

i.e. aquatic animals such as fishes, bear, deer, frogs, snakes etc and various types of medicinal plants also present in or on the wetlands.

ii) Abiotic factor → Abiotic factors refers to the non living factor of the wetland. It includes amount of water present in the wetland, O₂ level, precipitation, temperature, soil quality are the abiotic factor of the wetland. These are play an important role in naturally occurring wetland processes.

Date - 12/03/19

□ Types of wetlands :-

We classified wetlands into four major classes based on the ecological and economical function / values. These are -

i) Marsh → Marshes are wetland that are always flooded, rather than being submerged under water just during the summer or a couple of month over the years. Marsh is a one type of fresh water wetland and amount of water in marsh can be changed with the season. They, great variety of vegetation that has adopted a especially to live in saturated soil. Marshes wildlife includes alegators, beavers, turtles etc.

ii) Swamp → Swamps differ from marshes in that typically they are dominated by woody plants. Some of these trees are

often to make an effective Swamps and fish two m swamp ted ani alegator

iii) Bog acidic as a swamp precipi stream very im prevail

iii) Fen wetland from g they a means wild lit thing

often harvested by people for all over the earth - to make timber and to build their homes which can effect the ecosystem drastically (corrupt). Swamps are typically the home to various birds and fishes as well as smaller creatures. There are two main types of swamps - one is forested swamp and other is shrub swamp. The dominated animals of swamps are bob cat, snake, alegators and large diversity of birds.

iii) Bogs → Bogs are characterised by more acidic water and spongy ^{peat} deposits as well as a covering of fresh water. ^{unlike} Marshes and swamps, bogs tend to get their wetness from precipitation rather than water ways such as ~~trues~~ stream or runoff ~~from~~ river. This wetlands are very important and play fantastic role for preailing down stream flooding.

iii) Fen → fens are like bogs, peat forming wetlands. Although they usually get their wetness from ground water than precipitation which means they are slightly less acidic in nature. This means tend to support a greater variety of wildlife from plants to fish to birds and every-thing in between.

□ Wetland Ecological significance & importance:

- Prevent Flooding activity
- Release Vegetative matter
- Water purification
- Erosional control
- A home for animals
- Phosphate & Nitrate elimination

□ Threats to wetlands :-

• Anthropogenic threats ⇒

- i) Industrial discharge
- ii) Pollution
- iii) Dam
- iv) New animals
- v) Grazing
- vi) Mining
- vii) Agricultural activity

• Natural threats ⇒

- i) Acid rain
- ii) Volcanic eruption
- iii) Forest fire

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Date - 25/09/19

Wetland conservation & Management :-

• How to conserve wetlands ?

→ The ten conservation strategy of wetlands are —

i) Joint programmes that help to protect and restore wetland.

ii) Report illegal activities.

(Pumping, cleaning, poaching)

iii) Pick up all litter and dispose in appropriate container.

iv) Plant local tree species.

v) Use living shoreline techniques to stabilise the soil.

vi) Avoid wetlands if you are expanding your homes or installing a set.

vii) Use phosphate free laundry and dishwasher, detergent.

- viii) Use paper and recycled product made from unbleached (non toxic) paper.
- ix) Use non-toxic products for household cleaning.
- x) Reduce, reuse and recycle household item and waste.

Date - 30/5/19

• Factors effecting soil temperature :-

- i) Soil texture (3 type of texture)
- ii) Soil structure (Developing and non-developing) [Organic matter rare]
- iii) Soil colour

Ramsar convention, 1971 :-

- The following aspects of Ramsar convention
- To designate wetlands of International importance for inclusion in a list of so called 'Ramsar site'.
- To maintain the ecological characteristics of their listed Ramsar site to recognise their planning so as to achieve the wise use of all the wetlands on their territory.
- To designate wetlands as natural reservoirs

19 wetlands in India have been categorised as Ramsar site —

Sl. No.

- | | | | |
|----|------------------------|-------------|----------------|
| 1. | Asthamudi wetland | — Kerala | — 61,400 ha. |
| 2. | Bhitarkanika Mangroves | — Orissa | — 65,000 ha. |
| 3. | Bhoj wetland | — M.P | — 3,201 ha. |
| 4. | Chilka lake | — Orissa | — 1,16,500 ha. |
| 5. | Deepor Beel | — Assam | — 4,000 ha. |
| 6. | East calcutta wetland | — W.B | — 12,500 ha. |
| 7. | Harika lake | — Punjab | — 4,100 ha. |
| 8. | Kunjli lake | — Punjab | — 183 ha. |
| 9. | Keolado National Park | — Rajasthan | — 2873 ha. |

- 10. Koller
- 11. Lokta
- 12. Point Wildlife Sanct
- 13. Pong
- 14. Rope
- 15. Sam
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- 10. Kolleru lake — A.P — 90,100 ha.
- 11. Loktak lake — Manipur — 28,600 ha.
- 12. Point Calimera Wildlife & Bird Sanctuary — Tamil Nadu — 38,500 ha.
- 13. Pong Dam lake — Himachal Pradesh — 15,662 ha.
- 14. Roper wetland — Punjab — 1,365 ha.
- 15. Sambhar lake — Rajasthan — 24,000 ha.
- 16. Sasthamkotta Lake — Kerala — 373 ha.
- 17. Tsomoriu — Jammu & Kashmir — 12,000 ha.
- 18. Vembanad-Kol lake — Kerala — 1,51,250 ha.
- 19. Wular lake — Jammu & Kashmir — 18,900 ha.

□ Wetland conservation and Management Rules, 2017 :-

The new rules, modified by the environmental ministry, decentralised wetland management by giving state powers to not only identify and notify wetlands within their jurisdictions but also keep a watch on prohibited activities.

Under this rules, to protect over 2 lakh wetlands across the country, the center has come out with rules to identify and manage this ecological fragile areas which play an important

role in flood control, ground water recharge, preserving plant rarities, supporting migratory birds and protecting coast line. The new rules notified by the Environmental Ministry to protect this wetlands by different kinds of prohibited activities. The notification say " the wetlands shall be conserved and managed in accordance with the principle of 'wise use' as determine by the wetland authority

□ Objectives of the rules :-

- To maintain the ecological importance of the on fragile of this wetlands.
- To identify the destructed wetland areas.
- To prohibited activities which destructed the wetlands.
- To giving the state level power of local government to maintain and manage the wetlands area.

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• Water act :-

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