Factly Weekly

Compilation

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For UPSC CSE Prelims Exam

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De-Extinction of Dire Wolf

News: In a groundbreaking achievement, scientists have successfully revived the **dire wolf**, an ancient species that went **extinct** nearly 12,500 years ago, using **cutting-edge genetic engineering techniques by Colossal Biosciences**. De-Extinction of Dire Wolf.

De-Extinction of Dire Wolf

About De-Extinction
- De-extinction, also known as resurrection biology or species revivalism, is the process of recreating extinct species or organisms using biotechnology, aiming to bring them back to life.

About Dire Wolf (Aenocyon dirus)
- Habitat and Distribution: They were large **canines** that dominated the **grasslands and forest**sof **southern Canada and the US**.
- They resembled the **grey/ gray wolves (Canis lupus) of today** but were **larger, with white coats**.
- A dire wolf could be **5 feet tall**, more than **6 feet in length**, and weigh **up to 68 kg.**

Science behind De-Extinction Process of Dire Wolf
- The dire wolf genome was **extracted from two ancient samples** preserved in a American museum of natural history.
- Colossal's dire wolf work **took a less invasive approach** (than cloning), isolating cells from the blood (not from a tissue sample) of a grey wolf.
- These cells are known as **endothelial progenitor cells (EPCs),** which form the lining of blood vessels.
- The scientists then **rewrote the 14 key genes** in the cell's nucleus to match those of the dire wolf **using CRISPR**.
- No ancient dire wolf DNA was actually spliced into the gray wolf's genome.
- The edited nucleus was then transferred into a de-nucleated ovum which was allowed to develop into embryos in the lab.
- When ready, embryos were transferred to surrogates, also domestic dogs, and 62 days later the genetically engineered pups were born.
- These "dire wolves" will become the **second species on the planet** to be brought back to life.
  - The **first** was the **bucardo**, a **mountain goat from the Pyrenees, Europe.**

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Small Hive Beetle (SHB)

News: A young scientist from the Zoological Survey of India (ZSI) recently identified the presence of the **invasive Small Hive Beetle (SHB), Aethina tumida**, in an apiary located in Amdanga, North 24 Parganas district of **West Bengal**. **Small Hive Beetle (SHB)**

Small Hive Beetle (SHB)

About Small Hive Beetle (SHB)

- SHBs are **small, oval-shaped beetles** measuring **5–7 mm** in length, typically **reddish-brown** in color.
- It is native to the **sub-Saharan Africa**.
- **Female** beetles **infiltrate hives** through cracks, laying eggs that hatch into larvae which **feed on stored pollen, honey, and bee brood.**
- **Threat posed:** A potentially devastating threat is posed to India's **honey bee population and apiculture industry** of India.
- It is the **first time this beetle's presence** has been recorded in the country.
- The **World Organisation for Animal Health (OIE)** has **classified** SHB infestation as **a notifiable disease** due to its destructive potential.

ZooWIN Portal

News: The government has introduced a digital platform, ZooWIN, designed to track and manage the real-time availability of anti-rabies vaccines (ARV) and anti-snake venom (ASV) across the country.

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About ZooWIN Portal

- It is **a digital platform**, designed to **track and manage the real-time availability** of anti-rabies vaccines (**ARV**) and anti-snake venom (**ASV**) across the country.
  - It will **centralise data and improve collaboration** among healthcare providers, municipal authorities, and veterinary services.
- **Developed by: National Centre for Disease Control (NCDC)** with technical support from the **United Nations Development Programme (UNDP).**
- **Aim:** This initiative aims to **streamline healthcare delivery** and **reduce mortality rates** linked to these life-threatening conditions.
  - It also aims to **enhance public access to information** about rabies and snakebite treatments.
- **Working:** This platform is **similar to the Co-WIN and U-WIN platforms**.
  - It integrates with the **Electronic Vaccine Intelligence Network (eVIN)** to provide real-time tracking of vaccine and antivenom **stocks.**
- **Pilot project:** It will be piloted in **five States/UTs:** Delhi, Madhya Pradesh, Assam, Puducherry, and Andhra Pradesh.
- The platform **aligns** with the Health Ministry's broader initiatives like **National Action Plan for Prevention and Control of Snakebite Envenoming (NAPSE), 2024** to combat rabies and snakebites.

Key Facts about Slovakia

News: Slovakia intends to upgrade defence ties with India as Indian President is scheduled to visit the European country. **Slovakia.**

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Source- Britannica

About Slovakia

- **Location:** It is a **landlocked country** in central Europe.
- **Bordering countries:** It is bordered by Poland to the north, **Ukraine** to the east, Hungary to the south, Austria to the west, and the Czech Republic to the northwest.
- **Topography:** The **Western Carpathian Mountains (including Tatra Mountains)** dominate the topography of Slovakia.
  - The **highest peak** is Gerlachovský Peak, part of the **High Tatras.**
- **Rivers:** Slovakia is mainly drained by the **Danube River**. The **Morava river** forms its southwestern border.
- It was part of **Czechoslovakia** until the **"velvet divorce"** in January **1993**.
- It is a member of **NATO** and **European Union**.

Professional Tax

News: Swiggy faces a tax demand of ₹7.59 crore from the Maharashtra Government over alleged non-compliance with professional tax deduction norms. **Professional Tax.**

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Professional Tax

About Professional Tax

- **Professional Tax** is a tax charged on income earned through employment, business, freelancing, or any profession.
- It applies to all earning individuals, including salaried employees, business owners, and freelancers.
- **Self-employed individuals** such as shopkeepers, freelancers, consultants, and professionals like architects or chartered accountants also need to pay professional tax themselves if their income crosses a certain limit.
- It is imposed by the state government under **Article 276** of the Constitution of India. It also has provided for a maximum cap of Rs.2,500, beyond which professional tax cannot be charged to any person.
- Professional tax is deductible under the **Income Tax Act of 1961.**
- Each state sets its own rules and tax slabs. **The tax amount depends on the income of the person.**

Digital Threat Report 2024

News: India launches **first Digital Threat Report 2024** to support cyber security in the Banking, Financial Services and Insurance (BFSI) sector. **Digital Threat Report 2024.**

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Digital Threat Report 2024

About Digital Threat Report 2024

- This Report is a **comprehensive analysis** of current and emerging cyber threats and defense strategies.
- **Developed by:** It is developed through collaboration between the **SISA** (Strategic Information Services Agreement), a global cybersecurity company, the Indian Computer Emergency Response Team **(CERT-In, Ministry of Electronics and IT (MeitY)** and the Cyber Security Incident Response Team for the Financial Sector **(CSIRT-Fin).**
- **Aim:** This initiative aims to support India's Banking, Financial Services, and Insurance (BFSI) sector in **strengthening their defences** and building long-term cyber **resilience** with the rapid digitisation of financial services.

