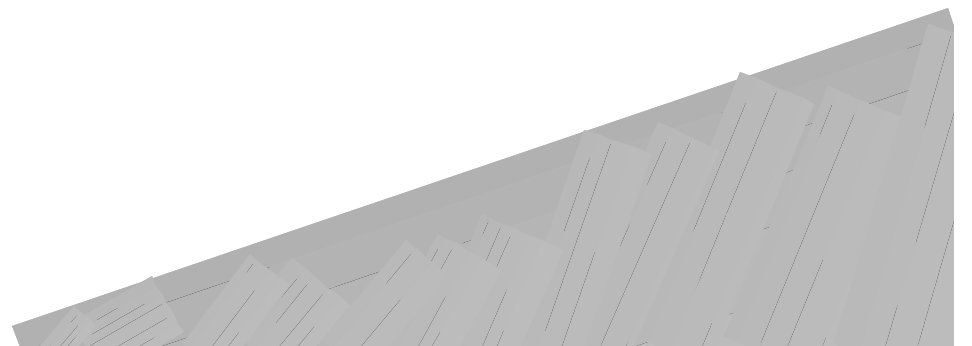
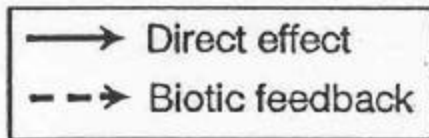
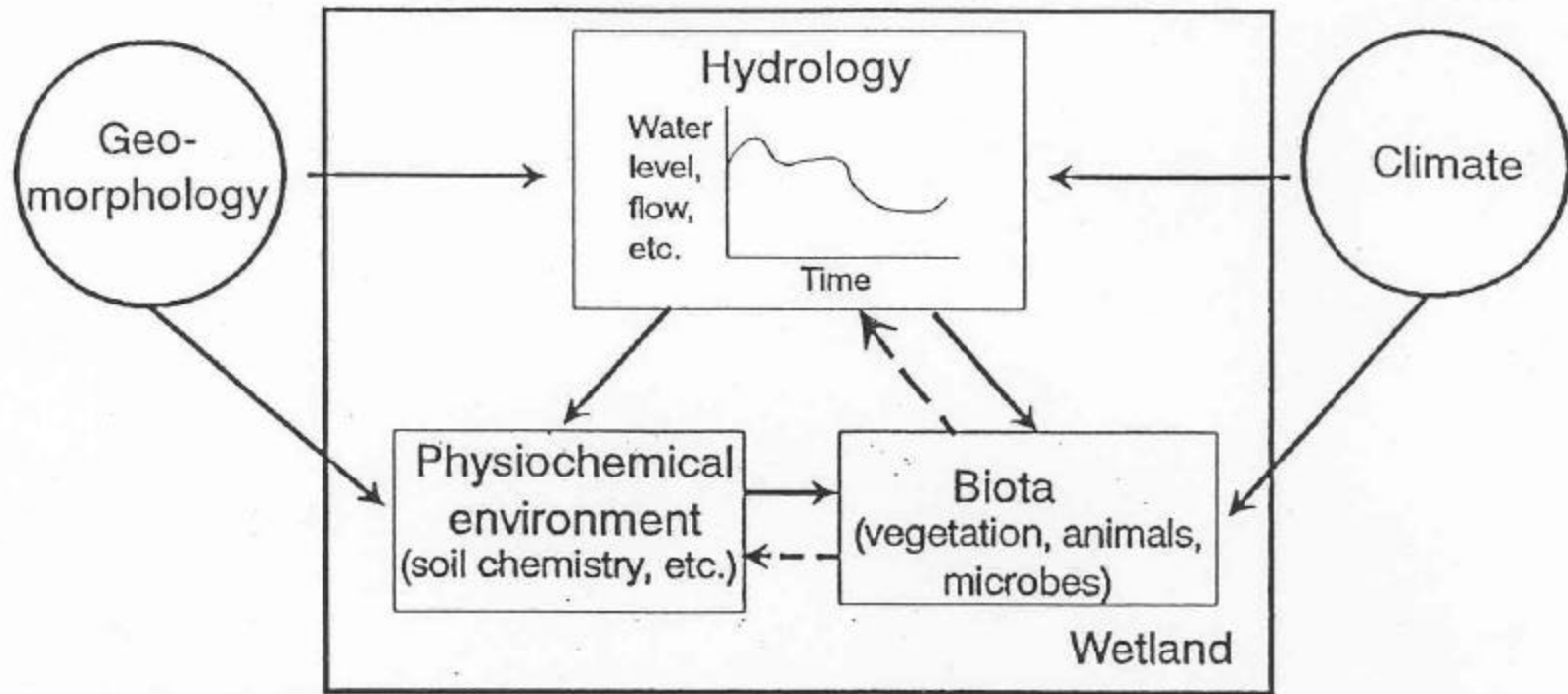


