



India's #1 Self-Study Notes



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

10 more Indian wetland sites get Ramsar tag, number rises to 64.....	2
Cabinet nod for climate pledges.....	3
Indian Virtual Herbarium, biggest database of country's flora, is a global hit.....	4
Study of rock agama gives insights into urbanisation, conservation.....	6
Creatures that crossed an ocean to find India.....	8
Climate change may increase mortality rate due to excess heat by six times: Lancet study.....	10
Exit and re-entry of the cheetah and other animals.....	12
World Elephant Day – 2022 celebrated at Periyar.....	14
Explained.....	25
75 Ramsar Sites in 75th Year of Independence.....	27
India at 75.....	58
'Delhi's PM2.5 levels worst in the world'.....	61
Great Indian Bustards adapt to produce 2-egg clutch.....	63
Hirakud's islands turn ideal nesting ground.....	65
Anang Tal site to be Centrally protected.....	67
NMCG hosts virtual session on the first day of the Stockholm World Water Week 2022.....	68
Government notifies Battery Waste Management Rules, 2022.....	74
Net-zero target could boost India's GDP: study.....	77
Pak. declares emergency as flood toll rises to 937.....	79
Zombie ice from Greenland will raise sea level 10 inches.....	80

10 MORE INDIAN WETLAND SITES GET RAMSAR TAG, NUMBER RISES TO 64

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

India has added 10 more Ramsar sites, or wetlands that are of international importance, taking the number of such sites to 64, Environment Minister Bhupendra Yadav said on Wednesday. The 10 new Ramsar sites include six in Tamil Nadu and one each in Goa, Karnataka, Madhya Pradesh and Odisha.

[Our code of editorial values](#)

END

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

© **Zuccess App** by crackIAS.com

CrackIAS

CABINET NOD FOR CLIMATE PLEDGES

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

Net zero: India aims to put an end to dependence on fossil fuels by 2070. PTI

India ratified pledges made by Prime Minister Narendra Modi in Glasgow last November to accelerate the country's reliance on renewable energy to power the economy and be effectively free from use of fossil fuels by 2070. However, the approved pledges were fewer than those Mr. Modi committed to.

The Union Cabinet, chaired by Mr. Modi, on Wednesday approved an update to India's Nationally Determined Contribution (NDC). Mr. Modi had laid out five commitments, or *Panchamrit*, as the government references it, namely: India will increase its non-fossil energy capacity to 500 GW (gigawatt) by 2030; will meet 50% of its energy requirements from "renewable energy" by 2030; will reduce the total projected carbon emissions by one billion tonnes from now till 2030; will reduce the carbon intensity of its economy by more than 45%; and will achieve the target of "net zero" by the year 2070, when there will be no net carbon dioxide emitted from energy sources.

A press statement, following the Cabinet approval, only mentions two of these promises, namely that India is committed to reduce emissions intensity of its GDP by 45% by 2030, from the 2005 level and achieving 50% cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030.

India's NDC did not "bind it" to any sector-specific mitigation obligation or action and that India's goal was to reduce overall emission intensity and improve energy efficiency "while protecting the vulnerable sectors of economy and society," the press note added.

Independent experts said that while the NDCs reflected India's commitment to sustainable development they were a climbdown from the ambition India had expressed at Glasgow.

"India's updated NDC does not include all the promises made at COP26 in Glasgow," Vibhuti Garg, Energy Economist & India Lead, Institute for Energy Economics and Financial Analysis, said in a statement.

Madhura Joshi, Senior Associate, India Energy Transition Lead, E3G, said: "India's updated NDC targets are a welcome move... these targets, while lower than the *panchamrits*, are actionable. A reiteration of the renewables focus would have provided a fresh impetus for the renewables sector."

[Our code of editorial values](#)

END

Downloaded from crackIAS.com

© **Zuccess App** by crackIAS.com

INDIAN VIRTUAL HERBARIUM, BIGGEST DATABASE OF COUNTRY'S FLORA, IS A GLOBAL HIT

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

With details of about one lakh plant specimens, the Indian Virtual Herbarium, the biggest virtual database of flora in the country, is generating a lot of interest and turning out to be an eye-catching endeavour. While herbarium specimens are considered important tools for plant taxonomy, conservation, habitat loss and even climate change, Prime Minister Narendra Modi has recently described the Indian Virtual Herbarium as an example of how digital tools can help us connect to our roots.

In the *Mann Ki Baat* episode on July 31, Mr. Modi spoke about the novel initiative, and said that the herbarium was an interesting collection of plants and preserved parts of plants. "The virtual herbarium also presents a rich botanical diversity of the country. I am convinced that the Indian Virtual Herbarium will turn out to be an important resource for research on plants in the country," he said.

Developed by scientists of the Botanical Survey of India (BSI), the herbarium was inaugurated by Union Minister of Environment Forest and Climate Change Bhupendra Yadav in Kolkata on July 1. Since then, the portal ivh.bsi.gov.in has had nearly two lakh hits from 55 countries.

Each record in the digital herbarium includes an image of the preserved plant specimen, scientific name, collection locality, and collection date, collector name, and barcode number. The digital herbarium includes features to extract the data State-wise, and users can search plants of their own States, which will help them identify regional plants and in building regional checklists.

The portal includes about one lakh images of herbarium specimens. BSI Director A.A. Mao said that by 2022-end, the number of digitised species will increase to two lakh.

"By 2024, we plan to provide a platform to all the herbaria in the country so that they can display their herbarium collection on the platform," Dr. Mao said.

Scientists say that there are approximately three million plant specimens in the country which are with different herbaria located at zonal centres of the BSI and at the Central National Herbarium at Acharya Jagadish Chandra Bose Indian Botanic Garden at Howrah in West Bengal.

"Work on the digitisation of the specimens started in 2019, and most of the digitisation has been done by the BSI. About 52% of our type specimens are from foreign nations and collected from 82 countries of the world during the British-era," Kumar Avinash Bharati, scientist, BSI said.

The Indian Virtual Herbarium is also deeply linked with the botanical history of the country. The portal provides most valuable historical collections of botanists like William Roxburgh, Nathaniel Wallich and Joseph Dalton Hooker, considered the founding fathers of botany in India.

The digital herbarium has some of the oldest botanical specimens dating as early as 1696. *Cyperus procerus* was collected between June 15 and 20, 1696, near Chennai. The oldest type specimen *Lepidagathis scariosa* was collected in 1817 by Robert Wight. Type specimens are those collections that help in new discoveries and are considered of great significance by botanists and taxonomists. Researchers need to examine the types of the names in order to

confirm their identities. As a priority, the Indian Virtual Herbarium has digitised information with images of 29,615 type specimens on its platform.

[Our code of editorial values](#)

END

Downloaded from **crackIAS.com**

© **Zuccess App** by crackIAS.com

CrackIAS.com

STUDY OF ROCK AGAMA GIVES INSIGHTS INTO URBANISATION, CONSERVATION

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

The Peninsular Rock Agama (*Psammophilus dorsalis*) which is a type of garden lizard has a strong presence in southern India. Habitat loss and other such features of urbanisation have affected the presence of the animal in urban centres. A study carried out by researchers from Indian Institute of Science (IISc), Bengaluru, undertook to characterise urbanisation in the region and also to understand where the rock agama reside in and around Bengaluru specifically.

The study, published in *Frontiers in Conservation Science*, examined several environmental factors that could affect the presence of the lizard and revealed that they are found mainly in rocky places and warm spots. Thus, the inference is that conservation efforts must point towards retaining rocky patches even while reviving landscapes by planting trees.

This lizard is a large animal, strikingly coloured in orange and black. They do not generate their own body heat, so they need to seek warmth from external sources like a warm rock or a sunny spot on the wall. They are important in ecology from different aspects — they can indicate which parts of the city are warming, and their numbers show how the food web is changing.

Maria Thaker from the Centre for Ecological Sciences, IISc, Bengaluru, who is an author of the paper, says that since these lizards eat insects and are in turn eaten by raptors, snakes and dogs, they cannot live in places where there are no insects.

“Insects are critical components of a healthy ecosystem as they provide so many services, including pollination. So, while rock agamas are interesting in themselves, they are also a good model system to understand other aspects of the ecosystem,” she says, in an email to *The Hindu*.

Dr. Thaker’s PhD students Madhura Amdekar and Abhijit Nageskumar along with student volunteers systematically surveyed Bengaluru and the surrounding area. “We counted the number of lizards in over a hundred 20 by 20 metre plots and collected fine-scale habitat information that is not available from satellite data using photographs taken by drones,” says Dr. Thaker.

The research threw interesting insights in the case of urbanisation of Bengaluru. “Distance to city centre and proportion of built-up area are commonly used to understand urbanisation,” says Nitya Prakash Mohanty, a post-doctoral fellow at the centre and an author of the paper.

“After approximately 20 km from the general post office, Bengaluru is a heterogenous matrix of crops, plantations, and rocky habitats,” says Dr. Thaker. Artificial light at night was closely linked with built-up areas in the city, but other ecological conditions such as the number of bird predators or the connectivity of habitats showed large variation and no clear patterns from city centre, she explains.

Usually, biodiversity conservation brings to mind large animals like tigers or elephants or even birds, but organisms like the rock agama play an equally important role in the ecosystem. “In cities such as Bengaluru, there is a lot of flora and fauna that is rapidly disappearing. The rock agama is one such species which is dependent on rocky scrub habitats which are being converted into buildings and plantations,” says K.S. Seshadri, another author of the paper.

The study apart from characterising the way Bengaluru has grown, further underlines that smaller fauna and flora could be key indicators of the health of the ecosystem and need to be preserved, too.

[Our code of editorial values](#)

END

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

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

CrackIAS.com

CREATURES THAT CROSSED AN OCEAN TO FIND INDIA

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

Preserved: A species of bat and a primitive lemur have been found in Gujarat's Vastan lignite mine. | Photo Credit: AFP

You will most likely see lemurs in a Hollywood animation movie; singing, dancing and playing pranks. In the wild, they are found only on the island of Madagascar, which, to naturalists has always been a place of intriguing creatures.

Many life forms in Madagascar have affinities to lineages found in India (3,800 km away) rather than Africa (413 km). This posed a 'difficult enigma' to naturalists.

Zoologist Philip Sclater was perplexed by the presence of lemurs, their relatives, and their fossils in Madagascar and India, but not in nearby Africa or the Middle East. In the 1860s, he proposed that a large island or continent must have once existed between India and Madagascar, serving as a land bridge. Over time, this island had sunk. He called this proposed island Lemuria.

Sclater's hypothesis fascinated occultists such as Helena Blavatsky, who thought that this had to be the place, now lost, where humans originated.

Tamil revivalists such as Devaneyya Pavanar also took up the idea, in the form of a Tamil civilisation, lost to the sea as described in literature and in Pandyan legends. They called this submerged continent Kumari Kandam.

Sclater's ideas lost favour when another 'outlandish' theory, of continental drift, began to gain acceptance. In plate tectonics, the large rocky plates that we stand on float on molten subterranean rocks and move 2-15 cm per year relative to each other. A landmass called Gondwana, split into two 165 million years ago — one containing what is now Africa and South America, the other comprising India, Madagascar, Australia and Antarctica.

Around 115 million years ago, Madagascar and India together broke free. Around 88 million years ago, India moved northward, dropping a few parcels of land along the way to form Seychelles. It joined the Eurasian mass 50 million years ago giving rise to the Himalayas and South Asia that we are familiar with.

Around 115 million years ago, it was the dinosaurs that ruled. Many life forms had not even evolved. Supporting the Gondwana breakup, dinosaur fossils found in India and Madagascar are closely related, and do not resemble species found in Africa and Asia. Fragments of *Laplatosaurus madagascarensis* have been found in both India and Madagascar.

A powerful technique, the molecular clock, is used to estimate the time when two forms of life diverged from each other. It is based on the observation that evolutionary changes in the sequence of an RNA or a protein molecule occur at a fairly constant rate. The difference in the amino acids of, say the haemoglobin of two animals can tell you how long ago their lineages diverged. Molecular clocks corroborate well with other evidence, such as the fossil record.

South India and Sri Lanka have only two genuses of the cichlid family of freshwater and brackish-water fishes — the *Etroplus* (a food fish in Kerala, where it is called *pallathi*) and

Pseudotroplus. Molecular comparisons show that the nearest relatives of *Etroplus* are found in Madagascar, and their common ancestor diverged from African cichlids 160 million years ago. A fourth group is in South America, thus, accounting for the fragments of Gondwana.

India occupies a pivotal position in the distribution of life forms in Asia, Madagascar and Africa. Gondwana creatures moved out of India. Others crossed over to stay. For example, Asian freshwater crabs (*Gecarcinucidae*) are now found all over Southeast Asia but their most recent common ancestor evolved in India. The frog family, *Sooglossidae*, is found only in India and the Seychelles (Datta-Roy and Karanth, *Journal of Biosciences*, 2009).

Fossil finds in the Vastan lignite mine in Gujarat by researchers from HNB Garhwal University, Panjab University and Johns Hopkins University have identified the earliest Indian mammal, a species of bat, and the earliest euprimate, a primitive lemur. These were dated 53 million years ago, around the time (or just before) the India-Eurasian plates collided (*Journal of the Paleontological Society of India*, 2005).

What about the lemurs? Madagascar is a large island, with a variety of climatic conditions. Evidence favours an ancestor primate crossing over from Africa. No monkey, ape or large predator managed the crossing, so dozens of lemur species proliferated.

In India, we have the lorises, which are the closest extant relatives of the lemurs. These are shy, nocturnal forest dwellers, with large, appealing eyes. They are also believed to have survived oceanic rides from Africa. They are mostly found in the Northeastern States (slow loris), and where Karnataka, Kerala and Tamil Nadu meet (slender loris).

