

Crooked Lake outlet

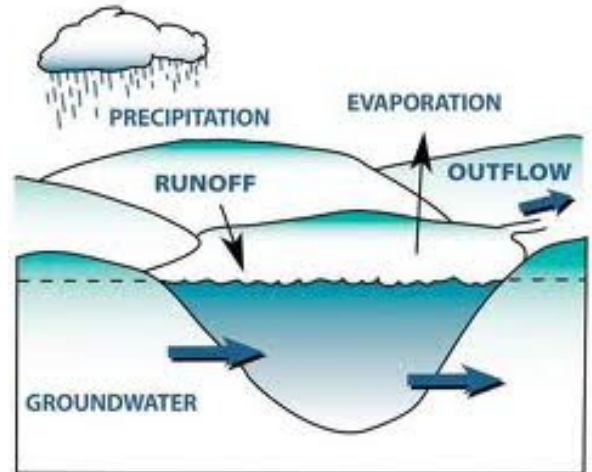
Fact Sheet 2

November 2011

Water levels

To understand lake water levels, you need to understand...water. Actually, you need to understand the movement of water, especially the water you can't see because it's underground. Namely, groundwater.

Groundwater is tough to visualize because it's not made up of underground pools or lakes. It's small bits of water filling in pores, tiny pores between soil grains and rock cracks, so it becomes saturated throughout (imagine saturated beach sand that's good for building sand castles— underground). This saturated area is often known as an aquifer.



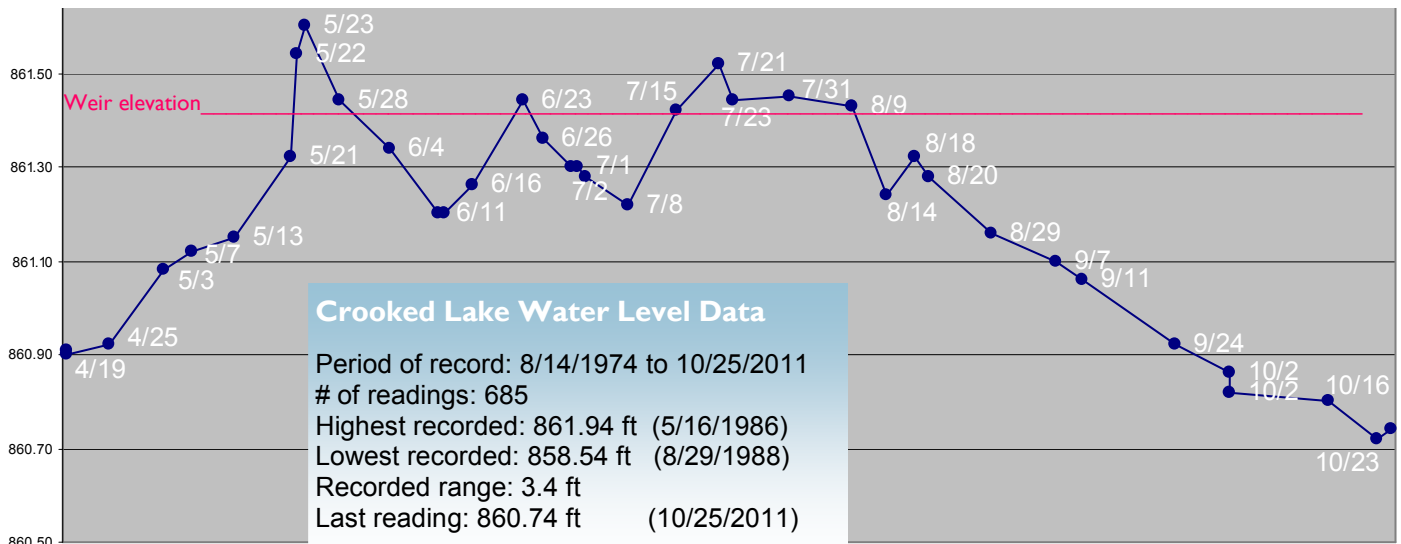
Gravity and pressure affect the movement of groundwater. It can move horizontally into other aquifers near the surface of land or vertically by filtering into deeper aquifers. Generally, water will move downhill unless block by something; underground, the blockages could be a layer of rock or clay which has tiny grains with tiny pores for water. The amount of time it takes to move through the ground varies; it's called "travel time." Estimates can be calculated through mathematical formulas; it's about 8 years for Crooked Lake

Crooked Lake has groundwater moving from the northeast towards the southwest and the Mississippi River.