# Wetland Hydrology

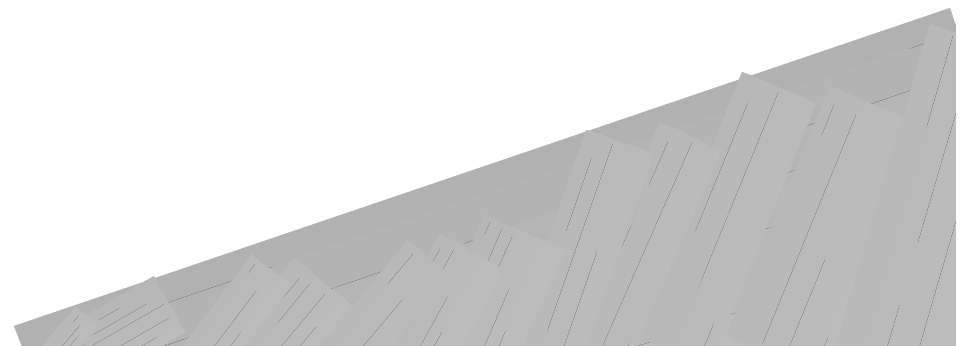


# Relationship Between Hydrology, Soils, Biology



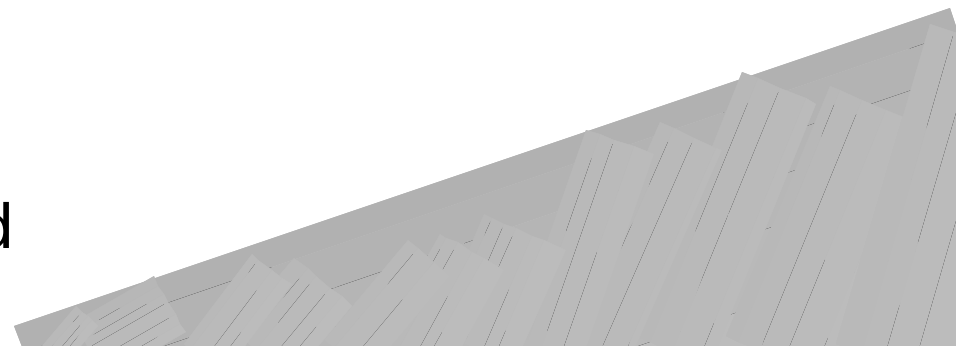
# Wetland Hydroperiods

- ◆ Seasonal pattern of water level in wetland
- ◆ Hydrologic signature
  - Flood/Saturation duration
  - Flood/Saturation frequency

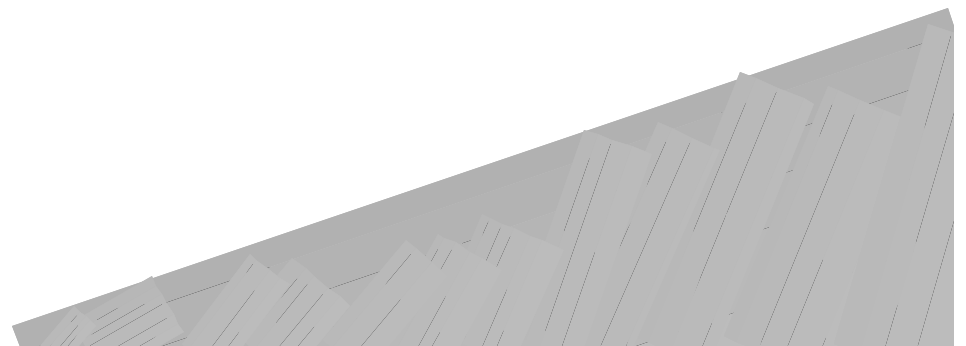
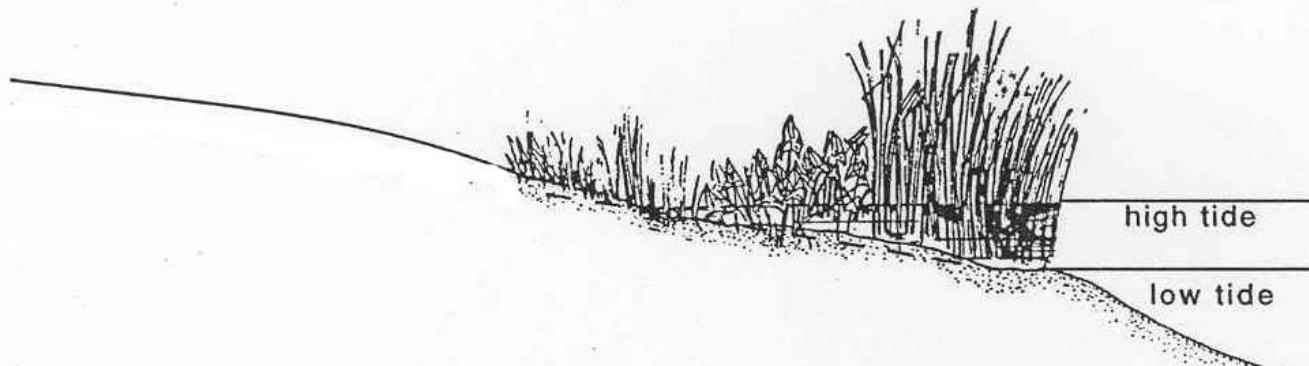


