

Connecting the Land to the Water: Soil Health and Aquatic Environments

Rusty Rodriguez

USGS/BRD

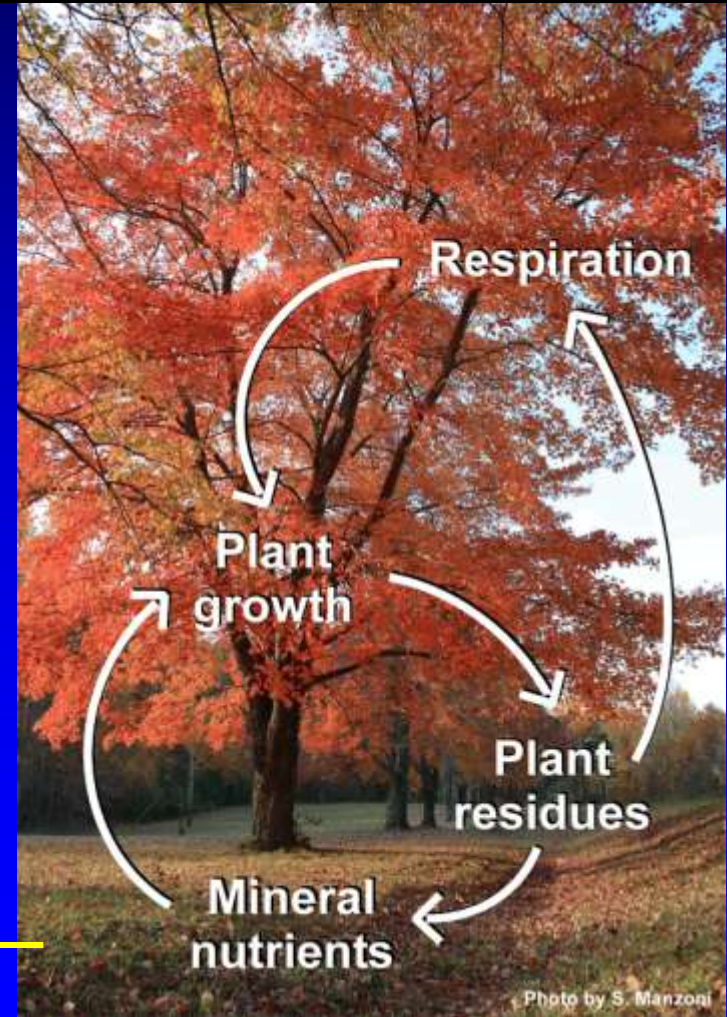
Seattle, WA

Soil Health versus Aquatic Health: A Dynamic Interplay of

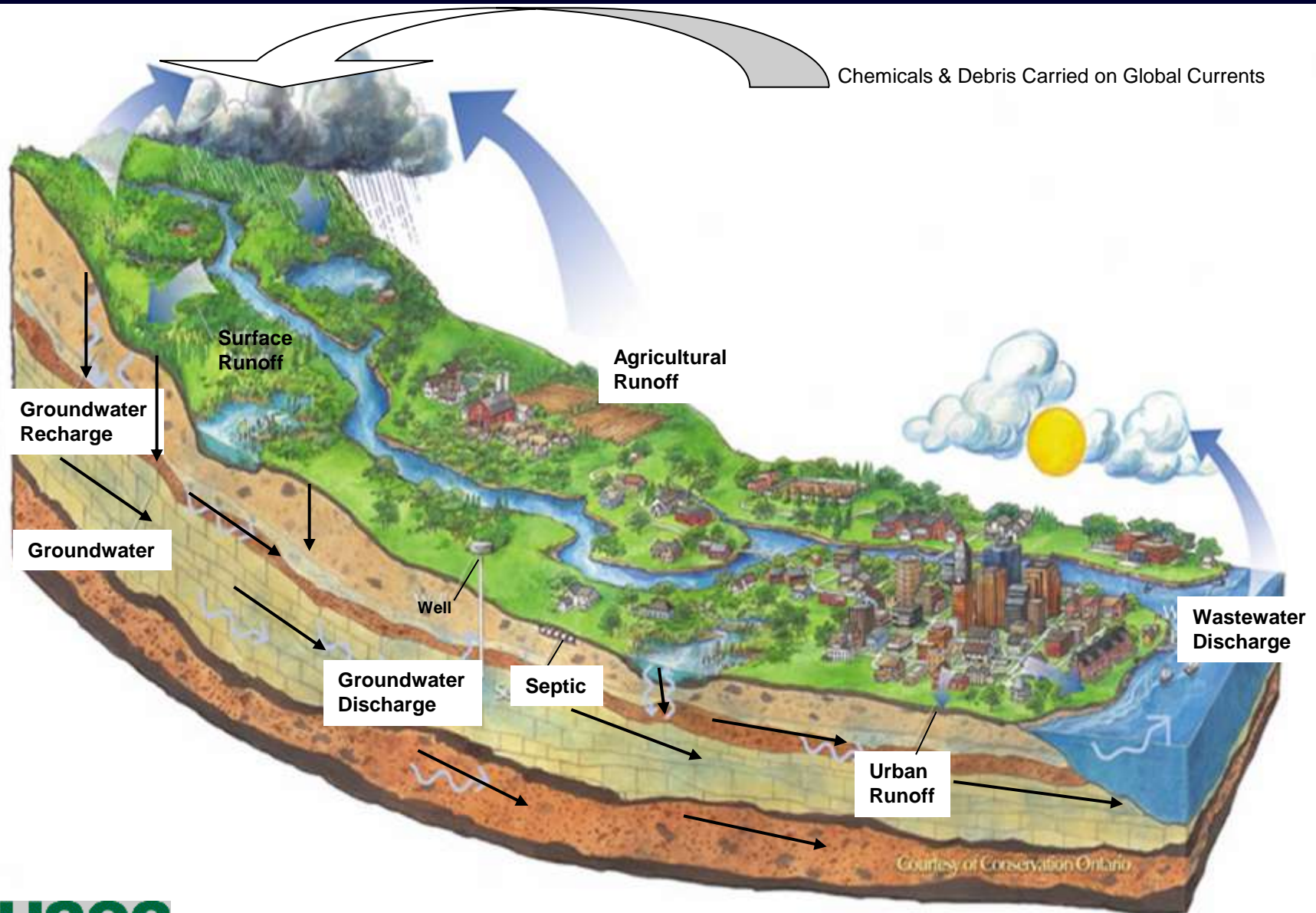
Biology (plant, microbial & invertebrate activities)

Chemistry (nutrients, pH, toxins, salinity, Oxygen)

Physics (structure, texture, aggregation)



Land & Water Connection: What Comes Around, Goes Around



Water Quality is a Reflection of Land Use and Mitigation Measures



Agricultural & Industrial Chemicals



Herbicide & Pesticide Runoff & Percolation

(metabolic dysfunction, altered sex ratios)



Fertilizer and Eutrophication

(reduced oxygen, immune dysfunction)



Often results in the growth of toxic algae
(toxins, disease)

Accelerated Sedimentation Impacts Aquatic Life

(suffocation, gill damage, light & structural loss)



Common Causes of Accelerated Stream Sedimentation



Soil Disturbance and Invasive Species



Phragmites Removal
Chemical
Physical
Burning

Sediment Plume Moves into Salt Water



Dec. 11, 2007 plume photo
from U.S. Coast Guard

Sensitive Marine Ecosystems

