

Every Drop Counts — Activity #38



TEKS:

Science Only

4.1 B

4.2 B, C, D, F

4.7 C

4.8B

4.4 A, B

5.1 B, 5.2 C, D, E,
F, G

5.4 A, B

5.8 B, 5.9 C

6.2 A, C, D, E

6.4 A, B

7.2 A, B, C, D, E

7.4 A, B

7.8 C

8.2 A, B, C, D, E

8.4 A, B

8.11 B, C, D

Resources:

<http://texaswater.tamu.edu/dwater.aquifer.htm>

www.eoearth.org/article/Aquifers_of_Texas#Introduction

www.texasep.org/html/wgn/rw_aqu.html

Texas Overview:

Most Texans cannot tell you where they get their water, but odds are good it came from an aquifer.

Texas has 23 aquifers — seven major and 16 minor — that provide the majority of our water. About 75 percent of the state sits atop aquifers, the largest of which is called the Ogallala and accounts for 90 percent of the water.

But there is a big drain on Texas aquifers. They are used not only for drinking water and homes (13.5 percent), but for irrigation (79.4 percent), industry (3.6 percent), mining (1.4 percent), power production (0.9 percent) and livestock (1.4 percent). Many of these aquifers have been over pumped, lowering the water table in Texas.

Aquifers get their water from rain and other forms of precipitation that percolate through a permeable layer. The area of surface water that feeds an aquifer is called its recharge zone. The rate an aquifer recharges varies based on factors such as the amount of precipitation and the type of material through which the water has to percolate. A large aquifer like the Ogallala Aquifer, which lies under most of the Texas High Plains, recharges very slowly because that area receives less precipitation and the material above it isn't very permeable, meaning the water moves slowly through it. The Edwards Aquifer, which is much smaller than the Ogallala, recharges faster. The material above it is more permeable, meaning water moves through it faster. It also is in an area of higher precipitation.

When we take water out of an aquifer faster than it can be recharged, we call it overdrafting. This is a big problem in Texas, where water is being used faster than it can be replaced. When this happens, many problems can occur. The water table will drop, causing some springs to go dry; the quality of water can go down; the land above the aquifer can sink (subsidence); and water costs can go up.

Where does your water come from?

MAJOR AQUIFERS OF TEXAS



EXPLANATION

- Ogallala
- Gulf Coast
- Edwards (BFZ)
- Carrizo-Wilcox
- Trinity
- Edwards-Trinity (Plateaus)
- Seymour
- Hueco-Mesilla Bolson
- Cenozoic Pecos Alluvium

OUTCROP (That part of a water-bearing rock layer which appears at the land surface.)

DOWNDIP (That part of a water-bearing rock layer which dips below other rock layers.)

