



India's #1 Self-Study Notes

crack
IAS.com

📞 **92170 70707**
crackiasquery@gmail.com

www.crackIAS.com

Introduces the most scientific & easiest way of preparing

CURRENT AFFAIRS

Topic Wise NEWS

← SOURCES →

**PIB » The Hindu » Live Mint » HT » TOI » RBI ET » Indian Express
PRS Blog » IDSA » Government of India & UNO Official Sites
NASA & Nature into these subject separately.**



**Topic Wise News for
GS (Pre-cum-Mains)
every Month**

Download your copy from crackIAS.com

Monthly Archive on **topic** wise news for **GS Pre & Mains**

Index

Effecting the ban on single-use plastics	2
Children spread their wings with new game	5
'Limited change' in cities under clean air scheme	6
For Vizhinjam, business as usual is not an option	7
Breather for coal plants draws anguish	10
Australia passes key Bill on climate change	12
Eight African cheetahs to land in Jaipur on Friday	13
Ghost islands of the Arctic: The world's 'northern-most island' isn't the first to be erased from the map	14
India's growing water crisis, the seen and the unseen	17
NITI Aayog Celebrates One-Year Anniversary of Shoonya Campaign	19
Jet that flew in cheetahs had earned its stripes	22
'Crime scripts' to unravel illegal trade of marine species	24
Cheetahs from Namibia get a new home in India	26
Explained	27
Joymala's case flags gaps in private ownership norms for elephants	29
Climate change threatens food but algae may offer answers	31
'No spotted deer brought to Kuno as prey for cheetahs'	34
NCC, UNEP sign MoU to tackle plastic pollution	35
India gets its first avalanche monitoring radar in Sikkim	36
Indian skimmers by the Chambal	37
Rescued bear cubs set to be released in Arunachal national park	39
Glue traps prove fatal for wild animals in Mumbai	41
New lakes in Alaska is releasing bubbles full of methane	43
National Expo on Eco-alternatives to banned single use items and Startup Conference 2022	45
Elephants re-colonise Bandhavgarh Tiger Reserve, helped by the local community	50
In nature's warning signs, a nudge to riparian states	52

EFFECTING THE BAN ON SINGLE-USE PLASTICS

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

The story so far: The Ministry of Environment, Forest and Climate Change, Government of India, notified the Plastic Waste Management Amendment Rules, 2021 on August 12, 2021. In keeping with the spirit of the 'Azadi ka Amrit Mahotsav', the country is taking steps to curb littered and unmanaged plastic waste pollution. Since July 1, 2022, India has banned the manufacture, import, stocking, distribution, sale, and use of single-use plastic (SUP) items with low utility and high littering potential. India is a party to the United Nations Environment Assembly (UNEA). In all, 124 nations are party to the UNEA, and India has signed a resolution to draw up an agreement in the future that will make it legally binding for signatories to address the full life cycle of plastics, from production to disposal.

The purpose of single-use plastics is to use them once or for a short period of time before disposing of them. Plastic waste has drastic impacts on the environment and human health. There is a greater likelihood of single-use plastic products ending up in the sea than reusable ones.

India has taken resolute steps to mitigate pollution caused by littered single-use plastics. A number of items are banned, including earbuds with plastic sticks, balloon sticks, plastic flags, candy sticks, ice cream sticks, polystyrene (thermocool) for decorations, plates, cups, glasses, cutlery such as forks, spoons, knives, straws, trays, wrapping or packing films around sweet boxes, invitation cards, cigarette packets, plastic or PVC banners less than 100 micron, stirrers, etc.

Littered single-use plastic items have an adverse effect on both terrestrial and aquatic ecosystems. All countries face a major environmental challenge due to pollution caused by single-use plastic items. India piloted a resolution on single-use plastics pollution at the 4th United Nations Environment Assembly in 2019, recognising the urgent need for the global community to address this issue. This resolution was adopted at the UN Environment Assembly as an important step forward. In the recently concluded 5th session of the United Nations Environment Assembly in March 2022, India engaged constructively with all member states to develop a consensus on a resolution to drive global action against plastic pollution.

However, India is not the first country to ban single-use plastics. Bangladesh became the first country to ban thin plastic bags in 2002; New Zealand banned plastic bags in July 2019. China had issued a ban on plastic bags in 2020 with a phased implementation.

As of July 2019, 68 countries have plastic bag bans with varying degrees of enforcement.

With effect from September 30, 2021, the Plastic Waste Management Amendment Rules, 2021, prohibited the manufacture, import, stocking, distribution, sale, and use of plastic carry bags whose thickness is less than 75 microns. From December 31, 2022, plastic carry bags whose thickness is less than 120 microns will be banned.

It means that the ban does not cover all plastic bags; however, it requires the manufacturers to produce plastic bags thicker than 75 microns which was earlier 50 microns. As per the notification, the standard shall be increased to 120 microns in December this year.

The notification clearly mentioned that plastic or PVC banners/ hoardings should have more than 100 microns in thickness, and non-woven plastic (polypropylene) must be more than 60

GSM (grams per square metre). Non-woven plastic bags have a cloth-like texture but are counted among plastics. Still, plastic or PET bottles, counted among the most recyclable types of plastic, have been left out of the scope of the ban.

In addition, the Indian government has taken steps to promote innovation and create an ecosystem for accelerated adoption and availability of alternatives across the country. To ensure the effective enforcement of the ban, national and State-level control rooms will be established, as well as special enforcement teams for the purpose of checking the illegal sale and use of single-use plastics. To prevent the movement of banned single-use plastic items between States and Union Territories, border checkpoints have been established.

In an effort to empower citizens to help curb the plastic menace, the Central Pollution Control Board (CPCB) has launched a grievance redressal application.

The Government has been taking measures for awareness generation towards the elimination of single-use plastics. The awareness campaign has brought together entrepreneurs and start-ups, industry, Central, State and local Governments, regulatory bodies, experts, citizen organisations, R&D and academic institutions.

In addition, the Ministry of Environment, Forests, and Climate Change notified the Plastic Waste Management Amendment Rules, 2022 on February 16, 2022. Extended Producer Responsibility (EPR) is the responsibility of a producer for the environmentally sound management of the product until the end of its life. The guidelines provide a framework to strengthen the circular economy of plastic packaging waste, promote the development of new alternatives to plastic packaging and provide the next steps for moving towards sustainable plastic packaging by businesses.

The ban will succeed only if all stakeholders participate enthusiastically and engage in effective engagement and concerted actions.

However, if we look back at our past, almost 25 Indian States previously banned plastic at the state level. However, these bans had a very limited impact in reality because of the widespread use of these items.

Now the challenge is to see how the local level authorities will enforce the ban in accordance with the guidelines. Banned items such as earbuds with plastic sticks, plastic sticks for balloons, etc., are non-branded items and it is difficult to find out who the manufacturer is and who is accountable for selling because these items will be available in the market even after the issuing of guidelines.

The consumer needs to be informed about the ban through advertisements, newspaper or TV commercials, or on social media. In order to find sustainable alternatives, companies need to invest in research and development. The solution to the plastic pollution problem is not the responsibility of the government alone, but of industries, brands, manufacturers and most importantly consumers. Finding alternatives to plastic seems a little difficult, however, greener alternatives to plastic may be considered a sustainable option. For example, compostable and bio-degradable plastic, etc., may be considered as an option.

While the total ban on the use of plastic sounds a great idea, its feasibility seems difficult at this hour, especially in the absence of workable alternatives.

G.S. Bajpai is Vice-Chancellor, Rajiv Gandhi National University of Law, Punjab. Sangeeta Taak is an Assistant Professor.

[Our code of editorial values](#)

END

Downloaded from [crackIAS.com](https://crackias.com)

© **Zuccess App** by crackIAS.com

CrackIAS.com

CHILDREN SPREAD THEIR WINGS WITH NEW GAME

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

The game titled Pakshi Parichay ('What's that bird?') entails a set of 40 flashcards on bird species. SPECIAL ARRANGEMENTS SPECIAL ARRANGEMENT

A green group has launched a game of flashcards on the birds of India to keep children away from screens to the open for taking a flight to nature.

Timed ahead of Teacher's Day on September 5, the game titled 'Pakshi Parichay' ('What's that Bird?') entails a set of 40 flashcards on as many species and is aimed at making children get out of their homes, observing birds and learning more about them.

The game has been designed by Early Bird, an avian-specific initiative of the Nature Conservation Foundation.

Designed as an educational game in Hindi, each card features a common Indian bird species with photographs on one side of the flashcard and information about its behaviour and range on the other, with icons for habitat and food, and a trivia section for games.

"Urban children nowadays have access to a variety of fascinating information about wildlife, thanks to mobile phones and Internet. However, much of this is focused on non-Indian species, and many children can identify hummingbirds and bald eagles but not the birds from our own backyard such as sunbirds and kites," Garima Bhatia, programme head of Early Bird and the primary creator of the game said. "This is the reason that on Teacher's Day we wanted children to get off their screens and get into the real world, observing Indian birds in the nature and caring for our natural heritage," she said.

The flashcards have already generated enthusiasm among some children, Early Bird said.

Tallulah D'Silva, a nature educator and an architect based in Goa, experimented with flashcards with secondary school and college students apart from those in pre-primary and primary schools.

"The students were totally engrossed in the game and also trying to outdo each other," Farida Tampal, state director of World Wide Fund for Nature-India said.

[Our code of editorial values](#)

END

Downloaded from crackIAS.com

© **Zuccess App** by crackIAS.com

'LIMITED CHANGE' IN CITIES UNDER CLEAN AIR SCHEME

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

An analysis by the environmental think tank, Centre for Science and Environment, reported “barely any difference” in trends in particulate matter pollution (PM2.5) between the group of cities under the National Clean Air Programme (NCAP) and those outside its ambit.

The NCAP covers 132 of India’s most polluted or so-called non-attainment cities. This is defined as a city whose air quality did not meet the national ambient air quality standards of 2011 to 2015. The NCAP launched in 2019 aims to bring a 20%-30% reduction in pollution levels from PM2.5 and PM10 particles by 2024, using 2017 pollution levels as a base.

Cities are required to quantify improvement starting 2020-21, which requires 15% and more reduction in the annual average PM10 concentration and a concurrent increase in “good air” days to at least 200. Anything fewer will be considered ‘low’ and the funding consequently reduced.

For disbursing funds, the Central Pollution Control Board (CPCB), which coordinates the programme, only considers levels of PM10, the relatively larger, coarser particles. However PM2.5, the smaller, more dangerous particles, aren’t monitored as robustly in all cities, mostly due to the lack of equipment.

The CSE in its national analysis of PM2.5 levels in cities for which data is available found that between 2019 and 2021, only 14 of 43 (NCAP) cities registered a 10% or more reduction in their PM2.5 level between 2019 and 2021. Only 43 cities, said the CSE, were considered as they had adequate data to scientifically establish a long-term trend.

“There is hardly any difference between the performance of NCAP and non-NCAP cities between 2019 and 2021,” said Avikal Somvanshi, programme manager of CSE’s Urban Lab.

Cities in Punjab, Rajasthan and Maharashtra dominated the list of cities which registered a significant increase in PM2.5 levels between 2019 and 2021. Chennai, Varanasi and Pune show the most improvement among NCAP cities. But unlike cities with increasing pollution level which have a very clear regional pattern, there was no regional pattern seen among cities reporting significant improvement in their air quality, the CSE analysis noted.

[Our code of editorial values](#)

END

Downloaded from crackIAS.com

© **Zuccess App** by crackIAS.com

FOR VIZHINJAM, BUSINESS AS USUAL IS NOT AN OPTION

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

In Vizhinjam | Photo Credit: PTI

Revenues from the 7,525-crore deep-water port and terminal at Vizhinjam in Kerala will only be justified if the project provides sufficient safeguards against ecological destruction and addresses the rights of households displaced by the project. Nowhere is this socio-environmental imperative bigger than in Thiruvananthapuram because of its precarious ecology and coast-reliant economy. It is politically hard, but developmentally critical, to make a mid-course shift, to put port development with coastal management on a sustainable track.

