



UC  
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UNIVERSITY OF  
CALIFORNIA  
COOPERATIVE  
EXTENSION

# ANNUAL REPORT

2023



UC  
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UNIVERSITY OF CALIFORNIA  
Agriculture and Natural Resources

UC Cooperative Extension

# MESSAGE FROM THE DIRECTOR

A MESSAGE TO THE COUNTY OF SONOMA BOARD OF SUPERVISORS: CHAIR DAVID RABBITT, CHRIS COURSEY, JAMES GORE, SUSAN GORIN AND LYNDIA HOPKINS


The University of California Cooperative Extension (UCCE) is proud to present our 2023 Annual Report, highlighting the department's accomplishments through our innovative programs in Sonoma County. UCCE is the primary County department that extends science-based information to private landowners in agriculture production and public land managers in natural resources management.

The department's programmatic delivery is aligned with the County's strategic pillar, Climate Action and Resiliency, addressing three critical issues: climate smart agriculture, community resiliency and sustainable science. UCCE programs are developed and delivered through a social equity lens.

UCCE's climate smart agriculture programs inform agricultural producers on how to maintain economic viability, while enhancing their climate footprint. In 2023, UCCE advisors developed a "Field Guide to Climate-Smart Agriculture", which allows livestock and dairy producers to document conservation practices and assess climate mitigation results. Our work with local food systems has led to a more resilient community food system with the establishment of the North Coast Emergency Food Systems Partnership. Our sustainable science provides innovative solutions to manage our working landscapes (rangelands, forests, and agriculture lands) and expand ecosystem services (carbon sequestration, food, clean air, and water) benefitting all of Sonoma County.







UCCE worked with County Climate Action and Resiliency Division and received \$10 million in USDA Climate Smart Commodities funding to implement climate smart practices across Sonoma and Marin counties for five years. The project goals are to support 73 Sonoma and Marin agricultural producers, covering approximately 13,686 acres and mitigating 253,612 MTCO<sub>2</sub>e over 20 years.

Through the Forest Stewardship workshop series, along with science driven data, UCCE worked with landowners, managers, community groups and county departments to provide research-based information for long-term forest management. UCCE's science-based solutions ensure fiscally sustainable land stewardship to both private landowners and public land managers.

The UC Master Gardener Program responded to community needs, providing critical educational outreach on fire preparedness, water conservation practices, and growing food. The UCCE Master Food Preservers provided research-based workshops to community residents on home food preservation, food safety, and food waste reduction.

UCCE partnered with Ag + Open Space on their land access study to develop a better understanding of the needs of limited resource farmers in the county and to make recommendations for actions that will support equitable land access, secure land tenure as well as associated farm business viability.

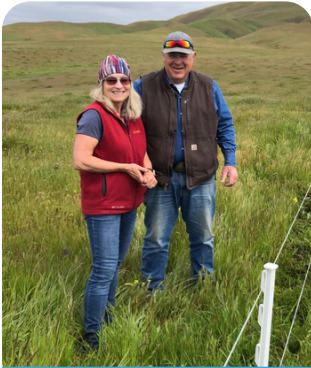
Sonoma County 4-H works with various community-based partners such as schools, afterschool programs, non-profits, and even U.S. Soccer, to provide educational content, community service projects, and leadership opportunities for youth.

UCCE research, programs, and outreach all focus on the needs of our clientele in the community. We achieve this through our continued county partnerships, collaborations and leadership from the Sonoma County Board of Supervisors. Our 105-year partnership continues to benefit all with science-based information and practices.

Thank You,

Stephanie Larson, PhD  
UCCE Department Head

# MEET OUR TEAM



**Stephanie Larson, PhD**  
County Director, Livestock &  
Range Management Advisor



**Deborah Curle**  
Master Food Preserver Coord.  
& Admin Service Officer



**Judy Hatfield**  
Senior Office Assistant



**Cindy Kron, PhD**  
Integrated Pest  
Management Advisor



**Chris Chen, PhD**  
Integrated Vineyard  
Systems Advisor



**Ellie Andrews, PhD**  
Specialty Crops Advisor



**Paolo Solari**  
Senior Ag Program  
Assistant



**Kerry McGrath**  
Agricultural  
Ombudsperson



**Randi Black, PhD**  
Dairy Systems Advisor



**Amanda Charles**  
Climate Smart  
Agriculture CES



**Steven Worker, PhD**  
4-H Youth Development  
Advisor



**Diego Mariscal**  
4-H Regional  
Supervisor



# OUR TEAM CONTINUED



**Shelley Ferina**  
4-H Administrative Aid



**Miguel Delgado Chavez**  
4-H CES



**Zaw Wai Htoo, PhD**  
Community Health Advisor



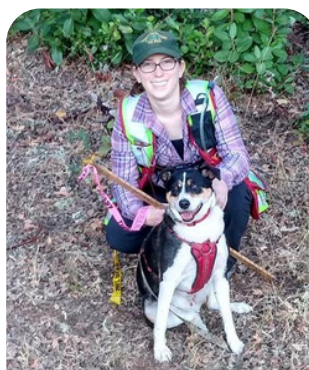
**Mimi Enright, MBA**  
Master Gardener & Community Food Systems Coord.



