

## UPSC Daily Current Affairs| Prelim Bits 31-05-2025

### Stromatolites

*Prelims - General issues on Environmental ecology, Bio-diversity and Climate Change.*

### Why in news?

Recently, 600-million-year-old stromatolite outcrop has been discovered in Chambaghat, Solan district, Himachal Pradesh.

- **Stromatolites** - They are reef-like **bio sedimentary structures** formed by cyanobacteria (blue-green algae) in ancient shallow seas.



- **Time period** - It dates from 3.6 billion years old (Australia) to 600 million years old (recent Himalayan discovery).
- **Distinction from fossils** - If original organism is preserved, it's technically a fossil; if only the *mineralised structure (calcium carbonate precipitates)* is preserved, it's a biosedimentary structure.

### Recent Discovery in the Himalayas

- **Location** - Pine-clad ridges of Chambaghat in Solan district, Himachal Pradesh.
- **Age** - 600 million years old.
- It is found at 5,000-6,000 feet above sea level in entire hill covered with stromatolites, not just isolated samples.
- **Younger stromatolites** - This is the youngest stromatolites in India.

*Oldest stromatolites are found in Dharwad in Karnataka, which are at least 2,500 million years old.*

- **Geological significance** - It is part of the Krol Group of sedimentary rocks that is formed in shallow marine environment of the ancient Tethys Sea.
- It helps to reconstruct the theory of a vanished Tethys Sea in the Himalayan region.
- These structures indicate the shallow marine conditions that once existed before the Indian plate collided with Eurasian plate.
- **Historical significance** - Earth's atmosphere doesn't contain oxygen when it is formed and it is composed of carbon dioxide, methane, and water vapor.
- **Oxygen production** - Cyanobacteria in stromatolites began producing oxygen through photosynthesis around 3.5 billion years ago.
- This contributed to the **Great Oxygenation Event**, making Earth habitable for complex life.

*Great oxidation event occurred around 2.4 billion years ago, transforming Earth's atmosphere and enabling multicellular life.*

- **Threat** - Risk of permanent loss due to development and natural processes such as mining activities, construction and erosion.

#### Other Stromatolite Sites in India

- **Uttarakhand** - Mussoorie, Nainital (Krol Belt formations)
- **Haryana** - Morni Hills (dolomite formations)
- **Uttar Pradesh** - Chitrakoot (Vindhyan limestones), Salkhan (fossil park)
- **Rajasthan** - Jhamarkotra (mining threatened), Zawar, Jaisalmer Fossil Park, Bhojunda, Bilara Group
- **Andhra Pradesh** - Kadapa Basin (Cuddapah Supergroup)
- **Madhya Pradesh** - Kadapa mountains
- **Chhattisgarh** - Chandi Formation
- **Sikkim** - Buxa Formation (declared Geoheritage site)

#### Reference

[Indian Express| 600-million-year-old stromatolites found in Himalayas](#)

#### Tral Wildlife Sanctuary

#### *Prelims: General issues on Environmental ecology*

#### Why in News?

*The Centre has officially designated an Eco-Sensitive Zone (ESZ) around the Tral Wildlife Sanctuary recently.*

- It is situated in the Pulwama district, Jammu and Kashmir.

- It serves as a vital corridor for the remaining population of Hangul in the country.
- This location is one of the rare regions beyond Dachigam National Park where a population of the critically endangered Hangul deer continues to exist.
- **Vegetation** - It primarily consists of Himalayan moist temperate forest, sub-alpine forest, and various types of alpine forest.
- The sanctuary is also connected to other important wildlife areas, such as Overa-Aru Wildlife Sanctuary and Khrew Conservation Reserve.
- **Fauna** - Endemic to Kashmir Musk Deer and Kashmir Gray Langur, as well as threatened species like the Common Leopard, Himalayan Griffon Vulture, Bearded Vulture, and Kashmir Flycatcher.
- **Flora** - It also harbours numerous plant species with significant medicinal value.
- Following the notification, the government can now regulate activities in the area to create a buffer zone, aiding the survival of this vulnerable species.

