



Peatland Conservation

For Prelims: Peatlands, [Wetlands](#), [Wetlands \(Conservation and Management\) Rules, 2017](#), [carbon sequestration](#)

For Mains: [National Wetland Inventory & Assessment](#), Significance of Wetlands, Challenges in Wetland Conservation

[Source: DTE](#)

Why in News?

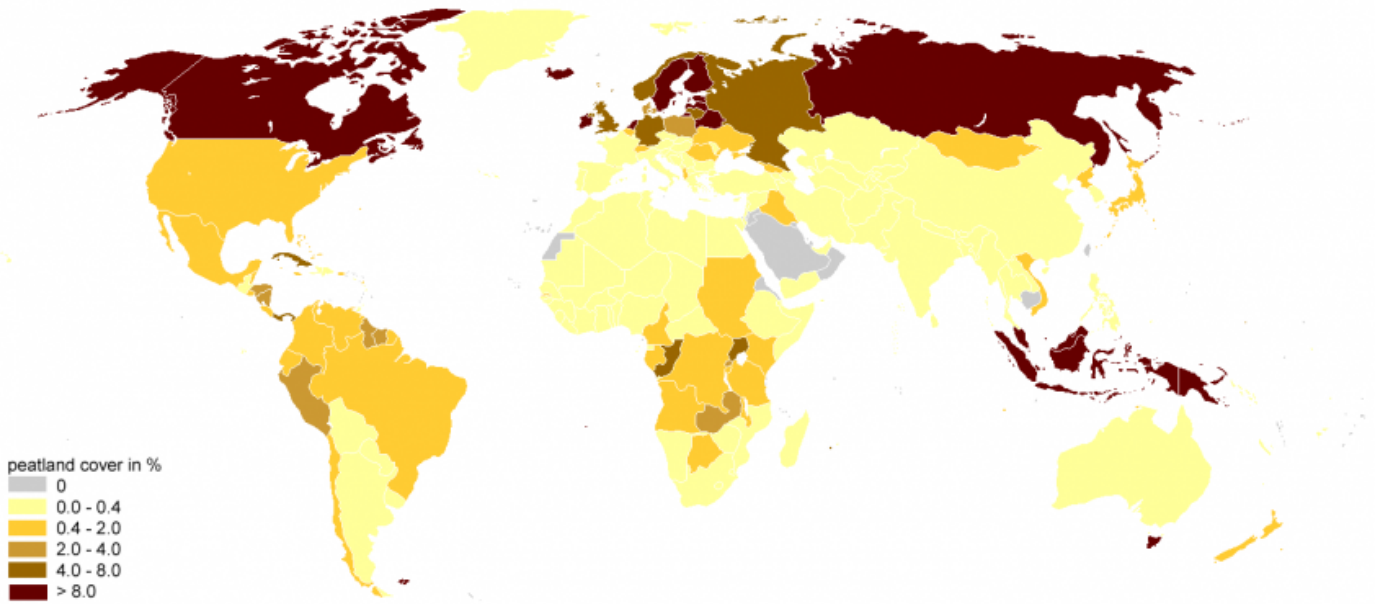
A recent study has highlighted the alarming state of under-protection of **peatlands**, which are crucial for **carbon storage** and **climate regulation**.

What are the Key Highlights of the Study About Peatland?

- **Limited Protection:** Only **17% of global peatlands** are under legal protection, far less than other critical ecosystems such as **mangroves (42%)** and **saltmarshes (50%)** and **tropical forests (38%)**.
- **High Human Pressure:** Around **22% of global peatlands face high human pressure** (mainly in **Europe** and **US**).
- **Freshwater Security and Biodiversity:** Peatlands contain **10% of the world's unfrozen freshwater** and support diverse ecosystems.
- **Indigenous Role in Conservation:** **27% of global peatlands** are on **indigenous people's land**, where traditional conservation practices have led to **better ecosystem preservation**, yet 85% remain outside formal conservation frameworks.
- **Carbon Storage and Climate Impact:** Peatlands store **600 gigatonnes of carbon**, more than all the world's forests combined, but, when degraded they release **CO₂**, **2-5% of annual human-driven greenhouse gas emissions**.

What are Peatlands?