(*The article was written in collaboration with Sushil Chandani who works in molecular modelling. sushilchandani@gmail.com*)

[Our code of editorial values](#)

END

Downloaded from crackIAS.com

© **Zuccess App** by crackIAS.com

CLIMATE CHANGE MAY INCREASE MORTALITY RATE DUE TO EXCESS HEAT BY SIX TIMES: LANCET STUDY

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

The study shows that the frequency and mean intensity of hot nights would increase more than 30% and 60% by the 2100s, respectively, compared with less than 20% increase for the daily mean temperature. File | Photo Credit: Getty Images

Climate change may increase the mortality rate due to excessive heat six times by the end of the century, according to a modelling study published in The Lancet Planetary Health journal.

Researchers from the University of North Carolina, United States noted that ambient heat during the night may interrupt the normal physiology of sleep.

Less sleep can then lead to immune system damage and a higher risk of cardiovascular disease, chronic illnesses, inflammation and mental health conditions, they said.

The study found that the average intensity of hot night events will nearly double by 2090, from 20.4 degrees Celsius to 39.7 degrees Celsius across 28 cities from east Asia, increasing the burden of disease due to excessive heat that disrupts normal sleep.

The findings show that the burden of mortality could be significantly higher than estimated by average daily temperature increase.

The results suggest that warming from climate change could have a troubling impact, even under restrictions from the Paris Climate Agreement that aims to limit global warming to well below 2 degrees Celsius, compared to pre-industrial levels.

"The risks of increasing temperature at night were frequently neglected," said study co-author Yuqiang Zhang, a climate scientist at the University of North Carolina.

"However, in our study, we found that the occurrences of hot night excess (HNE) are projected to occur more rapidly than the daily mean temperature changes," Mr. Zhang said.

The study shows that the frequency and mean intensity of hot nights would increase more than 30% and 60% by the 2100s, respectively, compared with less than 20% increase for the daily mean temperature.

The researchers estimated the mortality due to excess heat in 28 cities in China, South Korea and Japan between 1980 and 2015 and applied it to two climate change modelling scenarios that aligned with carbon-reduction scenarios adapted by the respective national governments.

The team was able to estimate that between 2016 and 2100, the risk of death from excessively hot nights would increase nearly by six-fold. This prediction is much higher than the mortality risk from daily average warming suggested by climate change models.

"From our study, we highlight that in assessing the disease burden due to non-optimum temperature, governments and local policymakers should consider the extra health impacts of the disproportional intra-day temperature variations," said Haidong Kan, a professor at Fudan University in China.

"A more complete health risk assessment of future climate change can help policymakers for better resource allocation and priority setting," said Mr. Kan, the corresponding author of the study.

The researchers also found that regional differences in temperature accounted for many of the variances in nighttime temperature, and areas with the lowest average temperature were projected to have the largest warming potential.

"To combat the health risk raised by the temperature increases from climate change, we should design efficient ways to help people adapt," said Mr. Zhang.

"Locally, heat during the night should be taken into account when designing the future heatwave warning system, especially for vulnerable populations and low-income communities who may not be able to afford the additional expense of air conditioning," the scientist said.

The researchers said stronger mitigation strategies, including global collaborations, should be considered to reduce future impacts of warming.

[Our code of editorial values](#)

END

Downloaded from **crackIAS.com**

© **Zuccess App** by crackIAS.com

CrackIAS

EXIT AND RE-ENTRY OF THE CHEETAH AND OTHER ANIMALS

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

PHOTO: REUTERS

The cheetah scenario

In 1952 - five years after the last three wild cheetahs fell to hunting - cheetahs were declared extinct in the country. Since then, there have been several calls to re-introduce the carnivore. After decades, finally a solid plan for it took shape in 2009. The Asiatic cheetah is found in the wild today only in Iran, which refused to entertain such a relocation. So, the plan turned its focus to Africa. While in 2013 the Supreme Court rejected the idea to introduce what is essentially an alien species (the African cheetah), last year it gave its nod for the move. Among the areas identified for the Rs. 14-crore "Project Cheetah" is the Kuno National Park in Madhya Pradesh. It was recently announced that the transportation of the big cats to the Park is likely to happen around this November.

- The effort to re-introduce the cheetah, albeit the African species, is the first for an extinct mammal in the country. However, within the country, rhinoceros have been introduced in other areas - to both happy and sad results. Launched in 2005, the Indian Rhino Vision 2020 came about to address the issue of declining rhino population in the country. Back then, a large portion of the animals dominated Assam's Kaziranga National Park. So, over 10 years, a few rhinos were moved to Manas National Park in the State. The animals managed to thrive. Some of the females even gave birth twice, increasing the total number of animals from zero in 2005 to 32 in 2015. Sadly, poachers thrived too - in just five years, 10 rhinos were killed, causing a setback to the project.
- Similarly, the relocation and introduction of another big cat - the tiger - too have been the focus for a while now. The Project Tiger Relocation was launched in 2018, and a male from Kanha Tiger Reserve and a female from Bandhavgarh from Madhya Pradesh were relocated to Satkosia Tiger Reserve in Odisha. While the male was found dead within months, the female mauled a villager, and was shifted to an enclosure, effectively affecting the initiative.
- Meanwhile, discussions have been going on for years about introducing the Asiatic lion - found in the wild today only in Gujarat's Gir forest - to other areas. The talks have intensified since 2018 when several lions in Gir lost their lives due to in-fighting and virus infection.
- Usually, it is threatened or endangered species (and, occasionally those extinct in the wild too) that are re-introduced in a region. This helps bring about a healthy, diverse, and thriving population over the years, giving hope to the species.
- When a species is re-introduced, it may help improve its habitats or even an ecosystem. This becomes especially relevant when it is an apex predator at the top of a food chain containing herbivores and the vegetation these herbivores are dependent on.
- Rare and endangered species have the potential to improve tourism by bringing in more discerning visitors. This also means more awareness among adults and children about the need to conserve wildlife and their habitats.

- Globally, and especially in India, many wildlife species are in dire straits due to several reasons, including climate change, human activity, infrastructure development, etc. In such a scenario, it is prudent to channel manpower and funds to conserve threatened species rather than to the re-introduction of species.

- There have been instances that suggest enough sensitivity, research, and planning have not gone into introduction plans, resulting in precious loss of animal lives. As for the cheetah re-introduction, many conservationists have raised concerns over the lack of prey base and adequate space for a carnivore that thrives in grasslands.

[Our code of editorial values](#)

END

Downloaded from **crackIAS.com**

© **Zuccess App** by crackIAS.com

CrackIAS.com

WORLD ELEPHANT DAY – 2022 CELEBRATED AT PERIYAR

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

World Elephant day - 2022 was celebrated today at Periyar, Kerala in the presence of Shri Bhupender Yadav, Union Minister of Environment, Forest & Climate Change (EF&CC), Shri Ashwini Kumar Choubey, MoS, EF&CC and Shri A. K. Saseendran, Minister of Forests & Wildlife, Kerala among others.



The Union Minister released “Elephant Reserves of India: An Atlas”, “Elephant Reserves of India: Land Use Land Cover Classification”, “Caring for elephants: Managing health and welfare in captivity” and the Special edition of “Trumpet”.



Commemorating 30 years of completion of Project Elephant, a poster on elephant conservation in India was released by all dignitaries.



For the first time in an initiative taken by the Hon'ble Minister, Gaj Gaurav award was conferred for the commendable efforts of local communities, frontline staff and mahouts working at grass root level to conserve elephants in wild and captivity. This year the Malasar Community belonging to the Anamalai of Tamil Nadu and mahouts of Kerala and Assam were awarded the Gaj Gaurav award by the Union Minister, EF&CC.



Prizes were also given to school students for several competitions held on the theme “Living with elephants”. Speaking at the occasion, the Union Minister reiterated that our association with elephants is ancient, valued and revered. He further said that Elephants are also critical to

the sustenance of our wildlife and biodiversity and India places a very high premium on the conservation of the jumbos.



Shri Yadav also stated that “Hon’ble Prime Minister Shri Narendra Modi ji a staunch environmentalist and nature lover has made two aspects central to our wildlife conservation strategy. First, wildlife protections and fight against climate change can go hand in hand with development – without either compromising on the other. Second, conservation efforts for our wildlife and biodiversity should be community-driven and all the assistance needed from the state being made available.

The Union Minister informed the audience that India has the largest and the most stable population of Asian elephants. In fact, more than 60% of wild Asian elephants are in India. The population of 29,964 elephants as recorded in the last elephant census conducted in 2017 speaks volumes of the passion for wildlife conservation ingrained in Indian culture. “We have some of the best laws to protect elephants and their habitats. We have the most amazing people who love and worship elephants”, said the Minister.

Union Minister further said that India has 31 Elephant Reserves. In the last 3 years, **Dandeli** Elephant Reserve has been notified by the state of Karnataka, **Singphan** Elephant Reserve by Nagaland and **Lemru** Elephant Reserve in Chhattisgarh. This has brought the total area under Elephant Reserves in India to about 76,508 sqkm across 14 states of the country.

He also shared that India is going to witness the establishment of **one more Elephant Reserve, the Agasthiyamalai in Tamil Nadu**, adding yet another 1197 sqkm of Protected Area dedicated for protection and conservation of elephants in India.

I am very happy to share with you all that later today, India will witness the establishment of one more Elephant Reserve, Agasthiyamalai in Tamil Nadu, adding another 1,197 sq km of protected area dedicated to conservation of elephants. [#WorldElephantDay2022](https://www.twitter.com/4VSFeA3aJJ)
[pic.twitter.com/4VSFeA3aJJ](https://www.twitter.com/4VSFeA3aJJ)

Speaking about the human-animal conflict, Shri Yadav said, “The Government of India recognizes that welfare of people is at the heart of elephant conservation in India. With competition for resources, human-elephant conflict is increasing and it is unfortunate that on an average 500 people are killed annually by elephants and about 100 elephants are killed in retaliation by people. Managing human-elephant conflict is a major focus of the Indian government. Reaching out to the families of the victims affected by elephants, Pradhan Mantri Shri Narendra Modi ji’s government has increased the ex-gratia from Rs 2 lakh to Rs 5 lakh.

To find a long-term solution, we are revisiting the elephant corridors of the country and have finished more than 50% of the task involving key stakeholders in this endeavour.

Shri Yadav took the opportunity to inform that regarding the eco sensitive zone judgement passed by the Supreme Court, the Ministry is filing a review petition, specially again to revisit the section 44A and 44E of the judgement as more clarity on the issue was required. He also touched upon the issue of wild boars and stated that the Ministry had already issued a guideline for the human wildlife conflict in February 2021 and powers have been given to the Chief Wildlife Warden of Kerala under section 11 of Wildlife Protection Act for mitigation of this problem.

On the issue of Western Ghats, a committee had been appointed to take a holistic approach to Kasturirangan and Gadgil Committee Report and to consider the representation given by the people.

Union Minister, Shri Yadav also informed that the Wildlife Protection Act has been amended and passed by Lok Sabha recently and there is a provision that mentions that use of elephants for the religious purpose will be continued with certain guidelines of Government of India and Ministry of Environment, Forest and Climate Change.

The Union Minister took the opportunity to reiterate that Pradhan Mantri Narendra Modi Ji's Government is "pro-poor, pro people and pro planet" and that is the reason that the Prime Minister announced a mission of LiFE (Lifestyle For Environment) in Glasgow summit.

In the capacity of Union Minister of Labour & Employment, Shri Bhupender Yadav announced that Kattappana in Idukki district will soon have a 100 bedded ESIC hospital with full facility for the purpose of serving the poor people.

"I am confident that our efforts will pave the way to secure the future of wild elephants and their habitat globally", concluded the Minister.

MoS, EF&CC, Shri Choubey also addressed the gathering and said that Gajaraj has always been a part of all activities associated with human welfare since ages. He also said that the importance of public participation in conservation of elephants cannot be overstated.

Under PM Shri [@narendramodi](#) ji, Project Elephant has received a huge boost with the number of elephant reserves rising and a holistic approach being adopted for elephant conservation. [#WorldElephantDay2022](#) pic.twitter.com/jMqGsmP9rd

World Elephant Day is an international annual event, dedicated to the preservation and protection of the world's elephants. The goal of World Elephant Day is to create awareness on elephant conservation, and to share knowledge and positive solutions for the better protection and management of wild and captive elephants.

