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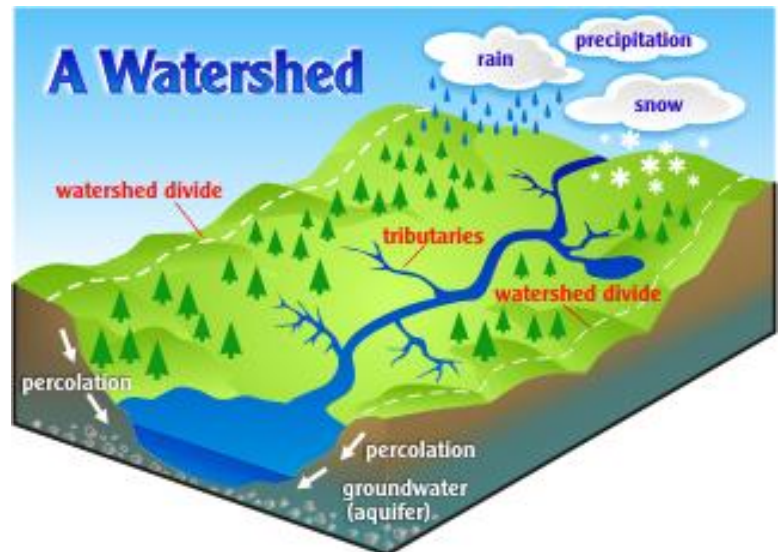
## Nueces River Watershed

In George West, we live next to the Nueces River. This river supplies many towns and cities with drinking water. It is very important to keep the river and its surrounding run-off areas as clean and pollution free as possible to protect the drinking water.

The first step to protecting the river is to stop pollution. Do not throw trash or dump any chemicals into the river. However, it's not just the river itself that needs protection. We have to protect the entire watershed. A **watershed** is the area of land that drains into a particular body of water. A watershed can cover many counties and even entire states!

The Nueces River watershed covers several counties and contains many other rivers and lakes.

<b>Counties</b>	<b>Rivers and Lakes</b>
Edwards	Atascosa River
Real	Hondo Creek
Bandera	Seco Creek
Kinney	Sabinal River
Uvalde	Frio River
Medina	Nueces River
Bexar	West Nueces River
Maverick	Leona River
Zavala	Nueces River
Frio	Miguel Creek
Atascosa	Choke Canyon Reservoir
Wilson	Lake Corpus Christi
Karnes	
Dimmit	
La Salle	
McMullen	
Live oak	
Bee	
San Patricio	
Nueces	
Webb	
Duval	
Jim Wells	

