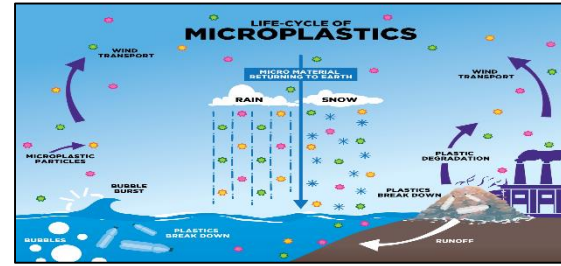


Microplastics

❖ Context

- According to a new study, an estimated **170 trillion plastic particles weighing about 2 million metric tons** are currently afloat in the oceans across the world.



❖ Key Highlights of the Study:

- The study added that if no urgent action is taken then this number could nearly triple by 2040.
- In 2014, it was estimated that there were **5 trillion plastic particles in the ocean**. From 1990 to 2005, the number of plastic particles more or less fluctuated.
 - One of the reasons for this could be due to the **effective implementation** of important policy measures at the time.
 - In the 1980s and 90s, there were some international policies, like **MARPOL Annex 5** that **enforced laws against dumping trash at sea**.
- Things went downhill soon after as the world began producing much more plastic than ever before.
 - Since 2005 we have produced more than **5,000,000 tons of new plastic into the world**, and with more plastic there is more pollution.
- Researchers of the latest study suggested that there is an **urgent need to implement a global resolution to limit the production of single-use, throwaway plastic**.

❖ Impact of Microplastics in the Oceans & Marine life:

- Microplastics are particularly harmful to the oceans as they don't readily break down into harmless molecules & adversely **affect the health of marine** organisms, which mistake plastic for food.
- Moreover, these particles **can trigger loss of biodiversity and threaten ecosystem balance**.
- The **ingestion of such microplastic** can cause “**mechanical problems**, such as lacerations & blockages to internal systems.
- Ingested plastics can cause chemical problems by leaching absorb chemicals into organisms.
 - Microplastics absorb many hydrophobic compounds, like **DDT, PCBs** and other industrial chemicals, and evidence shows they can be released when ingested.

- Microplastics can also disrupt the carbon cycle of the oceans.
- **Impact on Human Health** : Humans consume these marine animals as seafood which leads to several health complications.
 - It is **not yet clear** if these microplastics **can cross over from the bloodstream** to deposit in organs and cause diseases.
 - Level of microplastics in **drinking-water** is not yet dangerous for humans but called for more research into potential future risk.

❖ Microplastics:

- Microplastics are **tiny plastic debris** that are smaller than 5 mm in length, tinier than even a grain of rice.
- **There are two types of microplastics** :
 - **Primary microplastics are tiny particles-**
 - They are purposely designed as such for commercial use, like in **cosmetics, nurdles-plastic pellets** used in industrial manufacturing and in **fibers from synthetic textiles like nylon**.
 - **Secondary microplastics** : They are formed through the **degradation of larger plastic items** like bottles fishing nets & plastic bags.
 - This occurs through exposure to the environment, like radiation from the sun, wind and ocean waves.
- Microplastics are **not biodegradable** and once they are found in the environment, they begin to accumulate.

News in Between the Lines

Cope India



❖ Context

- The Indian Air Force is now all set to kick off an exercise with the **US Air Force (USAF) at the Kalaikunda airbase** in West Bengal this month.

❖ Key Highlights:

- The ‘**Cope India**’ exercise from **April 10 to 21** will “further enhance operational capability and interoperability between the two air forces”.
- **Japan, significantly, will also take part as an “observer” in the exercise.**
 - It will witness “air combat and mobility elements” operating from multiple air bases like Kalaikunda, Panagarh, Agra and Hindon.
- The exercise comes amid India’s continuing three-year-long military confrontation with China in eastern Ladakh as well as the ongoing Russia-Ukraine war, which has seen Beijing and Moscow get into a tighter strategic clinch.
- **Side Note** :
 - Cope India **began in 2004** as a fighter training exercise.
 - The **last edition** of the exercise was held in **2019**.

Face to Face Centres



National Financial Reporting Authority (NFRA)

National Financial Reporting Authority



❖ Context

- The National Financial Reporting Authority (NFRA) has pulled up a section of India Inc, including “a large listed firm”, for not complying with Indian Accounting Standards (Ind AS) regarding measurement of “revenue from contracts” with customers and trade receivables.

❖ National Financial Reporting Authority (NFRA)

- National Financial Reporting Authority (NFRA) is an independent regulator set up to oversee the auditing profession and the Indian Accounting Standards under the Companies Act 2013.
- It came into existence in October 2018.
- **Function and Duties :**
 - **Recommend accounting and auditing policies** and standards to be adopted by companies for approval by the Central Government;
 - Monitor and enforce compliance with accounting standards & auditing standards;
 - Oversee the quality of service of the professions associated with ensuring compliance with such standards and suggest measures for improvement in the quality of service;
- **Powers :**
 - It can **probe listed companies and those unlisted public companies** having paid-up capital of no less than Rs 500 crore or annual turnover of no less than Rs 1,000 crore.
 - It can **investigate professional misconduct** committed by members of the Institute of Chartered Accountants of India (ICAI) for prescribed class of body corporate or persons
- **Composition of the NFRA :**
 - The Companies Act requires the NFRA to have a chairperson who will be appointed by the Central Government and a **maximum of 15 members**.

