

SANSKRITI IAS DAILY CURRENT AFFAIRS

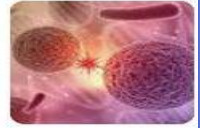
04-09-2026

Ophiorrhiza assamensis

Inshorts

New plant species discovered in Assam, may aid cancer drugs | 'Found growing in a moist, shaded habitat' | Inshorts

Scientists have found a new plant species, *Ophiorrhiza assamensis*, near Satargaon Road in Assam's Kamrup Metropolitan district.



Why in News

- Botanists recently discovered the new flowering plant species **Ophiorrhiza assamensis** near **Guwahati, Assam**.

Botanical Profile

- **Ophiorrhiza assamensis** is a **perennial herb** with large ribbed leaves and clusters of small white flowers.
- It belongs to the genus **Ophiorrhiza**, which is part of the **Rubiaceae family**, the family that also includes coffee.
- The species has so far been recorded from a **highly localised population** in a moist and shaded habitat near Guwahati.



Medicinal Significance

- The genus **Ophiorrhiza** is a natural source of **camptothecin**, a compound used in developing medicines for cancers, including colon cancer.
- Its restricted population makes the species vulnerable to **deforestation and development-related habitat changes**.

Conservation Status

- Researchers have classified **Ophiorrhiza assamensis** as '**Data Deficient**' under **IUCN criteria** because its total population remains unknown.

Limiting Overshoot Report

Why in News

- The **United Nations Environment Programme (UNEP)** has released the **Limiting Overshoot Report**, warning that the world is likely to temporarily breach the **1.5°C warming threshold** in the coming years.

UNEP - UN Environment Programme

Overshoot explained: 5 things to understand about a world beyond 1.5°C

Exceeding 1.5°C must not mean abandoning the goal. UNEP explains five things to know about climate overshoot and the choices that will shape...

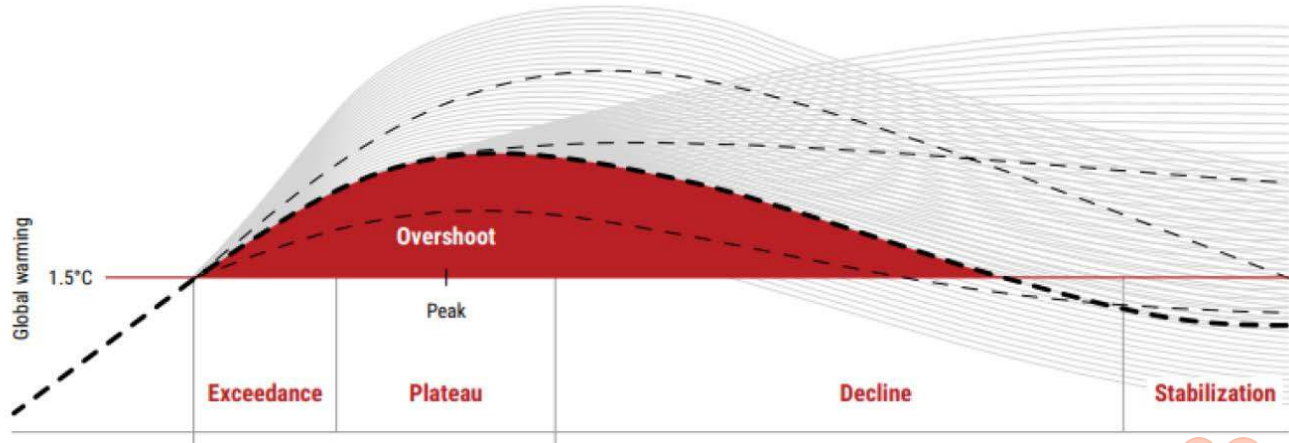


Key Climate Projections

- Even if all countries fully implement their **national climate plans and net-zero targets**, peak warming could reach **1.8°C**.

- Current policies could result in approximately **2.6°C warming by 2100**, with a projected range of **1.9–3.6°C**.
- The report presents an **overshoot, peak and decline pathway** for global temperature.

Figure 1.3: Key determinants of overshoot peak and decline pathway outcomes down to the impact chain



Impacts of Temperature Overshoot

- Prolonged warming above **1.5°C** could accelerate **sea-level rise, coral reef collapse and glacier loss**.
- Without effective adaptation, global food production could decline by **up to 14% by 2050**.
- The report highlights risks of irreversible tipping points involving the **West Antarctic and Greenland ice sheets, Atlantic Meridional Overturning Circulation (AMOC) and Amazon**.

UNEP is headquartered in **Nairobi, Kenya**.

Methane and Climate Action

- The report places significant emphasis on **methane reduction** as an effective means of slowing warming in the near term.