## Kashmiri Stag

- It is referred to as Hangul, a subspecies of the Central Asian red deer that is native to Kashmir and its neighboring regions.
- This deer inhabits thick riverine forests located in the high valleys and mountainous areas of Jammu and Kashmir, as well as northern Himachal Pradesh.
- In Kashmir, its main habitat is the Dachigam National Park, where it is afforded protection.
- Additionally, a small population has been observed in the Overa-Aru Wildlife Sanctuary situated in southern Kashmir.
- **Conservation status**
  - **Wildlife (Protection) Act, 1972** - Schedule I.
  - **IUCN** - Critically endangered.
- **Threats** - Poaching and Habitat threats.

## Reference

[News 18 | Tral Wildlife Sanctuary](#)

## SEBI's New Framework for Risk Monitoring

**Prelims: Economic and Social Development | Current events of national and international importance.**

### Why in News?

*The Securities and Exchange Board of India (SEBI) has come up with a new framework for risk monitoring and increased the position limits for futures and options.*

- SEBI had changed the method to calculate the value of open interest (OI) from notional value-based to delta-based.
- The new method will weigh OI by the price sensitivity making it impossible to manipulate trades.

- SEBI has also increased the limits for positions for options.
- The net end-of-day open interest limit for options will be **Rs.1,500 crore and gross OI will be at Rs.10,000 crore.**
- For futures, the OI limits are fixed based on the type of investors ranging from 5% of future OI value to 15% of future OI value.
- SEBI has decided not to impose limits on intraday trading.
- Delta-adjusted open interest is a true reflection of the positions taken by traders at large.
- In effect, positions are being assigned weights as per the delta, making the risk management framework stronger.
- SEBI has set a phased timeline for exchanges to implement these steps till September.

## Reference

[The Hindu | New framework on F&O risk monitoring](#)

## Revision on Minimum Support Prices (MSP) for Kharif Crops

**Prelims: Public policy| Government Initiatives | Current events of national and international importance.**

### Why in News?

*The Centre recently announced minimum support prices (MSP) for 14 crops for the 2025-26 Kharif Marketing Season (KMS), with moong seeing the lowest and ragi the highest increase.*

- **Minimum Support Price (MSP)** - MSP for a commodity refers to the price at which the government is obligated to purchase the produce from farmers if the market price falls below this threshold.
- MSPs serve as a baseline for market prices, guaranteeing that farmers obtain a specific minimum compensation to cover their cultivation expenses and potentially generate some profit.
- By utilising these measures, the government provides incentives for the cultivation of specific crops, thus assuring the maintenance of an adequate supply of essential food grains in India.
- **Revised Prices** - In percentage terms, ragi recorded a maximum hike compared to last season.
- Like ragi, another millet crop, jowar also saw almost a double-digit hike in percentage terms in its MSP.
- The MSP of jowar (hybrid) and jowar (Maldandi) has been fixed at almost 10% higher as compared to the last Kharif season.
- The MSP of bajra has been fixed at 5.71% higher compared to the last season.
- In recent years, the government has been promoting millet crops, including ragi and jowar, and has declared them as **Shree Anna.**
- Ragi accounts for just 0.51% of the gross cropped area of the country and is mainly

grown in Karnataka, Tamil Nadu and Maharashtra.

*Major jowar producing states are Maharashtra, Karnataka, Rajasthan, Tamil Nadu and Uttar Pradesh.*

- Moong, a pulse crop, saw the lowest hike of just 0.99%.

*Moong is grown in Rajasthan, Maharashtra, Madhya Pradesh and Karnataka.*

- Like moong, paddy has also seen a low hike in MSP.
- The MSP for paddy (common) and paddy (Grade A) has been fixed at 3% higher compared to the last season.
- The reason for the low hike in MSP for paddy is that the government has record stock of rice in the Central Pool.
- Centre also approved the continuation of the Interest Subvention (IS) component under the Modified Interest Subvention Scheme (MISS) for the financial year 2025-26.
- Under MISS, short-term credit is provided to farmers at an affordable interest rate through the Kisan Credit Card (KCC).

