



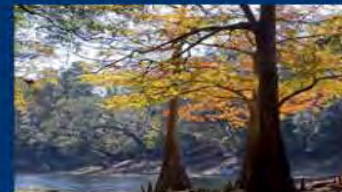
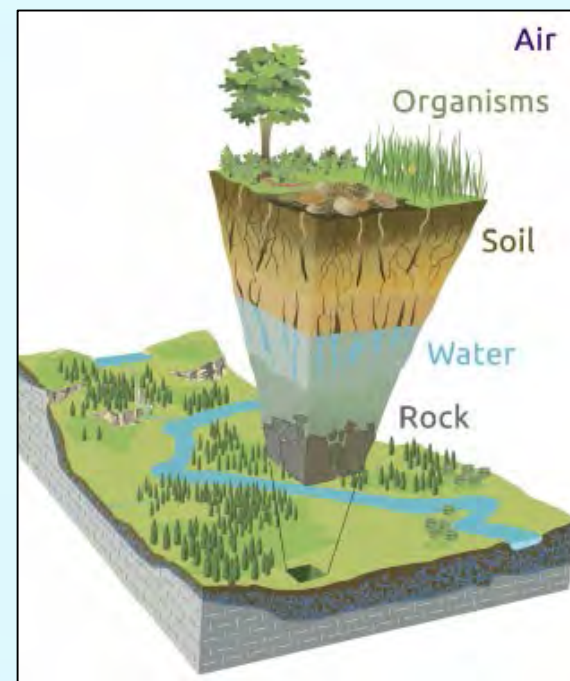
Florida Department of Environmental Protection

Florida Geological Survey

Florida's Aquifers

Jonathan D. Arthur, PhD, PG
Director and State Geologist

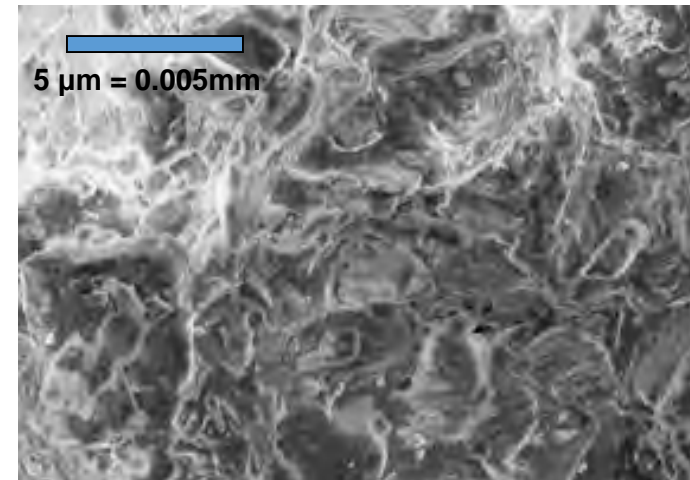
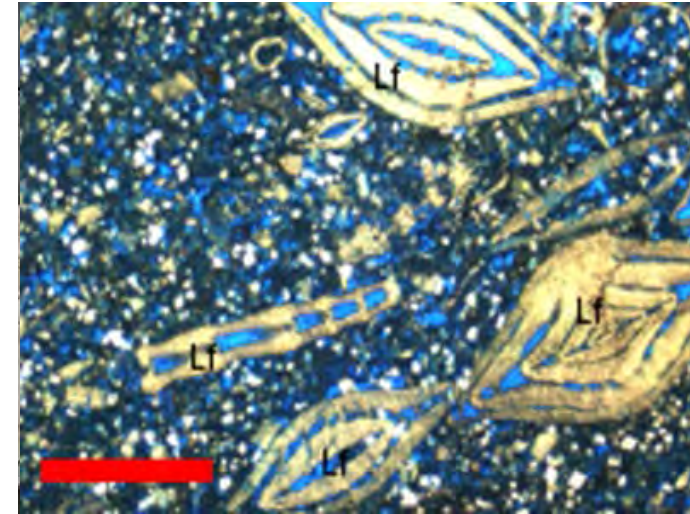
Public Land Acquisition and Management
Partnership Conference
October 2, 2018

