November - 22

TNPSC BITS

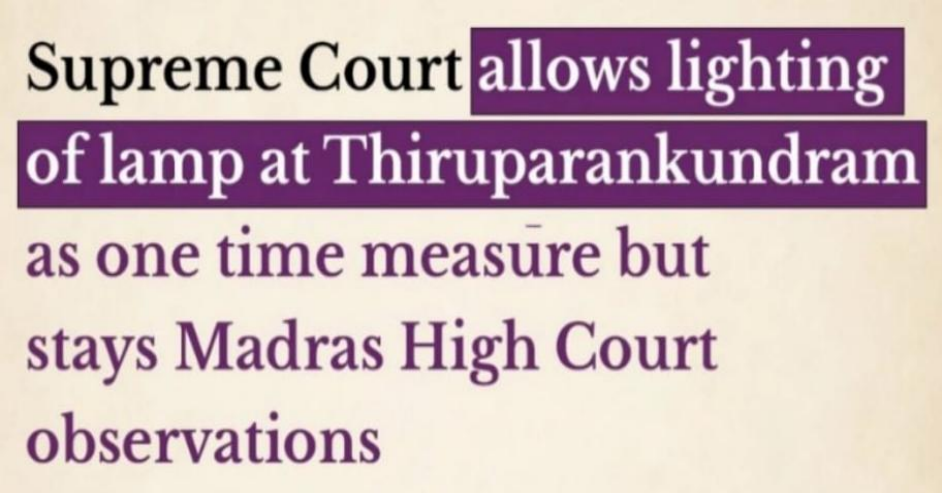
- Researchers at the Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bengaluru, developed a silicon chip for terahertz communication.
- The National Commodity and Derivatives Exchange (NCDEX) launched India's first Price Reporting Agency (PRA)-based steel scrap futures contract.
  - The contract aims to provide a market-linked price benchmark and help traders hedge against price fluctuations.
- NASA's Neil Gehrels Swift Observatory re-entered Earth's atmosphere over North Sumatra, Indonesia, ending its 22-year mission.
  - Launched in 2004, Swift was designed to study Gamma-Ray Bursts (GRBs) and other high-energy cosmic phenomena.
- 'Varuvaaiy', composed and sung by Devan Ekambaram featuring Subhiksha Rangarajan (Susha), became the first Tamil song to receive a Grammy nomination in the Best Global Music Performance category for the 69th Annual Grammy Awards 2027.
- Theni Allinagaram was recognised as the cleanest city in Tamil Nadu at an award ceremony held in New Delhi.
- National Newborn Week is observed from 15 to 21 November every year in India to promote awareness about newborn health and care.
  - The week focuses on essential newborn care, breastfeeding, vaccinations and the early identification of health risks.
- International Men's Day is observed annually worldwide on 19 November to recognise men's contributions to families and society and promote their health and well-being.
  - The theme for the year 2026 is "The Future Is Everyone".

TAMIL NADU NEWS

Supreme Court on Karthigai Deepam

- The Supreme Court permitted one-time lighting of the Karthigai Deepam lamp at the Deepathoon (stone pillar) on Thiruparankundram Hill in Madurai.
- The Supreme Court stayed the relevant findings of the Madras High Court's Division Bench judgment dated 6 January 2026 until further orders.

- The permission is a one-time arrangement and does not establish or recognise any customary religious right to light the lamp at the disputed location.
- Only authorised temple representatives and government officials will be allowed to perform the ritual; public gatherings, processions and demonstrations are prohibited.
- The Supreme Court has left questions concerning religious rights under Articles 25 and 26 of the Constitution for consideration at a later stage.



