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Glaw Lake Becomes India's 101st Ramsar Site, Strengthening Wetland Conservation and International Ecological Commitments

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Recent Developments:

- **Glaw Lake** in **Arunachal Pradesh** has been designated as **India's 101st Ramsar Site**, becoming the **first Wetland of International Importance** in the state under the **Ramsar Convention on Wetlands**.
- The addition has increased India's **Ramsar Site network from 26 sites in 2014 to 101 sites in 2026**, reflecting the country's growing commitment towards **wetland conservation, biodiversity protection, and climate resilience**.

About Glaw Lake:

Location:

- **Glaw Lake** is a **pristine freshwater lake** situated inside the **Kamlang Tiger Reserve and Wildlife Sanctuary** in **Lohit district, Arunachal Pradesh**, within the **Eastern Himalayas**.
- The lake forms part of a **high-altitude Himalayan wetland ecosystem** that supports diverse flora and fauna.

Physical Features:

- The lake is **fed by perennial mountain streams**, ensuring year-round freshwater availability.
- Dense natural forests surrounding the lake help maintain its **hydrological balance, water quality, and ecological integrity**.
- The catchment area remains largely undisturbed, enhancing the lake's conservation value.

Biodiversity:

- The wetland and its catchment support **more than 150 tree species** and **49 orchid species**, making it an important **biodiversity hotspot**.
- The ecosystem provides habitat for numerous **birds, mammals, amphibians, reptiles, insects**, and other Himalayan wildlife.
- The lake contributes to the ecological connectivity of the **Kamlang Tiger Reserve landscape**.

Significance:

- The Ramsar designation will strengthen **wetland conservation, scientific management, and international recognition**.
- The lake will contribute to **biodiversity conservation, water security, carbon sequestration, climate change adaptation, and disaster resilience**.
- The recognition is expected to support **community-based conservation, sustainable livelihoods, ecotourism, and improved wetland governance**.

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Ramsar Convention on Wetlands:

Introduction:

- The **Ramsar Convention on Wetlands** is the world's first global treaty dedicated exclusively to the **conservation and wise use of wetlands**.
- The Convention was **adopted on 2 February 1971** at **Ramsar, Iran**, and entered into force on **21 December 1975**.
- **India became a Contracting Party on 1 February 1982**.
- The **Ramsar Secretariat** is located at **Gland, Switzerland**, and is hosted by the **International Union for Conservation of Nature (IUCN)**.

Objectives:

- To promote the **conservation, restoration, and wise use** of wetlands.
- To maintain the **ecological character** of wetlands.
- To strengthen **international cooperation**, particularly for **transboundary wetlands** and **migratory species**.
- To integrate wetlands into **national planning, water resource management, and sustainable development**.
- To enhance **public awareness, research, and capacity building** for wetland conservation.

Three Pillars of the Convention:

- **Wise Use of Wetlands:** Promote sustainable management through policies, legislation, scientific planning, and community participation.
- **Designation of Ramsar Sites:** Identify and effectively manage wetlands of international importance.
- **International Cooperation:** Encourage collaboration on shared wetlands, river basins, migratory species, scientific research, and technical assistance.

International Organization Partners (IOPs):

- **BirdLife International**
- **International Union for Conservation of Nature (IUCN)**
- **International Water Management Institute (IWMI)**
- **Wetlands International**
- **WWF International**

Wetlands:

Definition:

- Wetlands are areas where **water permanently or seasonally covers the land**, creating ecosystems that support specialized plant and animal communities.
- Under the Ramsar Convention, wetlands include both **natural** and **human-made** ecosystems.

Types of Wetlands Covered under Ramsar:

- **Natural Wetlands:** Lakes, rivers, marshes, swamps, peatlands, floodplains, estuaries, deltas, mangroves, coral reefs, lagoons, mudflats, underground aquifers, oases.
- **Human-made Wetlands:** Reservoirs, rice fields, fish ponds, salt pans, irrigation canals, wastewater treatment ponds.

Importance of Wetlands:

- Wetlands conserve **biodiversity** by providing habitat for numerous species.