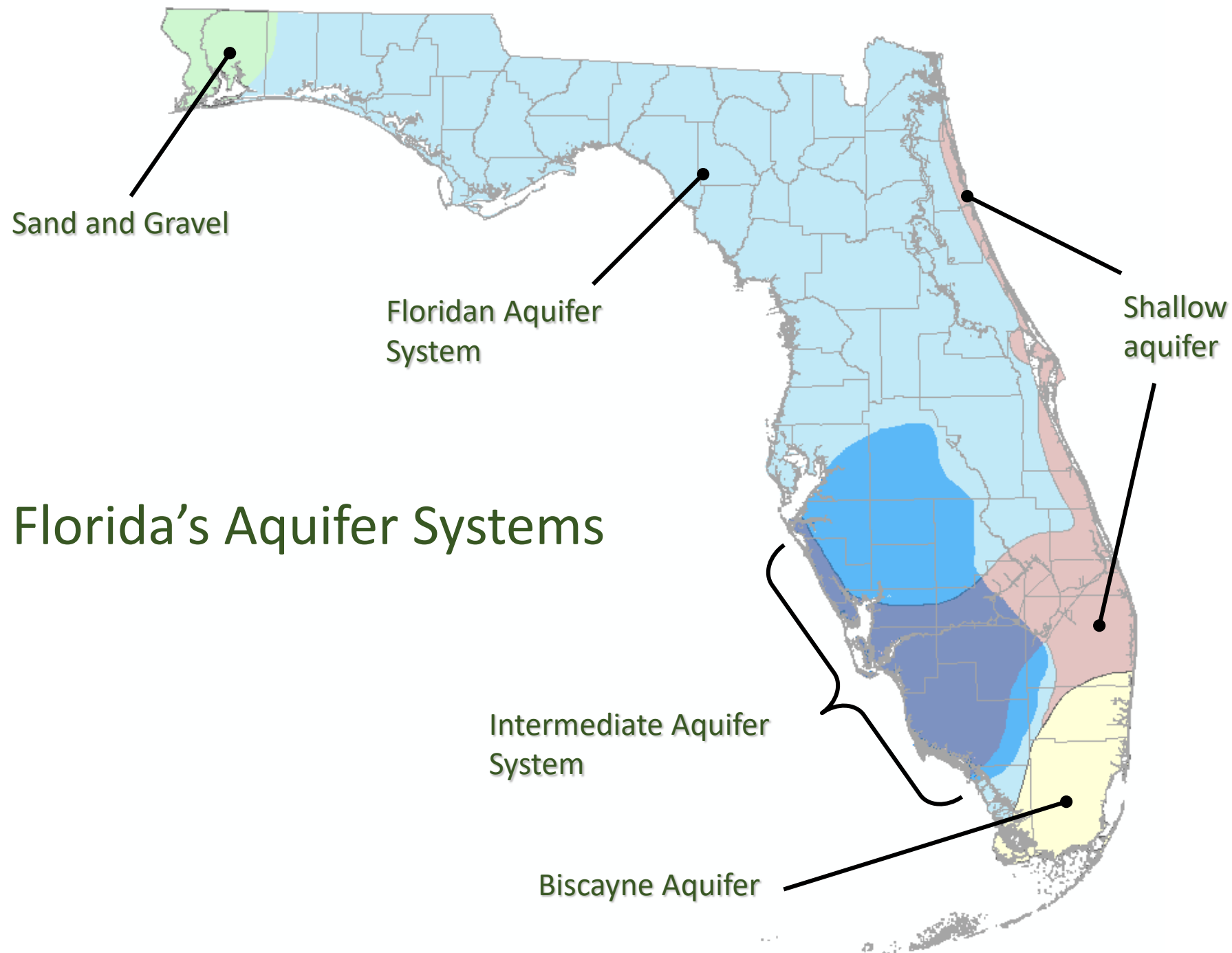




The fundamentals...