**Julia Van Soelen Kim, MPH, MS**  
Food Systems Advisor



**Mike Jones, PhD, RPF**  
Forest Advisor



**Tori Norville, MS, RPF**  
Fire Science Advisor



**Steven Swain, MS**  
Environmental Horticulture Advisor



**Kerry Wininiger**  
Sudden Oak Death Outreach Coordinator



**Heather Hill**  
Forest Stewardship CES





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# CLIMATE SMART AGRICULTURE PRACTICES


REDUCING GHG EMISSIONS,  
INCREASING SOIL CARBON, AND  
WATER USE EFFICIENCY

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2023



# INCREASING GRAZING HOOFRPINTS



Sequestering  
1322.5  
MTCO2

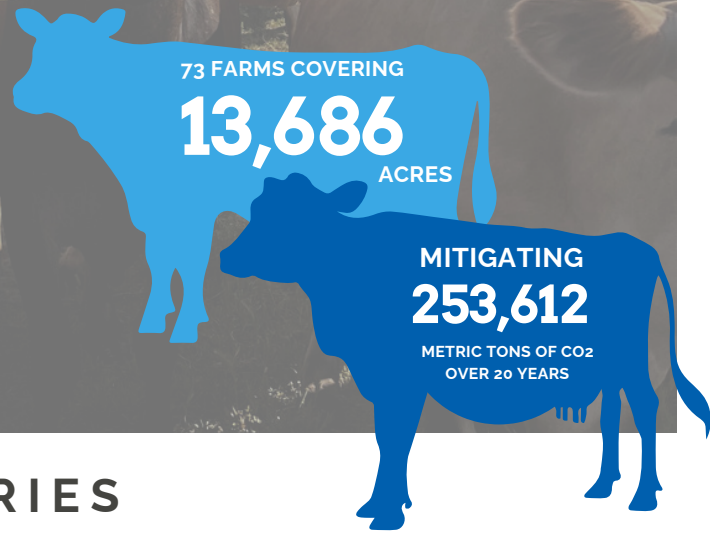
## OF PUBLIC AND PRIVATE LANDS

**Prescribed Grazing Program.** UCCE Livestock and Range Management Advisor Stephanie Larson, increased outreach to communities that have minimal support to manage their vegetation. With funds provided by the Board of Supervisors, Stephanie targeted difficult to reach areas with heavy vegetation and/or a history as a fire path in Sonoma County. She also held grazing schools to inform landowners how to implement a grazing program on their properties to reduce fire risks. At the grazing school, targeted grazers discussed methodologies to increase their "grazing footprint" expanding landscape areas that are being managed for fire reduction, native species, and climate mitigation. She worked with land managers in the communities of Santa Rosa, Windsor, and Healdsburg, creating grazing communities which will provide community safety and better habitat conservation. UCCE will continue its outreach to implement advanced grazing techniques, such as temporary fencing and GPS collars, for a strategic long-term resiliency for Sonoma County. The program targets landscapes to maintain fuel breaks, control shrub encroachment, and reduce vegetation near wildland-urban interfaces (WUI). Program goals will assess total grazable acreages in Sonoma County, focusing on high fire severity areas, working with landowners and managers to achieve climate mitigation and habitat conservation goals.

**Wildfire Fuel Mapper.** UCCE expanded the Wildfire Fuel Mapper (WFM), which now allows landowners to select multiple parcels and maps to address their resource needs. The WFM assists landowners and managers in locating and understanding fire hazards on their land, providing users with a set of tools, resources, and information to help landowners and managers reduce fire hazards. Vegetation management is designed to alter the amounts and arrangement of fuels that sustain wildfires. These actions have been shown to lead to fewer, smaller, and less damaging fires. UCCE advisors continue to work with landowners and managers to implement a vegetation management plan to support our region's overall resilience to wildfire.

**Stephanie Larson, PhD - Livestock & Range Management Advisor**

# FINANCING OF CLIMATE SMART AG



## ON SONOMA COUNTY DAIRIES

**Cost benefits of climate smart manure practices.** Implementing climate smart practices on farms comes with a cost to the farmer, making a benefit of those costs critical for adoption success. Working with other UCCE Dairy Advisors across the state, the UCCE Sonoma Dairy Advisor, Randi Black, and Climate Smart Agriculture Community Educational Specialist, Amanda Charles, are sampling different technologies used to reduce greenhouse gases from manure on dairies while also gathering maintenance and operational costs. These data will inform dairies of the long-term benefits and costs of using manure climate smart practices, promoting greater adoption.