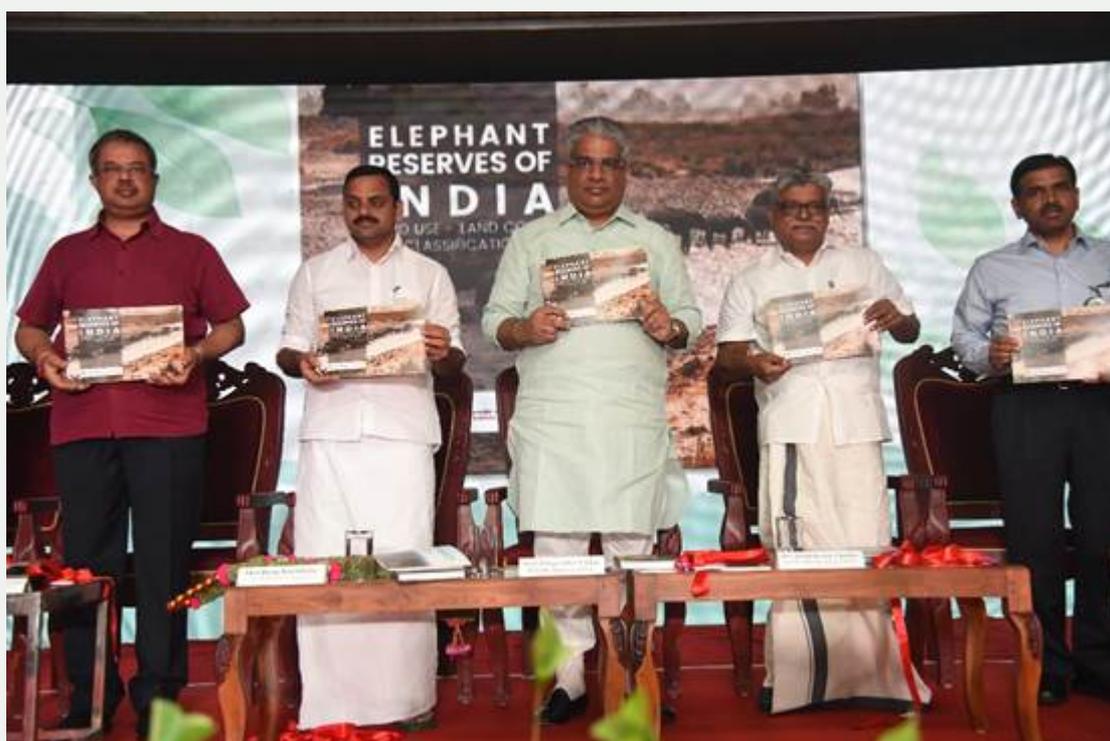
The current population estimates indicate that there are about 50,000 - 60000 Asian elephants in the world. More than 60% of the population is held in India. Indian Elephant has also been listed in the Appendix I of the Convention of the Migratory species in the recently concluded Conference of Parties of CMS 13 at Gandhi Nagar, Gujarat in February 2020. World Elephant Day is being celebrated to bring attention of various stakeholders to support various conservation policies to help elephants, including improving enforcement policies to prevent the illegal poaching and trade of ivory, conserving elephant habitats, providing better treatment for captive elephants and reintroducing some captive elephants into sanctuaries. Elephant is the Natural Heritage Animal of India and India also celebrates this day to spread awareness towards conservation of the species.

HS/PD

World Elephant day - 2022 was celebrated today at Periyar, Kerala in the presence of Shri Bhupender Yadav, Union Minister of Environment, Forest & Climate Change (EF&CC), Shri Ashwini Kumar Choubey, MoS, EF&CC and Shri A. K. Saseendran, Minister of Forests & Wildlife, Kerala among others.



The Union Minister released “Elephant Reserves of India: An Atlas”, “Elephant Reserves of India: Land Use Land Cover Classification”, “Caring for elephants: Managing health and welfare in captivity” and the Special edition of “Trumpet”.



Commemorating 30 years of completion of Project Elephant, a poster on elephant conservation in India was released by all dignitaries.



For the first time in an initiative taken by the Hon'ble Minister, Gaj Gaurav award was conferred for the commendable efforts of local communities, frontline staff and mahouts working at grass root level to conserve elephants in wild and captivity. This year the Malasar Community belonging to the Anamalai of Tamil Nadu and mahouts of Kerala and Assam were awarded the Gaj Gaurav award by the Union Minister, EF&CC.



Prizes were also given to school students for several competitions held on the theme “Living with elephants”. Speaking at the occasion, the Union Minister reiterated that our association with elephants is ancient, valued and revered. He further said that Elephants are also critical to

the sustenance of our wildlife and biodiversity and India places a very high premium on the conservation of the jumbos.



Shri Yadav also stated that “Hon’ble Prime Minister Shri Narendra Modi ji a staunch environmentalist and nature lover has made two aspects central to our wildlife conservation strategy. First, wildlife protections and fight against climate change can go hand in hand with development – without either compromising on the other. Second, conservation efforts for our wildlife and biodiversity should be community-driven and all the assistance needed from the state being made available.

The Union Minister informed the audience that India has the largest and the most stable population of Asian elephants. In fact, more than 60% of wild Asian elephants are in India. The population of 29,964 elephants as recorded in the last elephant census conducted in 2017 speaks volumes of the passion for wildlife conservation ingrained in Indian culture. “We have some of the best laws to protect elephants and their habitats. We have the most amazing people who love and worship elephants”, said the Minister.

Union Minister further said that India has 31 Elephant Reserves. In the last 3 years, **Dandeli** Elephant Reserve has been notified by the state of Karnataka, **Singphan** Elephant Reserve by Nagaland and **Lemru** Elephant Reserve in Chhattisgarh. This has brought the total area under Elephant Reserves in India to about 76,508 sqkm across 14 states of the country.

He also shared that India is going to witness the establishment of **one more Elephant Reserve, the Agasthiyamalai in Tamil Nadu**, adding yet another 1197 sqkm of Protected Area dedicated for protection and conservation of elephants in India.

I am very happy to share with you all that later today, India will witness the establishment of one more Elephant Reserve, Agasthiyamalai in Tamil Nadu, adding another 1,197 sq km of protected area dedicated to conservation of elephants. [#WorldElephantDay2022](https://twitter.com/4VSFeA3aJJ)
pic.twitter.com/4VSFeA3aJJ

Speaking about the human-animal conflict, Shri Yadav said, “The Government of India recognizes that welfare of people is at the heart of elephant conservation in India. With competition for resources, human-elephant conflict is increasing and it is unfortunate that on an average 500 people are killed annually by elephants and about 100 elephants are killed in retaliation by people. Managing human-elephant conflict is a major focus of the Indian government. Reaching out to the families of the victims affected by elephants, Pradhan Mantri Shri Narendra Modi ji’s government has increased the ex-gratia from Rs 2 lakh to Rs 5 lakh.

To find a long-term solution, we are revisiting the elephant corridors of the country and have finished more than 50% of the task involving key stakeholders in this endeavour.

Shri Yadav took the opportunity to inform that regarding the eco sensitive zone judgement passed by the Supreme Court, the Ministry is filing a review petition, specially again to revisit the section 44A and 44E of the judgement as more clarity on the issue was required. He also touched upon the issue of wild boars and stated that the Ministry had already issued a guideline for the human wildlife conflict in February 2021 and powers have been given to the Chief Wildlife Warden of Kerala under section 11 of Wildlife Protection Act for mitigation of this problem.

On the issue of Western Ghats, a committee had been appointed to take a holistic approach to Kasturirangan and Gadgil Committee Report and to consider the representation given by the people.

Union Minister, Shri Yadav also informed that the Wildlife Protection Act has been amended and passed by Lok Sabha recently and there is a provision that mentions that use of elephants for the religious purpose will be continued with certain guidelines of Government of India and Ministry of Environment, Forest and Climate Change.

The Union Minister took the opportunity to reiterate that Pradhan Mantri Narendra Modi Ji's Government is "pro-poor, pro people and pro planet" and that is the reason that the Prime Minister announced a mission of LiFE (Lifestyle For Environment) in Glasgow summit.

In the capacity of Union Minister of Labour & Employment, Shri Bhupender Yadav announced that Kattappana in Idukki district will soon have a 100 bedded ESIC hospital with full facility for the purpose of serving the poor people.

"I am confident that our efforts will pave the way to secure the future of wild elephants and their habitat globally", concluded the Minister.

MoS, EF&CC, Shri Choubey also addressed the gathering and said that Gajaraj has always been a part of all activities associated with human welfare since ages. He also said that the importance of public participation in conservation of elephants cannot be overstated.

Under PM Shri [@narendramodi](#) ji, Project Elephant has received a huge boost with the number of elephant reserves rising and a holistic approach being adopted for elephant conservation. [#WorldElephantDay2022](#) pic.twitter.com/jMqGsmP9rd

World Elephant Day is an international annual event, dedicated to the preservation and protection of the world's elephants. The goal of World Elephant Day is to create awareness on elephant conservation, and to share knowledge and positive solutions for the better protection and management of wild and captive elephants.

The current population estimates indicate that there are about 50,000 - 60000 Asian elephants in the world. More than 60% of the population is held in India. Indian Elephant has also been listed in the Appendix I of the Convention of the Migratory species in the recently concluded Conference of Parties of CMS 13 at Gandhi Nagar, Gujarat in February 2020. World Elephant Day is being celebrated to bring attention of various stakeholders to support various conservation policies to help elephants, including improving enforcement policies to prevent the illegal poaching and trade of ivory, conserving elephant habitats, providing better treatment for captive elephants and reintroducing some captive elephants into sanctuaries. Elephant is the Natural Heritage Animal of India and India also celebrates this day to spread awareness towards conservation of the species.

HS/PD

END

Downloaded from **crackIAS.com**

© **Zuccess App** by crackIAS.com

CrackIAS.com

EXPLAINED

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

A view of the fishing village in south Mumbai under the CRZ. File | Photo Credit: The Hindu

The story so far: This week, the [Comptroller and Auditor General \(CAG\) of India tabled a report](#) in Parliament on whether steps taken by the Union Environment Ministry to conserve India's coastal ecosystems have been successful. The CAG frequently undertakes 'performance audits' of government programmes and ministries. This latest report contains the observations from an audit of [Conservation of Coastal Ecosystems from 2015-20](#).

The government has issued notifications under the Environment Protection Act, 1986, to regulate activities along India's coasts particularly regarding construction. The Coastal Regulation Zone Notification (CRZ) 2019, implemented by the Ministry, classifies the coastal area into different zones to manage infrastructure activities and regulate them. The three institutions responsible for the implementation of the CRZ are the National Coastal Zone Management Authority (NCZMA) at the Centre, the State/Union Territory Coastal Zone Management Authorities (SCZMAs/UTCZMAs) in every coastal State and Union Territory and the District Level Committees (DLCs) in every district that has a coastal stretch and where the CRZ notification is applicable. These bodies examine if CRZ clearances granted by the government are as per procedure, if project developers once given the go-ahead are complying with conditions, and if the project development objectives under the Integrated Coastal Zone Management Programme (ICZMP) are successful. They also evaluate the measures taken up by the government towards achieving the targets under Sustainable Development Goals, a set of United Nations-prescribed targets for countries towards eradicating poverty and becoming sustainable societies.

The CAG has a constitutional mandate to investigate and report on publicly funded programmes. The CAG conducted "pre-audit studies" and found that there were large-scale CRZ violations in the coastal stretches. Incidences of illegal construction activities (reducing coastal space) and effluent discharges from local bodies, industries and aquaculture farms had been reported by the media and this prompted it to undertake a detailed investigation.

The audit pointed out various categories of violations. For one, the Environment Ministry hadn't notified NCZMA as a permanent body and it was being reconstituted every few years. In the absence of defined membership, it was functioning as an ad-hoc body. There were instances of the Expert Appraisal Committees — a committee of scientific experts and senior bureaucrats who evaluate the feasibility of an infrastructure project and its environmental consequences — not being present during project deliberations. There were also instances of the members of the EAC being fewer than half of the total strength during the deliberations.

The SCZMA had not been reconstituted in Karnataka and there was delayed reconstitution in the States of Goa, Odisha and West Bengal. The DLCs of Tamil Nadu lacked participation from local traditional communities. In Andhra Pradesh, DLCs were not even established.

Also read | [CAG flags CRZ violations in Kerala](#)

There were instances of projects being approved despite inadequacies in the Environment Impact Assessment (EIA) reports. These included non-accredited consultants preparing the EIA, using outdated data, not evaluating environmental impacts of the project, not appraising the disasters which the project area was prone to and so forth.

Tamil Nadu didn't have a strategy in place to conserve the Gulf of Mannar Islands. In Goa, there was no system for monitoring coral reefs and no management plans to conserve turtle nesting sites. In Gujarat, instruments procured to study the physiochemical parameters of soil and water of the inertial area of the Gulf of Kutch weren't used. Sea patrolling in Gahirmatha Sanctuary, in Kendrapara, Odisha did not happen. A research laboratory at Dangmal, Kendrapara District, Odisha constructed in 2016 has not been made functional till date. There was no website to disseminate the information related to the NCZMA , the CAG found, which is a clear violation of the mandated requirements of the Authority.

These reports are placed before the Standing Committees of Parliament, which select those findings and recommendations that they judge to be the most critical to public interest and arrange hearings on them. In this case, the Environment Ministry is expected to explain omissions pointed out by the CAG and make amends.

[Our code of editorial values](#)

END

Downloaded from **crackIAS.com**

© **Zuccess App** by crackIAS.com

CrackIAS

75 RAMSAR SITES IN 75TH YEAR OF INDEPENDENCE

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

PM Shri [@narendramodi](#) ji's love and care for environment is helping India scale newer heights in conservation.

Elated to inform that 11 more Indian wetlands have got Ramsar recognition. This takes our tally to 75 sites. [#AmritMahotsav#IndiaAt75 pic.twitter.com/jsYGTBGOQo](#)

India adds 11 more wetlands to the list of Ramsar sites to make total 75 Ramsar sites covering an area of 13,26,677 ha in the country in the 75th year of Independence.

The 11 new sites include: Four (4) sites in Tamil Nadu, Three (3) in Odisha, Two (2) in Jammu & Kashmir and One (1) each in Madhya Pradesh and Maharashtra. Designation of these sites would help in conservation and management of wetlands and wise use of their resources.

India is one of the Contracting Parties to Ramsar Convention, signed in Ramsar, Iran, in 1971. India signed it on 1st Feb 1982. During 1982 to 2013, a total of 26 sites were added to the list of Ramsar sites, however, during 2014 to 2022, the country has added 49 new wetlands to the list of Ramsar sites.