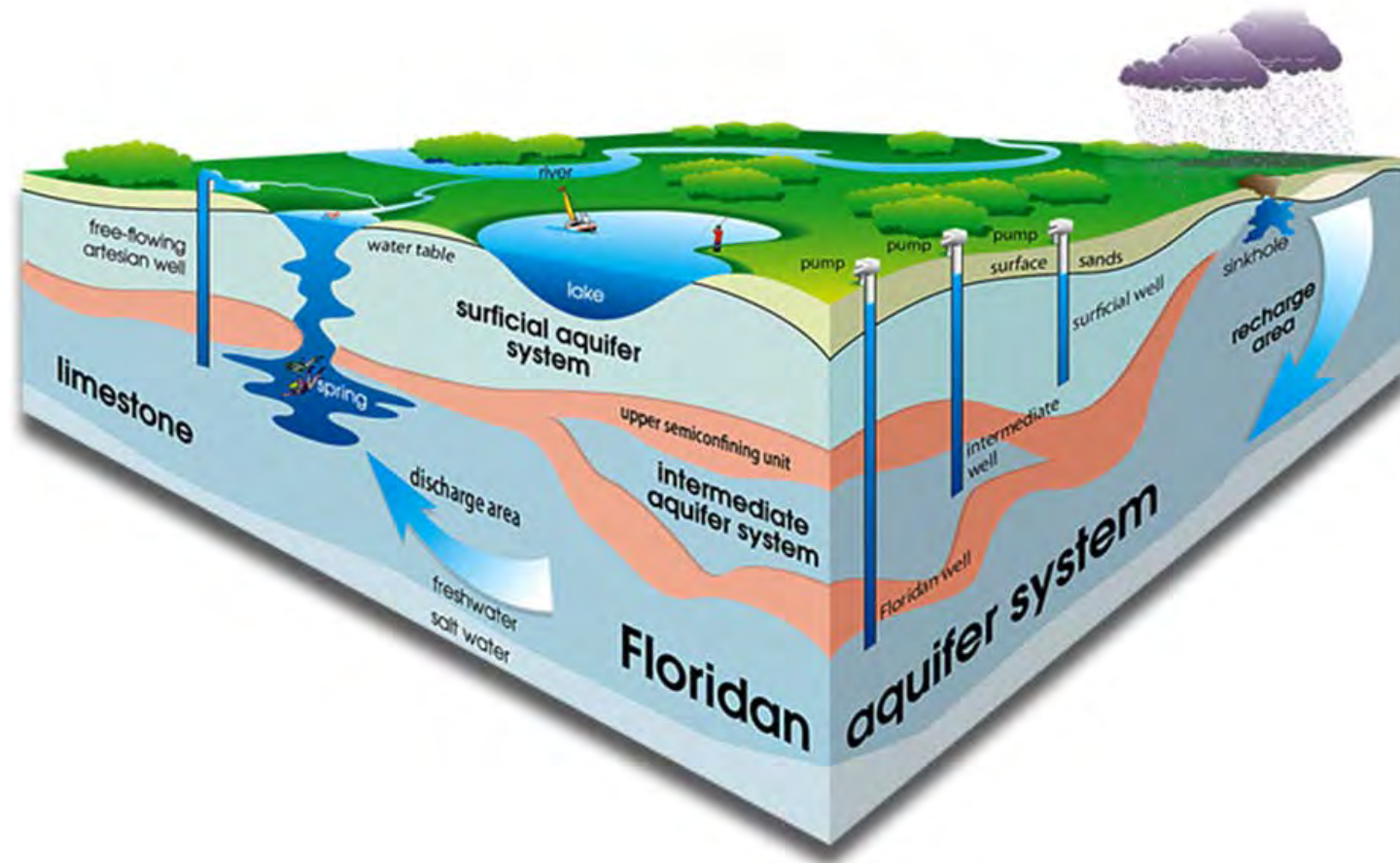
- Permeability - the capacity of a porous rock, sediment or soil to transmit fluid
- Confining layer - rock and sediment that restrict the vertical movement of water
- Aquifer system - permeable rocks and sediments that contain enough ground water to be pumped from a well