NATIONAL NEWS

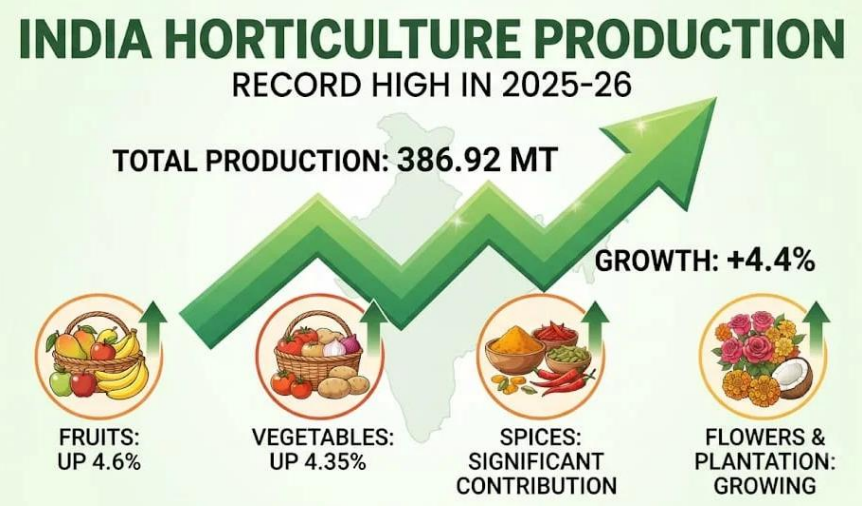
Supreme Court on Land Acquisition

- The Supreme Court ruled that prior Gram Sabha consent is mandatory for acquiring land in Scheduled Areas for mining by private companies.
- The Court held that consent from at least 80% of affected families must be obtained along with the Social Impact Assessment (SIA) study when land is acquired for a private company for a public purpose.
- It set aside the Odisha government's 2021 land acquisition proceedings for 273 hectares in Kukuda, Bihabandha and Lanjiberna villages of Sundargarh district, intended for Dalmia Cement (Bharat) Limited.
- The Court overturned the 2024 Orissa High Court judgment, which had treated Gram Sabha consent as a directory requirement rather than mandatory.
- Section 41 of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 provides special safeguards for Scheduled Castes and Scheduled Tribes in Scheduled Areas, requiring prior consent of the concerned Gram Sabha or relevant local bodies.

- The Court clarified that payment of compensation for damage to land cannot replace lawful land acquisition and mandatory prior consent.

Supreme Court Quashes Mining Land Acquisition In Tribal Area, Holds Gram Sabha Consent Mandatory

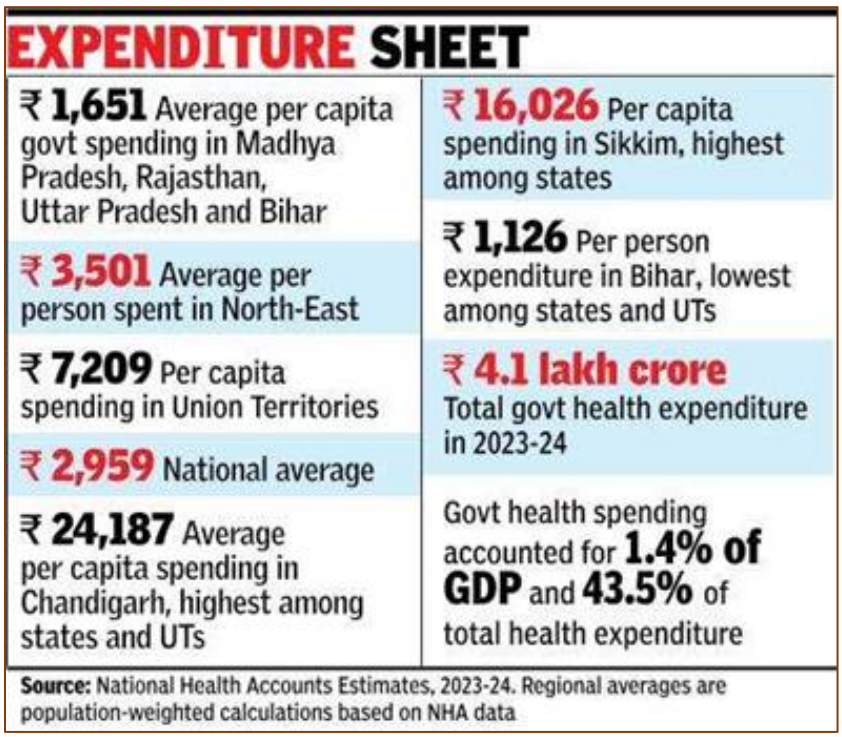
India's Horticulture Production in 2025/26



- India's horticultural production is expected to rise 4.36 per cent to 386.92 million tonnes in the 2025-26 crop year (July-June).
- It was according to the government's third advance estimates released by Agriculture Minister Shivraj Singh Chouhan.
- The projected output is 16.18 million tonnes higher than the 370.74 million tonnes recorded in 2024-25.
- Production is expected to rise even as the area under horticultural crops shrinks to about 29.72 million hectares from 30.14 million hectares a year earlier.

