



napa valley vintners

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## **Climate Change, Napa Valley, and what we don't know**

By CHRIS HOWELL

The question of climate change and global warming is not an "If" scenario, but a "What," "Where," "When," and "How" scenario. As prudent farmers in the Napa Valley, we are constantly thinking about this as we plan for the future. Napa's wine industry, while producing just 4% of California's wine grape harvest, has an economic impact on our county of \$11 billion dollars annually, it also represents 34% of the value of California's wine industry's economic impact on the US economy—so there's a lot at stake for all of us.

We winemakers are farmers—as farmers, we live not by the climate, but much more by the weather, ie: day to day, week to week, season to season, and year to year. In order to get clear evidence of climate change, we need to be able to compare trends over decades --this is not a perspective on the usual human scale.

A study, Climate Change in the Napa Valley sponsored by the Napa Valley Vintners, has been underway for almost two years, but we still have no definitive results. Evaluating local climate is more difficult than we thought, and we're trying to develop a model that describes our Napa Valley both longitudinally and transversely. There are only a few data stations that go back in time more than a decade, and even fewer that cover several decades (and these may not be representative, since they're not in vineyards). We hope to have something more substantive to report within the next year.

Should you pick up your vineyard and move it to the Oregon coast? Absolutely not, because of this complexity: many climate scientists believe that the coastal regions to our north could become wetter, and thus, impact bud-break, fruit set and bloom. Then, without good sunlight, ripening is impacted. Vine diseases and pests also become more problematic in areas without long dry periods.

We love to quote Mark Twain who said, "The coldest winter I ever spent was a summer in San Francisco." The Pacific Ocean is our region's greatest temperature control. From living here, we know that the warmer the Central Valley becomes on a summer day, the more intensely the fog pours in from the coast. This is the "vacuum effect" of a warmer interior valley. We have been blessed to have the perfect mix of warm days and fog/coastal cooling that allow us to grow some of the finest wines in the world.

Globally, the years 1998, 2005 and 2006 were the warmest years on record, but consider the fact that they were the coolest for the Napa Valley. There is some suggestion by climate scientists that as the interior areas warm in the future, that we may actually become cooler, or foggier. Either way, warmer or cooler, it's different than what we're experiencing today—so as prudent farmers we need to look at all of our possible scenarios and consider best practices to continue to grow the best wine grapes.

Once we have established a solid understanding of the climates within our Napa Valley, we hope to create a model to predict future changes, and look at what modifiers might be at our disposal both short- and long-term in the vineyard. For example, if we start to warm a couple of degrees, we can look to change the heavily manicured trellising systems we currently employ to purposefully get sunlight onto grape clusters; cover crops can be grown differently to mitigate heat; irrigations techniques could be altered and so on. Then, rootstock could be changed since this is the energy engine of the vine, different rootstocks that dictate different vine vigours could be planted. And, these are just scratching the surface of in-field practices.

At the end of the day, for now at least, climate study is a predictive science and we are working hard with our vintners, growers and researchers to provide a road map for what could be on our horizon. But what we are mostly learning is how much we really don't yet know.

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