Key Highlights of the Report

- The Report Identifies **Sector-wide security gaps and emerging cyber risks**, empowering BFSI institutions to strengthen defenses.
- **Shift towards social engineering and credential theft:** A notable trend has been the rise of social engineering, with Business Email Compromise (BEC) and sophisticated phishing campaigns dominating the threat landscape.
- **Increase in supply chain and third-party attacks:** Supply chain vulnerabilities remained a prominent attack vector for the digital payments industry in 2024.
- **Exploiting weak links:** Organizations with inadequate cloud configurations or insufficient security controls are becoming prime targets for cyberattacks.

Mount Kanlaon

News: Mount Kanlaon, one of the most active volcanoes in the Philippines, recently erupted dramatically, spewing a massive ash plume 4,000 meters (2.5 miles) high into the sky.

About Mount Kanlaon

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Source: mountain forecast

- Mount Kanlaon is a **stratovolcano** located in the north-central part of **Negros Island in the Philippines.**
- It is one of the active volcanoes in the Philippines and part of the **Pacific Ring of Fire.**
- It features several pyroclastic cones and craters.
- The volcano is composed of **tropical volcanic deposits**, including layered lava flows, lahar deposits, airfall tephra, and apron pyroclastic materials.
- Kanlaon is **rich in biodiversity,** providing a habitat for numerous species of flora and fauna.

SC verdict on Governor's assent to Bills

News- In a landmark judgment, the Supreme Court struck down Tamil Nadu Governor R.N. Ravi's decision to withhold assent to 10 State Bills, terming it illegal and erroneous in law. **SC verdict on Governor's assent to Bills.**

About Supreme Court's ruling (Tamil Nadu Governor Assent Case)

- The Court held that the *Governor cannot sit indefinitely on Bills passed by the State Legislature*, reaffirming that the Governor is a constitutional head, not a political authority.
- Citing its *2023 ruling in the Punjab case*, the Court emphasized that the *Governor must act within a reasonable time frame* and cannot obstruct the legislative process.
- The Court invoked *Article 142* to directly deem the 10 pending Bills as having received assent.
  - Article 142 empowers the Court to go beyond procedural technicalities and deliver complete justice, particularly in situations where no other legal remedy is available.

Time Limits Prescribed by the Court (Under Article 200)

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On the clock

SC sets time frame for Governors, saying the phrase 'as soon as possible' permeates Article 200 with a sense of expediency

- A Governor has a maximum of **one month** to withhold assent on the aid and advice of the State Cabinet

- A maximum of **three months** is given to return the Bill with a message specifying reasons if the Governor withholds assent contrary to the Cabinet's advice

- The Governor has **three months** to reserve a Bill for the President's consideration against the advice of the Cabinet

- The Governor 'must' grant assent to a Bill re-passed by the State Legislature under Article 200 within a **maximum of one month**

Source- The Hindu

Situation	Maximum Time allowed
Withhold or reserve Bill (on Ministerial advice)	1 month
Return Bill for reconsideration (contrary to advice)	3 month
Reserve Bill for President (against ministerial advice)	3 month
Assent to reconsidered Bill	1 month

Constitutional Provisions regarding Governor's assent to Bills

Article 163 defines the general powers of the Governor, stating that they must act based on the advice of the Council of Ministers, except in situations where the Constitution allows the Governor to exercise discretion.

Article 200- It specifically deals with the issue of granting assent to Bills. As per Article 200, when a Bill is passed by the state legislature, the Governor has four options:

a. Grant Assent
b. Withhold Assent
c. Return the Bill (except Money Bills) for reconsideration.
d. Reserve the Bill for the President's consideration

Key Provision in Article 200:

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- Article 200 states that the Governor must return a non-Money Bill "*as soon as possible*" with a message for reconsideration. If the legislature passes the Bill again, the Governor is constitutionally bound to grant assent.
- However, since *no specific timeframe is prescribed for the Governor's action*, this creates a loophole. In practice, the Governor can exercise what is termed a "*pocket veto*"—withholding action on the Bill indefinitely without either assenting to it or returning it.
- Governors have exploited this ambiguity to sit on Bills indefinitely without returning them to the state legislature, in effect paralysing the elected government.

Supreme Court earlier Judgments on Governor's Powers:
1. **Shamsher Singh vs. State of Punjab(1974)**– The Supreme Court held that the Governor is bound to act in accordance with the aid and advice of the Council of Ministers headed by the Chief Minister
2. **Nabam Rebia vs. Deputy Speaker (2016)-** The Supreme Court held that the Governor cannot delay assent to a Bill indefinitely and must return it with a message if there are any concerns or suggested changes.
3. **State of Punjab vs Principal Secretary to the Governor (2023)**– The Supreme Court held that the Governor, as an unelected head, cannot obstruct the legislative process. It further held that if the Governor withholds assent under Article 200, they must return the Bill for reconsideration instead of delaying it indefinitely.

India Skills Accelerator initiative

News: The **Ministry of Skill Development and Entrepreneurship (MSDE)** partners with **World Economic Forum** (WEF) to launch **India Skills Accelerator initiative.**

India Skills Accelerator Initiative

About India Skills Accelerator initiative

- It is a **national public-private collaboration platform** designed to enhance workforce development by addressing skill gaps and encouraging public-private partnerships.
- It focuses on **preparing India's youth for future job markets**, particularly in high-growth sectors such as artificial intelligence, robotics, and energy.

