Characterize Acclima TDT soil moisture sensors

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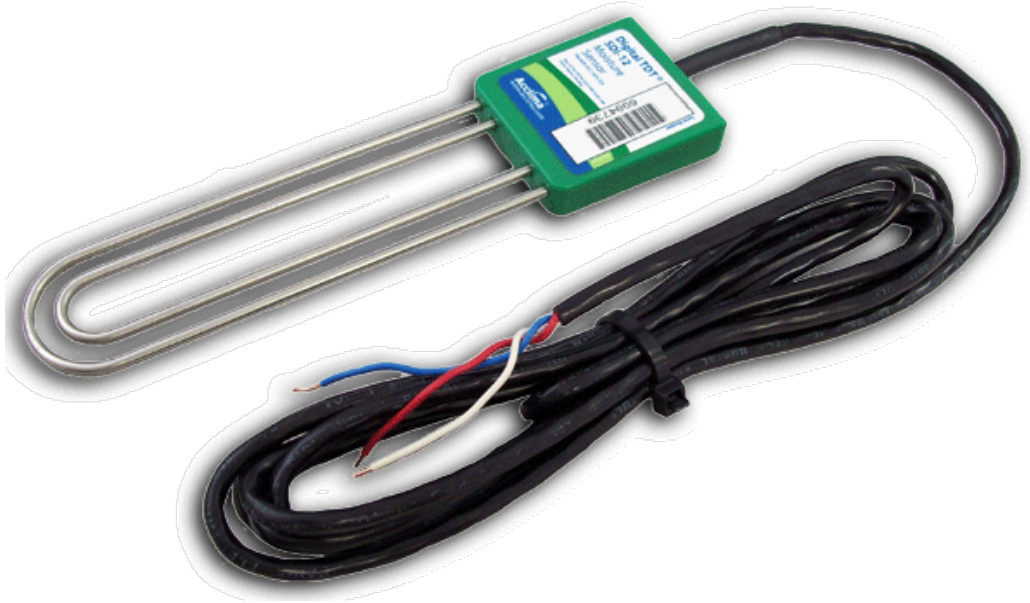
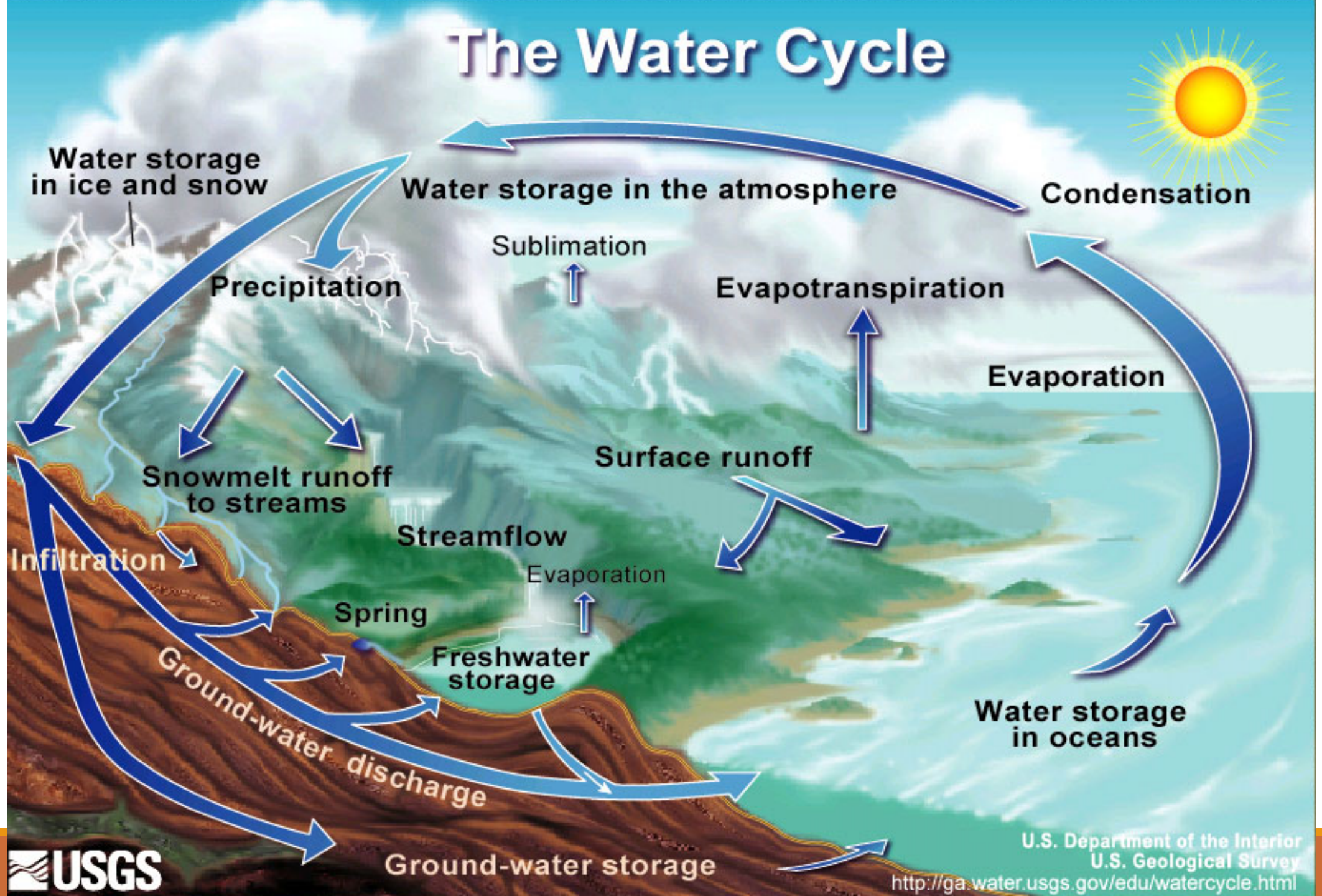
Project Goal