**Local funding for climate smart practices.** A collaborative group of 16 local Sonoma and Marin agricultural agencies, led by the County of Sonoma, received \$10 million in USDA Climate Smart Commodities funding to implement climate smart practices across the two counties over 5 years. The UCCE team, comprised of the Dairy Advisor, watershed advisor, specialty crops advisor, and agricultural ombudsperson, will offer educational opportunities to learn about what climate smart agriculture is, how to implement the practices, and how determine success of implementation. They will also serve as technical experts for selection and implementation of practices. Over the 5-year grant term, this project aims to support 73 Sonoma and Marin agricultural producers, covering approximately 13,686 acres and mitigating 253,612 MTCO<sub>2</sub> over 20 years.

**Empowering livestock producers to convey accurate climate smart messaging.** As more livestock producers implement climate smart agricultural practices, consumers are becoming more interested and engaged in the benefits for the producers and ecosystem. The UCCE dairy and livestock advisors developed a guidebook which includes talking points, economics, and overall climate impact in an easy to use, bound notebook. An accompanying worksheet allows for user-specific emissions avoidance and carbon sequestration calculations. Empowering the voice of producers to tell their climate story offers opportunities to gain consumer trust and encourage adoption of practices by fellow producers.





## ON LOCAL DAIRY FARMS, CATTLE RANCHES, AND VINEYARDS

**Healthy Soils Program.** The California Department of Food and Agriculture's Healthy Soils Program (HSP) released its fifth solicitation since 2017, helping farmers with efforts to try a variety of soil health practices on their own California farmland. To prepare for this upcoming solicitation our Climate Smart Agriculture Community Education Specialist, Amanda Charles, led efforts to provide technical assistance for farmers and ranchers in the area who were excited to draw up project ideas to enhance the health of their soil on the farm. The most popular climate smart agriculture practice remained as compost as it had traditionally in years past. The farmers that were assisted with their HSP projects in 2021-2022 (38) finished up their second year of practice implementation in 2023.

**Alternative Manure Management Program.** Interest in the Alternative Manure Management Program (AMMP) has risen amongst dairy farmers in the county. UCCE Dairy Advisor, Randi Black, and Amanda worked together to submit 2023 AMMP applications for Sonoma County dairies. One project was funded for \$745,348 and will reduce methane emissions by 2,577 MTCO<sub>2e</sub> (CARB). The project is expected to result in a compost production of 23 tons/ac and will begin in Spring 2024. Both projects awarded in 2022 began construction in 2023 and will come to fruition by the end of 2024.

**Compost.** HSP has helped on-farm produced composting become a hot topic amongst Sonoma County farmers. Combining efforts from both the HSP grant and the AMMP grant, farmers are able to use new manure solid separation equipment from the AMMP projects to convert these solids into a new product: compost! This compost can have a multitude of uses, but most commonly it is used as bedding for the cows or as a soil structure "amendment" to increase organic matter in the pastures and sequester more carbon.

# TRANSFORMING COMMUNITY PERSPECTIVES



77.2%

increase in landowner  
confidence in managing  
their own land for fire  
mitigation

## FIRE SCIENCE PROGRAM

**Building Landowner Confidence.** The UCCE Fire Science Advisor, Tori Norville, in coordination with the members of the Sonoma Forest Conservation Working Group, planned, organized, and executed the multi-day Forest Conference: Living with Fire in June of 2023. Participants received information on permitting processes, fire ecology, tools to help with vegetation management projects and how to manage for a host of goals and objectives. Of the ~120 participants, there was a 77.2% increase in participant confidence in being able to manage their own lands. Having landowners confident to do some work themselves will increase the acres treated and move the County to be more resilient. Contributors: Jones, Norville, Swain, (Sashi Sabaratnam)

**Making Knowledge Accessible.** *The Guide: Tending the Land for Fire Resilience in Sonoma County.* UCCE Fire Science Program and Forestry Program assisted Sonoma Ecology Center with *The Guide: Tending the Land for Fire Resilience in Sonoma County* by providing content and technical review. The project seeks to make fuel reduction and vegetation management resources more available to residents of Sonoma County in order to increase the pace and scale of creating resilient landscapes. Contributing Advisors: Jones, Larson, Norville

**Promoting hands-on skills.** In collaboration with other UCCE Advisors throughout the state, the Fire Science Program provided a two-part Pile Burning Workshop. The first part was a Statewide webinar focused on pile construction, permitting, weather and safety considerations and the liability of burning on your property. The second part was local field day to give hands on pile burning experience to participants in order to empower them to utilize the skill on their own lands. Sonoma County's local field day was put on in partnership with UCCE and Circuit Riders. The majority of the participants attending the hands-on field day stated, in a post-workshop survey, that they felt comfortable pile burning on their property and they would try it in the next year.