# Definition of Hydroperiods

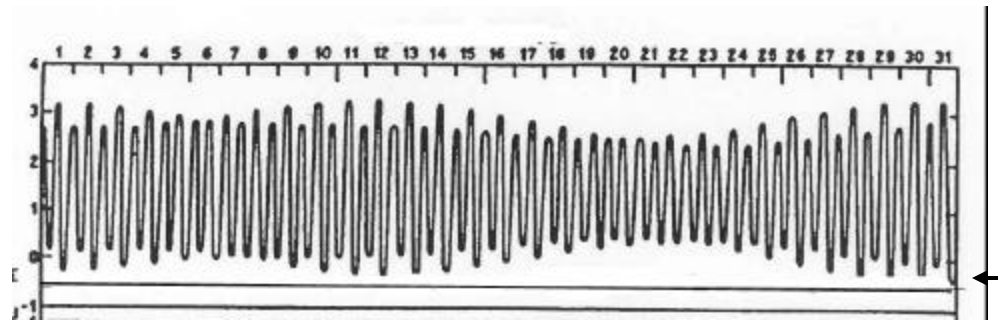
- ◆ Tidal Wetlands
  - Subtidal
  - Irregularly exposed
  - Regularly flooded
  - Irregularly flooded
- ◆ Nontidal Wetlands
  - Permanently flooded
  - Intermittently exposed
  - Semipermanently flooded
  - Seasonally flooded
  - Saturated
  - Temporarily flooded
  - Intermittently flooded



