

### **Al Todd, US Forest Service**

- There is a need to look at the coastal system in particular but also to look at buffers in the upland watershed.
- We need to know a lot more about the science of coastal environments, with regard to buffers.
- Most of the scientific research on water quality and aquatic system benefits of buffers is from freshwater streams and upland watersheds. Much of what we learn about buffer processes in upland areas can be applied to coastal zones.
- We also need to know a lot more about water flow and quality in urban environments, and the role that buffers play.
- A buffer in an urbanized setting may not be as effective at water quality treatment than in a rural or agricultural area. Other practices may be needed to simulate buffer functions and processes and compliment their effectiveness such as bioretention, urban tree canopy increases, or combining engineering and soft/natural practices.
- It is best to define buffers in terms of functions that we wanted them to provide: maintain integrity of streams and coastlines, reduce impact from upland pollution, and supply biological needs (fish and wildlife).
- Scale is vitally important to understanding value of buffers and their functions: effects at site, watershed and regional scales.
- Different definitions of water quality – James Karr quote – it is more than chemicals in the water but should include stable natural ecosystems to the extent possible.
- In addition to the processing of pollutants from upslope runoff and groundwater, we should not discount the valuable functions of preventing direct inputs by setting potentially risky activities back from the water.
- Having a vegetation target that looks at the natural ecosystem is important.
- View of coastal areas as "Living shorelines" is an emerging approach.
- A lot of this information is available. Call Chesapeake bay program: 1-800-YOUR-BAY and request the Chesapeake Bay Riparian Handbook DVD. The website also has some info: <http://www.Chesapeakebay.net>