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- **Launched by:** Ministry of Skill Development and Entrepreneurship (**MSDE**), in collaboration with the **World Economic Forum (WEF)**
- **Aim**: The initiative aims to **close the skill gaps** through-
  - inclusive upskilling and reskilling
  - mobilizing investment in lifelong learning
  - fostering government-industry collaboration
- The Ministry will work towards **aligning** the newly launched initiative with insights from the **World Economic Forum's Future of Jobs 2025 report.**

Bandipur National Park

News: 'Save Bandipur**'** protest launched as Karnataka thinks of lifting night traffic ban. **Bandipur National Park.**

About Bandipur National Park

- **Location:** It is located in Chamarajanagar and Mysuru district (**Karnataka**) at the **tri-junction area** of the States of Karnataka, Tamil Nadu and Kerala.
- **Formation:** It was established as a sanctuary named **Venugopala Wildlife Park in 1931**. Later, it was converted into a **tiger reserve** under Project Tiger in **1973** and declared **a National Park in 1974.**
- **Rivers**: It is flanked by the **Kabini River** in the north and the **Moyar** in the south. The **Nagu River** runs through the park.
- **Climate and Vegetation:** It has **typical tropical climate** with distinct wet and dry seasons. The park has a variety of biomes including **dry deciduous forests, moist deciduous forests and shrub-lands.**
- **Part of Nilgiri Biosphere Reserve**: Park is the part of Nilgiri Biosphere Reserve making it largest protected area in Southern India and largest habitant of Wild Elephants in South Asia.
  - It shares its **boundary with 3 other National Parks** namely **Nagarahole National Park (Karnataka), Wayanad National Park (Kerala) and Mudumalai National Park (Tamil Nadu).**
- **Flora**: A wide range of timber trees including **teak, rosewood, sandalwood, Indian-laurel, Indian Kino tree, giant clumping bamboo**

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- **Fauna**: **Tigers** (hosts **second highest Tiger population** in India), Leopard, Dhole, Sambar, Sloth bear, Chital and Blue Peafowl.
  - It is one of the **last refuges of the endangered Asiatic wild elephant**.

Modernisation of Command Area Development and Water Management (M-CADWM) scheme

News: The Centre has approved the Modernization of Command Area Development and Water Management (M-CADWM) as a sub-scheme of the Pradhan Mantri Krishi Sinchayee Yojana(PMKSY) for the 2025-2026 period with an initial total outlay of Rs 1,600 crore. **Modernisation of Command Area Development Water Management M-CADWM.**

Modernisation of Command Area Development Water Management M-CADWM

About Modernisation of Command Area Development and Water Management (M-CADWM) scheme

- It is a **sub-scheme of the** Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) which is designed to significantly **enhance the irrigation infrastructure** in India.
- **Aim:** The scheme aims for **modernization of the irrigation water supply network** to supply of irrigation water from existing canals or other sources in a designated cluster.
  - It also aims to **build sustainable farming practices** and seeks to make **agriculture more appealing to youth**.
- **Benefit:** This will help farmers with small land-holdings, by **improving water-use efficiency** (**WUE**).
- **Key features:**
  - Implementation of **underground pressurised, piped irrigation systems**, extending up to 1 hectare per farm to **enhance micro-irrigation practices**
  - Use of **advanced technologies** such as **SCADA** (Supervisory Control and Data Acquisition) and the **Internet of Things (IoT)** for real-time water accounting and monitoring
  - Irrigation Management Transfer (IMT) to Water User Societies (WUS) to manage irrigation assets independently and sustainably
  - Connect Water User Societies (WUS) with Farmer Producer Organisations (FPOs) or Primary Agricultural Cooperative Societies (PACS)

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Panchayat Advancement Index (PAI)

News: The Ministry of Panchayati Raj has launched the first-ever Panchayat Advancement Index (PAI) Baseline Report for the fiscal year 2022–23. **Panchayat Advancement Index (PAI).**
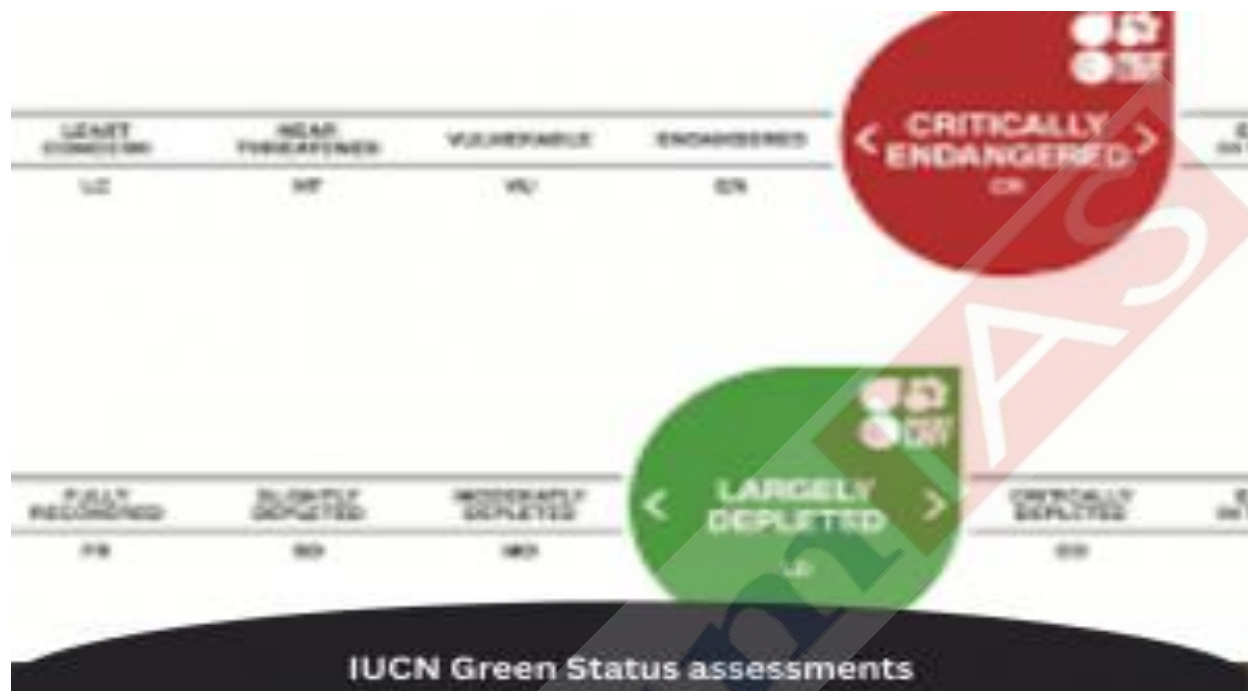

Panchayat Advancement Index (PAI)

About Panchayat Advancement Index (PAI)