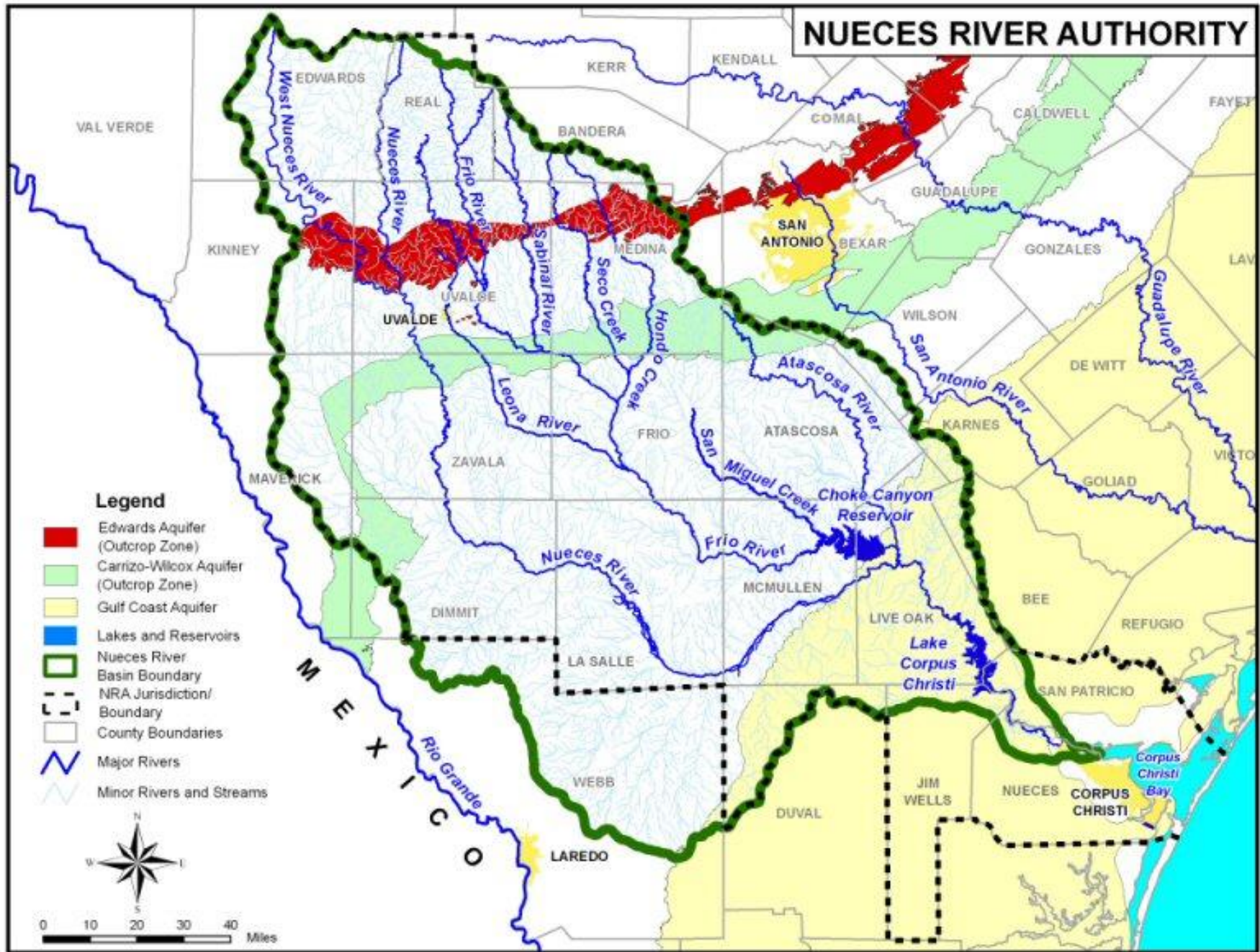


**Directions: You will color parts of the Nueces River Watershed on the next page:**

Trace the rivers and lakes in blue

Trace the outside edge of the watershed in red (it's the thicker, dashed line)

