

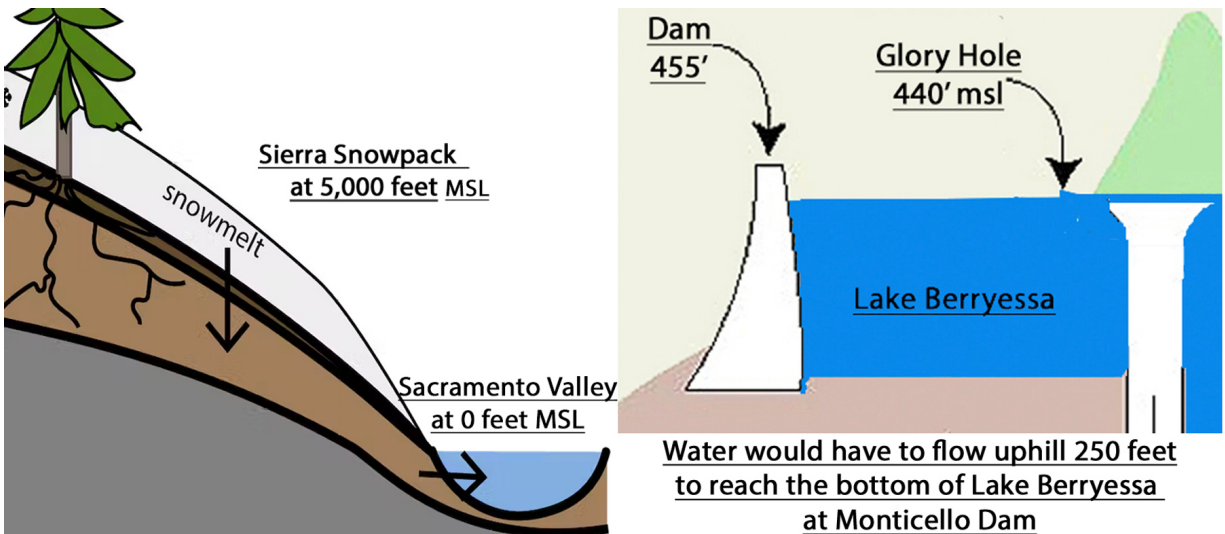
## Does Sierra Snowmelt Get To Lake Berryessa? No

Gravity Is Your Friend, But Water Does Not Flow Uphill!

The higher than normal rainfall and rapid lake level rise during the 2022-2023 rain year got everyone excited. The very unusual heavy snowfall at the lake was a beautiful event. And the record snowfall in the Sierras put a lot of water in the bank for this summer and future years. But I'm still surprised at how many people think that Lake Berryessa gets some benefit from the Sierra snowmelt.

Lake Berryessa has NO CONNECTION to the snow in the Sierras. The diagram shows why. Say the snowmelt flows down from the Sierra hills at 5,000 feet above MSL (mean sea level). Gravity is our friend in that case - no pumping necessary. But when it hits the Sacramento River it's now at basically sea level - 0 feet MSL.

Just looking across the Sacramento Valley at the mountains to the west should be a clue. Driving from Winters to Markley Cove should smack you in the head with the obvious. Lower Putah Creek flow downhill fast and furious to Winters in a big rain - and it's not all from Lake Berryessa. Most of the rain flows into Lake Berryessa, not out of it.



One way to get Sierra snowmelt into Lake Berryessa would be to pump it uphill from the Sacramento River. The proposed Sites Reservoir would actually do that - pump water from the Sacramento River during the Winter to be released in the summer. But Lake Berryessa would then be competing with all the agricultural water users in this water dependent state.

There is one (speculative) scientific way to get Sierra water to the Lake Berryessa - an airtight pipe starting at a higher level with an output lower than the higher level but with no open storage areas in between. The hydraulic pressure at the high end would push the water down to and out the other end even if there were a low spot in between. You can see this principle in action if you take any short hose and fill it with water. If you now lift one end, the water flows out the lower end due to hydraulic pressure caused by the force of gravity. Doing this with a hundred fifty mile pipe from Auburn to Lake Berryessa would be a monumental endeavor.

But for additional (highly speculative) excitement, the pipe output from the mountains could be connected to the output of Glory Hole making it the input to the lake. It would be an awesome site to see water gushing up out of Glory Hole during the spring and early summer when the Sierra snow starts to melt in volume.