

GS PAPER 3

Environment and Biodiversity-Nov'18

CSE Awarded Indira Gandhi Prize

In News

- Centre for Science and Environment (CSE), the New Delhi based independent research and advocacy think tank, has been awarded and the **Indira Gandhi Prize for Peace, Disarmament Development**.
- The award is accorded annually by the Trust to individuals or organisations in recognition of creative efforts toward promoting international peace, development and a new international economic order, ensuring that scientific discoveries are used for the larger good of humanity, and enlarging the scope of freedom.
- The international jury, chaired by former president Pranab Mukherjee, decided to give the award to CSE for its pioneering work in environmental education and protection, for its steadfast advocacy of measures to combat environmental deterioration, for its success in influencing public policies and programmes that have benefitted social and economic development in India, and for keeping the issue of environmental sustainability at the forefront of national attention and public policy.
- CSE's selection for this prize also points to the significant imperative of environmental issues in our lives. It is a recognition of the imminent threats that the world faces today – of insecurity due to climate change, inequitable development, and rapid and growing environmental degradation.
- **Established in 1980** under the leadership of Anil Aggarwal, CSE has been working for the last four decades on extending awareness and education about environmental issues, on air and water pollution, waste water management and industrial pollution, food safety and energy, climate change and above all in influencing official policy and public actions for sustainable development.
- As the world, and particularly India, face growing challenges that threaten the future of the planet, CSE has built up the expertise and credibility to make a difference and its programmes have achieved important public health outcomes in several areas of vital impact.

Palau To Ban Sunscreen Products To Protect Reefs

In News

- Palau is set to become the first country to impose a widespread ban on sunscreen in an effort to protect its vulnerable coral reefs.
- The government has signed a law that restricts the sale and use of sunscreen and skincare products that contain a list of ten different chemicals.
- Researchers believe that these ingredients are highly toxic to marine life, and can make coral more susceptible to bleaching. The ban comes into force in 2020.

How Do Sunscreen Products Harm Corals

- Scientists have been raising concerns about the impacts of sunscreen products on marine life for many years. They are particularly worried over the **role of two ingredients** called **oxybenzone and octinoxate**. These are used as sun protection factors as they absorb ultraviolet light. However, they are believed to make coral more susceptible to bleaching.
- Research **published in 2015** showed that the **oxybenzone could stunt the growth of baby corals** and was toxic to several different coral species in laboratory tests.
- Oxybenzone is probably the baddest actor out of the 10 chemicals that have been banned. It causes corals to bleach at lower temperatures, and it reduces their resilience to climate change

How Much Of A Threat Does Sunscreen Pose

- Researchers say that the biggest threat to coral reefs is climate change, with estimates that 90% of reefs will succumb to rising temperatures by 2050.
- The second biggest threat is the suffocating threat posed by algal blooms, triggered by the runoff of nutrients from sewage and farming.
- Sunscreen is now seen as one of a number of other, lesser threats including ocean acidification.

Why Palau And Why Now

- Palau is located in the western part of the Pacific ocean. It is made up of one large volcanic island and several smaller coral reef associated islands. Despite its small size, it has often taken big steps in protecting the environment.
- In 2015, it designated almost its entire ocean territory as a marine protected zone. Very aware of the threats of climate change, Palau became the second nation in the world after Fiji to ratify the Paris climate agreement in 2016.
- When it comes to coral reefs, the island nation has largely avoided the negative impacts of extensive coastal erosion from agriculture, pollution and rampant overfishing that have affected reefs elsewhere.
- The ban on sunscreen products means Palau is determined to fight any threat to the reefs, which are visited by thousands of tourists every year.

Several regions have imposed bans, including the island of Bonaire in the Caribbean and the US state of Hawaii which passed a law earlier this year. Mexico has banned sunscreen in nature reserves.
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Are There Alternatives That Do Not Contain These Chemicals

- Yes, there are alternatives that do not include the two key chemicals that are being marketed as "reef-safe". But some scientists argue that the term is not legally enforceable, and there is no compulsion on manufacturers to demonstrate that their products don't harm coral.
- Another approach would be to use mineral-based sunscreen, such as non-nanosized titanium oxide or zinc oxide.

