ANNUAL REPORT

2022

UC Cooperative Extension
Sonoma County

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AGRICULTURE
INDUSTRY
RECREATION

Message from the Director

A message to the County of Sonoma Board of Supervisors:

Chair Chris Coursey, James Gore, Susan Gorin, Lynda Hopkins, and David Rabbitt

The University of California Cooperative Extension (UCCE) is proud to present our 2022 Annual Report, highlighting the department's accomplishments through our innovative programs in Sonoma County. UCCE is the main County department that conducts outreach to private landowners in agriculture production and natural resources management. The department's programmatic delivery is aligned with the County's strategic pillars: Climate Action and Resiliency and Racial Equity and Social Justice.

UCCE's Livestock and Range Management prescribed grazing program will maximize the benefit of livestock grazing for fuels reduction. The innovative strategic grazing program will target landscapes, to maintain fuel breaks, control shrub encroachment, and reduce vegetation near the wildland-urban interface (WUI). UCCE worked with the Agriculture Commissioner, Office of Equity, and Office of Emergency Services to create and roll out the Agriculture Ag Pass Program, ensuring local livestock and dairy producers' access to their properties and animals in disasters. UCCE Dairy Advisor hosted a composting workshop for dairy producers to acquire hands-on experience in composting basics and mechanics of creating and using composting on their farms. Three Sonoma County producers, with assistance from UCCE, were also awarded a California Department of Food and Agriculture Alternative Manure Management Program grant totaling over $2.2 million to separate manure solids and increase compost production for land application. UCCE Sonoma Forestry Advisor collaborated with Permit Sonoma on the update of the Tree Protection ordinance and development of the Oak Woodland Protection Ordinance. A series of stakeholder workshops and townhalls were conducted to receive input from community members and professionals and help further develop the ordinances. UCCE Fire Advisor is working with landowners and managers to achieve more stewardship on the landscape using a variety of tools including prescribed fire.

Message from the Director Continued

The North Coast IPM Advisor conducted a grape-centric virtual meeting held over two half days in 2022. The seminar brought the latest science-based data from researchers working on vineyard pest and disease issues that affect the Sonoma County grape industry. UCCE Viticulture Advisor expanded his outreach operations to support growers and vineyard managers alike while maintaining the objective of developing climate-adaptive viticulture practices across Sonoma County. At the fore of the program is the recently funded Microclimate-adaptive grapevine rootstocks project.

UCCE Sonoma chaired the Sonoma County Food Recovery Coalition,a group of non-profit organizations, government agencies and individuals dedicated to creating a community where food is shared equitably. In 2022, UCCE Sonoma was awarded a $1 million USDA Regional Food Systems Partnership grant with an additional generous $250,000 commitment from the County of Sonoma Board of Supervisors. UCCE Sonoma partnered with Zero Waste Sonoma, Zero Foodprint and Petaluma Bounty to secure a USDA Carbon Sequestration & Food Recovery grant to expand capacity of food recovery non-profits and reduce food waste in landfills. UCCE Master Food Preserver program has expanded, furthering food access and preservation for Sonoma County residents. Volunteers engage with community partners to deliver education and outreach on food insecurity and food waste reduction.

UCCE Agriculture Ombudsman conducted a survey to access the barriers for local food production. The survey explored opportunities that increase land access and farm business viability for limited-resource farmers & ranchers.

Sonoma 4-H has made strides to connect with more teens in the county with new programs and age-appropriate activities. One of the programs is the 4-H Mentoring Program engages with youth in Roseland, providing mentorship, career education, and extracurricular activities for teens.

Stephanie Larson, PhD
County Director / Department Head

Meet the UCCE Team

UC Cooperative Extension (UCCE) county-based Advisors, Community Education Specialists, and County of Sonoma Program Managers work as a team to bring practical, trusted, science-based solutions to our state. We are problem solvers, catalysts, collaborators, educators, and stewards of the land, living in the communities we serve.

Stephanie Larson, PhD

Livestock & Range Advisor

Deborah Curle

Master Food Preserver Coordinator & Administrative Service Officer

Randi Black, PhD

Dairy Advisor

Mimi Enright

Master Gardener & Food Systems Program Manager

Cindy Kron, PhD

IPM Advisor

Chris Chen, PhD

Viticulture Advisor

Ellie Andrews, PhD

Specialty Crop Advisor

Diego Mariscal

4-H Regional Supervisor

Amanda Charles

Community Education Specialist

Michael Jones, PhD

Forestry Advisor

Tori Norville

Fire Advisor

Sashi Sabaratnam

Vegetation Management Program Manager

UCCE Team Continued

Steven Swain, M.S.

