



# National Hydropower Association Southeast Regional Meeting

## Drought Management and Water Supply Issues

Birmingham, AL

December 3, 2008

Ty Ziegler, P.E.

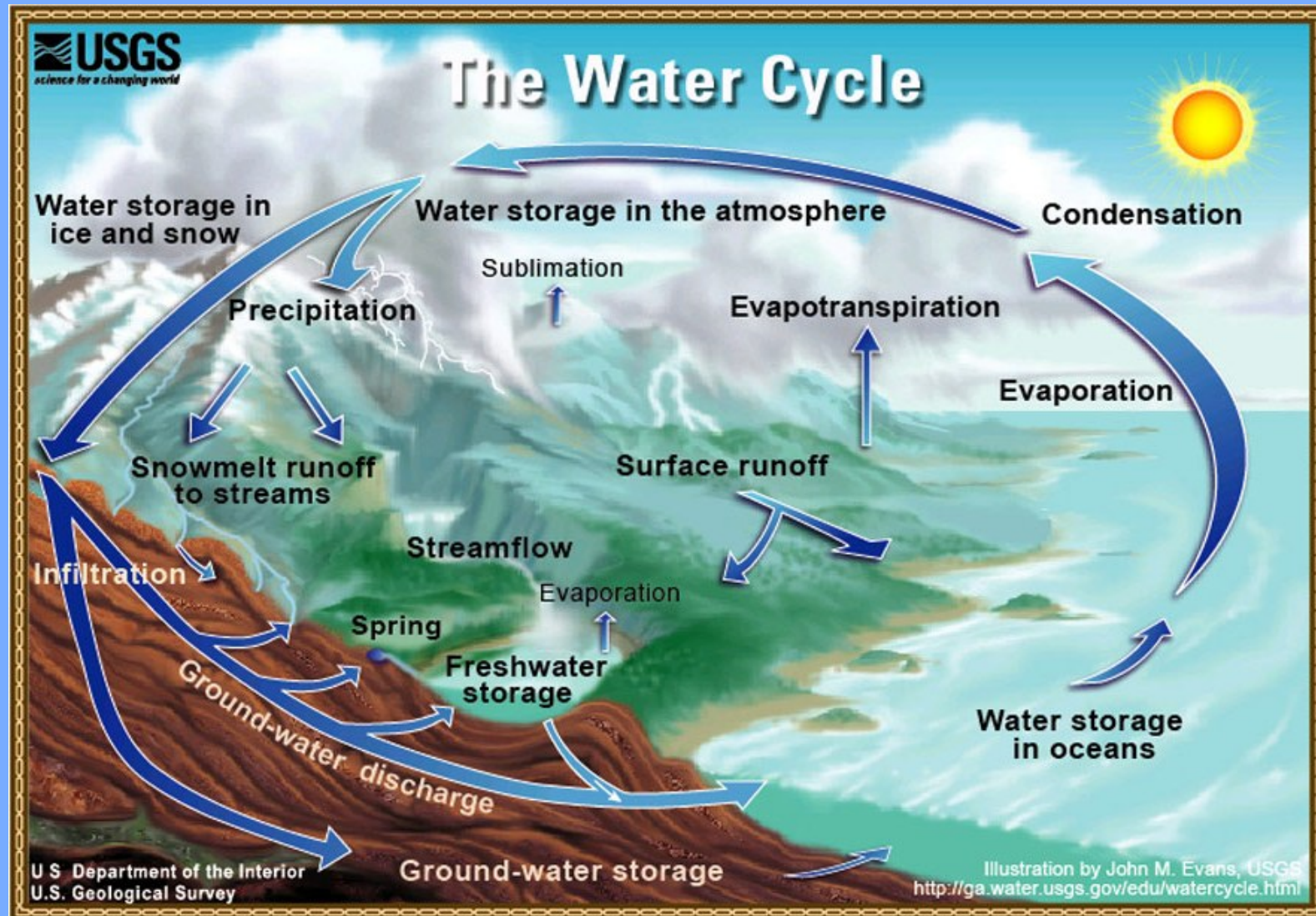
## PANELISTS

- Roger McNeil (National Weather Service) –  
Drought Tools and Indicies
- David Moore (Troutman Sanders) –  
Legal Perspective
- Alan Peeples (Alabama Power) –  
Operational Perspective



An aerial photograph showing a severe drought impact on a landscape. The ground is parched and cracked, with large areas of exposed, light-brown soil. Patches of dark green forest and some sparse, dry vegetation are scattered throughout the scene. The overall tone is one of desolation and environmental stress.

# WHY DOES THIS HAPPEN???





December 3, 2008

Drought Management and Water Supply Issues





December 3, 2008

Drought Management and Water Supply Issues







# HYDRO GENERATION

## Peaking Operations

Meet Power Demands

## Baseflow Operations

Maintain Min Flow

Aquatic

Wastewater

Raw Water Intakes

Navigation





## IMMEDIATE EFFECTS

- **Water Restrictions**
  - Municipal
  - Irrigation
- **Recreation**
  - Access Restrictions
- **Environmental**
  - Reduction in Suitable Habitat
  - Water Quality Concerns
- **Power Production**
  - Water = Fuel
  - Thermal Derates, Steam Production, Air Pollution Control



## RIPPLE EFFECTS

- **Water Restrictions**
  - Industries that rely on process water shut down
  - Job losses
  - Economic growth concerns
  - Navigation concerns (in some areas)
- **Recreation**
  - Loss of tourism dollars
- **Environmental**
  - Saltwater intrusion near coastal areas
  - Increase in private groundwater wells
- **Power Production**
  - Grid stability issues
  - Off-channel Water Supply Reservoirs
  - Increased use of non-renewable energy sources (particularly combustion turbines)



# WILL WE KEEP REPEATING THIS CYCLE???