Conclusion

Reefs cannot be saved by banning sunscreens alone. There are **more destructive drivers of reef decline such as sea water warming, overfishing, nutrient enrichment and pollution** that need to be controlled to halt the ongoing degradation of reef ecosystems.

Ozone Hole Is Closing

In News

- The Antarctic ozone hole is expected to gradually close, returning to 1980 levels in the 2060s.
- **The ozone layer, found in the Stratosphere, that shields life from cancer-causing solar rays** is recovering at a rate of one to three percent per decade, reversing years of dangerous depletion caused by the release of harmful chemicals, a U.N. study said.
- The four-yearly review of the Montreal Protocol, a 1987 ban on man-made gases that damage the fragile high-altitude ozone layer, found long-term decreases in the atmospheric abundance of controlled ozone-depleting substances and the ongoing recovery of stratospheric ozone.
- The Antarctic ozone hole is recovering, while continuing to occur every year. As a result of the Montreal Protocol much more severe ozone depletion in the polar regions has been avoided.

Complete Healing: Findings And Expectations

- Evidence presented by the authors shows that the ozone layer in parts of the stratosphere has recovered at a rate of 1-3 percent per decade since 2000. At projected rates, Northern Hemisphere and mid-latitude ozone is scheduled to heal completely by the 2030s followed by the Southern Hemisphere in the 2050s and Polar Regions by 2060.

The U.N. had already hailed the success of the Protocol, which banned or phased out ozone depleting chemicals, including chlorofluorocarbons (CFCs) once widely used in refrigerators and spray cans, but the report said it was the first time that there were emerging indications that the Antarctic ozone hole had diminished in size and depth since 2000.

- In the Arctic, annual variations were much larger, making it hard to confirm whether there had been a definite recovery in the layer since 2000.
- However, while most of the banned gases have been phased out, the report found at least one violation of the protocol: an unexpected increase in production and emissions of CFC-11 from eastern Asia since 2012. The report said the source country had not yet been identified.
- If CFC-11 emissions continued at the same rate, return of mid-latitude and polar ozone-depleting chemicals to their 1980 values would be delayed by about 7 and 20 years, respectively, the report said.

Proposed Ganga Bill

In News

- **Context:** The government has banned the construction of jetties, ports or “permanent hydraulic structures” in the Ganga, unless permitted by the National Ganga Rejuvenation Authority, according to a proposed ‘Ganga Act’.
- The legislation, formally called the **National River Ganga (Rejuvenation, Conservation and Management) Bill, 2018**, proposes to create a management structure that will

supervise the health of the 2,500-kilometre long Ganga which, **the draft Bill defines**, as ‘India’s national river.’

Highlights Of The Bill

- Draft Bill envisages constitution of **National Ganga Council and a National Ganga Rejuvenation Authority** to enforce the Law.
- The Bill lays down provisions of imprisonment of 2 to 5 years for offences like commercial fishing, polluting the river and construction of illegal structures in active floodplains.
- The Bill lays down a host of restrictions to ensure the “uninterrupted, ecological flow” of the river.
- The legislation looms even as the government is developing a **National Waterways Project-1 (River Ganga) from Haldia to Varanasi (1,390 km), with the technical and financial assistance of the World Bank**. The waterways project involves creating permanent and movable terminals that require dredging and frequent de-silting to ensure that minimum river depths — for the smooth movement of the vessels — are maintained.
- However, the proposed legislation specifies that “**unauthorised**” activities that cause “...obstruction or discontinuity of water in the River Ganga...due to engineered diversion of water or stoppage of water...could be liable to a prison term of 3 years or fines upto ₹50 crore, or both.”
- Activists say that while the government’s efforts have been largely on cleaning the Ganga — namely, by installing sewage plants in riverine cities such as Allahabad and Varanasi and Kanpur — but neglecting to take steps to ensure the river’s natural flow is maintained through the stretch.

Food and beverage giant PepsiCo has dispatched 16 containers from Haldia containing packaged food and assorted goods, and they are expected to dock in Varanasi on November 12, according to a statement from the Union Shipping Ministry. This is the first container movement aboard an inland vessel in independent India, according to that Ministry.