## Reference

[The Indian Express | MSP hike for 14 Kharif crops](#)

## Shangri-la Dialogue

***Prelims: Current events of national and international importance***

### Why in News?

*Chief of Defence Staff General Anil Chauhan will visit Singapore from to attend the 22<sup>nd</sup> edition of the Shangri-La Dialogue.*

- The Shangri-La Dialogue stands as Asia's foremost defense and security summit, uniting defense ministers, military leaders, policymakers, and strategic experts from around the world.
- It is the most influential multilateral security exchange platform in the Asia-Pacific region.
- **Established in** - 2002.
- It has evolved into a pivotal multilateral platform for security discussions in the Asia-Pacific region, taking place annually in June at Singapore's Shangri-La Hotel.
- **Organized by** - International Institute for Strategic Studies (IISS) in London, in collaboration with Singapore's Ministry of Defence.
- The dialogue addresses a comprehensive agenda that reflects the region's security landscape.

- This includes both traditional security concerns, such as territorial disputes and military collaboration, and non-traditional issues like terrorism, cybersecurity, and climate change.
- The format of the dialogue features open general assembly sessions for broad discussions and closed-door meetings for more focused negotiations, fostering mutual understanding and cooperation among participants.

## Reference

[The Hindu | Shangri-La Dialogue](#)

### One Liners 31-05-2025

#### History, Art and Culture

##### **Hindi Journalism Day 2025**

On May 30, 2025, India observes Hindi Journalism Day, commemorating nearly two centuries of vernacular media's democratic, awareness, and cultural contributions.

- **Historical Roots** - The day marks the 1826 launch of 'Udant Martand' by Pt. Jugal Kishor Shukla from Kolkata. As India's first Hindi newspaper, it faced challenges but inspired a mass awakening despite ceasing publication after 79 editions.
- **Significance** - Hindi journalism has disseminated information, preserved Indian languages, empowered non-English speakers, and held authorities accountable, playing a pivotal role in informing and mobilizing public opinion.
- **Thriving Today** - Hindi journalism thrives across print and digital platforms, with major newspapers like Dainik Jagran and Amar Ujala commanding massive readerships, especially in the Hindi heartland.
- **Commemorative** - Events on May 30, 2025, include seminars, awards, workshops, and tributes, reflecting on sector challenges and achievements while highlighting issues like press freedom and digital disruption.
- **Role in Strengthening Democracy** - Hindi journalism remains indispensable to India's democracy, empowering citizens by providing news in a familiar language, fostering civic participation, and serving as a vital source of information in regions with limited English literacy.

##### **Goa Celebrates 39th Statehood Day on May 30**

Goa, known for its beaches and vibrant culture, celebrates its 39th Statehood Day on May 30, marking nearly four decades as a full-fledged Indian state.

- **Journey** - From Colony to Union Territory After over 450 years of Portuguese rule, Goa was liberated in December 1961 by Indian armed forces (Operation Vijay) and became a Union Territory with Daman and Diu.
- **Achieving Full Statehood** - On May 30, 1987, Goa achieved full statehood, becoming India's 25th state, recognizing its unique linguistic, cultural, and historical identity.
- **Significance of the Day** - Goa Statehood Day commemorates its integration into the Indian Union, honoring resistance against colonial rule and promoting awareness of Goan history, culture, and national contributions.

#### Polity & Governance



### **Savarkar Petition Dismissed**

The SC recently dismissed a petition seeking protection for V.D. Savarkar's name under the Emblems and Names (Prevention of Improper Use) Act, 1950.

- **Act's Purpose** - This regulatory legislation, enforced since September 1, 1950, prevents commercial or improper use of national emblems, names, and symbols of public significance or national institutions.
- **Nodal Authority** - The Central Government is the nodal authority, empowered to amend the Schedule and issue rules.
- **Key Objectives** - It aims to prohibit misuse of names/emblems associated with national institutions, protect the dignity of symbols and historic personalities, and maintain decorum in commercial branding.
- **Prohibition & Scope** - Section 3 prohibits using specified names/emblems for business, trade, patents, or advertising without Central Government permission. It applies across India and to Indian citizens abroad.
- **Registration Ban & Penalty** - Section 4 bans registration of companies, trademarks, or patents with protected names/emblems. Misuse carries a fine up to ₹500 (Section 5).
- **Dynamic Schedule** - The Act's dynamic Schedule includes protected items like the Indian National Flag, Mahatma Gandhi's name, and Rashtrapati Bhavan.