- PAI is a Multi-domain and multi-sectoral index that is intended to be used to assess the overall holistic development, performance & progress of panchayats
- It will measure how well these grassroots institutions are achieving localized Sustainable Development Goals (SDGs).
- **Objective:** To identify developmental gaps in rural local bodies and facilitate evidence-based policymaking.
- **Themes and Indicators:** The PAI is based on 435 unique local indicators spread across nine thematic areas.
  - These themes include: Rate of poverty, Availability of livelihoods, Health indices, Whether the panchayat is child-friendly, Water sufficiency, Clean and green environment, Self-sufficient infrastructure, Social justice and social security and Good governance and women-friendliness.
- **Performance Categories:** Based on the evaluation, gram panchayats are categorized into five performance bands:
  - **Achiever**: Those scoring 90 and above (No gram panchayat has reached this category yet).
  - **Front Runner**: Those scoring between 75 and below 90.
  - **Performer**: Those scoring between 60 and below 75.
  - **Aspirant**: Those scoring between 40 and below 60.
  - **Beginner**: Those scoring below 40.

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IUCN Green Status assessments

News: The International Union for Conservation of Nature (IUCN) has recently published its first-ever Green Status assessment for the lion (*Panthera leo*). **IUCN Green Status assessments.**

IUCN Green Status assessments

First Green Status assessment for the lion (Panthera leo)

- The first Green Status assessment for the lion (Panthera leo) shows that it is Largely Depleted, while the species remains Vulnerable on the IUCN Red List.
- **Impact of Human Activity**: Ongoing human pressures are limiting the lion's ability to play its natural ecological role throughout its current range.
- **Regional Extinction**: Lions have been completely lost from *North Africa and Southwest Asia.*
- **Conservation Achievements**: Targeted efforts in West and Southern Central Africa, South Africa, and India have successfully averted potential local extinctions and supported population stability.

About IUCN Green Status assessments

- **IUCN Green Status of Species** is a standardized global framework developed to measure and monitor species recovery.
- The outcomes of a Green Status assessment such as the Species Recovery Score and Category, along with conservation impact metrics and categories, should be interpreted in conjunction with the species' IUCN Red List classification.
- The Green Status emphasizes that conservation extends beyond preventing extinction.
- The Green Status framework includes eight categories: *Extinct in the Wild, Critically Depleted, Largely Depleted, Moderately Depleted, Slightly Depleted, Fully Recovered, Non-Depleted,* and *Indeterminate.*
- Currently, more than 100 species have been assessed under the IUCN Green Status and are featured on the IUCN Red List.

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PM POSHAN (POshan SHAkti Nirman) Scheme

News: Centre to bear additional ₹954 crore cost in food material cost under PM-POSHAN scheme. **PM POSHAN (POshan SHAkti Nirman) Scheme.**

About PM POSHAN (POshan SHAkti Nirman) Scheme

- **It is a Centrally Sponsored Scheme** launched for providing **one hot cooked meal** in Government and Government – aided Schools from **2021-22 to 2025-26.**
- **Nodal Ministry:** Ministry of Education
- **Type:** Centrally Sponsored Scheme
- **Provision:** Under the Scheme, there is provision of **hot cooked meal to children** of **pre-schools** or Bal Vatika (before class I) in primary schools also in addition to the 11.80 crore children of **classes I to VIII studying** in 11.20 lakh schools.
- **Objective:** The **main objectives** are to address **two of the pressing problems** for majority of children in India – **hunger and education**.
- **Coverage:** The Scheme is implemented **across the country** covering all the eligible children without any discrimination of **gender and social class**.

Mandovi River

News: Ministry of Shipping grants first digital NOC for jetty development on **National Waterway-68 along River Mandovi in Goa.**

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Mandovi River

About Mandovi River

- The Mandovi River (also known as Mahadayi or Mhadei) is one of the main West Flowing Rivers of Goa State. Alongside the Zuari River, it is one of the two principal rivers in the state, playing a crucial role in its ecology and economy.
- **Origin:** It rises at Bhimgad in the Western Ghats of Belgavi district in **Karnataka state**.
- **River course:** It travels 35 km in Karnataka; 82 km in Goa and 1 km in Maharashtra before joining the Arabian Sea at Panji (North-Goa).
- **Tributaries:** The important tributaries of Mandovi River are Kalasa Nala, Banduri Nala, Surla Nala, Haltar Nala, Singar Nala, Doli Nala, Kotni Nala, Irti Nala, Bail Nadi, Pansheer Nala, Madhuhalla Nala.
- **Some Interesting Facts:**
    - **Dudhsagar Falls and Vajrapoha Falls:** These prominent waterfalls are located on this river.
    - **The Atal Setu (Third Mandovi Bridge),** inaugurated in 2019, is the **largest bridge** in Goa.
    - The **Salim Ali Bird Sanctuary** is located on the **island of Chorao** in the Mandovi river.
    - **National Waterway-68** is part of Mandovi River.

Aravalli Range

News: NGT orders the authorities to prevent illegal mining in Aravali land protected under Nicobar swap. **Aravalli Range.**

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Aravalli Range

About Aravalli Range

- It is a mountain range in **northern-western India**, running approximately 670 km in a south-west direction.
- It is one of the **oldest fold mountain** in the world.
- It starts from near **Delhi**, passing through southern **Haryana**, **Rajasthan** and ending in **Gujarat**.
- It is divided into **two sections**: The **Sambhar-Sirohi ranges**, taller and including Guru Shikhar; and the Sambhar-Khetri ranges, consisting of three ridges that are discontinuous.
- **Formation**: The Aravalli Range is one of the oldest geological features on Earth having its origin in the **Proterozoic era** through tectonic plate collisions that led to the formation of the **Aravalli-Delhi orogenic belt**.
- **Highest peak:** The highest peak is **Guru Shikhar on Mount Abu** at 1,722 m (5,650 feet).
- **Rivers:** It gives rise to several rivers, including the **Banas, Luni, Sakhi, Sahibi and Sabarmati.**