Protect The Little Helpers

In News

Across India’s agrarian plains, plantations and orchards, millions of birds, bats and insects toil to pollinate crops. However, many of these thousands of species may be in dangerous decline.

Key Highlights

- In 2015, the **Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)** found that pollinators lead to huge agricultural economic gains. The report estimated pollinator contribution in India to be \$0.831-1.5 billion annually for just six vegetable crops.
- This is an underestimation considering that nearly 70% of tropical crop species are dependent on pollinators for optimal yields.
- The decline of moths, bees, butterflies, hoverflies and other pollinators is undeniably linked to human activity: large tracts of natural habitats have been cleared for monoculture cultivation, while the use of pesticides and fertilisers is pushing out nature’s little helpers.

- In a series of studies at the University of Calcutta, researchers have showed that native Indian bees, when exposed to multiple pesticides, suffer from memory and olfactory impairment, lower response rates, and oxidative stress which damages cells.
- A team estimated that between 1964 and 2008, there was a 40-60% growth in relative yields of pollinator-dependent crops, **while pollinator-independent crops such as cereals and potatoes saw a corresponding 140% rise in yields.**
- In Kashmir, researchers have pinned lowering yields of apple trees on the declining frequency of bee visits. In north India, lowering yields of mustard cultivation may be caused by disappearing pollinators.

What Needs To Be Done

- Apart from promoting organic farming and lowering pesticide usage, landscape management is key.
- The **EU Pollinators' Initiative** adopted in June can provide pointers to India, particularly a policy of direct payment support to farmers to provide buffer strips for pollinators for nectar- and pollen-rich plants.
- India has millions of hectares of reserve forests, some of which have been converted to pulpwood plantations. Much of this can be restored to become thriving homes for pollinators.
- The same can be done in gram panchayat levels. Fallow areas and government land can be used to plant flowering species for pollinators.

Human-Tiger Conflict

In News

- **Context:** India's national animal has fallen prey to human-tiger conflict
- We have lost two of our national animals to targeted killings in two rich landscapes — **Yavatmal (Maharashtra) and Dudhwa (Uttar Pradesh)**. The big cats were victims of human-tiger interface conflict.
- India is in a leadership position on the tiger front with almost 70 per cent of the global tiger population. We pioneered tiger conservation with Project Tiger and by conserving 2.4 per cent of our geographical area as tiger reserves.

Why, Then, Do We Find Ourselves In Such Conflict Situations Repeatedly

- Our tiger reserves, national parks and sanctuaries exist only as islets in a vast sea of human, cattle and unsustainable land use. The stakeholders are many in this heterogeneous mosaic, from primary (local people) to secondary (government departments) and tertiary (business groups, semi-urbanscape).
- Urbanisation and growth agendas alter landscape dynamics, which has a cascading effect on the ecological dynamics of wildlife. This results in ecological dislocation of sorts, wherein endangered wild animals like tigers either cause distress or land themselves in trouble.

Statistics

- India's 3.28 million sq km land area amounts to 2.4 per cent of the planet's geographical area. But we have almost 17 per cent of the world's human population and 16 per cent of global livestock.

- Our per capita forest is just 0.064 ha compared to the global average of 0.64 ha, which partly explains the forest resource dependency of a large number of rural people.
- India's 668 protected areas add up to 14 per cent of her forest area and 4.9 per cent of her geographical area. Of these, 50 protected areas are tiger reserves.
- Against this backdrop, we hold two-thirds of the global tiger population, the largest population of Asiatic elephants and so on.
- Barring protected areas, our forests are not very rich. And the concessions in our forests have caused overuse and abuse of resources.
- Loss of forest productivity in terms of forage for wild herbivores has meant that the bulk of our forests cannot sustain medium-sized wild herbivores like deer, megaherbivores like elephants or big cats like tigers.