Singapore, Shanghai, and Dubai took advantage of ports to become hubs, earn incomes, and drive economic growth. Vizhinjam's proximity to east-west shipping routes, its natural undredged draft of some 20 metres, and suitability for large vessels all make it a unique site. But in a lopsided agreement, the Government of Kerala bears 67% of the financing and the Concessionaire (extended to a generous 40 years) 33%, with a low internal rate of return of 3.7% for the Government and 15% for the Concessionaire. Despite the locational advantages, the Adani Vizhinjam Port Pvt. Ltd., finds the deal attractive only with the inclusion of large real estate components in prime port property. The financial picture of the enterprise for Kerala State is dicey at best.

Another crucial issue is that any revenue generation is at the cost of a heavy human toll. Some 350 families that have lost homes to coastal erosion last year, and those living in makeshift schools and camps are just a foretaste of things to come if coastal erosion and extreme cyclones continue unabated. Port projects in China, Kenya, and Vietnam have seen vast resettlement and livelihood outlays by the owners over the life of the project.

A further danger is an irreversibly destroyed ecology, triggering deadlier hazards of nature. Ports without adequate safeguards in a highly delicate ecology unleash destruction on marine life and the livelihoods of the local population. Visakhapatnam and Chennai show how siltation, coastal erosion and accretion can be exacerbated by deepening of harbour channels in ecologically sensitive areas; this risk is just greater for Vizhinjam by an order of magnitude.

Building safeguards could potentially run economic growth and socio-economic sustainability in tandem. A 2017 study warned of the fallout for the shoreline and marine ecosystem from construction of breakwater and dredging. But no funds have been earmarked for maintenance dredging within operational expenses, based on the false premise that siltation would be "negligible", with "minimum literal drift along the project site".

Equally, project documents hardly address the effects of the port on the precious marine ecosystem and biodiversity, a huge priority for Kerala. Recent studies have identified the Vizhinjam-Poovar stretch as a biodiversity hotspot and recommended that the region be recognised as a marine protected area. The discussion of flora, fauna, and lakes in the environmental impact assessment (EIA) is purely pro-forma.

The vital shoreline assessment in the EIA, released in May 2013, has come under heavy criticism for factual errors. For example, there is no mention of the ecological consequences of the dismantling of two hills in the Western Ghats to provide rocks for the project, aside from

destroying a few promontories at the project site.

A just published study shows that during 2006-20, the sea gobbled some 2.62 square kilometres or close to 650 acres from the Thiruvananthapuram coast alone. The rate of erosion is faster between Pozhikkara and Veli. Also, 0.7 km² of land was accreted.

The latest shoreline report, based on beach profile and satellite analysis, by the National Institute of Ocean Technology (NIOT), Chennai, appointed by the developer, shows significant erosion on the northern coast of the port (Poonthura, Valiyathura, Shanghumugham, Veli) and accretion in the port area and in the south (Poovar, Adimalathura) from 2015 to 2021 during port construction. Many of the spots themselves were the same during 2015-21 compared to previous periods, but new spots (Kochuveli, Cheriathura) too had emerged, post 2015.

The NIOT report attributes the erosion and accretion to climate change more than port activity, on grounds that construction has been modest in scale. That, in fact, aggravates the risk that stepped-up activity, without safeguards, will see more dire consequences. Anthropogenic climate change is unquestionably raising sea levels along Indian coasts, but the extreme stress north of the port cannot be explained by global warming, something that impacts everywhere.

In fact, a study of shoreline changes in Kerala by the National Centre for Sustainable Coastal Management attributes most of the drastic shoreline changes during 1972-2010 to structures built along its coast. Two-thirds of Kerala's coasts are eroding, and precautions are a must before constructing structures along its "eroding and vulnerable" coasts. Thiruvananthapuram has the highest percentage of erosion, facts ignored in environment clearances.

With a port, reclamation, dredging and construction of breakwaters further complicate erosion. Breakwaters have exacerbated the drastic shoreline changes in and around its proximity. In almost all these areas, the coast to the north of the breakwaters is heavily eroded.

A bedrock principle of environmental regulation worldwide is that pollution penalties should be high enough and borne by the creators of damages. For large-scale infrastructure projects, the financier and the borrower must implement sufficient safeguards to avoid marine pollution and destruction. On involuntary dislocation of people that society is willing to accept in return for financial gains, the project must allocate funds in recognition of people's centuries' old right to the sea and its resources.

There are many examples of projects that unduly harm the environment or society, which can be learnt from. Just to take two in relation to the Vizhinjam venture, the International Finance Corporation (IFC) supported the 4,150-Megawatt Tata Mundra coal plant (Gujarat) — the negligence greatly and unnecessarily exceeded the harm to the local poor people. Tata Mundra is one of the 50 biggest sources of greenhouse gas emissions. And in another more recent case, Bravus Mining and Resources (an Adani unit in Australia) has begun construction of its Carmichael thermal coal mine in Queensland's Galilee basin to export vast amounts of coal to India — when the world is moving away from fossil fuels in a desperate effort to save the planet.

Whether there were pre-existing health conditions or not, when COVID-19 infection precipitates illness or death, the pandemic is labelled the proximate cause. The same way, when port construction without adequate social and environmental safeguards harms lives and livelihoods, even in the presence of climate change, the project must take full responsibility for compensation. Corrective action by way of hard-engineering solutions such as seawalls and soft responses such as vegetation is in order.

The first order of business, as in infrastructure projects worldwide, is that the project provides

compensation to the displaced people and restores their rights. Second, the gross neglect of the damage to invaluable marine biodiversity must be redressed with an acceptable EIA, including inputs from experts in biology, ecology, and oceanography. Third, there needs to be an independent assessment of safeguards that port authorities must put in place as a precondition for any further construction.

A Turkish proverb says, “No matter how far you have gone on a wrong road, turn back.” That, in the context of unanswered financial, social and environment risks, means business as usual is not an option. On the other hand, rejecting the project, having approved it, is politically difficult. The way forward would be for the project management to take to heart, in the spirit of learning from experience, the red alerts, and the Government to allow continuation of the project only with agreement for a mid-course transformation, including a legal covenant to make the venture sustainable for Kerala.

Vinod Thomas is a former Senior Vice-President, Independent Evaluation, World Bank, and a former Director-General, Independent Evaluation, Asian Development Bank

[Our code of editorial values](#)

END

Downloaded from crackIAS.com

© **Zuccess App** by crackIAS.com

CrackIAS

BREATHER FOR COAL PLANTS DRAWS ANGUISH

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

The new deadline spans from December 2024 to 2026. Rick Bowmer

The Union Environment Ministry has for the third time extended the deadline by which coal plants must install pollution-control technologies to reduce emissions, drawing criticism from environment and clean-energy activists.

The Ministry first specified emission norms for the control of sulphur dioxide (SO₂), nitrogen oxides (NO_x) and mercury (Hg) from coal-fired power plants in December 2015, giving thermal power plant operators time until December 2017 to install equipment to contain emission of these pollutants. The deadline was then extended to 2022.

Power plants in the National Capital Region, which witnesses some of the worst pollution levels, were given a tighter deadline of 2020. However, non-compliance and limited progress by the plants in the region and elsewhere in the country led to a new extension in March 2021, followed by the notification on Monday pushing it to 2025.

According to the latest notification, power plants within a 10-km radius of the NCR and in the vicinity of cities with a population of more than one million have until December 31, 2024, to meet the deadline. For power plants within a 10-km radius of “critically polluted” areas (as designated by the Environment Ministry), the deadline has been extended to December 31, 2025. Finally, for all other power plants across the country, the deadline stands at December 31, 2026.

While multiple timeline extensions have been given for the installation of flue gas de-sulphurisation equipment, there are sustained efforts toward diluting or doing away with the norms by the power plants, say environmentalists.

“This is evident from the communications in the past and studies put out by the Central Electricity Authority (CEA) and the Union Ministry of Power (MoP), which ignore the basic science and chemistry of SO₂'s role in building up PM_{2.5} concentrations through sulphate formation,” said Sunil Dahiya, analyst at the Centre for Research on Energy and Clean Air.

Ritwick Dutta, environmental lawyer and founder of Legal Initiative for Forest and Environment (LIFE), said, “The fact that another extension has been given clearly shows that the emission norms will never be implemented. All power plants were required to achieve the target for emission standards by December 2017. All missed the target.”

Nivit Yadav of the Centre for Science and Environment (CSE), said, “Our analysis shows that till date, only 4% of India's coal power capacity has installed equipment to control SO₂ emissions and another 41% has identified the vendors for equipment. The remaining 55% of the capacity has not taken any concrete steps to meet the norms.”

[Our code of editorial values](#)

END

CrackIAS.com

AUSTRALIA PASSES KEY BILL ON CLIMATE CHANGE

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

Welcome move: Students demanding action on climate change ahead of the national election, in Sydney. File photo

Australia on Thursday passed its first major climate change Bill in over a decade, codifying emissions targets and enshrining into its law for the first time a goal to reach net zero by 2050.

The legislation, a key election promise of Australia's new centre-left Labour government, aims to slash emissions in the carbon-intensive economy by 43% from 2005 levels.

Its passage was heralded by the government as the end of a decade of Australian inaction on climate, and it garnered broad support from unions and business groups.

One of the world's leading coal and natural gas exporters, Australia has been slow to adopt climate targets, even as it is hit by increasingly ferocious bush fires and floods.

While the new targets are more ambitious than the previous government's planned 26-28% cut by 2030, the legislation has been criticised by some for not doing enough and for failing to ban new coal and gas projects.

"43% is not enough," rugby star turned Senator David Pocock said. "But it's a start... I think it's important that we do legislate a target," said Mr. Pocock, one of the green-minded independents who helped push the Bill through.

Mr. Pocock was among a number of climate-aware candidates swept into office in the last election on promises of swifter action to curb global warming.

The issue was key to the ousting of the previous conservative coalition government after wildfires in the late 2019 and early 2020 tore through 5.8 million hectares of Australia's east and released so much smoke that researchers said it significantly affected the ozone hole above Antarctica.

However, fossil fuels, coal and gas in particular, remain central to the Australian economy, rendering climate action a politically fraught subject.

"Clearly the impediment in Australia hasn't been people (or) communities (not) wanting more action, it's been lack of political will," Mr. Pocock said.

[Our code of editorial values](#)

END

Downloaded from **crackIAS.com**

© **Zuccess App** by crackIAS.com

EIGHT AFRICAN CHEETAHS TO LAND IN JAIPUR ON FRIDAY

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

Big journey:An India-bound African Cheetah undergoing health exam by an international team of experts .File photo

Later this week, eight cheetahs from Namibia will depart from the capital Windhoek in a chartered flight and land in Jaipur on Friday. From here they will be transported in a helicopter and, after a 40-minute journey to the Kuno National Park (KNP) will be released on September 17 into a dedicated, 'quarantine' enclosure under the watch of Prime Minister Narendra Modi, officials from the Union Environment Ministry said on Monday.

September 17 is Mr. Modi's birthday and the release of the cheetahs are timed to mark the celebrations, Madhya Pradesh Chief Minister Shivraj Chauhan, said last month.

The cheetahs will initially be in quarantine enclosures for about a month and then moved to 6-square kilometre, 'predator-proof,' holding facilities that will also host live prey. It will be a few months before the cheetahs are released into the wild. All the animals will be radio collared and their movements tracked via GPS. Based on current prey estimates, the Kuno National Park can support up to 20 cheetahs and with restoration, protection and management this number can go up to 40 individuals, officials estimate.

