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A weir at the UC ANR Sierra Foothill Research and Extension Center in Yuba County. Once installation of a monitoring device for a weir is complete, water diverters need only read a staff gauge that shows the height of the water spilling over the weir's crest — and do a bit of math.



the support of the statewide Cattlemen's Association. It took shape as proposed legislation in 2017 and was shepherded through the Legislature by Assemblyman Frank Bigelow (R-O'Neals). It breezed through both chambers with no votes in opposition — not even in committee. "All parties realized," says Assemblyman Bigelow, "that Assembly Bill 589 would cut compliance costs and, as a result, increase compliance rates — which benefited both the regulators and the regulated community."

Essentially, AB 589 allows water diverters to install their own monitoring devices if they successfully complete a monitoring workshop offered by UCCE. Further, it directed UCCE to develop the workshop in coordination with the water board. Khaled Bali, an irrigation water management specialist at the Kearney Agricultural Research and Extension Center, took the lead in drafting the coursework. "Then we met with the [water] board and got feedback," Bali says. "We made changes until they said, 'This looks good.'"

Attendees at the workshops, which last three and a half hours, gain a solid foundation in the basic principles of diversion monitoring. They learn how to monitor flows passing through a ditch, over a weir or through a pipe — or gathering in a pond. They learn how to build or install measuring devices appropriate for each type of diversion and how to calibrate those devices to comply with the state's accuracy requirements. They learn how to navigate the water board's rather detailed reporting system.

Equipment for monitoring flows through open ditches might be limited to a tape measure, a timing device and a floating object. Installing a monitoring device for a diversion routed over a weir — a simple dam with an edge or notch that allows overflow — requires a bit more equipment. But once the installation is complete, the diverter need only read a staff gauge that shows the height of the water spilling over the weir's crest (and then do a bit of math). Diversions flowing through pipes must be outfitted with flow meters. Diversions feeding into a pond or reservoir can be monitored by tracking the depth of the water with a staff gauge, float or pressure transducer (provided that the depth and surface area of the pond or reservoir are known).

So far, UCCE has offered the course in about 15 locations, from Yreka to Bakersfield. According to Shasta County UCCE County Director Larry Forero — who teaches the \$25 course along with Bali, Tehama County UCCE Advisor Allan Fulton and UC Davis-based UCCE Specialist Daniele Zaccaria — about 1,000 people had earned certificates of completion by early October. Even farmers and ranchers who divert less than 100 acre-feet per year are attending. "I've been flooded," says Wilbur, "by the number of diverters who have attended the course even though they aren't required to — they want to better understand the regulations and make sure they're doing the right thing." It probably helps that the registration fee is a fraction of the cost of importing a faraway engineer. [CA](#)

—Lucien Crowder

LETTER

Re: Soil- and waterborne *Phytophthora* species linked to recent outbreaks in Northern California restoration sites by Matteo M. Garbelotto, et al. (vol. 72, no. 4, October–December 2018)

WHAT DO YOU THINK?

The editorial staff of *California Agriculture* welcomes your letters, comments and suggestions. Please write to us at: 2801 Second Street, Room 184, Davis, CA 95618, or calag@ucanr.edu. Include your full name and address. Letters may be edited for space and clarity.

I am curious if any researcher has linked the inadvertent introduction of *Phytophthora* to restoration areas to the current practice of using dead plant tissue (compost) as part of the growing media.

If the plant material is grown in a sterile highly permeable mineral media, such as mined pumice, *Phytophthora* organisms will not be promoted.

Organic media eventually, if not immediately, promote *Phytophthora* when utilized as a growing medium. As organic substrate particles continue to decompose, the permeability of the medium decreases. The decomposition also consumes oxygen creating conditions perfect for *Phytophthora*.

In agriculture the hydroponic researchers realize the importance of promoting adequate oxygen levels in the rootzone. In floriculture the same concerns have been addressed. They are aware that dead (or alive) organic matter anywhere in the rootzone or irrigation

system can result in oxygen levels that are too low for ideal root health.

Horticulture has to follow suit.

Gary Matsuoka
Laguna Hills Nursery

Matteo Garbelotto, UC Cooperative Extension specialist and adjunct professor at UC Berkeley, responds:

We published a paper in *California Agriculture* in 2015 on the risks of using products that are in between true compost (which is normally truly *Phytophthora*-free) and mulch (see volume 69, issue 4; <http://calag.ucanr.edu/archive/?article=ca.v069n04p237>). Also, we have found that soil and mulch used for trail-making can be chock full of *Phytophthoras*, and we are alerting stakeholders about the risks of using these two media. Your comments were right on.