Problems

- successive assessments have revealed that tigers are largely confined to their source areas (core areas of tiger reserves) and their fringes (buffers). The bulk of other forests in most of India's tiger states have practically lost their **habitat value owing to excessive biotic pressure**.
- Consequently, agriculture and cash crops beyond protected areas readily lure wild pigs and other preys, which in turn lure big cats.
- And once wild animals earn a pest value, they get trapped in snares or succumb to revenge or avoidance killings, more often than not through a silent method of poisoning using pesticides.
- This "interface" is further influenced by urbanisation, rail and road transport infrastructure and intensive operations like mining or special economic zones — part of the growth agenda in any developing country.

Steps Taken

- The truth is, human-wildlife interface is here to stay. While there can be no "co-existence" with tigers or elephants, a "co-occurrence" agenda with a proactive management control is available. **The National Tiger Conservation Authority (NTCA)** has brought out several Standard Operating Procedures (SOPs) to deal with various challenges of the human-tiger interface.
- An incapacitated tiger or leopard has to be captured on priority
- A prime animal straying close to human settlements requires active monitoring and translocation to suitable habitat.
- For example, tigers were shifted from the fringes of Bandhavgarh to Satpura. All this requires 24x7 monitoring using technology, management of corridors, building up the frontline capacity, creating village teams for reporting wild animal presence, and, an intersectoral portfolio at the landscape level akin to the "master plan" envisaged for an eco-sensitive zone.

Way Forward

Human-tiger interface management demands proactive measures. One cannot allow a big cat to get habituated and then brutally eliminate it. It is a tragic end for our national animal, and a complete travesty of the responsibility reposed on foresters and wildlife experts.

About NTCA:

- The National Tiger Conservation Authority is a statutory body under the Ministry of Environment, Forests and Climate Change constituted under enabling provisions of the Wildlife (Protection) Act, 1972, as amended in 2006, for strengthening tiger conservation, as per powers and functions assigned to it under the said Act.
- 'Project Tiger' is a Centrally Sponsored Scheme of the Environment, Forests and Climate Change, providing funding support to tiger range States, for in-situ conservation of tigers in designated tiger reserves. It has put the endangered tiger on an assured path of recovery by saving it from extinction, as revealed by the recent findings of the All India tiger estimation using the refined methodology.

Climate Risk From Rise In Indian AC Units**In News**

- **Context: Refrigerants used for cooling are the major contributors to global warming**
- By 2022, India is expected to have a fourth of the world's air conditioning units, and the risks to climate from this could be immense, according to a report.
- The refrigerants used for cooling are the major contributors to global warming, and if left unchecked, they could cause global temperatures to rise by 0.5 degrees Celsius.

Phasing Out HFCs

- In 2016, India was a signatory to a compact of 107 countries to "substantially phase" out a potent greenhouse gas, called hydrofluorocarbons (HFC), by 2045 and move to prevent a potential 0.5 C rise in global temperature by 2050.
- HFCs are a family of gases that are largely used in refrigerants at home and in car air-conditioners. However, they substantially worsen global warming. India, China, the United States and Europe have committed themselves to reducing the use of HFC by 85% by 2045.

Global Cooling Prize

- Several Departments in India, including the Department of Science and Technology and the Ministry of Power, has announced a partnership with the Rocky Mountain Institute (RMI), a U.S.-based institute, and Conservation X Labs, a technology solutions company, to institute a **Global Cooling Prize to motivate research laboratories across the world to develop highly efficient cooling technologies.**
- Solving the Global Cooling Challenge would require a technology solution that could help to reduce the impact by one-fifth and ensure that air conditioning units use 75% less electricity.
- Over ₹21 crore (\$3 million) will be awarded over the course of the two-year competition.
- Up to 10 short-listed competing technologies will be awarded up to ₹1.4 crore (\$200,000) each in intermediate prizes to support the design and prototype development of their innovative residential cooling technology designs. The winning technology will be awarded at least ₹7 crore (\$1 million) to support its incubation and early-stage commercialization.

Is Point Calimere Wildlife Sanctuary Safe For Migratory Birds

In News

- **Context:** The pH and salinity of the waters exceeded permissible limits for ecologically sensitive zones.
- The water quality at the Point Calimere Wildlife Sanctuary might be unsafe for avifauna to feed and breed, notes a study that examined different pollution indicators in water.
- **The wildlife sanctuary located in Nagapattinam district of Tamil Nadu spreads across an area of 30 sq.km and comprises sandy coastal, saline swamps and thorn scrub forests around the backwater.**
- Though it is a protected area and a **Ramsar site**, chemical companies and small-scale shrimp farms around the wetland have started to pose a threat to the biodiversity and ecosystem of the sanctuary.

