

Vineyards track weather, soil differences

By **BRAD CARLSON**
For the Capital Press

Scientists track weather, water and soil data from monitoring stations at 10 southwest Idaho vineyard sites stretching from Kuna northwest to Parma.

The Sunnyslope Soils and Weather Network is the first regional environmental-monitoring system for Idaho's vineyards, leaders said. On-site instruments record hourly readings of air temperature at vineyard canopy height, precipitation, relative humidity, vapor pressure, wind speed and direction and solar radiation. Probes set between 15 and 75 centimeters deep measure soil moisture and temperature. The system

also provides derived measures of growing-degree and frost-free days, wind run and evapotranspiration, a multi-factored measure of a plant's water-use efficiency.

Primary investigator David Wilkins, associate professor of geosciences at Boise State University, said the study, begun two-plus years ago, aims to make it easier for grape growers to determine which varietals to grow, and where.

"They didn't have any of these data before at the vineyard-site scale," he said. "These vineyards now have readily available climate and soil data to inform their vineyard management practices."

Researchers aim to better characterize the diversity of soils, climate

and elevation related to grape-growing suitability.

Wilkins said by understanding and mapping the measured characteristics across the 10 monitored sites, "we can better understand the quality of soils and the micro-climate at each site, and better inform best practices for quality wine grape production."

The Idaho wine industry previously lacked such data as well as a template for gathering and displaying it, he said. Findings can be viewed on plot graphs or lists.

One of the mast-mounted stations is at Bitner Vineyards in the Sunnyslope grape-growing area, where owner Ron Bitner in 2017 documented conditions that differed

notably from his neighbors'. He saw his 35-year-old vineyard sustain serious damage in January — 10 straight days of bitter cold knocked out vines, though a two-foot blanket of snow kept roots alive — and again in a late-May freeze. A neighbor's vineyard at lower elevation was damaged more, and a nearby vineyard at a higher elevation was damaged less.

Researchers so far have found fairly significant differences in heat units and growing-degree days at monitored sites within one to two miles of each other, Wilkins said. Close-together sites can vary enough in slope, soil composition and other factors to make for unique growing conditions.



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Ron Bitner, of Bitner Vineyards west of Caldwell, Idaho, with his weather monitoring station.



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