During this year itself (2022) a total of 28 sites have been declared as Ramsar sites. Based on the date of designation mentioned on Ramsar Certificate, the number is 19 for this year (2022) and 14 for previous year (2021).

Tamil Nadu has maximum no. of Ramsar sites (14 nos), followed by UP which has 10 nos. of Ramsar sites.

Brief of 11 wetlands designated as Ramsar sites

S.No

Name of wetland

Area in Ha

State

1.

Tampara Lake

300

Odisha

2.

Hirakud Reservoir	65400
3.	
Ansupa Lake	231
4.	
Yashwant Sagar	822.90
5.	
Madhya Pradesh	
Chitrangudi Bird Sanctuary	260.47
6.	
Tamil Nadu	
Suchindram Theroor Wetland Complex	94.23
7.	
Vaduvur Bird Sanctuary	112.64
8.	
Kanjirankulam Bird Sanctuary	96.89
9.	
Thane Creek	6521.08
10.	
Maharashtra	

Hygam Wetland Conservation Reserve

801.82

Jammu and Kashmir

11.

Shallbugh Wetland Conservation Reserve

1675

Total area of 11 sites

76316

Year wise designation of 75 Ramsar sites

S. No.

Year of Designation

No of site designated

(As per date of designation)

Sites designated upto 2013

and

after 2014 to till date

Area covered in Ha

1

1981

2

26

(1981 to 2013)

633871

2

1990

4

3

2002

13

4

2005

6

5

2012

1

6

2019

11

49

(2014 to 2022)

692807

7

2020

5

8

2021

14

9

2022

19

Total**75****75****1326678**

ANNOTATED SUMMARY AND PICS OF 11 NEW RAMSAR SITES

1. Tampara Lake:

Tampara Lake is among the most prominent freshwater lakes in the State of Odisha situated in Ganjam district. The depression on the ground gradually filled with rainwater from catchment flow and was called “Tamp” by the British and subsequently termed “Tampara” by the locals. The wetland supports at least 60 species of birds, 46 species of fishes, at least 48 species of phytoplanktons, and more than seven species of terrestrial plants and macrophytes. The wetland is an important habitat for vulnerable species such as *Cyprinus carpio*, common pochard (*Aythya ferina*), and river tern (*Sterna aurantia*). With an estimated average fish yield of 12 tonnes per year, the wetland is an important source of livelihood for the local communities. Along with fishes the wetland also provides provisioning services like water for agriculture, and domestic use and is a well-known tourism and recreation site.



Birds above the wetland



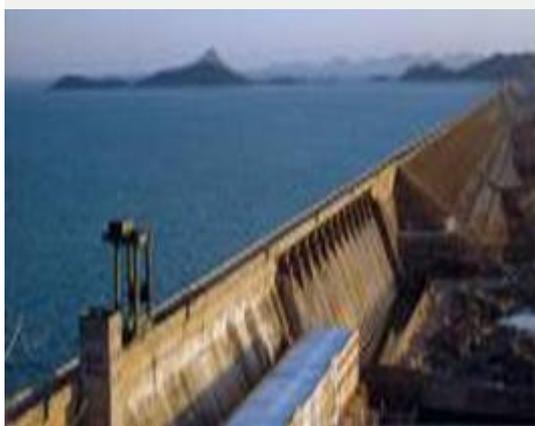
Wetland surface



Adjacent vegetation

2. Hirakud Reservoir

Hirakud Reservoir, the largest earthen dam in Odisha started operating in 1957. The reservoir supports a range of floral and faunal species, including several of high conservation significance. Out of the known 54 species of fish from the reservoir, one has been classed as being endangered, six near threatened and 21 fish species of economic importance. Fisheries presently yield a catch of around 480 MT of fish annually and is the mainstay of livelihoods of 7,000 fisher households. Similarly, over 130 bird species have been recorded at this site, out of which 20 species are of high conservation significance. The reservoir is a source of water for producing around 300 MW of hydropower and irrigating 436,000 ha of cultural command area. The wetland also provides important hydrological services by moderating floods in the Mahanadi delta, the ecological and socio-economic hub of the east coast of India. Hirakud reservoir supports abundant tourism, and forms an integral part of the high touristic value sites located around Sambalpur with over 30,000 tourists annually visiting the site.



Hirakud Reservoir



Migratory Birds



Waterbirds _ Hiraikud Reservoir

Landscape

3. Ansupa Lake

Ansupa Lake is the largest freshwater lake of Odisha situated in Banki sub-division of Cuttack district and has its fame from time immemorial for its scenic beauty, biodiversity, and natural resources. The wetland is an oxbow lake formed by River Mahanadi and is spread over an area of 231 ha. The wetland is home to at least 194 species of birds, 61 species of fishes and 26 species of mammals in addition to 244 species of macrophytes. The wetland provides a safe habitat to at least three threatened bird species- *Rynchops albicollis* (EN), *Sterna acuticauda* (EN) and *Sterna aurantia* (VU) and three threatened fish species- *Clarias magur* (Clariidae) (EN), *Cyprinus carpio* (Cyprinidae) (VU) and *Wallago attu* (VU). Ansupa lake sustains the freshwater demands of the surrounding areas and also supports the livelihood of the local communities through fisheries and agriculture. The wetland has immense recreational and tourism potential as it is a major wintering ground for migratory birds and is also known for its scenic beauty.



A view of Ansupa Lake



A view of Ansupa Lake



Migratory ducks in Ansupa Lake

4. Yashwant Sagar

Yashwant Sagar is one of the two Important Bird Areas (IBA) in the Indore region as well as one of the most important birding sites in Malwa region of Madhya Pradesh. Presently it is mainly used for water supply to the city of Indore and is also being used for fish culture on a commercial scale. Yashwant Sagar reservoir comes under the jurisdiction of Indore City Municipal Corporation. Indore which has bagged the title of one of the cleanest cities in India is also often known as center of economic growth of Madhya Pradesh. The catchment area of this wetland is predominantly agriculture. Yashwant Sagar is considered to be a stronghold of the vulnerable Sarus Crane in central India. The lake backwaters have plenty of shallow areas, conducive for waders and other waterfowl. As the water level recedes, many islands serve as roosting sites for waterfowl. Due to its vast shallow reed beds, the wetland is considered heaven to a large number of winter migratory birds.



Heronry birds, Yashwant Sagar



Lotus farming, Yashwant Sagar



Panoramic view of Yashwant Sagar

5. Chitrangudi Bird Sanctuary

Chitrangudi Bird Sanctuary, locally known as "Chitrangudi Kanmoli" is located in Ramanathapuram district in Tamil Nadu. The wetland is a protected area since 1989 and declared as Bird Sanctuary, coming under the jurisdiction of Tamil Nadu Forest Department, Ramanathapuram division. Chitrangudi Bird Sanctuary is an ideal habitat for winter migratory birds. Around 50 birds belonging to 30 families have been reported from the site. Out of these 47 are water birds and 3 terrestrial birds. Notable waterbirds spotted from the site area spot-billed pelican, little egret, grey heron, large egret, open billed stork, purple, and pond herons. Chitrangudi is surrounded by agricultural fields, where different crops are grown throughout the year. The wetland also supports a number of fishes, amphibians, molluscs, aquatic insects, and their larvae forming good food sources for arriving waterbirds. Groundwater is extracted for irrigation around and within the wetland for agricultural purposes.



CHITHIRANKUDI BIRD SANCTUARY WETLAND COMPLEX



CHITHIRANKUDI WETLAND COMPLEX-FLOCKS OF BAR HEADED GOOSE



CHITHIRANKUDI WETLAND COMPLEX –RELEASE OF FINGERLINGS



Chitrangudi Bird Sanctuary

6. Suchindram Theroor Wetland Complex

Suchindrum Theroor Wetland complex is part of the Suchindrum-Theroor Manakudi Conservation Reserve. It is declared an Important Bird Area and lies at the southern tip of the Central Asian flyway of migratory birds. It was formed for birds' nesting purposes and it attracts thousands of birds every year. The total population dependent upon Theroor is about 10,500 and 75% of the population's livelihood hinges on agriculture which in turn is dependent upon the water released from the Theroor tank. This is a man-made, inland Tank and is perennial. Copper plate inscriptions from the 9th century mention Pasumkulam, Venchikulam, Nedumarthukulam, Perumkulam, Elemchikulam and Konadunkulam. Around 250 species of birds have been recorded in the area, of which 53 are migratory, 12 endemic, and 4 threatened.



Landscape of Suchindram Tank



Indian Cormorant



Heronry in Suchindram Theroor



Spot-billed Duck

7. Vaduvur Bird Sanctuary

Vaduvur bird sanctuary spreads over an area of 112.638 ha, is a large human-made irrigation tank and shelter for migratory birds as it provides a suitable environment for food, shelter, and breeding ground. While these irrigation tanks have socio-economic and cultural significance, very little is known of their ecological importance. These tanks have the potential to harbor good populations of resident and wintering water birds but no studies have been done to confirm this. Indian Pond Heron *Ardeola grayii* occurred in most of the surveyed tanks. Large concentrations of wintering waterfowl such as Eurasian Wigeon *Anas penelope*, Northern Pintail *Anas acuta*, Garganey *Anas querquedula* were recorded in tanks. Vaduvur Bird Sanctuary has a diverse habitat including a number of inlets and surrounding irrigated agricultural fields which provides good nesting and foraging habitats for birds. Thus, the site provides support to the species listed above during critical stages of their life-cycle.



Panoramic View of Vaduvur Bird Sanctuary



Black headed Ibis nest



Nesting Site

Panoramic view of the sanctuary

8. Kanjirankulam Bird Sanctuary

Kanjirankulam Bird Sanctuary is a Protected area near Mudukulathur Ramanathapuram District, Tamil Nadu, India, declared in 1989. It is notable as a nesting site for several migratory heron species that roost in the prominent growth of babul trees there. The breeding population of migratory waterbirds arrive here between October and February and include: painted stork, white ibis, black ibis, little egret, great egret. The site qualifies as an IBA as the threatened Spot-billed Pelican *Pelecanus philippensis* breeds here. The wetland exhibits rich biodiversity including many globally near-threatened species like Spot-billed Pelican, Oriental Darter, Oriental white Ibis and Painted Stork and also commonly occurring shore and water birds like greenshank, plovers, stilts and forest birds like bee-eaters, bulbuls, cuckoos, starlings, barbets, etc. They act as breeding, nesting, roosting, foraging, and stopover sites for the birds. The wetland supports IUCN RedList vulnerable avian species like *Sterna aurantia* (River Tern).



Black winged stilt



Black Ibis



Spot-billed pelican nesting site



Kanjirankulam Bird Sanctuary

9. Thane Creek

Thane Creek is located in Maharashtra, India. There are several sources of fresh water to the creek, of which Ulhas River is the largest, followed by many drainage channels from various suburban areas of Mumbai, Navi Mumbai & Thane. It has been declared as Thane Creek Flamingo Sanctuary. Thane creek is fringed by mangroves on both banks & comprises around 20% of the total Indian mangrove species. The mangrove forest acts as a natural shelter belt & protects the land from cyclones, tidal surges, seawater seepage & intrusions. The mangrove serves as a nursery for several fishes & sustains the local fishery. The area is an important part of the wetland complex of the Central Asian Flyway of the birds and has been categorized as an Important Bird Area (IBA). Other than 202 avifaunal species, the creek also houses 18 species of fishes, crustaceans & molluscs, 59 species of butterflies, 67 species of Insects, and 35 species of phytoplankton, and 24 species of zooplankton & 23 species of Benthos.



congregation of Lesser flamingos



Closeup view



Mangroves of Thane creek



Flamingoes in Thane creek

10. Hygam Wetland Conservation Reserve

Hygam Wetland falls within the River Jhelum basin and plays a significant role as a flood absorption basin, biodiversity conservation site, eco-tourism site, and livelihood security for the local communities. The wetland is located in the Baramulla district. It serves as an abode to many residents and migratory bird species. It is also recognized as an Important Bird Area (IBA). Consequent to the high rate of siltation, Hygam Wetland has lost its wetland characteristics to a large extent and in many places changed its profile into a landmass. This has resulted in further loss of habitat conditions to offer a suitable site for visiting migratory birds (Winter/ Summer migrants) and for resident birds as well. Hygam Wetland provides a plethora of ecosystem services, these include fish and fiber, water supply, water purification, climate regulation, flood regulation, and recreational opportunities. The livelihoods of people living in, and adjoining the fringes of wetlands depend partially or entirely on wetland ecosystem services.



Photograph of the flood basin



Migratory Waterfowl congregation at Hygam wetland



Photograph of the flood basin.



Photograph of the wetland channel.

11. Shallbugh Wetland Conservation Reserve

Shallabugh Wetland Conservation Reserve is located in the District Srinagar, UT of J&K. Large areas of the wetland dry up between September and March. The area has extensive reedbeds of *Phragmites communis* and *Typha angustata*, and rich growth of *Nymphaea candida* and *N. stellata* on open water. It serves as an abode to more than four lakh resident and migratory birds of at least 21 species. Shallabugh Wetland plays a major role in the natural control, amelioration or prevention of flooding, It is also important for seasonal water retention for wetlands or other areas of conservation importance downstream. The wetland is important for the recharge of aquifers. A major natural floodplain system. Shallabugh Wetland provides plethora of ecosystem services, these include fish and fiber, water supply, water purification, climate regulation, flood regulation, recreational opportunities. The wetland serves as an important breeding ground for many species of waterbirds



Pics of Shallabugh Wetland



Panoramic view of Shallabugh Wetland

HS

PM Shri [@narendramodi](#) ji's love and care for environment is helping India scale newer heights in conservation.

