The Importance of Wetlands

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What are wetlands?

Areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static, flowing, fresh, brackish or salt, including areas of marine water, the depth of which at low tide does not exceed six metres

Characteristics of Wetlands

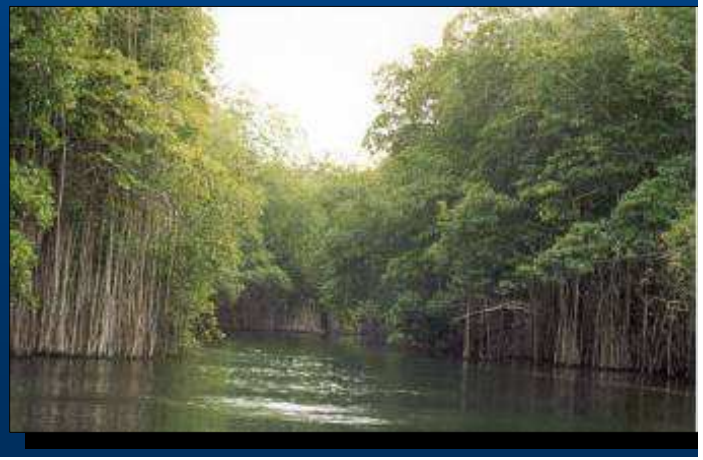
- Occupy a transitional zone
- Diversity varies according to origin, geographical location, water regime and chemistry, dominant flora and soil or sediment characteristics
- Sustainability of wetlands depends largely on the dynamics of water supply and loss
- The ecosystem function of a wetland is dependant on its biogeochemical processes

Types of Wetlands

- Natural Wetlands
  - Marine
  - Estuarine
  - Lacustrine
  - Riverine
  - Palustrine
- Artificial Wetlands
  - Aquaculture/Mariculture
  - Agriculture
  - Salt exploitation
  - Urban/Industrial
  - Water storage areas

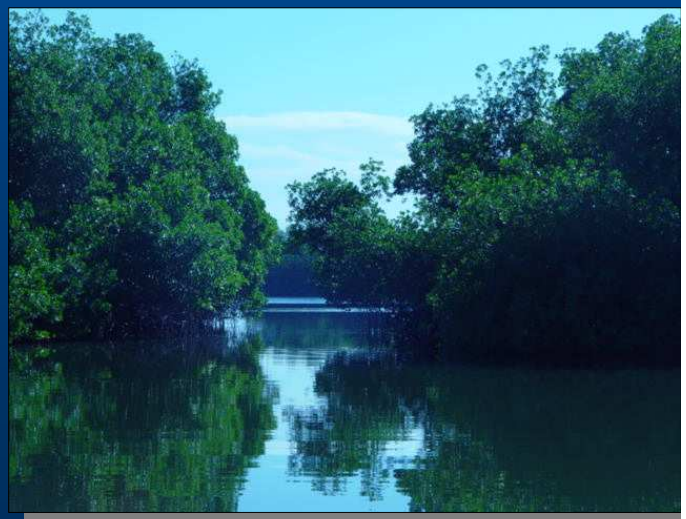
Types of Wetlands

- Marshes
  - Tidal, Nontidal, Wet Meadows, Prairie Potholes, Vernal Pools, Playa Lakes
- Swamps
  - Forested Swamps, Bottomland Hardwoods, Shrub Swamps, Mangrove Swamp
- Bogs
  - Northern Bogs, Pocosins
- Fens