- **About:**
 - Peatlands are **terrestrial [wetland](#) ecosystems** characterized by **waterlogged conditions** that prevent complete decomposition of plant material, leading to the **accumulation of peat (type of soil)**.
 - They **store more carbon than any other terrestrial ecosystem**, making them crucial for climate regulation.
- **Global Distribution:**
 - Peatlands cover approximately **4.23 million km² (2.84% of Earth's terrestrial surface)** and are found in every **climatic zone**.
 - **Canada, Russia, Indonesia, the US and Brazil** contain **70%** of global peatlands.



▪ Types:

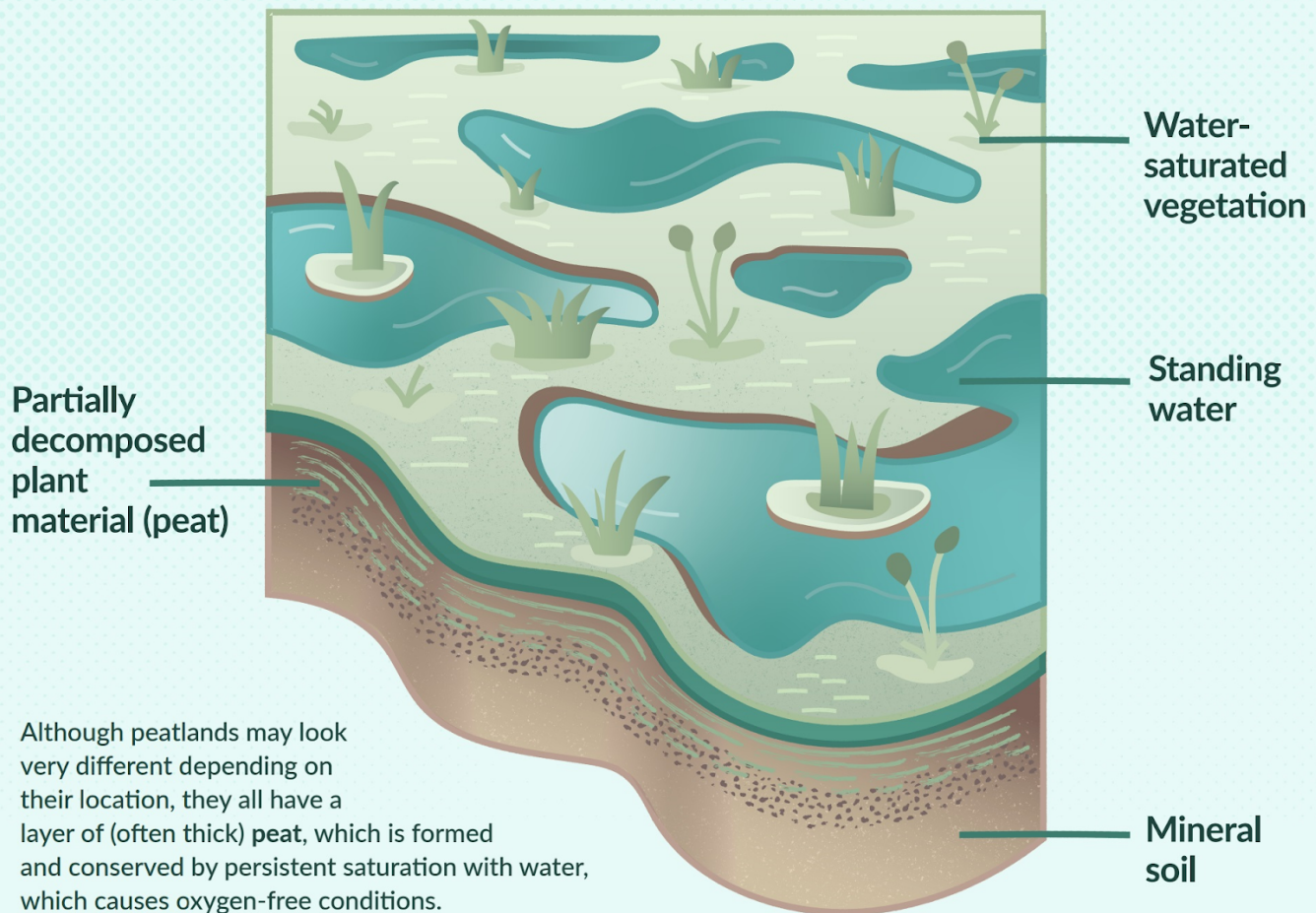
- **Northern and Temperate Peatlands:** Predominantly found in **Europe, North America, and Russia**, formed under high precipitation and low temperature conditions.
- **Tropical Peatlands:** Found in **Southeast Asia, Central and South America, Africa, and Australasia**, often associated with rainforests and mangroves.

