

OKLAHOMA ROCKS!

Water & Aquifers: Water Power



Courtesy Oklahoma Water Resources Board

Oklahoma dams and waterfalls, both natural and man-made, provide recreation, drinking water and in some cases hydroelectric power. Golda's mill, pictured above in black and white, was a historic water mill near Stilwell that used water power to mill flour from before electricity was common in rural areas until a fire destroyed it in 1983. Not all dams generate hydroelectric power, including the Overholser Dam pictured to the right.

In Oklahoma, ten large dams generate hydroelectric power, which is a renewable source of clean energy. These dams provide four percent of the electricity needs of the state. Nationally, hydroelectric power provides six percent. Electricity is generated when water from behind the dam turns the huge turbines that are part of the dam's power plant.

All of the hydroelectric dams in Oklahoma are in the eastern part of the state for two reasons. The rivers in the eastern part of the state are larger, partly because there is more rainfall there. This enables power-generating dams to be more efficient. Also, there is more topography in the eastern part of the state because of the state's geology. More topography means dams can be built where rivers narrow.

Oklahoma Hydroelectric Plant Locations:

Federally owned

Keystone Lake
Fort Gibson Lake
Tenkiller Lake
Eufaula Lake
Robert S. Kerr Lock and Dam
Webbers Falls Lock and Dam
Broken Bow Lake
Texoma Lake (Denison)

State owned

Kaw Hydroelectric Plant

Publicly owned

Grand River Dam Authority



Activities:

1. What is the closest lake to where you live? Create a list of uses supported by the lake.
2. Locate the closest groundwater aquifer to where you live. Use the book of maps linked from nie.newsok.com if you don't know which aquifer is closest. Based on where you live, what do you think the water there is used for the most?
3. The U.S. Army Corps of Engineers maintains data updated about the federally owned hydroelectric plants online, updated every 15 minutes. Visit nie.newsok.com for the link to the data on Oklahoma's eight federally owned plants, and then create a bar or line graph comparing the amount of power generated by each.
4. Now visit nie.newsok.com for links to water quality data about each of Oklahoma's aquifers and lakes. What water quality data is available? Are there any differences between the water quality of the lakes where hydroelectric plants exist compared to others?

Newspapers for this educational program provided by: