

MAJULI ISLAND



A new study has reconstructed nearly 4,000 years of climate and vegetation history of Majuli Island in Assam.

- **Location:** It is located in the **Brahmaputra river system**, in Assam.
- It is the **world's largest river island** located in Assam.

Formation: It is formed by the **Brahmaputra River** in the south and the **Kherkutia Xuti**, a branch of the Brahmaputra, joined by the **Subansiri River** in the north.

Crops cultivated: **Rice cultivation** is the primary livelihood for the residents of Majuli, with several unique varieties of rice, such as **Komal Saul** and **Bao Dhan**, grown in the region.

Tribes: Most of the islanders belong to three tribes-**Mishing, Deori, and Sonowal Kachari**, with the non-tribal Assamese comprising the rest.

Culture: The island has also been the hub of **Assamese neo-Vaishnavite culture**, initiated around the 16th century by the great Assamese saint-reformer **Srimanta Sankerdeva** and his disciple **Madhavdeva**.

- They initiated the **tradition of Satras** (monastic institutions), and these Satras have preserved **Sattriya dance**, literature, **bhaona** (theatre), dance forms, mask making, and boat-making.
- Apart from Satras or Vaishnavite monasteries, **Majuli is famous for mask-making** and has a tradition of pottery making.



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AUKUS



Recently, the Aukus alliance members said that they will develop advanced underwater drone systems and further deepen their maritime relationship.

- It is a **trilateral security partnership** between the **United Kingdom**, the **United States of America**, and **Australia** agreed in 2021.
- It aims to boost **defense capabilities**, accelerate technological integration, and expand the industrial capacity of all three nations as a part of a collective effort to **stabilize the Indo-Pacific region**.
- AUKUS is intended to strengthen the ability of each government to support security and defense interests, building on longstanding and ongoing bilateral ties.
- **It consists of two key pillars:**
 - **Pillar 1:** It focuses on supporting Australia to acquire its first conventionally armed, nuclear-powered submarine fleet. It does not involve the transfer of nuclear weapons to Australia.
 - **Pillar 2:** It focuses on cooperation **in eight advanced military capability areas:** artificial intelligence (AI), quantum technologies, innovation, information sharing, and cyber, undersea, hypersonic, counter-hypersonic, and electronic warfare domains.

WHAT IS A BLUE MICROMOON?



- A blue moon is the **second full moon** in a calendar month.
- That is **unusual** because the **period from one full moon to another** is about **29 1/2 days**.

- So when two occur in the same month, the **first** of these full moons is **always on the first or second day of the month.**
- **On average, a blue moon occurs once every 33 months or full moons, 41 times per century, or about seven times every 19 years.**
- An even rarer event is when **two blue moons happen in the same calendar year,** which happens about **four times per century.**
- **Sometimes, smoke or dust in the air can scatter red wavelengths of light,** as a result of which the **moon may, in certain places, appear more blue than usual.**
- But this has **nothing to do with the name “blue” moon,** and the association of the colour with the term is unclear.

What is a Micro Moon?

- This refers to the **apparent size of the moon as viewed from Earth.**
- The **moon is not always a constant distance away from the Earth.**
- Its **orbit around the Earth is elliptical.**
- The moon is about 363,711 km away at its **closest to earth, known as perigee.** At **apogee, or the furthest point,** the moon is about 403,945 km away.
- If a **full moon happens to occur close to its closest point,** then we call that a **supermoon.** And if it's **close to its furthest point,** then we call that a **micromoon.**
- A **micromoon** appears only about **14% smaller than a supermoon** and about **6% smaller than a typical full moon.**

How Rare is a Blue Micromoon?

- **Blue moons occur every couple of years, and micromoons occur two or three times every year.**
- A **blue micromoon** occurs about **once every couple of decades.**
- However, they **aren't regular,** and **two such events may occur closer together or further apart.**
- **No special equipment is needed to observe this blue micromoon,** and it should be clearly visible in the absence of clouds.

WHAT IS A MULE ACCOUNT?



In one of Gujarat Police's biggest cybercrime crackdowns, investigators recently uncovered a staggering Rs 2,289 crore cyber fraud network by targeting mule accounts, the financial lifeline of online scammers.