Alfalfa Hay

News: Issue of imports of Genetically Modified Alfalfa hay raised in the on-going Indo-US trade talks. **Alfalfa Hay.**
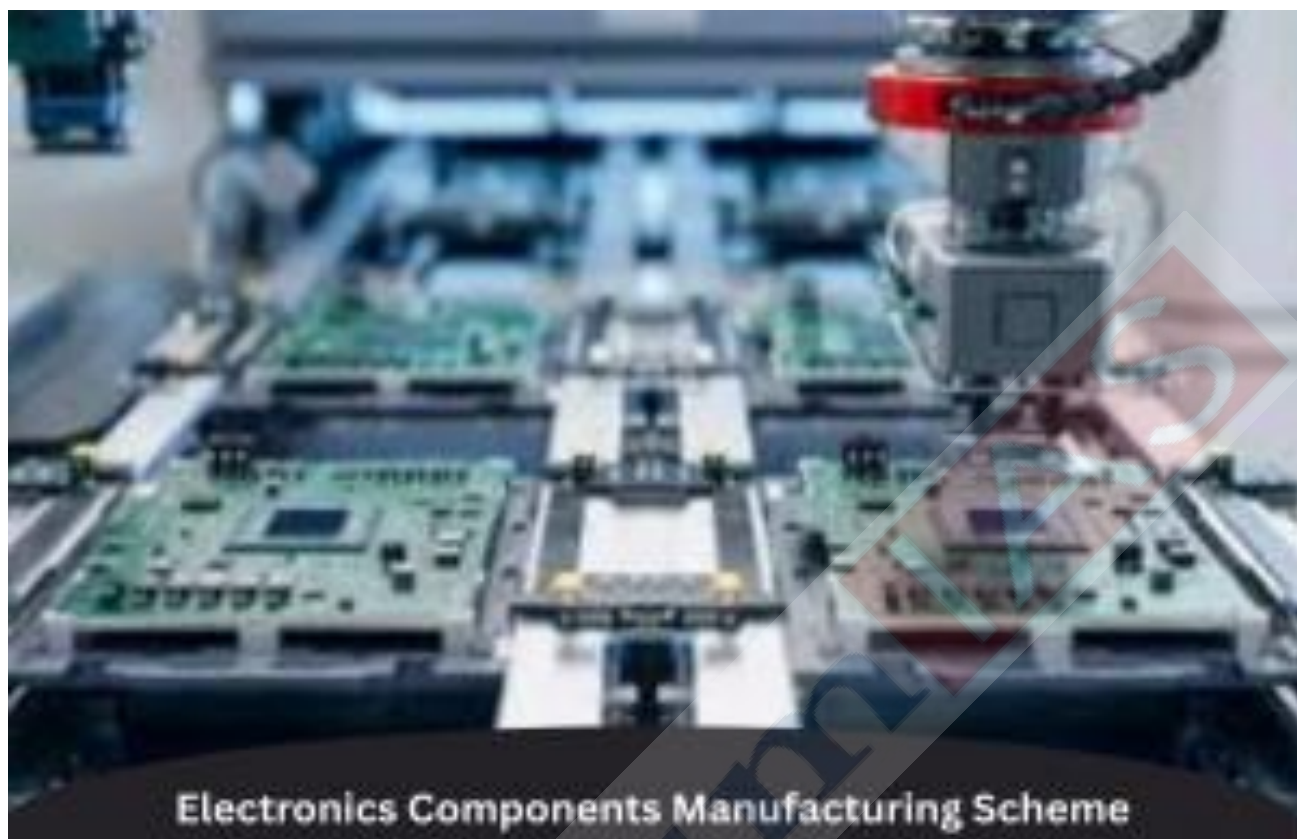
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Alfalfa Hay

About Alfalfa Hay (Medicago sativa)

- It is a **perennial, leguminous plant** of the **pea family (Fabaceae)**.
- It is widely grown primarily for **hay, pasturage and silage**.
- **Climatic conditions required:**
  - **Soil:** It prefers well-drained, fertile soils with a neutral pH **(around 6.8 to 7.5**
  - **Sunlight:** It thrives in regions with **abundant sunlight** which is essential for photosynthesis and biomass production.
- It is known for its **tolerance of drought, heat, and cold** and for the remarkable **productivity and quality** of its herbage.
- The plant is grown as a **cover crop and as a green manure**.
- It houses **symbiotic soil bacteria** (rhizobia) in their root nodules to "**fix" nitrogen** from the air into the soil.
- Green leafy alfalfa hay is **very nutritious** and is also rich in **vitamins A, E, D, and K.**

Electronics Components Manufacturing Scheme

News: The Ministry of Electronics and Information Technology (MeitY) has notified the **Electronics Components Manufacturing Scheme.**

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Electronics Components Manufacturing Scheme

About Electronics Components Manufacturing Scheme

- This is the first scheme that focuses on promoting the manufacturing of **passive electronic components** including resistors, capacitors, connectors, inductors, speakers, relays, switches, oscillators, sensors, films and lenses.
- **Nodal Ministry:** Ministry of Electronics and Information Technology (MeitY)
- **Aim:** It aims to **deepen domestic value addition** by localizing core electronic components by developing capacity and capabilities, and integrating Indian companies with Global Value Chains (GVCs).
- **Tenure:** The tenure of the scheme is six years with a one-year gestation period.
- **Features:**
    - This scheme follows the **Indian Semiconductor Mission (ISM 1.0)** and **white goods PLI**.
    - Both **greenfield and brownfield** applications will be **accepted** with applicants needing to apply separately for each product segment.
- **Incentives criteria:**
    - **Incentives** will be structured in **three ways—turnover linked** (based on revenue), **capex intensive** (for investments in plants & machinery), or **hybrid** (a combination of both).
    - Incentives for incremental investments and turnover range from 1–10% depending on the year and the component.
    - **Employment-linked incentives**: The government has **tied part of the payouts to job creation**.
- **Beneficiaries:**
    - Mobile Phone & Consumer Electronics Players
    - Component & PCB Makers
    - Semiconductor & Passive Component Players
    - Automotive & EV Component Suppliers
    - Display & Camera Module Makers

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One-Horned Rhinos

News: The one-horned rhinos may get some more breathing space outside its biggest habitats in Assam's Kaziranga National Park, Pobitora Wildlife Sanctuary and West Bengal's Jaldapara National Park. **One-Horned Rhinos.**

One-Horned Rhinos

About One-Horned Rhinos
- They are also known as the **Indian Rhinoceros** and are the **largest** of the three Asian rhino species.
- **Distribution and habitat:**
  - Rhinos thrive in floodplain **grasslands, swamps, and riverine forests**, particularly in the **Terai region** of India and Nepal.
  - Indian rhinos are primarily found in **protected** areas in **Assam, West Bengal, Uttar Pradesh and Nepal**.
- **Distribution within India:** They are mainly found in the **seven Protected Areas** –
  - Assam – Kaziranga NP (70**% of world's one-horned rhinos**, **2613 rhinos** as per 2022 Census), Pobitara WLS, Orang NP, Manas NP,
  - West Bengal – Jaldapara NP and Gorumara NP
  - Uttar Pradesh – Dudhwa NP
  - In addition, a transient population is also observed in Katerniaghat WLS in Uttar Pradesh and **Valmiki** TR in Bihar, which experience visits of rhinos from adjoining Nepal.
- **Fun fact:** Greater one-horned rhinos are good swimmers and can dive and feed underwater.
- **Protection Status:**
  - **IUCN Red List**: Vulnerable.

