

Resilience and Restoring
the Hydrologic Cycle

Reba D. Epler

Land Ethic & Community Law

Resilience

- “Think of it as beyond resilience. A system’s capacity to absorb shock, such as a forest fire or a hurricane (or a personal bankruptcy), and then “bounce back” to something like its original condition is called resilience. It means having enough integrity to return to normal—for example, enough rain to grow grass again or enough resources to remain financially healthy. But what if a system’s definition of normal changes? What if an area’s annual precipitation drops by half, or when the rains do fall, they come as a large flood event? What if you have access to only half as much food as you normally eat? You’ll likely be thinking and behaving in ways simply beyond bouncing back. Perhaps endurance or survival might be better words.” Quivira Coalition No. 41 August, 2015.



Let the Water Do the Work

Induced Meandering — Bill Zeedyk

Humans have the capacity and ability to restore and regenerate the land.

➤ We are the “Gardeners of Eden”

➤ Land Restoration & Regeneration Practices work!

➤ It is fun, fulfilling and physical work!



Rainwater Harvesting



“Reducing water costs and lessening the demand on water resources are the two main reasons people become interested in rainwater harvesting.” Billy Kniffen
Texas Rainwater Specialist.

[http://rainwaterharvesting.tamu.edu/
contacts/](http://rainwaterharvesting.tamu.edu/contacts/)