Types of Wetlands - Caribbean

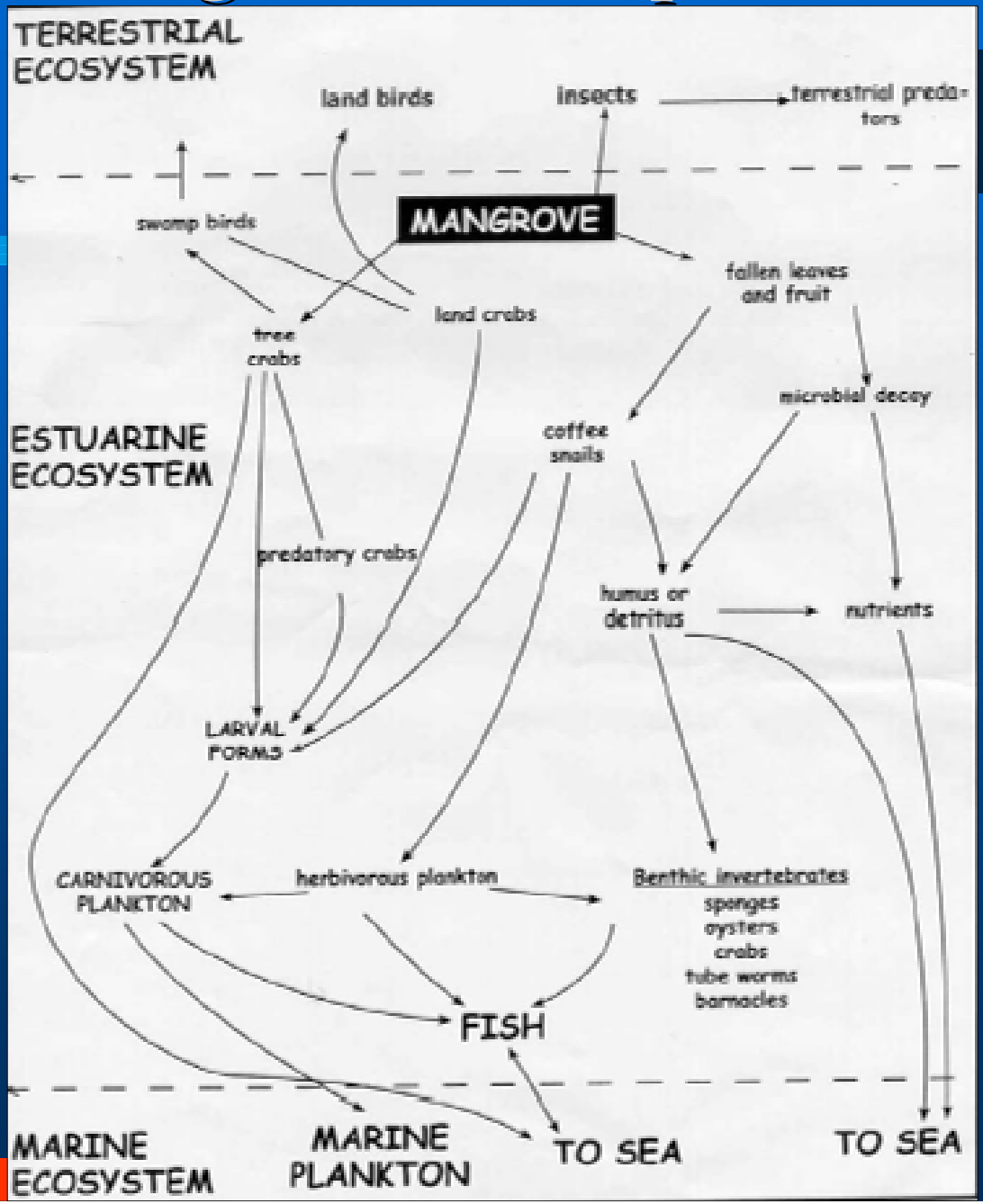
- Mangroves
- Lagoons, salt ponds, salinas
- Estuaries
- Tidal creeks
- Freshwater and brackish marshes
- Swamp forests
- Riverine forests
- Palm and pine barrens
- Coastal woodland
- Strand and dune woodlands



Major wetlands in Jamaica

Great Morass	St. Thomas
Black River Morass	St.Elizabeth
Pear Tree Bottom	St. Ann
Palisadoes-Port Royal	Kingston
Great Salt Pond	St. Catherine
Salt River Swamp	Clarendon
Canoe Valley	Manchester
Cabarita Swamp	Westmoreland
Hague Swamp	Trelawny
Negril Swamp	Westmoreland/Hanover