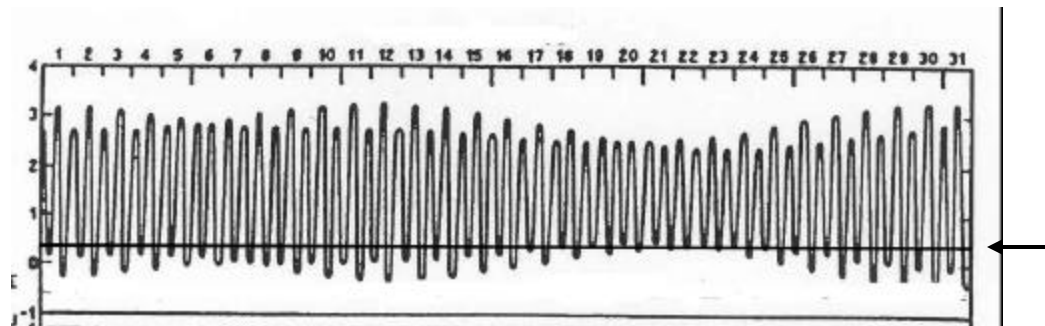
# Hydroperiods Tidal Wetlands



# Subtidal & Irregularly Exposed Tidal Wetland Hydroperiods

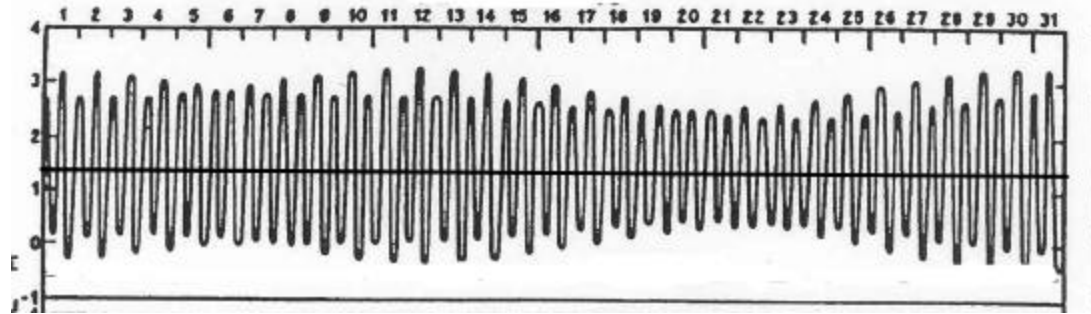


Subtidal – permanently flooded with tidal water

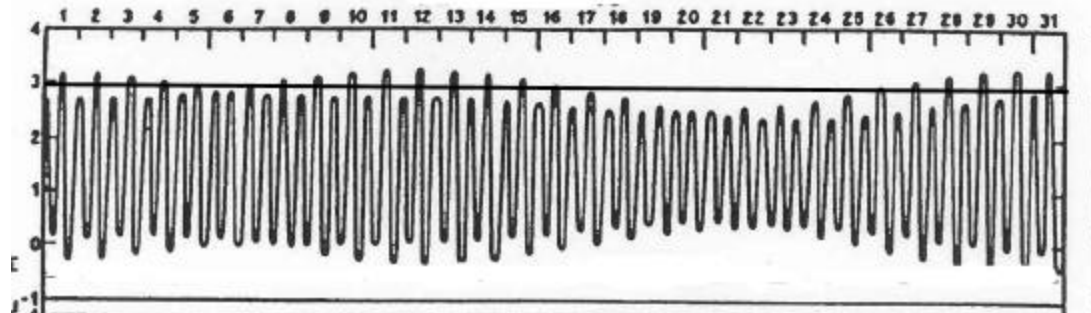


Irregularly exposed – surface exposed by tides less often than daily

# Regularly & Irregularly Flooded Tidal Wetland Hydroperiods

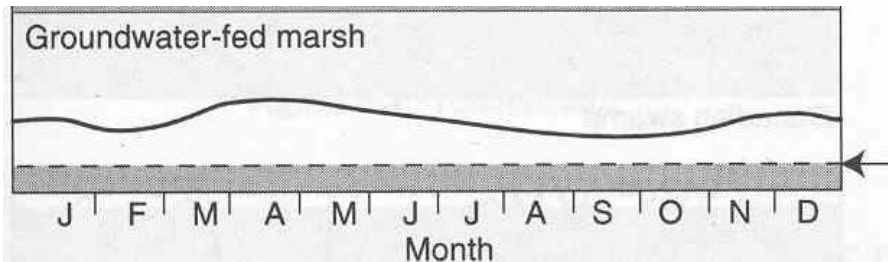


Regularly Flooded – flooded and exposed daily

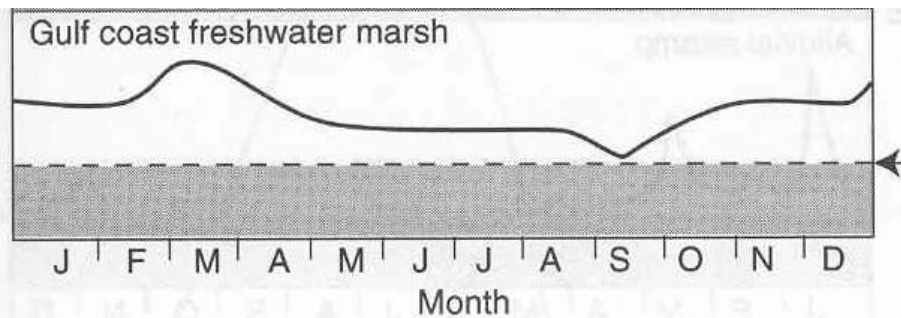


Irregularly Flooded – flooded less often than daily