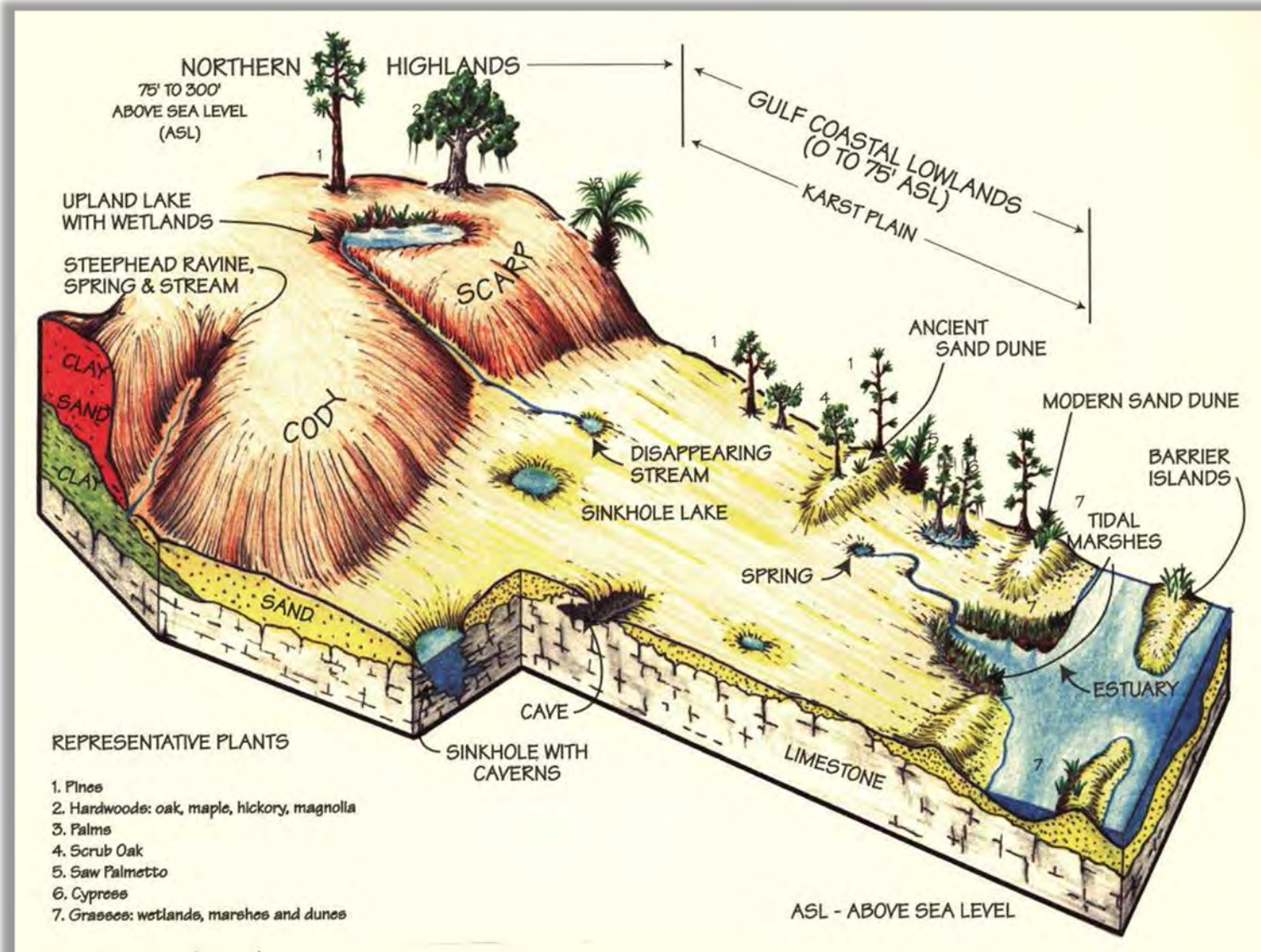


The “Bucket”