▪ Significance:

- **Water Security & Disaster Risk Reduction:** Peatlands play a crucial role in **regulating water flows**, mitigating **floods, droughts, and seawater intrusion**.
 - Healthy peatlands (**soggy and spongy**) help **lower temperatures, prevent wildfires**, and **naturally filter water** for safe drinking, while poor drainage leads to water pollution.
- **Biodiversity Conservation:** Peatlands are **biodiversity hotspots**, supporting **endangered species** like the **Bornean orangutan**.
 - They also **preserve archaeological** and ecological records such as pollen data and ancient artefacts.
- **Preventing Zoonotic Disease Risk:** Peatland degradation increases **human-wildlife interaction**, raising the **risk of zoonotic diseases** like Ebola and HIV/AIDS (originating from Congo's peatlands).
 - Biodiversity loss also fuels vector-borne diseases like malaria and dengue.
- **Livelihoods & Economic Importance:** They support **local economies, traditional knowledge, and cultural heritage** by providing food, fibre, and raw materials.

What Are Peatlands?

Peatlands are a type of wetland found in many parts of the world.



Read More:

- [What are Wetlands?](#)
- [What is the Ramsar Convention on Wetlands?](#)

What are the Challenges in Peatland Conservation?

- **Weak Legal Protection:** Only **17% of global peatlands** are under legal protection.
 - **Weak enforcement, bureaucratic delays, and competing interests** hinder restoration efforts.
- **Economic Exploitation:** Peatlands face **large-scale drainage for cash crops** (palm oil, rice), industrial agriculture, forestry, **and peat extraction**, while **urbanization and infrastructure expansion** drive **irreversible degradation**.
- **Climate Change & Natural Degradation:** Rising **temperatures and droughts accelerate peatland drying**, increasing **wildfires and CO₂ emissions**, while human activities further disrupt their ecosystem balance.
- **Financial Constraints:** **Limited funding** for conservation and **short-term economic priorities** often lead to **unsustainable land use, undermining restoration efforts**.
- **Weak Indigenous Land Rights:** Over **85% of peatlands on indigenous peoples'**

lands are not part of other protected areas.

- Limited awareness and research gaps further hinder effective policy measures.

Way Forward

- **Protect & Sustain: Stop harmful activities** like draining and converting peatlands for farming while promoting **sustainable peatland management** to ensure long-term carbon sequestration.
- **Restoration & Rewetting: Replenish water levels to revive peatlands**, making them **effective for storing carbon** and reducing emissions sustainably.
- **Policy & Legal Framework:** Establish **clear national and global targets for peatland restoration**, include them in climate action plans under the Paris Agreement, and strengthen laws to prevent further damage.
- **Standardized Definitions:** Adopt **globally consistent definitions** of peatlands prioritizing **conservation, restoration, and sustainable management** over industrial interests.
- **Global Cooperation & Knowledge Sharing:** Strengthen international efforts under **UNEP, FAO, Ramsar Convention**, and **IUCN** to map, protect, and restore peatlands, monitor emissions, and engage local communities for sustainable management.
- **Inclusion in Climate Agreements: Recognize peatlands as vital ecosystems** in global climate and biodiversity frameworks and **incorporate their restoration into national climate action plans under the UNFCCC.**

Drishti Mains Question:

Peatlands are vital for climate regulation and biodiversity but face degradation due to weak protection and exploitation. Discuss their significance and suggest measures for sustainable conservation

UPSC Civil Services Examination Previous Year Question (PYQ)

Prelims

Q. If a wetland of international importance is brought under the 'Montreux Record', what does it imply? (2014)

- (a) Changes in ecological character have occurred, are occurring or are likely to occur in the wetland as a result of human interference.
- (b) The country in which the wetland is located should enact a law to prohibit any human activity within five kilometers from the edge of the wetland.
- (c) The survival of the wetland depends on the cultural practices and traditions of certain communities living in its vicinity and therefore the cultural diversity therein should not be destroyed.
- (d) It is given the status of 'World Heritage Site.'

Ans: (a)

Mains

Q. What is wetland? Explain the Ramsar concept of 'wise use' in the context of wetland conservation. Cite two examples of Ramsar sites from India. (2018)