# Permanently Flooded & Intermittently Exposed Non-tidal

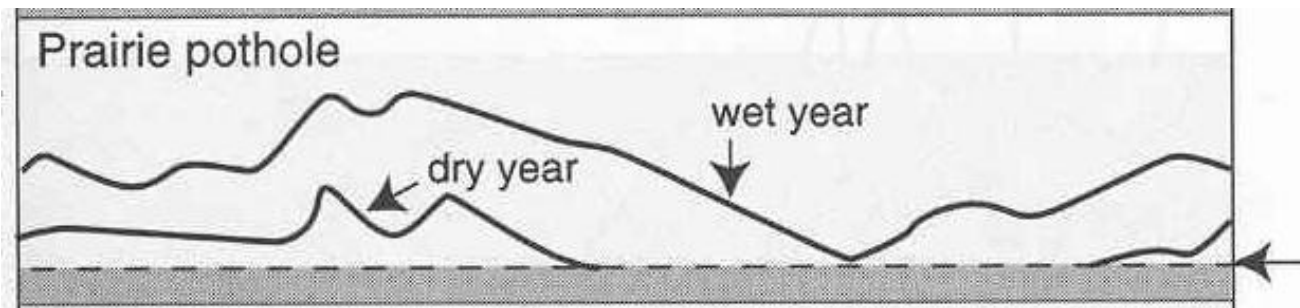


Permanently Flooded – flooded throughout year



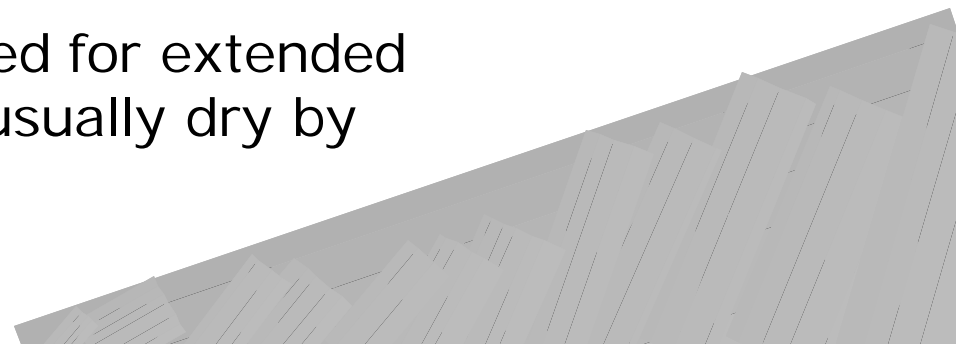
Intermittently Exposed – flooded throughout year,  
except in extreme drought

# Semipermanently & Seasonally Flooded Non-tidal Wetlands

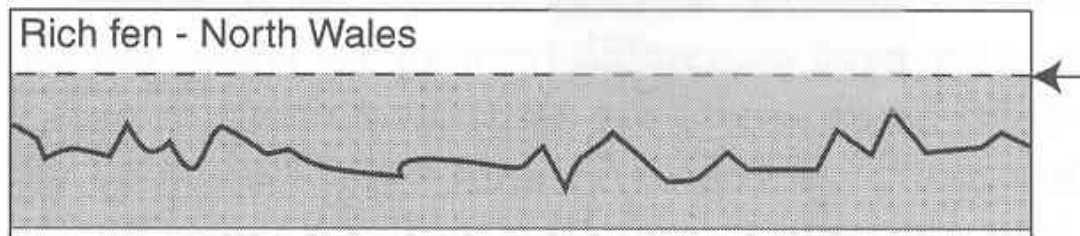


Semipermanently Flooded – flooded during growing season of most years

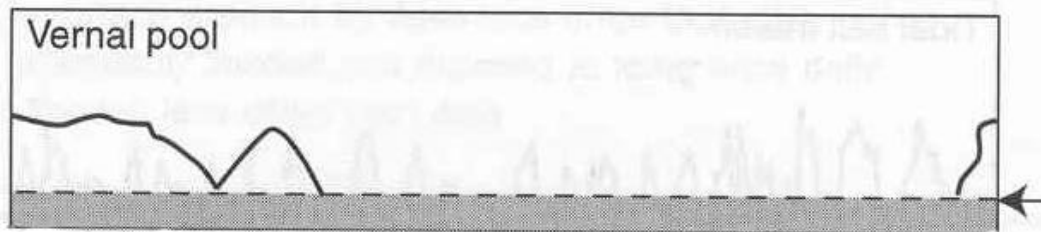
Seasonally Flooded – flooded for extended period of growing season, usually dry by end of growing season



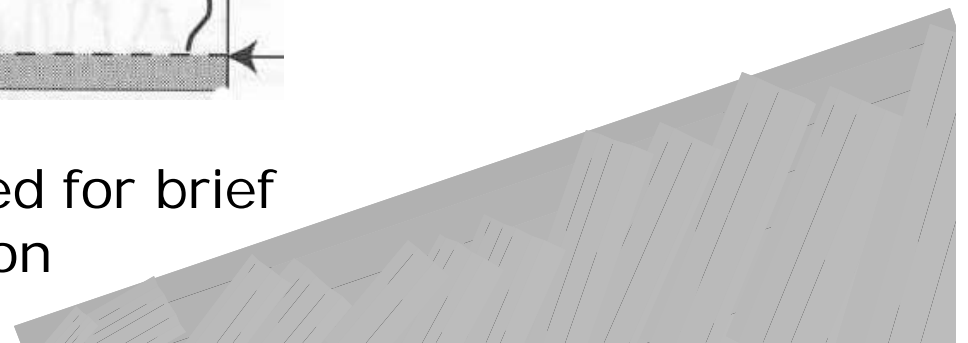
# Saturated & Temporarily Flooded Non-tidal Wetlands