Central Bureau of Investigation



❖ Context

- Prime Minister recently inaugurated the **Diamond Jubilee Celebrations** of the Central Bureau of Investigation (CBI) in New Delhi.

❖ Key Highlights:

- The Central Bureau of Investigation (CBI) is a premier investigative agency of India that operates under the jurisdiction of the Ministry of Personnel, Public Grievances and Pensions.
- It was established on 1st April 1963 by the Indian government with the aim of **investigating serious crimes, including corruption and economic offences**.
- The CBI has its headquarters in **New Delhi**, and it has offices in all major cities of India.
- It also has a presence in several countries around the world, including the **United States, United Kingdom, Germany, and France**

Indian Council for Cultural Relations



❖ Context

- The **Indian Council for Cultural Relations (ICCR)** plans to tap into the experiences of over 48,000 foreign students studying in India to promote the country's heritage and tourism.

❖ Key Highlights:

- ICCR (Indian Council for Cultural Relations) founded in 1950.
- The council aims to make these students brand ambassadors of India's cultural identity by introducing them to **yoga, ayurveda, craft, textiles, and tourist destinations**.
- As part of this “**soft diplomacy**”, the ICCR will organise E-3, or Exit Engagement Evenings, with foreign students, where they can learn about the unique heritage of India and visit places of national importance.
- The engagement evenings will be held three or four months before the students finish their courses in various Central and State universities, institutes like the National Institutes of Technology, and agricultural colleges of the country.
- According to the latest All India Survey on Higher Education, the number of foreign students enrolled in Indian higher education institutions was **48,035 in 2020-21**.

Face to Face Centres

- Students from more than 160 countries visit India to study, with **Nepal, Afghanistan, Bangladesh, the U.S., the UAE, Bhutan, Sudan, Nigeria, Tanzania, and Yemen** being the top source countries.

❖ **India Alumni Portal:**

- In April 2022, ICCR launched a website called the **India Alumni Portal**, which is aimed at connecting with foreign students around the world who have studied in India.
- The portal is a single platform for all past and present foreign scholars to register, interact, and maintain their Indian links.
- ICCR itself offers scholarships to over **6,000 students** every year, and there are now over **30,000 ICCR alumni**.

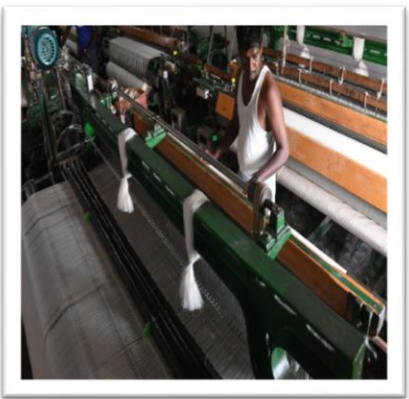
❖ **Context**

- The Indian government is set to expand the definition of "**political risk**" under the export guarantee scheme to cover the fresh imposition of non-tariff barriers by importing countries.

❖ **Key Highlights:**

- This move is a part of the new **Foreign Trade Policy (FTP)** which also aims to set up an inter-ministerial committee to examine trade-related grievances of micro, small, and medium enterprises (MSMEs) for expedited decision-making with a "whole of government" approach.
- The FTP also does away with the earlier requirement for importers storing merchandise in bonded warehouses to re-export such goods if not cleared for domestic consumption within one year.
- The new policy does not have an expiry date and will be regularly tweaked as opposed to past policies that had a tenure of five years.
- **The Export Credit Guarantee Corporation (ECGC)** usually indemnifies exporters for losses when buyers turn insolvent, default on payments, or face political risks like war and sudden import restrictions.
- The expanded definition of "**political risk**" will also cover **anti-dumping measures** or non-tariff barriers introduced after a shipment has been made.
- The **Export Guarantee Scheme** is a scheme run by the Export Credit Guarantee Corporation (ECGC) of India to provide insurance coverage to exporters against potential losses due to various risks associated with export trade.

Export Guarantee Scheme



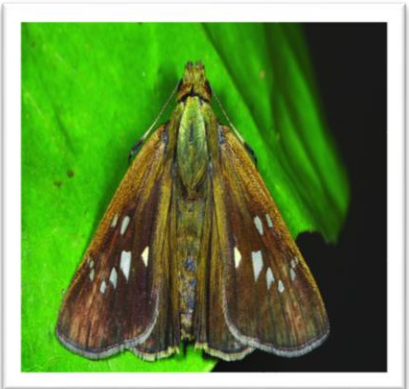
❖ **Context**

- Recently, a group of **lepidopterists** discovered a butterfly subspecies from the fringes of Akkulam and **Vembanad lakes in Kerala**.

