

1. **Vruthi' campaign:** Recently Kerala has been aggressively advocating its latest campaign — 'Vruthi'. Meaning cleanliness of the body and mind.
 - **About:** The 'Vruthi 2025' campaign is a flagship initiative by the Government of Kerala aimed at achieving a waste-free, climate-resilient state.
 - It serves as a key component of the broader 'Malinyamuktham Nava Keralam' (Waste-Free New Kerala) mission, Which emphasizes community participation, technological innovation, and decentralized waste management.
 - **Key Highlights of the 'Vruthi 2025' Campaign**
 - Showcasing Kerala's successful waste management practices
 - Empowering Local Bodies.
 - Promoting Innovation and Entrepreneurship.
 - Strengthening Haritha Karma Sena: the backbone of Kerala's waste management system.
 - Transforming Waste into Wealth:.
 - Promoting Climate Resilience
2. **Grey Wolf (Canis lupus pallipes):** Recently two wolves died of canine distemper virus (CDV), a highly contagious disease found in dogs in Indapur Maharashtra.
 - **About Grey Wolf :** Scientific name: Canis lupus pallipes
 - Common names: Indian wolf, Persian wolf, desert wolf
 - Family: Canidae
 - IUCN Status: These wolves, brown with black-and-white markings on their backs, are on the 'Red List' of the International Union for Conservation of Nature, an environmental network, meaning they are at risk of extinction.
 - The species is also on India's Schedule I list of animals, which receive the highest level of protection.
3. **Musa Indandamanensis:** Recently, a 4.2-metre-long inflorescence was recorded in a species of wild banana, Musa indandamanensis, which was first discovered in a remote tropical forest near the Krishna Nala Reserve Forest in the Andaman and Nicobar Islands.



- **About Musa Indandamanensis:**
 - **Plant height:** Medium-tall, herbaceous with a pseudostem like other banana plants.
 - **Leaves:** Broad, green, with red to purplish tinges; prominent midrib.
 - **Inflorescence:** Pendulous (drooping), which is characteristic of many wild bananas.
 - **Fruits:** Small, inedible, with numerous seeds, unlike the cultivated bananas.
 - **Male flowers:** Yellowish, with a distinct morphology that helped classify it as a new species.
- 4. **ATLAS telescope:** Recently astronomers using the ATLAS survey telescope in Chile discovered a small asteroid YR4 moving away from Earth.
- **About ATLAS :** An asteroid impact early warning system developed by the University of Hawaii and funded by NASA. It consists of four telescopes (Hawaii ×2, Chile, South Africa), which automatically scan the whole sky several times every night looking for moving objects.
 - **Objective:** To detect and track small to medium-sized asteroids on collision courses with Earth, giving time to evacuate or respond if necessary.
 - **Key Features and Capabilities:** Wide-Field Coverage: Each ATLAS Capable of detecting 100-meter asteroids days to weeks before impact and smaller ones hours to days ahead.
- 5. **Sample Registration System (SRS) Report:** Recently as per SRS Report India witnesses a steady downward trend in maternal and child mortality towards achievement of SDG 2030 targets.
 - **Key highlights of report**
 - Maternal Mortality Ratio drops significantly from 130 to 93 per lakh live births
 - Infant Mortality Rate declined from 39 per 1000 live births in 2014 to 27 per 1000 live births in 2021.
 - Neonatal Mortality Rate falls from 26 per 1000 live births in 2014 to 19 per 1000 live births in 2021
 - Under-Five Mortality Rate has dropped from 45 per 1000 live births in 2014 to 31 per 1000 live births in 2021.
 - Fertility Rate is consistent at 2.0 in 2021.
 - Sex Ratio at Birth improves from 899 to 913.

- **About SRS:** A demographic survey designed to provide reliable annual estimates of: Infant Mortality Rate (IMR), Birth Rate, Death Rate and Other key fertility and mortality indicators at both national and sub-national levels.
 - It was initiated **on a pilot basis** in select states in **1964–65** by the **Registrar General of India**.
 - The system became **fully operational in 1969–70**.
 - The SRS field investigation includes:
 - ✓ Continuous enumeration of births and deaths by resident part-time enumerators, usually anganwadi workers or teachers, in selected sample units.
 - ✓ An independent retrospective survey conducted every six months by SRS supervisors.
 - The data collected through these two independent sources are matched to ensure accuracy and reliability.
- 6. **National Technology Day:** Recently The Technology Development Board unveiled the official theme for National Technology Day 2025 —“YANTRA – Yugantar for Advancing New Technology, Research & Acceleration.”
 - **National Technology Day** is celebrated in India every year on **11th May** to honour the remarkable contributions of **scientists, engineers, and innovators** in shaping the country's technological progress.
 - This day marks the **historic nuclear tests conducted at Pokhran in 1998**, which established India as a **nuclear power** on the global stage.
 - Beyond the nuclear milestone, National Technology Day also highlights **India's journey towards self-reliance, innovation, and scientific excellence**, inspiring future generations to drive technological growth.
 - **About YANTRA:** The word "**YANTRA**" comes from India's ancient traditions and means more than just mechanical devices. It represents: **Systems thinking , Collaborative innovation and Scalable tech solutions**.
 - The related term "**Yugantar**" means **epochal change** and reflects India's shift: From just **adopting technologies** To **leading globally in innovation and technology**