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# SUSTAINABLE SCIENCES

DELIVERING SCIENCE-  
BASED KNOWLEDGE  
THROUGH RESEARCH AND  
EXTENSION

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2023

# RESILIENT ROOTSTOCKS

**8 AVA'S**

PARTICIPATING IN ROOTSTOCK  
RESEARCH ACROSS 3 COUNTIES

## NORTH COAST VITICULTURE PROGRAM (NCVP)

**UC Cooperative Extension North Coast Viticulture Program.** UCCE NCVP Advisor, Chris Chen, has taken large strides towards developing resources and new knowledge that will support the climate-adaptive vineyards of the future. Wine grape production is a keystone industry of Sonoma County. Grape growers and wine makers in the region are successfully implementing sustainable farming practices, emphasizing sustainability as a primary objective of their operations within their respective disciplines. Chris has worked to expand on local grape growers' dedication to farming sustainably and efficiently.

**Applied Research for Preserving Sonoma's Winegrape Vineyards.** UCCE leads research on identifying the beneficial traits of grape rootstocks that make vineyards resilient to rapidly changing climates. Between April and November of 2023, the UCCE North Coast Viticulture program conducted research focused on identifying the traits of grape rootstocks that are beneficial in making our vineyards resilient to rapidly changing climates. We have conducted this study across 8 distinct American Viticultural Area (AVA) within and adjacent to Sonoma County, Mendocino, and Lake Counties. The results of this study will be widely applicable to vineyard management under detrimental climate conditions and publicly available once complete.

**Grower Focused Outreach and Industry Collaboration.** Extension events in 2023 covered many topics related to climate resilience in the wine and grape industries. Key among these were Sonoma Grape Day, which was a collaborative event with local commodity groups, UCCE PCA breakfasts which occurred monthly during the grape-growing season, and Sonoma County Masterclasses which occurred quarterly; these were also planned in conjunction with local commodity groups. By organizing these events in parallel with local industry professional organizations who understand the challenges of wine grape production in the north coast, we have been directly addressing the most pressing concerns related to Sonoma County grape and wine producers. These collaboratively-coordinated programs and seminars help address the concerns of our Sonoma County grape producers.



# ADOPTING ALTERNATIVE PEST CONTROL METHODS

CA GRAPE GROWERS LOSE

**\$56.1M**

annually to Pierce's disease in lost production and vine replacement

## IN WINE GRAPES, OLIVES, WALNUTS, AND PEARS

**Pierce's disease.** In the North Coast, the blue-green sharpshooter is the main vector of *Xylella fastidiosa* that causes Pierce's disease in grapevines. The UCCE Integrated Pest Management Advisor, Cindy Kron, worked with her team to enter the fourth year of county-wide trapping for the blue-green sharpshooter in Sonoma County vineyards in 2023. [Regional trapping data](#) from 2023 is now available. The goal of this project is to collect long-term baseline data to assist in our understanding and ability to proactively address Pierce's disease in the future that will support the long-term economic resiliency of grape growing in Sonoma County.

**The North Coast IPM Seminar.** An annual grape-centric virtual meeting held over two half days in late November. The seminar brings the latest research results from researchers working on vineyard pest and disease issues that affect the Sonoma County grape industry. View [videos](#) from previous year's presentations.

**1st Biennial California Statewide Olive Webinar.** The 1st Biennial North Coast Olive Field Day took place in August 2022 and the 1st Biennial California Statewide Olive seminar took place in March of 2023. These two programs will continue to rotate, connecting olive researchers with growers to present current research results involving olive fruit fly, black scale, canopy management, nutrition, alternate bearing, olive diseases, and irrigation.

**Ant Identification Workshop.** The North Coast IPM Advisor brought together an Ant Taxonomist from UC Davis and members of the grape industry for a hands-on workshop with microscopes to walk through how to use the ant [identification keys](#). Ants are a pest in vineyards, as they interfere with biocontrol of mealybugs. Mealybugs excrete a sugary liquid that becomes a substrate for sooty mold to grow causing a reduction in wine quality and can vector viruses that cause Grapevine Leafroll Disease. Properly identifying the ant species allows growers to apply the most attractive, and therefore effective, ant bait for control.



## SPECIALTY CROPS

**Building Community Partnerships for Climate Resiliency.** The UCCE Sonoma Specialty Crops Advisor, Ellie Andrews, built cross-organization partnerships to support sustainable orchard and vegetable crop production. Ellie will serve on the Implementation Technical Advisory Committee for the \$10 million USDA [Partnerships for Climate Smart Commodities](#) funding, described on page 7. Through a \$2 million grant to build a statewide [Demonstration Network and Metrics for Accelerating Adoption of Climate Smart Farming Practices](#) led by UC SAREP, Ellie will support the local RCD's North Coast Soil Hub activities and the Soil Health Assessment Committee. The Advisor connects growers interested in funding for Climate Smart Agriculture with the Sonoma Community Education Specialist and other support.

**Engaging Growers through Robust Outreach & Needs Assessment.** Ellie implemented a strong outreach program to proactively share opportunities and science-based resources via the UCCE Sonoma Specialty Crops [website](#), [Instagram](#), and [YouTube](#). In 2023, the Specialty Crops Advisor identified Sonoma county's orchard and vegetable growers' key topics of interest through informal interviews via 55 farm visits, phone calls, emails, brainstorming sessions, group discussions, and surveys. Science-based educational programming was designed and implemented to address growers' top priorities, tailored to our Sonoma County context and responsive to emerging needs.