Northern Goshawk

Why in News

- The **Northern Goshawk, Punjab's State Bird**, has recently attracted attention.

The Indian Express

[Guru da Baaj: In Punjab's political skies, Guru's rare bird spotted, finally](#)

Punjab State Bird, Northern Goshawk, Guru Gobind Singh baaz, Harsimrat Kaur Badal, Sukhbir Singh Badal, Bhagwant Mann, Punjab Assembly...



Taxonomy and Distribution

- The Northern Goshawk is a large bird of prey belonging to the **Accipitridae family**.
- It is distributed across **Europe, Asia and parts of North America**.

Ecology and Behaviour

- It primarily inhabits **dense coniferous and mixed woodlands**.
- It has relatively short, broad wings and a long tail, with **females significantly larger than males**.
- The species is **diurnal, territorial and generally found singly or in pairs**.



Migration and Hunting

- Northern Goshawks are **partial migrants**, generally moving between **September–November** and **February–April**.
- They primarily use **perch-hunting**, involving short, rapid low-level flights interspersed with scanning from elevated perches.
- Their **IUCN Red List status is Least Concern**.

BIO-NIVESH Platform

DD India

Jitendra Singh launches BIO-NIVESH to boost private investment in Biotechnology

Union Minister Jitendra Singh on Thursday launched BIO-NIVESH, a platform aimed at connecting biotechnology startups with investors and...



Why in News

- The **Union Minister of State (Independent Charge) for Science & Technology** recently launched the **BIO-NIVESH platform**.

Purpose and Design

- **BIO-NIVESH** seeks to connect **biotechnology startups with investors** and increase private capital for innovations ready for scale-up and commercialisation.
- It is designed as a **recurring platform**, with future editions proposed in different cities to connect regional biotechnology innovation ecosystems.
- It functions as a **two-way engagement mechanism**, helping innovators understand investor requirements while enabling investors to understand scientific, regulatory and development pathways.

Inaugural Edition

- The inaugural edition brought together **20 high-potential biotechnology and deep-tech startups** and around **50 investors**.

- Startups were selected based on **innovation, development stage, market potential, scalability and regulatory readiness.**

Focus Areas

- Discussions covered **access to capital, commercialisation, scale-up and support for innovation-led growth.**
- The platform aims to bridge the gap between **research, entrepreneurship, industry, scale and markets.**

AgriStack

THE HINDU

Centre sanctions one more incentive of ₹175 cr. to TG for AgriStack implementation

HYDERABAD. The Centre has sanctioned ₹175 crore incentive to Telangana for completing the first milestone in the implementation of...



Why in News

- **Telangana** secured **₹599 crore in central incentives** for achieving key milestones under the Centre's **AgriStack programme.**

Digital Architecture

- **AgriStack** is a **Digital Public Infrastructure (DPI) for the farm sector** under the **Digital Agriculture Mission (DAM).**
- The **Digital Agriculture Mission** was approved by the **Union Cabinet in September 2024.**
- Its three foundational registries are the **Farmer Registry, Geo-referenced Village Map Registry and Crop Sown Registry**, maintained by **States/UTs.**
- The government aims to create digital identities or **Farmer IDs for 11 crore farmers.**

Farmer Registry

- **Farmer IDs** are dynamically linked with land records, livestock ownership, crops sown, demographic and family details, schemes and benefits availed.
- The Centre aims to complete the Farmer Registry with dynamic **Records of Rights (RoR) synchronisation by March 2027**, while the target for Northeastern States is **March 2028.**

Other Foundational Registries

- The **Crop Sown Registry** records crops planted by farmers through **mobile-based Digital Crop Surveys** conducted each season.
- The **Geo-referenced Village Map Registry** links geographic information and land records with their **latitude and longitude.**

- The government aims to cover **all villages under the Geo-referenced Village Map Registry by March 2027**.

Expected Benefits

- AgriStack is intended to enable **paperless and contactless crop loans, transparent crop-insurance claims, timely agricultural inputs and personalised pest and disease advisories**.
- It can facilitate **Direct Benefit Transfer (DBT)** of scheme benefits and procurement of agricultural produce at **Minimum Support Price (MSP)**.

Pichavaram Mangrove Forest

TH The Hindu

How valuable are mangroves? Study on Pichavaram ecosystem pegs it at ₹2,485.38 crore

How valuable are mangroves? A recent study of the Pichavaram mangrove ecosystem estimated its Total Economic Value (TEV) at ₹2485.38 crore...



Why in News

- A recent study estimated the **Total Economic Value (TEV)** of the Pichavaram mangrove ecosystem at **₹2,485.38 crore (\$289 million)**, with a per-hectare value of **₹1.83 crore**.

