



## Ramsar Sites

**For Prelims:** Climate Change, Greenhouse Gas Emissions, Wetlands and Ramsar Sites in India, Sustainable Development, World Wetlands Day 2022, Wetlands (Conservation and Management) Rules, 2017

**For Mains:** Wetlands - Significance, Threats, Impact of Degradation, Measures that can be taken to protect Wetlands

### Why in News?

India has added five more [Ramsar sites](#), or wetlands of international importance, bringing the number of such sites to 54.

### What are these New Ramsar Sites?

- **Karikili Bird Sanctuary (Tamil Nadu):**
  - The sanctuary is spread over a five-kilometre-wide belt and is home to cormorants, egrets, grey heron, open-billed stork, darter, spoonbill, white Ibis, night herons, grebes, grey pelican among others.
- **Pallikaranai Marsh Reserve Forest (Tamil Nadu):**
  - One of the **last remaining natural wetlands**, the marsh drains in an area of 250 square kilometres encompassing 65 wetlands.
  - The Pallikaranai Marsh is **one of the few natural coastal aquatic habitats that qualify as a wetland in India.**
- **Pichavaram Mangrove (Tamil Nadu):**
  - One of the last [mangrove forests](#) in the country.
  - It has an island of a vast expanse of water covered with mangrove forests.
- **Sakhya Sagar (Madhya Pradesh):**
  - Created from the Manier river in 1918, Sakhya Sagar is located near [Madhav National Park](#).
- **Pala Wetland in Mizoram (Mizoram):**
  - It is home to a wide **range of animals, birds, and reptiles.**
  - Its geographical location **falls under the Indo-Burma biodiversity hotspot** and is therefore rich in animal and plant species.
  - The lake is a **major component of the Palak Wildlife Sanctuary** and it supports the major biodiversity of the sanctuary.

### What is Ramsar Recognition?

- **About:**
  - A Ramsar site is a **wetland of international importance under the Ramsar Convention**, which is also known as the **'Convention on Wetlands'** — an intergovernmental environmental treaty established by UNESCO in 1971, and named after the **city of Ramsar in Iran**, where the convention was signed that year.

- Ramsar recognition is **the identification of wetlands around the world**, which are of international importance, especially **if they provide habitat to waterfowl (about 180 species of birds)**.
- There is international interest and cooperation in the conservation of such wetlands and a judicious use of their resources.
  - [Sundarbans in West Bengal](#) is the **largest** Ramsar site in India.
- India's Ramsar wetlands are spread over 11,000 sq km — around 10% of the total wetland area in the country — across 18 States.
  - No other South Asian country has as many sites though this has much to do with India's geographical breadth and tropical diversity.
- There are nine
- **Criteria: One of the nine criteria must be fulfilled to be the Ramsar Site.**
  - **Criterion 1:** If it contains **a representative, rare, or unique example of a natural or near-natural wetland** type found within the appropriate biogeographic region.
  - **Criterion 2:** If it supports **vulnerable, endangered, or critically endangered species** or threatened ecological communities.
  - **Criterion 3:** If it supports **populations of plant and/or animal species** important for maintaining the biological diversity of a particular biogeographic region.
  - **Criterion 4:** If it supports **plant and/or animal species at a critical stage** in their life cycles, or provides refuge during adverse conditions.
  - **Criterion 5:** If it regularly **supports 20,000 or more waterbirds**.
  - **Criterion 6:** If it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.
  - **Criterion 7:** If it supports **a significant proportion of indigenous fish subspecies, species or families, life-history stages, species interactions and/or populations** that are representative of wetland benefits and/or values and thereby contributes to global biological diversity.
  - **Criterion 8:** If it is an **important source of food for fishes, spawning ground, nursery and/or migration path** on which fish stocks, either within the wetland or elsewhere, depend.
  - **Criterion 9:** If it regularly **supports 1% of the individuals in a population of one species** or subspecies of wetland-dependent non avian animal species.
- **Significance:**
  - Ramsar Tag helps **develop and maintain an international network of wetlands which are important for the conservation** of global biological diversity and for sustaining human life through the maintenance of their ecosystem components, processes and benefits.
  - Sites are protected **under strict guidelines of the convention**.

