a crucial economic resource for them while also supporting the livelihoods of over three billion people across the globe. He added that it is home to extensive biodiversity and stressed the importance of responsible use and management of oceanic resources.

Mr. Modi said 70% of the world's tigers are found in India today as a result of 'Project Tiger', the country's pioneering conservation initiative. He said work is under way on Project Lion and Project Dolphin.

Underlining that India's initiatives are powered by people's participation, the PM said under 'Mission Amrit Sarovar' more than 63,000 waterbodies have been developed in just about one year. He also credited community participation in the 'Namami Gange Mission' which has resulted in the major achievement of the reappearance of the Gangetic Dolphin in many stretches of the river.



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# INDIA'S TIGER POPULATION RISES, MADHYA PRADESH HAS MOST BIG CATS

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

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July 29, 2023 09:56 pm | Updated July 30, 2023 08:08 am IST - NEW DELHI

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India's tigers are largely concentrated in 53 dedicated tiger reserves spread across 75,796 square km, spanning about 2.3% of India's total land area. Image for representation purpose only. File | Photo Credit: The Hindu

India's tiger population increased to 3,682 in 2022, up from 2,967 in 2018, according to an estimate released on Saturday. This is an upward revision from April this year, when a minimum of 3,167 animals were estimated by the Wildlife Institute of India (WII), which coordinates the quadrennial tiger census.

This also indicates significant growth over the last decade; there were 2,226 tigers reported in 2014, up from 1,706 in 2010.

**Also Read | [Rising Indian tiger population cause for celebration and concern](#)**

In 2022, the maximum number of tigers, [785, were reported to be in Madhya Pradesh](#), followed by Karnataka (563), Uttarakhand (560), and Maharashtra (444). Nearly a quarter of the tigers were reportedly outside protected areas.

India's tigers are largely concentrated in 53 dedicated tiger reserves spread across 75,796 square km, spanning about 2.3% of India's total land area. The reserves with the maximum number of tigers were at the Corbett National Park in Uttarakhand, which reported 260 animals, followed by Bandipur (150), and Nagarhole (141), both in Karnataka.

Central India, the Shivalik Hills, and the Gangetic plains witnessed increases in tiger population, particularly in the states of Madhya Pradesh, Uttarakhand, and Maharashtra. However, certain regions, such as the Western Ghats, experienced localised declines, needing targeted monitoring and conservation efforts. Some States — including Mizoram, Nagaland, Jharkhand, Goa, Chhattisgarh, and Arunachal Pradesh — have reported “disquieting trends”, according to a press statement from the Ministry of Environment and Forests, with smaller tiger populations.

Tiger Census 2022: Can India support more than its current 3,000-odd tigers? | In Focus podcast

“In general, reserves that have applied good conservation practices — such as ensuring enough

prey is available for tigers — have done well,” said Qamar Qureshi, a senior scientist at the WII who is closely associated with the tiger surveys.

Approximately 35% of the tiger reserves urgently required enhanced protection measures, habitat restoration, ungulate (deer, chital, blackbuck) augmentation, and subsequent tiger reintroduction, the Environment Ministry statement added.

The estimated number of 3,582 is an average figure for a population that likely ranges between 3,167 and 3,925. Tiger numbers are estimated based on the number of unique tigers captured on camera, plus an estimate of animals that may have not been photographed.

Nearly 88% of the tigers estimated this time were captured on camera, said Mr. Qureshi, the highest in surveys so far. However, it is quite likely that future exercises may not see dramatic increases in tiger population, he cautioned. Since 2014, India’s tigers have been increasing at about 5% to 6% each year.

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# FACING THE AXE: NEW 'FOREST' DEFINITION MAKES LARGE TRACTS VULNERABLE

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

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July 30, 2023 02:05 am | Updated 02:49 am IST - BHUBANESWAR

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The densely treed Niyamgiri Hills is home to the Dongria Kondh tribe, one of 13 particularly vulnerable tribal groups in Odisha. As per an estimate, 95% of land in the hills is not classified as 'forest' in government records. | Photo Credit: The Hindu

The Dongria Kondh tribe, one of 13 particularly vulnerable tribal groups in Odisha, fought a historic winning battle to save its ecology from bauxite mining operations in the Niyamgiri hill range from 2004 to 2013. Now, the tribe may face another challenge to prevent diversion of community-owned forest land.

Experts working in the forestry sector have sounded an alarm around the proposals of [the Forest Conservation \(Amendment\) Bill \(FCA\), 2023](#). The Bill has received the approval of the Joint Parliamentary Committee and was passed in the Lok Sabha, in the ongoing Monsoon Session. The new legislation may open a window for government agencies to divert land not classified as 'forest' in government records to other purposes.

