

# A rogue climate for the Applegate

BY ALAN JOURNET

## Water, water everywhere?

However we measure quality of life, water is essential; whether considering daily lives, commercial ventures, or agricultural activities, without a timely supply of water, our future is compromised.

Because of the historic pattern of snow accumulation and melt, Oregonians have counted on snow accumulation at high elevations serving as reservoirs releasing their bounty through summer and fall to nurture the rich rural lifestyle.

Unfortunately, this pattern is changing. Crater Lake snowpack has declined 25 percent since the 1930s. Meanwhile, the Columbia Plateau Aquifer—supplying 1.3 million westerners with drinking and irrigation water and supporting an agricultural economy worth \$6 billion annually—is dropping at 2 feet per year. The source of much Applegate Valley water is the Northern California Siskiyou below 7,500 ft. These regions similarly have exhibited declining snowpack (13 percent from 1950 to 2000). Projections through the century suggest that accumulation might drop to 10% of its 20th Century level. With warming, the problem of reduced snowpack will be magnified by earlier snowmelt, causing substantially lower stream flows during late summer and fall—exactly when agriculture most needs water.

While water availability is probably the most immediate concern to the region, the reported trends are driven by the larger problem of global climate change caused by our release of greenhouse gases into the atmosphere. The same climate pattern that enhanced the ferocity of Hurricane Sandy and the severity of heat waves, droughts, and wildfires devastating much of the nation over the last two years (causing 50 percent of counties to be declared disaster

areas), also affects the Northwest. Although the immediate future for the region is not as bleak as that for the central and southern states, where heat waves and droughts are projected to increase substantially and soon, our region is assuredly destined to experience negative impacts.

## Regional climate trends

Fortunately, we have projections identifying probable future conditions for our region if humanity collectively continues to behave as historically—the “business as usual” scenario. These come from analyses performed by the USFS Mapped Atmospheric-Plant-Soil System team and reported in a 2008 publication: *Preparing for Climate Change in the Rogue River Basin of Southwest Oregon* is available at <http://geosinstitute.org>.

The historic 1961-1990 pattern depicts an annual average of 50 degrees F, with summers 63.5 and winters 38. The analysis indicates that on top of the 1.3 degrees F warming already experienced, by 2035-2045, just over 20 years from now, average annual temperatures here will run nearly 2 to 3.5 degrees F warmer, with winters increasing 1.5 to over 3 degrees F and summers increasing 2 to 4.5 degrees F. By 2075-2085, meanwhile, another 40 years onwards, temperatures will increase such that



**Applegate Lake and snow-covered Siskiyou.** Snow accumulation, the water source for the valley, is already dropping and projected to decrease further. Photo: Alan Journet.



**Applegate River and McKee Bridge.** As snow accumulation drops and snowmelt advances, water available for irrigation is likely to be compromised. Photo: Alan Journet.

the average will likely be between 4 and 8 degrees F hotter than historic, with winters 3.5 to 6 degrees F and summers 5.5 to nearly 12 degrees F hotter. August alone could reach 15 degrees F hotter.

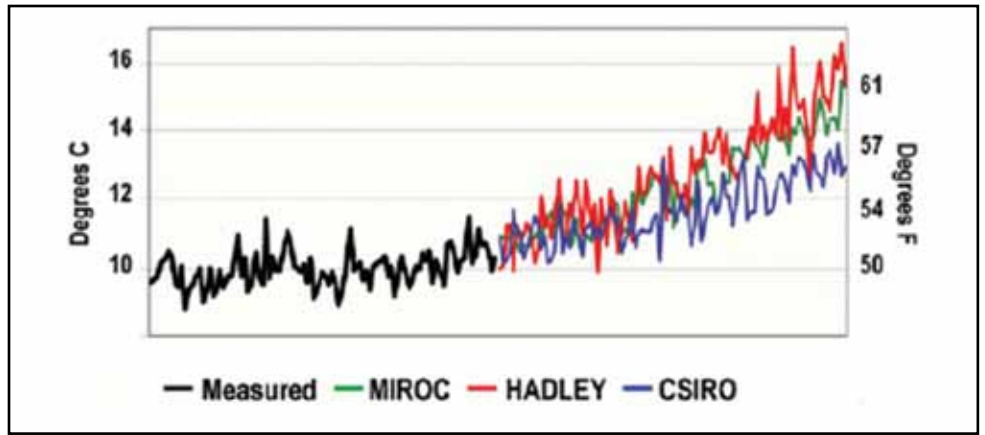
Precipitation projections are less clear, with summers trending drier and winters somewhat a little wetter. With hotter summers, the potential for increased drought and wildfire risk is clear. Meanwhile, the precipitation that falls will likely be focused on more heavy downpours, increasing floods and erosion problems rather than replenishing groundwater.

The warmer growing seasons are likely to compromise conditions for many critical crops grown locally where heat depresses yield. While many wine varietals currently grown in the valley can withstand increased growing season temperatures, some will not, and if the upper extreme is realized, most grape varietals will suffer. Warmer winters, meanwhile, may challenge the winter chilling required by fruits such as pears.

### Addressing the problem

There are two ways to address the

**Like most crops, wine grape varietals** each have their own optimum growing season temperature range. Future average and extreme temperatures will probably compromise many locally grown crops. Photo: Alan Journet.



**Historic and projected temperatures for the Rogue Valley** show the annual averages for three “business as usual” scenarios. Doppelt, Hamilton, Deacon, Williams, and Koopman 2008. Available at <http://www.geosinstitute.org>.

problems posed by climate change. One involves preparing for the change that is inevitable, the other is joining the global movement to stem greenhouse gas emissions, thereby avoiding the worst case scenario.

Preparation would involve conserving water wherever possible, including reducing evaporation from irrigation streams, canals, and ditches. Additionally, consideration should be given to cultivating species that are adapted to hotter, drier conditions

—employing native species wherever possible.

Reducing emissions involves reducing our use of energy generated by burning fossil fuels. While some people have argued that addressing climate change will cost more than we can afford, the real question is whether we can afford not to address it. A study by the McKinsey Company revealed that there are many ways of reducing carbon emissions that actually save money; even though some require an initial investment, savings accrue in the long run. We should look for these in our daily lives.

For many years, carbon intensive fuels have been encouraged. It is time to reverse the trend. Currently, those experiencing severe weather are paying the economic price; we might call it a carbon tax of suffering. The economic system should be adjusted so those emitting the greenhouse gases pay.

We are in danger of handing to future generations an unlivable Applegate Valley and planet. This is a question of inter-generational justice. Area residents interested in addressing the problem are invited to join the efforts of the Southern Oregon Climate Action.

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