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- ○ **CITES**: Appendix I (Threatened with extinction and CITES prohibits international trade in specimens of these species except when the purpose of the import is not commercial, for instance for scientific research).
  - ○ **Wildlife Protection Act, 1972**: Schedule I.

Rhinos around the Globe:

- There are **five species of rhino** – white and black rhinos in Africa, and the greater one-horned, Javan and Sumatran rhino species in Asia.
- **IUCN Red List Status:**
  - ○ Black Rhino: Critically endangered. Smaller of the two African species.
  - ○ White Rhino: Near Threatened.
  - ○ One-Horned Rhino: Vulnerable
  - ○ Javan: Critically Endangered
  - ○ Sumatran Rhino: Critically Endangered. It has gone extinct in Malaysia.

Malabar Grey Hornbill

News- A team of researchers from Kerala has been awarded the Future Conservationist Award by the Conservation Leadership Programme (CLP) for their project on conserving the **Malabar Grey Hornbill.**

Figure 1. Source- birdsoftheworld

About Malabar Grey Hornbill (Ocyceros griseus)

- **Geographical range**– It is *endemic to the Western Ghats* and associated hills of southern India.
- **Habitat**– They are found mainly in dense forest and around *rubber, arecanut or coffee plantations*.
- **Characteristics:**
  - ○ They are the *smallest among the Asian hornbills*.
  - ○ They have a large beak but *lack the casque* that is prominent in some other hornbill species.
  - ○ Males have a reddish bill, females have a yellowish bill with black markings.
  - ○ They move around in pairs or small groups, feeding on figs and other forest fruits.
  - ○ They are *notable for their loud cackling, screeching, and laughing calls*.
- **IUCN Status**– Vulnerable

About Conservation Leadership Programme (CLP)

- It is a partnership of Fauna & Flora International, BirdLife International and the Wildlife Conservation Society.

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○ CLP Award supports promising young conservationists with less than five years of professiona experience, offering funding and tailored mentoring to lead impactful projects.

Framework for Extradition in India

News: 26/11 accused Tahawwur Rana was recently extradited to India from the USA under the bilateral extradition treaty between the two countries. **Framework for Extradition in India.**

Framework for Extradition in India

About Framework for Extradition in India

- **Extradition:** It is the **formal process** of **one country surrendering an individual to another country** for prosecution or punishment for crimes committed in the **requesting country's jurisdiction**.
- It is typically governed by a bilateral treaty between the two countries involved, or a larger multilateral treaty.
- The **Ministry of External Affairs is** the **nodal Ministry** dealing with the processes of extradition in India.
- The Government of India finally decides on Extradition and this **decision can be appealed in a higher court.**
- **Countries with which India has an Extradition Treaty:** According to the website of the Ministry of External Affairs, India has extradition **treaties in force with 48 countries**, and non-binding extradition **arrangements with another 12**.
- **Extradition Law in India**– In India, the extradition of a fugitive criminal is governed under the **Indian Extradition Act, 1962.**

Global Frameworks facilitating Extraditions

- United Nations **Convention against Transnational Organized Crime** (2000) (**Palermo** Convention)

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- United Nations **Convention against Corruption** (2003) (**Merida** Convention)
- United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances (1988 Drug Convention).
- UN Model Law on Extradition (2004)
- International Convention for the Suppression of Terrorist Bombings (1997) (**Terrorist Bombing** Convention).
- European Convention on Extradition (1957) (**Council of Europe** 1957 Convention).

Classification of Industries by CPCB and Blue Industries

News: Recently, the Central Pollution Control Board (CPCB) has carved a new category of industries called the **'blue category' industries** based on the **Essential Environmental Services (EES)** for managing the pollution due to anthropogenic activities. **Classification of Industries by CPCB and Blue Industries.**

About Classification of Industries by CPCB and Blue Industries

Classification of Industries by CPCB:

- The CPCB **classifies** industries **based on their environmental impact**, focusing on air pollution, water pollution, and hazardous waste generation.
- Industries are classified using the **Pollution Index (PI),** which is calculated by considering air, water, and waste pollution, with equal weight given to each factor.
- **PI Categories:**
    - White: PI < 20 (least polluting industries)
    - Green: 21 ≤ PI < 40
    - Orange: 41 ≤ PI < 60
    - Red: PI > 60 (most polluting industries)

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Blue Industries:

- The Blue Category was introduced by the CPCB to classify **sectors that are essential for environmental management but are relatively low on pollution.**
- **Key Features of Blue Category Industries:**
    - Recognized as part of Essential Environmental Services (EES).
    - Granted extended validity of 'Consent to Operate' (CTO)—up to 2 years.
    - Intended for projects that produce minimal hazardous waste.
    - Expected to align with circular economy goals.
- **Industries Included:** Sewage Treatment Plants (STPs), Composting units, Biogas plants, Material Recovery Facilities (MRFs), and Waste-to-Energy (WTE) incinerators.
- **Procedural Criteria for Blue Category Inclusion:**
    - No generation of hazardous waste or toxic emissions.
    - Must promote circular economy (reuse, recycle, resource efficiency).
    - Must align with Sustainable Waste Management Rules, 2016.

Vitamin D

News: A report by the Indian Council for Research on International Economic Relations (ICRIER) has sounded the alarm over Vitamin D deficiency in India. **Vitamin D.**

About Vitamin D

- Vitamin D (also referred to as **calciferol**) is a **fat-soluble vitamin**.
- **Source:** It is **naturally present** in a few **foods** (like fatty fish (salmon, tuna), fortified milk, and eggs) and available as a dietary **supplement**.