Animals present in Kuno that can be potential prey include chital, sambar, nilgai, wild pig, chowsingha, langur, peafowl, hare and feral cattle. Close to 748 square km of forest landscape is available to the cheetahs in the park. This is part of the plan to help the animals acclimatise to Indian conditions. However, a local obstacle to the cheetah was that the current enclosures in Kuno-Palpur had five leopards all of whom needed to be relocated as it was inadvisable to have the two species coexist during the cheetah's acclimatisation.

Over time, says the action plan by the Centre, cheetah and leopard populations will be able to coexist.

India has also finalised an agreement with South Africa to source the animals but this is yet to be signed.

[Our code of editorial values](#)

END

Downloaded from **crackIAS.com**

© **Zuccess App** by crackIAS.com

GHOST ISLANDS OF THE ARCTIC: THE WORLD'S 'NORTHERN-MOST ISLAND' ISN'T THE FIRST TO BE ERASED FROM THE MAP

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

But there was a mystery afoot in the region. Just north of Cape Morris Jesup, several other small islands had been discovered over the decades, and then disappeared.

A previously uncharted island off the coast of northern Greenland is a contender for the title of the most northerly known landmass in the world. Image for representation. | Photo Credit: REUTERS

Some scientists theorized that these were rocky banks that had been pushed up by sea ice.

But when a team of Swiss and Danish surveyors traveled north to investigate this “ghost islands” phenomenon, they discovered something else entirely. They announced their findings in September 2022: These elusive islands are actually large icebergs grounded at the sea bottom. They likely came from a nearby glacier, where other newly calved icebergs, covered with gravel from landslides, were ready to float off.

This was not the first such disappearing act in the high Arctic, or the first need to erase land from the map. Nearly a century ago, an innovative airborne expedition redrew the maps of large swaths of the Barents Sea.

The view from a zeppelin in 1931

The 1931 expedition emerged from American newspaper magnate William Randolph Hearst's plan for a spectacular publicity stunt.

Hearst proposed having the Graf Zeppelin, then the world's largest airship, fly to the North Pole for a meeting with a submarine that would travel under the ice. This ran into practical difficulties and Hearst abandoned the plan, but the notion of using the Graf Zeppelin to conduct geographic and scientific investigations of the high Arctic was taken up by an international polar science committee.

The airborne expedition they devised would employ pioneering technologies and make important geographical, meteorological and magnetic discoveries in the Arctic – including remapping much of the Barents Sea.

The expedition was known as the Polarfahrt – “polar voyage” in German. Despite the international tensions at the time, the zeppelin carried a team of German, Soviet and U.S. scientists and explorers.

Among them were Lincoln Ellsworth, a wealthy American and experienced Arctic explorer who would write the first scholarly account of the Polarfahrt and its geographical discoveries. Two important Soviet scientists also participated: the brilliant meteorologist Pavel Molchanov and the expedition's chief scientist, Rudolf Samoylovich, who performed magnetic measurements. In charge of the meteorological operations was Ludwig Weickmann, director of the Geophysical Institute of the University of Leipzig.

The expedition's chronicler was Arthur Koestler, a young journalist who would later become famous for his anti-communist novel "Darkness at Noon," depicting totalitarianism turning on its own party loyalists.

The five-day trip took them north over the Barents Sea as far as 82 degrees north latitude, and then eastward for hundreds of miles before returning southwestward.

Koestler provided daily reports via shortwave radio that appeared in newspapers around the world.

"The experience of this swift, silent and effortless rising, or rather falling upwards into the sky, is beautiful and intoxicating," Koestler wrote in his 1952 autobiography. "... it gives one the complete illusion of having escaped the bondage of the earth's gravity.

"We hovered in the Arctic air for several days, moving at a leisurely average of 60 miles per hour and often stopping in mid-air to complete a photographic survey or release small weather balloons. It all had a charm and a quiet excitement comparable to a journey on the last sailing ship in an era of speed boats."

'The disadvantage of not existing'

The high latitude regions the Polarfahrt passed over were incredibly remote. In the late 19th century, Austrian explorer Julius von Payer reported the discovery of Franz Josef Land, an archipelago of nearly 200 islands in the Barents Sea, but initially there had been doubts about Franz Josef Land's existence.

The Polarfahrt confirmed the existence of Franz Josef Land, but it would reveal that the maps produced by the early explorers of the high Arctic had startling deficiencies.

For the expedition, the Graf Zeppelin had been outfitted with wide-angle cameras that allowed detailed photography of the surface below. The slowly moving Zeppelin was ideally suited for this purpose and could make leisurely surveys that were not possible from fixed-wing aircraft overflights.

"We spent the remainder of [July 27] making a geographical survey of Franz Josef Land," Koestler wrote.

"Our first objective was an island called Albert Edward Land. But that was easier said than done, for Albert Edward Land had the disadvantage of not existing. It could be found on every map of the Arctic, but not in the Arctic itself ... "

Next objective: Harmsworth Land

Funny as it sounds Harmsworth Land didn't exist either. Where it ought to have been, there was nothing but the black polar sea and the reflection of the white Zeppelin.

"Heaven knows whether the explorer who put these islands on the map (I believe it was Payer) had been a victim of a mirage, mistaking some icebergs for land ... At any rate, as of July 27, 1931, they have been officially erased." The expedition would also discover six islands and redraw the coastal outlines of many others.

A revolutionary way to measure the atmosphere The expedition was also remarkable for the instruments Molchanov tested aboard the Graf Zeppelin – including his newly invented

“radiosondes.” His technology would revolutionize meteorological observations and led to instruments that atmospheric scientists like me rely on today.

Until 1930, measuring the temperature high in the atmosphere was extremely challenging for meteorologists.

They used so-called registering sondes that recorded the temperature and pressure by weather balloon. A stylus would make a continuous trace on paper or some other medium, but to read it, scientists would have to find the sonde package after it dropped, and it typically drifted many miles from the launch point. This was particularly impractical in remote areas such as the Arctic.

Molchanov’s device could radio back the temperature and pressure at frequent intervals during the balloon flight. Today, balloon-borne radiosondes are launched daily at several hundred stations worldwide.

The Polarfahrt was Molchanov’s chance for a spectacular demonstration. The Graf Zeppelin generally flew in the lowest few thousand feet of the atmosphere, but could serve as a platform to release weather balloons that could ascend much higher, acting as remotely reporting “robots” in the upper atmosphere.

Molchanov’s hydrogen-filled weather balloons provided the first observations of the stratospheric temperatures near the pole. Remarkably, he found that at heights of 10 miles the air at the pole was actually much warmer than at the equator.

Fate of the protagonists

The Polarfahrt was a final flourish of international scientific cooperation at the beginning of the 1930s, a period that saw a catastrophic rise of authoritarian politics and international conflict. By 1941, the U.S., Soviet Union and Germany would all be at war.

Molchanov and Samoylovich became victims of Stalin’s secret police. As a Hungarian Jew, Koestler would have his life and career shadowed by the politics of the age. He eventually found refuge in England, where he built a career as a novelist, essayist and historian of science.

The Graf Zeppelin continued in commercial passenger service principally on trans-Atlantic flights. But one of history’s most iconic tragedies soon ended the era of zeppelin travel.

In May 1937, the Graf Zeppelin’s younger sister airship, the Hindenburg, caught fire while trying to land in New Jersey. The Graf Zeppelin was dismantled in 1940 to provide scrap metal for the German war effort. (The Conversation) MRJ

[Our code of editorial values](#)

END

Downloaded from **crackIAS.com**

© **Zuccess App** by crackIAS.com

INDIA'S GROWING WATER CRISIS, THE SEEN AND THE UNSEEN

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

At Kundacha village near Jawhar town, in Maharashtra | Photo Credit: Arunangsu Roy Chowdhury

The UNESCO United Nations World Water Development Report of 2022 has encapsulated global concern over the sharp rise in freshwater withdrawal from streams, lakes, aquifers and human-made reservoirs, impending water stress and also water scarcity being experienced in different parts of the world. In 2007, 'Coping with water scarcity' was the theme of [World Water Day](#) (observed on March 22). The new [Water Report of the Food and Agriculture Organization](#) of the United Nations (FAO) sounded a note of caution about this silent crisis of a global dimension, with millions of people being deprived of water to live and to sustain their livelihood.

Further, the [Water Scarcity Clock](#), an interactive webtool, shows that over two billion people live in countries now experiencing high water stress; the numbers will continue to increase. The Global Drought Risk and Water Stress map (2019) shows that major parts of India, particularly west, central and parts of peninsular India are highly water stressed and experience water scarcity. A NITI Aayog report, 'Composite Water Management Index' (2018) has sounded a note of caution about the worst water crisis in the country, with more than 600 million people facing acute water shortages. The typical response of the areas where water shortage or scarcity is high includes transfer of water from the hinterlands/upper catchments or drawing it from stored surface water bodies or aquifers. This triggers sectoral and regional competition; rural-urban transfer of water is one such issue of global concern.

Increasing trans-boundary transfer of water between rural and urban areas has been noted in many countries since the early 20th century. A review paper published in 2019 reported that, globally, urban water infrastructure imports an estimated 500 billion litres of water per day across a combined distance of 27,000km. At least 12% of large cities in the world rely on inter-basin transfers. A UN report on 'Transboundary Waters Systems – Status and Trend' (2016) linked this issue of water transfer with various Sustainable Development Goals proposed to be achieved during 2015 to 2030. The report identified risks associated with water transfer in three categories of biophysical, socio-economic and governance. South Asia, including India, falls in the category of high biophysical and the highest socio-economic risks.

According to Census 2011, the urban population in India accounted for 34% of total population distributed in 7,935 towns of all classes. It is estimated that the urban population component in India will cross the 40% mark by 2030 and the 50% mark by 2050 (World Urbanization Prospects, 2018). The urban population accounted for 50% of the total world population by the end of the last century. Although the pace of India's urbanisation is relatively slow, it is now urbanising at a rapid pace — the size of the urban population is substantial. Water use in the urban sector has increased as more and more people shift to urban areas, and per capita use of water in these centres rises, which will continue to grow with improved standards of living.

Examining the urban water management trajectory, it is evident that in the initial stages when a city is small, it is concerned only with water supply; in a majority of cases, water is sourced locally, with groundwater meeting the bulk of the supply. As the city grows and water management infrastructures develop, dependence shifts to surface water.

With a further growth of cities, water sources shift further up in the hinterlands, or the allocation of urban water is enhanced at the expense of irrigation water. Almost all cities in India that depend on surface water experience this trend. City water supply is now a subject of inter-basin and inter-State transfers of water.

Ahmedabad is an interesting case in this context. More than 80% of water supply in this city used to be met from groundwater sources till the mid-1980s. The depth to groundwater level reached 67 metres in confined aquifers. The city now depends on the Narmada canal for the bulk of its water supply. The shift is from local groundwater to canal water receiving supply from an inter-State and inter-basin transfer of surface water.

Dependence on groundwater continues particularly in the peri-urban areas in almost all large cities that have switched to surface water sources. While surface water transfer from rural to urban areas is visible and can be computed, the recharge areas of groundwater aquifers are spread over well beyond the city boundary or its periphery.

Whatever be the source, surface or groundwater, cities largely depend on rural areas for raw water supply, which has the potential to ignite the rural-urban dispute. Available studies covering Nagpur and Chennai indicate the imminent problem of rural-urban water disputes that the country is going to face in the not-so-distant future as water scarcity grows, which will be further exacerbated by climate change.

At present, the rural-urban transfer of water is a lose-lose situation in India as water is transported at the expense of rural areas and the agricultural sector; in cities, most of this water is in the form of grey water with little recovery or reuse, eventually contributing to water pollution. Rural and urban areas use water from the same stock, i.e., the water resources of the country. Therefore, it is important to strive for a win-win situation.

