



What is the Fate of Your Rainfall?
Flip chart

Acknowledgments

Authors

Billy Kniffen, Barron S. Rector, Bruce Lesikar, and Justin Mechell

The Texas A&M AgriLife Extension Service

References

Increasing Bare Ground Indicates Poor Watershed Health, by K. Brian Hayes, Barron S. Rector, and Larry D. White. Texas A&M AgriLife Extension Service, 2000.

The Journey of Alvar Nunez Cabeza de Vaca and His Companions from Florida to the Pacific, 1528-1536, by Nunez, Alvar, Cabeza de Vaca (author), Adolphe Francis Bandelier (editor), and Fanny Bandelier (translator). A.S. Barnes & Company, 1905.

Rangeland Watershed Management for Texans: Know Your Plants to Protect Your Watershed, by Barron S. Rector. Texas A&M AgriLife Extension Service, 2000.

Rangeland Watershed Management for Texans: Reading Your Landscape: Are Your Pastures Healthy? by Larry D. White, Barron S. Rector, and K. Brian Hayes. Texas A&M AgriLife Extension Service, 2000.

Stormwater website. Texas A&M AgriLife Extension Service, <http://stormwater.tamu.edu>

United States Environmental Protection Agency, <http://www.epa.gov>

Watershed Management: Practice, Policies, and Coordination, by R. J. Reimold. McGraw-Hill, 1998.

What is the Fate of Your Rainfall?

Learning objectives

To understand:

- Movement of water through the water cycle
- Concept of watersheds
- Ways that land cover and management determine the path of rainwater
- Effects of increased impervious areas on water movement in a watershed
- Water and land management options that decrease runoff and promote infiltration



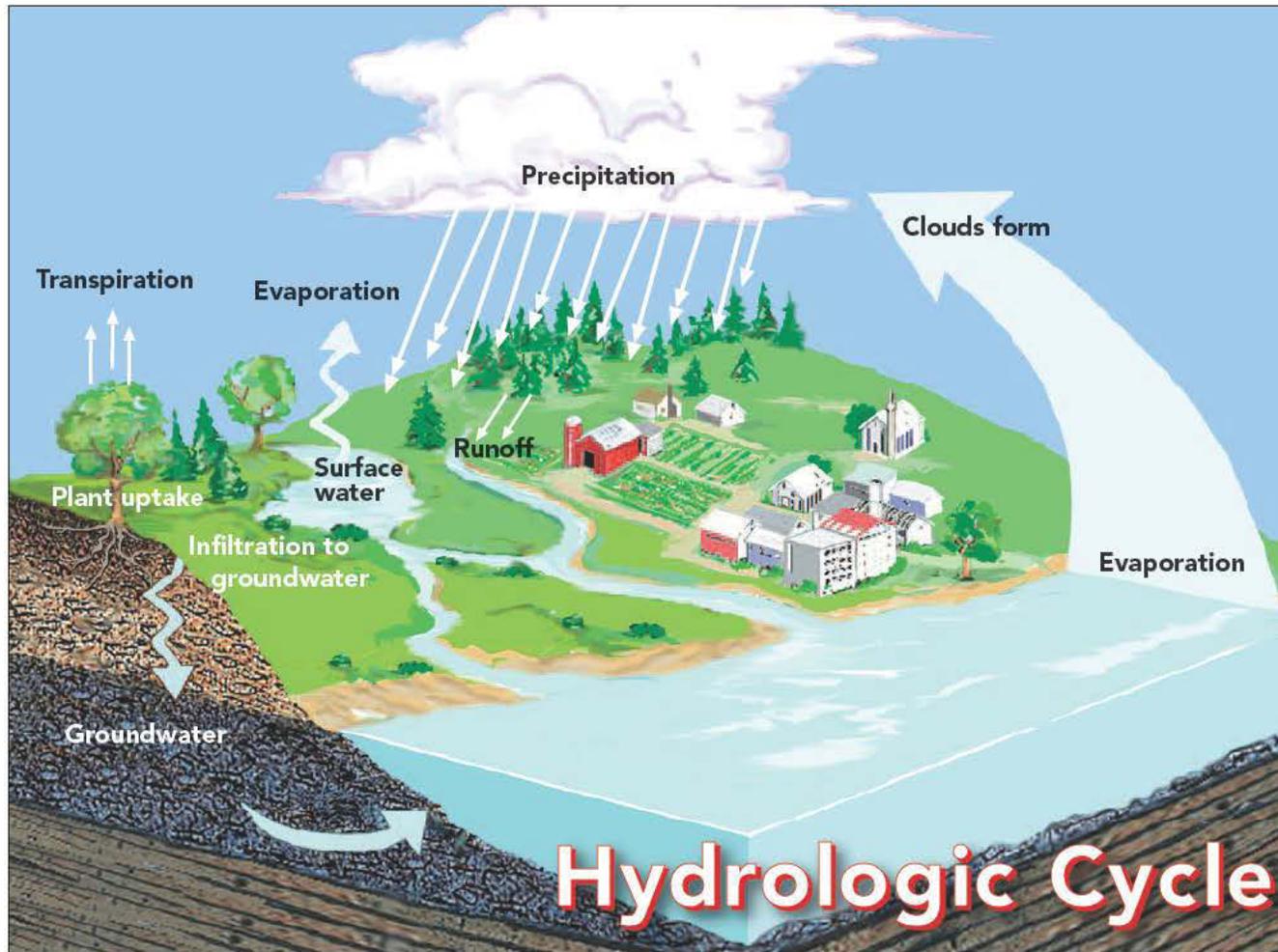
What is the Fate of Your Rainfall?

