



UC  
CE

University of California

Agriculture and Natural Resources

Cooperative Extension

# 2018 ANNUAL REPORT





Did you know there are as many microbes in a teaspoon of soil as there are people on earth?



# RESILIENT SONOMA COUNTY



HOUSING

FIREWISE LANDSCAPING



ECONOMY

VITICULTURE & INTEGRATED  
PEST MANAGEMENT

LIVESTOCK & RANGE MGMT

DAIRY PROGRAM



SAFETY NET

FOOD RECOVERY

MASTER GARDENERS

4-H YOUTH DEVELOPMENT



NATURAL  
RESOURCES

FOREST HEALTH

ENVIRONMENTAL  
HORTICULTURE

## A message to the County of Sonoma Board of Supervisors

Chair David Rabbitt | James Gore | Susan Gorin | Lynda Hopkins | Shirlee Zane

The University of California Cooperative Extension (UCCE) is excited to present our 2018 Annual Report, demonstrating our commitment to education, research-based information and technical expertise in Sonoma County. Our annual report highlights UCCE's research and education impacts, which enhance quality of life and the environmental and economic well-being of the residents of Sonoma County. Our UCCE advisors and County staff continue to bring the highest quality of science to address local issues, especially related to wildfire recovery.

In addition to our ongoing UCCE programs, we have continued to expand our programs to address the aftermath of the 2017 wildfires. We provided guidance by compiling science-based information to help landowners address fire fuel reductions, and assist with better agriculture preparedness. A variety of educational workshops covering topics such as best practices for home gardening, prescribed burns, grazing and other vegetation management tools have been held around the County for property owners and homeowners. The UCCE Sonoma website provided recovery resources for residents impacted by natural disasters.

To respond to the need for timely science-based wildfire recovery information, UCCE launched efforts to create a Prescribed Burning and Grazing Association. The "Good Fire Alliance" (GFA) is a collaborative effort with landowners, County departments, agencies and NGOs that will develop plans for prescribed burns and grazing as a fire fuel management tool. UCCE also collaborated with Sonoma County Animal Control and UC Davis, to create an animal evacuation plan.

The UCCE Master Gardener Program of Sonoma County created a team that developed firewise landscaping educational materials after the October 2017 wildfires and has been offering workshops, presentations and information tables at events. Master Gardeners implemented programs that promote sustainable home gardening landscape practices and community-based locally grown food in home, neighborhood and school settings, with a particular focus on minority and ethnic food diversity.

UCCE Sonoma facilitated a team that hosted an emergency food response gathering to look at the local response during the fires that resulted in a published summary report and inclusion of language around emergency food availability in the County of Sonoma Recovery and Resiliency Framework. In addition, UCCE Sonoma is facilitating the "Produce Safety After Urban Wildfire" team which is researching post urban wildfire food safety and soil health. UCCE Sonoma is a founding member of the Sonoma County Food Recovery Coalition which launched a Food Distribution Directory to facilitate the connection of recovered food to food distribution organizations as well as a tri-fold brochure to educate businesses about of food recovery.

UCCE has the talent on our team to address challenges facing the agricultural industry, expand opportunities for our youth, and develop leaders in our rural and urban communities. With the UCCE and County's continuing partnership, these opportunities will continue for generations to come.

Sincerely,  
Stephanie Larson  
County Director



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### Increased grazing management expertise for resilient working landscapes

UCCE is increasing the knowledge of public and private landowners on livestock grazing, through grazing schools, to manage parks and open spaces along with private lands. Improved wildland urban interface (WUI) management is an important issue for maintaining the safety of residents, properties and working landscapes. In addition, the occurrence of fires can affect tourist numbers, along with the commodities grown. UCCE conducted educational meetings to increase awareness of public and private landowners on using livestock grazing to manage parks, open space, and private lands. UCCE research will document the economic opportunities provided to the county by reducing risks, increasing economic incentives for new ranchers, while maintaining tourism in Sonoma County.

### Ecosystem Services provided by Working Landscapes

Changes in public policies and markets require public support, which begins with awareness and understanding of working landscapes and their associated ecosystem services. UCCE surveyed landowners on new methodologies for paying landowners for conservation easements and the subsequent ecosystem services provided from rangelands. The actual services provided by working Sonoma County landscapes can inform policy makers, land trusts and landowners to make educated management and marketing decisions about ecosystem services. UCCE findings build on the concept of valuing and paying for the services provided by rangelands for public benefit, and impacts can influence the long-term sustainability of generational range landowners' providing an income stream annually as opposed to a one-time payment.