100%
Residue
Cover

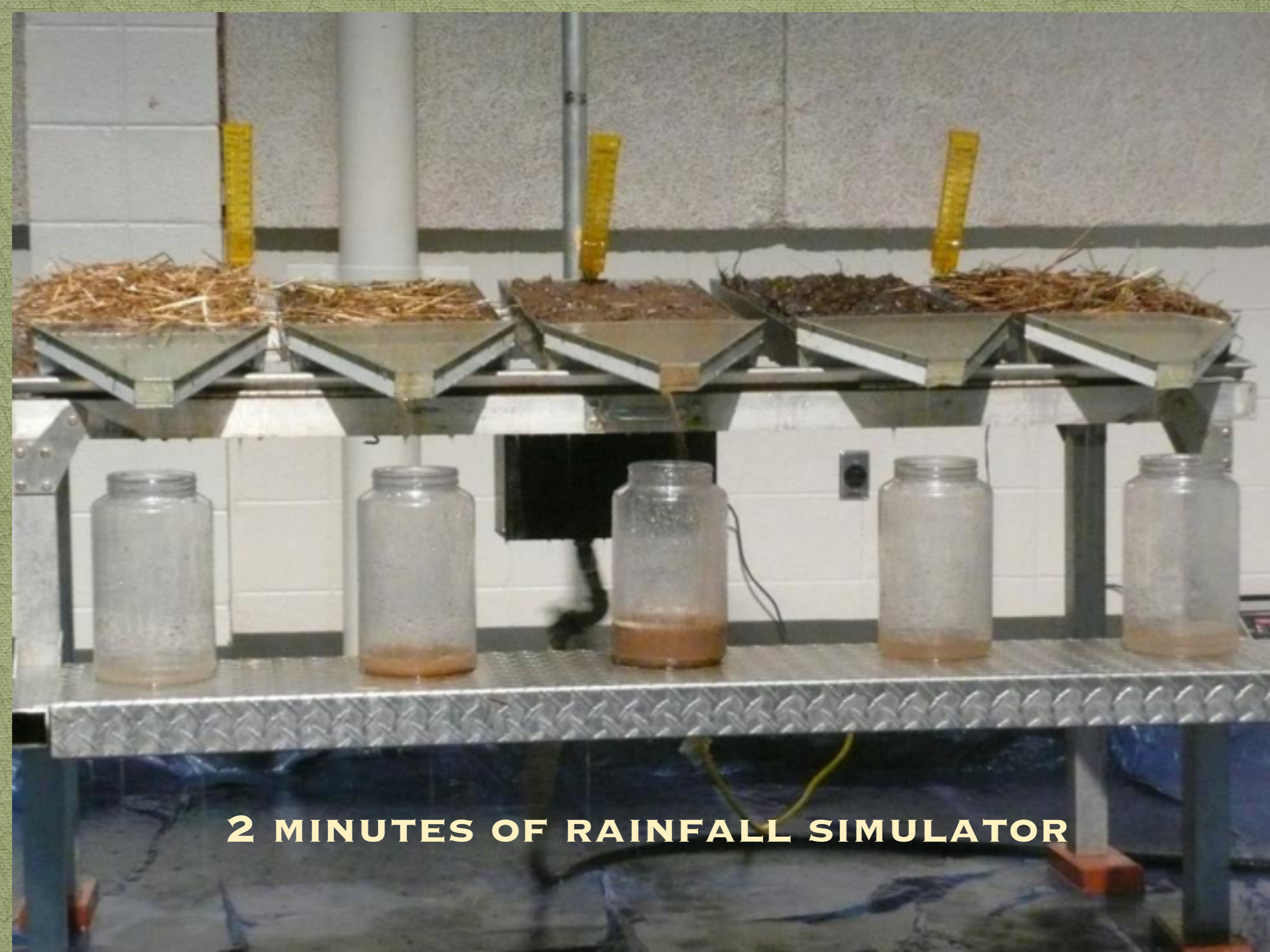
30%
Residue
Cover

Tilled
Bare
Ground

Structured
Bare
Ground

Grass
Sod

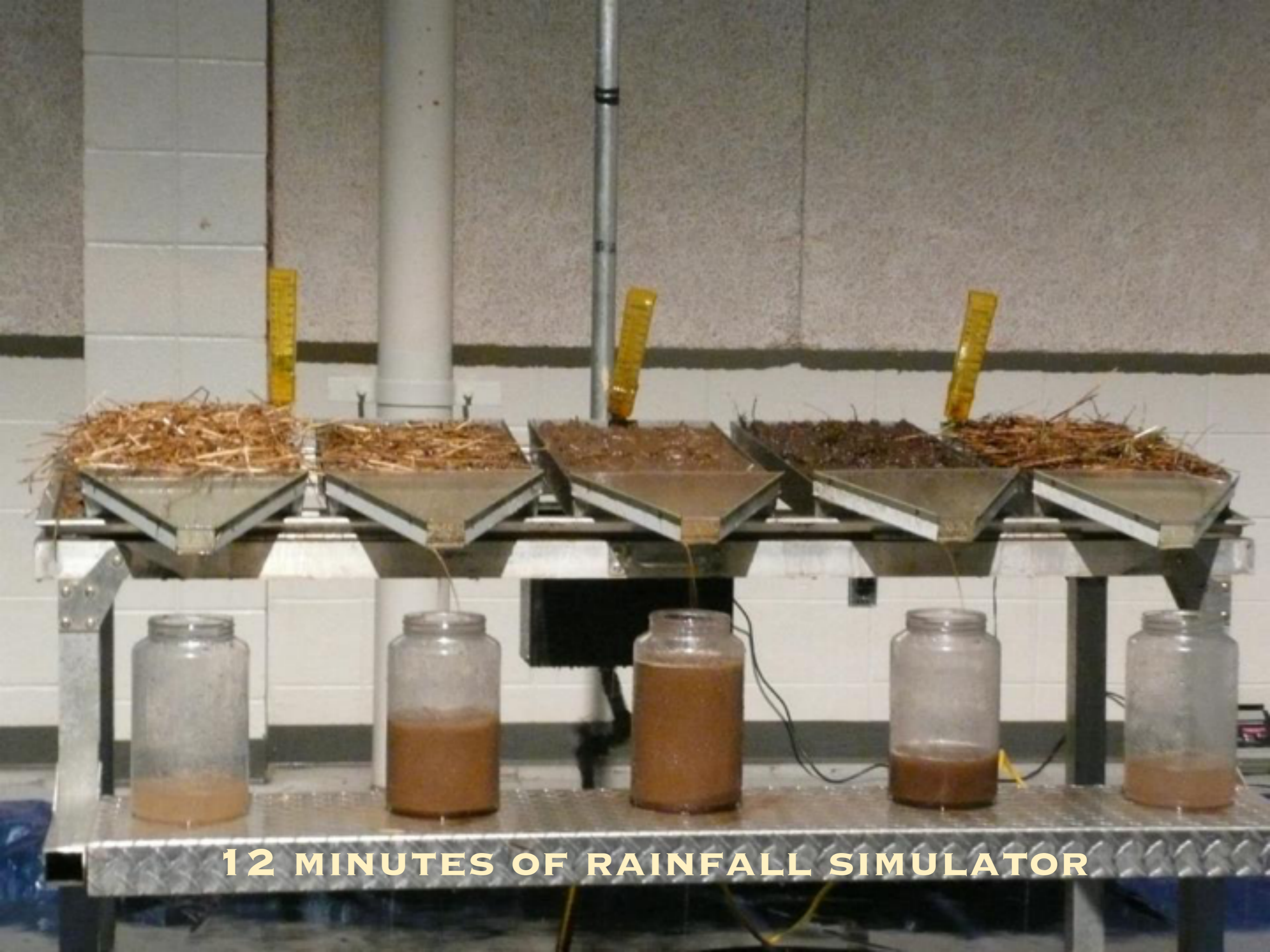




2 MINUTES OF RAINFALL SIMULATOR



8 MINUTES OF RAINFALL SIMULATOR

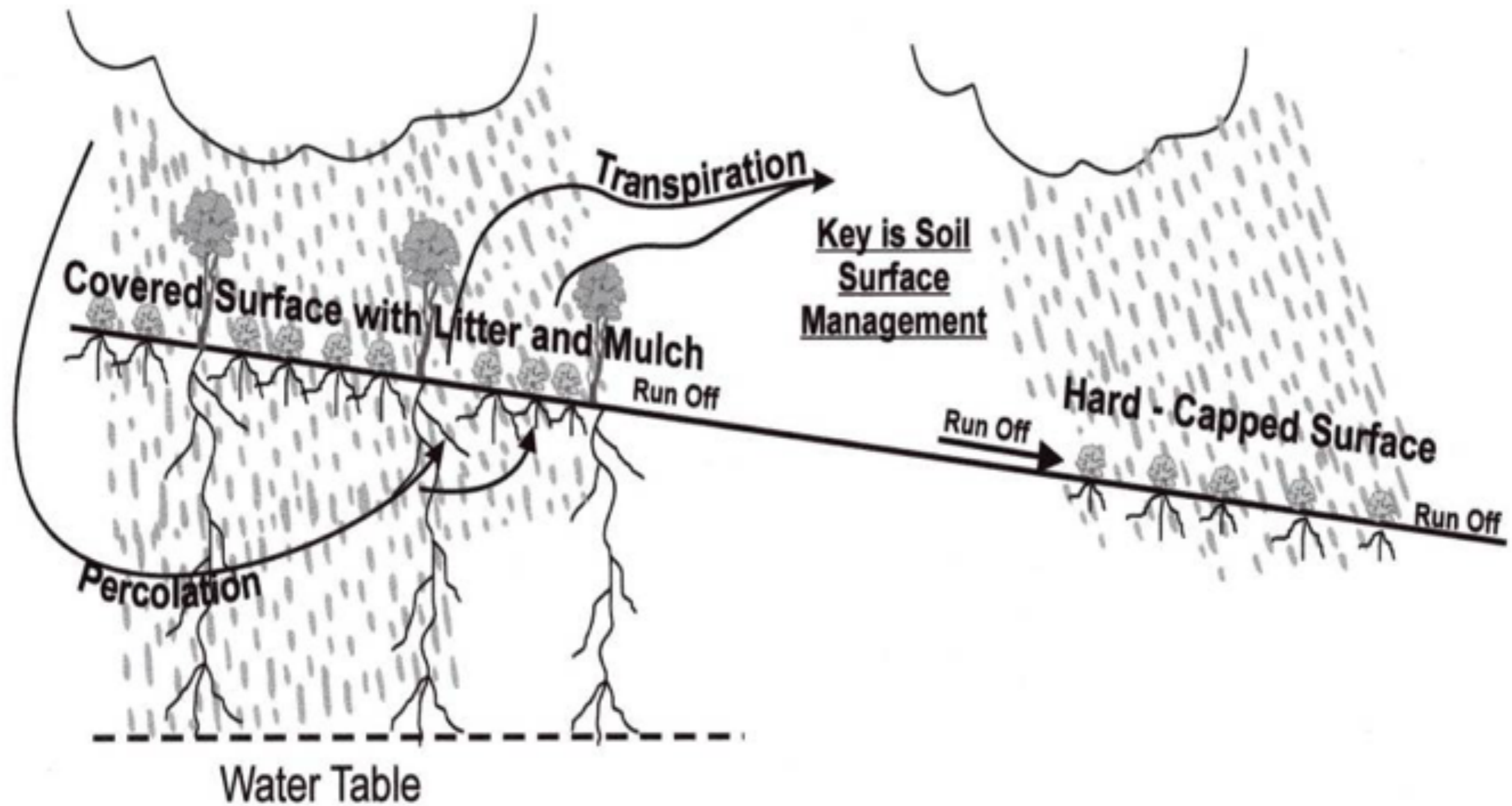