Simplified Mangrove Swamp Food Web



Functions of Wetlands

- Water purification - sediment and toxicant removal
- Water storage
- Nutrient cycling
- Prevent saline intrusion
- Groundwater recharge and discharge
- Flow regulation/flood mitigation
- Shoreline protection, storm protection & erosion control
- Windbreak
- Critical habitats for plants and animals

Benefits of Wetlands

- Water supply and transport
- Research and education
- Gene bank
- Recreation and tourism
- Timber and thatch production
- Energy resource
- Aesthetic
- Food resource
- Sediment trap and carbon sink
- Wastewater treatment

Value of Wetlands

- A study conducted revealed that the dollar value of our natural ecosystems was approximately US$33T. The estimated global value of wetland ecosystems was US$14.9T, 45% of the total (Ramsar Convention Bureau).
- A mangrove fringed shoreline in the Gulf of Panama yielded $95,000 per km from shrimp, other crustaceans and fish.
- 40,000 ha of managed mangrove forest in Malaysia yielded $10M in timber and charcoal and $100M in fish and prawns.

Functions of mangroves

- Energy source
- Habitat (plants & animals/migratory, sedentary sps)
- Biological filters – sink for pollutants, carbon sinks, carbon sequestration stores
- Water quality maintenance – sediment removal, nutrient retention and transformation and oxygen addition
- Coastline protection – storm surges/hurricanes
- Offshore ecosystem protection – terrestrial influence