Elated to inform that 11 more Indian wetlands have got Ramsar recognition. This takes our tally to 75 sites. [#AmritMahotsav#IndiaAt75 pic.twitter.com/jsYGTBGOQo](#)

India adds 11 more wetlands to the list of Ramsar sites to make total 75 Ramsar sites covering an area of 13,26,677 ha in the country in the 75th year of Independence.

The 11 new sites include: Four (4) sites in Tamil Nadu, Three (3) in Odisha, Two (2) in Jammu & Kashmir and One (1) each in Madhya Pradesh and Maharashtra. Designation of these sites would help in conservation and management of wetlands and wise use of their resources.

India is one of the Contracting Parties to Ramsar Convention, signed in Ramsar, Iran, in 1971. India signed it on 1st Feb 1982. During 1982 to 2013, a total of 26 sites were added to the list of Ramsar sites, however, during 2014 to 2022, the country has added 49 new wetlands to the list of Ramsar sites.

During this year itself (2022) a total of 28 sites have been declared as Ramsar sites. Based on the date of designation mentioned on Ramsar Certificate, the number is 19 for this year (2022) and 14 for previous year (2021).

Tamil Nadu has maximum no. of Ramsar sites (14 nos), followed by UP which has 10 nos. of Ramsar sites.

Brief of 11 wetlands designated as Ramsar sites

S.No**Name of wetland****Area in Ha****State**

1.

Tampara Lake

300

Odisha

2.

Hirakud Reservoir

65400

3.

Ansupa Lake

231

4.

Yashwant Sagar

822.90

Madhya Pradesh

5.

Chitrangudi Bird Sanctuary

260.47

Tamil Nadu

6.

Suchindram Theroor Wetland Complex

94.23

7.

Vaduvur Bird Sanctuary

	112.64
8. Kanjirankulam Bird Sanctuary	
	96.89
9. Thane Creek	
	6521.08
Maharashtra	
10. Hygam Wetland Conservation Reserve	
	801.82
Jammu and Kashmir	
11. Shallbugh Wetland Conservation Reserve	
	1675
Total area of 11 sites	
	76316

Year wise designation of 75 Ramsar sites

S. No.

Year of Designation

No of site designated

(As per date of designation)

Sites designated upto 2013

and

after 2014 to till date

Area covered in Ha

1

1981

2

26

(1981 to 2013)

633871

2

1990

4

3

2002

13

4

2005

6

5

2012

1

6

2019

11

49

(2014 to 2022)

692807

7

2020

5

8

2021

14

9

2022

19

Total**75****75****1326678****ANNOTATED SUMMARY AND PICS OF 11 NEW RAMSAR SITES****1. Tampara Lake:**

Tampara Lake is among the most prominent freshwater lakes in the State of Odisha situated in Ganjam district. The depression on the ground gradually filled with rainwater from catchment flow and was called "Tamp" by the British and subsequently termed "Tampara" by the locals. The wetland supports at least 60 species of birds, 46 species of fishes, at least 48 species of phytoplanktons, and more than seven species of terrestrial plants and macrophytes. The wetland is an important habitat for vulnerable species such as *Cyprinus carpio*, common pochard (*Aythya ferina*), and river tern (*Sterna aurantia*). With an estimated average fish yield of 12 tonnes per year, the wetland is an important source of livelihood for the local communities. Along with fishes the wetland also provides provisioning services like water for agriculture, and domestic use and is a well-known tourism and recreation site.



Birds above the wetland



Wetland surface

Adjacent vegetation

2. Hirakud Reservoir

Hirakud Reservoir, the largest earthen dam in Odisha started operating in 1957. The reservoir to support a range of floral and faunal species, including several of high conservation significance. Out of the known 54 species of fish from the reservoir, one has been classed as being endangered, six near threatened and 21 fish species of economic importance. Fisheries presently yield a catch of around 480 MT of fish annually and is the mainstay of livelihoods of 7,000 fisher households. Similarly, over 130 bird species have been recorded at this site, out of which 20 species are of high conservation significance. The reservoir is a source of water for producing around 300 MW of hydropower and irrigating 436,000 ha of cultural command area. The wetland also provides important hydrological services by moderating floods in the Mahanadi delta, the ecological and socio-economic hub of the east coast of India. Hirakud reservoir supports abundant tourism, and forms an integral part of the high touristic value sites located around Sambalpur with over 30,000 tourists annually visiting the site.



Hirakud Reservoir



Migratory Birds



Waterbirds _ Hirakud Reservoir



Landscape

3. Ansupa Lake

Ansupa Lake is the largest freshwater lake of Odisha situated in Banki sub-division of Cuttack district and has its fame from time immemorial for its scenic beauty, biodiversity, and natural resources. The wetland is an oxbow lake formed by River Mahanadi and is spread over an area of 231 ha. The wetland is home to at least 194 species of birds, 61 species of fishes and 26 species of mammals in addition to 244 species of macrophytes. The wetland provides a safe habitat to at least three threatened bird species- *Rynchops albicollis* (EN), *Sterna acuticauda* (EN) and *Sterna aurantia* (VU) and three threatened fish species- *Clarias magur* (Clariidae) (EN), *Cyprinus carpio* (Cyprinidae) (VU) and *Wallago attu* (VU). Ansupa lake sustains the freshwater demands of the surrounding areas and also supports the livelihood of the local communities through fisheries and agriculture. The wetland has immense recreational and tourism potential as it is a major wintering ground for migratory birds and is also known for its scenic beauty.



A view of Ansupa Lake



A view of Ansupa Lake



Migratory ducks in Ansupa Lake

4. Yashwant Sagar

Yashwant Sagar is one of the two Important Bird Areas (IBA) in the Indore region as well as one of the most important birding sites in Malwa region of Madhya Pradesh. Presently it is mainly used for water supply to the city of Indore and is also being used for fish culture on a commercial scale. Yashwant Sagar reservoir comes under the jurisdiction of Indore City Municipal Corporation. Indore which has bagged the title of one of the cleanest cities in India is also often known as center of economic growth of Madhya Pradesh. The catchment area of this wetland is predominantly agriculture. Yashwant Sagar is considered to be a stronghold of the vulnerable Sarus Crane in central India. The lake backwaters have plenty of shallow areas, conducive for waders and other waterfowl. As the water level recedes, many islands serve as roosting sites for waterfowl. Due to its vast shallow reed beds, the wetland is considered heaven to a large number of winter migratory birds.



Heronry birds, Yashwant Sagar



Lotus farming, Yashwant Sagar



Panoramic view of Yashwant Sagar

5. Chitragudi Bird Sanctuary

Chitragudi Bird Sanctuary, locally known as "Chitragudi Kanmoli" is located in Ramanathapuram district in Tamil Nadu. The wetland is a protected area since 1989 and declared as Bird Sanctuary, coming under the jurisdiction of Tamil Nadu Forest Department, Ramanathapuram division. Chitragudi Bird Sanctuary is an ideal habitat for winter migratory birds. Around 50 birds belonging to 30 families have been reported from the site. Out of these 47 are water birds and 3 terrestrial birds. Notable waterbirds spotted from the site area spot-billed pelican, little egret, grey heron, large egret, open billed stork, purple, and pond herons. Chitragudi is surrounded by agricultural fields, where different crops are grown throughout the year. The wetland also supports a number of fishes, amphibians, molluscs, aquatic insects, and their larvae forming good food sources for arriving waterbirds. Groundwater is extracted for irrigation around and within the wetland for agricultural purposes.



CHITHIRANKUDI BIRD SANCTUARY WETLAND COMPLEX



CHITHIRANKUDI WETLAND COMPLEX-FLOCKS OF BAR HEADED GOOSE



CHITHIRANKUDI WETLAND COMPLEX -RELEASE OF FINGERLINGS



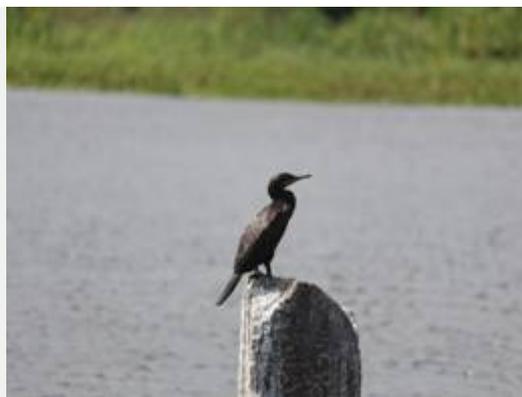
Chitrangudi Bird Sanctuary

6. Suchindram Theroor Wetland Complex

Suchindrum Theroor Wetland complex is part of the Suchindrum-Theroor Manakudi Conservation Reserve. It is declared an Important Bird Area and lies at the southern tip of the Central Asian flyway of migratory birds. It was formed for birds' nesting purposes and it attracts thousands of birds every year. The total population dependent upon Theroor is about 10,500 and 75% of the population's livelihood hinges on agriculture which in turn is dependent upon the water released from the Theroor tank. This is a man-made, inland Tank and is perennial. Copper plate inscriptions from the 9th century mention Pasumkulam, Venchikulam, Nedumarthukulam, Perumkulam, Elemchikulam and Konadankulam. Around 250 species of birds have been recorded in the area, of which 53 are migratory, 12 endemic, and 4 threatened.



Landscape of Suchindram Tank



Indian Cormorant



Heronry in Suchindram Theroor



Spot-billed Duck

7. Vaduvur Bird Sanctuary

Vaduvur bird sanctuary spreads over an area of 112.638 ha, is a large human-made irrigation tank and shelter for migratory birds as it provides a suitable environment for food, shelter, and breeding ground. While these irrigation tanks have socio-economic and cultural significance, very little is known of their ecological importance. These tanks have the potential to harbor good populations of resident and wintering water birds but no studies have been done to confirm this. Indian Pond Heron *Ardeola grayii* occurred in most of the surveyed tanks. Large concentrations of wintering waterfowl such as Eurasian Wigeon *Anas penelope*, Northern Pintail *Anas acuta*, Garganey *Anas querquedula* were recorded in tanks. Vaduvur Bird Sanctuary has a diverse habitat including a number of inlets and surrounding irrigated agricultural fields which provides good nesting and foraging habitats for birds. Thus, the site provides support to the species listed above during critical stages of their life-cycle.



Panoramic View of Vaduvur Bird Sanctuary



Black headed Ibis nest



Nesting Site



Panoramic view of the sanctuary

8. Kanjirankulam Bird Sanctuary

Kanjirankulam Bird Sanctuary is a Protected area near Mudukulathur Ramanathapuram District, Tamil Nadu, India, declared in 1989. It is notable as a nesting site for several migratory heron species that roost in the prominent growth of babul trees there. The breeding population of migratory waterbirds arrive here between October and February and include: painted stork, white ibis, black ibis, little egret, great egret. The site qualifies as an IBA as the threatened Spot-billed Pelican *Pelecanus philippensis* breeds here. The wetland exhibits rich biodiversity including many globally near-threatened species like Spot-billed Pelican, Oriental Darter, Oriental white Ibis and Painted Stork and also commonly occurring shore and water birds like greenshank, plovers, stilts and forest birds like bee-eaters, bulbuls, cuckoos, starlings, barbets, etc. They act as breeding, nesting, roosting, foraging, and stopover sites for the birds. The wetland supports IUCN RedList vulnerable avian species like *Sterna aurantia* (River Tern).



Black winged stilt



Black Ibis



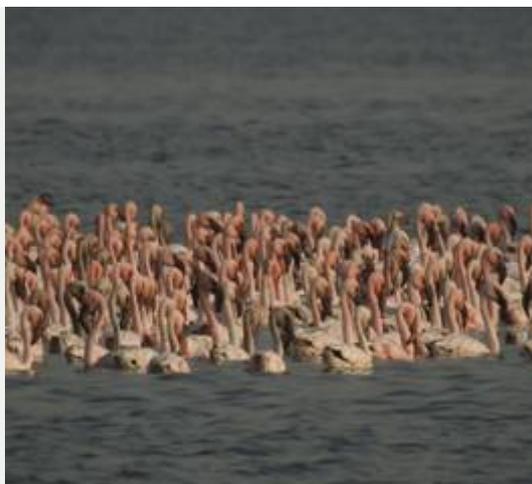
Spot-billed pelican nesting site



Kanjirankulam Bird Sanctuary

9. Thane Creek

Thane Creek is located in Maharashtra, India. There are several sources of fresh water to the creek, of which Ulhas River is the largest, followed by many drainage channels from various suburban areas of Mumbai, Navi Mumbai & Thane. It has been declared as Thane Creek Flamingo Sanctuary. Thane creek is fringed by mangroves on both banks & comprises around 20% of the total Indian mangrove species. The mangrove forest acts as a natural shelter belt & protects the land from cyclones, tidal surges, seawater seepage & intrusions. The mangrove serves as a nursery for several fishes & sustains the local fishery. The area is an important part of the wetland complex of the Central Asian Flyway of the birds and has been categorized as an Important Bird Area (IBA). Other than 202 avifaunal species, the creek also houses 18 species of fishes, crustaceans & molluscs, 59 species of butterflies, 67 species of Insects, and 35 species of phytoplankton, and 24 species of zooplankton & 23 species of Benthos.



congregation of Lesser flamingos



Closeup view



Mangroves of Thane creek



Flamingoes in Thane creek

10. Hygam Wetland Conservation Reserve

Hygam Wetland falls within the River Jhelum basin and plays a significant role as a flood absorption basin, biodiversity conservation site, eco-tourism site, and livelihood security for the local communities. The wetland is located in the Baramulla district. It serves as an abode to many residents and migratory bird species. It is also recognized as an Important Bird Area (IBA). Consequent to the high rate of siltation, Hygam Wetland has lost its wetland characteristics to a large extent and in many places changed its profile into a landmass. This has resulted in further loss of habitat conditions to offer a suitable site for visiting migratory birds (Winter/ Summer migrants) and for resident birds as well. Hygam Wetland provides a plethora of ecosystem services, these include fish and fiber, water supply, water purification, climate regulation, flood regulation, and recreational opportunities. The livelihoods of people living in, and adjoining the fringes of wetlands depend partially or entirely on wetland ecosystem services.



