



United States Department of Agriculture



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Wetlands in a Watershed at the Landscape Scale

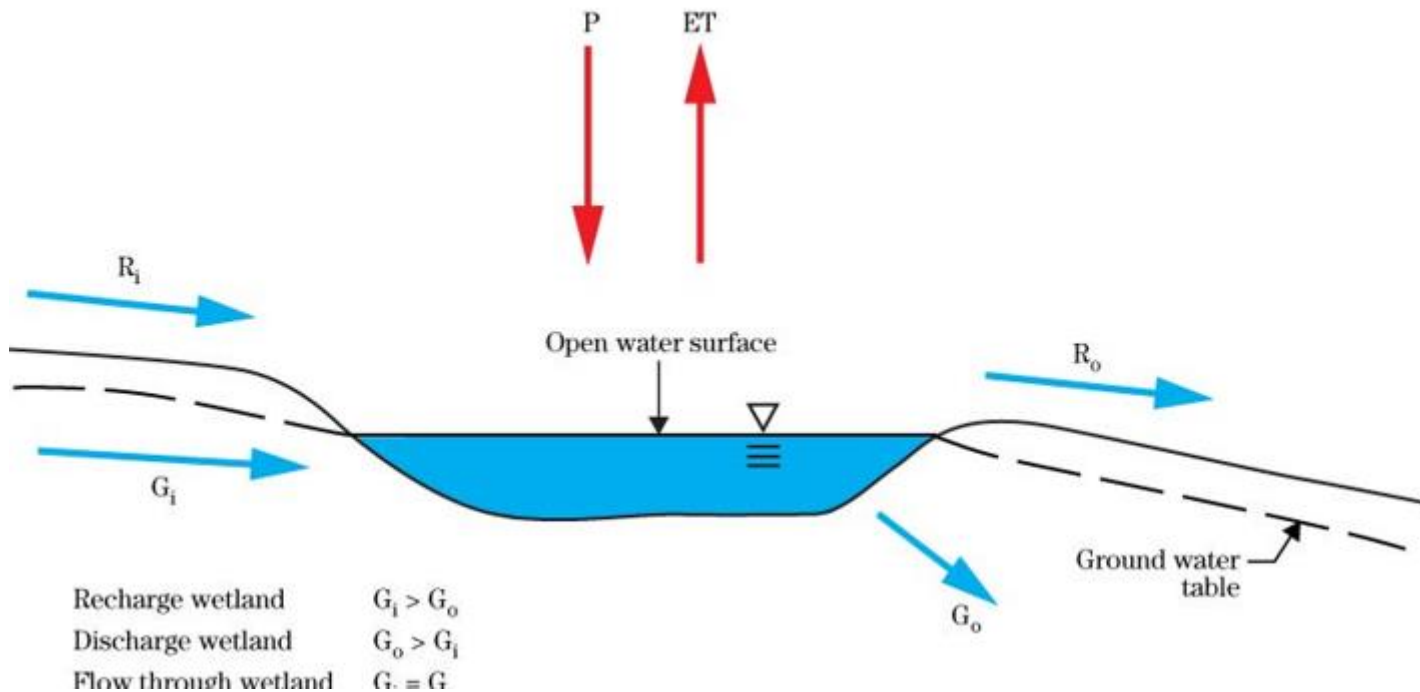
August 15, 2018 | Kendra Moseley, Regional ESS, Soil Science Division

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Summary – Hydrologic Factors

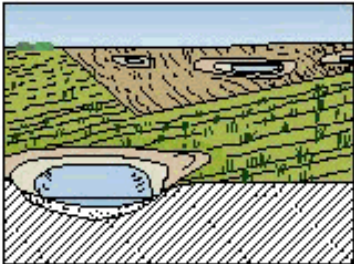
- **Source** of Water (Precipitation, Surface Flow, Groundwater)
- Flow **Direction** of Water
- **Amount** of Water (magnitude)
- **Duration** (residence time)
- **Timing** (season, frequency)



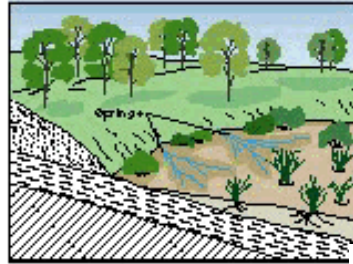
Summary – Geology & Soils



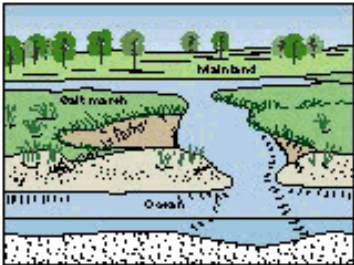
Geology and soils influence the types of wetlands that exist in an area based on their physical and chemical properties.



