



## **DAILY CURRENT AFFAIRS 13-11-2025**

### **GS-1**

1. Peru

### **GS-3**

2. Melatonin

3. Lichen

4. Mahuadán Wolf Sanctuary

5. Nugu Wildlife Sanctuary

## **Peru**

**Syllabus: GS-1; Geography Mapping, GS-2; International Relations**

### **Context**

- The **9th round of India-Peru Trade Agreement negotiations** was recently concluded in **Peru**, marking a significant step towards enhancing bilateral economic cooperation.

### **About Peru**



### **Location:**

- Situated just **south of the Equator** in **South America**.
- **3rd largest country** in South America (after Brazil and Argentina).

### **Bordering Countries:**

- **Ecuador** – North
- **Brazil** – East
- **Bolivia** – Southeast
- **Chile** – South

### **Bordering Ocean:**

- **Pacific Ocean – West**

### **Capital City:**

- **Lima**

### **Geographical Features**

- **Three Major Regions:**
  - **Costa:** Arid coastal strip along the Pacific Ocean.
  - **Sierra:** Andes mountain region running through central Peru.
  - **Amazonia:** Eastern tropical rainforest region.
- **Andes Division:**
  - **Cordillera Occidental, Central, and Oriental** ranges.
- **Highest Peak:**
  - **Mount Huascarán (6,768 m)**
- **Major Rivers:**
  - **Amazon, Ucayali, Madre de Dios**
- **Major Lakes:**
  - **Lake Titicaca** – World's **highest navigable lake**, shared with **Bolivia**.

### **Climate**

- **Varies regionally:**
  - **Tropical** in the east (Amazon Basin)
  - **Arid desert** in the west (coastal region)
  - **Temperate to frigid** in the Andes

### **Natural Resources**

- **Metals:** Copper, Silver, Gold, Iron ore
- **Energy & Minerals:** Petroleum, Coal, Natural gas, Phosphate, Potash
- **Forestry:** Timber

### **Significance for India**

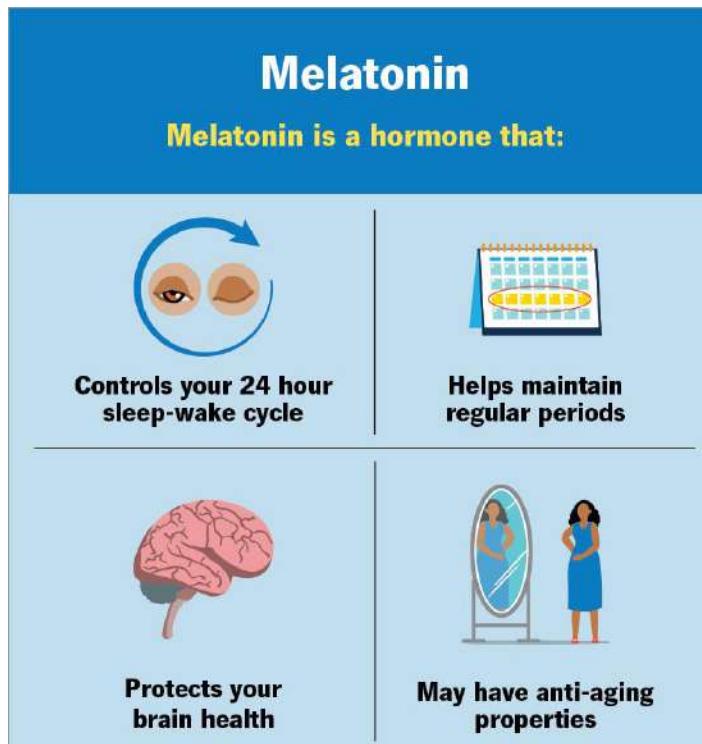
- The **India-Peru Trade Agreement** aims to strengthen **South-South cooperation** and diversify India's engagement with **Latin America**, especially in **minerals, energy, and agriculture trade**.

## Melatonin

**Syllabus: GS-3; General Science**

### **Context**

- Recently, **doctors have raised concerns** about the growing trend of people taking **melatonin supplements without medical supervision**. Experts warn that unregulated use can disrupt natural sleep cycles and cause unwanted side effects.



### **About Melatonin**

- Melatonin is a **naturally occurring hormone** in the human body that regulates the **sleep-wake cycle** (circadian rhythm).
- It is **secreted by the pineal gland**, located in the brain.
- **Production increases in the evening** when it gets dark, promoting sleep, and **decreases with exposure to light**, helping us stay awake.
- Melatonin secretion **peaks in the middle of the night** and **declines toward morning**, preparing the body to wake up.
- It typically **takes 30-45 minutes** after secretion (or supplementation) to induce drowsiness.

### **Synthetic Melatonin**

- Melatonin can also be **synthesized in laboratories** and sold as a **dietary supplement**—known as **exogenous melatonin**.
- It is commonly used by people suffering from **sleep disorders, jet lag, or irregular work schedules** (like shift workers).

### Concerns & Side Effects

- **Overuse or unsupervised intake** can lead to:
  - **Headaches**
  - **Hormonal imbalances**
  - **Mood swings**
  - **Daytime drowsiness**
  - **Disruption of natural sleep rhythm**
- Doctors emphasize that melatonin should **not be used as a regular sleep aid** without consulting a healthcare professional.