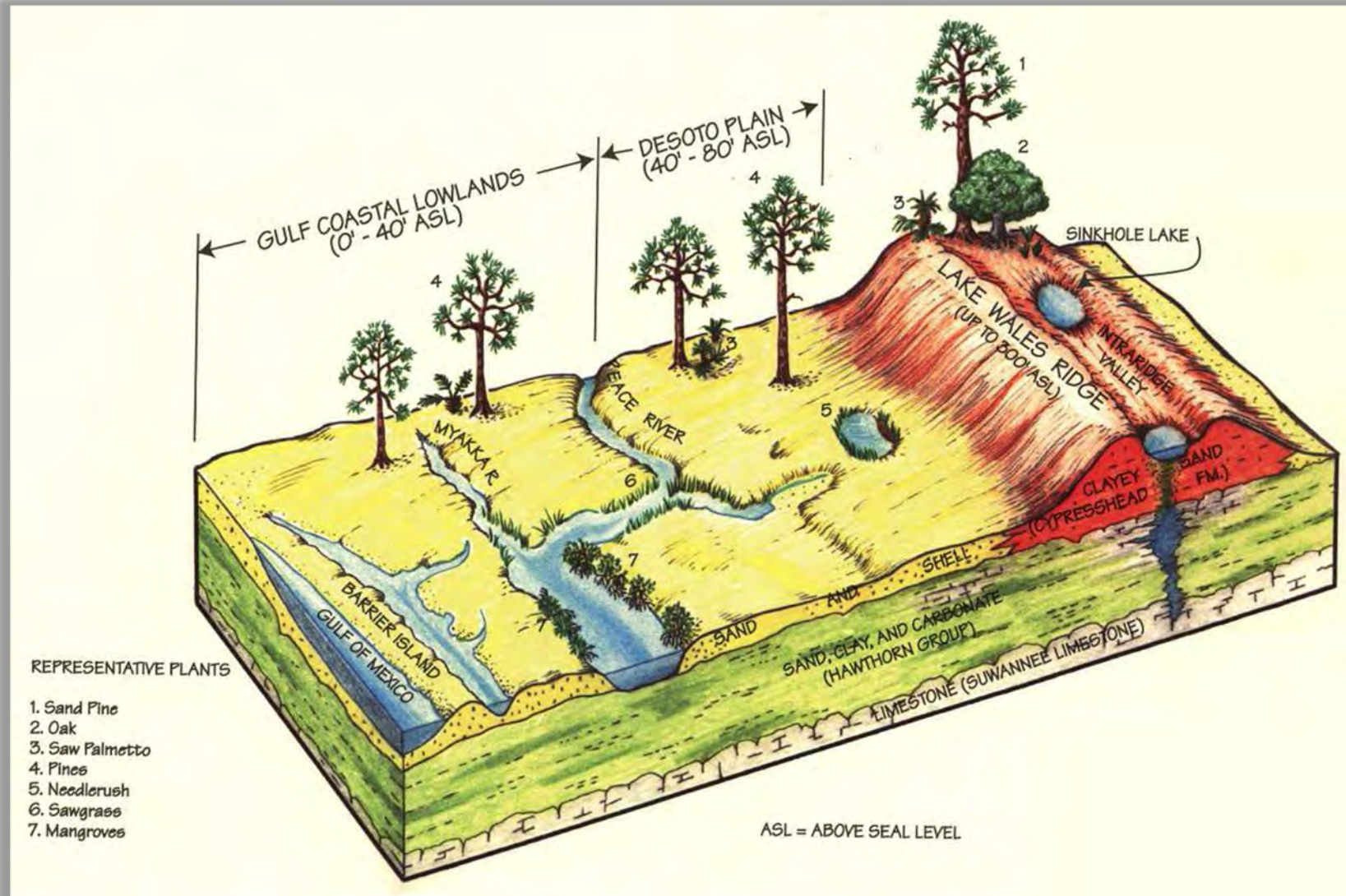


Northwest Florida





Central Peninsula



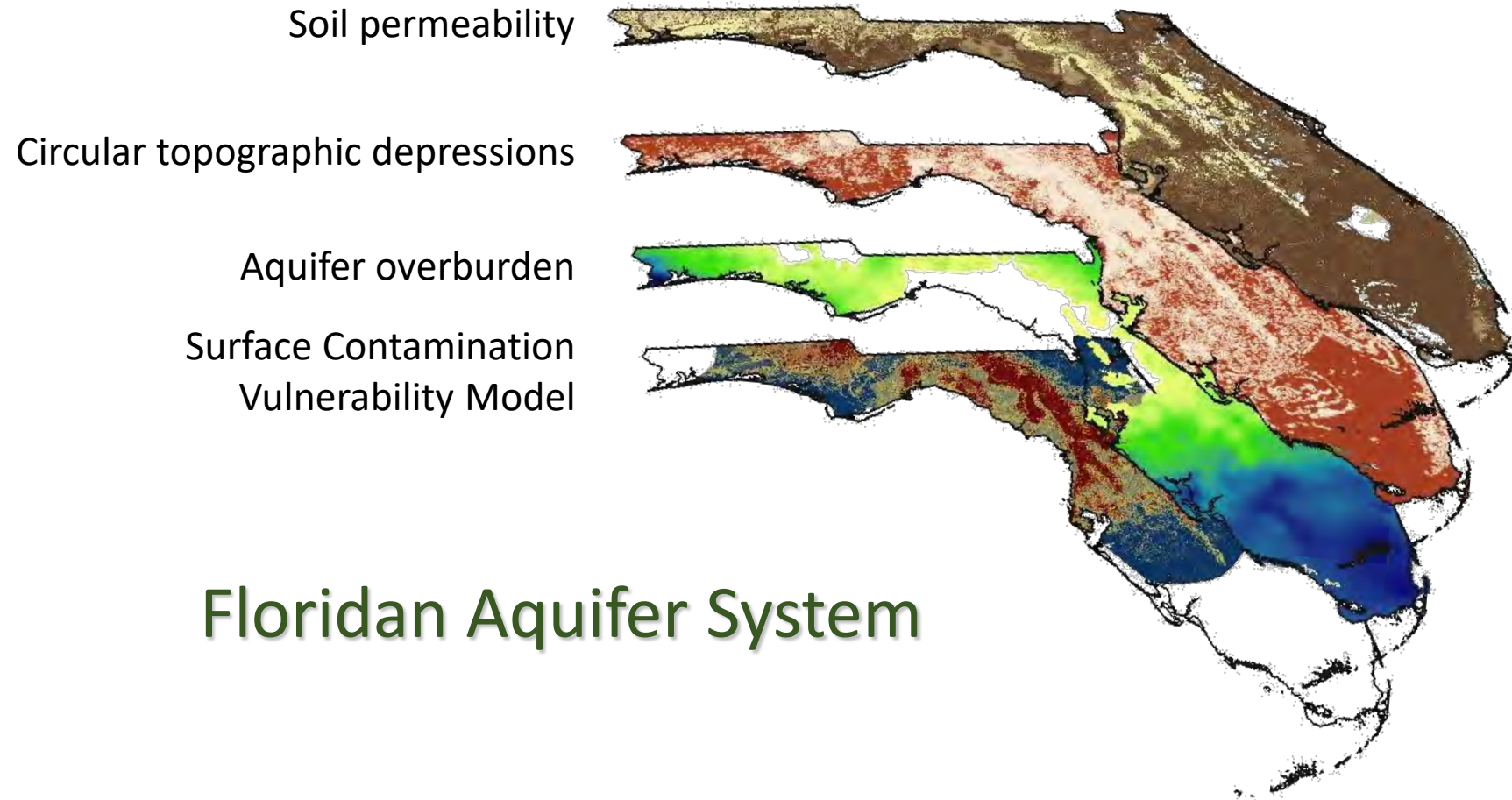
Vulnerability factors

- Depth to aquifer rocks
- Depth to groundwater
- Type & thickness of overburden
- Permeability
- Proximity to sinkholes and other pathways