Findings Of Study

Temperature of the atmosphere and water, and water quality analysis were carried out during the peak bird breeding season. The findings were:

- Atmospheric temperature at a few stations **exceeded 36-40 degrees Celsius**. This can **affect the egg albumen during the pre-incubation period**, thereby providing better growth conditions for harmful microorganisms in the eggs.
- **The pH and salinity of the waters** also exceeded the permissible limits for ecologically sensitive zones. Previous studies have shown that high acidic or high alkaline water can affect the metabolic and developmental activities of wild animals and birds.
- Microbial indicators such as coliform bacteria were also found to be very high at all the five sites. The **faecal waste of the birds contains a high level of microbial load besides nitrogen, and this can significantly alter the nutrients** in the water. Coliform infections in the birds have also been reported to cause a change in their natural behaviour and even affect their long distance migration.
- There are many salt pans near the sanctuary. This could be increasing the salinity. The chemical companies are also letting out untreated effluents into the waters. All this can have a deteriorating effect on the ecology. Previously the sanctuary used to see thousands of migratory birds, now the numbers have gone down to a few hundreds. The birds are starting to avoid the sanctuary.”
- Strict environmental regulations should be imposed and salt pan and other aquaculture practices around the sanctuary should be prohibited. Eco-tourism is also causing disturbances in this area.

Make Elephant Corridors Eco-Sensitive Zones, Says NGT

In News

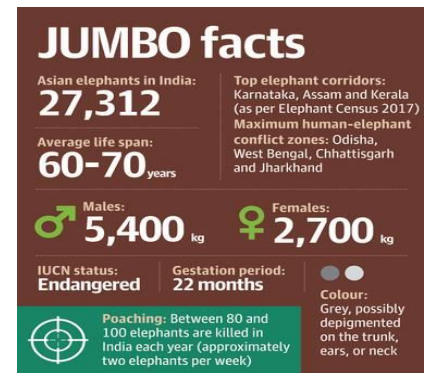
The National Green Tribunal has asked the Ministry of Environment, Forests and Climate Change (MoEF&CC) to consider declaring all elephant corridors in the country as eco-sensitive zones.

The Issue

- Owing to the increased denudation and loss of their forest habitats, elephants have come increasingly into conflicts with humans and faced deliberate retaliatory killings and accidents at railway crossings, high tension power lines, power fences and trenches.
- The court ordered the Ministry to look in to the issue by declaring all elephant corridors all over the country as eco sensitive zones by exercising its power (under relevant Acts.)

Some Facts

- A wildlife corridor, habitat corridor, or green corridor is an area of habitat connecting wildlife populations separated by human activities or structures (such as roads, development, or logging).
- This allows an exchange of individuals between populations, which may help prevent the negative effects of inbreeding and reduced genetic diversity (via genetic drift) that often occur within isolated populations.
- Corridors may also help facilitate the re-establishment of populations that have been reduced or eliminated due to random events (such as fires or disease).
- Elephant corridors are narrow strips of land that allow elephants to move from one habitat patch to another. There are 88 identified elephant corridors in India.



BASIC Nations Push For 'Climate Finance'

In News

- **Context: Climate Financing to meet the Requirements of Paris Climate Deal.**
- Ahead of the United Nations Conference of Parties (COP) in December, Environment Ministers and top climate change negotiators from **Brazil, South Africa, China and India (BASIC) convened in Delhi** and said the countries — as a group — would continue to push the developed countries on their earlier commitment to providing \$100 billion annually from 2020.
- A key aspect to make this possible is climate finance, but countries so far aren't agreed on what constitutes climate finance - do investments made by private companies in developed countries in new green technology count? Does improving efficiency in a thermal plant count?
- Ministers reiterated that public finance is the fulcrum of enhanced climate ambition by developing countries and urged developed countries to fulfil their climate finance commitments of mobilising USD 100 billion per annum by 2020. They encouraged developed countries to progressively and substantially scale up their financial support and finalise a new collective finance goal to inform parties for future action through NDCs (Nationally Determined Contributions).