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- It is also **produced endogenously** when **ultraviolet (UV) rays from sunlight strike the skin** and trigger vitamin D synthesis.

Deficiency

- Vitamin D deficiency can **lead to weakened bones** (**osteoporosis** in adults, **rickets** in children), **hypocalcemia** (low calcium levels in your blood) which leads to **secondary hyperparathyroidism** (overactive parathyroid glands attempting to keep blood calcium levels normal).

Significance

- It is **essential** for **calcium absorption, bone health, and immune function**.
- It plays a **crucial role** in **regulating calcium and phosphate levels,** which are necessary for strong bones and teeth.
- Vitamin D also **helps regulate the function of immune cells** and can influence muscle and nerve function.

Carbon Tax

News: India and 62 other countries voted in favour of the world's first-ever global carbon tax imposed on the shipping industry by the United Nations' shipping agency. **Carbon Tax.**

Carbon Tax

About Carbon Tax

- A carbon tax is a **type of penalty** that businesses must pay **for excessive greenhouse gas emissions**.
- The tax is usually **levied per ton of greenhouse gas emissions**
- **Objective:** The tax is designed to encourage such businesses to **reduce their output** of greenhouse gases and carbon dioxide.
- The carbon tax is a type of **Pigouvian tax**.

Types of carbon tax

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- **Emissions-based tax:** It is levied **directly on the quantity of GHG emissions** produced by an entity.
- **Goods-based tax:** It is applied to goods or services that are **carbon-intensive, such as gasoline or coal.** The tax is **based on the estimated emissions** associated with the production and use of these goods.
- **Cap-and-trade system:** It is a **market-based approach** to reducing GHG emissions, where a government **sets a limit (cap) on total emissions** and allows companies to **buy, sell, or trade emission permits** within that cap.
- **Carbon tariff:** Also known as carbon border adjustment mechanism (CBAM), it is an **eco-tariff on embedded carbon**, aiming to **prevent carbon leakage** from nations without a carbon price.

About International Maritime Organization (IMO)

- It is a **specialized agency of the United Nations** that is responsible for measures to improve the **safety and security of international shipping** and **prevent marine pollution** from ships.
- It has an integral role in meeting the targets set out in **UN SDG 14:** Conserve and sustainably use the oceans, seas and marine resources for sustainable development.
- **Members:** IMO currently has **176** member states. In addition, there are **three associate members**: Hong Kong, Macao, and the Faroe Islands.
- **Structure:** It consist of the **assembly**, representing the member states, and **a council** (an **executive body, appoints secretary-general**) elected by the members at **two-year intervals**.
- **Headquarter: London**, U.K.

Some of Important Treaties under IMO

- International Convention for the **Safety of Life at Sea** (SOLAS)
- International Convention on **Standards of Training, Certification, and Watchkeeping for Seafarers** (STCW)
- International Convention for the **Prevention of Pollution from Ships** (MARPOL)

Beijing India Report 2024

News: The Beijing India Report, 2024 was submitted on the 30th anniversary of the **Beijing Declaration and Platform for Action (1995),** highlighting the achievements and future course to be taken by India to achieve gender equality. **Beijing India Report 2024.**

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Beijing India Report 2024

About Beijing India Report 2024

- It is a **bilateral analysis** conducted by Chinese think tanks, assessing India's economic, technological, and geopolitical trajectory, focusing on areas like semiconductor manufacturing and Indo-Pacific strategy.
- It highlights **China's strategic interest** in India's growth and attempts to recalibrate bilateral ties amid border tensions and trade imbalances ($100 billion in 2023).
- The report marks **three decades since the adoption of the Beijing Declaration**, reflecting on India's **progress in gender equality**. However, it identifies a significant gap in integrating gender considerations into **climate policies, particularly affecting rural women**.
- This oversight presents an opportunity to enhance **gender-responsive climate action in India**.

About Beijing Declaration and Platform for Action

- It is the world's **most comprehensive, visionary plan** ever created to achieve the equal rights of ALL women and girls, outlining an **action plan for gender equality** across **12 dimensions** such as education, health, economics and politics.
- It was agreed to by **189 governments in 1995**, at the **Fourth World Conference on Women.**
- **Importance of India**: It has helped India focus attention on gender perspectives in policies, pass the **Protection of Women from Domestic Violence Act** and the **POSH Act**, and push for the **economic** empowerment of women.

BatEchoMon

News: India's first automated bat monitoring and detection system **BatEchoMon** launched marking a new chapter in bat research.

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About Bat Echolocation Monitoring (BatEchoMon)

- It is India's **first automated bat monitoring system**.
- It is an **autonomous system** capable of **detecting and analysing bat calls** in real-time.
- It is **programmed to activate automatically** at sunset, when bats begin flying and continuously listens and analyses audio.

Components and working

- Aside from a **recording device**, it includes **components** that can **record, store, process, and analyse species-wise bat activity** on the fly.
- **An Audiomoth, a popular low-cost ultrasonic detector, has been configured to work as an ultrasonic microphone.**
- Other **auxiliary components** in the device include a **solar panel plus battery** and a **WiFi communication unit** for power supply and data transmission, respectively.
  - In the **absence of the sun**, the device can last for **up to eight days.**

Mk-II (A) Laser- Directed Energy Weapon (DEW) system (Sahastra Shakti)

News: India has successfully conducted its first trial of a high-powered laser weapon, MK-II(A), using directed energy to neutralise an aerial target. **Mk-II (A) Laser- Directed Energy Weapon (DEW) system (Sahastra Shakti).**

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Mk-II (A) Laser- Directed Energy Weapon (DEW) system (Sahastra Shakti)

About Mk-II (A) Laser- Directed Energy Weapon (DEW) system (Sahastra Shakti)

- It is an indigenously designed and developed 30-**kilowatt laser-based weapon system** that can **disable, degrade or destroy** small **remotely** piloted aircraft, **swarm drones, missiles and sensors**.
- **Developed by: DRDO's** Centre for High Energy Systems and Sciences (**CHESS**), Hyderabad along with other labs, academic institutions and Indian industries**.**
- **Working:** Once detected by **its radar or by its inbuilt Electro Optic (EO) system**, **laser-DEW can engage targets at the speed of light** and use an **intense laser beam** to cut through the target, leading to structural failure or more impactful results if the warhead is targeted.
- **Advantages:** Unlike traditional kinetic weapons, **laser systems offer instantaneous engagement**, **precision targeting**, **low per-shot cost**, reduce **dependence** on costly ammunition, limit **collateral** damage and are particularly suited to **countering low-cost drone swarms** — an increasingly common threat.
- **Significance:** India joins an elite group of nations—including the **United States, Russia, and China**—that possess operational high-power laser weapon technology.

