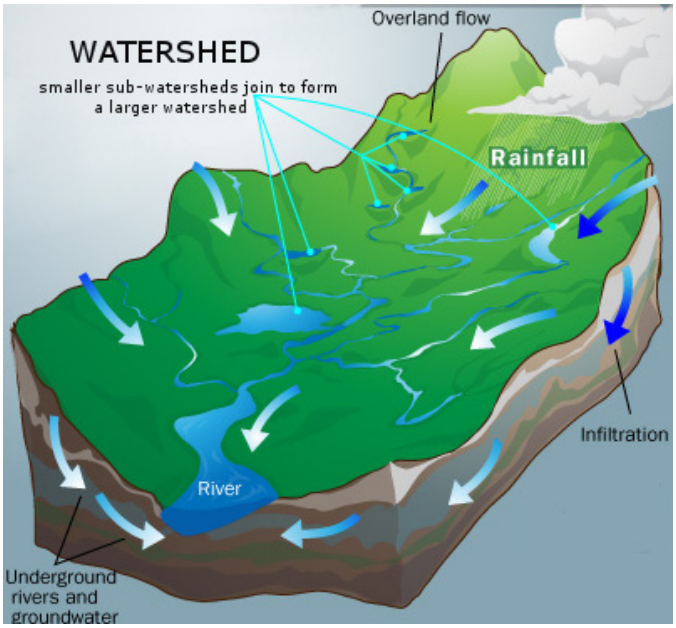
What Is A Watershed?

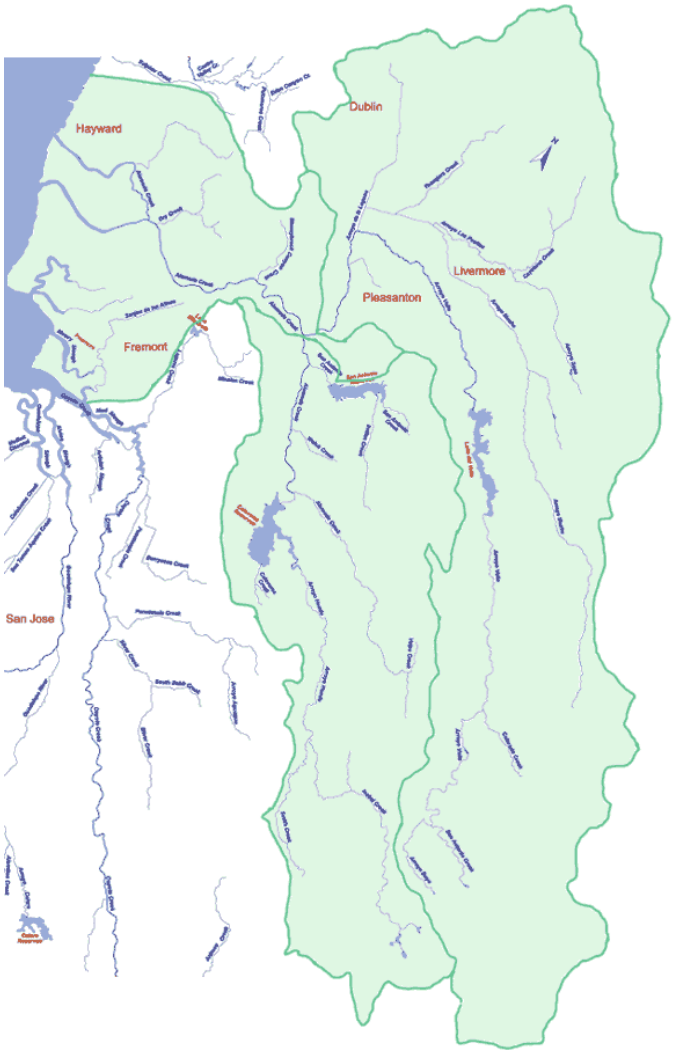


Above: A generalized watershed model.

I like to start off with this question when I meet with groups to discuss Alameda Creek, or steelhead trout, or stormwater management, or fisheries in general. The top two responses I get are that a watershed is "a place to store water" or "a place where water drains."

The generally-accepted definition of a watershed is an area of land where precipitation collects and drains into a common outlet, such as a river, bay, or other body of water. We recognize the Alameda Creek watershed as encompassing all of the lands where precipitation drains into the bay through Alameda Creek (or the Alameda Creek Flood Control Channel). This includes the Tri-Valley cities of Dublin, Pleasanton and Livermore — up to the Altamont Pass; the eastern slopes of Mount Hamilton, Niles Canyon and the "Niles Cone" which includes portions of Fremont, Union City and Hayward. And it is what ties all of these communities and the people living in them together.

Below: A map of the Alameda Creek watershed



Alameda Creek, like many large watersheds, is comprised of multiple sub-watersheds. The Arroyos of the Tri-Valley area are perhaps the biggest sub-watershed within the Alameda Creek watershed. Most of the waters of the Calaveras and San Antonio Creek sub-watersheds are captured in their respective reservoirs. We can define the upper Alameda Creek watershed as the portion above the confluences of these creeks with Alameda Creek, so from the Sunol Valley upstream.

But what of this notion of a watershed as a place to store water? That is correct and is important to understanding the functionality of a watershed. A watershed sheds water as it drains off the landscape, but it also stores water — like a storage shed.

In the Alameda Creek watershed this happens in our reservoirs, in the reclaimed quarry lakes in Pleasanton and Fremont, but perhaps most importantly in groundwater aquifers (an aquifer is an underground layer of water-bearing permeable rock or soil). Groundwater is stored under all of us, feeds into our creeks and rivers throughout the year, and supplies water to our native vegetation.

A watershed encompasses everything that happens upslope from streams and watercourses and reservoirs — in grasslands, forests and uplands — where runoff makes its way down the watershed. A watershed also includes us, and all human activities as well as natural processes such as erosion, flooding, sedimentation, and other natural cycles. Our watershed is affected not just by rainfall, but by water diversions and pollution, and also by land use and lifestyle choices far upslope from our creeks and rivers.

Above left : Calaveras Reservoir stores water for Bay Area communities as part of the Hetch-Hetchy water delivery system.

Above right: Quarry Lakes, Fremont, acts to recharge groundwater supplies. Water is diverted from Alameda Creek into the Quarry Lakes complex, where it slowly filters through the quarry walls into the aquifer below. Many pollutants in the water are filtered out naturally through this process.