### Good Fire Alliance

UCCE, in partnership with Audubon Canyon Ranch, created the Good Fire Alliance (GFA) to educate landowners on how to create healthy, sustainable range and forestlands enabling them to be more resilient in the next disaster. The Good Fire Alliance assists private and public landowners on the use of prescribed fire to manage rangelands and forestlands. Well-managed range and forestlands reduce the risk of a catastrophic wildfire, maintaining and enhancing habitat for many native grassland plants and animals, and maintaining the open character of our iconic grasslands, oak savannas and forestlands.

### Disaster Recovery Resources

In response to devastating October 2017 wildfires, UCCE Sonoma hosted a series of workshops covering best practices for prescribed burning and grazing, fire permitting, air quality and smoke management, burn planning, home hardening, produce safety after urban wildfire, vegetation management, disaster preparedness, what to do after a fire, clean-up, food safety, erosion, and rebuilding homes. Information from these workshops and other resources are listed online for home owners and land owners across California living in high fire hazard prone areas. Information from these workshops are included on our webpage. For more information visit: [ucanr.edu/SonomaStrong](http://ucanr.edu/SonomaStrong)

**Stephanie Larson, PhD**  
Livestock and Range Management Advisor



### Growing True Leaders

*“4-H has been an elevating experience that has enhanced my leadership, community and presentation skills. Being a Rising Star has gotten me much more connected to my community both in and out of 4-H. It has arisen opportunities I didn't think I would ever get. Through the 4-H program, I've had the chance to work beside truly inspiring leaders that having given the best pointers and advice that had guided me and will continue to impact my life. Getting more involved in the upper levels of 4-H was the best decision I've ever made for my life and future.”*

-Meghan Hill, Sonoma County 4-H Rising Star

### Teen Leadership

4-H All Stars and Rising Stars - The 2018-2019 All Stars and Rising Stars coordinated achievement night for Sonoma County 4-H, where over 100 4-H members received proficiency awards. Our outstanding 4-H volunteers were also recognized for their commitment to our youth's development.



### Project Growth and Club Expansion

The Golden Hills and Two Rock 4-H Clubs were awarded project grants to enable project growth. Two Rock received \$500 for a JOANN Spark Grant for the club's leathercraft project. Golden Hills 4-H Club of Petaluma was awarded a \$5000 gift from the Parker Foundation, the charitable arm of the Parker-Hannifin Corporation, to be used to further fund Golden Hills' STEM focused projects; 3-D printing and Lego Robotics. The funds will be used to purchase 3-D printers that the 4-H members will build themselves, Lego kits to enable more kids to participate in an annual local county-wide robotics competition ([scoe.org/robotics](http://scoe.org/robotics)), and up to date laptops to run the software required for both projects.

Sonoma 4-H welcomes The Redwood 4-H Club to the county program. Based in Rohnert Park, the club offers project choices in arts & crafts, clothing & textiles, community service, hobbies (books & games), public speaking and record keeping. Sonoma County 4-H has a total of 23 community clubs across the county.

Visit: [Sonoma County 4-H](http://Sonoma County 4-H)

- Diego Mariscal** UC 4-H Outreach Coordinator
- Tessa Matuszak** UC 4-H Program Lead
- Jesenia Mendoza** 4-H Administrative Aide
- Steven Worker, PhD** 4-H Youth Development Advisor





The Agriculture Ombudsman helps farming, ranching and food operators understand the rules and regulations that apply to diversification ideas or plans and will help them to navigate the various permits and departmental approvals that might be required.

Typical activities that fall under this purview are enterprise expansion projects such as agritourism, milk and meat processing and value-added products. She is also an integral partner to countywide initiatives to support and sustain agriculture in Sonoma County.



**Karen Giovannini**  
Ag Ombudsman

### Ag Ombudsman Fact Sheets

A resource for anyone looking to learn more about permits for agriculture can visit the Ag Ombudsman Fact Sheets. The site includes 58 pages of resources from selling produce to making value added products such as cheeses, from farm stays to Food Safety Modernization act and more. [ucanr.edu/agombuds](http://ucanr.edu/agombuds)

The dairy advisor works with dairy producers, bringing education and resources to improve sustainability of the local dairy industry. She worked with dairies to submit applications to the California Department of Food and Agriculture Alternative Manure Management Program. Randi will continue working with local producers to plan and submit applications for the coming funding round in an effort to reduce dairy greenhouse gas emissions and bring state funding opportunities to the community. She also conducted a North Bay dairy needs assessment aimed at identifying critical education and research priorities. These results will help cultivate new and important research ideas and deliver meaningful workshops to support dairy business sustainability. Results will also aid other community members in understanding the needs of the industry and how they may support continued success of local dairies. Randi also continues to collaborate with the UC Veterinary Medicine Teaching and Research Center to better understand dairy animal health through local research.