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- Wetlands regulate the **hydrological cycle** through groundwater recharge, water storage, and flood moderation.
- Wetlands improve **water quality** by filtering sediments, nutrients, and pollutants.
- Wetlands function as major **carbon sinks**, contributing to **climate change mitigation**.
- Wetlands support **food security, fisheries, agriculture, ecotourism, and livelihoods**.
- Wetlands reduce the impacts of **floods, droughts, and coastal storms**, improving climate resilience.

Major Threats:

- Urbanization and infrastructure expansion.
- Agricultural encroachment and land-use change.
- Pollution from industrial, domestic, and agricultural sources.
- Invasive alien species.
- Overexploitation of natural resources.
- Climate change, altered hydrological regimes, and habitat fragmentation.

Ramsar Site Selection Criteria:

Ecological Criteria:

- The wetland represents a **rare, unique, or representative** wetland type.
- The wetland supports **threatened, endangered, or critically endangered** species.
- The wetland maintains important **ecological communities**.

Species-based Criteria:

- The wetland supports significant populations of **waterbirds**.
- The wetland provides habitat during **breeding, migration, wintering**, or other critical life-cycle stages.
- The wetland plays an important role in sustaining **fish diversity, spawning grounds, and aquatic food webs**.

Ramsar Sites in India:

Current Status:

- India currently has **101 Ramsar Sites**, the **highest number in Asia**.
- Ramsar Sites are distributed across diverse ecosystems, including **high-altitude lakes, floodplain wetlands, coastal lagoons, mangroves, reservoirs, and bird sanctuaries**.

Importance for India:

- Ramsar recognition improves **international visibility** of important wetlands.
- It encourages **scientific monitoring, integrated management, and community participation**.
- It strengthens India's commitments under the **Convention on Biological Diversity (CBD), Sustainable Development Goals (SDGs), and climate action frameworks**.

Montreux Record:

Overview:

- The **Montreux Record** is a register of Ramsar Sites where the **ecological character has changed**, is changing, or is likely to change because of human activities or other threats.
- The Record helps prioritize **technical assistance, monitoring, and restoration efforts**.

Indian Ramsar Sites in the Montreux Record:

- **Keoladeo National Park**, Rajasthan.
- **Loktak Lake**, Manipur.

Related Government Initiatives:

National Plan for Conservation of Aquatic Ecosystems (NPCA):

- NPCA is the central umbrella programme for the conservation and integrated management of **lakes** and **wetlands**.

Amrit Dharohar Scheme:

- The scheme promotes **community participation**, **nature-based livelihoods**, **ecotourism**, and **conservation of Ramsar Sites** while enhancing local income generation.

Wetlands (Conservation and Management) Rules, 2017:

- The Rules provide the legal framework for **identification**, **notification**, **protection**, and **sustainable management** of wetlands in India.

National Wetland Inventory and Assessment (NWIA):

- Conducted by **ISRO**, the programme maps and monitors wetlands using **remote sensing** and **GIS technologies**.

Challenges in Wetland Conservation:

Ecological Challenges:

- Habitat degradation and biodiversity loss.
- Hydrological alterations caused by dams and diversions.
- Sedimentation, eutrophication, and pollution.

Governance Challenges:

- Weak enforcement of environmental regulations.
- Fragmented institutional coordination.
- Limited ecological monitoring and scientific data.
- Conflicts between development priorities and conservation needs.

Way Forward:

Integrated Conservation Strategy:

- Strengthen **catchment area management** and **ecosystem-based conservation**.
- Enhance **community-led wetland governance** and livelihood diversification.
- Promote **scientific monitoring**, **remote sensing**, and **early warning systems**.
- Improve **inter-state** and **international cooperation** for transboundary wetland management.
- Integrate wetlands into **climate adaptation**, **disaster risk reduction**, and **river basin planning**.

Value Addition for UPSC:

Important Facts:

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- **World Wetlands Day: 2 February** (marks the adoption of the Ramsar Convention in 1971).
- **Convention Adopted: 2 February 1971**, Ramsar, Iran.
- **Convention Entered into Force: 21 December 1975.**
- **India Joined: 1 February 1982.**
- **Ramsar Secretariat: Gland, Switzerland.**
- **India's Ramsar Sites (2026): 101, the highest in Asia.**
- **First Ramsar Site of Arunachal Pradesh: Glaw Lake**