12 MINUTES OF RAINFALL SIMULATOR



Water Cycle

Penetration + Aeration = Effective Precipitation







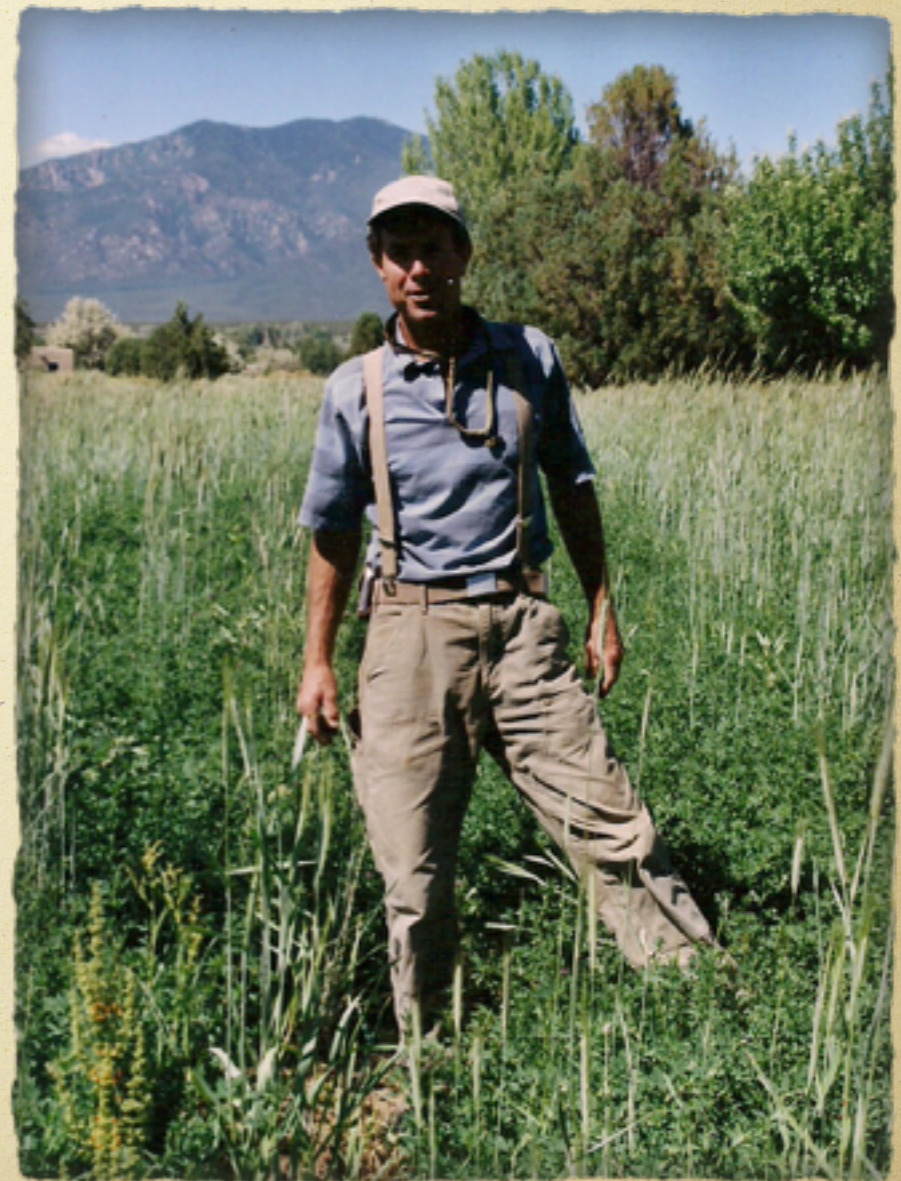


Restoring the Water Cycle
at the Headwaters

Mark Schuetz

Taos, New Mexico

- Selective thinning, favoring the species that are fire dependent.
- Arrangement of fallen logs on contour to accumulate and build forrest soils.
- This facilitates the infiltration of water, rather than running off.
- The infiltration and storage of water should be at the core of every endeavor we initiate.



Mesteno Draw Ranch

- Outside Albuquerque, New Mexico.
- Bean farm during WWII.
- Joan Bybee partnered with NRCS for a cost sharing grant.
- Joan contributed man hours; NRCS purchased materials such as rock, willows, shovels, pick axes, rose bushes and other riparian plants.



