06th October 2025

1. **Coral Triangle:** Recently, the **Philippines** unveiled plans to set up **Southeast Asia's first coral larvae cryobank**, in collaboration with research institutions from Taiwan, Indonesia, Malaysia, and Thailand.
    - The project aims to develop a regional network of coral cryobanks within the **Coral Triangle** to safeguard coral biodiversity and strengthen restoration initiatives.
    - **About the Coral Triangle:** Often called the **"Amazon of the Seas"**, the **Coral Triangle** is an expansive **marine region covering over 10 million square kilometres**.
        - **Member Countries:** Indonesia, Malaysia, Papua New Guinea, Singapore, the Philippines, Timor-Leste, and the Solomon Islands.
        - **Significance:** The region harbours **over 75% of the world's coral species**, **one-third of all reef fish**, **vast mangrove forests**, and **six of the seven known marine turtle species**.
            - It supports the **livelihoods and food security of more than 120 million people** across Southeast Asia and the Pacific.
        - **Major Threats: Rising carbon emissions**, **destructive fishing practices**, **pollution**, and **climate change** are accelerating **coral bleaching**, **habitat destruction**, and **marine species decline**.
2. **KONKAN-2025:** Recently, the Indian Navy and the Royal Navy began the latest edition of their bilateral maritime **exercise**, **KONKAN-2025,** off India's western coast.
    - **About Exercise KONKAN:** It is a **bilateral naval exercise** between the **Indian Navy and the Royal Navy (UK)**.
        - The exercise has been held for **over two decades**, growing in **scale and complexity**, enhancing **interoperability and mutual understanding** in maritime operations.
        - **Conducted in two phases**: **Harbour Phase:** Includes professional interactions, cross-deck visits, sports fixtures, and cultural engagements. Joint Working Group meetings and Subject Matter Expert Exchanges are also scheduled.
            - **Sea Phase:** Involves complex maritime operational drills — **anti-air, anti-surface, and anti-submarine warfare**, flying operations, and seamanship evolutions.
        - Participation by the **UK Carrier Strike Group (UK CSG 25)**, led by **HMS Prince of Wales**, with contributions from **Norway and Japan**, adds international depth.
        - The **Indian Navy** is represented by **INS Vikrant's Carrier Battle Group**, along with other surface, sub-surface, and air combatants.
        - The exercise underscores a **shared commitment to free, open, and secure seas**, aligned with the **India-UK Vision 2035** and **Comprehensive Strategic Partnership**.
3. **Conservation of Migratory Species of Wild Animals**: Recently, two new assessments by the United Nations Convention on the **Conservation of Migratory Species of Wild Animals** (CMS) raised an urgent alarm over how climate change is transforming wildlife habitats across Asia.
    - **Key Highlights: Asian elephants' habitat is** predicted to shift from **South Asia (India and Sri Lanka)** toward **Southeast Asia**, driven by **climate and land-use changes**.
        - However, **most elephants in India and Sri Lanka cannot migrate eastward**, creating a **"habitat gridlock"** that will intensify **human-elephant conflict**.
        - **Rapid warming, glacier retreat, and shifting rainfall patterns** are altering the Himalayan ecosystem, threatening species adapted to cold, high-altitude conditions.
        - Data from the **National Mission for Sustaining the Himalayan Ecosystem** (initiated 2015) was analyzed across **four river basins** — Beas, Bhagirathi, Teesta, and Kameng.
        - The study covered **36 mammal species, 27 bird species, and 2 fish species** across various **Shared Socioeconomic Pathways (SSPs)**.
        - The report warns that **some species may go extinct** because **no higher habitats exist for further migration**.
        - **Recommended actions:** Establish and protect **climate corridors**, **habitat islands**, and **refugia** to allow species movement and adaptation.

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4. **INS Androth**: Recently, the Indian Navy announced plans to commission **INS Androth**, during a ceremonial event at the Naval Dockyard in Visakhapatnam.



   - **About INS Androth**: The **second Anti-Submarine Warfare Shallow Water Craft (ASW-SWC)**.
     - **Built by Garden Reach Shipbuilders and Engineers (GRSE), Kolkata**.
     - It measures approximately **77 meters in length**, making it the **largest Indian Naval warship of its class**.
     - **Propulsion:** The vessel is powered by a **diesel engine–waterjet combination**, enabling **high speed and exceptional manoeuvrability** in **shallow waters**.
     - **Armament:** It features **cutting-edge lightweight torpedoes** and an **advanced shallow-water SONAR system** for superior detection and defence capabilities.
     - The vessel has **over 80% indigenous content**, symbolising **India's growing maritime self-reliance**.
     - The ship enhances the Navy's **Anti-Submarine Warfare (ASW) capabilities**, particularly for **littoral (coastal) operations**.
     - The commissioning reflects the Navy's sustained focus on **indigenisation, innovation, and capability expansion**.
     - The induction of **Androth** adds to a recent series of indigenous naval platforms — **Arnala, Nistar, Udaygiri, Nilgiri**, and now **Androth** — demonstrating balanced growth across maritime domains.
5. **Xenobiology**: Recently, scientists have entered an emerging field of research called **xenobiology**, exploring **new frontiers of life beyond Earth's biology**.
   - **About Xenobiology:** A new and rapidly growing branch of science studying how life could exist using biological systems different from those on Earth.
     - The term comes from Greek, meaning "**the study of alien life."**
     - It explores whether Earth-based life is the only possible form or if alternative forms could exist with different genetic codes or chemical compositions.
     - While traditional biology studies DNA, RNA, and proteins made from 20 amino acids, xenobiology looks beyond these constraints.
     - Possible alternatives include life using different **genetic codes, unusual chemical bonds, or solvents like methane or ammonia instead of water**.
     - These studies help define the boundaries of what qualifies as "life" and identify which biochemical features are essential for evolution and reproduction.
6. **Sir Creek**: Recently, the Union Defence Minister issued a strong warning to Pakistan, declaring that any misadventure in the **Sir Creek** sector would provoke a decisive response.