### Program Delivery

The dairy advisor is assisting local dairymen to plan and submit applications to the CDFA Alternative Manure Management Program, awarding up to \$750,000 per project and aimed at reducing greenhouse gas emissions. In 2018, \$2,040,869 was awarded to Sonoma County dairy producers through the program.

**Randi Black, PhD**  
Dairy Advisor - Sonoma,  
Marin and Mendocino Counties



Viticulture and Integrated Pest Management advisors conducted research to develop practical solutions that benefit local wine grape growers on production, pest management and resource stewardship. Examples include long-term research on grape diseases such as red blotch and Pierce’s disease (PD). They share information and expertise with industry leaders and regulatory agencies, thereby informing policies on exotic pest exclusion and clean plant propagation material, among others.

Collaborations with the nursery industry and California Department of Food and Agriculture to develop grapevine nursery production protocols are ongoing in an effort to prevent the occurrence of planting stock infested with vine mealybugs, which are a major emerging threat to Sonoma County vineyards.

Ongoing research into Pierce’s disease, a bacteria disease that kills grapevines, is focused on determining if a little-known species of spittlebug found in Sonoma County may be responsible for moving the bacteria and causing disease in some vineyards. The research findings will help growers to understand the role this spittlebug has in the spread of PD. This knowledge will determine if changes in management practices to reduce disease incidence are needed.

The viticulture advisor collaborated with Sonoma Water to address the need for growers to be aware of the approaches the agency uses to model vineyard irrigation in the Groundwater Sustainability Plan. A small focus group of growers who have been actively involved in the county’s Groundwater Sustainable Agencies discussed the type of data that is commonly collected and how it is utilized to schedule irrigation and determine the volume of water to be applied. The growers provided favorable feedback to the overall vineyard water use estimates generated by Sonoma Water. Participants also noted the need for a future study that accounts for deficit irrigation - which is a water management practice used by all grape growers to achieve a desirable level of water stress in wine grapevines.



*Infested green-growing vine with vine mealybug*



*Spittles on a weed caused by spittlebug nymphs*



*Some weeds can contain several spittlebug nymphs inside a spittle*

**Rhonda Smith**  
Viticulture Advisor

**Lucia Varela, PhD**  
North Coast IPM Advisor



### Emergency Food Response

As the October 2017 fires cooled, members of the Sonoma County Food Recovery Coalition, Sonoma County Food System Alliance and UCCE Sonoma assessed how the emergency food response unfolded during the disaster. To build a more climate resilient community, improve efforts during future disasters, and minimize the number of community members who transition from short-term emergency food assistance to long-term chronic food insecurity, they gathered over 30 individuals involved in the emergency food response in February 2018. From information gathered at the event on all aspects of the emergency food response, the team published a [report with key findings](#) for inclusion in the County of Sonoma Recovery & Resiliency Framework.

### Investigating Post-Fire Food Safety

The October 2017 fires created poor air quality and distributed toxic air contaminants over the region. Following the fires and the incredible response from local farmers and gardeners who donated fresh produce, UCCE Sonoma launched a study investigating post-fire produce safety. This citizen science project responds to community concerns about whether the safety of local produce was impacted by contaminants carried in the smoke and ash. Preliminary findings indicate local produce is safe to eat. In Spring 2019, UCCE Sonoma will share findings at community workshops and through online resources with other communities experiencing wildfires. [ucanr.edu/Post-FireProduceSafety](http://ucanr.edu/Post-FireProduceSafety)

### Increasing Food Recovery

The Sonoma County Food Recovery Coalition, chaired by Mimi Enright, works to increase food recovery and reduce food waste in Sonoma County by building community connections, awareness and resilience. The Coalition educates the community via a web page, a Food Distribution Directory connecting food donations with food distribution organizations, and an educational brochure for commercial institutions on food donations. [ucanr.edu/SCRFC](http://ucanr.edu/SCRFC)

### North Bay Food Systems

Farmers’ markets, farm stands, and other direct marketing channels cut out middlemen and help farmers retain the greatest share of their sales. Yet it’s a big demand on farmers’ time and has its limits. UCCE advisors, the Community Alliance with Family Farmers, and the Farmers Guild helped local farmers tap into local wholesale channels such as grocery stores, distributors, and institutions to broaden the appeal and availability of locally produced food and support the local economy. Together, they offered an event series for local farmers to explore new sales opportunities in Sonoma County.

