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5. SURHA Taal - India's 100th Ramsar Site and Wetland Conservation Milestone - Environment

On World Environment Day 2026 (June 5), India designated Jai Prakash Narayan Bird Sanctuary (Surha Taal) in Uttar Pradesh as its **100th Ramsar Site —** a landmark milestone in India's wetland conservation journey. India joined the Ramsar Convention in 1982 with Chilika Lake and Keoladeo National Park as its first two sites, and now leads Asia with the largest Ramsar site network, holding the 3rd largest globally by number. The designation coincides with India's submission of its Seventh National Report (NR-7) to the Convention on Biological Diversity (CBD), reflecting India's deepening commitment to global biodiversity frameworks.

1. About Surha Taal (Jai Prakash Narain Bird Sanctuary)

Location

1. Located in **Ballia district, Uttar Pradesh**
2. Situated in the **middle Ganga basin**
3. Strategically positioned along the Central Asian Flyway (CAF)

Wetland Type

1. **Natural perennial oxbow lake** formed from an abandoned meander of the Ganga River
2. Fed by **three freshwater channels**
3. Functions as important source of -
    1. Irrigation for surrounding agricultural areas
    2. Groundwater recharge for local communities

Formation and History

1. Created in **1991** by consolidating lands of **45 villages**
2. Covering **3,432.93 hectares**
3. Renamed **Jai Prakash Narain Bird Sanctuary in 2002** (honoring Jayaprakash Narayan, socialist leader, Ballia's most famous son)

Ecological Features

1. Characterized by floodplains, marshes, seasonally inundated areas, agricultural wetlands
2. Serves as **key wintering habitat for migratory birds** along the Central Asian Flyway (CAF)
3. Rich biodiversity - Waterbirds, fish species, aquatic vegetation, amphibians
4. Supports local fisheries providing livelihoods to surrounding communities

2. About Oxbow Lake

Formation

1. Crescent- or horseshoe-shaped water body formed when a river **cuts off one of its meanders (loops)** from the main channel
2. **Process -**
    1. River develops pronounced meander (loop) through lateral erosion
    2. Erosion on outer bends, deposition on inner bends
    3. Neck of meander narrows over time
    4. River breaches neck during floods taking shorter course
    5. Abandoned meander loop isolated → becomes oxbow lake

6. Deposition seals connection with river

Characteristics

1. Detached water body that was once part of the river
2. May be permanent or seasonal depending on water supply
3. Crescent/horseshoe shape reflecting original meander curve
4. Shallower than main river channel
5. Examples in India - Kanwar Lake (Bihar), various oxbow lakes along Brahmaputra, Ganga floodplains

Ecological Importance

1. Valuable wetland ecosystem supporting -
    1. Biodiversity (birds, fish, amphibians, aquatic plants)
    2. Fisheries providing rural livelihoods
    3. Groundwater recharge
    4. Migratory bird habitat
    5. Carbon sequestration

3. What are Wetlands?

Definition

1. Areas where water is the **primary factor controlling the environment** and associated plant, animal life
2. **Ramsar Convention Definition -** Areas of marsh, fen, peatland, or water (natural/artificial, permanent/temporary, fresh/brackish/saline) including marine waters up to **6 metres depth at low tide**
3. **Indian Definition (Wetlands Conservation and Management Rules, 2017) -** Excludes River channels, paddy fields, drinking-water tanks, aquaculture ponds, salt pans, and irrigation structures

Three Types

1. **Inland wetlands -** Lakes, rivers, swamps, marshes, peatlands
2. **Coastal wetlands -** Mangroves, coral reefs, tidal flats, estuaries, lagoons
3. **Human-made wetlands -** Reservoirs, aquaculture ponds, rice paddies, salt pans

4. Ramsar Convention on Wetlands

Origin

1. Adopted in **1971 at Ramsar, Iran;** came into force **1975**
2. **First global treaty focused on a specific ecosystem**
3. Currently 172 contracting parties

Three Pillars

1. **Conservation** of wetlands of international importance
2. **Wise use** of all wetlands (sustainable use maintaining ecological character)
3. **International cooperation** on shared wetlands and migratory species