"One of the important amendments in the [FCA-2023](#) is altering the definition of 'forest' set by the Supreme Court of India in 1996. The amendment Bill proposes that the FCA-2023 would be applicable only to the forest or plots that have been notified as 'forest' according to the Indian Forest Act, 1927; and plots or areas recorded as 'forest' in government records on or after October 25, 1980," said Bhubaneswar-based Manohar Chauhan, an expert on the implementation of the Forest Rights Act.

In 2013, up to 12 villages, home to 202 Dongria Kondh households, voted against a mining proposal in the Niyamgiri hill range, situated in Odisha's south-west. The proposal would have aided the London-headquartered Vedanta Group's alumina facility at Lanjigarh in Kalahandi district. Kalahandi and Rayagada districts are where the tribe's religious and cultural identity, and traditional livelihood opportunities lie.

"Most Dongria Kondh tribals are not aware of this proposal and its implications," said Lingaraj Azad, the convener of the Niyamgiri Suraksha Samiti, which had spearheaded the movement against the mining proposal in Niyamgiri.

This month, Mr. Chauhan, who was formerly with UNDP and currently works with the non-profit Foundation for Ecological Security, did an analysis of land holdings in the hill range. This

showed that 95% of land was not classified as 'forest' in government records, though large tracts of forest could be found there.

"The record of rights (RoR, a document containing all details about a piece of land) analysis shows that there are 3,634.54 acres of land in these 12 revenue villages. Of this, 3,467.94 acres constituting 95.42% are categorised as government land. Only 166.6 acres constituting 4.58% acres are under private ownership. Of the government-owned land, there are only 106.54 acres of recorded forestland. This is only 2.93% of the total land and 3.07% of the government-owned land," the FRA expert said. Mr. Chauhan clarified that on ground, "there are vast forest stretches".

Similarly, Tushar Dash, an independent researcher, Bhubaneswar, said, "The FCA-2023 seeks to reclassify 'forest' to exclude forest land categories such as deemed and revenue forests, private forestland, and plantations. It means the agencies will now be able to bypass forest diversion processes." These processes take years and compulsorily need the go-ahead of gram sabhas.

He explains that the proposals can lead to excluding large areas of forest that come under the deemed forest category, which tribal and other forest-dwelling communities have legal rights over. These may not be recorded as 'forest' in government records, and account for about 66 lakh acres in Odisha.

Deemed forest lands are located in the tribal districts of Rayagada, Koraput, Kalahandi, Nuapada, Sundargarh, Sambalpur, Keonjhar, Mayurbhanj, Nayagarh, Khordha as well as in some coastal areas. "All these forest areas and communities will be directly affected by the FCA," Mr. Dash said.

Sweta Mishra, a lead consultant at the Scheduled Castes and Scheduled Tribes Research and Training Institute in Bhubaneswar, said, "The Dongria Kondhs treats the hills as the abode of their deity Niyamaraja. They protect and preserve these areas."

On August 9, the Niyamgiri Suraksha Samiti will bring together the tribe to observe International Day of the World's Indigenous People at Lanjigarh in Kalahandi, a district of waterfalls and Paleolithic cave paintings. "We will explain the threat of the provisions to community," said Mr. Azad.

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## WILDLIFE TRAFFICKING IN TAMIL NADU

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

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July 30, 2023 12:41 am | Updated 08:08 am IST

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Lorikeets and Moluccan Lory at Kookyland, a private aviary at Mettupalayam. Such private aviaries have started coming up across Tamil Nadu over the last few years. | Photo Credit: S. Siva Saravanan

In an exotic bird park at Mettupalayam in Coimbatore district, Kookyland, visitors are charged 200 in entry fee. These exotic birds include macaws, the endangered African grey parrot, conures and lorikeets. The other exhibits include diamond doves, hedgehogs, exotic pythons, dwarf hamsters and iguanas. "All the species in my collection are foreign species that are allowed to be kept in India," says M.M. Sridhar, of Kookyland. "We have declared all the species in our collection in the Parivesh portal as per norms and officials of different departments also inspect the park often," he adds.

Similar private aviaries have started springing up across Tamil Nadu over the last few years with a boom in the interest among people in interacting with exotic wildlife. Has this interest brought on a rapacious industry thriving on the trade in exotic animals, many of which are often illegally trafficked into the country? While the trade in native Indian species of wildlife is protected by the Wild Life (Protection) Act, 1972, animals brought into India from other countries till recently had very little oversight once they entered Indian borders. From aviaries to private zoos, the lack of regulation of the sale and exhibition of non-native fauna could drive the threatened species towards extinction in other countries, besides endangering the local biodiversity, experts caution.