## What are the Wetlands?

- **About:**
  - Wetlands are ecosystems saturated with water, either seasonally or permanently.
  - They include [mangroves](#), [marshes](#), [rivers](#), [lakes](#), [deltas](#), [floodplains](#) and flooded forests, rice-fields, [coral reefs](#), marine areas no deeper than 6 metres at low tide, as well as human-made wetlands such as waste-water treatment ponds and reservoirs.
  - Though they cover only around **6% of the Earth's land surface, 40% of all plant and animal species live or breed in wetlands**.
- **Significance:**
  - **Assist in Fighting Against Climate Change:**
    - Wetlands assist in **stabilising CO<sub>2</sub> (Carbon dioxide), CH<sub>4</sub> (Methane), N<sub>2</sub>O (Nitrous oxide) and Greenhouse Gas (GHG)** concentrations by minimising climate and land-use-mediated GHG releases and by boosting the potential to actively collect CO<sub>2</sub> from the atmosphere and sequester carbon.
    - Wetlands also **help reduce the risk of disasters such as floods**, by protecting coastlines.
  - **Sequester Carbon:**
    - Wetlands' microbes, plants and wildlife are part of **global cycles for water, nitrogen and sulphur**.

- Wetlands store carbon within their plant communities and soil instead of releasing it to the atmosphere as carbon dioxide.
- **Significance of Peatlands:**
  - The term 'peatland' refers to the peat soil and the wetland habitats growing on the surface.
  - They **account for just 3% of the world's land surface but store twice as much carbon as forests**, thus playing a crucial role in delivering global commitments on the climate crisis, sustainable development, and biodiversity.
  - Peatlands - one of the world's largest carbon reserves, are sparse in India and require immediate attention.
- **Paradise for Migratory Birds:**
  - Millions of [migratory birds](#) flock to India, and wetlands are critical to this annual phenomenon.
  - Ecologically dependent on wetlands, **migratory waterbirds connect continents, hemispheres, cultures, and societies** through their seasonal movements.
  - A diversity of wetland communities offers essential stopovers for birds.
- **Cultural and Tourism Importance:**
  - Wetlands also have a deep connection with Indian culture and traditions.
  - [Loktak Lake in Manipur](#) is revered as "Ima" (Mother) by locals, whereas Sikkim's Khecheopalri Lake is popular as the "wish fulfilling lake".
  - The north Indian festival of Chhath is one of the most unique expressions of the association of people, culture, water and wetlands.
  - The Dal Lake in Kashmir, Khajjiar Lake in Himachal Pradesh, Nainital Lake in Uttarakhand and Kodaikanal in Tamil Nadu are popular tourism destinations.
- **Threat:**
  - **Human Activities:**
    - As per the [IPBES \(Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services\)](#)'s global assessment, wetlands are the most threatened ecosystem due to human activities and global warming.
  - **Urbanisation:**
    - Wetlands near urban centres are under increasing developmental pressure for residential, industrial and commercial facilities.
    - Areas surrounded by urbanised wetlands are expected to lead to a coastal squeeze in the face of sea-level rise ultimately leading to wetland loss.
  - **Climate Changes:**
    - [Climate change](#) and linked drivers and pressures are highly likely to increase vulnerability of wetlands.
    - Increased air temperature, shifts in precipitation, increased frequency of [storms](#), [droughts](#), and [floods](#), increased atmospheric CO<sub>2</sub> concentration, and [sea level rise](#) could also affect wetlands.
  - **Maladaptation:**
    - Wetlands are also **exposed to the risk of maladaptation** — the likelihood of adverse impacts on these ecosystems in response to adaptation actions in other sectors.
    - For example, the construction of hydraulic structures to increase freshwater storage in upstream stretches, may further accentuate the risks of salinisation in downstream coastal wetlands.

## Way Forward

- The ecosystem services of wetlands need to be highlighted in development policies, urban planning and climate change mitigation.
  - In this context, mega urban schemes like [Smart Cities Mission](#) and [Atal Mission for Rejuvenation and Urban Transformation](#) need to add the aspects of sustainable management of wetlands.
  - The multiple benefits and services provided by wetlands are essential to achieve the ambitious agenda for building resilient cities to achieve [sustainable development goals](#), while accommodating further development and eradicating poverty.

**Source: TH**

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