- Despite the decline in cultivated area, production is projected to increase across fruits, vegetables, flowers, plantation crops, and aromatic and medicinal plants.

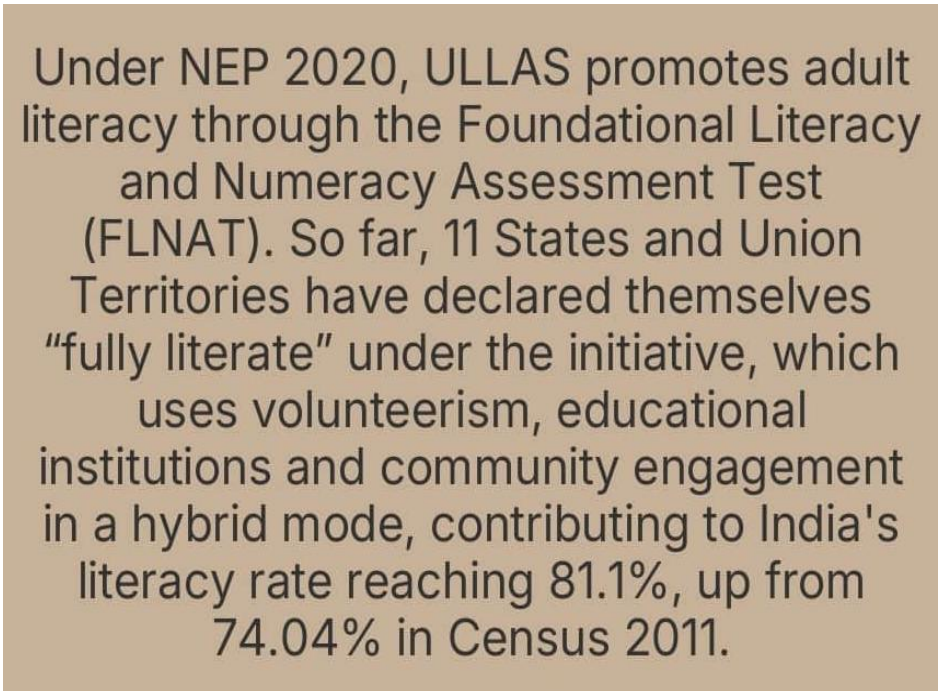
Health expenditure of states 2023-24



- The gap in government healthcare spending across Indian states has widened sharply over the past four years, even as overall public expenditure on health has increased.
- It was according to the National Health Accounts (NHA) Estimates for 2023-24
- Among individual states, Sikkim recorded the sharpest increase, with per-capita spending rising nearly 268 percent.
- Odisha followed with an increase of 149 percent, while Meghalaya and Manipur recorded increases exceeding 139 percent.
- Southern states recorded a population-weighted average govt health spending of around Rs 2,960 per person, almost matching the national average of Rs 2,959.
- The differences and disparities in per capita govt health expenditure reflect differences in states' fiscal capacity, population size, historical investment in healthcare infrastructure and political priorities.
- Economically weaker, populous states face greater resource constraints and higher investment by govts, while north eastern states incur higher service delivery costs and higher per capita investment due to difficult terrain and dispersed populations.

- At the national level, govt health expenditure stood at Rs 4.1 lakh crore in 2023-24, translating into Rs 2,959 per person.
- It accounted for 43.5% of total health expenditure and 1.43% of GDP.

Fully literate states in India



- 11 states, Union Territories are 'fully literate'; Madhya Pradesh leads in adult learners.
- Eleven states and Union Territories in India have achieved "fully literate" status under the ULLAS–Nav Bharat Saaksharta Karyakram.
- While Madhya Pradesh leads the country in adult learners.
- A state or Union Territory is declared "fully literate" when its adult literacy rate (ages 15 and above) reaches 95% or higher, covering reading, writing, numeracy, and critical life skills.
- ULLAS Scheme: Implemented by the Department of School Education and Literacy since 2022–23, the scheme targets 50 million non-literates aged 15 and above by 2027.
- FLNAT is a mechanism under ULLAS to evaluate learners' reading, writing and numeracy skills
- Foundational Literacy and Numeracy Assessment Test (FLNAT) is conducted twice a year.