**Improving Crop Production & Resiliency through Education & Advising.** Ellie implemented educational programming and provided in-depth advising to growers to strengthen orchard and vegetable production and resiliency in a changing climate. Ellie supported on-farm management strategies to maximize soil carbon storage and healthy soil practices, climate-adaptive irrigation and nutrient management practices, and ecologically-oriented pest management strategies. Ellie conducted 17 educational events and presentations serving Sonoma County growers. Ellie brings in experts to create valuable new learning opportunities for growers.



# ECOLOGICAL SUSTAINABILITY OF LANDSCAPES



OVER

200

workshop attendees made up of landowners, landscape professions, and agency personnel

## ENVIRONMENTAL HORTICULTURE

**The 2023 Spanish Bilingual Landscapers Class.** The Environmental Horticulture Advisor, Steven Swain, worked to put together this class to provide practicing and prospective landscape professionals with a broad background in basic gardening and landscape maintenance taught in both English and Spanish; covering topics like post-fire landscape management, proper planting and pruning, and Integrated Pest Management. The program directly addresses UC's Condition Changes of: Increased Ecological Sustainability of Landscapes, and Developing and Inclusive and Equitable Society. The class is aimed at small, independent landscaping companies or contractors whose primary language is Spanish.

**Sonoma County Forest Conservation Working Group.** An area-wide workshop was put on by both Steven and the Forest Conservation Working group. This workshop was aimed at small landowners and agency personnel to address fire mitigation measures and was attended by over 200 landowners, landscape professionals, and agency personnel collectively. A fire-wise landscaping training for professional landscapers was held by Thea Carlsen and Joel Grogan of SRJC where Steven helped by providing them with class materials from some of his own trainings on the topic.

**Addressing wildfire disasters.** Steven worked with UC Advisor Igor Lacan, USDA Forest Service Specialists Francisco Escobedo and Stacy Drury, and UC Berkeley SRA Tara Kelley to lay the groundwork for a federal publication aimed at addressing wildfire disasters in the Western United States. We visited a number of burn sites in the Santa Rosa area on 12-13 December 2022, and discussed disaster response and recovery with fire chief Marshall Turbeville and agency personnel from the Sonoma County Department of Emergency Management.

**Botryosphaeria infections.** In partnership with Matteo Garbelotto at UC Berkeley, Steven worked to sample bay trees for Botryosphaeria infections on private and County Parks lands in Sonoma County. The aim of this project was to get an idea of the prevalence of this disease in contributing to the dieback of bay laurels following the exceptional droughts experienced in 2021-2022



# ENCOURAGING ACTIVE STEWARDSHIP

## OF FORESTS AND WOODLANDS

**Oak Woodland Protection ordinance.** UCCE's Forest Advisor, Mike Jones, continued to help Sonoma County Permit and Resource Management Department develop and draft the new Oak Woodland Protection ordinance by providing data, resources, and technical expertise. The interest of this partnership is to ensure an ordinance or policy is established that accomplishes the goals of managing woodland conversion, but still allows for active stewardship.

**Mediterranean Oak Borer.** With the increased activity of the Mediterranean Oak Borer beetle in Sonoma County, Mike conducted research and outreach on the beetle that led to a collaborative training workshop for professionals and resource managers. The workshop covered ecology, behavior, and management of the invasive insect and was attended by 300 people in person and virtually. Subsequent to the workshop, engagement with several local governments helped develop integrated management strategy for Mediterranean Oak Borer. Check out [mobpc.org](http://mobpc.org) for more info.

**Endemic oak pests.** This was an active year for endemic oak pests. Extensive conversations with landowners and managers about acorn pests led to development of educational videos. Check out the video: [This Weevil Has Puppet Vibes But Drills Like a Power Tool](#), produced by KQED's Deep Look. Another pest of interest this year was the Two-horned Oak Gall wasp, which is undergoing a regional outbreak. The phenology and activity of these pests is being monitored, and while they can have significant aesthetic impacts, they are generally not serious pest of concern.



# TACKLING SUDDEN OAK DEATH



326

TREES WERE  
TESTED FOR SOD

## ENVIRONMENTAL HORTICULTURE

**Healthy forests are more resilient.** Our Sudden Oak Death program is funded by a grant from the USDA Forest Service. Though the science is unclear how climate change will affect the spread and severity of SOD, it is well known that stressed trees are more susceptible to pests and disease. In areas where weather patterns remain conducive to the SOD pathogen, drought and temperature stress brought on by climatic shifts could increase infection rates and decrease the number of trees that could recover. Additionally, SOD management is important because SOD itself is a major stressor on a tree's health, leading to worse outcomes for trees that are subsequently attacked by other enemies that have increased their geographic range due to climate change. Many local homeowners and tree care professionals rely upon UCCE Sonoma's SOD outreach program to provide up-to-date information about disease biology, spread, and management options, and with the switch to virtual programming during the pandemic, people from all over the state have begun turning to us for guidance. Assessment data collected after events show that our programs increase public understanding and desire to take action.

