RAINFALL SIMULATOR

IMPORTANCE OF WATER

- 3% Fresh Water on Earth
- What needs Water?
  - All living things.
- Different Kinds of Water:
  - Rain Water
  - Surface Water
  - Groundwater
- Average Rainfall for Leon county about 42”
- Of that, only 3.5% recharges down to the aquifer.

AQUIFER QUESTIONS?

- What is an aquifer? (an underground layer of water-bearing permeable rock, gravel, sand or silt, from which groundwater can be extracted using a water well or natural spring)
- What Aquifer is Leon County over? (Carrizo-Wilcox)
- How did water get into the aquifer? (water soaked into the soil, filtered through sand, gravel, and water-bearing permeable rock)
- Why is the aquifer important to us? (it is the source of most of our drinking water)

EXPERIMENT QUESTIONS

- What is Recharge/Groundwater? (water that infiltrates into the soil. Some is used by plants, some is evaporated, what is left is pulled by gravity into the aquifer.)
- What is Runoff Water? (water that does not soak into the soil and recharge the aquifer)

- Note: runoff water, in some cases, can infiltrate into the soil. For the purpose of this demonstration, we are going to assume that runoff water does not infiltrate into the soil.

EXPERIMENT

- Briefly describe the three land scenarios: impervious cover, over-grazed rangeland, and grass.
- Develop a hypothesis as to what will happen to the water on each plot of land.
- Using a water jug, make it "rain" on the three lands.
- Collect the runoff water and the ground water.
- Discuss: Was your hypothesis correct? Why or why not? Did anything else happen that surprised you?

IMPERVIOUS COVER

- Any surface that cannot effectively absorb water. As we develop more – less filtration and recharge leads to lower water quality.
- What are some examples? (sidewalk, roads, parking lots, building foundations)
- More impervious cover can lead to greater flooding – stream degradation due to chemicals which affect life forms and streams.
- Are there issues with Impervious Cover? (all runoff water, no recharge, possible transport of pollution into surface water)

OVERGRAZED RANGELAND

- Land becomes overgrazed when there are more animals on the land than there is food to support the animals.
- What type of food are we talking about? (plants)
- What happens to the plants/vegetation? (animals eat it)
- What happens to the animals? (starve or go to where food is)
- Is this condition good? (no food for animals, soil erosion)

GRASSES

- Can be either short grasses or tall grasses.
- Provides food for animals, habitat for wildlife.
- Roots help to hold soil in place, preventing erosion.
- Blades of grass help soften the force of falling rain, helping to reduce erosion.

CONCLUSION

- Why are aquifers important? (source of drinking water)
- Which type of land did the best job of recharging the aquifer? (grass)
- Which type of land did the worst job of recharging the aquifer? (impervious cover)
- While there might have been some recharge from the overgrazed rangeland, what was the big problem? (erosion)
- As we build our societies, we must make sure that we maintain a balance between impervious cover and grass lands.


GROUND WATER
RUNOFF WATER
GROUND WATER
RUNOFF WATER