Characterize Acclima TDT Soil Moisture Sensors

Sensor Measurements:

- Travel time (permittivity)
- Soil electrical conductivity
- Soil temperature




The Water Cycle
Water storage in ice and snow
Water storage in the atmosphere
Condensation
Sublimation
Precipitation
Evapotranspiration
Evaporation
Surface runoff
Snowmelt runoff to streams
Streamflow
Infiltration
Evaporation
Spring
Freshwater storage
Ground-water discharge
Water storage in oceans
Ground-water storage
USGS
U.S. Department of the Interior
U.S. Geological Survey
http://ga.water.usgs.gov/edu/watercycle.html

What I did

Tested all 170 sensors in air and water

- Permittivity Calibration

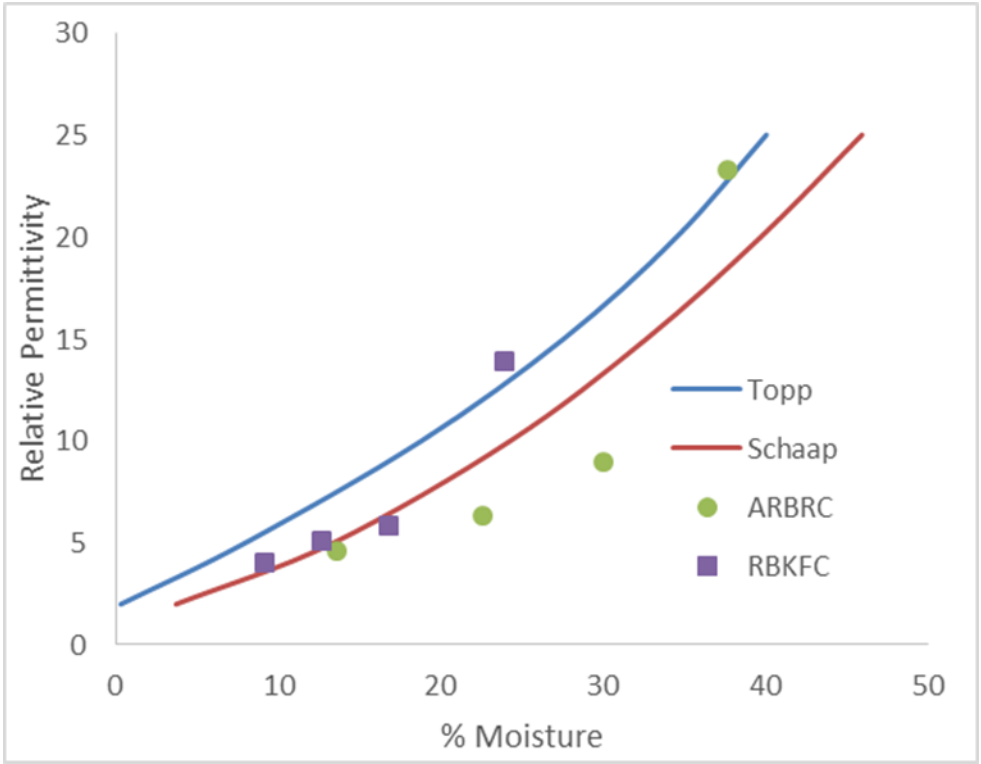
Characterized soils in Red Butte Creek

- Collected samples at 5 depths
- Tested non-typical soils using TDT sensors
- Developing characteristic curves for water content-permittivity

Results

Of 170 sensors, 4% of sensors failed testing during permittivity calibration

A rough soil water content – permittivity relationship was determined through soil calibration



What's next

Forest site permissions pending

Additional sensor testing in soil samples from GAMUT sites needed

Installation and monitoring of sensors at GAMUT sites planned