Such a situation is possible through a host of activities in the rural and urban areas, which is primarily a governance challenge. A system perspective and catchment scale-based approach are necessary to link reallocation of water with wider discussions on development, infrastructure investment, fostering an rural-urban partnership and adopting an integrated approach in water management.

Institutional strengthening can offer entry points and provide opportunities to build flexibility into water resource allocation at a regional level, enabling adjustments in rapidly urbanising regions. In India's 75th anniversary of Independence, it is time to examine the state of its water resources and ensure that the development process is not in jeopardy.

Srikumar Chattopadhyay is former Scientist, Centre for Earth Science Studies, Thiruvananthapuram, and Indian Council of Social Science Research (ICSSR) National Fellow, Gulati Institute of Finance and Taxation, Thiruvananthapuram

[Our code of editorial values](#)

END

Downloaded from crackIAS.com

© **Zuccess App** by crackIAS.com

NITI AAYOG CELEBRATES ONE-YEAR ANNIVERSARY OF SHOONYA CAMPAIGN

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

NITI Aayog held a day-long forum today to commemorate the one-year anniversary of Shoonya, India's zero pollution e-mobility campaign.

Shoonya is a consumer awareness campaign to reduce air pollution by promoting the use of electric vehicles (EVs) for ride-hailing and deliveries. The campaign has 130 industry partners, including ride-hailing, delivery and EV companies.

All the partners participated in today's forum and shared their success stories and commitments toward fleet electrification. G20 Sherpa Amitabh Kant, NITI Aayog CEO Param Iyer, MyGov CEO Abhishek Singh, Delhi Government Principal Secretary Ashish Kundra, Mahindra Electric Mobility CEO Suman Mishra, and several others attended the event.

In his keynote address, G20 Sherpa Amitabh Kant said, "The success of the Shoonya campaign is evidence that the green mobility revolution is knocking on our doors. The future belongs to a shared and connected world through electric mobility."

Underscoring the important role of green mobility in achieving India's decarbonization goals, NITI Aayog CEO Param Iyer said, "The Shoonya campaign has the potential to galvanize participation from all sectors towards the goal of green mobility."

Today's forum provided opportunities for partners to share knowledge and learnings and initiate collaborative engagements. During the focused discussions, corporates shared their challenges in scaling EVs and solicited feedback on driving impact through the campaign.

The *National Programme on Advanced Chemistry Cell (ACC) Energy Storage (Part III)* report was also launched during the event. The report highlights that India's \$2.5-billion Production-Linked Incentive (PLI) scheme for Advanced Chemistry Cell (ACC) energy storage is critical for meeting the projected cumulative battery demand of 106–260 GWh by 2030 to successfully realize the country's vision for EV adoption and grid decarbonisation. Read the report [here](#).

[#HappeningNow](#) at the Shoonya Forum.

To discuss the role of [@Shoonya_India](#) towards Communicating for Impact, Group 1 deliberated on the nuances of driving behaviour change through consumer engagement and collaboration. [#ShoonyaTurnsOne pic.twitter.com/A30BSreZPL](#)

About Shoonya:

Rapid global urbanization and e-commerce sales are driving significant growth in urban freight and mobility demand. In India, these sectors are expected to grow at a CAGR of 8% through 2030. If this demand is met by internal combustion vehicles (ICE), it would significantly increase local air pollution, carbon emissions, and lead to adverse public health effects. EVs offer an opportunity to address these challenges. Compared to ICE vehicles, EVs do not emit PM or NOx emissions at the tailpipe; they release 60% less CO2 and have 75% lower operating costs. Shoonya supplements existing national and sub-national EV policies as well as corporate efforts in India by creating consumer awareness and demand for zero pollution rides and deliveries in

Indian cities.

Till April 2022, the estimated number of electric deliveries and rides completed by corporate partners via the Shoonya campaign was close to 20 million and 15 million, respectively. This translates to a carbon dioxide emission savings of over 13,000 tonnes.

If all final-mile deliveries and rides in India were shoonya, India would be well on its way to improving air quality, reducing public health costs, enhancing energy security, and achieving its climate targets. The electrification of the ride-hailing and delivery sector in India could mitigate close to 54 MT of CO₂ emissions, 16,800 tonnes of PM emissions, and 537,000 tonnes of NO_x pollution, saving roughly 5.7 lakh crore in expenditures over a year. Thus, Shoonya can lead to dramatic emission reductions in the transport sector, supporting India's five-point agenda (Panchamrit), announced at COP 26, to reduce carbon emissions and secure its 2070 climate goals.

DS/AK

NITI Aayog held a day-long forum today to commemorate the one-year anniversary of Shoonya, India's zero pollution e-mobility campaign.

Shoonya is a consumer awareness campaign to reduce air pollution by promoting the use of electric vehicles (EVs) for ride-hailing and deliveries. The campaign has 130 industry partners, including ride-hailing, delivery and EV companies.

All the partners participated in today's forum and shared their success stories and commitments toward fleet electrification. G20 Sherpa Amitabh Kant, NITI Aayog CEO Param Iyer, MyGov CEO Abhishek Singh, Delhi Government Principal Secretary Ashish Kundra, Mahindra Electric Mobility CEO Suman Mishra, and several others attended the event.

In his keynote address, G20 Sherpa Amitabh Kant said, "The success of the Shoonya campaign is evidence that the green mobility revolution is knocking on our doors. The future belongs to a shared and connected world through electric mobility."

Underscoring the important role of green mobility in achieving India's decarbonization goals, NITI Aayog CEO Param Iyer said, "The Shoonya campaign has the potential to galvanize participation from all sectors towards the goal of green mobility."

Today's forum provided opportunities for partners to share knowledge and learnings and initiate collaborative engagements. During the focused discussions, corporates shared their challenges in scaling EVs and solicited feedback on driving impact through the campaign.

The *National Programme on Advanced Chemistry Cell (ACC) Energy Storage (Part III)* report was also launched during the event. The report highlights that India's \$2.5-billion Production-Linked Incentive (PLI) scheme for Advanced Chemistry Cell (ACC) energy storage is critical for meeting the projected cumulative battery demand of 106–260 GWh by 2030 to successfully realize the country's vision for EV adoption and grid decarbonisation. Read the report [here](#).

[#HappeningNow](#) at the Shoonya Forum.

To discuss the role of [@Shoonya India](#) towards Communicating for Impact, Group 1 deliberated on the nuances of driving behaviour change through consumer engagement and collaboration. [#ShoonyaTurnsOne pic.twitter.com/A30BSreZPL](#)

About Shoonya:

Rapid global urbanization and e-commerce sales are driving significant growth in urban freight and mobility demand. In India, these sectors are expected to grow at a CAGR of 8% through 2030. If this demand is met by internal combustion vehicles (ICE), it would significantly increase local air pollution, carbon emissions, and lead to adverse public health effects. EVs offer an opportunity to address these challenges. Compared to ICE vehicles, EVs do not emit PM or NOx emissions at the tailpipe; they release 60% less CO2 and have 75% lower operating costs. Shoonya supplements existing national and sub-national EV policies as well as corporate efforts in India by creating consumer awareness and demand for zero pollution rides and deliveries in Indian cities.

Till April 2022, the estimated number of electric deliveries and rides completed by corporate partners via the Shoonya campaign was close to 20 million and 15 million, respectively. This translates to a carbon dioxide emission savings of over 13,000 tonnes.

If all final-mile deliveries and rides in India were shoonya, India would be well on its way to improving air quality, reducing public health costs, enhancing energy security, and achieving its climate targets. The electrification of the ride-hailing and delivery sector in India could mitigate close to 54 MT of CO2 emissions, 16,800 tonnes of PM emissions, and 537,000 tonnes of NOx pollution, saving roughly 5.7 lakh crore in expenditures over a year. Thus, Shoonya can lead to dramatic emission reductions in the transport sector, supporting India's five-point agenda (Panchamrit), announced at COP 26, to reduce carbon emissions and secure its 2070 climate goals.

DS/AK

END

Downloaded from [crackIAS.com](#)

© **Zuccess App** by crackIAS.com

JET THAT FLEW IN CHEETAHS HAD EARNED ITS STRIPES

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

The jet's paint scheme was planned in 2015 when it was with a Russian carrier.PTI--

The Terra Avia Boeing 747-400 that flew in the eight African cheetahs from Windhoek, Namibia to Gwalior on Saturday was on a special mission, but the aircraft itself had been the flagship of another conservation campaign much earlier.

The jet's striking paint scheme — the image of a tiger — was planned in 2015 when the aircraft was with the Russian carrier, Transaero Airlines, now defunct. The plane, first owned by Singapore Airlines in 2001, was acquired by an American bank in 2012. It was later leased to Transaero.

As a part of the project, known as the 'Striped Flight', the visual was to run across parts of the fuselage, with the nose to sport the head of one of the world's largest big cats, the endangered Russian Amur tiger.

Putin's tiger project

In an email to *The Hindu*, Andrey Shorshin, Press-Secretary of the Amur Tiger Center, said the special livery, "Caring for Tigers together", was unveiled on June 22, 2015, at Moscow's Vnukovo airport. The scheme, which was a joint project by the Tiger Center and Transaero, had the goal of highlighting the need to conserve endangered species. In a survey conducted in 2015, the number of Amur tigers in the wild in Russia had been found to have stabilised between 510 to 540 individuals. Mr. Shorshin added that conservation of the Amur tiger was a key theme foregrounded by Russian President Vladimir Putin at the Tiger Summit in 2010.

Under the campaign, Transaero planned an extensive social media programme under the tag "Wildlife". Documentaries produced by the Amur Tiger Center were also screened for passengers on the 'Striped Flight'.

In another email, Anton Tretiakov, CEO, Aquiline International Corporation Limited — one of the partners in the cheetah translocation project to India — said Aquiline International, which provides charter services and leasing of long-haul freighters, had been contacted by Action Aviation to undertake the India flight.

Modifying the jet

He said that after Transaero had folded up, the jumbo jet had been stored in Spain from 2015 to early 2022. It was moved to Sharjah for a complete maintenance check. The jetliner was then flown to Fujairah to remove the seats and made ready for the 'cheetah mission'.

On the preparations for the flight, the official said there were 13 veterinarians. The team began their work for the flight two weeks before their departure to Namibia. He said that as there were certain temperature and pressure limits required for the safe airfreighting of the wild animals from Namibia to India, the Boeing 747 was considered the best option for the operation.

[Our code of editorial values](#)

END

Downloaded from crackIAS.com

© **Zuccess App** by crackIAS.com

CrackIAS.com

'CRIME SCRIPTS' TO UNRAVEL ILLEGAL TRADE OF MARINE SPECIES

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

Officials inspecting processed sea cucumber seized in Ramanathapuram district in Tamil Nadu. File photo

An analysis of the illegal trade of marine species in India between 2015 and 2021 pointed out that sea cucumbers were the most frequently seized marine species group. Tamil Nadu recorded the highest enforcement action with 126 seizure incidents of the marine species.

The study conducted by the Counter Wildlife Trafficking team of the WCS-India (Wildlife Conservation Society-India) recorded 187 media reports citing marine wildlife seizures by various enforcement agencies in India from 2015 to 2021.

"A total of 187 incidents of illegal trade of marine species were collated between January 2015 and December 2021. Data collected for seven groups of marine wildlife species were analysed within the report, which includes sea cucumber, coral, *Syngnathidae* (seahorse and pipefish), *Elasmobranch* (shark and ray), seashell, sea fan and sea turtle," stated the recently released report titled "Illegal trade of marine species in India: 2015-2021".

The report pointed out that collectively, 64,172 kg plus 988 individual (unweighed) sea cucumbers were seized by the enforcement agencies in Tamil Nadu, Lakshadweep and the Andaman Islands. Of the 187 incidents of the illegal trade of marine species, 122 incidents involved the seizure of sea cucumber.

