

Current Affairs - 04 March 2025

GANGETIC DOLPHIN



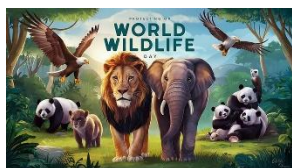
The first ever estimate of Gangetic dolphins, the only riverine dolphins in India, has found 6,327 of them in the river Ganga and its tributaries.

- It is a **freshwater species** and **one of the few river dolphins** found in the world.
- It inhabits the **Ganges-Brahmaputra-Meghna and Karnaphuli-Sangu River systems of Nepal, India and Bangladesh.**
- **Common names:** Blind dolphin, Ganges dolphin, Ganges **susu**, hihu, side-swimming dolphin, South Asian River Dolphin
- **Scientific name:** Platanista gangetica
- It has been recognized by the government of India as its **National Aquatic Animal.**
- **Description:**
 - A long, **thin snout**, rounded belly, **stocky body**, and **large flippers** are characteristics of the Ganges River dolphin.
 - It weighs up to 150 kg.
 - The calves are chocolate brown at birth and become **grayish brown in adulthood** with a smooth and hairless skin.
 - Females are larger than males. The maximum size of a female is 2.67 m and of a male 2.12 m.
 - Its **eyes lack lens**, and as a result, this species is also referred to as the "**blind dolphin**".
 - They have a **highly developed bio-sonar system** that facilitates them to **hunt** for fish even in murky waters.
 - They **emit an ultrasonic sound** which **reaches the prey**. The dolphin then **registers this image in its mind** and subsequently catches hold of its prey.

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- It **cannot breathe in the water** and must surface every 30-120 seconds.
- Because of the sound it produces when breathing, the animal is popularly referred to as the 'Susu'.
- **Conservation status:**
 - **IUCN: Endangered**
 - Wildlife (Protection) Act: Schedule-I
 - CITES: Appendix I

WORLD WILDLIFE DAY



- It is celebrated on **March 3** every year to spread awareness about the importance of flora and fauna.
- This day encourages people to support conservation efforts, adopt sustainable practices, and coexist peacefully with nature.

History:

- It was **established by the United Nations in 2013** after Thailand proposed to dedicate a day to raise awareness about wildlife conservation.
- On December 20, 2013, the UN General Assembly officially declared March 3 as World Wildlife Day, with the **first celebration taking place in 2014**.
- This date was chosen because, **in 1973**, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (**CITES**) was **signed on the same day**.
- CITES is a **global agreement** to ensure that **international wildlife trade does not threaten the survival** of animal and plant species.
- World Wildlife Day 2025 Theme: Wildlife Conservation Finance: Investing in People and Planet

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MISSION 300



- It is an **ambitious initiative** to provide electricity to **300 million people** in **Sub-Saharan Africa** by **2030**.
- It aims to accelerate the pace of electrification in Sub-Saharan Africa while ensuring that the transition to more diversified and cleaner sources of energy meets growing demand, brings economic growth, and creates jobs.
- It is led by the **World Bank and the African Development Bank**, in collaboration with key partners, Rockefeller Foundation, Global Energy Alliance for People and Planet (GEAPP), Sustainable Energy for All (SE4ALL), and Energy Sector Management Assistance Program (ESMAP).

Key Components:

- Expanding the electricity grid and increasing connections in underserved areas.
- Deploying **mini-grids and standalone solar solutions** to bring power to remote, off-grid communities.
- **Local communities** are actively involved in the design and implementation of all World Bank Group supported Mission 300 projects
- The significant leap will deliver reliable, sustainable, and affordable electricity to people, businesses, schools, and hospitals all over the continent.

FERRIHYDRITE



A recent study revealed that the red color of Mars could be due to the presence of an iron-containing mineral called ferrihydrite.

- It is a **poorly crystalline nanomineral** built up of about 20% (FeO₄) and 80% (FeO₆) polyhedra.