## Lichen

### Syllabus: GS-3; Biodiversity

#### Context

Researchers have discovered **four new lichen species** in the **Western Ghats**, expanding understanding of biodiversity in the region.

- **Discovered Species:**
  1. *Parmotrema sahyadricum* – from **Wayanad**
  2. *Solenopsora rhizomorpha* – from **Ervikulam and Mathikettanshola National Parks**
  3. *Buelloa ghattensis* – from **Mathikettanshola National Park**
  4. *Pyxine janakiae* – from **Mathikettanshola National Park**



### Background:

- Research began in **2022**.
- Over **50 additional species** were newly recorded for **Kerala's part of the Western Ghats**.
- Findings were published in **international scientific journals**.

### About Lichen

- **Nature:** A **symbiotic association** between a **fungus** (provides structure, shade, and water absorption) and an **alga or cyanobacterium** (performs photosynthesis).
- **Body:** Called a **thallus**, anchored by **rhizines**.
- **Habitat:** Found globally—on **rocks, bark, and soil surfaces**—tolerating extreme environments.

### Ecological Importance of Lichens

- **Pioneer Species:** First to colonize barren surfaces, aiding **soil formation**.
- **Bioindicators:** Sensitive to **air pollution**, indicating environmental quality.
- **Ecosystem Role:**
  - Provide **food and shelter** for animals (deer, rodents, birds).
  - Used by **birds for nesting materials**.

- Protect surfaces from **weathering** (rain, wind, snow).

## **Mahuadanr Wolf Sanctuary**

**Syllabus: GS-3; Biodiversity**

### **Context**

- Hidden deep in the Latehar district of **Jharkhand**, the **Mahuadanr Wolf Sanctuary**—India's **first and only wolf sanctuary**—continues to attract attention for its unique ecosystem and conservation challenges.



- The sanctuary, though lesser-known, plays a crucial role in protecting the **Indian grey wolf (*Canis lupus pallipes*)**, one of the most elusive and endangered predators of the Indian grasslands.

### **About Mahuadanr Wolf Sanctuary**

- **Location:** Latehar district, Jharkhand
- **Area:** ~63 sq km
- **Declared:** 1976
- **Part of:** Palamau Tiger Reserve
- **River System:** Drained by the **Burha River**, which meets the **Aksi River** and later joins the **North Koel River** near Kujrum.
- **Core Zone:** The **Chechari (Mahuadanr) Valley**

The landscape comprises **sal forests, rocky plateaus, scrublands, and river valleys**, forming ideal habitats for wolves, leopards, sloth bears, hyenas, and deer.

### **Indian Grey Wolf (*Canis lupus pallipes*)**

- One of the **smallest wolf subspecies** globally.
- Prefers **semi-arid and scrubland ecosystems**.
- Hunts mainly **at dusk and night**; forms smaller packs.
- Estimated population in India: **2,000–3,000** individuals.

### **Conservation Status:**

- *IUCN Red List*: Endangered (Indian population)
- *Wildlife (Protection) Act, 1972*: Schedule I species

### **Significance:**

- The Mahuadanr Wolf Sanctuary remains a **symbol of India's grassland conservation efforts** and a reminder that **predator protection is not limited to tigers and lions**, but also includes species adapted to dry, open habitats crucial for ecological balance.

## **Nugu Wildlife Sanctuary**

### **Syllabus: GS-3; Biodiversity**

### **Context**

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- A farmer was recently **killed in a tiger attack** near the **Nugu Wildlife Sanctuary** in Mysuru district, Karnataka.

### About Nugu Wildlife Sanctuary

- **Location:** Mysuru district, Karnataka
- **Situated:** North of Bandipur National Park
- **Area:** ~30 sq. km
- **Major Feature:** The **Nugu Reservoir** occupies the northern part of the sanctuary.
- **River:** Nugu River, a tributary of the Cauvery, flows through the area.
- **Nugu Dam:** Built across the Nugu River.

### Legal & Ecological Status

- **Declared as Wildlife Sanctuary:** 1974
- **Added to Nilgiri Biosphere Reserve:** 2003-2004

### Climate & Vegetation

- **Rainfall:** Receives from both southwest and northeast monsoons (~1000 mm annually).
- **Vegetation Type:** Predominantly **dry deciduous forest** with patches of **plantations**.

### Flora

Key tree species:

- *Dipterocarpus indicus*
- *Calophyllum tomentosum*
- *Hopea parviflora*

### Fauna

- **Mammals:** Tiger, Leopard, Elephant, Wild Dog, Striped Hyena, Sloth Bear, Gaur, Sambar, Chital, Four-horned Antelope
- **Riverine species:** *Smooth-coated Otter, Marsh Crocodile*
- **Birds:** Peafowl, Indian Ring Dove, Grey Junglefowl, Brahminy Kite, Grey-headed Fish Eagle

### Significance

- Important **ecological corridor** connecting **Bandipur** and **Nilgiri** regions.
- Known for **high biodiversity** and **riverine ecosystem** conservation.