

**Our Ocean Backyard — *Santa Cruz Sentinel* columns by Gary Griggs, Distinguished Professor of Earth and Planetary Sciences, UC Santa Cruz.**

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A Very Dry February**

*“Dig a well before you are thirsty”* - Ancient Chinese proverb

While the winter isn't over yet, things aren't looking all that rosy at the moment. We have had exactly no precipitation in February and we are already half way through the month. The long-term average rainfall for February is 5.5 inches, although February in 1953 was dry all month long. Not a drop of rain. At the other extreme, the sky opened up in February of 1998 when 18.6 inches of rain fell.

This time last year, after suffering through the worst drought in California's recorded history, the snow pack in the Sierra Nevada was at 182% of the historical average. Right now we are at about 21%, and it's that snow pack that provides about 30% of the state's water supply. This is the water that makes southern Californians think they live in the tropics when in fact they actually live in a desert, connected to the Sierra snowpack by some very long pipes.

Santa Cruz has seen just one significant storm this entire winter, on January 8<sup>th</sup> and 9<sup>th</sup>. Last December was the 2<sup>nd</sup> driest on record with only 1/6<sup>th</sup> of an inch of rain. Snow levels in the Sierra are lower now than even the bleakest days of the last drought. While South Korea seems to have no shortage of snow for the winter Olympics, you might want to take your mountain bike to the Sierras instead of your snowboard or skis.

A high-pressure ridge has been sitting offshore and has pushed storm tracks from the Pacific Ocean first north into Alaska, which then have been turning into British Columbia. As a result, we aren't getting any of those storms and any rain. As of mid-February, Santa Cruz had received just 8.3 inches of rain (our water year extend from Oct. 1, 2017 to Sept. 30, 2018) and most of that was in those two days in early January.

In a normal year we would have received 21 inches by now. While I believe it's too early to speculate on what the next few months will deliver, one long-range weather forecaster has proclaimed "unless March and/or April bring abundant rains... this rainfall season could end up being one of, or possibly the driest, in our climate history". That's not a record anyone is excited about owning.

Fortunately for us, back in the late 1800s our early city leaders made some wise decisions and began to think ahead about providing water for the city. Water rights were obtained and small diversion dams were built on three north coast streams (Laguna, Majors and Liddell Creeks), which have very high quality water year around and still provide us with about one-third of all of our annual water supply.

An earth-fill dam was built on Newell Creek in Lompico in 1960-61 that created Loch Lomond, our only storage reservoir. Newell Creek was named after Addison Newell, originally from Maine, who came west during the Gold Rush, but like so many others, didn't strike it rich. He ended up in the San Lorenzo Valley in 1857 and had a farm on the creek. Loch Lomond was originally named Newell Lake, but the name was soon changed to keep with the Scottish theme of nearby Ben Lomond.

When full to the brim, Loch Lomond holds about 2.8 billion gallons of water, slightly more than water department's average annual water demand of about 2.66 billion gallons. As of Mid-February, we are at 93.5% of capacity or 2.62 billion gallons of water are sitting behind the dam.

At the moment we have a well-planned reserve. If you look at the weather page in the Sentinel every day, you will notice under the rainfall totals that the status of Loch Lomond is given in percent of capacity. It's a good thing to look at from time to time as the year proceeds just before you jump in the shower.