Geographical Setting

- **Pichavaram Mangrove Forest** is located near **Chidambaram, Tamil Nadu**, and covers about **1,100 hectares**.
- It lies between the **Vellar Estuary in the north** and **Coleroon Estuary in the south** and forms part of the **Vellar-Coleroon complex**.
- The mangroves are connected to the **Bay of Bengal**, being separated from it by a lengthy sand bank.

Conservation and Economic Value

- Pichavaram was designated a **Ramsar Site in 2022**.
- Its high **Total Economic Value (TEV)** demonstrates the economic importance of ecosystem services provided by mangroves.

Ecological Characteristics

- The ecosystem contains **channels, creeks, gullies, mudflats and sand flats**, with more than **50 islands** and around **4,400 canals**.
- Mangrove trees grow in water depths ranging from approximately **3 to 10 feet** in different locations.
- The forest supports **more than 200 bird species**, including snipes, egrets, cormorants, storks, herons, spoonbills and pelicans.
- Its aquatic biodiversity includes **seaweed, fish, prawns, crabs, oysters, turtles and otters**.

Subarnarekha River

TOI The Times of India

Subarnarekha level recedes, villages still marooned

Subarnarekha river recedes below danger mark in Odisha, but Balasore's low-lying villages remain flooded, marooned, and facing drinking...



Why in News

- Flooding caused by the **Subarnarekha River** affected more than **45,000 people across 22 gram panchayats in three blocks of Balasore, Odisha** after the river breached its banks.

Geographical Course

- The **Subarnarekha** is an important **east-flowing river** passing through **Jharkhand, Odisha and West Bengal**.
- It originates near **Nagri village in Ranchi district, Jharkhand**, at an elevation of about **600 metres**.
- It flows eastward through the **Chhotanagpur Plateau**, a mineral-rich region, and passes through **Hundrugbagh Waterfall** while exiting the plateau.
- After travelling about **395 km**, it drains into the **Bay of Bengal at Kirtania Port in Odisha**.



Tributaries and Basin

- Major tributaries include the **Kanchi, Kharkai and Karkari rivers**.
- The **Subarnarekha Basin** lies between the **Damodar River to the north** and the **Brahmani and Baitarani rivers to the south**.
- The basin extends across **Jharkhand, Odisha and a smaller part of West Bengal**.

Hydrology and Infrastructure

- The basin is influenced by the **Southwest Monsoon**, which generally extends from **June to October**.
- Important water infrastructure includes **Getalsud Reservoir, Chandil Dam, Galudih Barrage and Icha Dam**.
- Important places along its course include **Ranchi, Jamshedpur, Chaibasa, Bhadrak and Kirtania Port**.

Other Important News of the day

Persons in News

Gaurang Vyas, Gujarati Music Composer, Dies at 87

 The Times of India

Popular Gujarati singer Gaurang Vyas passes away at 87; PM Narendra Modi mourns veteran arranger-composer

Gaurang Vyas, one of the prominent names in Gujarati music, has passed away in Ahmedabad at the age of 87. The veteran composer, arranger...



Why in News

- **Gaurang Vyas**, a noted Gujarati music composer, arranger and singer, died at **87** in **Ahmedabad** in September 2026.

Musical Legacy

- He was the son of **Avinash Vyas**, a renowned composer and **Padma Shri** awardee.
- He began his career assisting his father in **Jesal Toral** and made his independent debut with **Lakho Phulani**.

Important Fact

- **Gujarati cinema** is a regional film industry based in **Gujarat** and primarily uses the **Gujarati language**.
- **Padma Shri** is one of India's **civilian honours**.

Notable Contributions

- His important works include **Bhavni Bhavai**, **Maniyaro** and **Liludi Dharati**.
- He collaborated with renowned playback singers such as **Lata Mangeshkar**, **Asha Bhosle**, **Kishore Kumar** and **Manna Dey**.

Environment

Osbeckia ulotricha

 Down To Earth

Botanists identify new woolly-haired flowering plant in Agasthyamala Biosphere Reserve

Scientists have identified *Osbeckia ulotricha* in the Western Ghats' shola grasslands, with only about 50 flowering individuals found across...



Why in News

- Scientists from the **Botanical Survey of India (BSI)** discovered a new flowering plant, **Osbeckia ulotricha**, in the Western Ghats.

Taxonomy and Habitat

- **Osbeckia ulotricha** belongs to the **Melastomataceae family** and is endemic to elevations of **1,200–1,500 metres**.

