



WETLANDS - GS III MAINS

Q. What do you understand about wetlands? Highlight the importance of these ecosystems and discuss various initiatives undertaken to conserve them. (15 marks, 250 words)

News: *Wetland conservation vital for earth's survival: National Biodiversity Authority secretary*

What's in the news?

- Conservation of wetlands is vital for saving the earth as they support 40% of the planet's flora and fauna despite covering only 6% of the surface, said Secretary of the National Biodiversity Authority (NBA) B. Balaji.

Wetlands:

- A wetland is an **area of land that is either covered with water or saturated with water.**
- Unique plants, called **hydrophytes**, define wetland ecosystems.
- These are **transition zones between terrestrial and aquatic ecosystems.**
- Example: Mangroves, Lake littorals (marginal areas between highest & lowest water level of the lakes), floodplains (areas lying adjacent to the river channels beyond the natural levees and periodically flooded during high discharge in the river) & other marshy or swampy areas.

Importance of Wetlands:

1. Nature's own filter:

- Act as "nature's kidneys" by recycling nutrients and removing sediments from surface and groundwater.
- Make surrounding land mass fertile for the growth of crops.

2. Biodiversity conservation:

- Wetlands contribute to human wellbeing through provision of food, energy and clean water, support to livelihoods and biodiversity.

3. Enhance climate adaptation and resilience from extreme weather:

- It helps in replenishing ground water & their filtering capacity helps to protect groundwater quality.
- Acts like a sponge & helps in flood control by soaking extra water from the surroundings. Thus, it acts as buffer shorelines against erosion & pollutants.

4. Carbon emission mitigation:

- Acts as a carbon sink, soils around wetlands can store carbon for many years (climate change mitigation).



5. Provides ecological, cultural & socio-economic benefits to society:

- Provides habitat for wildlife and fisheries, including threatened species. It provides opportunities for tourism (recreational), research fishing and other commercial activities.

6. Stabilization of shorelines:

- As they are generally located at the margins of lakes, bays, rivers, and oceans, they protect the shorelines and stream banks against erosion.
- The plants and trees in the wetlands hold the soil with their roots, absorb the energy of waves and break up the flow of stream.

NEED FOR CONSERVATION		PROHIBITED ACTIVITIES WITHIN WETLANDS
WHAT IS WETLAND ▶ Land area covered by water, either temporarily/seasonally or permanently (marsh, fen and peatland come under this category) ▶ It has characteristics of a distinct ecosystem		
WHY ARE THEY IMPORTANT ▶ Play a key role in hydrological cycle and flood control, water supply, providing food, fibre and raw materials ▶ Wetlands support lakhs of migratory birds from colder regions of the world in summers, apart from mangroves that protect coastlines and filter pollutants		
WETLANDS IN NUMBERS It mapped 2,01,503 wetlands	Isro had in 2011 prepared a national wetlands atlas on the basis of satellite images They comprise around 4.63% of the geographic area of India	▶ Any kind of encroachment ▶ setting up of any industry ▶ Expansion of existing industries ▶ Solid waste dumping ▶ Discharge of untreated wastes and effluents from industries, cities, towns, villages and other human settlements ▶ Poaching ▶ Any construction of a permanent nature except for boat jetties within 50 metres from the mean high flood level observed in the past 10 years
	No. of wetland sites in India under Ramsar Convention 37	
INDIA'S PROMINENT WETLANDS	Chilika lake areas (Odisha) Wular lake (J&K) Renuka (Himachal Pradesh) Sambhar lake (Rajasthan) Deepor Beel (Assam) East Kolkata wetlands (West Bengal) Nal Sarovar (Gujarat) Harike (Punjab) Rudra Sagar (Tripura) and Bhoj wetland (Madhya Pradesh)	



Threats of Wetlands:

- Dense human population in catchment areas.
- Rapid urbanization.
- Drainage of wetlands for agricultural and construction activities causes harm to wetlands.
- The introduction of invasive species to wetlands damages the wetland ecosystems.
- Pollution of wetlands due to human activities such as the dumping of factory wastes is harming the flora and fauna of wetland ecosystems.
- Climate change is another major factor that acts as a threat to wetlands.
- The construction of dams alters the flow of water to wetlands thus altering the healthy status of wetlands.
- Weed choking is another cause of concern for wetlands.
- Sand and shell removal is harming the wetlands.
- Wastes from intensive aquaculture are another threat.
- Upstream human activities exert pressure on the downstream area in coastal backwaters.

Conservation Efforts:

1. Ramsar Convention:

- It is the only treaty dealing with a particular ecosystem
- **World Wetlands Day - 2nd February**
- **Objectives:**
 - Conservation and Sustainable use of Wetlands
 - Wise use of Wetlands - Maintenance of Ecological Character for Sustainable Development of Wetlands
- **2023 Theme** - It's Time for Wetlands Restoration.

2. Wetland Conservation and Management Rules, 2017:

Prohibits several activities such as

- Conversion of wetlands for non-wetland purposes
- Setting up of industries
- Solid waste dumping
- Discharge of untreated waste
- Any construction of permanent nature
- Poaching

The conservation of wetlands needs management of environmental needs with a holistic approach. The management programs should include sustainable measures so that those who are dependent on it do not suffer and biodiversity is protected. There is a need to adopt scientific, technical, and socio-economic cooperation to conserve the wetlands. Integrated management with a collaborative approach.