The document not only provided insights into the nature, the volume and the extent of the illegal marine trade across the country but also analysed the incidents involving the illegal sea cucumber trade. They were further researched using "crime scripts", to understand how the smuggling networks operated. The crime script had been prepared on the basis of the 122 incidents of seizure bringing out what went into the preparation, pre-activity, activity and post-activity phase of the smuggling of the marine group of species.

The report pointed out that due to the legalised trade of sea cucumbers in countries with close proximity to India, the sea cucumber consignments were often smuggled through those countries, to be laundered and then re-exported to the Southeast Asia markets.

Marine biologist Vardhan Patankar said that the illegal marine trade, although common, often went unreported due to the nature of the trade and as a result, the civil society, the policymakers and the local communities were left in the dark about the scale of the problem, making it hard to investigate the report and analyse.

While the most incidents of seizure (122) were of sea cucumbers, sea fan followed with 20, seahorse and pipefish 18, seashell 18 incidents, shark and rays 15, sea coral 12 and sea turtle five.

State-wise data

Similarly in terms of State-wise seizures, Tamil Nadu (with 126 seizures) was followed by Maharashtra (13 incidents), Lakshadweep (12 incidents) and Karnataka (eight incidents). Marine

wildlife incidents were reported across 18 States, including the eight coastal States and the two island territories, the report stated. The document also cautioned that a high number of seizure incidents alone “does not always indicate a high frequency of wildlife crime, and it may be a result of effective enforcement or more media interest”.

Aaron Savio Lobo, Senior Advisor Marine program at WCS-India said that when it came to illegally traded marine wildlife, the largest volumes were harvested as an incidental catch in unselective fisheries such as trawling and gillnetting. “This includes the likes of seahorses, sharks, manta and devil rays. This is unlike the most terrestrial traded wildlife species which are directly harvested. Countering marine wildlife trade thereby requires paradigm changes in fisheries management as a whole to reduce their capture in the first place,” he added.

The report threw light on international illegal marine trade routes. “Out of the 122 sea cucumber incidents recorded between 2015 and 2021, 34 incidents either mentioned attempts to illicitly export sea cucumbers to neighbouring countries or countries with established markets for trade. Sri Lanka (26 incidents), China (six incidents) and Malaysia (two incidents) were recorded as countries that are either transit locations or destinations of trade,” it said.

[Our code of editorial values](#)

END

Downloaded from **crackIAS.com**

© **Zuccess App** by crackIAS.com

CrackIAS

CHEETAHS FROM NAMIBIA GET A NEW HOME IN INDIA

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

The introduction of the cheetah in India is being done under Project Cheetah. According to the Environment Ministry, this is the first time a large carnivorous species has been moved across continents for establishing a new population.

The released cheetahs are radio-collared and their movements will be tracked. Each animal has its dedicated tracking team. There is also a team of wildlife scientists, biologists and Laurie Marker, a renowned zoologist and founder of the Cheetah Conservation Fund, which has worked on restoring the species in Africa. The process to bring cheetahs into India spans several decades, including an ingenious proposal in 2005 by the CSIR- Centre for Cellular and Molecular Biology, Hyderabad, to clone an Asiatic cheetah. This came to naught after Iran refused to share an animal.

In 2010, the Environment Ministry put together a plan recommending locations in India suitable for the cheetah and for sourcing cheetahs from Africa. This, however, brought legal problems as conservationists challenged estimates by the Wildlife Institute of India of the suitability of Indian sanctuaries for the animal. Kuno Palpur was originally intended as a second home for the Asiatic lions in Gir but the Gujarat government has opposed despite a Supreme Court order directing the transfer.

[Our code of editorial values](#)

END

Downloaded from crackIAS.com

© **Zuccess App** by crackIAS.com

Crack

EXPLAINED

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

“We are not there yet, but the end is in sight.” | Photo Credit: Getty Images

The story so far: “We are not there yet, but the end is in sight.” At a press conference on September 14, [World Health Organization \(WHO\) director General Tedros Adhanom Ghebreyesus](#) said: “Last week, the number of weekly reported deaths from COVID-19 was the lowest since March 2020. We have never been in a better position to end the pandemic.” The [COVID-19 pandemic struck nearly three years ago](#), in December 2019, in Wuhan, China. But the WHO chief also warned that if the world does not seize the opportunity now, there will be more risks ahead.

As per the [ourworldindata COVID-19 dashboard](#), as of September 16, a total of 4,53,481 new cases had been recorded across the world. On the same day, the cumulative count of cases was 611.33 million. In contrast, the seven day average of new cases hit a peak on January 24, 2022 at 3.44 million cases per day.

Not yet, according to Dr. Tedros, who, on the contrary, calls for greater energy, a last-mile spurt. “A marathon runner does not stop when the finish line comes into view. She runs harder, with all the energy she has left. So must we,” he said during his address.

“We can see the finish line. We’re in a winning position. But now is the worst time to stop running. Now is the time to run harder and make sure we cross the line and reap the rewards of all our hard work. If we don’t take this opportunity now, we run the risk of more variants, more deaths, more disruption, and more uncertainty,” Dr. Tedros further said. He added that the WHO is releasing six policy briefs outlining the key actions that all governments must take to finish the race.

The briefs are a summary, based on the evidence and experience of the last 32 months, of what works best to save lives, protect health systems, and avoid social and economic disruption. The briefs are an urgent call for governments to take a hard look at their policies, and strengthen them for COVID-19 and future pathogens with pandemic potential, Dr. Tedros insisted.

The WHO chief urged nations to invest in vaccinating 100% of the most at-risk groups, including health workers and older people, indicating that these groups are the highest priority to achieving 70% vaccine coverage. He added that it was important for countries to keep testing and sequencing for SARS-CoV-2 besides integrating testing and surveillance with similar measures for other respiratory diseases.

Dr. Tedros made a strong case for putting in place a system in order to integrate care for COVID-19 into primary health, and said patients should continue to receive the care that is right for them. While the numbers are dropping globally, it is better to plan for surges of cases, ensuring at the same time that one is always prepared to handle emergency or pandemic situations with the necessary supplies, equipment and health workers.

He also called for broad-based strategies for infection prevention and control precautions to protect health workers and non-COVID patients in health facilities.

The six policy briefs of the WHO set out guidelines for clinical management of COVID-19; managing infection prevention and control measures for COVID-19 in health care facilities;

reaching COVID-19 vaccination targets; COVID-19 infodemic management; and building trust through risk communication and community engagement.

In an article in *Nature* early this year, Aris Katzourakis, a professor who studies viral evolution and genomics at the University of Oxford, [argued that rosy assumptions would endanger public health](#) and that policy makers must act now to shape the future, referring to a COVID-19 context. “The best way to prevent more, more-dangerous or more-transmissible variants from emerging is to stop unconstrained spread, and that requires many integrated public-health interventions, including, crucially, vaccine equity.”

[In an editorial, *The Lancet Infectious Diseases* acknowledged](#) that it was good news indeed that the link between cases and deaths had weakened, even if it wasn’t broken, at least in highly vaccinated countries. The vast research effort that has gone into COVID-19 over the past two years has given the world tools to turn a pandemic disease into a manageable, endemic one, the *Lancet* paper pointed out. “Better vaccines and treatments will be required to maintain this success, and large parts of the world’s population still do not have access to vaccines. However, research organisations, funding bodies, and industry should now lead a compensatory effort that, applying lessons learned from combatting COVID-19, redirects research towards the control of infectious diseases (and, indeed, non-communicable diseases) that take a toll of human life year in and year out.”

[Our code of editorial values](#)

END

Downloaded from crackIAS.com

© **Zuccess App** by crackIAS.com

Cracki

JOYMALA'S CASE FLAGS GAPS IN PRIVATE OWNERSHIP NORMS FOR ELEPHANTS

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

Joymala, who was leased by Assam to Tamil Nadu, is in the news after animal rights organisations alleged the elephant was being mistreated. File | Photo Credit: The Hindu

The ongoing dispute between the Governments of Tamil Nadu and Assam over the alleged mistreatment of a temple elephant named Joymala, has brought into focus the prevailing lacunae over private ownership of elephants in India. Joymala, who was leased by Assam to Tamil Nadu, is in the news after animal rights organisations alleged the elephant was being mistreated. Legal battles are underway at the High Courts of Madras and Gauhati, with both States making contrasting claims.

While Tamil Nadu is one of the States to have strict controls governing the private ownership of elephants, the lack of law enforcement in certain other States has led to a thriving “black market” in which elephants are captured illegally and trafficked to different places, allege activists and conservationists.

A response in 2020 from the Project Elephant Division of the Ministry of Environment, Forests and Climate Change (MoEFCC) to an application filed under the Right to Information (RTI) Act showed that the ownership of at least one out of every four captive elephants held by private individuals was not supported by the relevant documentation. The MoEFCC has clarified that it's illegal to hold elephants in captivity without ownership certificates.

Also Read | [Let Assam team inspect 'abused' elephant, Gauhati HC tells Tamil Nadu govt.](#)

While Tamil Nadu reportedly has only one elephant without an ownership certificate, Kerala, Uttar Pradesh, Karnataka, Assam, Tripura and Madhya Pradesh account for 96% of elephants in captivity without ownership certificates. “As per the RTI Act response, 694 out of 723 elephants in India that are privately owned and without documentation are in these States,” Antony Rubin, an animal welfare activist, said.

Activists allege that many elephants without documents have been captured in Assam, Tripura and other northeastern States. They are sold at elephant markets, from where individuals traffic them illegally to other States. Arunachal Pradesh, which has 109 elephants in captivity, has not released any data on whether these elephants have ownership certificates. Data also shows that Assam is home to the highest number of elephants without any ownership certificates, with 335 out of 905 captive elephants not having any documents to prove ownership.

Mr. Rubin said it was illegal to buy or sell elephants in India. Rules only allow for elephants to be exchanged or donated to temples or between private individuals. However, without an ownership certificate, the keeping of any elephant in captivity by a private individual is illegal, as per the new amendments to the Wildlife Prevention Act.

“It's a smuggling ring,” prominent animal rights activist and former Union Minister Maneka Gandhi told *The Hindu*. Ms. Gandhi said elephants were illegally captured in the northeastern States and trafficked to different parts of the country. “They are either sent to temples or used for begging, and when State Forest Departments try to act against the smugglers, they cross State borders and escape action,” she said. Rescue shelters for illegally owned elephants need to be

set up in each State, she suggested.

'Elephant' G. Rajendran, an advocate and activist, said that in many cases, one ownership certificate is used multiple times for different animals when they are transported within the country. "All elephants look the same to any normal person. So one ownership certificate is used for different animals, and unless there is proper monitoring and identification of each of the individual animals in captivity, it becomes extremely difficult to trace whether the animal was captured illegally and is being smuggled," Mr. Rajendran said.

Shekhar Kumar Niraj, Principal Chief Conservator of Forests (Biodiversity Conservation), and former head of TRAFFIC India, said that during his time as head of the organisation working to shut down illegal trade in wildlife, there had been some progress in shutting down "elephant markets" such as the one in Sonapur in Odisha. "However, shutting down such markets could have pushed the trade underground," Dr. Niraj said.

"The Wildlife Crime Control Bureau, with the cooperation of State Forest Departments, needs to investigate these reports of trafficking in elephants, which have always been around," he said. He had also investigated reports of trafficking of elephants from India, across the border into neighbouring countries. DNA profiling of the captive elephants needed to be undertaken so that they could be identified and tracked, he said.

Tamil Nadu Additional Chief Secretary (Environment, Climate Change and Forests), Supriya Sahu, said the State Government was again enumerating the number of elephants in private custody, and checking whether they all had ownership certificates. An online portal is to be set up by the Tamil Nadu Forest Department, in which details of elephants would be uploaded to ensure transparency.

