



## Mains Practice Question

**Q.** What are wetlands and their functions? Discuss the threats being faced by them. (250 words)

24 Apr, 2019 GS Paper 3 Bio-diversity & Environment

### Approach

- Define wetlands.
- Describe the functions of wetlands.
- Describe the threats faced by wetlands.
- Give a conclusion.

### Introduction

- Wetlands are defined as: "lands transitional between terrestrial and aquatic ecosystems where the water table is usually at or near the surface or the land is covered by shallow water".
- Water is the primary factor controlling the environment and the associated plant and animal life in wetlands.

### Body

#### Functions of Wetlands

- **Habitat:** Wetlands play an integral role in the ecology of the watershed. The combination of shallow water, high levels of nutrients is ideal for the development of organisms that form the base of the food web and feed many species of fish, amphibians, shellfish and insects.
- **Cleansing agents:** 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. Reduces levels of contaminants in surface waters which recharge underlying or adjacent groundwater.
- **Flood control:** Wetlands function as natural barriers that trap and slowly release surface water, rain, snowmelt, and groundwater and flood waters. Wetland vegetation also slows the speed of flood waters lowering flood heights and reduces soil erosion.
- **Economic function:** Wetlands are highly productive ecosystems that provide the world with nearly two-thirds of its fish harvest.
  - Wetlands are a vital source for food, raw materials, genetic resources for medicines, and hydropower. They play an important role in transport, tourism and the cultural and spiritual well-being of people.
  - Wetlands also provide important benefits for industry. For example, they form nurseries for fish and other freshwater and marine life and are critical to commercial and recreational fishing industries.

#### Threats being faced by Wetlands

- **Urbanization:** Wetlands near urban centres are under increasing developmental pressure for

residential, industrial and commercial facilities. Urban wetlands are essential for preserving public water supplies.

- **Agriculture:** Vast stretches of wetlands have been converted to paddy fields. Construction of a large number of reservoirs, canals and dams to provide for irrigation significantly altered the hydrology of the associated wetlands.
- **Pollution:** Wetlands act as natural water filters. However, they can only clean up the fertilizers and pesticides from agricultural runoff but not mercury from industrial sources and other types of pollution. There is growing concern about the effect of industrial pollution on drinking water supplies and the biological diversity of wetlands.
- **Climate Change:** Increased air temperature; shifts in precipitation; increased frequency of storms, droughts, and floods; increased atmospheric carbon dioxide concentration; and sea level rise could also affect wetlands.
- **Dredging and draining:** The removal of material from a wetland or river bed. Dredging of streams lowers the surrounding water table and dries up adjacent wetlands. Water is drained from wetlands by cutting ditches into the ground which collect and transport water out of the wetland. This lowers the water table and dries out the wetland.
- **Alien Species:** Wetlands are threatened by exotic introduced plant species. They clog waterways and compete with native vegetation.

## Conclusion

Thus, wetlands are important ecosystem considering their importance there are international efforts in their conservation e.g. Ramsar convention aims at conservation and wise use of all wetlands through local and national actions and international cooperation.

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