Water is essential for life



What is the Fate of Your Rainfall?

Where is the water stored?



What is the Fate of Your Rainfall?

What determines where rainfall goes?

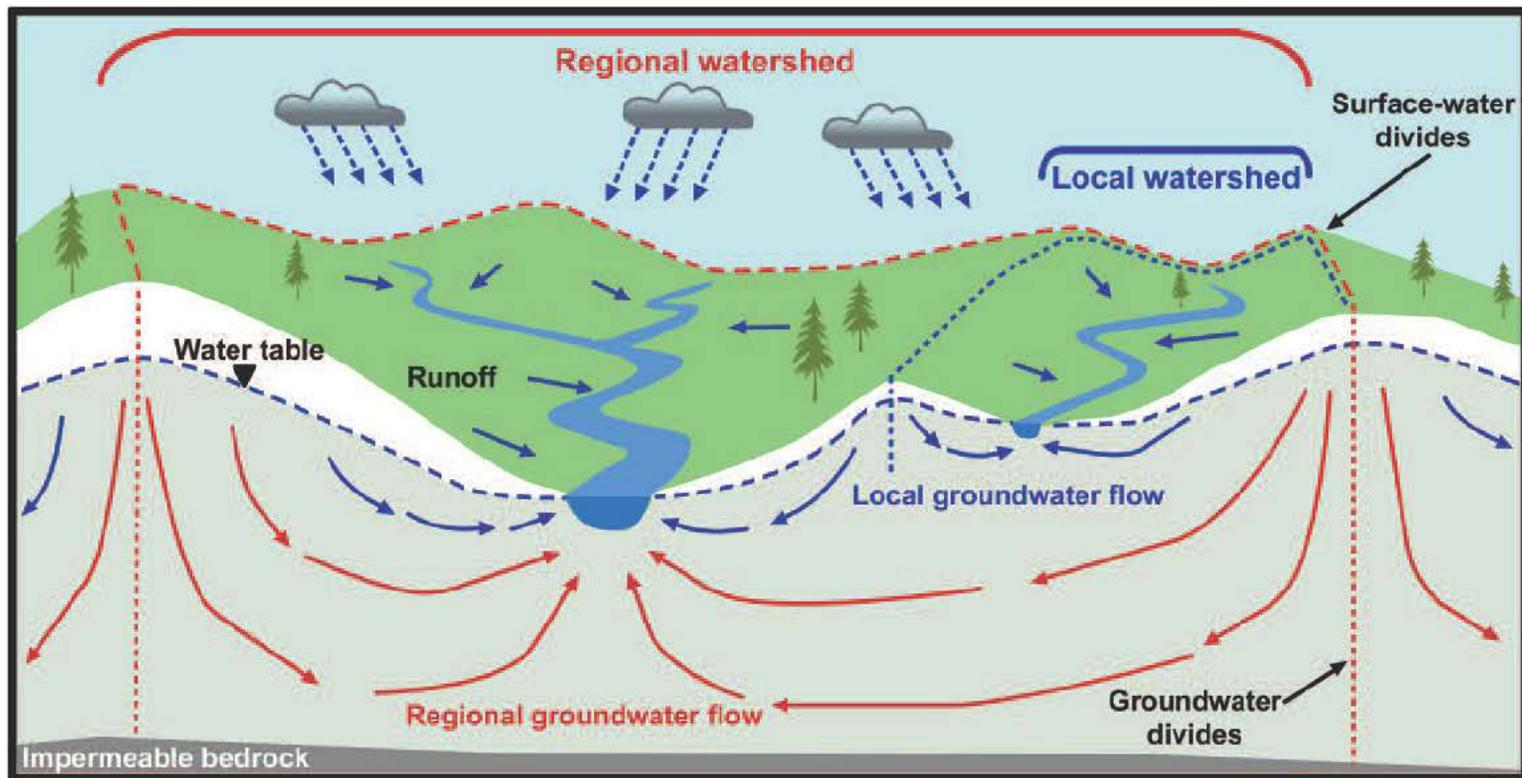
- **Soil type**
 - ~ Infiltration rate
 - ~ Soil water-holding capacity
- **Land cover**
 - ~ Vegetation cover and type
 - ~ Impervious cover
- **Storm intensity and duration**
- **Soil moisture at time of rainfall**
- **Land slope**



What is the Fate of Your Rainfall?

Watersheds

- *Watershed*: An area of land that drains to a common point
- Surface water and groundwater are interconnected



What is the Fate of Your Rainfall?

Sustainable watershed management

- Maintaining natural rainfall distribution in:
 - ~ Soil
 - ~ Groundwater
 - ~ Surface water



The Blanco River, located in the Texas Hill Country

What is the Fate of Your Rainfall?

