Understanding the San Lorenzo River Watershed

By Lee Summers

Water is the drink of life that pours through our veins, cradles us as babes in the womb, carves valleys and mountains, cleans our air and keeps our planet green and growing. About 71 percent of the earth's surface is covered with water. Of that, about 2½ percent is fresh water and only about 1.2 percent of fresh water can we easily access, treat, and drink.[1] What's more, about 60 percent of the human body is water. It comes in quite handy as cellular building material; to regulate our temperature; transport food; flush waste; absorb shock to the brain, spine, and fetus; and lubricate joints.[2]

We can find water as a liquid, gas and solid. Its solid form is less dense than liquid, which allows lakes to freeze from the top down. It dissolves substances better than any other liquid, which means it easily transports nutrients through a body. It absorbs a lot of heat before it gets hot, so it keeps the air temperature more constant, especially near the coast. It sticks to itself, which allows it to ball into drops as well as get pulled up the tallest redwood trees. In fact, if we weren't surrounded by it our entire lives, it would amaze us.

Water is essential for life on this planet, yet most people have no idea where their water comes from when they turn on the faucet. If they really understood, they would likely never take water for granted again. So where does the San Lorenzo Valley's water come from?

The simple answer is that it comes from the watershed.

Watersheds Help Cycle Water

Like the blood in our arteries and veins, water flows in a system of rivers, streams and creeks that generally runs from the tops of ridges to the sea. When the sun shines on the ocean, it warms the water and causes it to evaporate into clouds, which will blow over the land and eventually rain down again. A single drop of rainwater that lands on the side of a ridge will naturally flow downhill. It may flow through the soil and sink into great underground basins, or it may find a stream to follow until it reaches a river. In Santa Cruz County all the rivers eventually flow into the Pacific Ocean.

The San Lorenzo River Watershed is the land that drains the steep sides of Ben Lomond Mountain to the west, Castle Rock and the summit to the north, and the sloping hills around Branciforte to the east. Tributaries like Branciforte, Carbonera, Zayante, Bean, Fall, Newell, Bear, Boulder, Kings and other creeks all drain into the San Lorenzo River and from there, to its mouth where it flows into the Monterey Bay near the Santa Cruz Boardwalk. All 138 square miles of these downward sloping hills funnel water into the Pacific as part of the San Lorenzo River Watershed,[3] and every drop comes from weather systems that blow in from the Pacific.

A Watershed is a Natural Water Purifier and Holding Tank

The watershed acts like a giant sponge that absorbs rain. When water soaks into the ground, the soil filters out any impurities and produces clean, healthy water that fills underground basins called *aquifers*. Sandy soils, in particular, make great sponges that scour the water clean and allow enough space between sand grains to hold lots of water. Locally, the Santa Margarita Groundwater Basin is a large span of sandy soil that pierces through the San Lorenzo River Watershed and provides residents of the San Lorenzo and Scotts Valleys with water.

Eighty-five percent of Californians use groundwater as their water source.[4] Unfortunately, local water districts have joined statewide practices to overdraft their aquifers, which means they removed more water than nature has replaced. With less water in the basin, wells can run dry, land can compact which can damage buildings, more energy is needed to pump water out of

deeper wells, water quality can decline as salt water seeps in, river levels can drop and ecosystems that need high water tables can decline in health.[5]

One of the reasons the State of California enacted the Sustainable Groundwater Management Act was to halt overdraft and promote a more balanced use of pumping and recharging the aquifers. Together, the San Lorenzo Valley Water District, Scotts Valley Water District and the County of Santa Cruz are working on a plan to achieve sustainability within 20 years of enacting it.[6] Recharged aquifers will have the power to buffer water users from drought and climate change and provide a stable water source independent of weather patterns.[7]

Healthy Habitats Maintain Clean Water

In nature, diversity equals stability.[8] When a watershed's living populations are stable, they are filled with a wealth of native plants and animals. These species relate to each other through a web of interactions, which help maintain rich soil, clean air and fresh water. Too many or too few of any given species creates an unstable and unhealthy watershed.

When a human body gets sick, symptoms appear like a runny nose or a sneeze. In nature, symptoms come in the form of more invasive species and fewer *keystone species*. Keystone species are natives that become rare because of an unhealthy system, yet when their numbers raise again, the whole watershed benefits. Locally, invasive plants like French broom and acacia take over habitats and crowd out natives. Likewise, keystone species like the endangered steelhead and Coho salmon need close monitoring to bring to light the health of the watershed and therefore the quality of the water.

When water moves through a healthy watershed, its forests, sandhills and riparian habitats work like expensive engineered systems but in a natural and sustainable way. This *green infrastructure* delivers runoff into streams and percolation into aquifers as it filters contamination so that costly built systems like water treatment plants won't have to. As the climate continues to change, the watershed can handle future droughts and floods more efficiently than built systems, offering communities more flexibility in addressing these problems.[9]

Your Actions Determine Our Water's Quality

Once upon a time, the San Lorenzo River hosted the largest steelhead fishery in California and the fourth largest salmon fishery south of San Francisco.[10] But timber harvesting and quarrying led to erosion, which caused fisheries to wane, Coho salmon to disappear from the river and both steelhead and Coho to be listed as endangered.

More recently, reduced logging and quarrying has eased the negative impacts on the watershed, and the tourist industry has promoted watershed health and beauty. Yet people continue to put pressure on water resources as the population of the basin continues to climb from 11,000 in 1960 to 31,000 in 1976[11] to 41,000 in 2001.[12] Prior to the 1950s, summer homes dominated the San Lorenzo Valley, but gradually these homes were converted to permanent residences, and new units filled in buildable lots and open space. Failed septic systems and runoff from urban areas polluted the watershed. Erosion and sedimentation from development and low stream flows from water extraction downgraded the ecosystem's quality. These problems caused federal and state agencies to list the San Lorenzo River as impaired.[13]

Yet every person has the power to help recover the watershed's health in countless ways:

- ✓ Conserve water use
- ✓ Maintain a healthy septic system
- ✓ Use biodegradable home and garden products
- ✓ Recycle, re-use and reduce your waste
- ✓ Use free services to dispose of appliances, TVs and cars

- ✓ Plant native species
- ✓ Don't disturb delicate, creek-side plants whose roots hold the soil in place
- ✓ Maintain cars, trucks, motorcycles and even lawnmowers so they don't drip fluids[14]
- ✓ Consider a small family size

If everyone does their share, our water quality will maintain its high levels for people and nature. When we pay attention, we can discover that water ties us to all living things as well as to the planet itself. Water has the power to teach us the lessons of interdependence: what we do to the planet, we do to ourselves.

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