Photograph of the flood basin



Migratory Waterfowl congregation at Hygam wetland



Photograph of the flood basin.



Photograph of the wetland channel.

11. Shallbugh Wetland Conservation Reserve

Shallabugh Wetland Conservation Reserve is located in the District Srinagar, UT of J&K. Large areas of the wetland dry up between September and March. The area has extensive reedbeds of *Phragmites communis* and *Typha angustata*, and rich growth of *Nymphaea candida* and *N. stellata* on open water. It serves as an abode to more than four lakh resident and migratory birds of at least 21 species. Shallabugh Wetland plays a major role in the natural control, amelioration or prevention of flooding, It is also important for seasonal water retention for wetlands or other areas of conservation importance downstream. The wetland is important for the recharge of aquifers. A major natural floodplain system. Shallabugh Wetland provides plethora of ecosystem services, these include fish and fiber, water supply, water purification, climate regulation, flood regulation, recreational opportunities. The wetland serves as an important breeding ground for many species of waterbirds



Pics of Shallabugh Wetland



Panoramic view of Shallabugh Wetland

HS

END

Downloaded from **crackIAS.com**

© **Zuccess App** by crackIAS.com

INDIA AT 75

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

'The obsession with economic growth treats the natural environment and related livelihoods as fodder for exploitation' | Photo Credit: S. RAMESH KURUP

Chipko. Silent Valley. Narmada. Koel-Karo. Growing up in the 1970s and the early 1980s, many of us who were passionate about environmental issues were inspired by these and other movements. As the government too responded with a series of forest, wildlife, environment-related laws and policies, there was hope that India would be able to balance its development needs with the sustenance of its ecological foundations. As India celebrates 75 years of Independence, has that hope been sustained?

The prospects today seem far gloomier than they did in the 1980s. Four hundred and eighty million Indians face the world's most extreme air pollution levels. According to NITI Aayog, "600 million people in India face high to extreme water stress... with nearly 70% of water being contaminated; India is placed at 120th amongst 122 countries in the water quality index". Land degradation and desertification are taking place over 30% of our land, according to the Indian Space Research Organisation. Average levels of land productivity are one-fourth or one-fifth of what they could be; pumping in artificial fertilizers restores a bit, but at the cost of pushing the soil further towards death. Food items in most cities have pesticide residues well above human safety levels. The World Bank — itself partly responsible for pushing India into unsustainable pathways — reported in 2013 that India was losing 5.7% of GDP due to environmental damage. The latest global environmental ranking by Yale and Columbia Universities puts India at the bottom among 180 countries; while flawed in many respects, including how it lets rich countries off the hook, it is nevertheless reflective of what is happening on the ground.

All this evidence has still not penetrated the minds of politicians and economists setting development priorities. The obsession with economic growth — despite growing evidence of GDP being a very poor indicator of human well-being — treats the natural environment (and related livelihoods) as fodder for exploitation. Despite public posturing about the Sustainable Development Goals, the natural elements without which we would all be dead — land, water, biodiversity, air — continue to be ignored or mauled.

In fact, the Government is dismantling environmental and social security policies to favour corporate access to land and natural resources, such as the latest proposals to amend forest and environment laws, and the Environment Impact Assessment notification. Its priority programmes include building massive physical infrastructure that only disrupts the natural infrastructure we desperately need to protect. For instance, the 2022-23 Budget has an allocation for highways that alone is 40 times greater than the Budget of the Ministry for Environment, Forests and Climate Change. Of what use is faster and faster mobility, if at the end of the journey we still have air and water and food that are killing us?

Given the hopeful signs of the 1970s and the 1980s, how did we come to this pass? In our book *Churning the Earth*, Aseem Shrivastava and I analysed in detail a significant turning point — the economic 'reforms' beginning in 1991. With greater integration into the global economy, the entry of multinational (and big Indian) corporations into every sector, and increasing exports of natural materials and imports of toxic waste, the issue of environmental sustainability was relegated to the background. Mining projects crept into previously safe areas including wildlife protected areas and Adivasi territories, the oceans became a target for major commercial extraction (and will be even more so with the new Deep Ocean Mission), and big infrastructure

became a holy mantra.

While wildlife and biodiversity have been major sufferers, there are also severe socio-cultural costs. Over 60 million people have been physically displaced by 'development' projects in the last few decades with very poor (if any) rehabilitation, and according to the former Planning Commission, a disproportionately high percentage of these are Adivasis and Dalits. Ironically, a component of Prime Minister Narendra Modi's vision of Aatmanirbhar Bharat (self-reliant India) is new coal mining in central India, displacing already self-reliant Adivasi communities and rendering them dependent on government and corporations.

The climate crisis severely compounds all this. This year's super-hot summer should be a warning, even if we have not yet learnt from earlier events of extreme temperatures, erratic rainfall, cloudbursts and cyclones. In recent trips to Ladakh, I learnt that many villages (e.g. in Zaskar) are being abandoned due to water shortages caused by receding glaciers. A *Lancet Planetary Health* journal article says that extreme temperatures in India are responsible for 7,40,000 excess deaths annually. The majority of these are likely to be labourers, farmers, and other vulnerable sections who have to work, live, and commute in these temperatures without access to air-conditioning, appropriate clothing, etc. And we are not at all prepared, with abysmally low budgets for adaptation measures. The Climate Action Plan got a meagre 30 crore in the 2022-23 Budget.

So, India's biggest challenge: can ecological sustainability be ensured while generating livelihood security and dignity for more than a billion people? Answers do exist, in thousands of initiatives across the country, as documented in the Vikalp Sangam process. Five thousand Dalit women farmers of the Deccan Development Society have demonstrated how organic, rainfed farming with traditional seed diversity can provide full food security and sovereignty.

Several hundred handloom weavers in Kachchh (Gujarat) have shown how dignified, creative livelihoods can be revived based on organic Kala cotton and a mix of traditional and new skills. Indeed, India's crafts have sustained several hundred million people in the past, and can do so again if the incredible traditional and new skills in textiles, footwear, cleaning agents, vessels, pottery, furniture, architecture and construction, water-related technologies, and a range of household items are given priority. Community-led ecotourism, such as homestays in Uttarakhand and Ladakh and Sikkim, has combined increased earnings with ecologically sensitive visitation. Community conserved areas have shown a democratic approach to wildlife protection very different from the top-down 'protected area' model. As advocated by the United Nations Environment Programme, public transportation, organic farming, land and water regeneration, renewable energy, community health, eco-friendly construction, ecotourism, and small-scale manufacturing can significantly enhance job creation. Linking programmes such as the Mahatma Gandhi National Rural Employment Guarantee Act with such activities, as happening in some States, also has huge potential.

Such an orientation entails fundamental restructuring of economy and governance. It will mean a shift away from large infrastructure and industrialisation, replacing mega-corporations with producer cooperatives, ensuring community rights over the 'commons' (land, water, forest, coasts, knowledge), and direct decision-making powers to *gram sabhas* and urban area *sabhas* while tackling gender and caste inequities. It will entail respect for both human rights and the rights of nature. But since this will inevitably (and desirably) cut into the profits and consumerism of India's ultra-rich, and reduce the centralised power of the state, it will not happen through government action alone. It needs the collective mobilisation of industrial workers, farmers, fishers, craftspersons, pastoralists, urban and rural youth, women in all sectors, the 'disabled' and LGBTQ, and those speaking on behalf of wildlife, all of whom are marginalised by dominant elites. Then only will India finish its century of Independence as a nation that has achieved

genuine well-being — a real 'amrit kaal' and not the seductive but poisoned chimera promised by Finance Minister Nirmala Sitharaman in the Budget 2022-23 address.

Ashish Kothari is with Kalpavriksh, Pune. The views expressed are personal

[Our code of editorial values](#)

END

Downloaded from **crackIAS.com**

© **Zuccess App** by crackIAS.com

CrackIAS.com

'DELHI'S PM2.5 LEVELS WORST IN THE WORLD'

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

Gasping for air: Motorist and pedestrian travelling amid heavy smog conditions in New Delhi. File photo

A global analysis of air quality found that Indian cities, while recording particulate matter emissions (PM2.5) that are among the highest in the world, do relatively better on nitrogen dioxide (NO2) emissions.

The report, *Air Quality and Health in Cities*, released by U.S.-based Health Effects Institute on Wednesday, analyses pollution and global health effects for more than 7,000 cities around the world, focusing on two of the most harmful pollutants - fine particulate matter (PM2.5) and nitrogen dioxide (NO2).

The report, using data from 2010 to 2019, found that global patterns for exposures to the two key air pollutants were "strikingly different." While exposures to PM2.5 pollution tend to be higher in cities located in low- and middle-income countries, exposure to NO2 is high across cities in high-income as well as low- and middle-income countries.

Delhi and Kolkata were ranked first and second in the list of top 10 most polluted cities when PM2.5 levels were compared, with Delhi and Kolkata reporting an average annual exposure of (relative to population) of 110 ug/m³ and 84 ug/m³ respectively. ug/m³ refers to microgram per cubic metre.

However no Indian city appeared in the list of top 10 – or even top 20 - polluted cities when NO2 levels were compared. This list saw Shanghai at the top with an average annual exposure of 41 ug/m³. Average NO2 levels for Delhi, Kolkata and Mumbai, according to the report, ranged from 20-30 ug/m³.

NO2 comes mainly from the burning of fuels in older vehicles, power plants, industrial facilities and residential cooking and heating.

As city residents tend to live closer to busy roads with dense traffic, they are often exposed to higher NO2 pollution than residents of rural areas.

In 2019, 86% of the more than 7,000 cities analysed in the report exceeded the WHO's 10 ug/m³ guideline for NO2, impacting about 2.6 billion people.

"While PM2.5 pollution tends to get more attention on known hotspots around the world, less data has been available for NO2 at this global scale," the report notes.

An expert, who was not associated with the study, told *The Hindu* that this paradoxical situation in India was likely due to the relatively lower adoption of high-efficiency engine vehicles. "Complete combustion of fuel results in higher NOx (nitrogen oxides) where incomplete combustion sees other kinds of emissions," said Sachchida Nand Tripathi, Professor, IIT-Kanpur and an expert on air pollution in India. Other cities with high NO2 population levels included Moscow, Beijing, Paris, Istanbul and Seoul.

Due to their highly reactive nature, nitrogen oxides also contributed to the formation of other pollutants, including ozone and particulate matter. NO2 also has a shorter lifetime compared

with PM2.5 and other air pollutants. As a result, NO₂ levels show very high variability in space and time — levels can vary significantly even across a few kilometres. In comparison, PM2.5 levels tend to show less spatial variation.

In 2019, the global average NO₂ exposure was 15.5 ug/m³, but exposure levels varied considerably across cities.

Ground monitoring of air quality remains limited in many regions of the world, the report adds, obscuring the true degree of NO₂ pollution in countries such as India.

[Our code of editorial values](#)

END

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

© **Zuccess App** by crackIAS.com

CrackIAS.com

GREAT INDIAN BUSTARDS ADAPT TO PRODUCE 2-EGG CLUTCH

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

The Great Indian Bustard. File.

The perceived beliefs and recorded observations pertaining to the egg-laying habits of the Great Indian Bustard (GIB) have changed after the recent excessive rains in western Rajasthan. The critically endangered bird species has adopted an altogether new habit of laying a clutch of two eggs at a time after having a diet with additional proteins during the monsoon season.

Environmentalists in Rajasthan have hailed it as a new record as all experts had been reporting a clutch of a single egg by GIBs all through its natural history of more than a century. Scientists working on *ex situ* breeding of these endangered birds have discovered the new proclivity in Jaisalmer district's Desert National Park (DNP).

Four female GIBs laid two eggs at a time during the current rainy season in the DNP, while two others were observed laying clutches of two eggs each earlier in the 2020 season. Dehradun-based Wildlife Institute of India's (WII) scientist Sutirtha Dutta, who is leading the project for the breeding of the rare species, told *The Hindu* that six nests with two eggs each had been detected so far in the DNP.

Dr. Dutta said 5% to 10% of the female GIBs had been detected in the past laying two eggs each, but the high incidence, with the signs of an evolving habit, had been observed for the first time. "The natural feed for birds gets produced in abundance whenever it rains excessively in the DNP," he said. The rains exceeded 20 mm by mid-August in Jaisalmer district. As the GIB, which is the State bird of Rajasthan, survives mainly on reptiles, gerbils, grasshoppers, large insects and locusts, a rich quantity of feed was produced this year, providing additional proteins to the endangered birds, which have doubled their clutch size "in happiness".

The WII's team has been working on *ex situ* breeding of GIB for the last three years. Dr. Dutta said the team had picked up one egg from each nest to be incubated and hatched under artificial conditions at a facility established near Sam in Jaisalmer district. The remaining eggs were left within the natural nests of the females to be hatched.

Aimed at preserving the GIBs, whose population has reduced to less than 150 in the wild, the breeding project focuses on spatial prioritisation, risk characterisation, and conservation management with the endangered species. The laying of clutches of two eggs in 2020 aroused immense curiosity, after which the WII's experts became vigilant in monitoring the nests to assess if such an instance would get repeated. The team has considered the GIBs' new habit as an important element of the project's progress.