Benefits of natural rainfall distribution

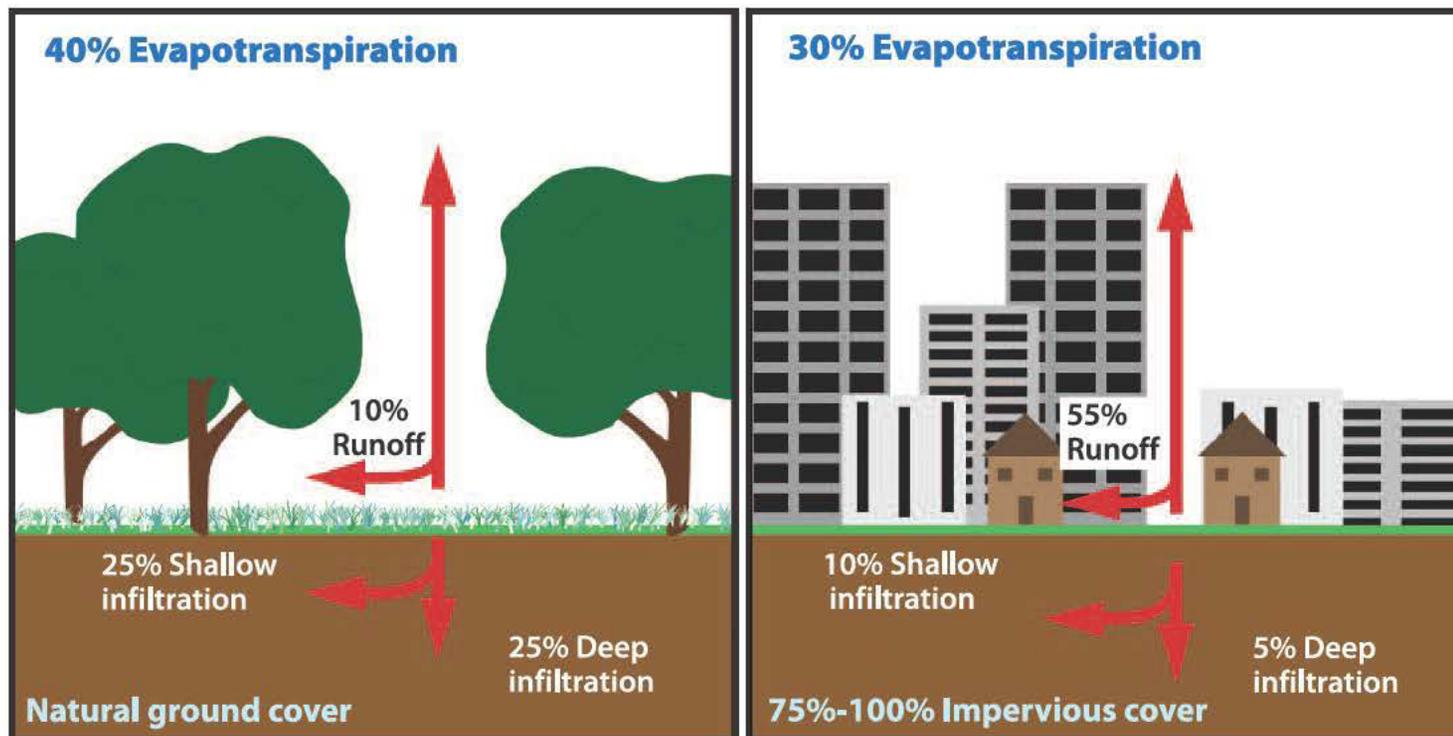
- More water infiltration
- Less soil loss
- More harvestable forage productivity
- Better wildlife food, water, and cover
- Water protected from nonpoint source pollution
- Less water needed to irrigate plants



What is the Fate of Your Rainfall?

Rainfall distribution

- Natural ground cover vs. impervious cover
- Type of land cover affects rainwater runoff



What is the Fate of Your Rainfall?

