



ENVIRONMENTAL MANAGEMENT 1

Wetland: Functions and Values





Wetland. Functions

Physical/Hydrological Functions

- Flood Control
- Coastal Protection
- Ground Water Recharge
- Sediment Traps
- Atmospheric Equilibrium





Flood Control

Wetlands act as protective natural Sponges by capturing, storing and slowly releasing water over a long period of time, thereby reducing the impact of floods.





Coastal Protection

- Coastal marshes, mangrove swamps and other estuarine wetlands act as effective storm buffers. Studies have concluded that more than half of normal wave energy is dissipated within the first 3 meters of encountering marsh vegetation such as cordgrass. The erosive nature of tides is also dampened by wetland plants because their roots hold soil in place and their stalks reduce the destructive energy of waves and wind.

Unstable shoreline with a large amount of erosion



Stable wetland, preventing erosion.





Ground Water Recharge

- Wetlands' role in recharging ground water varies widely, but it is clear that wetlands often contribute to ground water and can be important in recharging aquifers.



Sediment Traps

- Wetlands improve water quality by acting as sediment sinks or basins. They are especially effective at trapping sediments in slow moving water. Wetland vegetation slows water velocity and particles settle out.





Atmospheric Equilibrium

- Atmospheric levels of carbon and sulfur and excess nitrogen contained in fertilizers are lowered by a wetlands' ability to capture and reduce these elements to harmless or inert forms.





Wetland. Functions

Chemical Functions

- Pollution Interception
- Waste Treatment





Pollution Interception &

Waste Treatment

- Wetlands act as filters and sponges. Water that enters a wetland is filtered through the substrate and wetland plants, removing nutrients, i.e. Nitrogen and Phosphorous, and toxins.





Wetland Function - Nurseries

- Wetlands provide nurseries for aquatic life.





Wetland Function - Habitat

- Wetlands provide habitat for upland mammals such as deer and raccoons.





Wetland Function - Habitat

- Wetlands provide habitat for wetland dependent species such as the salamander.





Wetland Function -

Endangered Species

- It is estimated that one third of all endangered species are dependent on wetlands.





Wetland Function - Migration

- Wetlands provide valuable stop-over sites for migratory birds. Wetlands are also necessary habitats for all waterfowl.





Wetlands: Value

- The following slides show examples of wetlands values. Values are properties of a wetland that are beneficial to humans.

Socioeconomic Functions/Benefits

- Food
- Commercial animal populations
- Fuel
- Timber/Fiber Production
- Recreation, Aesthetics, Education





Food

- Wetlands produce food that is beneficial to humans. Examples are rice and cranberries



Commercial Animal Populations

- Wetlands provide humans with commercial animal populations.



Fuel

- Peatlands are still used as production areas.



Timber/Fiber Production

- Wetlands are used as timber/fiber production areas.





Recreation, Aesthetics, Education

- Wetlands are used as recreation sites all over the world.





Self - Quiz 5

Using the knowledge gained from previous slides, answer the following questions. Answers can be found on the next slide.

1. Name two wetland food crops.
2. Can you think of some recreational activities that occur in wetlands?





Self-Quiz 5 Answers

1. Cranberries and rice
2. Canoeing, bird watching, hunting, fishing, hiking, education