- The Department of School Education and Literacy has been implementing the ULLAS–Nav Bharat Saaksharta Karyakram since 2022-23.
- In pursuance of NEP 2020, the scheme targets non-literate persons aged 15 and above.
- The scheme has raised India's literacy rate to 81.1%, from 74.04% in Census 2011.

SCIENCE AND TECHNOLOGY NEWS

Ancient Martian Meteorite - Teghaza 001



- A study examined Teghaza 001, a Martian meteorite that provides evidence of water activity on ancient Mars.
- A meteorite is a fragment of a space rock that survives its passage through Earth's atmosphere and reaches the ground.
- Teghaza 001 was discovered in Mali's Sahara Desert in 2022 and weighs approximately 800 grams.
- It is more than 4.1 billion years old and is among the three oldest Martian meteorites found on Earth.

- NASA-funded researchers found that liquid water altered the rock on Mars around 4.1 billion years ago.
- Martian meteorites are classified mainly into three groups: Shergottites, Nakhlites and Chassignites (SNC groups).

Indigenous AI Foundation Models



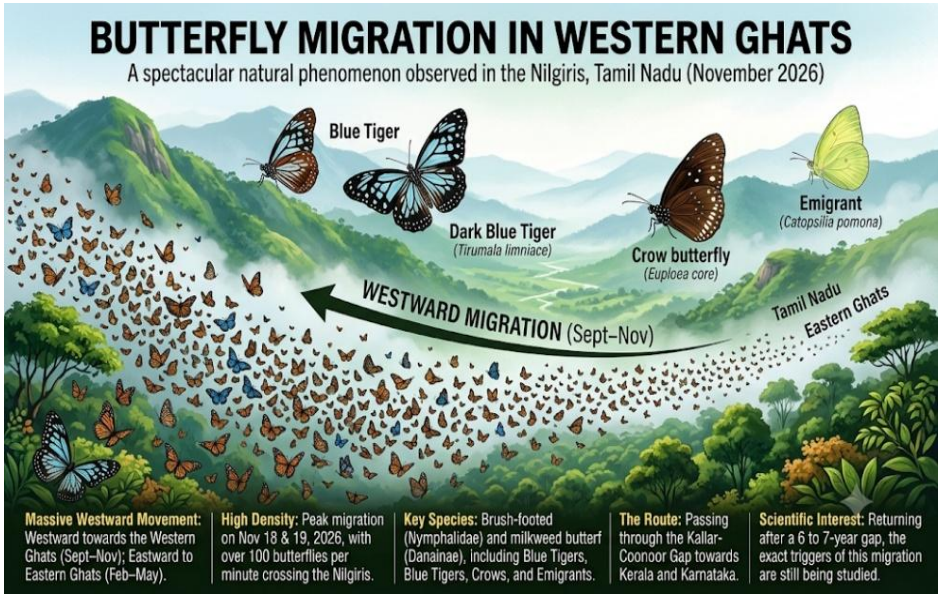
- The IndiaAI Mission under the Ministry of Electronics and Information Technology (MeitY) launched three indigenous foundation language models: EKA-1, Dhir 2B and Dhir 5B.
- EKA-1 was developed by Soket AI Labs and has 26.3 billion parameters; it supports all 22 scheduled Indian languages and English.
- Dhir 2B and Dhir 5B were developed by Bengaluru-based ZenteiQ AiTech Innovations; they have 2 billion and 5 billion parameters, respectively.
- EKA-1 is designed for mathematics, coding, reasoning, banking, financial services and cybersecurity applications.
- The IndiaAI Mission was approved in 2024 and is implemented by MeitY to develop India's artificial intelligence ecosystem.
- BharatGen (Param 2 – 17B), Sarvam AI, Gnani.ai, Krutrim and Project Indus are other Indian AI models or platforms.

ENVIRONMENT NEWS

Butterfly Migration in Western Ghats

- Large-scale westward migration of butterflies has been observed in the Nilgiris district of Tamil Nadu in November 2026.