The State government's Forest Department started the breeding project in collaboration with the WII to raise the new stock of GIB chicks in 2019 after a long wait by environmentalists for nearly four decades. Secretary of the Tourism and Wildlife Society of India (TWSI), Harsh Vardhan, said that though the bird species had been facing the threat of its extinction, the breeding project took off only after it vanished in Andhra Pradesh, Karnataka, Maharashtra and Madhya Pradesh.

The GIB is now found in a small number only in western Rajasthan, while Gujarat claims to have a few females left in its Banni Grassland Reserve. When the project commenced, the Forest

Department invited experts from the Abu Dhabi-based International Fund for Houbara Conservation to stay at the DNP and provide guidance at the new breeding facility for GIBs.

Mr. Vardhan said the egg-laying aspect of GIBs had received lively attention at an international symposium on bustards organised in Jaipur in 1980. Most of the experts who attended the event were unanimous that the GIB laid only a single egg, while renowned ornithologist Salim Ali had opined that the bird laid more than one egg. The citing by British ornithologists during the colonial period were also in favour of the GIP laying one egg at a time.

[Our code of editorial values](#)

END

Downloaded from **crackIAS.com**

© **Zuccess App** by crackIAS.com

CrackIAS.com

HIRAKUD'S ISLANDS TURN IDEAL NESTING GROUND

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

Ideal ground: A river tern stands guard over its newly-hatched younglings. Special Arrangement

Many may feel threatened by the rising water level in Hirakud Reservoir, but for birds, it is their shield. Hundreds of birds use the islands within the waterbody in Odisha's Sambalpur district as a congenial nesting ground away from predators.

Tweets of winged species and their mass nesting liven up the unmanned and picturesque islands in the reservoir every year before they go under vast swathes of water during the monsoon.

Seven or eight islands in the reservoir host annual nesting of birds between March and June.

Birds usually scrape a hole in the ground to create nests where they can easily lay eggs and stand guard.

According to experts, eggs get sufficient heat if laid on ground and birds opt places near waterbodies for temperature regulation.

This has been observed in more than 13 species of birds in the Hirakud Wildlife Division.

River tern, little tern, little ringed plover, black winged stilt, oriental pratincoles, small pratincoles and red-wattled lapwing are the bird species that are observed to participate in ground nesting inside the Reservoir every year.

"These islands are safe for birds to nest. Predators such as dogs and other wild animals from nearby Debrigarh Sanctuary cannot go near islands due to vast water surface that surround the submerged hilltops. Only natural predation takes place. Sometime raptors pick up eggs," said Anshu Pragyan Das, Divisional Forest Officer, Hirakud Wildlife Division, said.

An adaptation

It is not always easy to spot these eggs, as they look similar to the surface and remain camouflaged. "The biggest threat to eggs is the scorching heat during May and June. However, birds are smart enough to find shadow amidst grass vegetation and behind boulders to escape from searing heat," said Bhubaneswar Patra, a Forest Ranger in Debrigarh Sanctuary and keen birdwatcher.

To divert the attention of predators from the eggs, birds quiver their wings to appear as an easy target; often, they perform injury-feigning acts, explained Mr. Patra, adding that these anti-predator behaviours keep the nests safe.

Ms. Das said, "On our parts, we have ensured that these islands remain inviolate. Fishermen and boaters are sensitised regularly."

END

Downloaded from crackIAS.com

© **Zuccess App** by crackIAS.com

CrackIAS.com

ANANG TAL SITE TO BE CENTRALLY PROTECTED

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

The ancient mound at Mehrauli in South Delhi, including Anang Tal lake, could soon become a Centrally protected site, with the Archaeological Survey of India this week calling for objections or suggestions to its plan to declare it a site of national importance.

The ASI said in a Gazette notification on Monday that “the Central Government is of the opinion that the ancient mound including Anang Tal, ... is an ancient site and remains of national importance”. Once declared to be of national importance, the site would be protected by the ASI and incur restrictions on construction activity in its vicinity. The notification asked for objections and suggestions to be sent to the ASI director-general for a period of two months, after which they would be taken into consideration.

National Monuments Authority chairman Tarun Vijay, who, along with officials has called for the restoration of the site.

The city was known earlier as DhillikaPuri, as stone inscriptions excavated by Lord Cunningham have revealed

Gazette notification

[Our code of editorial values](#)

END

Downloaded from [crackIAS.com](#)

© **Zuccess App** by crackIAS.com

Crack

NMCG HOSTS VIRTUAL SESSION ON THE FIRST DAY OF THE STOCKHOLM WORLD WATER WEEK 2022

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

National Mission for Clean Ganga organized a virtual session on the first day of the Stockholm World Water Week 2022 (August 24-September 01). The keynote address was given by Shri G. Asok Kumar, Director General, National Mission for Clean Ganga on 'Arth Ganga: Model for Economic River-People Connect for Sustainable River Rejuvenation using Economic Bridge'. Other panelists in the session included Shri G. Kamala Vardhana Rao, Director General (Tourism), Ministry of Tourism, Shri T. Vijay Kumar, Executive Vice-Chairman, Rythu Sadhikara Samstha, Dr. Acharya Balkrishan, Founder and Secretary of Patanjali Trust and Dr. Ruchi Badola, Scientist G, Wildlife Institute of India. The World Water Week is an annual event organized by Stockholm International Water Institute (SIWI) to address the global water issues and related concerns of international development.

Giving his keynote address, Shri G. Asok Kumar, DG, NMCG gave a detailed presentation on Arth Ganga elaborating the Model and the interventions made so far. "Arth Ganga has ushered-in a paradigm shift in the River Basin Management," Shri Kumar said while highlighting the significance of Arth Ganga.



He said that Arth-Ganga concept, espoused by the Hon. Prime Minister during the 1st National Ganga Council meeting in 2019 in Kanpur, is being developed into an economic model for sustainable river rejuvenation. The central idea of "Arth Ganga" is linking people and Ganga through the bridge of economics in line with the slogan of "Banking on River Ganga". "Arth Ganga Model strives to contribute at least 3 percent of the GDP from the Ganga Basin itself", he informed while also adding that the interventions envisaged and being implemented are in line with the country's commitments towards the UN Sustainable Development Goals.

Elaborating on the six verticals of Arth Ganga, he said that the most important aspect is Zero

Budget Natural Farming that envisages chemical-free farming for 10 kms on either side of the river, generating “more income, per drop”, and ‘Gobar Dhan’ for farmers. “We are planning to promote natural farming in a big way and will be conducting ‘shibirs’ on natural farming in Uttarakhand and Uttar Pradesh in the coming days to nudge the farmers towards natural farming,” he added, while informing about the recent event in Shirdi, Maharashtra where 30 farmers were facilitated by NMCG to attend the 5-day Subhash Palekar Natural Farming workshop.

He said that collaborations with various ministries and organisations are being made for monetization and reuse of sludge & wastewater that envisages reuse of treated water for irrigation, industrial purposes and revenue generation for ULBs. He cited the example of arrangement with Indian Oil Corporation for selling of treated water from Mathura refinery.

“Livelihood Generation Opportunities such as ‘Ghat Mein Haat’, promotion of local products, Ayurveda, medicinal plants, capacity building of volunteers like Ganga Praharis is also being done under Arth Ganga,” he said, adding, “NMCG plans to launch 75 *Jalaj Kendras* across the Ganga basin to create livelihood opportunities for the local people, out of which 26 were launched on 16th August.”

He emphasized on the need for public participation to ensure increased synergies between stakeholders and spoke on various steps being taken to promote cultural heritage & tourism along River Ganga through interventions like boat tourism, community jettis, promotion of yoga, adventure tourism, Ganga Artis etc. “Over 20,000 Ganga Doots have been deployed in different states and associated awareness generation programmes along with the initiatives like ‘Har Hafte Hoga, Ghat Pe Yoga’, ‘Ganga Quest’ and administrative setups like District Ganga Committees, to name a few, have been bringing wondrous results in the direction of success of the Mission,” he added. The last vertical of Arth Ganga is Institutional Building that looks to enhance the local capacities for better decentralized water governance. Shri Kumar said that the Namami Gange Mission has been bringing the unprecedented outcomes as regards attaining the goals of Aviralta and Nirmalta in the river Ganga.

Shri T. Vijay Kumar, in his address, spoke about the key steps fundamental to

assure cooling of the planet Earth. He mentioned that adopting sustainable practices like Natural Farming and ensuring the maximum possible conservation of water could bring a bright future to the country. He gave a presentation showing the scaling lessons from the experience of the state of Andhra Pradesh wherein the farmers achieved excellent results after their transition from the practice of traditional farming to Natural Farming. He added that the ‘Principles are common, but Practices are unique to a region’, and that India has got a special advantage on account of Natural Farming.



Shri Kamala Vardhana Rao, while highlighting the significance of rivers, particularly Ganga, in the development of the tourism sector, said that the culture of homestays in the country has been proving a win-win situation for both the hosts as well as the guests. 'Rivers are where tourism emanates', he added following his remark that skill development initiatives for local communities are in place to give a boost to rural tourism. Lauding the 3% GDP target, he said that it is ambitious but very much achievable if all departments contributes a little bit to the cause. He emphasized on the emerging importance of Ayurveda clinics around the globe and how it can be used as potential tourism opportunity in the Ganga Basin.

Acharya Balkrishan presented the ways fundamental in building an effective sludge management strategy. Through a presentation, Patanjali emphasized that technologically sound anaerobic-based approach will provide a permanent solution to the problem of sludge that is emerging as a big challenge not just in the Ganga Basin but the entire world.

Dr. Ruchi Badola discussed the 'Conservation Sensitive Development for Realizing Arth Ganga', and elaborated the concept of Jalaj and its contribution in strengthening the people-river connect and in sustainable development of the nation.

AS

National Mission for Clean Ganga organized a virtual session on the first day of the Stockholm World Water Week 2022 (August 24-September 01). The keynote address was given by Shri G. Asok Kumar, Director General, National Mission for Clean Ganga on 'Arth Ganga: Model for Economic River-People Connect for Sustainable River Rejuvenation using Economic Bridge'. Other panelists in the session included Shri G. Kamala Vardhana Rao, Director General (Tourism), Ministry of Tourism, Shri T. Vijay Kumar, Executive Vice-Chairman, Rythu Sadhikara

Samstha, Dr. Acharya Balkrishan, Founder and Secretary of Patanjali Trust and Dr. Ruchi Badola, Scientist G, Wildlife Institute of India. The World Water Week is an annual event organized by Stockholm International Water Institute (SIWI) to address the global water issues and related concerns of international development.

Giving his keynote address, Shri G. Asok Kumar, DG, NMCG gave a detailed presentation on Arth Ganga elaborating the Model and the interventions made so far. “Arth Ganga has ushered-in a paradigm shift in the River Basin Management,” Shri Kumar said while highlighting the significance of Arth Ganga.



He said that Arth-Ganga concept, espoused by the Hon. Prime Minister during the 1st National Ganga Council meeting in 2019 in Kanpur, is being developed into an economic model for sustainable river rejuvenation. The central idea of “Arth Ganga” is linking people and Ganga through the bridge of economics in line with the slogan of “Banking on River Ganga”. “Arth Ganga Model strives to contribute at least 3 percent of the GDP from the Ganga Basin itself”, he informed while also adding that the interventions envisaged and being implemented are in line with the country’s commitments towards the UN Sustainable Development Goals.

Elaborating on the six verticals of Arth Ganga, he said that the most important aspect is Zero Budget Natural Farming that envisages chemical-free farming for 10 kms on either side of the river, generating “more income, per drop”, and ‘Gobar Dhan’ for farmers. “We are planning to promote natural farming in a big way and will be conducting ‘shibirs’ on natural farming in Uttarakhand and Uttar Pradesh in the coming days to nudge the farmers towards natural farming,” he added, while informing about the recent event in Shirdi, Maharashtra where 30 farmers were facilitated by NMCG to attend the 5-day Subhash Palekar Natural Farming workshop.

He said that collaborations with various ministries and organisations are being made for monetization and reuse of sludge & wastewater that envisages reuse of treated water for irrigation, industrial purposes and revenue generation for ULBs. He cited the example of arrangement with Indian Oil Corporation for selling of treated water from Mathura refinery.

“Livelihood Generation Opportunities such as ‘Ghat Mein Haat’, promotion of local products, Ayurveda, medicinal plants, capacity building of volunteers like Ganga Praharis is also being done under Arth Ganga,” he said, adding, “NMCG plans to launch 75 *Jalaj Kendras* across the Ganga basin to create livelihood opportunities for the local people, out of which 26 were launched on 16th August.”

He emphasized on the need for public participation to ensure increased synergies between stakeholders and spoke on various steps being taken to promote cultural heritage & tourism along River Ganga through interventions like boat tourism, community jettis, promotion of yoga, adventure tourism, Ganga Artis etc. “Over 20,000 Ganga Doots have been deployed in different states and associated awareness generation programmes along with the initiatives like ‘Har Hafte Hoga, Ghat Pe Yoga’, ‘Ganga Quest’ and administrative setups like District Ganga Committees, to name a few, have been bringing wondrous results in the direction of success of the Mission,” he added. The last vertical of Arth Ganga is Institutional Building that looks to enhance the local capacities for better decentralized water governance. Shri Kumar said that the Namami Gange Mission has been bringing the unprecedented outcomes as regards attaining the goals of Aviralta and Nirmalta in the river Ganga.