- In the run-up to the climate conference, India has had meetings with several countries to firm up a key plank of the forthcoming negotiations on transparency. That is, what would be the mechanism in place for countries to reporting their emissions inventory, steps taken and how other countries could be certain that this was being done truthfully and that this data passed agree-upon norms of quality.

India Gets UN Environment Award For Combating Transboundary Environmental Crime

In News

- United Nation Environment has awarded **Wildlife Crime Control Bureau (WCCB)**, Ministry of Environment, Forest and Climate Change, Government of India with **Asia Environment Enforcement Awards, 2018** for excellent work done by the Bureau in combating transboundary environmental crime.
- The awards are given to outstanding individuals and/or government organizations/teams that demonstrate excellence and leadership in enforcement of national laws to combat transboundary environmental crime in one of the following eligibility criteria areas: collaboration; impact; innovation; integrity and gender leadership.
- WCCB has adopted innovative enforcement techniques that have dramatically increased enforcement of transboundary environmental crimes in India. Notably it has developed an online Wildlife Crime Database Management System to get real time data in order to help analyze trends in crime and devise effective measures to prevent and detect wildlife crimes across India.
- This system has been successfully used to analyse trends, helping put in preventive measures as well as for successfully carrying out operations such as **Operation SAVE KURMA, THUNDERBIRD, WILDNET, LESKNOW, BIRBIL, THUNDERSTORM, LESKNOW-II along with other enforcement agencies** resulting in the arrest of 350 wildlife criminals and huge seizures of Tiger/Leopard Skin/bones and other trophies, Rhino Horn, Elephant Ivory, turtles/tortoises, Mongoose raw hairs as well as Mongoose hair brushes, protected birds, Marine products, live Pangolin as well as its scales, deer antlers etc. across all the states.

Atmosphere & Climate Research-Modelling Observing Systems & Services (ACROSS)

In News

- ACROSS scheme pertains to the atmospheric science programs of the Ministry of Earth Sciences (MoES) and addresses different aspects of weather and climate services, which includes warnings for cyclone, storm surges, heat waves, thunderstorms etc.
- Each of these aspects is incorporated as nine sub-schemes under the umbrella scheme "ACROSS" and is implemented in an integrated manner by the Ministry of Earth Sciences through its institutes namely India Meteorological Department (IMD), Indian Institute of Tropical Meteorology (IITM), National Centre for Medium Range Weather Forecasting (NCMRWF), and Indian National Centre for Ocean Information Service(INCOIS).
- As the objective of the ACROSS scheme is to provide a reliable weather and climate forecast for betterment of society, the scheme will aim at improving skill of weather and climate forecast through sustained observations, intensive R & D, and by adopting effective

dissemination and communication strategies to ensure its timely reach to the end-user of all services.

Impact

- The scheme will provide improved weather, climate and ocean forecast and services, thereby ensuring transfer of commensurate benefits to the various services like Public weather service, disaster management, Agro-meteorological Services, Aviation services, Environmental monitoring services, Hydro-meteorological services, climate services, tourism, pilgrimage, power generation, water management, Sports & adventure etc.
- **Generate Employment:** To ensure last-mile connectivity of the weather based services to the end -user, a large number of agencies like the Krishi Vigyana Kendras of Indian Council of Agricultural Research, Universities and local municipalities are roped in thus generating employment opportunities to many people. A sizable number of scientific and technical staff along with requisite administrative support, thereby generating employment.