- A mule account is a **bank account used to facilitate financial crimes**, including money laundering, fraud and illicit fund transfers.
- The **person who owns the account** — called a “**money mule**” — **may or may not know their account is being used for illegal activities.**
 - **Criminals recruit money mules to help launder proceeds** derived from **online scams and frauds** or crimes like **human trafficking and drug trafficking.**
 - **Some money mules know they are supporting** criminal enterprises; **others are unaware** that they are helping criminals' profit.
- Criminals exploit these **mule accounts to move illegal money through legitimate banking channels**, making it **harder for law enforcement agencies to track** the origin and destination of illicit funds.
- Mule accounts **function as intermediaries, receiving and transferring funds** on behalf of criminal networks.
- This **layering process helps criminals obscure the money trail**, making it difficult for financial institutions and regulators to detect suspicious activity.
- Moreover, these accounts are frequently utilized for swift and **recurrent international transactions**, further **obscuring the trail of money.**
- **Funds are rapidly moved through numerous accounts or converted into diverse currencies**, significantly complicating the efforts of law enforcement to track the money flow.

SUMMER AIR POLLUTION IN INDIAN CITIES

- Most people associate Indian city pollution with winter smog. Winter pollution is dominated by finer **PM2.5 particles** that get trapped close to the ground due to low temperatures, low wind speeds, and the basin-like topography of cities like Delhi.
- Summer, however, brings a different pollution chemistry — driven primarily by two pollutants — **PM10** (coarser dust particles) and **ground-level ozone**.
- While summer brings stronger winds and thunderstorms that help disperse some pollutants, heat and intense sunlight create their own dangerous pollution conditions.

What is PM10 and What Causes Its Summer Spike

- PM10 refers to particulate matter smaller than 10 micrometres in diameter — coarser dust particles that can enter the respiratory tract and cause breathing problems.
- Unlike the finer PM2.5 of winter, PM10 is primarily driven by dust in summer.
- Two main mechanisms drive India's summer PM10 spikes:
 - **Natural Dust Storms — Loo and Andhi** - Hot conditions over the Indian subcontinent create a low-pressure area that extends toward Iran. Its interaction with surrounding high-pressure areas produces hot, windy conditions that stir up dust storms. These include: Loo and Andhi.

Loo — Hot, dry winds that carry dust from West Asia and the Thar Desert across northern India toward the Bay of Bengal. These can elevate PM10 levels for days.

Andhi — Shorter, localised dust storms that form when strong downward-moving air from thunderstorms hits the ground, lifts loose dust, and carries it at high speed. While loo storms are common in North India, cities like Mumbai and Hyderabad typically face dusty episodes from local thunderstorms.

- **Human Activities Worsening Dust** - Natural dust is compounded by human activity. Construction and demolition work — which often resumes after winter GRAP restrictions are lifted — adds significantly to PM10 without adequate dust control measures.

What Can Cities Do — Solutions and Way Forward

- **Forecasting and Early Warning Systems**
 - Natural dust cannot be controlled — but it can be predicted. Delhi's Air Quality Early Warning System (AQEWS) — created after the severe 2018 dust storms — now runs year-round and has been extended to Jaipur and Mumbai.
 - It provides three-day Air Quality Index (AQI) forecasts for 140 Indian cities.
 - The IMD also publishes national weather forecast bulletins multiple times daily.
 - Authorities must use these systems to issue timely local alerts on dust storms, ozone, and poor air quality so citizens can reduce exposure.
- **Construction Dust Control**
 - Construction sites need active dust management year-round — not just during winter GRAP periods.
 - A CEEW study found that simply reducing heavy vehicle movement at construction sites can lower local PM levels.
- **Reducing Ozone — Cutting NO_x and VOC Emissions**
 - Tackling ozone requires cleaner transport, better industrial compliance, and attention to solvents, paints, and fuel combustion.
 - Even simple behavioural campaigns like Delhi's 'Red Light On, Gaadi Off' — urging drivers to switch off vehicles while waiting at traffic junctions — can meaningfully reduce idling emissions and ozone formation.
- **Summer Action Plans for All Cities**
 - Delhi has had a Summer Action Plan since 2022.
 - Other cities urgently need similar plans combining forecasting, public health advisories, construction dust control, road dust management, and action on ozone-forming emissions.
 - Indian cities must plan for both winter and summer pollution seasons — treating them with equal seriousness.