Groundwater makes up about 56% of the input to Crooked lake, where the water table meets the surface. The other 44% is from precipitation, including runoff. The outlet at the southern end of the lake is where the elevation is lowest.

Recent lake levels

[Ordinary High Water Level \(OHWL\)](#)
elevation: 862.1ft



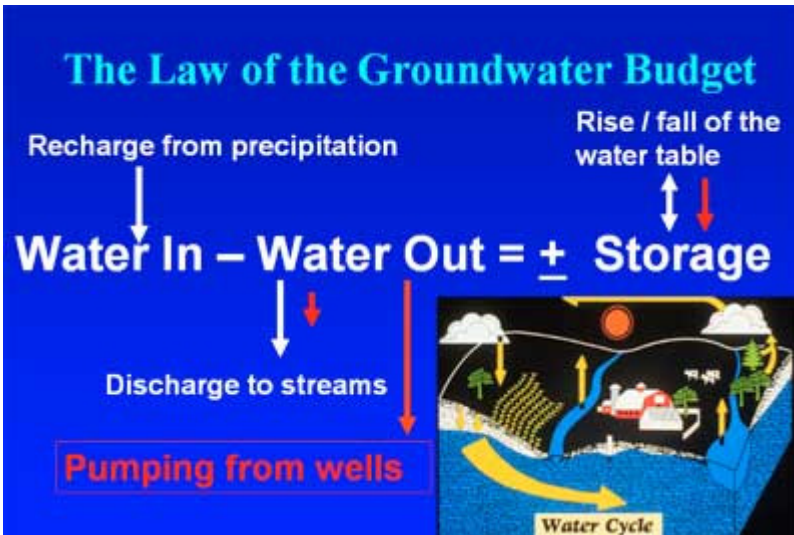
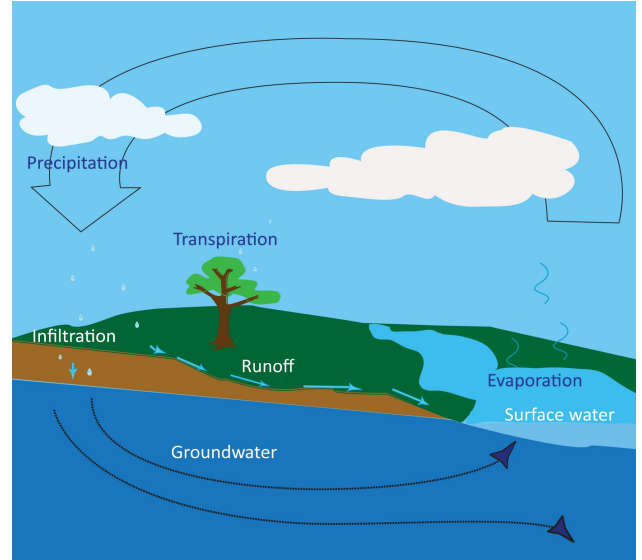
Quick Facts

It would take about 8 years for Crooked Lake to drop 10 inches by a 10-inch diameter animal burrow leaking.

September and October had record low amounts of rain.

Coon Creek Watershed District Goals

1. To secure safety from floods.
2. To prevent loss of life, property damage, and the losses and risks associated with flood conditions.
3. To preserve the location, character, and extent of natural drainage courses.
4. To preserve the natural integrity of drainage patterns
5. To provide a storm and surface water system capable of handling a storm that has a 1% chance of occurring annually.



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The Outlet



The outlet without the wooden board/rock that had been in place unofficially during many dry years. Note the metal weir set in concrete (circled). May 2011.

The outlet at the south end of the lake is an earthen dam with a culvert that has a metal weir on the lip of the lakeside end. It has been inspected annually by Coon Creek Watershed District since 2008 when the Lake Management Plan was adopted.

Potential leakage of earthen dam: It was most recently inspected in Spring of 2011. On the lake side of the culvert, at the base, sits an 15-inch high weir (metal sheet) that is permanently welded onto the culvert and set in concrete. The weir sits at an elevation of 861.4 feet.

The culvert is still in functional condition though has some small rust holes. It is surrounded by a dam that is in need of repair inspection because of vegetation and animal burrows. The five to six burrows are located on either side of the culvert at about culvert height.

The process for evaluating the earthen dam repair options and needs will begin in 2012.