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- **Formation:** It forms by **rapid oxidation and hydrolysis**, and exists in varying degrees of structure disorder.
- It is one of **the initial corrosion products** in the oxidation of iron, and is the precursor to the formation of the more stable mineral **phases goethite** ($\alpha\text{-FeO(OH)}$) and **hematite** ($\alpha\text{-Fe}_2\text{O}_3$).
- **Occurrence:**
 - It is widespread in the **soluble fraction of soils** and **weathered rock**.
 - In precipitates around cold and hot springs, especially those supporting iron-metabolizing bacteria; in acid mine effluent.
 - The iron bacteria, especially **Gallionella ferruginea**, **Leptothrix ochracea** and **Toxothrix trichogenes** create ferrihydrite as a waste product of their metabolism.
- It is **known to trap water** and protect organic molecules and forms rapidly in cool water.
- It forms a **significant proportion of soils**, especially soils formed under cool, moist conditions and it occurs as a pre-terrestrial weathering product in meteorites.

PROTON EXCHANGE MEMBRANE FUEL CELL



- It is an **electrochemical device** that converts the **chemical energy** of **hydrogen** and **oxygen** into **electricity** through a series of redox reactions.
- Unlike traditional batteries, which store chemical energy internally, PEM fuel cells require a **continuous supply of hydrogen fuel and oxygen** (typically from the air) to sustain the chemical reaction and generate electricity.
- **Working Principle:** The working principle involves an **electrochemical reaction** where **hydrogen** gas is fed into the **anode**, **oxidized to release protons**, which then travel through a **polymer membrane** to the **cathode**, where they react with oxygen to produce electricity and water.

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- They offer an environmentally friendly solution with high power density in a compact size.
- They run on hydrogen fuel, which can be stored and transported for refuelling, and require significantly less maintenance than traditional backup power sources.

Applications:

- These fuel cells **provide reliable electricity** with quick start-up times and operate at relatively low temperatures, making them a viable alternative to diesel generators.
- An innovative hydrogen fuel cell-based backup power solution for telecom towers, **developed using a plug-and-play model** can support national renewable energy goals while ensuring seamless connectivity for millions and promoting clean energy in the **telecom sector**.
- **Portable power:** specific applications include laptops, mobile phones, battery chargers and unmanned aerial vehicles.

INDIA, CHINA, AND THE US RACE TO SECURE COPPER SUPPLIES

Rising Demand for Copper

- Driven by EV batteries and clean energy technologies, copper demand is projected to outstrip supply by 2035.
- Countries like India, China, and the U.S. are racing to secure supply chains and boost domestic capabilities.

India's overseas focus for copper

- **India's Declining Domestic Copper Production**
 - Copper is a critical mineral for India.
 - Domestic ore production (2023-24): 3.78 million tonnes, 8% lower than in 2018-19.
 - Hindustan Copper Ltd (HCL) saw a 6% year-on-year decline in production (April–January 2023-24).

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- **Rising Dependence on Imports**

- Copper concentrate imports doubled in value to ₹26,000 crore (2023-24) from 2018-19.
- India has large copper deposits, but extensive exploration is needed before mining.

- **Overseas Expansion Strategy**

- India is securing greenfield and brownfield copper assets in Zambia, Chile, and the DRC to meet short-term demand.
- These high-grade deposits and mining-friendly environments allow faster project development.
- However, geopolitical risks pose challenges to overseas investments.

Africa's Growing Role in Critical Minerals

- Africa's share in copper, lithium, and natural graphite production is increasing.
- The Democratic Republic of Congo (DRC) produces 70% of global cobalt and 16% of global copper.
- The DRC is projected to become the world's second-largest copper supplier by 2030 (IEA report).

- **India's Copper Exploration in Zambia**

- India secured a 9,000-sq-km block in Zambia's Northwestern province through a government-to-government deal.
- Geological Survey of India (GSI) will explore the site, which is six times the size of Delhi.
- In Copperbelt province, Vedanta Group already owns a large copper mine.
- Zambia ranks 7th globally in copper production (after Chile, Peru, and the DRC).

Global Competition for Mineral Assets

- Competition for critical minerals remains intense as other countries also seek to expand their supply chains.
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AUSTRALIA, A NATURAL PARTNER FOR INDIA'S GROWTH TRAJECTORY

- The **relationship between Australia and India** has entered a **new era of economic and strategic cooperation**, with Australia expressing strong confidence in India's growth trajectory.
- This partnership is **built on shared economic interests, strategic alignment**, and historical ties.
- The **recently launched New Roadmap for Australia's Economic Engagement with India** outlines how Australia aims to support and benefit from India's rapid development.

Australia's Engagement with India

- **New Roadmap for Australia's Economic Engagement with India**
 - Launched by Australian Prime Minister Anthony Albanese, it builds on the progress made since 2018.
 - It **provides a strategic plan** for further deepening trade and economic cooperation.
 - The impact of the **Economic Cooperation and Trade Agreement (ECTA)** has already been substantial, as evidenced by the rapid increase in trade between the two nations.
 - While India's global exports have grown by 35% in the last five years, **its exports to Australia have surged by 66%**, indicating a strong economic synergy.
 - The roadmap identifies four key sectors, described as the '**Superhighways of Growth**,' where India and Australia can collaborate effectively:
 - **Clean Energy** – Australia provides essential resources such as lithium, nickel, and cobalt, which are critical for India's electric vehicle and renewable energy sectors.

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- **Education and Skills** – Australian universities are expanding their presence in India, helping train the next generation of Indian professionals.
- **Agribusiness** – Enhancing trade in agricultural products and food security.
- **Tourism** – Promoting mutual travel and cultural exchange.
- Additionally, **seven other 'Major Economic Roads'** for cooperation have been identified: investment, technology, sports, culture and arts, resources, defence, space, and health.
- By focusing on these areas, **the roadmap aims to solidify economic cooperation between the two nations.**

The Role of the Indian Diaspora in Strengthening Ties

- One of the most significant advantages of the Australia-India partnership is the **Indian diaspora in Australia, which is over 1 million (10 lakh) strong and growing rapidly.**
- This **community acts as a cultural and economic bridge**, fostering business and government ties.
- **Many Indian-Australians hold leadership positions**, contributing to policy-making and economic collaboration between the two countries.
- **Australia recognises the potential of this 'human bridge' and has invested ₹22 crore in the Maitri Grants Program**, which strengthens diaspora links and supports cultural and economic initiatives.
- Additionally, **the Centre for Australia-India Relations has been established with a funding of ₹132 crore** to enhance bilateral engagement.

The Path Ahead: Comprehensive Economic Cooperation Agreement (CECA)

- While the ECTA has significantly boosted trade, **the next step in economic engagement is the CECA**, which aims to further remove trade barriers and create a robust framework for long-term economic cooperation.

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INDIA'S BURDEN OF RISING OBESITY, THE HEFTY COST TO PAY

- Recent data from the **National Family Health Survey (NFHS-5, 2019-21)** indicates that nearly **one in four Indian adults** is either overweight or obese.
- However, the prevalence of obesity varies significantly across states, regions, and demographic groups.
- In some states, obesity rates are as low as **8%**, while in others, they exceed **50%**.
- Both men and women in urban and rural settings are affected, although **urban populations tend to have a higher prevalence** due to lifestyle factors.
- The **situation is even more alarming among children**. The World Obesity Federation has identified India as having one of the **steepest annual increases** in childhood obesity worldwide.
- Over the past 15 years, the number of overweight and obese children in India has **doubled**, and in the last 30 years, it has **tripled**.
- This trend is concerning as childhood obesity often leads to obesity in adulthood, **increasing the risk of chronic diseases** at an earlier age.
- A nationwide study published in **The Lancet Diabetes and Endocrinology (2023)** estimated that among Indian adults aged 20 and above:
 - **35 crore people** (one in three) have **abdominal obesity**
 - **25 crore people** (one in four) have **general obesity**
 - **21 crore people** (one in five) have **high levels of blood cholesterol**
- These figures indicate that **obesity is not only a growing problem but also a complex health issue affecting multiple aspects of well-being**, including cardiovascular health, metabolism, and overall quality of life.

Conclusion

- The **rising prevalence of overweight and obesity in India** poses a serious threat to public health and economic stability.