

Water Temperature in Sausal Creek

Water temperature is a basic and very important parameter to measure. All creek organisms have a range of temperatures in which they can live, although fish tend to be most sensitive to temperature fluctuations. In the Bay Area, it is generally increases in water temperatures that cause problems for creek inhabitants, whether due to loss of shade along a bank, warm water discharge from an industrial facility, or simply a hot summer day.

Rainbow trout prefer water temperatures below 20°C. Sausal Creek temperatures generally range from 8°C to 20°C, which is a fairly healthy range. Rainbow trout do need cool temperatures (about 9°C) for spawning, so an extended warm fall could delay reproduction.

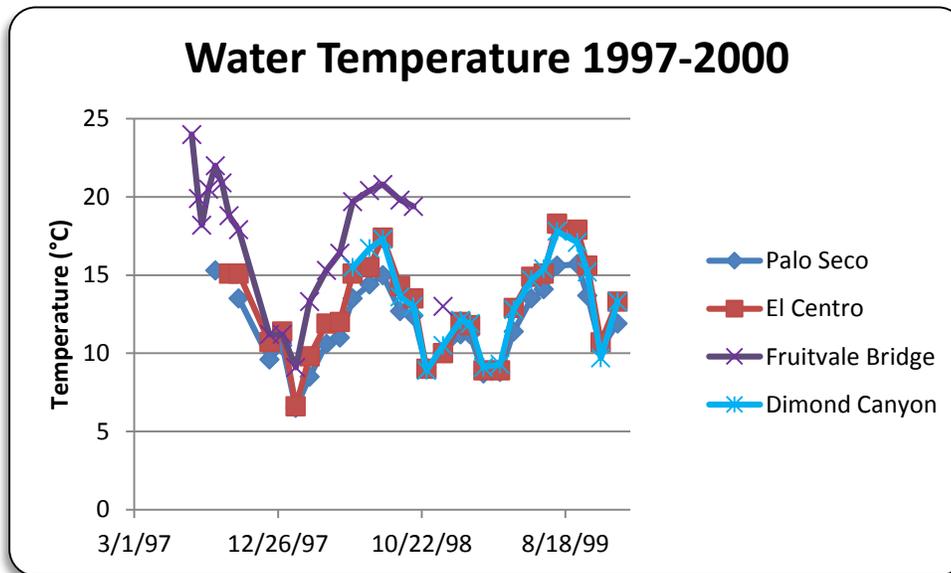


Figure 1. Water temperature measured at four sites from 1997-2000

In the graph above, we can see that water temperature at the Fruitvale Bridge site tends to be higher than at the other sites, especially in the summer. This site is located where the creek enters the estuary, several miles downstream of the other sites. It is not unusual for creek water lower down in the watershed to be warmer than at the headwaters, but in this case there's another factor: When Sausal Creek enters the estuary it has been culverted for some distance, increasing the water temperature. The culvert also makes fish passage impossible.

At all other sites creek temperatures remain nice and cool, even in the heat of summer. This is unusual for creeks of this size and especially important for our rainbow trout population. The mechanism behind our cool creek is likely cold groundwater input, and we have local geology to thank for our healthy temperatures.

We don't collect water quality data as often as we did in the past, so it's a little harder to interpret our most recent temperature results (below). However, all sites have very similar temperatures, which trend together and are still nice and cool.

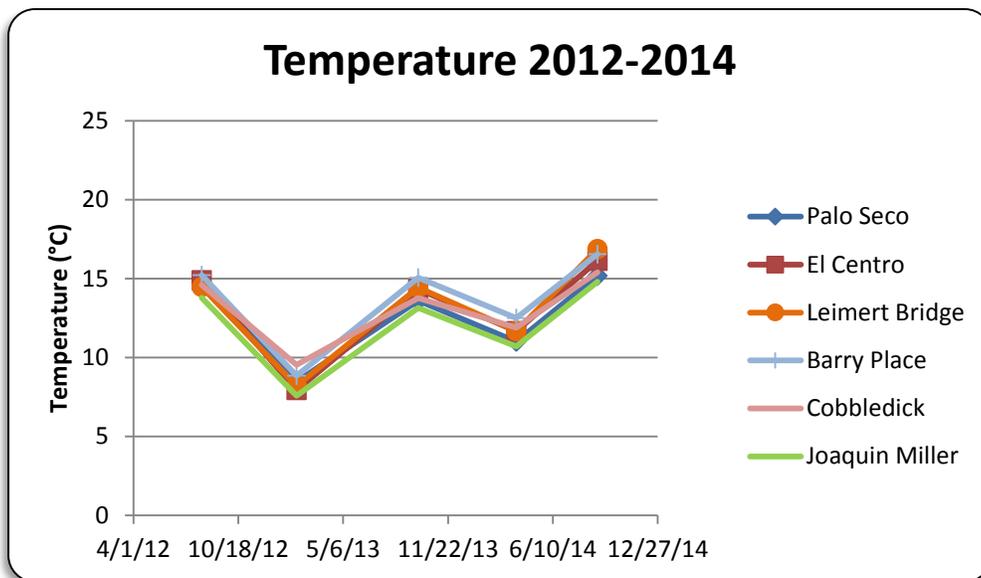


Figure 2. Water temperature measured at six sites from 2012-2014

Let's compare Joaquin Miller (in the Oakland hills) with Barry Place, which is lower in the watershed, at 27th St. near Fruitvale Ave.

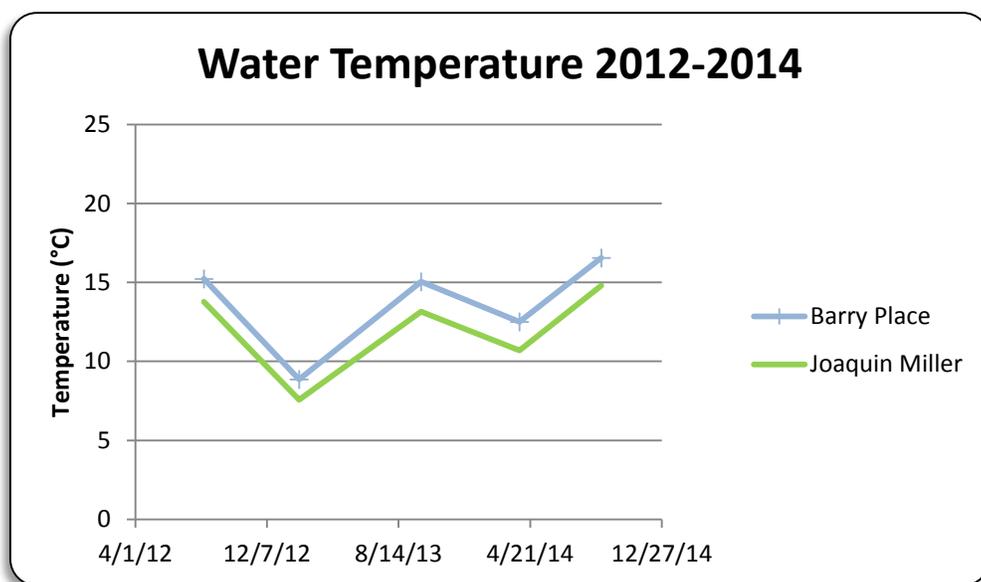


Figure 3. Water temperature measured at two sites from 2012-2014

In the graph above, we see warmer temperatures lower in the watershed. This is common for streams, both urban and pristine, and in this case the temperatures are in a healthy range.

For more information on water temperature in creeks, please see this publication from the Clean Water Team:

http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/cwt/guidance/3120en.pdf

--Helen Dickson