Lightly color in the entire watershed in yellow



Nueces River Watershed

**Vocabulary**

**groundwater** – water that is located within rocks below Earth’s surface.

**watershed** – the land drained by a specified body of water.

**runoff** – water that flows across land and collects in rivers, lakes, and other bodies of surface water.

**river basin** – the entire area drained by a river and all its tributaries.

**water table** – the level below which the ground is saturated with water.

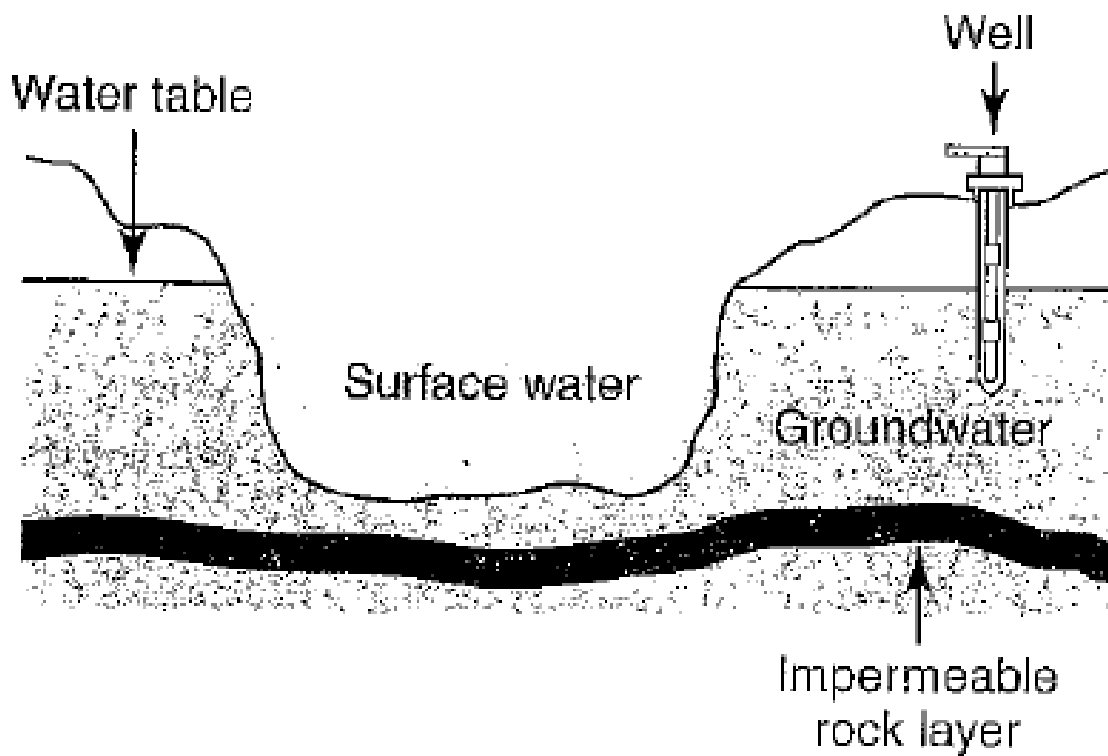
Fresh water is water that is free of salt or that has only a very small amount of salt dissolved in it. On Earth, freshwater can be found in the atmosphere. frozen in glaciers, in bodies of surface water such as lakes and rivers, and in bodies of groundwater.

Fresh water usually enters a **watershed** as either rainfall or snowmelt. Some of the rainfall or snowmelt becomes **runoff**. Runoff flows into the watershed’s lakes and **river basins**. After the water enters a river basin, it eventually flows into a lake or ocean. The map below shows the river basins of Texas. Only the Rio Grande and the Brazos River drain directly into the Gulf of Mexico.



Rainfall and snowmelt that does not become runoff soaks into the ground. Eventually, the water reaches an impermeable rock layer that it cannot pass through. The water collects there. Over time, enough water has collected to form a body of groundwater. Groundwater can become surface water if the elevation of the land dips below the water table. The **water table** is the level below which the ground is saturated with water.

The water table rises during wet seasons and falls during dry seasons. In some areas, the water table is just below Earth's surface. In these areas, springs and some lakes are fed by groundwater. In other areas, such as deserts, the water table may be hundreds of meters below the surface. In these areas, the groundwater may only be reached by digging a well. A **well** is a hole that people dig in order to access groundwater.



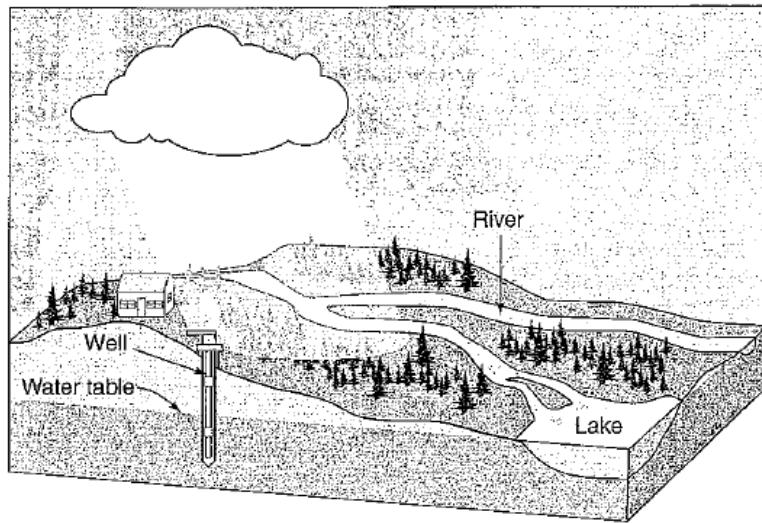
**Directions: Using the information you have read, answer these questions.**