In the 2023 newsletter, 'TRAFFIC Post', on wildlife trade in India, Astha Gautam and Merwyn Fernandes of TRAFFIC's India office, a non-governmental organisation working on understanding and addressing global trade in wildlife, said the Ministry of Environment, Forest and Climate Change issued an advisory on import of exotic live wildlife species into India and declaration of animals that had already been brought into the country. In December 2022, a new amendment to the Wild Life (Protection) Act meant that owners of exotic animals are now mandated to declare ownership of their animals.

"The amendment introduced regulation of CITES-listed species under Schedule IV of the Act. Prior to this, the EXIM policy regulated the trade of exotic species in India. However, this presented a gap in intervening in the possession and trade of CITES-listed species beyond trade points. Now, the inclusion of the species in the national legislation can help take enforcement action for violation of the provisions of CITES," Mr. Fernandes told The Hindu.

CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) is a



multilateral treaty to protect endangered plants and animals from the threats of international trade. India is a signatory to it. Many species listed in Appendices I, II and III of CITES are brought into the country and sold to private collectors and as pets, conservationists and experts allege. Animals listed in Appendix I include species threatened with extinction and CITES prohibits the trade in these species. Appendix II includes species that could face extinction unless trade is “closely regulated”. Appendix III includes species included at the request of a country requiring international cooperation to prevent “unsustainable and illegal exploitation”.

Ms. Gautam and Mr. Fernandes, who analysed the CITES trade database, state that between 2017 and 2021, 20 species of parrots listed in Appendix II and four species in Appendix I, including golden parakeet, grey parrot, military macaw and scarlet macaw, were imported, besides nine exotic species of reptiles included in Appendices I and II. The imported species were assessed as “near threatened”, “vulnerable” and “endangered” by the Red List of the International Union for Conservation of Nature (IUCN). Shekhar Kumar Niraj is the Principal Chief Conservator of Forests (Biodiversity), Tamil Nadu, and the former country head of TRAFFIC India. Mr. Niraj, who implemented CITES in India’s western and southern regions, said that until recently, non-native wild animals being brought into the country could only be governed by the Customs Act, 1962, and the Export Import (Exim) Policy. This weakened the regulation of trade in non-native wildlife.

“For a start, there was no specific legislation to back up CITES implementation except the Customs Act, 1962, which didn’t empower forest officials to take cognisance of smuggled wildlife. Moreover, there were only five CITES central offices, with a few sub-regional offices located across the country with a limited number of staff members. Secondly, if the animals managed to get through customs zones, where the Customs Act was applicable, enforcement became difficult as the local Forest Departments had no enforcement authority as till recently, they were not governed by the Wild Life (Protection) Act, 1972,” he added.

Mr. Niraj said that while the new amendment meant more focus on the trade in species listed in the CITES appendices, there were many species which were not included in the CITES appendices were being traded with no regulation.

He added that neither customs officials nor Forest Department employees had the expertise or competence to identify or handle non-native species. “With the recent amendments, species, especially those listed in Appendix I of CITES, are more strictly controlled; but that, too, has issues as there are very few quarantine centres in the country where these animals can be moved to,” he said. In some cases, non-native wildlife are released into the local ecosystems, leading to the risk of these animals becoming invasive at the cost of the native wildlife. Besides, one may not know what pathogenic transmission could be in the offing from the illegally released animals.

He called for more specialised training for forest, customs and police officers in identifying protected and commonly traded non-native species; better quarantine and upkeep facilities; and carefully thought-out plans to deal with the seized animals.

N. Sadiq Ali, founder of the Wildlife and Nature Conservation Trust, said the reach of social media and rising affluence were leading to a surge in demand for exotic pets across India. “Even chimpanzees and orangutans are trafficked into India, while potentially invasive species such as Burmese pythons, ball pythons, various species of frogs and arachnids are sold in open markets across the country,” he said, adding that once these animals enter the country, there is very little oversight of how they are handled. “Private aviaries are almost unregulated. Even government zoos have so many rules and regulations to follow; the same must be applied to private collectors,” said Mr. Sadiq Ali, adding that private collections of exotic animals exhibited to



members of the public should be brought under the regulatory purview of the Central Zoo Authority.

TRAFFIC collated data from open media sources on wildlife seizures from 2022 and found 56 seizures of exotic animals across India, with Tamil Nadu recording the second highest. Throughout India, more than 100 primates, including Moor macaques, grey monkeys, pygmy marmosets, spot-nosed monkeys, Myanmar snub-nosed monkeys, Tamarins, spider monkeys, capuchins, orangutans and chimpanzees, were seized, besides mammals such as kangaroos, otters, beavers, wallabies, servals, porcupines, sloths, capybaras and cuscus. A total of 157 reptiles and thousands of birds were also seized during the period. Parrots accounted for the highest number of species seized, with over 1,000 individuals.

A senior official of the Forest Department said several private breeders sell exotic species through their contacts in closed networks of WhatsApp or Telegram groups. Such breeders are more likely to keep species that are not allowed for international trade but are smuggled into the country.

