

## pH in Sausal Creek

pH measures the acidic or basic nature of a solution. The pH scale is logarithmic (i.e., a one-unit increase means a ten-fold increase in concentration) and ranges from 0 to 14. More acidic solutions have a lower pH, while more basic solutions have a higher pH. Pure deionized water has a pH of 7, which is considered neutral.

Many factors can affect pH in a stream environment. Pine needles are acidic and therefore lower pH, while maple leaves are basic and so raise it. If there is high algal growth, the stream can experience daily pH fluctuations based on the balance of oxygen and carbon dioxide in the water. Urban runoff and mining activities can also alter pH.

Most organisms, including fish and invertebrates, need a pH between 7 and 8.5 to be healthy. Generally, pH in Sausal Creek stays within this range.

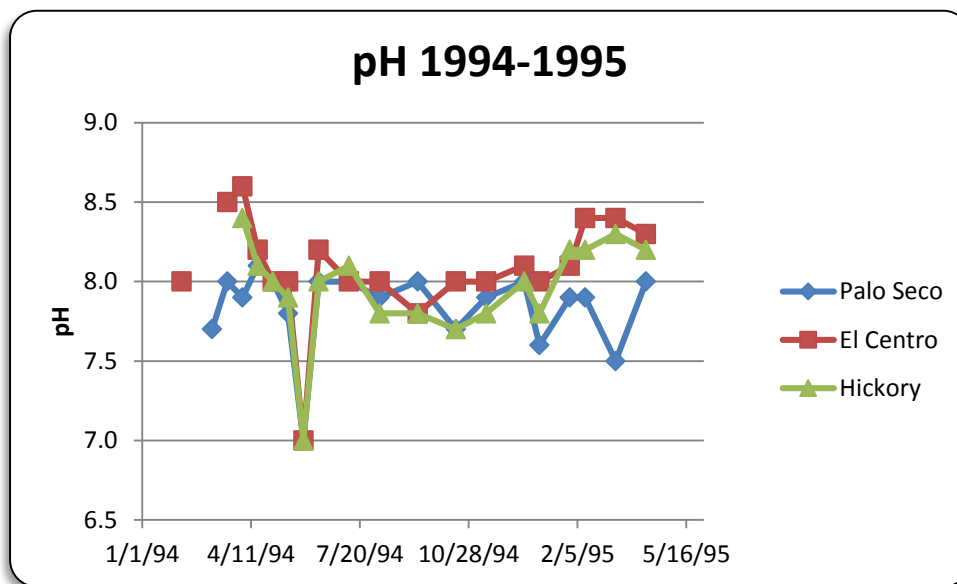


Figure 1. pH measured at three sites from 1994-1995

In the graph above, pH stays between 7.5 and 8.5 with only one exception: In May 1994, all sites had a pH of 7.0. While this is not an unhealthy pH, it is an unusually low reading for this creek. It is also unusual for the data to line up that well, so this may be indicative of a drinking water leak. It's much harder to notice a drinking water leak than, say, a sewage leak, because the creek may not visibly change. Sometimes there is a faint chlorine smell, and if you look for the benthic macroinvertebrates that should live in the creek you would be unlikely to find them, as they can't live in drinking water. Low conductivity readings might indicate a leak, as pure water has fewer ions than creek water, but unfortunately we do not have conductivity data from this date.

The graph below shows normal pH levels in Sausal Creek—values between 8 and 8.5—which is a very healthy range.

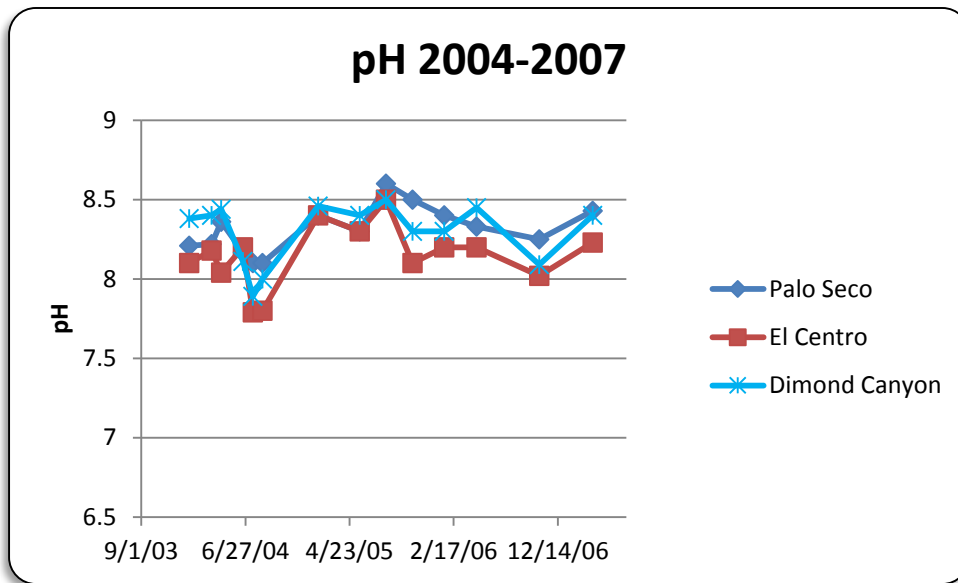


Figure 2. pH measured at three sites from 2004-2007

For more information on pH in creeks, please see this publication from the Clean Water Team:  
[http://www.waterboards.ca.gov/water\\_issues/programs/swamp/docs/cwt/guidance/3140en.pdf](http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/cwt/guidance/3140en.pdf)

--Helen Dickson