1. What is fresh water? \_\_\_\_\_  
\_\_\_\_\_

2. Where does water in a watershed come from? \_\_\_\_\_

3. Where is the water table in a desert? \_\_\_\_\_  
\_\_\_\_\_

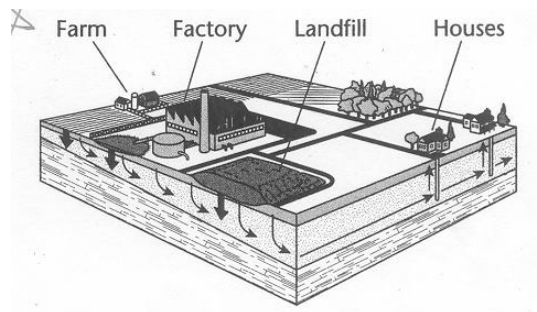
4. Explain how a body of groundwater forms. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



5. What will happen to the rain falling from the cloud? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6. What could happen to the water table if twenty more houses were built in the area? \_\_\_\_\_  
\_\_\_\_\_

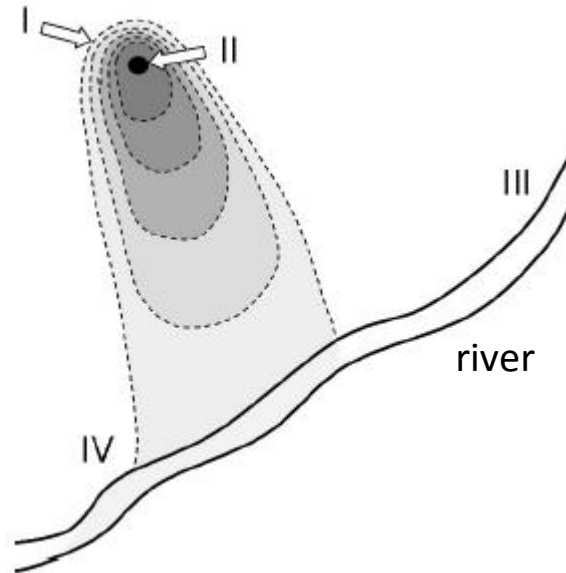
- 7 Underground water can be stored in layers of rock or sediment called aquifers. The Ogallala Aquifer provides water to Texas. Water levels are dropping because of the demands of crop irrigation. What can you predict from this information?
- A The aquifer could eventually dry up, affecting the entire region.
  - B The aquifer will remain the same over the years with little or no impact.
  - C The aquifer can be replenished over time with the melting of winter snow.
  - D The aquifer could become a marsh area and be used for growing crops such as rice.
- 8 The land area that supplies water to a river system is called a
- A divide
  - B watershed
  - C stream
  - D tributary



- 9 What might be the most serious effect of placing a factory in the location shown below?
- A Groundwater might be used up too quickly
  - B Pollution from the factory would seep into the groundwater
  - C Groundwater could become salt water
  - D Groundwater could seep into the factory

**Use the diagram for the next two questions.**

The diagram illustrates the contamination of a river by a municipal waste treatment plant.



**10** What is the original point of contamination?

- A I
- B II
- C III
- D IV

**11** Which point on the map represents the affected area that is the greatest distance from the waste treatment plant?

- A I
- B II
- C III
- D IV

- 12** In an agricultural area, a heavy rainfall caused a flash flood. The topsoil from a freshly fertilized field washed into a local stream. As a result, the amount of nitrogen in the water drastically increased causing the algae to grow to record levels. So much algae grew that it covered the surface of the stream. What effect did this bloom of algae have on the stream?
- A** The animal life in the stream was benefited since most fish eat algae.
  - B** The algae upset the balance of carbon dioxide and oxygen in the water causing fish to die
  - C** The algae acted as a thermal blanket on the stream causing the water temperature to increase and the fish to thrive.
  - D** The algae attached itself to the stream bank and narrowed the width of the stream. This caused the water to flow at a faster rate.

**13** Refer to the chart and graphic. According to the U.S. Environmental Protection Agency, ground water contamination in most states most likely comes from -

- A** human waste
- B** oils spills
- C** fertilizer
- D** radioactive substances

**U.S. Ground Water Contamination**

Pollutants	# of states
Nitrates	49
Volatile substances	48
Petroleum products	46
Metals	45
Pesticides	43
Brine/salinity	37
Arsenic	28
Agricultural chemicals	23
Radioactive material	23
Fluoride	20
Other inorganic substances	15

*U.S. Environmental Protection Agency*