In the Yelagiri Hills of Tirupattur district, five private aviaries exhibit exotic animals. District Forest Officer Naga Satish Gidijala said the Forest Department maintains a list of private bird parks. A list of birds and animals that are protected under the Wild Life (Protection) Act, 1972, has been given to the owners of the private bird parks and pet shops in the hills. They have been asked not to procure these species from vendors as it is against the law.

Private Faunus Wildlife Park, Panaiyur, ECR. | Photo Credit: M. KARUNAKARAN

Even after the Wild Life (Protection) Amendment Act, 2022, was enacted to help India conform to the provisions of CITES, regulations for procuring and exhibiting exotic wildlife are still sketchy, even as an increasing number of aviaries and petting zoos are popping up across the State. One such facility is the month-old Faunus Park in Chennai that houses 13 species of exotic birds, including blue-and-yellow macaws, African grey parrots, bobwhite quails and conures. On June 6, Forest Department officials inspected the park. E. Prasanth, Wildlife Warden, Chennai, says they had made a voluntary declaration in the Parivesh portal for possession of exotic wildlife but details of the import of the birds were unclear.

The “grey areas” in the Act are not helping in regulating possession of and trade in exotic wildlife, say officials and experts. As many as 16,000 voluntary declarations of exotic live species — all of which come under Schedule IV of the Wild Life (Protection) Amendment Act (specimens listed in CITES appendices) — have been made from Tamil Nadu, according to Chief Wildlife Warden Srinivas R. Reddy. “We need clarification on approving them as earlier they were only categorised as exotic, but with the Amendment Act in place there are regulations of their trade,” he says, adding that the question of how the birds were imported now arises. The same scrutiny also applies to breeders, who are required to make an application before July 31 to breed animals listed in Appendix I of Schedule IV of the Act, he adds.

There are no rules defined in the Act for displaying exotic species, says Jose Louies, chief of enforcement (wildlife crime control), Wildlife Trust of India. “As per law, if one wants to display animals, one needs a zoo permit. But the clause under zoo management only mentions ‘wildlife’ that refers to native wild animals and birds and not CITES specimens,” he says. Calling for tightening regulation of wildlife trade, he cautioned against damage to the ecosystem and biodiversity in other countries as well as in India because exotic animals brought into the country could become invasive.

*(With inputs from Wilson Thomas in Coimbatore, Beulah Rose in Madurai, Nahla Nainar in*

*Tiruchi and D. Madhavan in Vellore.)*

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# PLASTIC POLLUTION WIDESPREAD IN WATER BODIES ACROSS THE WORLD

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

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July 29, 2023 09:15 pm | Updated 09:15 pm IST

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Two papers published in *Nature* have found evidence for widespread plastic contamination of coral reefs and freshwater lakes. The reef study finds that larger fragments (mostly debris from the fishing industry) make up most of the plastic found, and these macroplastics are especially abundant in deep reefs. The assessment of freshwater lakes and reservoirs reveals that all assessed bodies of water were contaminated with microplastics.

Hudson Pinheiro from the California Academy of Sciences, San Francisco and colleagues surveyed global reefs for macroplastics (over 5 cm) and other debris in 84 shallow (less than 30 metres deep) and deep (30-150 metres) coral ecosystems at 25 locations across the Pacific, Atlantic and Indian Ocean basins. Debris was found in 77 of the 84 sites including in some of Earth's most remote and near-pristine reefs, such as in uninhabited central Pacific atolls. Macroplastics accounted for 88% of the debris found. Levels of macroplastics were highest in the deep reefs. In most surveyed areas, fishing vessels were identified as the main source of plastic, such as lines and discarded traps. The findings contrast with the global pattern observed in other nearshore marine ecosystems, where macroplastic densities decrease with depth and are dominated by consumer items.

In the second study, Veronica Nava from the University of Milano-Bicocca, Milan, Italy. and others sampled the surface waters of 38 lakes and reservoirs in 23 countries mainly concentrated in the Northern Hemisphere. They found microplastics (over 250 microns) in all sample sites. "Our results indicate that two types of lakes are particularly vulnerable to plastic contamination: lakes and reservoirs in densely populated and urbanised areas and large lakes and reservoirs with elevated deposition areas and high levels of anthropogenic influence," they write.

They found plastic concentrations varying widely among lakes. In the most polluted lakes, plastic concentrations were found to "reach or even exceed those reported in the subtropical oceanic gyres, marine areas collecting large amounts of debris". "Our findings highlight the importance of including lakes and reservoirs when addressing plastic pollution, in the context of pollution management and for the continued provision of lake ecosystem services," they note.

The two studies demonstrate the widespread contamination of water bodies with plastic debris, and underscore the urgent need for coordinated, systematic monitoring of plastic pollution.

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