Pictures – Human uses of Wetlands

Fishing, Venezuela

Observation deck, USA

Pictures – Human uses of Wetlands

Harvesting reeds for construction and other uses

Melaleuca harvesting in Vietnam

Pictures – Human uses of Wetlands

WWF's donated 'Banana Boat' used for research and eco-tourism, Zambia

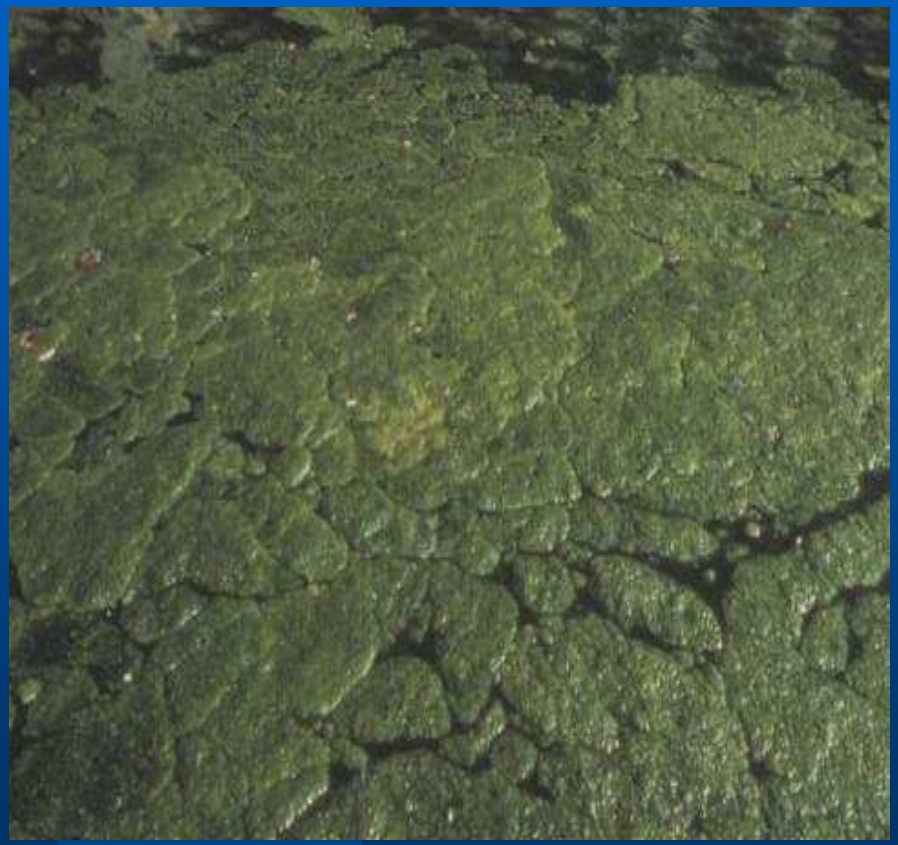
Fish traps made out of reds, Turkey

Pictures – Threats to Wetlands

Inundation by heavy rain and destruction of floodplain, Germany

Forest fire, USA

Pictures – Threats to Wetlands



Coast of France

Irrigation canals, Poland

Pictures – Threats to Wetlands

Cleaning of a canal, Turkey

Polluted pond, United Kingdom

Great Morass

- Herbaceous swamp & mangrove forest
- Coastline protection (dissipates effects of trade winds & hurricanes)
- Habitat function
- Food and wood source
- Water quality maintenance
- Impacted by charcoal burners

Great Morass

- Flora
  - red, black, white and button mangroves
  - reeds, wild cane
- Fauna
  - birds (9 endemic, 12 aquatic, 22 residents, 18 migrants)
  - reptiles (crocodile, hawksbill & leatherback turtles)
  - butterfly (endemic Jamaican Satyra)
  - amphibians (frogs)
  - aquatic (crabs, oyster, crayfish)

Why conserve Wetlands?

- '*The maintenance of wetlands as functioning ecosystems will often ensure that important contributions to development are maintained*'
- Jamaican wetlands were formerly much more extensive as most were reclaimed in the 18th century for sugar production.

The Protection of Wetlands

- Policies drafted:
  - *Policy for Jamaica's System of Protected Areas, 1997*
  - *Mangrove, Coastal and Wetland Policy, 1997*
- Natural Resources Conservation Authority Act (Permit and Licence Regulation), 1999
- The Convention on Wetlands of International Importance (Ramsar Convention)

The Ramsar Convention

- Inter-governmental treaty
- Provides framework for the conservation and wise use of wetlands and their resources
- Provision of a suitable habitat for water birds
- Oldest global nature conservation treaty
- Started in 1971, came into force 1975

Ramsar

Why do countries become Parties to the Convention?

- To facilitate development at the national level of policies and actions for the wise use of wetlands.
- Present an opportunity for a country to be heard in the principal intergovernmental forum on conservation and wise use of wetlands.
- Brings increase publicity and prestige for wetlands.
- Encourages international cooperation on wetland issues and bring the possibility of support.
- Brings access to expert advice on national and site-related problems.

Commitments of the parties to the Ramsar Convention

- Promotion of conservation (wise use of wetlands)
- Maintenance of the natural habitat
- Reserves and training
- International co-operation
- Promote research and exchange data and publications on wetlands
- Enlist site(s)

Ramsar Criteria for Identifying Wetlands of International Importance

Wetlands should be selected for the List of Wetlands of International Importance on account of their international significance in terms of ecology, botany, zoology, limnology or hydrology and indicates that in the first instance, wetlands of international importance to waterfowl at any season should be included.

Criteria

Group A: Sites containing representative, rare or unique wetland types

- Criteria for unique, rare or representative wetlands, which are natural or near-natural

Group B: Sites for conserving biological diversity - criteria based on species and ecological communities

- Criteria for supporting vulnerable, endangered, or critically endangered species or threatened ecological communities; populations of plant and/or animal species important for maintaining biological diversity; plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions.

Criteria

Criteria specific to waterbirds

- Supports 20,000 or more waterbirds and 1% of the individuals in a population of one species or subspecies of waterbird.

Criteria based on fish

- 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.
- Important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere, depend.

Criteria

Criteria specific to other taxa

- Supports 1% of the individuals in a population of one species or subspecies of wetland-dependent non-avian animal species.

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This could be OURS!!