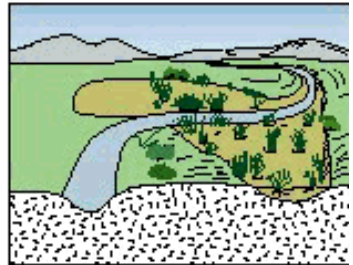
Isolated depressions



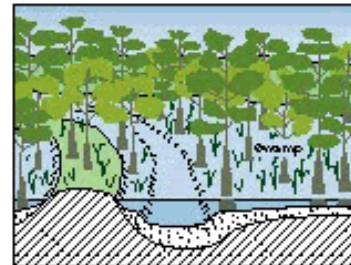
Seepage areas and springs



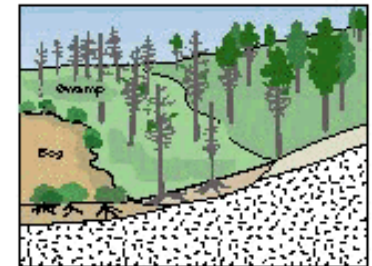
Sheltered embayments



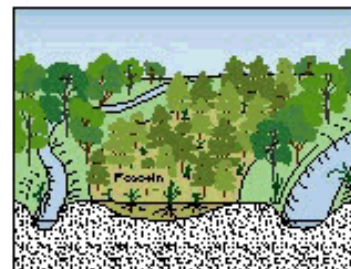
Basins with streams



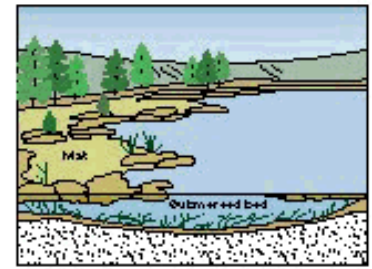
Flood plains



Blanket bogs in boreal and arctic regions



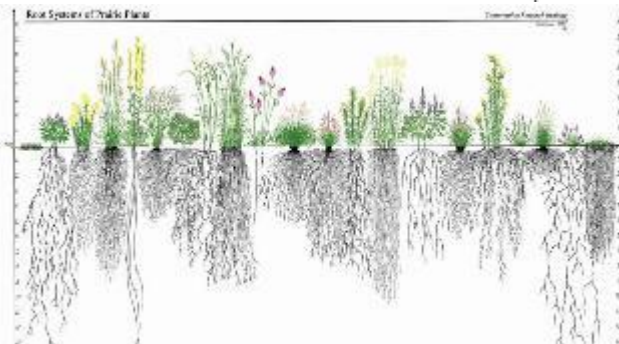
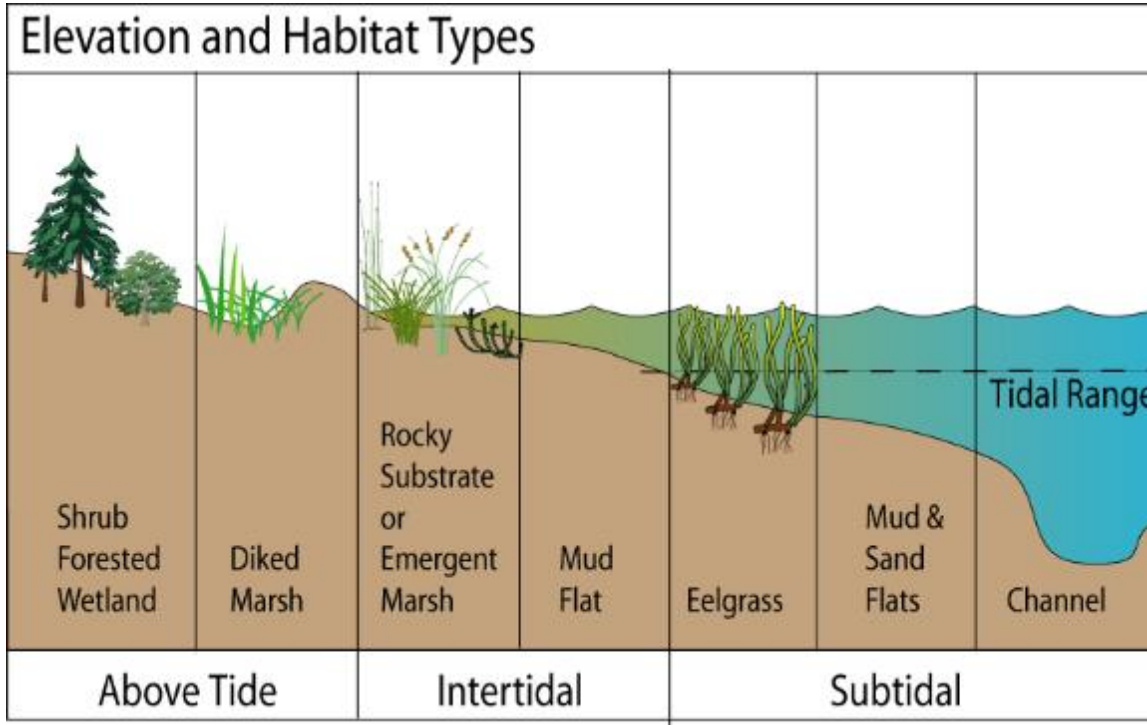
Relatively flat interstream divides (including poocosins)