[Our code of editorial values](#)

END

Downloaded from crackIAS.com

© **Zuccess App** by crackIAS.com

CLIMATE CHANGE THREATENS FOOD BUT ALGAE MAY OFFER ANSWERS

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

Microalgae are a diverse group of microscopic aquatic organisms that typically generate energy from sunlight through photosynthesis. Image for Representation. | Photo Credit: The Hindu

In 2021, the Intergovernmental Panel on Climate Change issued the first volume of its latest authoritative report on climate change. The United Nations secretary-general branded its findings a “code red for humanity”.

The emerging and predicted impacts on agriculture and food supplies are stark, according to the panel. For instance, heat waves, drought and increasing rainfall variability could adversely affect crop yields and livestock productivity. This, in turn, could cause problems with food availability and nutritional quality, as well as risks of malnutrition and hunger.

Some parts of the world disproportionately bear this burden: over three billion people are currently deemed highly vulnerable to climate change, most of them in Africa, South Asia and Latin America. Small-scale farmers and pastoralists are particularly at risk.

The need for climate action is now evident, but finding viable pathways can be challenging. Yet effective climate actions can reduce climate-related risks while fostering sustainability.

“Climate smart” agricultural technologies offer various proven climate actions, such as agroforestry or drought-tolerant seeds. Such technologies can potentially raise farm productivity while also mitigating (that is, combating) climate change or helping farmers adapt to it, or both.

Microalgae are a diverse group of microscopic aquatic organisms. Like plants, they typically generate energy from sunlight through photosynthesis. But they differ from plants in basic ways. For instance, they grow in water instead of on land and absorb nutrients directly instead of via roots. While some microalgae are seen as harmful, others provide useful products.

Consumers, businesses and researchers have shown growing interest in microalgae in recent years. Use of *Arthrospira platensis* (spirulina) as a food supplement is one example. Others include how microalgae can be used as crop support tools, bioplastics or biofuels.

Also Read | [Dry parts of north Karnataka reel under excess, erratic rain](#)

One question that has remained largely unexamined, however, is whether “agri-food” applications of microalgae might offer promising options to mitigate or adapt to climate change.

A new academic paper set out to provide provisional answers. It reviewed the available evidence on microalgae as food supplements, livestock feeds, biofertilisers, biostimulants and biochar feedstocks. It then assessed the potential of these five microalgae applications to serve as the basis for climate actions.

Microalgae have been used as traditional foods in various countries where suitable species occur naturally, such as Mexico and Chad.

Nowadays microalgae food supplements are principally eaten by health-conscious consumers.

Yet they can also be used to address malnutrition and to improve health in places where diet is poor. As foods, microalgae can be potent sources of nutrients, including high-quality proteins, lipids and vitamins.

Microalgae production has characteristics that clearly distinguish it from plant or animal production.

It doesn't require fertile land. It is largely independent of local weather patterns and could potentially recycle water. It has elevated productivity and scope for continuous harvests.

This technological profile is well suited to coping with climatic shocks, so microalgae production can be climate resilient. The delivery of microalgal biomass for use as a food or for other applications can thus also be climate resilient.

Novel feeds like microalgae, seaweed and insects offer options to improve the sustainability of livestock production by providing protein-rich complements to staple feeds like grasses and feed crops.

Microalgae feeds have been tested on cattle, goats, sheep, pigs, poultry and fish. The results have typically included improved productivity, better nutritional quality of products, or both. Microalgae could also provide a secure source of feeds in places where livestock deaths linked to climate change are a growing concern.

Global crop production continues to rely heavily on chemical fertilisers to boost crop productivity.

However, such products can sometimes undermine agricultural sustainability or not cope well with climate change impacts.

Biofertilisers and biostimulants are natural alternative options for boosting crop production. Biofertilisers provide nutrients to plants. Biostimulants promote plant growth by stimulating biological or chemical processes in plants or microbes associated with roots.

Early studies of microalgae-based biofertilisers and biostimulants suggest they can boost productivity while also building the resilience of crops to climate-related stresses like elevated temperatures, water scarcity and soil salinity.

Treated maize plants, for example, showed more developed roots than untreated plants. This resulted in better resistance to drought.

Microalgae could also support crop production by using algal biomass to make biochar, or charred biomass. Applying biochar to fields can improve soil fertility and enhance soil's capacity to hold water. Such effects could help crops cope with climate change impacts like erratic rainfall and extreme weather events.

Biochar was a traditional soil management tool in some cultures, and treated fields sometimes remain distinct. For instance, fields treated many centuries ago in South America were found to contain up to 9 per cent carbon compared with 0.5 per cent on neighbouring fields.

Also Read | [Climate change, salinity and menstrual health problems: Sundarbans women battle triple whammy](#)

Moreover, their productivity was twice as high as that of untreated fields. Early studies on biochar made from microalgae have suggested it could be an effective soil amendment.

Taken together, these five agri-food applications of microalgae could be seen as possible ways to enhance the climate resilience of food production, and hence as climate change adaptation measures. Concretely, they offer options to help secure both food supplies and agricultural livelihoods despite climate change.

These five applications were also found to offer possible ways to mitigate climate change, whether by reducing greenhouse gas emissions or transforming these gases into physical form.

One example is partially replacing an imported livestock feed like soymeal – associated with transport emissions and tropical deforestation – with microalgae-based feeds that need comparatively little land and could be locally sourced. Another example is using microalgae-based biochar to build up soil organic carbon in stable form.

In future, such mitigation measures could perhaps be supported by the carbon markets. These markets offer mechanisms to pay for projects that mitigate climate change. In theory this could provide cash flows to participating stakeholders, including farmers.

Such projects might moreover be attractive to potential participants given sharp rises in carbon credit prices in recent years, even if these initiatives have sometimes proven disappointing in the past. Several institutional developments would, however, be needed to make this possible.

The five microalgae applications examined clearly hold promise, both as avenues for fostering climate resilient food production and as climate change mitigation measures.

These applications could thus be framed as climate actions. But more research is needed to explore and verify this potential, and to examine issues like consumer acceptance and managing possible contamination risks.

In the meantime, these five microalgae technologies merit greater attention from consumers, farmers and governments as timely and hopeful innovations.

(The Conversation)

[Our code of editorial values](#)

END

Downloaded from **crackIAS.com**

© **Zuccess App** by crackIAS.com

'NO SPOTTED DEER BROUGHT TO KUNO AS PREY FOR CHEETAHS'

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

Relocation of chital is for better access to food and water, say authorities. JOTHI RAMALINGAM
B

The Madhya Pradesh Forest Department has denied reports that chital, or spotted deer, from Rajasthan are being ferried to the Kuno National Park (KNP) in Madhya Pradesh for the newly acquired cheetahs to prey on them.

On Tuesday, several media outlets reported that members of the Bishnoi community in Rajasthan which is active in wildlife conservation had written to the Prime Minister, protesting against the alleged capture of chital by Forest Department officials to bolster prey numbers in the Kuno reserve.

On Saturday, Mr. Modi released three cheetahs — out of a batch of eight brought from Namibia — into a protected enclosure at the KNP. Sambar and chital would constitute preferred prey for the wild cats. “No chital has been brought from Rajasthan into Kuno. There are already close to 20,000 chital in the forest here. There are several wildlife parks in Madhya Pradesh with surplus chital population. During summers, many spots see a scarcity of water and fodder and these animals are sometimes relocated to help them access food and water,” Madhya Pradesh Chief Wildlife Warden Jasbir Singh Chauhan said in a statement.

As part of these relocations, chital were being moved to the Satpura National Park, Sanjay Gandhi National Park, Nauradehi forest and KNP. These animals were also moved around because they would graze on standing crop and cause losses to those who lived in the vicinity, he added.

[Our code of editorial values](#)

END

Downloaded from crackIAS.com

© **Zuccess App** by crackIAS.com

NCC, UNEP SIGN MOU TO TACKLE PLASTIC POLLUTION

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

The National Cadet Corps (NCC) and United Nations Environment Programme (UNEP) in New Delhi on Thursday signed a Memorandum of Understanding (MoU) to tackle the issue of plastic pollution and achieve the universal goal of clean water bodies through ' *Puneet Sagar Abhiyan* ' and 'Tide Turners Plastic Challenge programme'. It was signed between Director-General of NCC Lt. Gen. Gurbirpal Singh and Bishow Parajuli, Resident Representative, UN World Food Programme, in the presence of Rajnath Singh. "The aim is to synergise and collate efforts towards engaging youth for promoting clean water bodies," a Defence Ministry statement said.

[Our code of editorial values](#)

END

Downloaded from [crackIAS.com](https://www.crackIAS.com)

© **Zuccess App** by [crackIAS.com](https://www.crackIAS.com)

CrackIAS

INDIA GETS ITS FIRST AVALANCHE MONITORING RADAR IN SIKKIM

Relevant for: Environment | Topic: Disaster and disaster management

An avalanche monitoring radar, the first of its kind in India, has been installed in North Sikkim by the Army and Defence Geoinformatics and Research Establishment. It can detect avalanches within three seconds of its trigger and will assist in saving lives of troops and reducing damage to property. The radar was inaugurated by Lt. Gen. Tarun Kumar Aich, General Officer Commanding of Sukna-based 33 Corps, on September 20 at an altitude of 15,000 feet, one officer said. The radar was made operational by DGRE, a lab under the Defence Research Development Organisation (DRDO), which is involved in forecasting and mitigation of avalanche hazards faced by the Army in the Himalayan region.

[Our code of editorial values](#)

END

Downloaded from [crackIAS.com](https://www.crackIAS.com)

© **Zuccess App** by crackIAS.com

CrackIAS

INDIAN SKIMMERS BY THE CHAMBAL

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

An Indian skimmer taking off. | Photo Credit: Getty Images/iStock

The Indian skimmer is an odd bird with a strong underbite. The longer lower mandible is perfectly adapted to its style of fishing. It flies low over the water surface with its bright orange beak agape, the knife-like lower bill slicing the liquid. Any fish or shrimp too slow to dodge is snapped up. About 20% of the total population of fewer than 2,500 birds nest along river Chambal. Villagers here call it *pancheraa*, that which tears water.

When conservation biologist Parveen Shaikh arrived at the Chambal to study the species, villagers couldn't believe she came all the way from Mumbai to observe these koel-sized black and white birds. They were even more astonished to learn she was being paid. They grumbled they had been watching these fowl all their lives with no such remuneration.

Studying the Indian skimmers' nesting behaviour is no easy task. In late winter, they leave the coastal tidal flats of Gujarat and Sunderbans for the Chambal. In summer, the dropping river level exposes stretches of sand, where they prefer raising their offspring. The parents don't go to any great trouble in making a nest to cushion their progeny. They scrape a shallow depression in the soft sand and lay three or four speckled eggs. Several birds nest together, creating nurseries. By then the air temperature often hits 45°C. The adult pair feeds in the early mornings and late evenings and takes turns incubating the clutch. But in the afternoon, the ground is hot enough at 50-55°C to bake the eggs. The embryos need cooling rather than more warmth.

The proximity of the river comes in handy as the parents wet their bellies before squatting on their nests. Since evaporation rates are high, the birds hurry to the water's edge every three to five minutes. For 25 days, they frantically continue to keep eggs, and then chicks, warm at night and cool during the day.

If Shaikh had to cope with the broiling heat as her subjects did, she would remain in the water. With no trees to provide shade from the sun and mugger crocodiles lurking in the river, she adjusted her timings. She ventured out, like the parent birds, at sunrise and late afternoon to scout for nesting sites, monitor the fate of the nests, count the number of incubation days, and tally how many chicks hatched and how many fledged.

Working in heat at full blast may sound gruelling, but she says raising funds for this work was even more difficult. The species' lack of charisma and the region's historical lawless reputation initially left donors unconvinced.