**Educational outreach for all ages.** This year, the UCCE SOD program coordinator, Kerry Winger, hosted events, gave presentations, created educational displays, and appeared in public media across a wide range of audiences. High school and college students participated in SOD blitzes and benefitted from exhibits on their school campuses. Thousands of elementary aged children and their families engaged with interactive materials at the North Bay Science Discovery Day. Adults interested in native plants, forest pests, and mushrooms participated in nature hikes to learn about managing SOD. Community members heard from the SOD team via radio, newspaper, public report, newsletter, social media, and outreach table displays.

**Citizen Scientists help track disease spread.** The UCCE SOD program collaborates with UC Berkeley, Kashia Pomo, Sonoma State University, Audubon Canyon Ranch, Regional Parks, local k-12 students, and LandPaths to host SOD Blitz trainings in spring and follow-up meetings in fall. The pivot to virtual delivery in 2020 broadened our reach to more remote inhabited areas in the counties, which is now offered as an alternative to in-person delivery. This scientific research project is an important tool for residents to confirm the presence or absence of disease where people live and play, and encourages informed management decisions and behavior changes. In 2019, we created the first fully bilingual (Spanish/English) SOD Blitz in the state, and in 2021 expanded this effort to include Spanish-language marketing, pre-event training, symptom cards, and registration, now available for statewide blitz organizers to utilize. In 2023, the number of bilingual SOD Blitz events tripled, with more Spanish language materials being distributed than ever before.





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**ENHANCING  
COMMUNITY  
RESILIENCE**

**WITH OVER 300 VOLUNTEERS  
AND 1,000 YOUTH MEMBERS**

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2023



# CREATING YOUTH OPPORTUNITY



NEARLY  
**1,000**  
YOUTH MEMBERS

MORE THAN  
**125**  
PROJECTS

## SONOMA COUNTY 4-H

**One of the largest programs.** The Sonoma County 4-H program is comprised of a 3 person team Diego Mariscal, Shelley Ferina, and Miguel Delgado Chavez, who work with one of the largest 4-H programs in California with nearly 1000 members and over 200 adult volunteers. Sonoma County 4-H partners with various community-based organizations such as schools, afterschool programs, non-profits, and U.S. Soccer, to provide educational content, community service projects, and leadership opportunities for youth.

**Community Clubs.** Sonoma County's community clubs are one of the longest running youth programs in the county. Nearly 700 youth participated in community clubs, where more than 120 projects are offered ranging from Bee Keeping, Outdoor Adventure, Photography, Robotics to Animal Showmanship. Members and volunteers helped at community service events benefitting the county's rich agricultural heritage, such as the Great Sonoma Crab Fest, Love of the Land, state and county competitions and fairs. Members who participated gained lifelong knowledge, leadership, responsibility, teamwork, and presentation skills.

**4-H Camp.** Sonoma County 4-H Camp offered two weeks of residential summer camp for nearly 150 youth at the Hopland Research Center. Through engaging educational workshops, team building activities, and exciting recreational activities, youth experience this great opportunity as 4-H camp continues to be a staple of summer programming for families in Sonoma County. One of the newest programs for Sonoma 4-H is the partnership between 4-H and the county's school districts through 4-H afterschool clubs. These programs offer afterschool enrichment and out of school day camps for families in the Roseland and Windsor school districts.

**More ways to engage.** Sonoma County 4-H has developed more ways for families to engage in 4-H. By offering more projects, more locations, and fostering more collaboration, more youth have been able to participate in low-cost educational programs in the community, which furthers the development of important life skills.



# CULTIVATING SCIENTIFICALLY LITERATE AND CIVICALLY ENGAGED YOUNG PEOPLE

**STEM education.** The Youth Development Advisor, Steven Worker, focused on building a more robust Science Technology Engineering and Mathematics (STEM) education ecosystem in Sonoma County. Young people are living in a world challenged with complex agricultural, environmental, and social issues, such as climate change, water access, food deserts, and community health. Building a just and resilient Sonoma County will require young people that are civically engaged and possess scientific literacy to contribute to their communities.

**North Bay Science Discovery Day.** UCCE hosted the 11th annual North Bay Science Discovery Day, a one-day public free science festival designed to spark children's wonder and curiosity for science, technology, engineering, and mathematics. Over 8,000 attendees engaged with over 70 organizations and 100 hands-on interactive exhibits. Youth explored rockets and beehives, robots and sharks, catapults and hearts, animation, animals, art, and more. Youth talked to professional scientists and engineers. Youth reported heightened motivation for continued STEM learning.