Open water bodies with floating mats and submerged beds



Summary – Vegetation & Wildlife



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Summary – Land Use



- Groundwater pumping

Agricultural landscape



Groundwater pumping for irrigation has lowered the water table and dried up some rivers. Sediment, nutrients, and pesticides are exported from agricultural fields to the Mississippi River.

Water-quality effects



- Agricultural drainage



Excess nitrogen from fertilizer and manure has contaminated the groundwater and affected drinking water. The contaminated groundwater seeps into local streams and rivers and contributes to the eutrophication of Chesapeake Bay.



- Agricultural irrigation



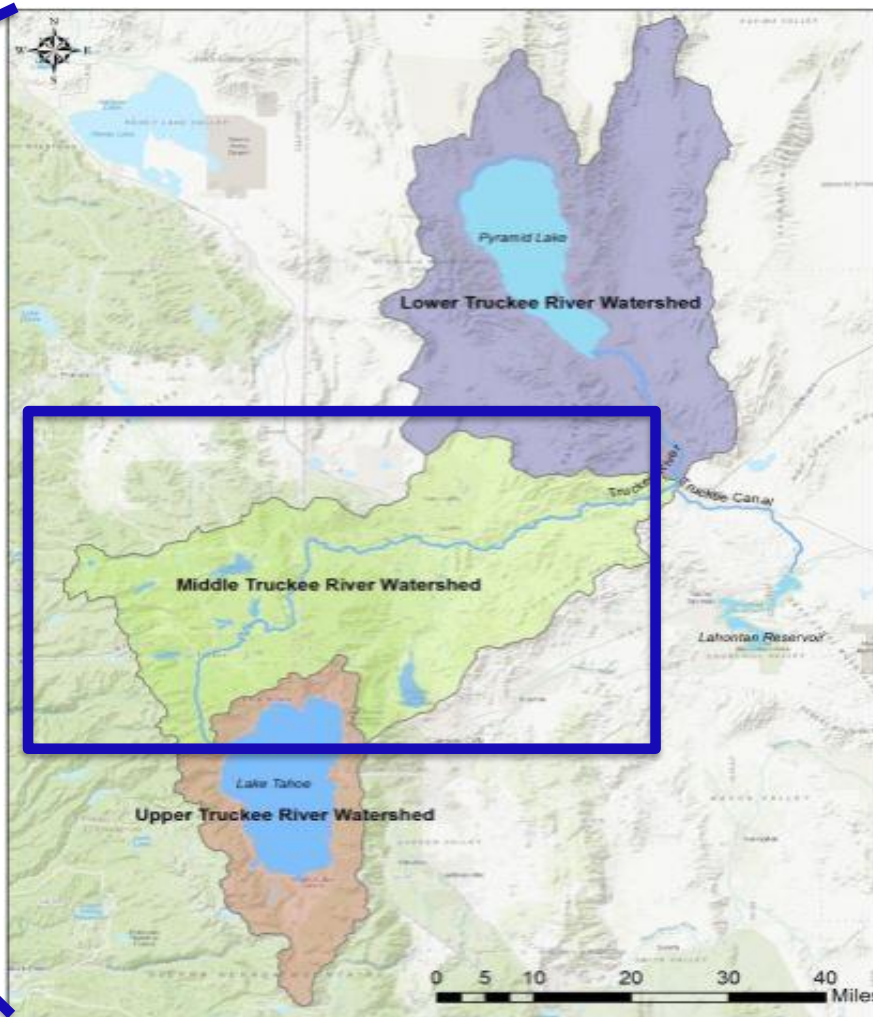
Prior to the 1990s, excess irrigation runoff transported large amounts of sediment and nutrients to streams. In the 1990s, changes in irrigation methods reduced the amount of runoff, decreasing the amount of sediment transported to streams. As the streams became less turbid, increased light penetration stimulated excessive aquatic plant growth in the clear, nutrient-rich stream water.