Events introduced farmers to produce buyers from around the region who care about sourcing locally and offered strategies to successfully build new sales relationships with wholesale buyers. Events included a Bus Tour to Meet Buyers (December 4, 2017) in which farmers toured wholesale buyers ranging from food distributors to grocery stores across Sonoma County, a workshop on Expanding Market Channels (January 18, 2018) where farmers learned the inside scoop from buyers with a track record of buying from local farms, and the popular annual Farmer-Buyer Mixer where farmers and buyers “speed date” and get new business connections. Events were organized by UCCE Sonoma, UC SAREP, and CAFF/The Farmers Guild with funding from CoBank and the Farm Credit Alliance.

**Julia Van Soelen Kim**  
North Bay Food Systems Advisor

**Mimi Enright**  
Community Food Systems Program Manager



### Firewise Landscaping

After the fires of October 2017, the UC Master Gardener Program of Sonoma County knew that there was a need to integrate 'Firewise' landscaping practices into our entire program of sustainable horticulture to help build a climate-resilient community. Our task was how to take complex information and make it accessible to our wider community. A year of learning and growing as an organization resulted in a series of information tables, workshops and written materials. To access this information, including recently released videos from our public firewise landscaping workshop held in Fall 2018, go to: [Firewise Landscaping](#)

### Food Gardening Across Cultures

In Sonoma County food insecurity and the need for affordable food inspires us to expand our work helping families to grow their own food. Our Food Gardening Specialists help promote healthy people and communities via a collaboration with Landpaths at Bayer Farm in the Roseland area with a demonstration garden highlighting how to grow food sustainably and workshops in Spanish and English.

To help increase access to sustainable landscaping information to a more diverse audience, we have developed a variety of [food gardening resources](#) that are available in [Spanish](#) on our [Espanol page](#).

### Local Partnerships

The UC Master Gardener Program of Sonoma County (UCMGSC) is proud of its partnerships with local government agencies and non-profits, which help protect California's natural resources including the following:

- With the Sonoma County Waste Management Agency to teach composting via a series of 7 workshops each year, including 2 in Spanish.
- With Sonoma Water to educate on water conservation practices via our Garden Sense program - a unique model wherein 2 Master Gardeners visit a gardeners' home to consult on lawn conversion, irrigation conversion from spray to drip and site specific site recommendations
- With Habitat Corridor Project (a local non-profit advocating for use of native plants), Sonoma Water and Santa Rosa Junior College (SRJC), we developed a series of sustainable and firewise landscape designs that will be implemented as demonstration gardens on the SRJC campus.

#### Mimi Enright

Program Manager, UC Master Gardener Program of Sonoma County





The Forestry and Wildlands Ecology Program focuses on efforts to keep oak and conifer forests and the habitat they provide healthy and productive. Through research, education and advice, the program encourages biodiversity and sustainable management of these forestlands.

**Mike Jones, PhD**  
Forestry Advisor

UCCE Forest programs are active partners with the Sonoma County Forest Conservation Working Group; providing educational and research based information to small-parcel forest landowners on issues related to the resiliency of Sonoma County forests. UCCE's program strives to make Sonoma County forest management sustainable across generations. Programs include shaded fuel breaks, installing emergency water storage for firefighting in rural areas, and managing roads so that they are both passable in emergencies and sediment does not wash into fish-bearing streams.

UCCE provides a conduit for informed dialog that will shape the future of our County.

### Plant pathology for small farmers

Disease management can be a vexing challenge for small farmers, particularly if they are just starting out. UCCE provides on-site consultation and sometimes testing for difficult disease management issues such as white rot of garlic, verticillium wilt of strawberry, fusarium wilt of basil, and various damping off diseases that kill greenhouse grown seedlings. Emphasis is on prevention and sanitary practices that should be applicable in any farming system, including organic, biodynamic, and conventional.



### Sudden Oak Death (SOD)

Sudden Oak Death is still a critical issue in Northwestern Sonoma County, and because tanoak mortality can elevate fuel loading in specific areas, UCCE continues to monitor fuels where the disease is present. UCCE worked with regional and local fire personnel to survey the north coast for *Phytophthora ramorum* and fuels loading. The disease was detected from bay laurel (*Umbellularia californica*) and tanoak (*Notholithocarpus densiflorus*) in 70% of samples taken from Fort Ross to Sea Ranch. Educational meetings and future research will help to inform landowners about disease management strategies and removal the standing dead fuels.

**Steven Swain**  
Environmental Horticulture Advisor





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