### **Battery Aadhaar Unveiled**

At the Battery Summit 2025, Tata Elxsi, in collaboration with Tata Motors, Tata AutoComp, and IIT Kharagpur, launched the Battery Aadhaar initiative to key government stakeholders.

- **Battery Aadhaar** - is a digital identification system for batteries, leveraging secure, blockchain-backed technologies to ensure full traceability throughout their lifecycle.
- **Developed** - Spearheaded by Tata Elxsi's MOBIUS+ platform.
- **Objective** - is to assign unique digital IDs to batteries, enabling safe use, regulated reuse, and efficient disposal, aligning with national and global compliance like the EU Battery Regulation.
- **Features** - MOBIUS+ integrates blockchain for tamper-proof data, tracking manufacturer details, usage history, and material content. It automates regulatory reporting and supports circular economy models.
- **Significant Impact** - The initiative prevents unsafe battery reuse, enhances India's battery supply chain visibility, and promotes eco-conscious innovation within the EV ecosystem.
- **Green Tech Leadership** - Battery Aadhaar strengthens India's commitment to sustainability, supporting the National Electric Mobility Mission Plan (NEMMP) and fostering green tech leadership.

## AA Scheme Rules Eased

The government has eased Advance Authorisation (AA) Scheme rules, allowing duty-free benefits for exporters even if goods shipped before licence issuance, provided the Bill of Entry is filed post-licence date.

- **AA Scheme** - It's a foreign trade policy initiative by DGFT, enabling duty-free import of inputs for manufacturing export products.
- **Scheme's Aim** - To reduce input costs for exporters, boosting the global competitiveness of Indian goods.
- **Key Features** - It permits duty-free import of raw materials, packaging, and fuel. Exports must adhere to Standard Input-Output Norms (SION), and eligibility extends to manufacturer and merchant exporters.
- **Recent Relaxation** - Previously denied, duty exemption is now permitted if the Bill of Entry is filed *after* licence issuance, regardless of shipment date.
- **Impact & Restriction** - This removes ambiguity, streamlines Customs clearance, and boosts exporter confidence. However, it excludes restricted or canalised goods without special DGFT approval.

## International Relations and Issues

### International Day of Potato 2025: "Shaping History, Feeding the Future"

On May 30, 2025, the world observes the second International Day of Potato, highlighting its global impact on food security, culture, and sustainable agriculture.

- **A Crop with Andean Roots** - Originating over 7,000 years ago in the Andes, the potato was domesticated by Indigenous communities, who cultivated diverse heirloom varieties.
- **Global Journey and Impact** - Introduced to Europe during the Columbian Exchange, the potato became a cornerstone of modern agriculture and food security, despite tragedies like the Irish Potato Famine.
- **FAO's 80th Anniversary** - This year's observance coincides with FAO's 80th anniversary, reaffirming its mission to fight hunger and promote sustainable agriculture.
- **Global Staple for Food Security** - Grown in over 150 countries, the nutrient-rich, climate-resilient potato feeds billions, significantly contributing to food security, employment, and income.
- **Challenges** - Challenges include production constraints, biodiversity loss, and value chain strengthening.
- **Opportunities** - lie in empowering women and family farmers to secure the potato's future in sustainable development.

## Environment



## Nurdles

On May 27, Thiruvananthapuram's coast was inundated with nurdles following the May 25 sinking of the MSC ELSA 3, carrying hazardous materials.