MAHA WATER MISSION



Mission.

Recently, the union Minister of Science & Technology launched the Missions for Advancement in High-Impact Areas (MAHA) Water

- It has been conceived as a **national platform** to accelerate **innovation in the water sector** by connecting science, entrepreneurship, industry, academia and grassroots action.
- It aims to **support innovations from laboratory research to field deployment** while generating scalable and localised solutions for strengthening **India's long-term water security**.
- It will **support technology development**, field validation and deployment for addressing critical water challenges.
- It will focus on **five priority themes**:
 - Water resource assessment and sustainable management;
 - Drinking water;
 - Water quality and ecological health;
 - Water use efficiency and circular economy;
 - Climate resilience and adaptation
- **Financial Assistance:** A projected outlay of **₹200 crore over five years**, jointly contributed by **Anusandhan National Research Foundation (ANRF)** and the **Ministry of Jal Shakti**.
- The programme will support **multidisciplinary consortia involving** universities, national laboratories, research organisations, startups, MSMEs and industry partners.
 - **Up to ₹20 crore support** will be available for selected consortia to undertake technology development, field assessment, validation and deployment of high-impact solutions in the water sector.

PROJECT UDAYAK



Recently, the Border Roads Organisation (BRO) celebrated the 37th Raising Day of Project UDAYAK.

- It is an initiative of the **Border Roads Organisation**.
- The Project was **aptly named 'Udayak'**, meaning the **Rising Sun** as the first rays of the rising sun in the country fall in the AOR of the project.

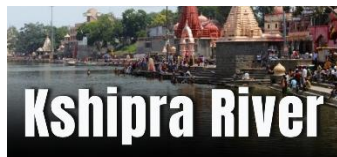
History:

- It was **raised on 01 Jun 1990** at Doomdooma, Assam as part of the restructuring undertaken to focus on the development on the far-eastern area of the country.
- Its two task forces, 48 BRTF and 752 BRTF were **carved out of Projects Vartak and Sewak** respectively, to form the two executive arms of the Project.

Achievements of Project UDAYAK:

- It has been instrumental in the development and **maintenance of strategic road infrastructure** in the **easternmost regions of Arunachal Pradesh and parts of Assam**.
- The Project plays a vital role in enhancing connectivity in remote and strategically significant areas along the **Line of Actual Control (LAC) and the Indo-Myanmar border**.
- The Project is currently undertaking construction of roads and border fencing infrastructure, along the Indo-Myanmar border, **strengthening national security and improving accessibility in border regions**.

KEY FACTS ABOUT KSHIPRA RIVER



maintain a perennial flow.

The Kshipra riverine system in Madhya Pradesh is facing a major crisis marked by the drying up of its tributaries that fail to

- The Kshipra, also known as the **Shipra**, is a river that flows in the state of **Madhya Pradesh**.
- It is a **tributary of the Chambal**
- It is a **perennial river** and is **considered as sacred as the Ganga River** by the Hindus.
- **Course:**
 - **Origin:** It originates from the **Vindhya Range near Ujjain**, Madhya Pradesh.
 - It flows across the **Malwa Plateau to join the Chambal**
- **Major Tributaries:** Khan and Gambhir.
- **Religious Significance:**
 - The **Puranas**, or **ancient Hindu texts**, put forward that the **Shipra originated from the heart of Varaha**, Lord Vishnu's incarnation as a boar.
 - Also on the banks of the Shipra is **Sage Sandipani's ashram or hermitage**, where **Krishna**, Lord Vishnu's eighth incarnation, had studied.
 - It finds mention not only in ancient Hindu texts but also in **Buddhist and Jain scriptures**.
 - The **holy city of Ujjain** is located on the right bank of the Shipra River.
 - The **famous Kumbha Mela** takes place in the ghats of this city, **once every 12 years**.
 - There are hundreds of Hindu shrines along the banks of the Shipra River.