Being surrounded by water offers some security for the nests. But when the river level falls further, the islets become conjoined with the banks, creating bridges for dogs and cattle. Skimmers are not militantly protective of their offspring. They scramble to the air while screaming in alarm. This parental strategy does nothing to deter the canines from polishing off all the eggs and fluff-ball chicks on a sandbar within 10 to 15 minutes. The herbivorous livestock cause as much damage by trampling on the exposed nests.

The occasional black-bellied terns that nest along with the skimmers become missiles, swooping and striking any prowler. They didn't spare the researcher, who waved a stick but wasn't fast enough to fend off one attack that left her with a bruise on her scalp. This avian feistiness, however, cannot ward off determined animals.

During the first two years of her study, only 15% of skimmer eggs hatched. The riverine islands needed better protection. Shaikh experimented with fences and recruited villagers as guardians, increasing the hatching success to over 85%. The men chase any animals that blundered onto the sand spits. She plans to fence more colonies and employ more people. At least some residents are now paid to watch the birds.

Janaki Lenin is not a conservationista but many creatures share her home for reasons she is yet to discover.

[Our code of editorial values](#)

END

Downloaded from crackIAS.com

© **Zuccess App** by crackIAS.com

CrackIAS.com

RESCUED BEAR CUBS SET TO BE RELEASED IN ARUNACHAL NATIONAL PARK

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

Siyang, an Asiatic black bear cub, was rescued by local environmentalists when it was just one month old. Image for Representation. | Photo Credit: REUTERS

Five-month-old Siyang and three of her peers are all set to make Pakke Tiger Reserve (PTR) in Arunachal Pradesh their new home, having completed the acclimatisation process in the national park under the supervision of experts over the past few months.

Siyang, an Asiatic black bear cub, was rescued by local environmentalists when it was just one month old.

The tiny one was then brought to the Centre for Bear Rehabilitation and Conservation (CBRC) here, where it was nursed back to health, said one of its officials.

The cub was found in a dehydrated condition on the Siang river bed, and was named after the river.

At the centre, Siyang met three other rescued friends – two male cubs, Den and Itna, and another female Devi – and the four got along well quickly, the CRBC official said.

"Orphaned bears are made to go through the acclimatisation process before they are released in the wild. These four will be released in the reserve in December or early January next year," he said.

Siyang is the most active of the four and a favourite of all forest personnel, CBRC head Panjit Basumatary said.

[Also Read | Haryana man on mission to clean up litter from Himalayas](#)

"The day begins with morning walks deep inside the reserve. They play and fight with each other, climb trees and feed on fruits and insects before returning home," Basumatary stated.

During their walks, which are monitored by animal keepers and biologists, the cubs learned to forage and also gradually developed their wild instincts.

"Once the cubs become reluctant to follow their keepers back to the camp, they are ear-tagged, micro-chipped and radio-collared for soft release in the wild. Eventually, if they do not return to their cages anymore, they are considered ready for the wild. However, they are monitored for a few more months before release," the CBRC chief said.

Millo Tasser, the deputy conservator of forest (wildlife), pointed out that bear cubs take time to adjust to a new environment and overcome their proximity to humans, with some getting more attached to the caretakers than the other.

"The ones that find it more difficult to adjust are sent to zoos for captive rearing," Tassar said.

Basumatary further explained that poachers often kill Asiatic bears for their skin, leaving their

cubs orphaned.

Their population has also declined over the years due to deforestation, habitat loss and other abiotic factors, he added.

[Our code of editorial values](#)

END

Downloaded from **crackIAS.com**

© **Zuccess App** by crackIAS.com

CrackIAS.com

GLUE TRAPS PROVE FATAL FOR WILD ANIMALS IN MUMBAI

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

A bird can damage its wings and feathers if it gets stuck in a glue trap. Image for Representation. | Photo Credit: The Hindu

Glue traps, which are commonly used to catch and kill rats and pests, are becoming a threat to wild animals in Mumbai and neighbouring districts, as they often get injured and die after coming in contact with these devices.

Citing that the use of such devices was in violation of the Prevention of Cruelty to Animals Act and the Wildlife Protection Act, a city-based wildlife organisation has written to the Maharashtra government seeking a ban on the production, sale and use of glue traps.

Glue traps, also known as rat bait stations, are boxes with a strip of adhesive used to catch rodents. These traps are activated by placing food items, and once a rodent steps into the device, it gets stuck and dies a slow and painful death.

Resqink Association for Wildlife Welfare (RAWW) has written to the chief wildlife warden and principal chief conservator of forests (PCCF), wildlife of the state forest department, appealing for a ban on the production, sale and use of such traps.

The use of glue traps was not only an inhumane way of dealing with pests, but several protected species were also falling prey to this, RAWW founder and honorary wildlife warden Pawan Sharma stated in the letter.

The RAWW has rescued different species of wild animals, birds and reptiles such as squirrels, bats, kingfishers, owls, python and monitor lizards from such traps, he said.

Glue traps are a major cause for concern in urban areas, where they are regularly used by pest control agencies, at factories, companies, residential and commercial areas.

Talking to PTI, Sharma said, "Several cases of animals dying or getting injured due to glue traps go unreported due to lack of awareness and in most instances, people don't come forward to avoid legal hassles."

Mumbai, Thane and surrounding areas have a unique biodiversity that needs to be protected and conserved, he said.

The RAWW has been campaigning to spread awareness and was appealing to citizens and officials to understand this issue and address it by stopping the use of the device and discontinuing its production, he said.

"Glue traps are also a potential human hazard, as rodents that get trapped in it remain alive for hours and slowly die of trauma, pain and starvation, and eventually become carriers of dangerous diseases," Sharma said.

Moreover, there is no clarity on the safe disposal or audit of these traps, which are discarded with regular garbage and they pollute the environment, he added.

Sharma further claimed that the use of glue traps or rat bait stations is in violation of the Prevention of Cruelty to Animals Act, 1960, Wildlife Protection Act, 1972, Environment Protection Act, 1986, Indian Forest Act, 1927 and Indian Penal Code.

According to veterinarians Dr Rina Dev and Dr Priti Sathe of the RAWW, if a bird gets stuck in a glue trap, its feathers and wings get damaged and this can result in permanent loss of its ability to fly.

Reptiles and mammals lose their skin when they get stuck and their internal organs are left exposed, which can lead to death if they are not provided timely medical attention, they said.

[Our code of editorial values](#)

END

Downloaded from **crackIAS.com**

© **Zuccess App** by crackIAS.com

CrackIAS.com

NEW LAKES IN ALASKA IS RELEASING BUBBLES FULL OF METHANE

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

The Big Trail Lake in Fairbanks, Alaska, is a 'thermokarst lake' that has come into existence over the last 50 years. Image for Representation. | Photo Credit: AP

New lakes are emerging in Alaska due to thawing permafrost and releasing methane—a greenhouse gas—into the atmosphere.

The Big Trail Lake in Fairbanks, Alaska, is one such 'thermokarst lake' that has come into existence over the last 50 years or so and is continuously belching bubbles filled with methane gas, according to a [blog post](#) by NASA.

Permafrost is ground that stays frozen all year around. In Alaska, the permafrost also contains massive wedges of ice locked within the ground. When the ice melts, the ground surface collapses and forms a sinkhole that is filled with water, creating a thermokarst lake.

Katey Walter Anthony is a researcher collaborating with NASA's Arctic Boreal Vulnerability Experiment (ABoVE) which is a large-scale study of environmental change and its implications for social-ecological systems. She has been studying the formation of thermokarst lakes and how the process influences Earth's climate change.

"Lakes like Big Trail are new, they're young, and they are important because these lakes are what's going to happen in the future," she explained.

[Also Read | Shifting monsoon patterns](#)

The methane bubbles emerging from these newly formed lakes are caused by microbial activity. The microbes digest the dead plants and organic matter in the previously frozen ground, which produces carbon dioxide and methane. Permafrost thaw can also form under-lake chimneys that allow gases like methane to escape from where they were trapped underground.

"At Big Trail Lake, it's like opening your freezer door for the first time and giving all the food in your freezer to microbes to decompose. As they decompose it, they are belching out methane gas," says Walter Anthony.

An easy way to test if the lake is emitting old methane is to light a match near the collected gas sample from the lake. As a flammable gas, it will catch fire easily until the supply is maintained. Scientists use field measurements, collected samples and airborne radar data to estimate how much methane these lakes are releasing across a large area.

Methane is the primary contributor to the formation of ground-level ozone, a hazardous air pollutant. A powerful greenhouse gas, it is 80 times more potent at warming than carbon dioxide over a period of 20 years, as per a [UNEP report](#). Though it has a much shorter atmospheric lifetime than carbon dioxide, methane is responsible for 30% of the rise in global temperatures since the industrial revolution. In fact, it is proliferating faster now than at any other time since record-keeping began in the 1980s, says a [study](#) by the United States National Oceanic and Atmospheric Administration.

Only recently formed in Alaska, these types of lakes are abundant in the Arctic. Some Arctic lakes are hundreds or thousands of years old and the microbes in them have run out of permafrost organic matter to decompose. As a result, these ancient lakes do not release as much methane as the newer ones in Alaska, such as the Big Trail Lake.

“So what’s a concern for the future, when we think about permafrost carbon feedback, are areas that are newly thawed,” says Walter Anthony.

[Our code of editorial values](#)

END

Downloaded from **crackIAS.com**

© **Zuccess App** by crackIAS.com

CrackIAS.com

NATIONAL EXPO ON ECO-ALTERNATIVES TO BANNED SINGLE USE ITEMS AND STARTUP CONFERENCE 2022

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

In one of the first initiatives to promote eco-alternatives to banned single use plastics and innovation and startup ecosystem in the country, the National Expo on alternatives to banned single use plastics items and Conference of Startups -2022, was inaugurated today at Chennai Trade Centre, Chennai, in the presence of Shri Siva V Meyyanathan, Minister of Environment, Climate Change, Youth Welfare and Sports Development, Government of Tamil Nadu.



On this occasion, a video message of Shri Bhupender Yadav, Union Minister for Environment, Forest and Climate Change, Government of India, was played out, inaugurating the Expo and Startup Conference – 2022. The Expo and Startup Conference have been jointly organized by the Ministry of Environment, Forest and Climate Change, Government of India, and Government of Tamil Nadu.



Union Environment Minister Shri Bhupender Yadav, in his message, highlighted that mindless consumption in place of mindful use of resources, has led to the presence of littered and unmanaged plastic waste. Uptake of eco-friendly alternatives such as jute, and bamboo, and moving towards an environmentally conscious lifestyle are required to address the issue.

More than 150 manufacturers of eco-alternatives from across the country are participating in the Expo. The Eco-alternatives included items made from natural fibers such as coir, bagasse, rice and wheat bran, plant and agricultural residue, banana and areca leaves, jute and cloth. The National Expo is open to the public, school and college students, entrepreneurs, and manufacturers of eco alternatives to banned single use plastic items. The Expo and Conference of Startups will spread mass awareness on the availability of eco-alternatives and provide a platform for startups for scaling up their solutions.

Representatives from State Governments, State Pollution Control Boards, concerned central Ministries, financial institutions and banks are participating in the Expo. Along with the Expo, A Conference of Startups working in the area of alternatives to single use plastics and air quality management has also been organized along with the Expo. The Conference of Startups will provide a platform for exchange views amongst innovators and institutions, and Government Departments supporting startup ecosystems in the country. Thematic sessions on marine plastic litter – issues, challenges and way forward and manufacturing of eco-alternatives have also been organized.

India took a defining step in addressing the challenge by banning identified single use plastic items, which had high littering potential and low utility, from 1st July 2022. Awareness of the alternatives to banned single use plastic items and their availability is the key to the success of the ban.