Summary – Landscape to Watershed



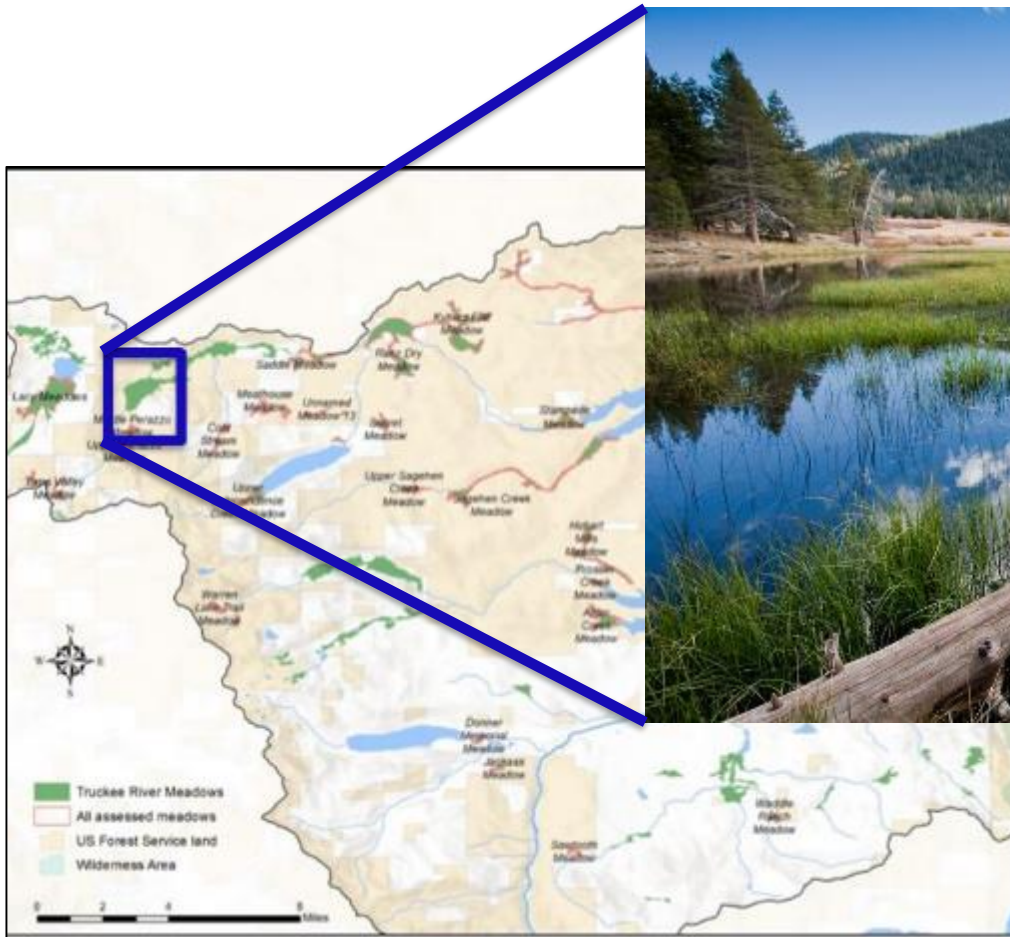
California Sierra Nevada Mountains



Middle Truckee River Watershed



Summary – Watershed to Wetland



**Middle Perazzo Meadows
Wetland**

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Middle Perazzo Meadows

Summary – Questions?



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