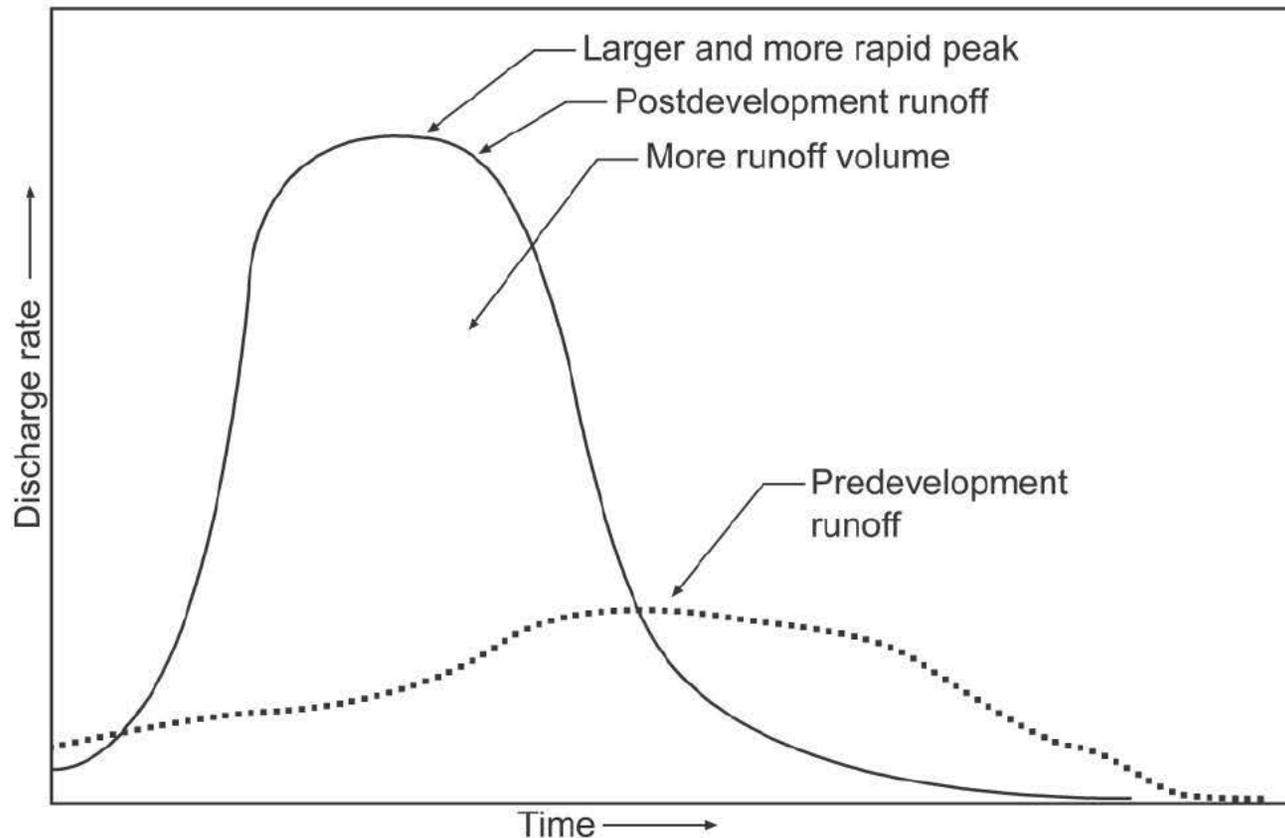
Agricultural, urban, and rangeland erosion



What is the Fate of Your Rainfall?

Runoff rate and volume

As more land is developed, more water runs off, and it runs off faster



What is the Fate of Your Rainfall?

Extreme stream bank erosion



What is the Fate of Your Rainfall?

Groundwater use in Texas

- Before being developed, Texas had more than 10,000 springs
- Now only 60% still flow