   - **About Sir Creek**: **96-kilometre-long tidal estuary**, formerly known as **Ban Ganga**, located in the **Indus River Delta**.
     - It is a **marshy, uninhabited stretch** where **seawater merges with river water**, making the terrain **unstable and environmentally sensitive**.
     - **Location:** The creek lies along the **India–Pakistan border**, separating the **Kutch region of Gujarat (India)** from the **Sindh province of Pakistan**.
       - It opens into the **Arabian Sea**, directly influencing the **maritime boundaries and fishing zones** of both countries.
     - **Key Features:** Sir Creek is a **narrow, muddy, and shifting water channel** that frequently changes course due to **tidal movements**.
       - It forms part of the **Indus Delta wetlands**, a vital habitat for **migratory birds and marine biodiversity**.
       - Control over Sir Creek is strategically important as it affects the **delimitation of Exclusive Economic Zones (EEZs)** and the **continental shelf**, which define each nation's rights over **fishing grounds, oil, and gas exploration**.

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7. **Phosphine (PH_3):** Recently, in a ground-breaking discovery, scientists detected trace amounts of **phosphine (PH_3)** for the first time in the atmosphere of a brown dwarf.
   - **About Wolf 1130C:** An **ancient brown dwarf**, an object **too massive to be a planet** but **too small to sustain hydrogen fusion like a star**. Such objects are often called **"failed stars."**
     - **Significance of Phosphine Detection:** On **Earth**, **phosphine is produced only by biological activity**, but in space it can also arise through **non-biological chemical reactions**.
   - **About Phosphine:** A compound made up of **one phosphorus atom and three hydrogen atoms**.
     - Naturally produced by **bacteria in low-oxygen (anaerobic) environments**.
     - These bacteria generate phosphine by **extracting phosphate from minerals or organic matter** and **combining it with hydrogen**.
     - **Presence in Space:** Also found in the **atmospheres of Jupiter and Saturn**, likely formed under **high-pressure and high-temperature conditions**.
     - **Industrial Uses:** Utilized in the **semiconductor and plastics industries**.
       - Used in the **production of flame retardants**.
       - Serves as a **fumigant pesticide** for **stored grains**.
8. **National Camel Sustainability Initiative (NCSI):** Recently, the Union government began preparations to launch the **National Camel Sustainability Initiative (NCSI).**



   - **About NCSI: A multi-ministerial national mission** aimed at **reversing the sharp decline in India's camel population**.
     - The initiative is being developed in consultation with the **Food and Agriculture Organization (FAO)** and a **draft policy paper**.
     - **Objective:** To **restore the camel's economic, ecological, and cultural significance** in India's arid and semi-arid regions.
       - The mission aims to ensure **coordinated action** by involving the **Departments of Animal Husbandry and Dairying**, **Environment**, **Rural Development**, **Tourism**, and **State Governments**.
     - **Crisis Overview:** India's **camel population has declined by over 75%** since 1977. As per the **20th Livestock Census (2019)**, the **camel population stands at 2.52 lakh**, down from **11 lakh in 1977** and **4 lakh in 2013**.
       - Around **90% of camels** are found in **Rajasthan and Gujarat**, both witnessing severe declines.
9. **NATPOLREX-X**: Recently, the **Indian Coast Guard (ICG)** announced plans to host the 10th edition of the **National Level Pollution Response Exercise (NATPOLREX-X)**, along with the 27th **National Oil Spill Disaster Contingency Plan (NOSDCP)** and Preparedness Meeting, off the coast of Chennai, Tamil Nadu.
   - **Key Highlights:** The two-day event involves **central ministries**, **coastal state governments**, **major ports**, **oil handling agencies**, and **maritime organizations**.
     - Participation includes **over 100 national delegates** and **40 foreign observers from 32 countries**, reflecting the **international importance** of India's marine pollution preparedness efforts.
   - **About NATPOLREX-X 2025:** A **biennial flagship exercise** designed to:
     - **Evaluate and enhance national preparedness** for responding to **marine oil spills**.
     - **Test inter-agency coordination and communication** mechanisms as defined under the **NOSDCP framework**.
     - It aims to ensure India's readiness in handling large-scale **marine pollution incidents** effectively and swiftly.
     - It seeks to **strengthen inter-agency collaboration**, **promote best practices**, and **advance technological innovation** in pollution response.

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