❖ **Key Highlights:**

- It is the **first record of the species Bromus swift** (Caltoris bromus), a skipper butterfly belonging to the HesperIIDae family of Lepidoptera (moths and butterflies), from the Western Ghats and Peninsular India.
- The butterfly was **first spotted at Akkulam lake in 2005** and **later in Vembanad in 2009 by Dr. Sadasivan**.
 - He subsequently **reared the species from larvae on the host plant Phragmites karka (tall reed)** to confirm the identity of the taxon.
- Caltoris an Indo-Australian genus has over 15 species distributed across south-east Asia.
- Caltoris bromus, one of them, has two other subspecies Caltoris bromus bromus and Caltoris bromus yanuca.

Caltoris Bromus Sadasiva



• **Vembanad Lake :**

- Vembanad is the **longest lake in India, as well as the largest lake in the state of Kerala**.
- The lake has its source in four rivers **Meenachil, Achankovil, Pampa & Manimala**.
- It is separated from the Arabian Sea by a narrow barrier island and is a popular backwater stretch in Kerala.
- It is the **2nd-largest Ramsar site in India** only after the Sundarbans in West Bengal.

Face to Face Centres



Pashmina Shawls



❖ Context

- The **Kashmir Chamber of Industries and Commerce (KCCI)** has raised the issue of confiscation and poor testing of pashmina shawls with the Union Minister for Forest, Environment and Climate Change.

❖ Key Highlights

- According to official figures of the Kashmir handicrafts department, exports of shawls have decreased from **₹305 crore in 2018-19 to ₹166 crore in 2021-2022** due to various reasons including :
 - poor testing,
 - seizures at customs, and contamination with banned shahtoosh guard hair at source and even CBI raids on artisans.
- The KCCI claims that there has been a growing seizure of **shawl consignments** by the customs department at **international airports in India**, which is leading to a decrease in exports.
- Basic microscopes may detect banned **shahtoosh guard hair** in pashmina shawls, which is leading to further testing in laboratories, causing delays of several months.
- The KCCI has demanded the installation of the **latest pashmina testing machine** in Srinagar as well as in Delhi for simplification of the clearance at customs.
- **Shahtoosh Guard Hair:** It is wool from the **chiru goat or Tibetan antelope**, & it has a width below 11 microns, while pashmina wool has a thread width of **13 to 16 microns**.

❖ About Pashmina Shawls :

- Pashmina shawls are high-quality shawls made from the wool of the **pashmina goat**, which is native to the Himalayan regions of Nepal, India, and Pakistan.
- The wool is known for its **softness, warmth, and lightweight texture**, making it a popular choice for luxury clothing items.

Eravikulam National Park



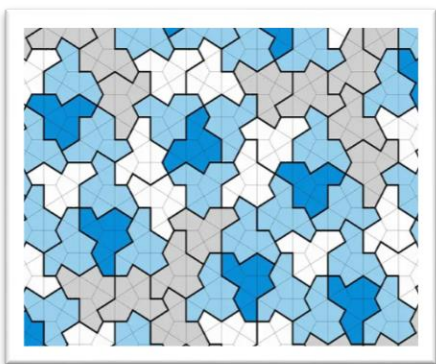
❖ Context

- Eravikulam National Park had been reopened recently for visitors after being closed for two months during the Nilgiri tahr calving season.

❖ Key Highlights:

- Eravikulam National Park is a wildlife sanctuary located in the **Idukki district of Kerala, India**.
- It is home to the **endangered Nilgiri tahr** & other species of animals, birds, & butterflies.
- The park is known for its scenic beauty, trekking trails, and panoramic views of the Western Ghats.

Einstein Tile



❖ Context

- Recently, Mathematicians discovered a **single shape that can be used to cover a surface completely without ever creating a repeating pattern**.

❖ Key Highlights:

- Mathematicians have long wondered if there existed an **“einstein tile”** – a shape that could be singularly used to create a **non-repeating (aperiodic) pattern** on an infinitely large plane.
- Here, “einstein” is a play on German ein stein or **“one stone”** – not to be confused with Albert Einstein, the famous German physicist.
- **Aperiodic Tiling :** A set of tile-types (or prototiles) is considered to be aperiodic if **copies of these tiles can only form patterns without repetition**.
- **The discovery :** However, the latest discovery, a **13-sided shape** which has been named **“the hat”** by its proponents, has presented a deceptively simple solution.
 - The hat comprises eight copies of a **60°–90°–120°–90° kite**, glued edge-to-edge, & can be generalised to an infinite family of tiles with the same aperiodic property.
 - The shape also retains its aperiodic qualities when varying the lengths of the sides, meaning that the solution is actually a continuum of similar shapes.
- **Application :** It will help physicists and chemists **understand the structure and behaviour of quasicrystals**, structures in which the atoms are ordered but do not have a repeating pattern. The newly discovered tile might be a springboard for innovative art.

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