**Sustainable polymer curriculum and pilot test.** Advisor Worker completed the high school sustainable polymer curriculum and pilot tested with a group of students at Summerfield Waldorf School. Students reported learning about the prevalence, life cycle, and impact of plastics in everyday life. Students explored the environmental impacts of oil-based plastics, emerging work on bio-plastics (compostable plastics made from renewable resources), and advocated for an emerging policy, technology, or approach to deal with the detrimental impacts of petroleum-based-plastic.

**Imagine Science.** UCCE Sonoma County 4-H joined a partnership with four of the nation's largest youth-serving organizations: 4-H, Boys & Girls Clubs, Girls Inc., and YMCA. In Sonoma County, 4-H is collaborating with the Sonoma County Family YMCA to strengthen STEM education opportunities for youth, bridging STEM opportunity gaps for historically under-represented youth.





# REDUCING REGULATORY BURDENS

**UCCE Agricultural Ombudsperson.** Our Ombudsperson, Kerry McGrath, works directly with our local Farm Service Agency on outreach and accessibility to their funding opportunities for climate smart farming, disaster programs, and loan opportunities for local farmers. Kerry works with producers on their individual needs with regard to the regulatory burden of our farming community. She continues to get to know the community better and be a liaison and educator with regulators, local partners and producers. Kerry continues to be on the Santa Rosa Junior College Agriculture and Natural Resource Advisory Board. She joined the California Department of Food and Agriculture (CDFA) Small-Scale Producer Advisory and is also on the Sonoma-Marin Agricultural County Climate Coalition (SMACCC) Marketing Council.

**Land Access and Land Tenure for Limited Resource Farmers: Assessment of Conditions and Opportunities in Sonoma County.** Kerry partnered with Ag + Open Space on their land access study to develop better understanding of the needs of limited resource farmers, and to make recommendations for actions that Ag + Open Space and others can take to support equitable land access, secure land tenure, and associated farm business viability for limited resource farmers in the county. She looks forward to continuing to work with private landowners and public agencies on more creative solutions to land access. Kerry continues to work directly with our local Farm Service Agency on outreach and demystifying their funding opportunities for climate smart farming, disaster programs and loan opportunities.

**Agave growers experimenting with new varieties.** Kerry worked with two agave growers that are trying out different varieties to figure out which are best suited for Sonoma County. They have begun to explore what local processing would look like. While the initial focus is on spirits there is interest in other value-added agave products. Due to their low water usage and overall hardiness it's exciting to have a new crop in the county.

# EXTENDING SUSTAINABLE LANDSCAPING



## UC MASTER GARDENER PROGRAM OF SONOMA COUNTY (UCMGSC)

**Comprehensive outreach methods.** UCMGSC's [YouTube channel](#) had over 47,000 total video views. UCMGSC's [web page](#) received over 165,000 visits. UCMGSC continued a partnership with the Press Democrat with 28 columns printed, including 2 in the Spanish language La Prensa publication. UCMGSC continued in person community connections with information tables at farmer's markets and other venues as well as lectures at Sonoma County library branches and with Sonoma Land Trust. UCMGSC's information desk helped 658 community members with their home gardening questions in 2023.

**Creative Programming.** UCMGSC continued its 10-year partnership with Sonoma Water on the award-winning [Garden Sense](#) water conservation program, which has conservatively helped save over 200 million gallons of water since its inception! UCMGSC led food gardening workshops around the County and created food gardening videos at our partner community garden, Harvest for the Hungry. Mimi Enright, Program Coordinator, launched a new program, Portable Container Gardens -- hosting workshops to provide Sonoma County residents who rent and/or do not have access to garden space the opportunity to learn about growing some of their own food in portable containers.

**New demonstration garden.** In partnership with Petaluma Bountly, UCMGSC expanded a new demonstration garden to provide collaborative educational outreach, along with other existing UCMGSC demonstration gardens geographically dispersed around our County. The new youth-focused demonstration garden on the County's Los Guilicos campus will be a venue for school visits, expanding on work done in partnership with Sonoma Ecology Center for many years.

**The Resilient Landscapes Coalition.** UCMGSC continued an educational outreach program to help community members better prepare for the threat of wildfire, funded by the County of Sonoma Vegetation Management Grant Program. The Resilient Landscapes Coalition provides homeowners with information that create well-designed and maintained landscapes that mitigate the risk of wildfire damage, reduce water consumption, and enhance wildlife habitat.





# BUILDING RESILIENT FOOD SYSTEMS

## STRENGTHENING LOCAL FOOD SYSTEMS



**Expanding Access to Farmers Markets.** UCCE Sonoma's Food Systems Advisor, Julia Van Soelen Kim, continued community-engaged research to expand access to farmers markets in collaboration with Petaluma Bounty and Farmers Market LIFE—a network of 15 farmers markets in Sonoma County. Based on research findings, the project is launching innovations to make farmers markets more welcoming to the whole community, expand use of CalFresh and Market Match nutrition incentives at farmers markets, and improve the financial viability of farmers market vendors.