Arroyo with erosion

Pre-treatment



**PROCESS OF INDUCED MEANDERING
POST TREATMENT**



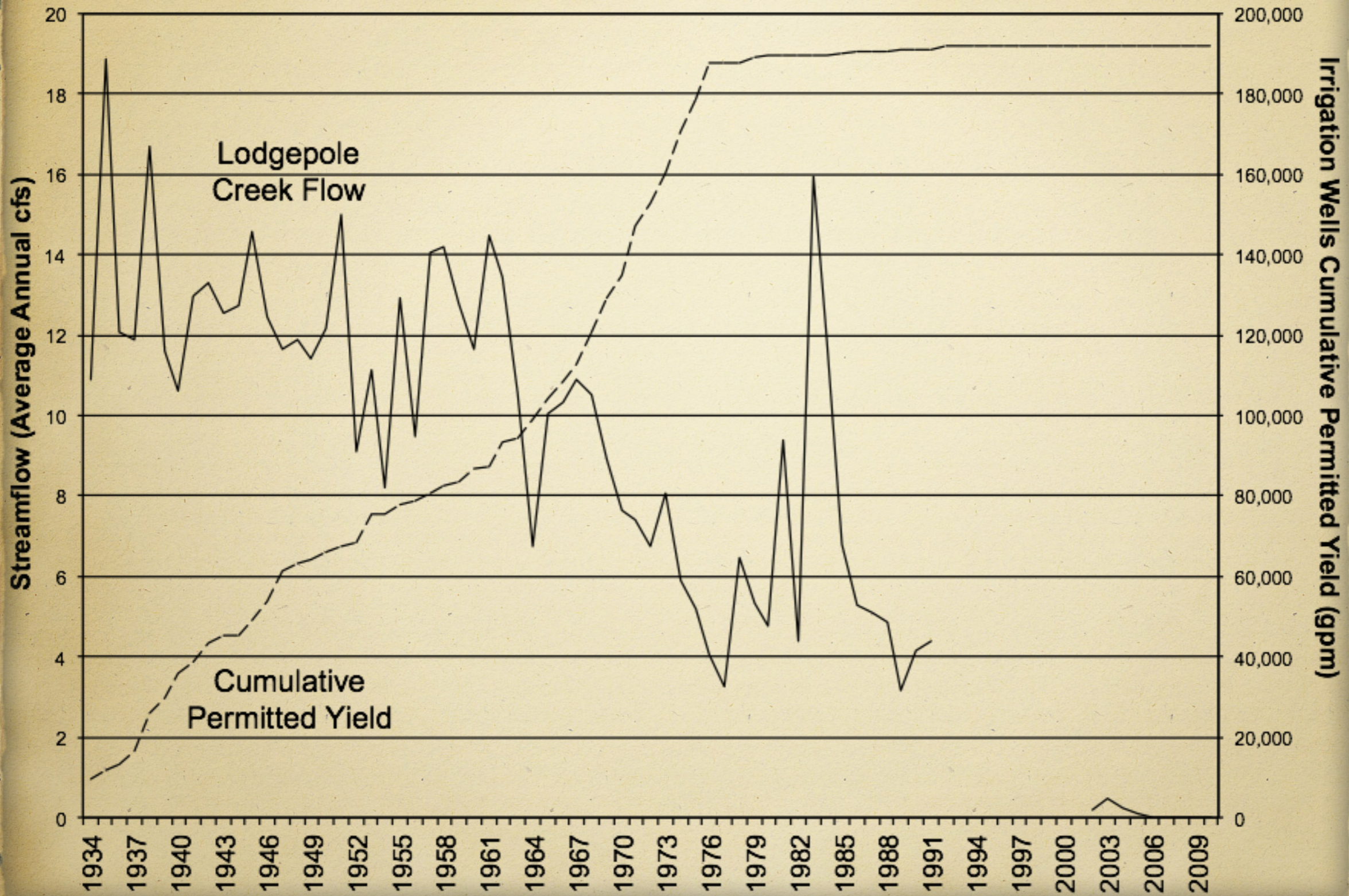


8 23 2011

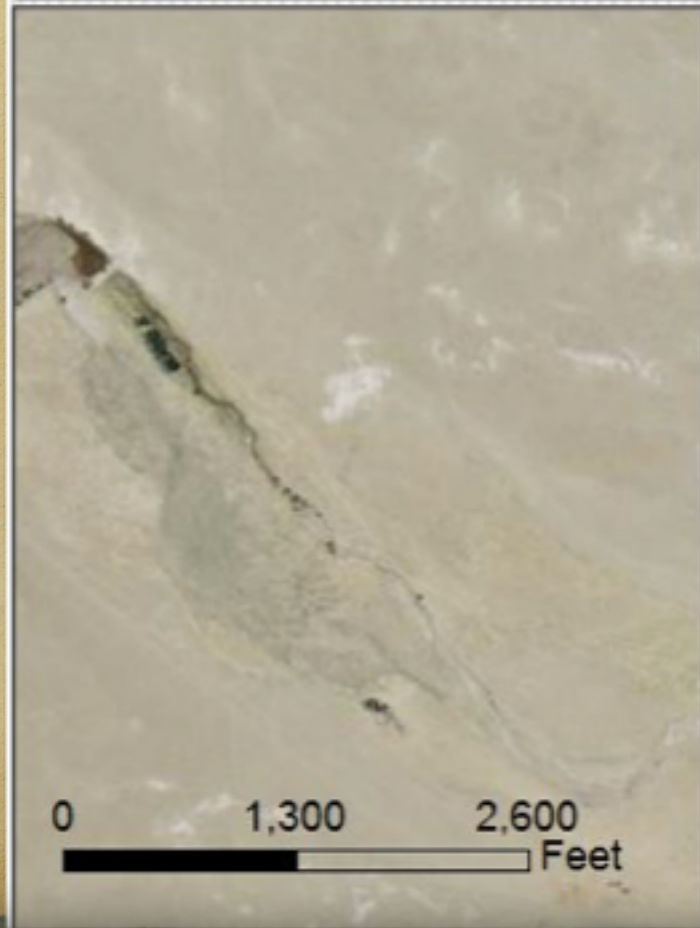


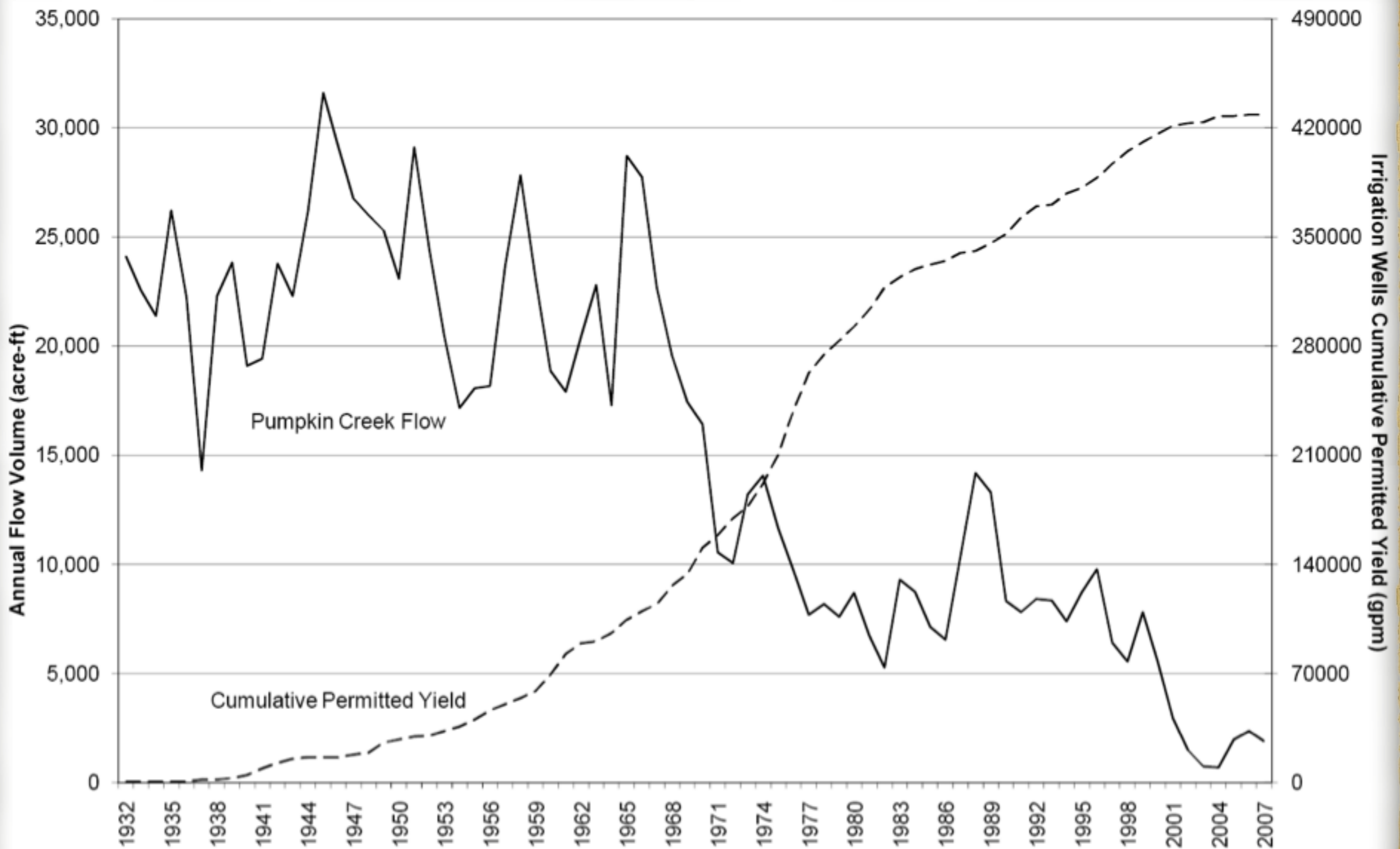
8.23.201

Streamflow at Bushnell Gauge and Irrigation Well History in Lodgepole Creek Basin, Wyoming



Lodgepole Creek





The direction of my life's work.

- Land Restoration;
- Family;
- Working with my body and the earth;
- The practice of law which promotes resilience in the land and in people's lives;
- Buying land and building a place.



Adelante!

Good luck in life and in law school. Gus and I wish you the best!