HS

In one of the first initiatives to promote eco-alternatives to banned single use plastics and innovation and startup ecosystem in the country, the National Expo on alternatives to banned single use plastics items and Conference of Startups -2022, was inaugurated today at Chennai Trade Centre, Chennai, in the presence of Shri Siva V Meyyanathan, Minister of Environment, Climate Change, Youth Welfare and Sports Development, Government of Tamil Nadu.



On this occasion, a video message of Shri Bhupender Yadav, Union Minister for Environment, Forest and Climate Change, Government of India, was played out, inaugurating the Expo and Startup Conference – 2022. The Expo and Startup Conference have been jointly organized by the Ministry of Environment, Forest and Climate Change, Government of India, and Government of Tamil Nadu.



Union Environment Minister Shri Bhupender Yadav, in his message, highlighted that mindless consumption in place of mindful use of resources, has led to the presence of littered and unmanaged plastic waste. Uptake of eco-friendly alternatives such as jute, and bamboo, and moving towards an environmentally conscious lifestyle are required to address the issue.

More than 150 manufacturers of eco-alternatives from across the country are participating in the Expo. The Eco-alternatives included items made from natural fibers such as coir, bagasse, rice and wheat bran, plant and agricultural residue, banana and areca leaves, jute and cloth. The National Expo is open to the public, school and college students, entrepreneurs, and manufacturers of eco alternatives to banned single use plastic items. The Expo and Conference of Startups will spread mass awareness on the availability of eco-alternatives and provide a platform for startups for scaling up their solutions.

Representatives from State Governments, State Pollution Control Boards, concerned central Ministries, financial institutions and banks are participating in the Expo. Along with the Expo, A Conference of Startups working in the area of alternatives to single use plastics and air quality management has also been organized along with the Expo. The Conference of Startups will provide a platform for exchange views amongst innovators and institutions, and Government Departments supporting startup ecosystems in the country. Thematic sessions on marine plastic litter – issues, challenges and way forward and manufacturing of eco-alternatives have also been organized.

India took a defining step in addressing the challenge by banning identified single use plastic items, which had high littering potential and low utility, from 1st July 2022. Awareness of the alternatives to banned single use plastic items and their availability is the key to the success of the ban.

HS

END

Downloaded from crackIAS.com

© **Zuccess App** by crackIAS.com

CrackIAS.com

ELEPHANTS RE-COLONISE BANDHAVGARH TIGER RESERVE, HELPED BY THE LOCAL COMMUNITY

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

An elephant herd in Bandhavgarh Tiger Reserve, MP | Photo Credit: Sudhir Mishra

“There were no elephants in these forests for over 100 years,” says Anshuman Shah, Head naturalist at Samode Safari Lodge in Bandhavgarh Tiger Sanctuary in Madhya Pradesh. The first herd — around 15 to 20— was spotted in the tiger landscape, in 2018. “Initially it looked like a part of elephant movement along the tiger corridor, but the herd is back and is living here now,” says Shah.

Head of the Elephant Corridor Project at WTI (Wildlife Trust of India), Upasana Ganguly says, “Though herds move through elephant corridors, they have started exploring new routes like this Chhattisgarh-to-Bandhavgarh one. We have started an initiative, *Haathi Mitra Dal*, with Madhya Pradesh Forest Department and the local community to train members, local responders and frontline forest workers to give safe passage to the new entrants to this area as well as ensure the community’s safety.”

In April 2022, a wild elephant strayed into Rusa Mal village in Dindori, a part of the Bandhavgarh Tiger Reserve and destroyed some of the huts. The area, inhabited by the Baiga tribes, has jackfruit trees. The river Son flows through and the tribals make *Mahua* (local liquor), all these attract the elephant,” says Pushpendra Dwivedi, a journalist-turned-wildlife field expert who uses “chilli balls and *rassi* (rope) bombs” to steer the pachyderm out.

Pushpendra , who has innovated the *rassi* bomb explains, “the smoke from chilli balls and the vibrations of the *rassi* bomb confuse the elephants. We then used *mashal* or fire torch to guide them back to the forest. Pushpendra got involved with the Forest Department and joined them unofficially in 2009, while covering an incidence of man-animal conflict in which two tiger cubs had killed and devoured three villagers in the area. An advocate and an honorary Wildlife Warden, his study subject is ‘Conflict Mitigation.’

As part of WTI, he is now readying the *Haathi Mitra Dals* or Friends of Elephants groups in 15 villages in the Bandhavgarh Sanctuary. “The groups will consist of five able-bodied young men from each village, who will be trained to minimize any negative interactions and foster co-existence,” he says.

The MP Forest department has been proactive in this regard and organized a workshop, inviting experts from other elephant ranges to share their ideas on this new challenge. Sudhir Misha, Assistant Director, Bandhavgarh Tiger Sanctuary, says that they see this new phenomenon as part of the ecosystem, “Our response has been quick. Each range has its team; our patrolling vehicle alerts us on any elephant movement near a village and a team reaches out. We also have information sharing groups.”

Traditionally known for its population of Royal Bengal Tigers, the sanctuary is a biodiverse park that includes species such as leopards and deer. It has four tiger corridors, a core area (700 plus square kilometre) with dense forests and the buffer area (822 square kilometres) with a mix of human habitation. The biggest challenge being faced by the changed scenario is the local community’s unfamiliarity with elephants.

“There are new elephant movements in another places too. In Gadchiroli, Maharashtra and moving from Orissa into Andhra Pradesh, but here the elephants have chosen to stay,” says Upasana adding that this recolonization prompts them to investigate several issues like the reason behind the movement, coexistence of the animals and requires thoughtful planning so the situation does not get out of hand.

“Chhattisgarh was known to have elephants several centuries ago with Surguja and Korba having a history of elephant capture for the Mughal army. The area did not have elephants for a long period, until they started arriving from Jharkhand around 1988. It is imperative that the local community is empowered, starting with basic knowledge like the ecology of elephants and the do’s and don’ts before more animal man conflict happens,” she says.

“The elephants entered Bandhavgarh Tiger Sanctuary from Chhattisgarh. Now there are about 50 staying,” says Pushpendra adding that though the herd is mostly confined to the core area, by evening, they go to the nearby village for the grains stored by the villagers in their huts. “Sometimes they just get lost and stray into human habitation,” he says. The villagers, who have been trained to tackle wild pigs, have started learning how to co-exist with their new neighbours since last year.

Shah talks about the delight tourists take in spotting a tiger and an elephant in the same frame. Though not common, he recalls seeing Chota Bheem, a young male tiger, playing with a young bull, elephant calf in Khitauli. “You can find them together near a watering hole. In Budhwar and Corbett parks this interaction happens quite often.”

Though Mishra has not seen the two animals together, he has seen many elephant calves and says that the population is growing. “Their breeding has started,” he says. One of the long-term plans of the Forest Department, says Mishra will be to develop large water bodies for the jumbos. They are also looking at radio collars, a GPS device on the neck of the elephant that will enable real time monitoring of elephant movement.

Mishra feels that this movement is all about the pachyderms regaining their old habitat, and that the last records of elephants in MP are from Amarkantak in 1905. “The lifespan of an elephant is up to 80, so a generation before these, the elephants were here,” he says. “Now, they have returned.”

[Our code of editorial values](#)

END

Downloaded from crackIAS.com

© **Zuccess App** by crackIAS.com

IN NATURE'S WARNING SIGNS, A NUDGE TO RIPARIAN STATES

Relevant for: Environment | Topic: Disaster and disaster management

In Sohbat Pur city, a district in Pakistan's southwestern Baluchistan province | Photo Credit: AP

There has been an increase in the magnitude, the frequency and the intensity of floods in many parts of the world. As an example, nearly [a third of Pakistan is experiencing devastation](#), with a spread of diseases and severe shortage of potable water after intense flooding. In June this year [Assam experienced one of its worst floods](#) in living memory which affected over 30 districts. In some districts in Assam and Bihar, flooding is a recurrent feature, and thus a major impediment in ensuring poverty alleviation and meeting Millennium Development Goals.

Flooding is still considered to be a natural phenomenon that cannot be entirely prevented. But it is compounded by the lack of transparency in the sharing of hydrological information and also information relating to activities (such as by one riparian state) that are transboundary in their effect (affecting other riparian states), thus serving as an obstacle in understanding the magnitude of flooding.

In accordance with customary international law, no state has to use its territory in a manner that causes harm to another state while using a shared natural resource; this amounts to saying that there is a binding obligation on all states not to release water to cause floods in another co-sharer of the river water. This obligation gives rise to other procedural norms that support the management of floods, which include notification of planned measures, the exchange of data and information, and also public participation.

The International Court of Justice (ICJ), in the Pulp Mills on the River Uruguay (Argentina vs Uruguay) case (2010), upheld that conducting a transboundary environmental impact assessment (TEIA) of a planned measure or projects on the shared water course is part of customary international law. In fact, the ICJ noted that the acting state must notify the affected party of the results of TEIA to "enable the notified party to participate in the process of ensuring that the assessment is complete, so that it can then consider the plan and its effects with a full knowledge of the facts".

Closer home, there is the case of China being the upper riparian in the Brahmaputra, which spans India and Bangladesh, enjoying apparent leverage *vis-à-vis* lower riparian India. During the monsoon, flooding has been the recurrent feature in the last several decades in Assam. India faces other woes in the form of the construction of dams by China. China's excessive water release, as a "dam controller", in violation of customary international law has the potential to exacerbate flooding in Assam in future. India's main concern is that there is no comprehensive sub-basin or all basin-level mechanism to deal with water management of Brahmaputra. Neither India or China are party to the United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses (UNWC) 1997 or the United Nations Economic Commission for Europe (UNECE) on the Protection and Use of Transboundary Watercourses and International Lakes 1992 (Water Convention).

The UNWC contains a direct reference to floods, which covers harmful conditions and emergency situations. Article 27 of the Convention says: "Watercourse States shall, individually and, where appropriate, jointly, take all appropriate measures to prevent or mitigate conditions ...that may be harmful to other watercourse States, whether resulting from natural causes or

human conduct, such as floods or ice conditions, water-borne diseases, siltation, erosion, salt-water intrusion, drought or desertification.”

In the absence of any mechanism, India relies on its memorandum of understanding (MoU) with China in 2013 with a view to sharing hydrological information during the flood season (June to September). The MoU does not allow India access to urbanisation and deforestation activities on the Chinese side of the river basin. With the MoU in the background, India by becoming a party to either the UNWC and the Water Convention could lay the groundwork for a bilateral treaty on the Brahmaputra but subject to the reservation that it should not insist on the insertion of a dispute settlement mechanism provision.

Floods are also a recurrent problem in the Koshi and Gandak river basins that are shared by India and Nepal. The intensity and magnitude of flooding is rising because of heavy seasonal precipitation as well as glacial retreat due to global warming and human-induced stressors such as land use and land cover changes in the river basin area of Nepal (Terai) and Bihar. It is important that the two neighbours view the river basins as single entities, which will help in facilitating an integrated approach for improved basin and flood risk management. The India-Nepal Koshi agreement 1954 (revised in 1966) is aimed at reducing devastating flooding in the river basin. The treaty-based joint bodies have also tried to refine the early warning systems for flood forecasting. In contravention of procedural customary international law obligation, India considers data on transboundary rivers as classified information, which is one of the key challenges in developing cross-border flood warning systems. In light of the cataclysmic floods in Pakistan and the visible effects of climate change, it is important that all riparian states must comply with all the procedural duties pursuant to the no harm rule. They must also think of becoming a party to either the UNWC or the UNECE Water Convention.

Anwar Sadat is Senior Assistant Professor in International Law, specialising in environmental law, at the Indian Society of International Law, New Delhi

[Our code of editorial values](#)

END

Downloaded from crackIAS.com

© **Zuccess App** by crackIAS.com