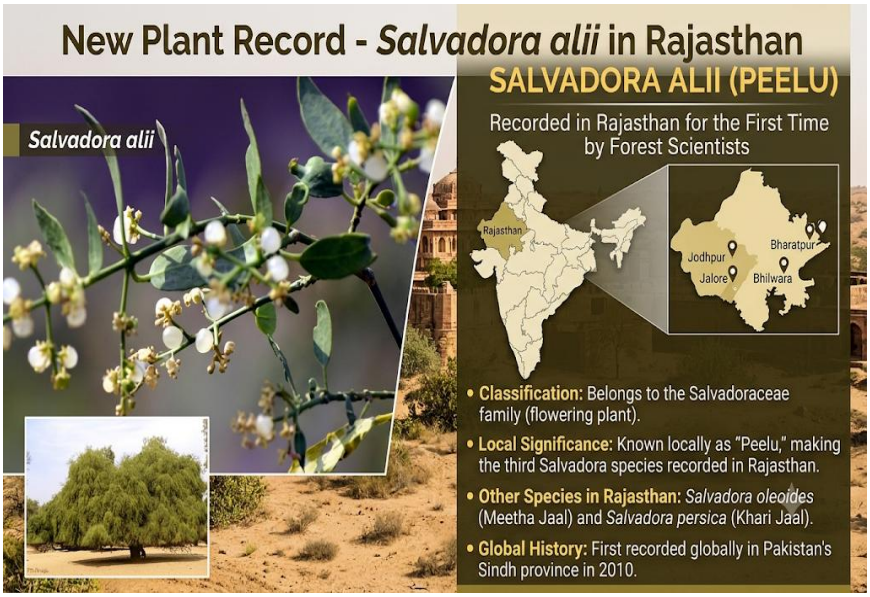
- The migration mainly involves the brush-footed butterfly family (Nymphalidae) and its subfamily Danainae, also known as milkweed butterflies.
- Butterfly migration occurs twice a year: eastwards from the Western Ghats to the Eastern Ghats (February–May) and westwards towards the Western Ghats (September–November).
- The major migrating species include Blue Tigers, Dark Blue Tigers and Crows, along with Emigrants from the Pieridae family.
- More than 100 butterflies per minute were recorded crossing the Nilgiris during peak migration on November 18 and 19, 2026.
- The migration route passes through the Kallar-Coonoor gap in the Nilgiris towards Kerala and Karnataka.
- This large-scale migration was observed in the Nilgiris after a gap of six to seven years, while its exact causes are still being studied.



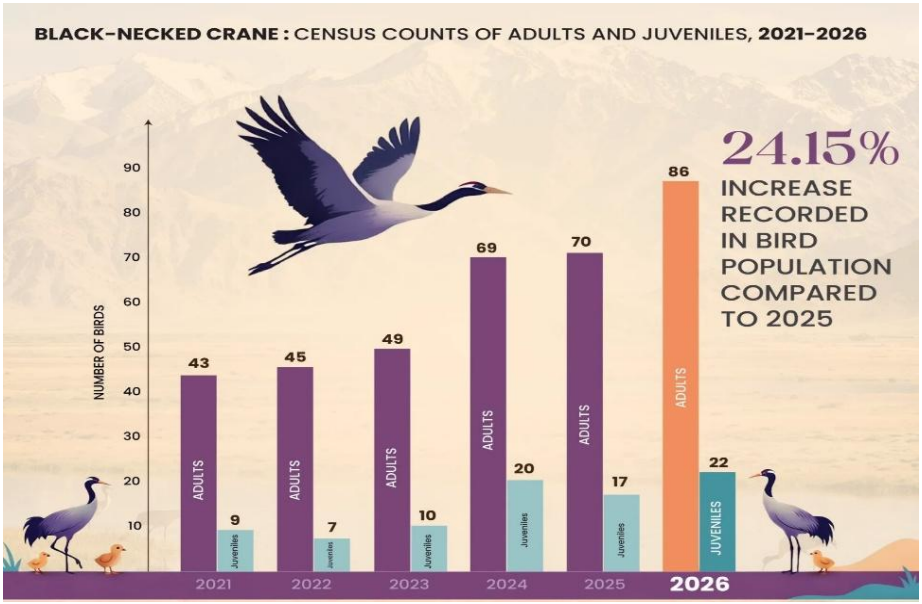
New Plant Record - Salvadora alii

- Forest scientists recorded Salvadora alii in Rajasthan for the first time, with its presence confirmed in four districts.
- Salvadora alii is a flowering plant belonging to the family Salvadoraceae.
- It was recorded in Jodhpur, Jalore, Bhilwara and Bharatpur districts.
- The discovery makes it the third Salvadora species recorded in Rajasthan, locally known as Peelu.
- The other two species are Salvadora oleoides (Meetha Jaal) and Salvadora persica (Khari Jaal).