	➤ It occurs in the shola grasslands of the Agasthyamala Biosphere Reserve in the Western Ghats. Distinctive Features ➤ The species is woolly-haired, has leaves clustered at the apex and possesses a sub-globose hypanthium and an ovary crowned with true bristles. ➤ Its hypanthium is urn-shaped with a neck, while flowering and fruiting occur between February and May. ➤ It grows mainly along the damp margins of Tropical Montane Wet Temperate Forests (shola) and Montane Temperate Grasslands. Agasthyamala Biosphere Reserve ➤ The reserve lies in the southern Western Ghats, covering parts of Kerala and Tamil Nadu, and was established in 2001. ➤ It became part of the UNESCO World Network of Biosphere Reserves in 2016. ➤ Its vegetation includes tropical evergreen, semi-evergreen, moist deciduous forests, montane rainforests and shola-grassland ecosystems. ➤ Important rivers originating from the region include Thamirabarani, Neyyar and Karamana. ➤ Important protected areas within the reserve include Shendurney, Peppara and Neyyar Wildlife Sanctuaries and Kalakkad-Mundanthurai Tiger Reserve.
Defence	‘RAKSHA’ Framework  Raksha Mantri unveils ‘RAKSHA’ defence diplomacy document outlining India’s strategic roadmap & vision for global partnerships over next 10 years Raksha Mantri Shri Rajnath Singh released ‘RAKSHA’ document on defence diplomacy in New Delhi on September 03, 2026.  Why in News ➤ The Defence Minister released ‘RAKSHA’, a strategic framework presenting India’s roadmap for defence diplomacy and global defence partnerships over the next 10 years. Strategic Orientation ➤ The framework seeks to strengthen engagement with friendly nations by aligning national security objectives with proactive international cooperation.

	➤ It aims to promote long-term stability, stronger partnerships and India's role in the evolving global security environment. Four Key Pillars ➤ Strategic Partnerships focus on deepening bilateral and multilateral security cooperation. ➤ Capacity Building emphasises joint military exercises, training programmes and sharing of best practices. ➤ Indigenous Exports promote Make-in-India defence platforms to establish India as a global defence manufacturing hub. ➤ Maritime Security seeks to strengthen India's role as a Net Security Provider and First Responder in the Indian Ocean Region.
Science and Technology	Reverse Vaccinology TH The Hindu <u>A first step towards a universal vaccine against pneumonia, meningitis</u> British scientists make a significant advance towards a universal vaccine against pneumonia and meningitis caused by Streptococcus...  Why in News ➤ British scientists have taken an important step towards developing a pneumonia vaccine using reverse vaccinology. Concept and Origin ➤ Reverse vaccinology is an approach that uses bioinformatics and computational analysis to identify potential vaccine targets from pathogen genomes. ➤ The approach enables researchers to model epitopes and develop tailored vaccines with improved efficacy and safety. ➤ The term was coined by Rino Rappuoli in 2000, based on information obtained through whole-genome analysis. Development Process ➤ Genome sequencing is used to identify proteins predicted through <i>in silico</i> analysis to be surface-exposed or secreted. ➤ The identified proteins are subjected to high-throughput immunization and screening. ➤ Selected proteins are produced in laboratories and tested in animal models to assess their ability to safely generate immunity.

	Applications ➤ The method was first applied to developing a vaccine against serogroup B <i>Neisseria meningitidis</i> (MenB). ➤ It has subsequently been applied to pathogens including <i>Bacillus anthracis</i>, <i>Streptococcus pneumoniae</i> and <i>Mycobacterium tuberculosis</i>.
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Uttar Pradesh in News

Indian Railways Approves Kavach 4.0 in Moradabad Division

bt Business Today

Indian Railways approves ₹170 crore for Kavach 4.0 across 712 route km in Moradabad Division

Indian Railways approved Kavach Version 4.0 for the remaining sections covering 712 route kilometres in Northern Railway's Moradabad...



Why in News: Indian Railways has approved **₹170 crore** for implementing **Kavach 4.0** on the remaining **712 Route Kilometres (RKM)** of the **Moradabad Division, Northern Railway**.

Kavach 4.0 and Railway Safety

- **Kavach** is an indigenous **Automatic Train Protection (ATP)** system developed by the **Research Design and Standards Organisation (RDSO)** under Indian Railways.
- Its implementation provides an **advanced safety layer** for train operations across identified railway sections.
- The approved **₹170 crore** project will cover the remaining **712 RKM** of the Moradabad Division.

Modern Signalling Infrastructure

- Indian Railways has approved **₹233 crore** for **Electronic Interlocking** at **21 stations** of the **Samastipur Division, East Central Railway**.
- Electronic Interlocking replaces ageing **relay-based systems** with **computer-based interlocking**.
- The system will strengthen **modern signalling infrastructure** and facilitate Kavach implementation.

Technology and Operational Benefits

- Kavach uses **electronic devices and Radio Frequency Identification (RFID)** installed on locomotives, signalling systems and railway tracks.
- These components communicate using **ultra-high radio frequencies** to support train protection.
- **Electronic Interlocking** provides **higher reliability, faster fault diagnosis, easier maintenance and enhanced operational flexibility**.