Ramsar Site Designation Criteria

A wetland qualifies if it -

1. Supports vulnerable, endangered, or critically endangered species
2. Threatened ecological communities
3. Regularly supports **20,000 or more waterbirds**
4. Important source of food for fish, spawning grounds, nurseries
5. Representative example of natural wetland type in biogeographic region

India and Ramsar

1. **Joined Convention - 1982**
2. **First two sites -** Chilika Lake (Odisha), Keoladeo National Park (Rajasthan)
3. **100th site -** Surha Taal, Uttar Pradesh (2026)
4. **Largest Ramsar network in Asia**
5. **3rd largest globally** by number of sites (after UK, Mexico)
6. **State with most Ramsar sites -** Tamil Nadu (20 sites as of 2026)
7. **Largest Ramsar site -** Sundarbans (West Bengal, ~4,23,000 hectares)

World Wetlands Day

1. Observed annually on **February 2**
2. Marks anniversary of Ramsar Convention adoption (1971)
3. Promotes global wetland conservation awareness

5. Significance of Wetlands

Biodiversity Hotspots

1. Occupy only **~6% of Earth's land area**
2. Support nearly **40% of all plant and animal species**
3. Critical habitat for migratory birds, freshwater fish, amphibians

Natural Flood Control

1. Act as natural sponges absorbing excess rainfall, reducing flood risks
2. Wetlands can store up to 1 million gallons of flood water per acre
3. Protecting downstream communities from flash floods

Water Purification

1. Known as **"Kidneys of the Landscape"**
2. Filter pollutants, sediments, nutrients improving water quality
3. Natural wastewater treatment through vegetation, microbial activity

Climate Regulation

1. Important **carbon sinks** storing carbon in soils, vegetation
2. Peatlands store ~30% of world's soil carbon despite covering only 3% of land
3. **Blue carbon ecosystems** (mangroves, seagrasses) highly efficient carbon stores

Coastal Protection

1. Protect nearly **60% of global population** living near coastlines
2. Buffer against storm surges, cyclones, tsunamis
3. Mangroves reducing wave energy by 50-70%

Other Benefits

1. **Groundwater recharge -** Replenishing aquifers for drinking, agriculture
2. **Fisheries -** Supporting global fisheries worth billions annually
3. **Tourism and recreation -** Eco-tourism, birdwatching generating livelihoods
4. **Cultural significance -** Sacred sites, traditional livelihoods of indigenous communities

6. Central Asian Flyway (CAF)

1. One of world's major bird migration routes
2. Extends from **Arctic and subarctic regions of Siberia and Central Asia to South Asia, Southeast Asia, and Australia**
3. Passes through India's major wetlands (Chilika, Keoladeo, Loktak, Surha Taal)
4. Millions of migratory birds including ducks, geese, cranes, waders using CAF annually
5. India's Ramsar sites providing critical stopover, wintering habitats

7. Threats to Wetlands in India

1. **Encroachment and land conversion** for agriculture, urban development
2. **Pollution** from industrial effluents, agricultural runoff, sewage
3. **Invasive species** (water hyacinth) choking wetland systems
4. **Overexploitation** of fisheries, sand mining
5. **Climate change** altering water regimes, increasing drought/flood extremes
6. **Lack of community awareness** about wetland ecosystem services

8. Way Forward

1. Strengthen **Wetland Health Card** system monitoring ecological status
2. Integrate wetland conservation into **climate adaptation planning**
3. Expand **community-based wetland management** involving fisherfolk, farmers
4. Enforce **Wetlands (Conservation and Management) Rules 2017** strictly
5. Develop **wetland tourism** generating alternative livelihoods reducing encroachment pressure
6. Align India's wetland targets with **KMGBF 30×30** goal

9. Conclusion

India's designation of Surha Taal (Ballia, UP) as its 100th Ramsar Site on World Environment Day 2026 marks a historic conservation milestone — reflecting India's largest Asian Ramsar network commitment to protecting wetland ecosystems that occupy 6% of Earth's land yet support 40% of all species. The oxbow lake's role as critical wintering habitat on the Central Asian Flyway, groundwater recharge source, and irrigation support system exemplifies why wetlands deserve "Kidneys of the Landscape" recognition, demanding sustained community participation, strict regulatory enforcement, and climate-resilient management.

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