- The species was first recorded globally in Pakistan's Sindh province in 2010.



Black-Necked Crane Population 2026



- The Black-necked Crane population in Ladakh increased to 108 in 2026, up from 87 in 2025.
- The Changthang region is an important breeding habitat of the Black-necked Crane.
- Chushul, Tso Kar, Kargyam and Korzok together recorded 60 cranes, accounting for approximately 56% of the total population.

- The first-ever Black-necked Crane Festival was organised by the Union Territory Administration to create conservation awareness.
- The Black-necked Crane (Grus nigricollis) is listed as Near Threatened on the IUCN Red List and is the State Bird of Ladakh.

REPORTS AND INDICES

Climate Risk Index (CRI) 2027



- Climate Risk Index 2027 was released by non-profit Germanwatch at the sidelines of the 31st Conference of the Parties to the UN Framework Convention on Climate Change (COP31) currently underway in Antalya, Turkiye.
- It has been prepared by analyzing the number of fatalities, affected people, and economic loss caused by extreme weather events based on data from the International Disaster Database (EM-DAT) on extreme weather events and socioeconomic data from the International Monetary Fund and the World Bank.
- Deadliest Hazard: Heatwaves accounted for roughly 40% of 30-year fatalities (over 364,000 deaths).
- Costliest Hazard: Storms drove 58% of 30-year economic losses and 41% of losses in 2025.
- The report identifies two broad groups; countries hit by exceptionally destructive disasters and those repeatedly exposed to extreme weather.
- Dominica, Myanmar and Honduras represent the first, while India and the Philippines fall in the latter category.

- The report also showed that while almost all countries in the top rankings are in the Global South, several European countries and the US appear among the top 30, indicating the rapidly increasing pan-global impact of climate change.
- According to the Index, the top three most climate-vulnerable countries based on three-decade vulnerability rankings are Dominica, Myanmar and Honduras.
- India among top 10 countries hardest hit by extreme weather since 1996, with 78,000 disaster-triggered deaths.
- Floods, cyclones, and heatwaves have caused significant fatalities, displaced millions, and inflicted severe economic losses.
- India was also ranked 28th in the Climate Change Performance Index.

MISCELLANEOUS NEWS

TIME100 Next India List 2026



- TIME Magazine released its first international TIME100 Next India list, recognising 100 emerging Indian leaders.
- The entertainment category includes Alia Bhatt (actor and producer), Aryan Khan (filmmaker and founder of Slab Ventures), Payal Kapadia (film director) and Theja Rio (filmmaker).
- The sports category includes Harmanpreet Kaur (Indian women's cricket captain), Lovlina Borgohain (boxer), Sania Mirza (former tennis player), Savita Punia (hockey goalkeeper) and Vaibhav Sooryavanshi (cricketer).
- The music category includes Diljit Dosanjh (singer and actor) and Anirudh Ravichander (music composer).
- Other recognised personalities include Anant Goenka and Ritika Chopra (journalists at The Indian Express).

- The list also features business leaders such as Albinder Singh Dhindsa (Blinkit), Peyush Bansal (Lenskart) and Tarun Mehta (Ather Energy).

Narmada Valley Paleontological Discovery

- A 75 cm-long fossilised jaw, preliminarily identified as belonging to the extinct elephant Palaeoloxodon namadicus, was exposed by river erosion at Patai Ghat along the Narmada River.
- Palaeoloxodon namadicus, also known as the Asian straight-tusked elephant, lived during the Middle to Late Pleistocene epoch, approximately 700,000 to 25,000–30,000 years ago.
- It is considered one of the largest land mammals ever to have lived, with an estimated height of 5–5.5 metres and weight of 18–22 tonnes.
- The species was first scientifically described in 1846 by British palaeontologists Hugh Falconer and Proby Cautley, based on fossils found in the Narmada Valley.
- It mainly inhabited river valleys, floodplains and woodlands of the Indian subcontinent.
- The discovery highlights the palaeontological importance of the Narmada Valley, which also yielded the Narmada Human fossil at Hathnora in 1982.



Fossilised remains, provisionally identified as the lower jaw of a prehistoric giant elephant, were found by children playing along the Narmada River near Deori village in Madhya Pradesh's Raisen district. Geologists estimate their age at around 6.5 million years. Locals began worshipping the fossil before officials secured the site to protect it.

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