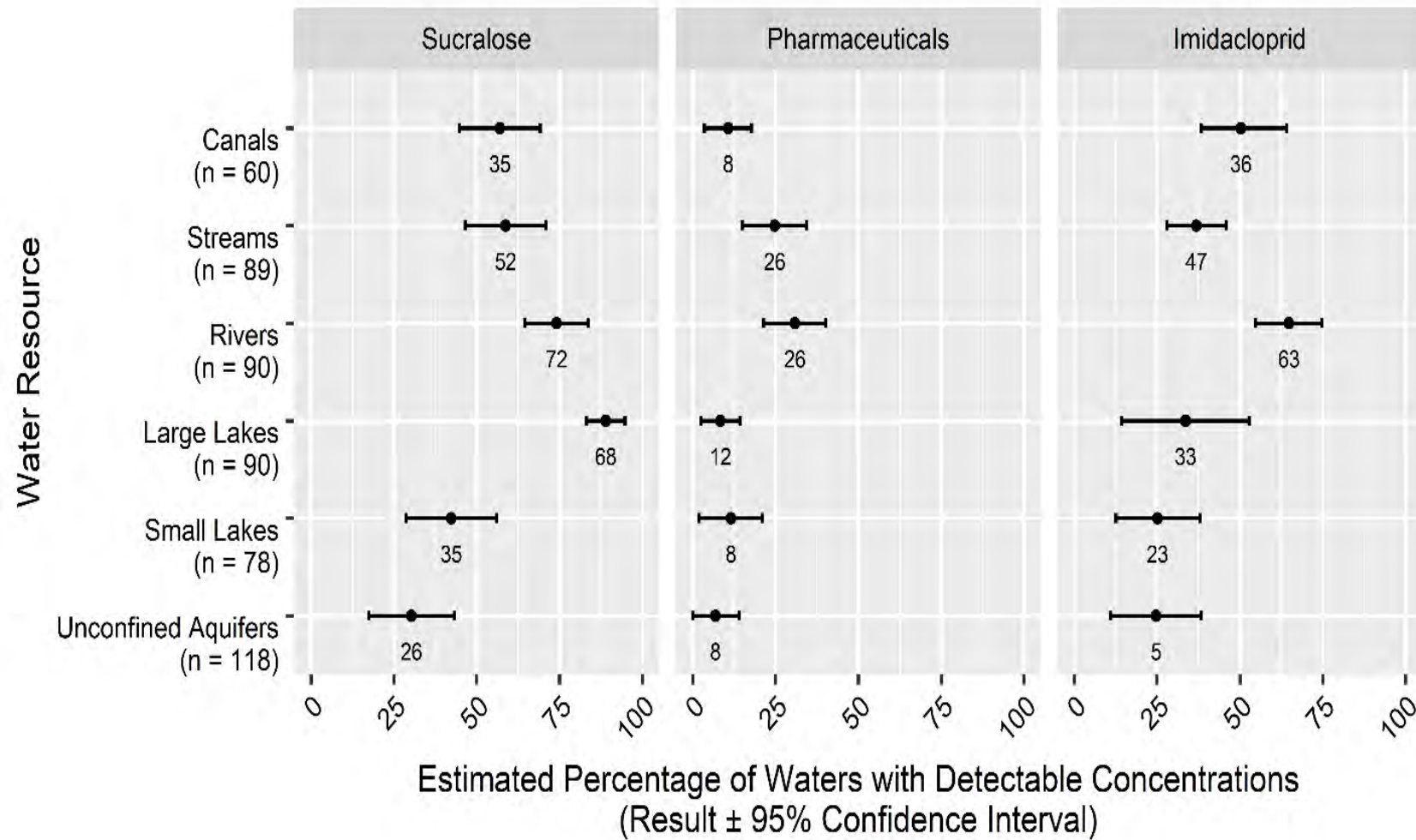


Aquifer Vulnerability





Water Quality





Natural Aquifer Protection

How fast and how much these contaminants reach the groundwater depends on biological, chemical and physical aspects of the surface/subsurface materials, and interconnection between surface water and groundwater.

Microorganisms and organic matter in soils and sediments support chemical and biological reactions that reduce some of the contaminants before they reach to the groundwater.

Low-permeability soils and thick, clay-rich sediments overlying water-bearing rock or sediment layers help to protect groundwater from contaminants introduced at the land surface.



Protection Programs

- Total Maximum Daily Loads
- Basin Management Action Plans
- Minimum Flows and Levels
- Springs Restoration
- Scientific Research