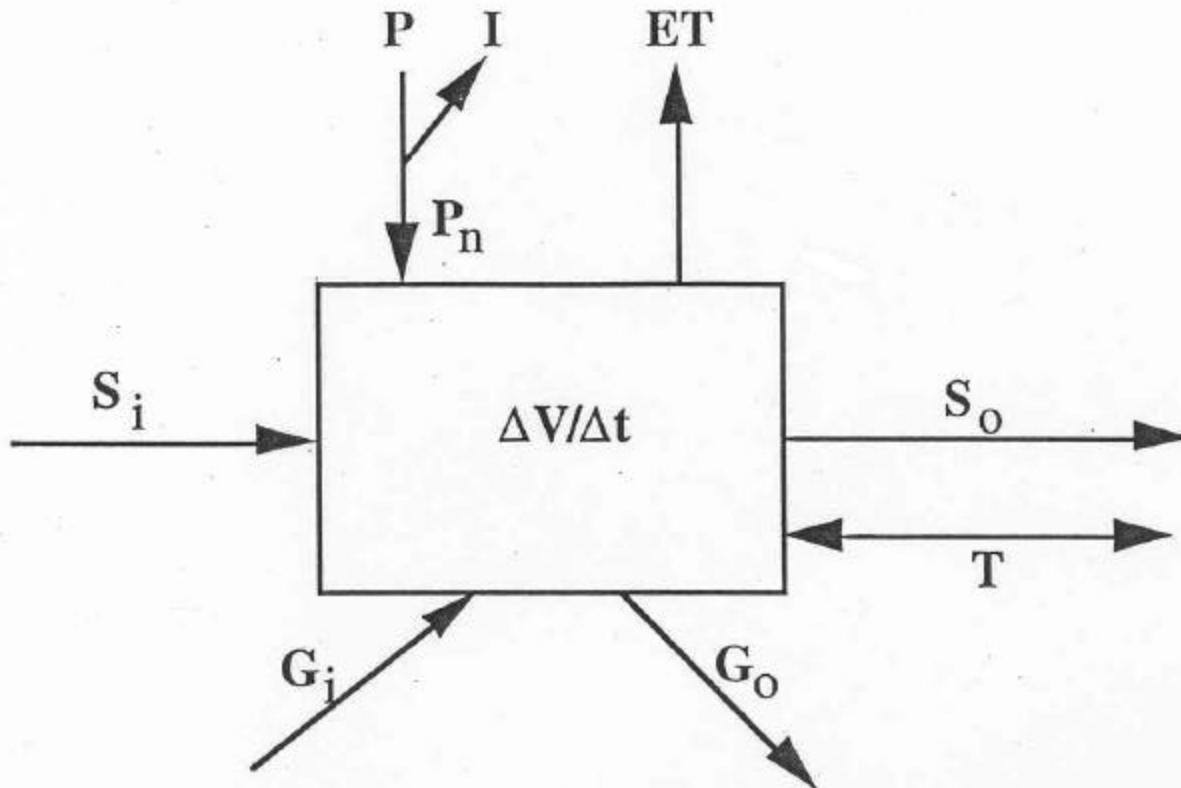
Saturated – Substrate saturated for extended  
during growing season