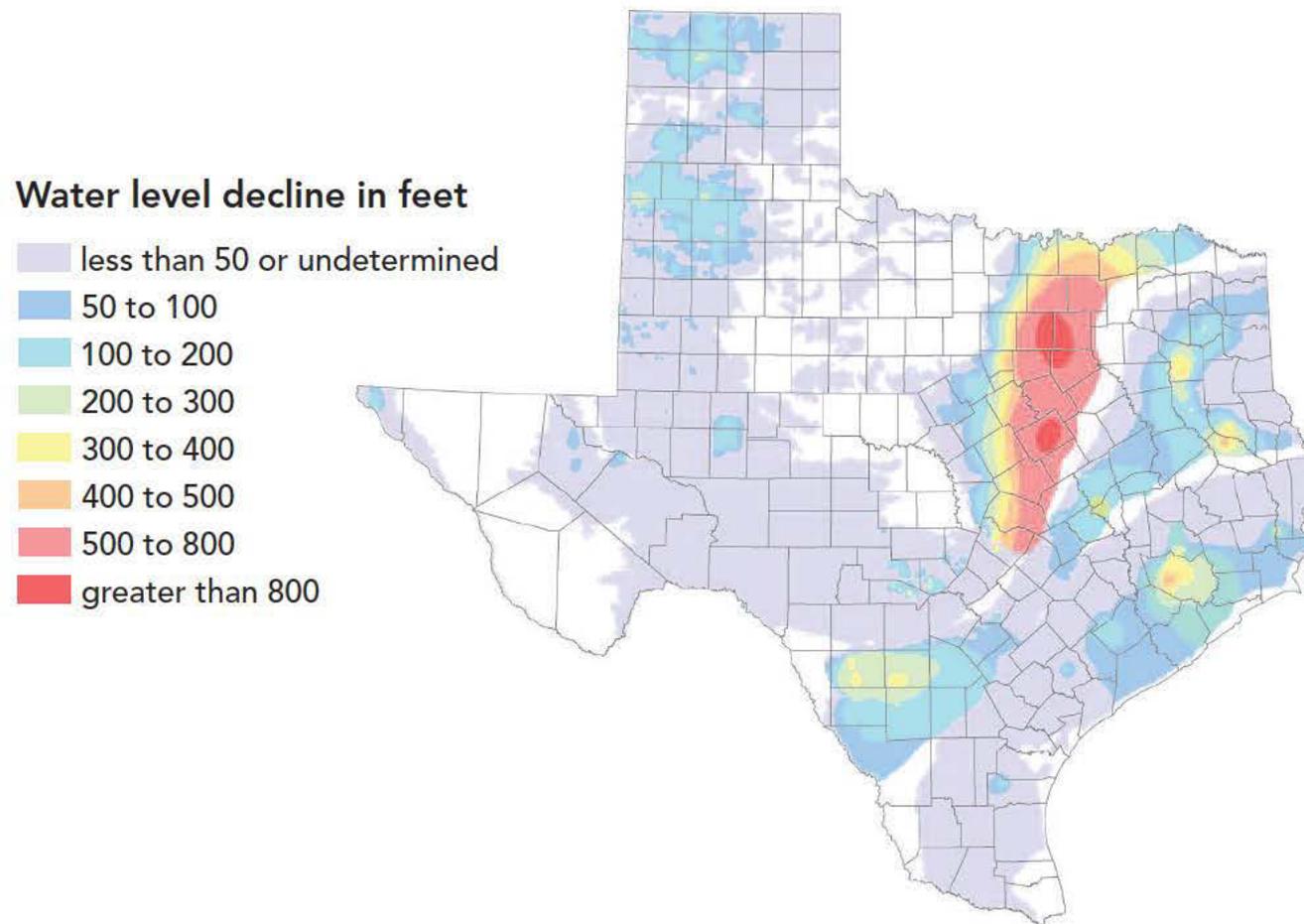


The Comal River arises from the Comal Springs in Texas.

Photo: Texas Parks and Wildlife Department

What is the Fate of Your Rainfall?

Major Texas aquifers being depleted



What is the Fate of Your Rainfall?

Reasons for aquifer depletion

- **Pumping**
 - ~ Municipal (such as for household uses)
 - ~ Agricultural
 - ~ Industrial
- **Absence of fire**
- **Less grass that promotes infiltration**



What is the Fate of Your Rainfall?

Watershed management solutions

- Use water wisely
- Evaluate water infiltration/percolation areas on your property
- Manage invasive woody plants
- Protect riparian areas to reduce soil erosion
- Avoid overgrazing in ranchland
- Teach others



What is the Fate of Your Rainfall?

Texas A&M AgriLife Extension Service

AgriLifeExtension.tamu.edu

More Extension publications can be found at *AgriLifeBookstore.org*

Educational programs of the Texas A&M AgriLife Extension Service are open to all people without regard to race, color, sex, religion, national origin, age, disability, genetic information, or veteran status.

The Texas A&M University System, U.S. Department of Agriculture, and the County Commissioners Courts of Texas Cooperating.

Produced by Texas A&M AgriLife Communications

New