7. **Kosmos 482 Mission:** Recently A piece of a Soviet spacecraft launched more than 50 years ago is expected to crash back to Earth later this week.
- **About Mission :** The mission was part of a series of probes that the erstwhile Soviet Union launched during the Cold War to explore Venus. The planet was a subject of interest for two reasons.
 - o One, the thick clouds of Venus were believed to be hiding life on the surface.
 - o Two, the Soviets wanted to demonstrate their scientific superiority by sending probes to a far-off planet.
 - o The Kosmos 482 consisted of various instruments to measure the temperature, pressure, wind speed, visibility, atmospheric gases and rock composition, and radio the results back to Earth.
 - o It was designed to study Venus's atmosphere and surface, but a launch malfunction prevented it from reaching its destination, and the probe instead remained in Earth orbit for over 50 years.
8. **First 'Pangenome' Of Asian Rice:** Scientists have created the first pangenome of Asian rice, a comprehensive genetic map that includes both shared and unique genes across 144 wild and cultivated varieties.
- **About :** This project, comparable to the Human Genome Project, includes both core genes common to all varieties and unique genes found in specific strains.
 - o The pangenome, built using PacBio HiFi sequencing and advanced computational tools, revealed 3.87 billion base pairs of previously missing genetic material.
 - o **Genetic Diversity:** Mapping of 144 wild and cultivated rice varieties across Asia reveals broad genetic variation.
 - o **Core & Unique Genes:** 28,907 core genes are shared, while 13,728 genes are specific to wild rice, aiding adaptability and disease resistance.
 - o **Evolutionary Insights:** Confirms domestication from *O. rufipogon* and traces divergence between indica and japonica.
 - o **Climate Resilience:** Identifies genes for drought, flood, and heat tolerance, crucial for adapting to climate change.

9. **Karegutta hills:** Recently, a massive 20-day anti-insurgency operation involving 28,000 personnel was called off in the Karegutta hills along the Chhattisgarh-Telangana border.
- **About Karegutta Hills**
 - **Challenging Terrain:** Characterized by steep slopes, rocky formations, and numerous caves, the region offers natural fortifications ideal for Maoist guerrilla warfare.
 - **Interstate Border Zone:** Located along the Telangana-Chhattisgarh border, the area suffers from a security vacuum due to overlapping and often unclear jurisdictional responsibilities.
 - **Sustainable Water Sources:** Presence of freshwater springs supports long-term insurgent hideouts by providing reliable water access.
 - **Absence of Civilian Settlements:** With no local population, the area allows for intensified security operations with minimal risk of civilian casualties.
 - **Historic Maoist Base:** Known as a long-standing stronghold for Maoist Central Committee members and their armed units.
10. **LICONN (Light-Microscopy-Based Connectomics):** Scientists have developed LICONN, a revolutionary technique that uses light microscopes to map the brain's neural connections at the synapse level.
- **About LICONN:** Stands for **Light-Microscopy-Based Connectomics**—an advanced imaging method designed to map brain connections with incredible detail. This technique combines **hydrogel expansion, protein staining, and AI-driven segmentation** to achieve its results.
 - **Key Features:**
 - **Hydrogel Expansion:** Brain tissue can be expanded up to 16 times its original size using specialized hydrogels.
 - **Fluorescent Tagging & Deep Learning:** Key molecular features are highlighted with fluorescent tags, and deep learning helps with precise neural segmentation.
 - **Nanoscale Resolution:** It achieves nanoscale imaging, a level of detail previously only possible with electron microscopy, but now with light microscopy.
 - **Applications:** Mapping neural connections at the synapse level advances neuroscientific research, aiding in the understanding of brain disorders, exploring memory processing, and uncovering neural pathway functions for potential new treatments..