Andaman & Nicobar Island: Home To One-Tenth Of India's Fauna Species

In News

The islands, comprising only 0.25% of country's geographical area, has 11,009 species, according to a publication by the Zoological Survey of India

Report and Its Findings

- The **Narcondam hornbill**, its habitat restricted to a lone island; the **Nicobar megapode**, a bird that builds nests on the ground; the **Nicobar treeshrew**, a small mole-like mammal; the **Long-tailed Nicobar macaque**, and the **Andaman day gecko**, are among the 1,067 endemic faunal species found only on the Andaman and Nicobar Islands and nowhere else.
- The presence of a large number of species in such a small area makes the Andaman and Nicobar Islands one of the richest ecosystems and biodiversity hot spots in India.
- The population of the islands, which includes six particularly vulnerable tribal groups (PVTGs) — **Great Andamanese, Onge, Jarawa, Sentinelese, Nicobarese and Shompens** — is not more than 4 lakh.
- Of the ten species of marine fauna found on the islands, **the dugong/sea cow, and the Indo-Pacific humpback dolphin**, are both classified as **Vulnerable** under the IUCN (International Union for Conservation of Nature) Red List of Threatened Species.
- Among the 46 terrestrial mammalian species found, three species have been categorised as **Critically Endangered** — **Andaman shrew (*Crocidura andamanensis*)**, **Jenkin's shrew (*C. jenkinsi*)** and **Nicobar shrew (*C. nicobarica*)**.
- Another unique feature of the islands' ecosystem is its **marine fauna diversity**, which includes coral reefs and its associated fauna. In all, 555 species of **scleractinian corals (hard or stony corals)** are found in the island ecosystem, all which are placed under **Schedule I of the WPA**. Similarly, all species of gorgonian (sea fans) and calcerous sponge are listed under different schedules of the WPA.

Note Of Caution

- The publication, however, also cautions that **tourism, illegal construction and mining** are posing a threat to the islands' biodiversity, which is already vulnerable to volatile climatic factors.

- The number of tourists visiting the islands has crossed the number of people residing in them, with latest data showing 4.87 lakh tourists visiting the islands annually.
- In a recent development, the Government of India relaxed the **Restricted Area Permit (RAP) norms** for some foreign nationalities notified under the Foreigners (Restricted Areas) Order, 1963, to visit 29 of its inhabited islands, till December 31, 2022. This has triggered further concerns of increased anthropogenic pressures over the islands' ecosystem.
- The **Restricted Area Permit (RAP), which forbids people from visiting prohibited locations** without permission, may be reimposed in the North Sentinel island where an American was killed by members of a highly protected and reclusive tribe recently.
- While highlighting that a long period of isolation from the mainland made the islands hotspots for **speciation (the formation of new and distinct species) resulting in hundreds of endemic species and subspecies**, the authors of the publication have underlined that any stress can have a long-lasting impact on the islands' biodiversity, devastating the population size of any endemic fauna, followed by extinction within a limited span of time.

Scientists Mull Stratospheric Barrier To Curb Warming

In News

- The geo-engineering technique known as stratospheric aerosol injection (SAI) could limit rising temperatures that are causing climate change.
- As yet unproven and hypothetical, it would involve the use of huge hoses, cannons or specially designed aircraft to spray large quantities of sulphate particles into the upper layer of the atmosphere to act as a reflective barrier against sunlight.
- After direct input from several aerospace and engine companies, the scientists said they have developed a design that could be suitable and could be ready to be deployed in 15 years, aiming to cut the rate of temperature change in half.
- There are some risks. Scientists have said SAI could cause droughts or extreme weather in other parts of the world, harm crop yields as well as potential public health and governance issues.
- It also does not address the issue of rising carbon dioxide emissions, the main greenhouse gas blamed for global warming.

CVF Leaders Urges World's Govts To Raise Ambition Of Climate Targets By 2020

In News

Leaders at the **Climate Vulnerable Forum** called on world's governments to raise the ambition of their climate targets by 2020 in order to save vulnerable nations threatened by warming beyond 1.5 degrees Celsius.

Highlights

- The carbon-free summit brought together leaders of the Climate Vulnerable Forum (CVF), which represents many of the countries most threatened by climate change.

- Through the summit's "**Jumemmej Declaration**", the forum's leaders committed to strengthening their national climate efforts by 2020 in order to pressure world governments to act.
- "Jumemmej" is a Marshallese word of seafaring origin calling for vigilance to keep a watch against threats.
- The Climate Vulnerable Forum (CVF) is an international partnership of countries highly vulnerable to a warming planet. The Forum serves as a South-South cooperation platform for participating governments to act together to deal with global climate.