Long-Range Glide Bomb 'Gaurav'

News: DRDO conducts successful Release Trials of **Long-Range Glide Bomb 'Gaurav'** from **Su-30 MKI aircraft.**

Long-Range Glide Bomb 'Gaurav'

About Long-Range Glide Bomb 'Gaurav'

- It is a **1,000 kg class glide bomb**.
- **Developed by: DRDO's Research Centre Imarat**, Hyderabad and **Armament Research and Development Establishment** with the support of development-cum-production partners — **Adani Defence Systems and Technologies, Bharat Forge** and various MSMEs.
- It uses a **highly accurate hybrid navigation system**, combining data from the **Global Positioning System (GPS)** with onboard guidance to steer precisely towards its target after release.
- The tests demonstrated a range close to **100 km with pin-point accuracy.**
- Gaurav was first tested in August 2023.

Ramgarh Lake

News: The Ramgarh Dam near Jaipur, which once served as a crucial source of water for the Rajasthan capital, is currently undergoing a survey to identify and remove encroachments and obstructions in its catchment area. **Ramgarh Lake.**

About Ramgarh Lake

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Source: indovacations.net

- It is a man-made water body located near Jamwa Ramgarh, approximately 30 kilometers from Jaipur in Rajasthan, India.
- It hosted the rowing events during the 1982 Asian Games, underlining its prominence in Indian sports history.
- The lake last received water in 1999 and has remained dry since the year 2000.
- Due to the rich biodiversity in the area, the Government of India declared it a Wildlife Sanctuary in 1982.
- **Historical Significance:** Ramgarh was once a royal hunting ground for the Maharajas of Jaipur. The region has since evolved into a heritage site with significant cultural importance.
- Another major attraction near the lake is the shrine of *Jamwa Mata*, situated downhill from the lake. This temple was established by Rao Dulherao of the Kachhwaha clan of Jaipur.

Phawngpui National Park

News: Recently, forest fires had erupted in several parts of Mizoram's Phawngpui National Park.

About Phawngpui National Park

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Source: Roundglass

- It is located in **Mizoram.** It is named after **Phawngpui Mountain,** the highest peak in Mizoram, and is also popularly known as **Phawngpui Blue Mountain National Park.**
- The **Kolodyne River** marks the eastern boundary of the park.
- **Vegetation:** The park consists of **Tropical Evergreen Forests and Subtropical Montane Forests.**
- **Flora:** Its slopes and ridges are adorned with various species of rhododendrons. Other important flora includes oak (Quercus), Bauhinia variegata, Pinus kesiya, and numerous orchids. Unique plant species like solitary Daphnia flowers, theopathic basils, and rare bamboo groves are also found here.
- **Fauna:** Tiger, Leopard, Clouded Leopard, Malayan Sun Bear, Himalayan Black Bear, Indian Bison, Sambar, Goral, and Serow. Hoolock Gibbon, Common Langur, Stump-tailed Macaque, and Slow Loris, Golden Cat, Jungle Cat, Leopard Cat, Marble Cat, Barking Deer and Binturong are found in the park.
- The park is recognized as an **Important Bird Area (IBA)** for its rich avian diversity and presence of globally threatened bird species such as Blyth's Tragopan and Mrs. Hume's Pheasant, both listed as Vulnerable.

Lichens

News: A recent experiment has shown that lichens can thrive in Martian simulation, showcasing another step towards life on Mars. **Lichens.**

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Lichens

About Lichens

- They are a **complex life form** that is a **symbiotic partnership** of two separate organisms, a **fungus and an alga**.
- The **outer skin and internal structure** of a lichen is **made of strands of fungal hyphae**.
- Interspersed among the strands inside the lichen are **individual cells of algae**.
- Lichens **do not have roots** or structures like other plants, they **depend on the atmosphere for air and water**. So, the **quality of ambience** reflects in the **diversity** of lichens.
- **Spread:** Between six to eight percent of Earth's surface is covered by lichen, with over 15,000 known species.

Note– India's first Lichen Park was established in 2020 in Munsiyari, Uttarakhand.

Morag Axis

News: Israel seizes key Gaza corridor 'Morag Axis' as pressure mounts for ceasefire talks with Hamas. **Morag Axis.**

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The 'Morag Axis'

Morag Axis

About Morag Axis

- This area consists mainly of **agricultural land** located between **Khan Younis and Rafah**, stretching from **east to west across the Gaza Strip**.
- The name "Morag" refers to **an illegal Israeli settlement** that was established in the region between 1972 and 2005.
- It includes parts of what the Israeli military had previously designated as a "**humanitarian zone**", where they had told internally displaced Palestinians to seek refuge.

Thangjing Hill

News: A Meitei organisation has slammed Kuki civil society groups for warning the Meitei community against embarking on their annual pilgrimage to the **Thangjing Hill**.

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Thangjing Hill

About Thangjing Hill

- **Geography:** It is located somewhere in the **middle of buffer zone** created between Churachandpur and Bishnupur districts in Manipur.
- The north–south-running **mountain range** on which it sits is also called **Thangjing range or Thangjing Hills.** The range forms part of the **western border of the Imphal Valley**.
- **Status:** It falls within the **Churachandpur-Protected Forest** which was notified in 1966 under Section 29 of the Indian Forest Act, 1927.
- **Historical importance:** It has been declared as a **protected site**, under **Section 4 of the Manipur Ancient and Historical Monuments and Archaeological Sites and Remains Act, 1976**.
- **Cultural & religious significance:** It is associated with the **Ibudhou Thangjing temple**, believed to be the original abode of **deity Thangjing** by Meitei. The **Kuki** residents refer to the hill range as '**Thangting**'.
  - So, it is considered **sacred** to **both**.
- **Dispute:** Contests over the **right to pray and worship** on the hill range have only escalated since the ethnic conflict of 2023.

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