Temporarily Flooded – flooded for brief  
periods during growing season

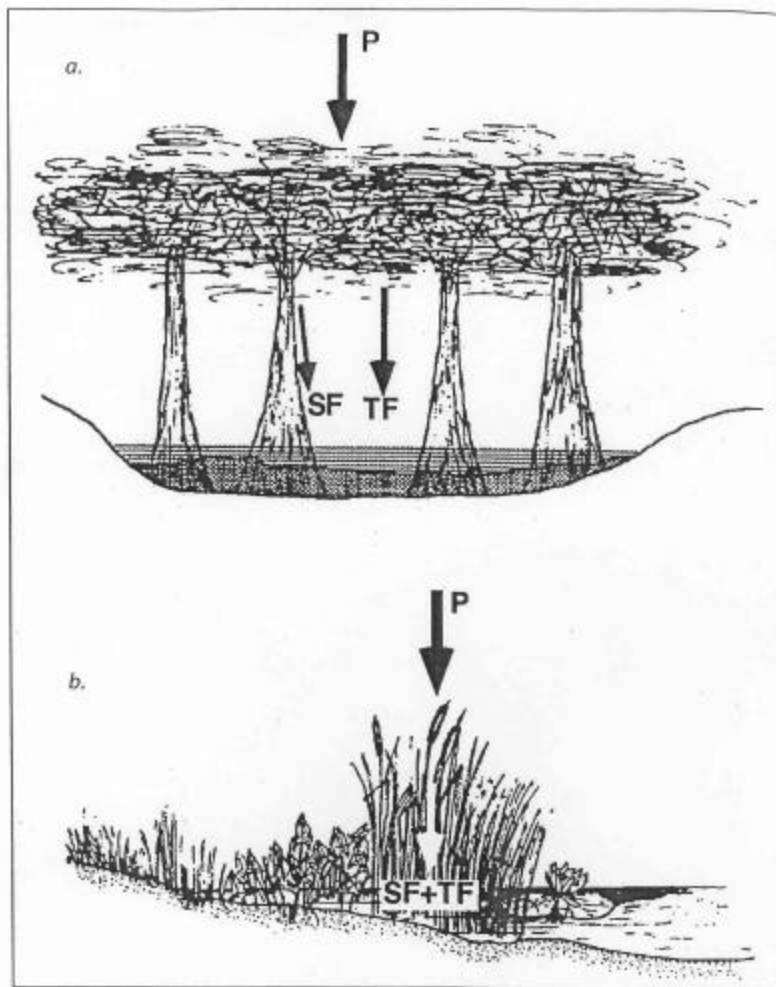


# Generalized Water Budget



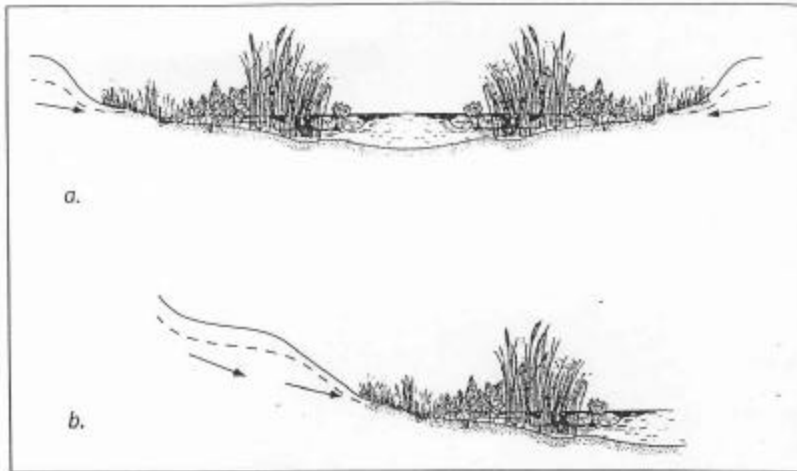
$$\Delta V/\Delta t = P_n + S_i + G_i - ET - S_o - G_o \pm T$$