- **Nurdles** - Are 1-5mm plastic pellets (polyethene, polypropylene, polystyrene, PVC) used as raw material, classified as primary microplastics.
- **Environmental Threat** - Ingested by marine life, nurdles cause blockages. An estimated 230,000 tonnes pollute oceans annually, harming ecosystems and coastal communities.
- **Past Incidents** - Notable spills include Hong Kong (2012) and Durban (2017), causing severe ecological damage and highlighting transport risks.
- **Composition & Recycling** - Kerala's nurdles are primarily Low-Density Polyethene (LDPE) and High-Density Polyethene (HDPE). LDPE's recycling difficulty complicates waste management.
- **Cleanup and Prevention** - Strategies involve manual cleanups, floating booms, improved packaging, rapid response, and strict regulatory enforcement to prevent future spills.
- **Ongoing Concerns** - The Kerala incident underscores the persistent threat of plastic waste, raising concerns for biodiversity-rich regions as plastic production increases.

## Security

### Red teaming

Launched in May 2025, **Operation Sindoor** marked a significant shift in India's military strategy, notably through its innovative use of "red teaming" in planning.

- **Red teaming** - Is a military strategy where a dedicated group simulates adversary tactics to critically evaluate operational plans and anticipate enemy reactions. In India, it's called '**Vidur Vakta**'.
- **Red Teaming in Action** - For the first time, a five-officer **red team** was embedded in **Operation Sindoor's** planning, challenging strategies and evaluating potential enemy responses.
- **Background and Objective** - The operation responded to a terrorist attack in Pahalgam, targeting nine Pakistan-based terror camps of groups like Jaish-e-Mohammed and Lashkar-e-Taiba.
- **Precision Strikes Utilized** - Operation Sindoor deployed advanced assets, including Rafale jets with SCALP missiles and AASM Hammer bombs, along with BrahMos cruise missiles, for precision strikes.
- **Future of Red Teaming** - Following its success, the Indian Army plans to formalize and expand the '**Vidur Vakta**' program over the next two years, enhancing in-house strategic expertise.

## Science

### **India's First Gene-Edited Sheep**

Sher-e-Kashmir University of Agricultural Sciences and Technology (SKUAST-Kashmir) has successfully produced India's first gene-edited sheep, boasting a 30% increase in muscle mass.

- **What It Is** - This genetically modified lamb has an edited myostatin gene, which naturally regulates muscle growth, developed by SKUAST-Kashmir.
- **Technology Used** - The project utilized the Nobel Prize-winning CRISPR-Cas9 gene editing technique, adhering to international biosafety protocols, ensuring no foreign DNA insertion.
- **Features** - The sheep exhibits 30% higher muscle mass, similar to European breeds. It is non-transgenic, increasing regulatory acceptance, and the technology can be extended for disease resistance and improved reproduction.
- **Significance for Livestock** - This achievement offers a blueprint for enhancing meat yield and quality in Indian sheep, boosting the livestock sector and positioning India in advanced genome editing research.
- **Future Implications** - It aligns with India's evolving biotech policy and supports sustainable livestock farming by increasing productivity per animal, building on SKUAST's past success with cloned Pashmina goat, 'Noori'.
- 

### **Miscellaneous**

#### **Kami Rita Sherpa: Everest Record Breaker**

Recently, a 55-year-old Kami Rita Sherpa summited Mount Everest for the 31st time, extending his own record. Leading an Indian Army team, his achievement highlights Sherpa mountaineering expertise.

- **Sherpas** - are a Tibetan ethnic group from the Himalayas, renowned for their mountaineering skills. The term "Sherpa" is also used for delegates facilitating discussions at summits.
- **Kami Rita's Legacy** - Nicknamed the "Everest Man," Kami Rita first climbed Everest in 1994 and has scaled it annually since, showcasing remarkable professionalism and skill.
- **Everest Climbing Eligibility** - Climbers must be over 18, complete recognized mountaineering courses, demonstrate fitness, and have high-altitude experience. The Nepal Tourism Board regulates applications.
- **Sherpas' Vital Role** - Sherpas are crucial to expeditions, providing terrain and weather knowledge, enhancing climber safety, and contributing significantly to mountaineering success.
- **Challenges and Sustainability** - Everest climbing presents challenges like extreme weather and altitude sickness. Kami Rita advocates for sustainable practices amidst environmental concerns from increased mountain traffic.



**SHANKAR**  
**IAS PARLIAMENT**  
*Information is Empowering*