ES 10 Estuaries, Lakes, and Streams 3-12-01

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My goal today is to introduce you to a few important issues involved in protecting and maintaining natural (and unnatural) waterways, while demonstrating the connections between terrestrial and aquatic ecosystems.

1. Lakes and reservoirs -- a California perspective
   Principle of multiple use

2. The hydrologic cycle revisited

   The Water Balance Equation:
   Change in basin storage = (Precipitation + Runoff In) – (Evaporation + Drainage)
   INPUTS - OUTPUTS

3. Water movement through the environment
   Time Scales -- short-term (*e.g.* storm water runoff)
   -- long-term (*e.g.* groundwater recharge, weather patterns)
   Sedimentation
   Nutrient cycles
   Contaminant transport

4. Nutrient cycling issues in lakes

5. Ebb and flow in estuaries

6. Water quality, habitat, and bioaccumulation

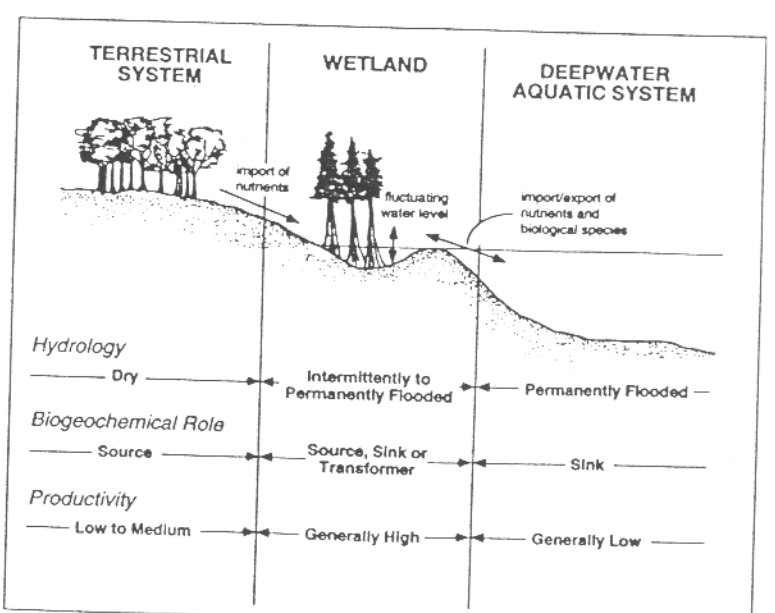

Figure 1–7. Wetlands are often located at the ecotones between dry terrestrial systems and permanently flooded deepwater aquatic systems such as rivers, lakes, estuaries, or oceans. As such, they have an intermediate hydrology, a biogeochemical role as source, sink, or transformer of chemicals, and generally high productivity if they are open to hydrologic and chemical fluxes.