# Fate of Precipitation

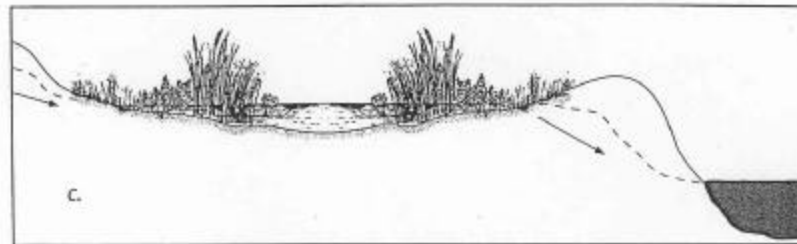


$$P_n = TF + SF$$
$$P_n = P - I$$

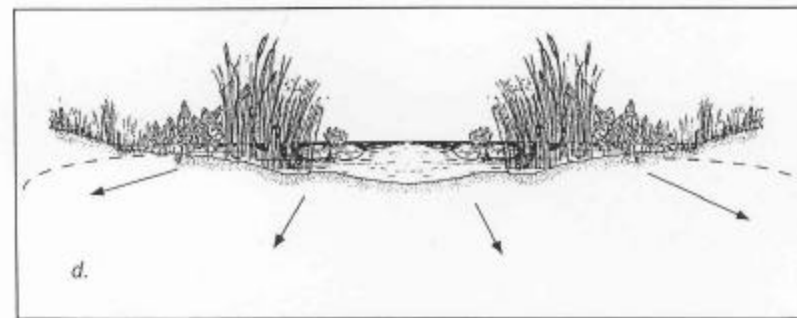
# Groundwater Discharge-Recharge



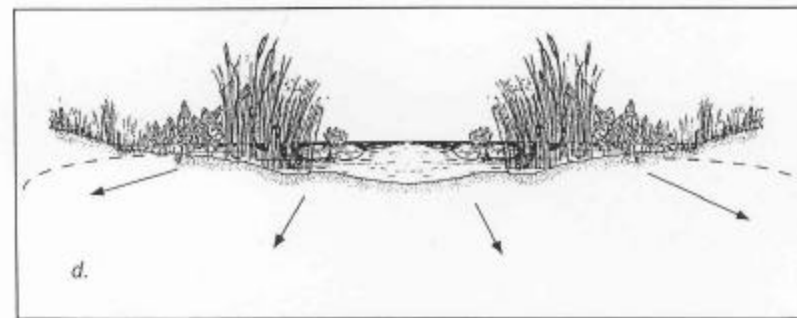
Discharge Wetland



Seep Wetland

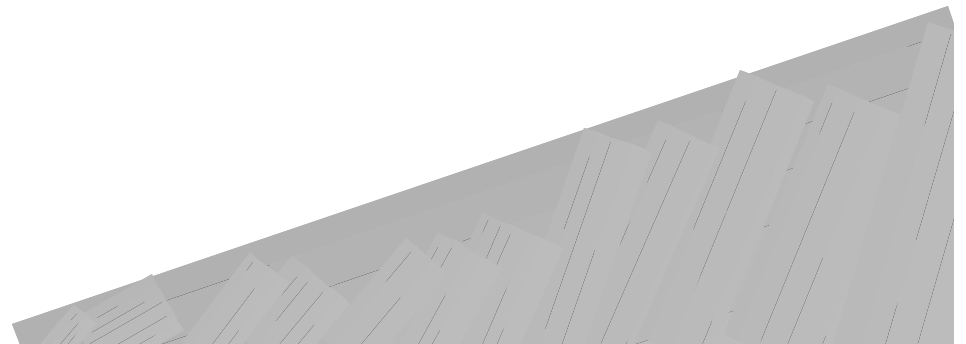
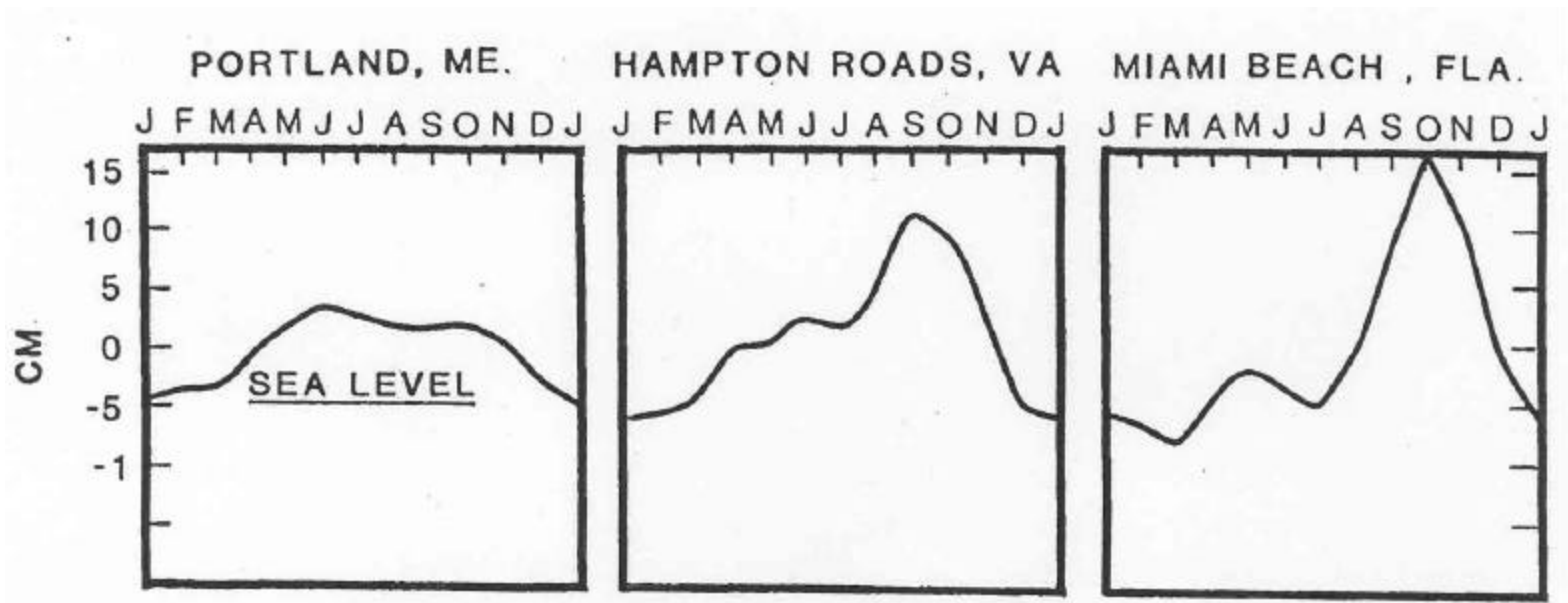


Floodplain Wetland



Recharge Wetland

# Tidal Cycles



# US Army Corps of Engineer Hydrology Criterion

## ◆ Duration

- Inundation/saturation at surface for 5 – 12% (continuous) of growing season
- Depth to water table - <12 inches
- Growing season – Frost-free days

## ◆ Frequency

- Average Conditions at least once every two years