Shri T. Vijay Kumar, in his address, spoke about the key steps fundamental to

assure cooling of the planet Earth. He mentioned that adopting sustainable practices like Natural Farming and ensuring the maximum possible conservation of water could bring a bright future to the country. He gave a presentation showing the scaling lessons from the experience of the state of Andhra Pradesh wherein the farmers achieved excellent results after their transition from the practice of traditional farming to Natural Farming. He added that the ‘Principles are common, but Practices are unique to a region’, and that India has got a special advantage on account of Natural Farming.



Shri Kamala Vardhana Rao, while highlighting the significance of rivers, particularly Ganga, in the development of the tourism sector, said that the culture of homestays in the country has been proving a win-win situation for both the hosts as well as the guests. 'Rivers are where tourism emanates', he added following his remark that skill development initiatives for local communities are in place to give a boost to rural tourism. Lauding the 3% GDP target, he said that it is ambitious but very much achievable if all departments contributes a little bit to the cause. He emphasized on the emerging importance of Ayurveda clinics around the globe and how it can be used as potential tourism opportunity in the Ganga Basin.

Acharya Balkrishan presented the ways fundamental in building an effective sludge management strategy. Through a presentation, Patanjali emphasized that technologically sound anaerobic-based approach will provide a permanent solution to the problem of sludge that is emerging as a big challenge not just in the Ganga Basin but the entire world.

Dr. Ruchi Badola discussed the 'Conservation Sensitive Development for Realizing Arth Ganga', and elaborated the concept of Jalaj and its contribution in strengthening the people-river connect and in sustainable development of the nation.

AS

END

Downloaded from crackIAS.com

© **Zuccess App** by crackIAS.com

CrackIAS

GOVERNMENT NOTIFIES BATTERY WASTE MANAGEMENT RULES, 2022

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

Ministry of Environment, Forest and Climate Change, Government of India published the Battery Waste Management Rules, 2022 on 24th August, 2022 to ensure environmentally sound management of waste batteries.

Notification of these rules is a transformative step towards implementation of the announcement made by Prime Minister Shri Narendra Modi in his address to the Nation on Independence Day on 15th August, 2021 to promote Circular Economy in full earnest.

New rules will replace Batteries (Management and Handling) Rules, 2001.

The rules cover all types of batteries, viz. Electric Vehicle batteries, portable batteries, automotive batteries and industrial batteries.

The rules function based on the concept of Extended Producer Responsibility (EPR) where the producers (including importers) of batteries are responsible for collection and recycling/refurbishment of waste batteries and use of recovered materials from wastes into new batteries.

EPR mandates that all waste batteries to be collected and sent for recycling/refurbishment, and its prohibits disposal in landfills and incineration. To meet the EPR obligations, producers may engage themselves or authorise any other entity for collection, recycling or refurbishment of waste batteries.

The rules will enable setting up a mechanism and centralized online portal for exchange of EPR certificates between producers and recyclers/refurbishers to fulfil the obligations of producers.

The rules promote setting up of new industries and entrepreneurship in collection and recycling/refurbishment of waste batteries.

Mandating the minimum percentage of recovery of materials from waste batteries under the rules will bring new technologies and investment in recycling and refurbishment industry and create new business opportunities.

Prescribing the use of certain amount of recycled materials in making of new batteries will reduce the dependency on new raw materials and save natural resources.

Online registration & reporting, auditing, and committee for monitoring the implementation of rules and to take measures required for removal of difficulties are salient features of rules for ensuring effective implementation and compliance.

On the principle of Polluter Pays Principle, environmental compensation will be imposed for non-fulfilment of Extended Producer Responsibility targets, responsibilities and obligations set out in the rules. The funds collected under environmental compensation shall be utilised in collection and refurbishing or recycling of uncollected and non-recycled waste batteries.

HS/PD

Ministry of Environment, Forest and Climate Change, Government of India published the Battery Waste Management Rules, 2022 on 24th August, 2022 to ensure environmentally sound management of waste batteries.

Notification of these rules is a transformative step towards implementation of the announcement made by Prime Minister Shri Narendra Modi in his address to the Nation on Independence Day on 15th August, 2021 to promote Circular Economy in full earnest.

New rules will replace Batteries (Management and Handling) Rules, 2001.

The rules cover all types of batteries, viz. Electric Vehicle batteries, portable batteries, automotive batteries and industrial batteries.

The rules function based on the concept of Extended Producer Responsibility (EPR) where the producers (including importers) of batteries are responsible for collection and recycling/refurbishment of waste batteries and use of recovered materials from wastes into new batteries.

EPR mandates that all waste batteries to be collected and sent for recycling/refurbishment, and its prohibits disposal in landfills and incineration. To meet the EPR obligations, producers may engage themselves or authorise any other entity for collection, recycling or refurbishment of waste batteries.

The rules will enable setting up a mechanism and centralized online portal for exchange of EPR certificates between producers and recyclers/refurbishers to fulfil the obligations of producers.

The rules promote setting up of new industries and entrepreneurship in collection and recycling/refurbishment of waste batteries.

Mandating the minimum percentage of recovery of materials from waste batteries under the rules will bring new technologies and investment in recycling and refurbishment industry and create new business opportunities.

Prescribing the use of certain amount of recycled materials in making of new batteries will reduce the dependency on new raw materials and save natural resources.

Online registration & reporting, auditing, and committee for monitoring the implementation of rules and to take measures required for removal of difficulties are salient features of rules for ensuring effective implementation and compliance.

On the principle of Polluter Pays Principle, environmental compensation will be imposed for non-fulfilment of Extended Producer Responsibility targets, responsibilities and obligations set out in the rules. The funds collected under environmental compensation shall be utilised in collection and refurbishing or recycling of uncollected and non-recycled waste batteries.

HS/PD

END

Downloaded from crackIAS.com

© **Zuccess App** by crackIAS.com

CrackIAS.com

NET-ZERO TARGET COULD BOOST INDIA'S GDP: STUDY

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

Ending new coal mining by 2023 would help achieve net zero emissions.

Achieving net zero carbon emissions by 2070, a target that Prime Minister Narendra Modi committed to in Glasgow in 2021, could boost India's economy by 4.7% above the projected baseline growth in GDP terms by 2036, worth a total of \$371 billion, said a report commissioned by the High-level Policy Commission on Getting Asia to Net Zero, which was released here on Friday.

It could create as many as 15 million new jobs by 2047, it said.

The *Getting India to Net Zero* report, as it is called, contains new research and modelling, and finds that policies to initiate the clean energy transition will be crucial in determining when India achieves net zero emissions and how much it could benefit from it.

Positive economic impacts are driven in part by an improved trade balance amounting to \$236 billion due to reduced demand for fossil fuels. Beyond this, maximising viable policy options to decarbonise its energy system and economy could lead India to net zero emissions by mid-century.

Ending new coal as soon as possible by 2023 and transitioning from unabated coal power by 2040 would be particularly impactful to get India to net zero emissions sooner.

By reaching net zero by 2050, India could boost annual GDP by as much as 7.3% (\$470 billion), and create nearly 20 million additional jobs by 2032, compared with current policies, the report finds.

Kevin Rudd, former Australian Prime Minister, Asia Society's global president, and the convener of the High-level Policy Commission on Getting Asia to Net Zero, said, "India's net zero ambitions are not just important for the global fight against climate change – they can also be a boon for the country's own sustainable and inclusive development. If approached with comprehensive, holistic planning, in a way that attracts additional investment and ensures a just transition for those most reliant on fossil fuels, India's path to net zero can create new jobs, secure livelihoods and improve health."

Net zero emissions by 2070 would require an economy-wide investment of \$10.1 trillion from now; 2050 calls for \$13.5 trillion, the research finds.

Additional finance would free up existing resources to tackle negative impacts of climate policies such as carbon taxes.

[Our code of editorial values](#)

END

CrackIAS.com

PAK. DECLARES EMERGENCY AS FLOOD TOLL RISES TO 937

Relevant for: Environment | Topic: Disaster and disaster management

Flood misery: Motorists riding past tents setup for displaced people, who fled their homes in Sindh province. AFPASIF HASSAN

Pakistan government has declared a national emergency as rain-induced floods have so far killed 937 people, including 343 children, and left at least 30 million without shelter.

Sindh Province reported the highest number of deaths as 306 people lost their lives due to floods and rain-related incidents from June 14 to Thursday, according to the National Disaster Management Authority (NDMA).

Balochistan reported 234 deaths whereas Khyber Pakhtunkhwa and Punjab Province recorded 185 and 165 deaths, respectively.

In Pakistan-occupied Kashmir, 37 people were killed while nine deaths were reported in the Gilgit-Baltistan region during the current monsoon rains.

According to the NDMA, Pakistan received 166.8 mm of rain in August, as opposed to the average of 48 mm — an increase of 241%. Sindh and Balochistan — the worst-hit regions — witnessed a 784% and 496% increase in the monsoon deluge, respectively, the Dawn News reported.

Minister for Climate Change Sherry Rehman said on Thursday that a “war room” has been set up by Prime Minister Shehbaz Sharif at NDMA, which would spearhead relief operations across the country.

Sindh has asked for one million tents and Balochistan has demanded 100,000 tents, she said.

[Our code of editorial values](#)

END

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

© Zuccess App by crackIAS.com

ZOMBIE ICE FROM GREENLAND WILL RAISE SEA LEVEL 10 INCHES

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

A boat navigates at night next to large icebergs in eastern Greenland. Zombie ice from the massive Greenland ice sheet will eventually raise global sea level by at least 10 inches (27 centimeters) on its own, according to a study released on August 29, 2022. File | Photo Credit: AP

Greenland's rapidly melting ice sheet will eventually raise global sea level by at least 10.6 inches (27 centimeters) -- more than twice as much as previously forecast — according to a study published Monday.

That's because of something that could be called zombie ice. That's doomed ice that, while still attached to thicker areas of ice, is no longer getting replenished by parent glaciers now receiving less snow. Without replenishment, the doomed ice is melting from climate change and will inevitably raise seas, said study co-author William Colgan, a glaciologist at the Geological Survey of Denmark and Greenland.

"It's dead ice. It's just going to melt and disappear from the ice sheet," Colgan said in an interview. "This ice has been consigned to the ocean, regardless of what climate (emissions) scenario we take now."

Study lead author Jason Box, a glaciologist at the Greenland survey, said it is "more like one foot in the grave."

The unavoidable ten inches in the study is more than twice as much sea level rise as scientists had previously expected from the melting of Greenland's ice sheet. The study in the journal *Nature Climate Change* said it could reach as much as 30 inches (78 centimeters). By contrast, last year's Intergovernmental Panel on Climate Change report projected a range of 2 to 5 inches (6 to 13 centimeters) for likely sea level rise from Greenland ice melt by the year 2100.

What scientists did for the study was look at the ice in balance. In perfect equilibrium, snowfall in the mountains in Greenland flows down and recharges and thickens the sides of glaciers, balancing out what's melting on the edges. But in the last few decades there's less replenishment and more melting, creating imbalance. Study authors looked at the ratio of what's being added to what's being lost and calculated that 3.3% of Greenland's total ice volume will melt no matter what happens with the world cutting carbon pollution, Colgan said.

"I think starving would be a good phrase," for what's happening to the ice, Colgan said.

One of the study authors said that more than 120 trillion tons (110 trillion metric tons) of ice is already doomed to melt from the warming ice sheet's inability to replenish its edges. When that ice melts into water, if it were concentrated only over the United States, it would be 37 feet (11 meters) deep.

The figures are a global average for sea level rise, but some places further away from Greenland would get more and places closer, like the U.S. East Coast, would get less. Although 10.6 inches may not sound like much, this would be over and above high tides and storms, making them even worse, so this much sea level rise "will have huge societal, economic and

environmental impacts,” said Ellyn Enderlin, a geosciences professor at Boise State University, who wasn't part of the study.

“This is a really large loss and will have a detrimental effect on coastlines around the world,” said NYU’s David Holland who just returned from Greenland, but is not part of the study.

This is the first time scientists calculated a minimum ice loss — and accompanying sea level rise — for Greenland, one of Earth’s two massive ice sheets that are slowly shrinking because of climate change from burning coal, oil and natural gas. Scientists used an accepted technique for calculating minimum committed ice loss, the one used on mountain glaciers for the entire giant frozen island.

Pennsylvania State University glaciologist Richard Alley, who wasn’t part of the study but said it made sense, said the committed melting and sea level rise is like an ice cube put in a cup of hot tea in a warm room.

“You have committed mass loss from the ice,” Alley said in an email. “In the same way, most of the world’s mountain glaciers and the edges of Greenland would continue losing mass if temperatures were stabilized at modern levels because they have been put into warmer air just as your ice cube was put in warmer tea.”

Time is the key unknown here and a bit of a problem with the study, said two outside ice scientists, Leigh Stearns of the University of Kansas and Sophie Nowicki of the University of Buffalo. The researchers in the study said they couldn't estimate the timing of the committed melting, yet in the last sentence they mention, “within this century,” without supporting it, Stearns said.

Colgan responded that the team doesn’t know how long it will take for all the doomed ice to melt, but making an educated guess, it would probably be by the end of this century, or at least by 2150.

Colgan said this is actually all a best case scenario. The year 2012 (and to a different degree 2019) was a huge melt year, when the equilibrium between adding and subtracting ice was most out of balance. If Earth starts to undergo more years like 2012, Greenland melt could trigger 30 inches (78 centimeters) of sea level rise, he said. Those two years seem extreme now, but years that look normal now would have been extreme 50 years ago, he said.

“That’s how climate change works,” Colgan said. “Today’s outliers become tomorrow’s averages.”

[Our code of editorial values](#)

END

Downloaded from **crackIAS.com**

© **Zuccess App** by crackIAS.com