**Networking Community.** Mimi Enright chaired the Sonoma County Food Recovery Coalition to help create a community where food is shared equitably and there is a deeper understanding of the valuable resources that go into producing our food. UCCE Sonoma partnered on a USDA Carbon Sequestration & Food Recovery grant to expand food recovery and reduce food waste in landfills.

**Supporting Emergency Food Response.** Mimi Enright continued to co-chair the Sonoma Community Organizations Active in Disaster (COAD) Food Access Committee to build collaboration to meet the need for emergency food assistance and to plan for future disasters. Together, the group worked to decrease barriers to food access for low-income communities during the winter storms in early 2023 with partners contributing over 200 meals and 650 food boxes to community members in need.

**Building Community Resilience.** UCCE Sonoma leveraged a generous \$250,000 commitment from the County of Sonoma Board of Supervisors and \$1 million USDA Regional Food Systems Partnership grant to establish the North Coast Emergency Food System Partnership. This multi-year project seeks to increase the local food system's preparedness, recovery, and resilience to disasters and expand community resilience.

**Julia Van Soelen Kim, PhD - Food Systems Advisor and Mimi Enright, MBA, Community Food Systems Coordinator**

# REDUCING FOOD WASTE AND FOOD INSECURITY



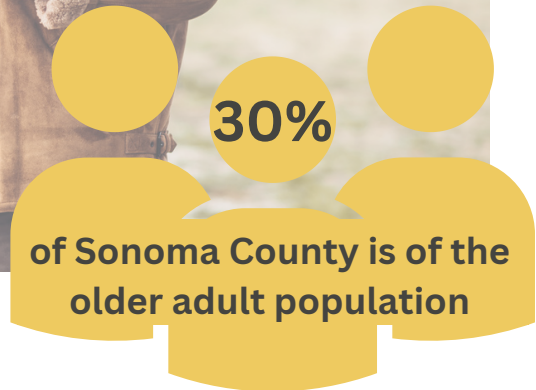
## UC MASTER FOOD PRESERVER PROGRAM OF SONOMA COUNTY

**Community Partnerships.** Master Food Preservers (MFPs), along with the program coordinator Deborah Curle, have developed a great partnership with Sonoma Clean Power's Advance Energy Center where workshops took place in 2023 in their all-electric kitchen in Santa Rosa. The cheesemaking class was a big hit and a lot of fun for attendees, who got to take home several different kinds of cheese. During "Zero Waste Week" in Sonoma County, volunteers did a series of demonstrations at the Advanced Energy Center on ways to be creative with food waste. Workshops, demonstrations, and presentations were held at the Windsor Library with topics including "Preserving Your Delicious Garden Tomatoes!" and "Everything Apple – Fresh Ideas for Preserving Fall Apples" in addition to teaching about food safety during a presentation on "Emergency Preparedness with a Food Focus." In addition, an information table and presentations at the annual Gravenstein Apple Fair in Sebastopol were well received. Presentations were also featured at a monthly produce exchange and have become very popular.

**Growing the Local Program.** The MFP program in Sonoma County has grown to 30 engaged volunteers, with plans underway for another training class in early 2025 adding 10-15 more enthusiastic volunteers. Planning started for outreach at local food banks where handouts about food safety (US Dept. of Agriculture's "Food Safe Families" brochure) and food preservation would be included (in English and Spanish) with bags and boxes of food. Additionally, simple kitchen tools such as vegetable peelers, food thermometers and other common items like this will also be added for recipients to take home along with the food that's being picked up.

**Connecting With All in the Community.** The group has been offering monthly drop-in sessions for members of the community to bring their pressure canner in to have the gauge tested for accuracy – an important step when using a pressure canner! Another ongoing service that we offer is contacting us by email or phone with questions about food preservation. A monthly newsletter goes out to a subscriber list of over 400 interested people. Word is spreading in the community that we are here to support anyone interested in food preservation!





## OF AGING POPULATIONS IN SONOMA COUNTY

**Dr. Zaw Wai Htoo.** onboarded as the UCCE Community Nutrition and Health Older Adult Advisor in mid 2023. Since, he has initiated several key activities including:

**Community Health & Nutrition for Older Adult Needs Assessment and Engagement.** Zaw Wai continues to work on developing ongoing networking, outreach, engagement, key interviews, and education information sessions undertaken over the past three quarters of 2023.

The first iteration of health and nutrition needs assessment of older adults in Sonoma County was achieved in collaboration with stakeholders, counterparts, and partners including the County Health and Human Services Departments, the Center for Wellbeing, community projects, food banks, home delivery programs, senior center, farmers' markets, COAD (Community Organizations Active in Disaster), and SCFSA (Sonoma County Food System Alliance). The findings will inform future projects and programs to support the nutrition and health priorities and goals of older adults.

**Perspectives & Plans for Sonoma County.** The advisor aims to enhance collaboration and partnerships with organizations, continue community engagement, and increase education, awareness, and empowerment among older adults regarding health and nutrition for quality of life. Additionally, the advisor invites further research & development on evidence-based interventions and programs tailored for the older population in Sonoma County.