Environmental Horticulture Advisor

Kerry McGrath

Agricultural Ombudsperson

Julia Van Soelen Kim, PhD

Food Systems Advisor

Steven Worker, PhD

4-H Advisor

Adrienne Groves

Senior Agricultural Program Assistant

Michelle Nozzari

Administrative Aide

Judith Hatfield

Senior Office Assistant

Kerry Wininiger

SOD Outreach Coordinator

Climate Action & Resiliency

The University of California Cooperative Extension (UCCE Sonoma), continues to adapt our educational programs to address community needs during natural disasters. Our staff has worked tirelessly to develop innovative land management resources to promote community resilience. In 2022, UCCE Sonoma advisors led efforts to provide resources and vital information to county residents and landowners through the creation of Disaster Resources and Fire Resources. UC advisors and program coordinators shifted their research and outreach to focus on reducing the impact of catastrophic wildfires and other natural resource issues related to climate change such as drought, flooding, and invasive species. As part of this work, the County Director partnered with the Sonoma County Agricultural Commissioner to create the Ag Pass Program that will provide immediate access to producers to evacuate livestock from fires or gain re-entry to agricultural property to check on livestock once fire danger is gone. UCCE remains committed to building programs that support climate-resilient landscapes and communities. Through funds from the Sonoma County Board of Supervisors' PG &E settlement and climate action projects, UCCE developed tools and programs to assist private landowners and managers in Sonoma County. UCCE's expertise in applying the best available scientific research and technology improved Sonoma County's knowledge base of complex remote-sensing datasets, vegetation disturbance and post-fire analysis and the collective understanding of the needs of private landowners and the evolving trends in the insurance industry. UCCE, in partnership with Ag + Open Space and Permit Sonoma, leveraged our key strengths as Sonoma County departments to develop resources and implement programs for landowners in mitigating wildfire fire risk. Additionally, our departments worked for more than a year to coordinate vegetation management planning, resources, and activities for the public's benefit.

Stephanie Larson, PhD | County Director & Livestock and Range Advisor

Grazing: A Resource Management Tool

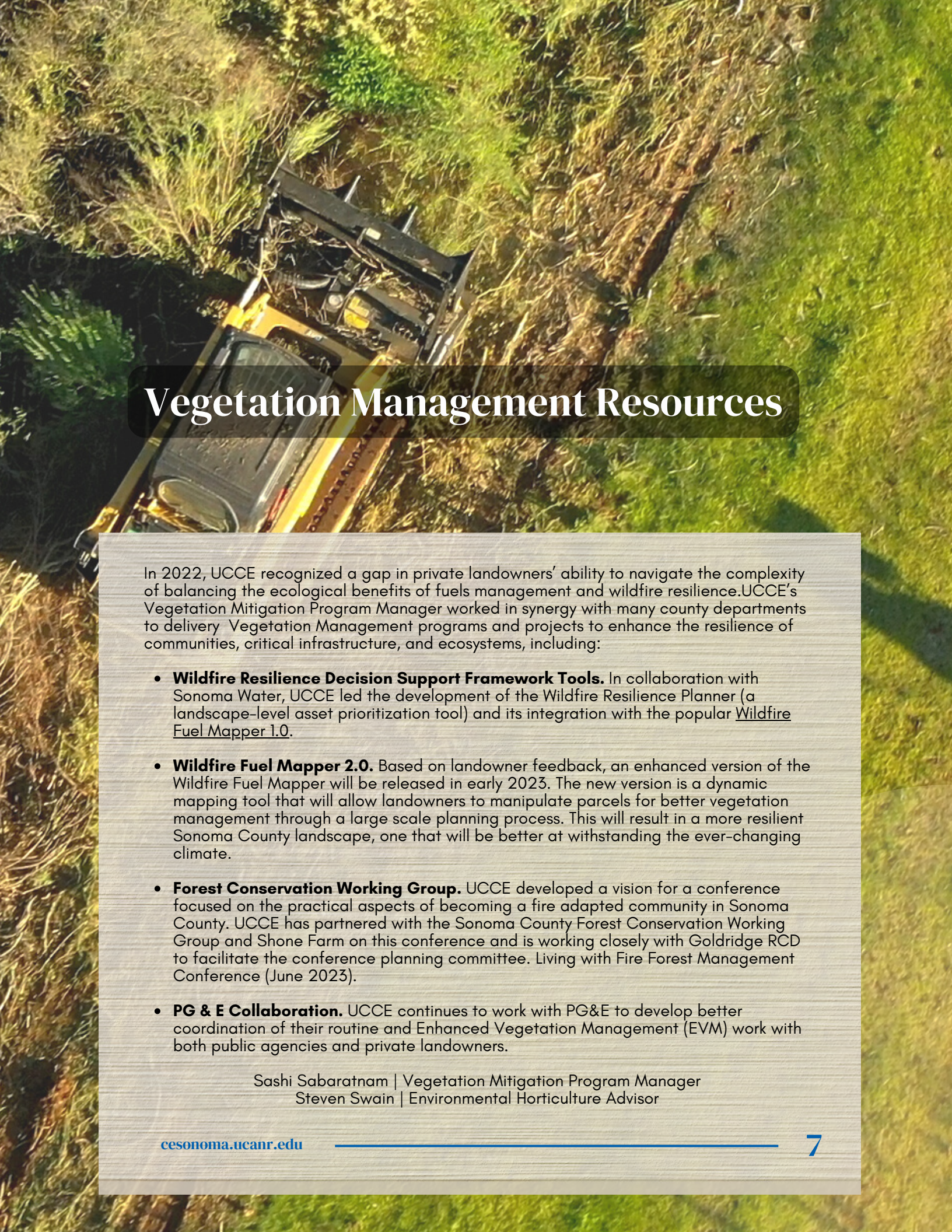
UCCE provides the best available science, to manage our range and forest lands. Today, California forests have undergone great change, with a higher density of trees and more brush in conifer forests and oak woodlands, and federal forests now have higher fire probabilities than forests in other forms of ownership. The buildup of dried fuels in California's Mediterranean ecosystems is one key driver of the wildfire crisis in the state. UCCE is leading efforts to education, motivate and financial assistance landowners. Now more than ever, our highly fire-prone landscapes are not being managed, instead they are hindered by past and current policies and interests. Even in Sonoma County, there is land that is not stewarded. This abandoned land, left alone, regresses into an unhealthy system. UCCE Sonoma leads programs and projects that explore the ecological risks and opportunities, especially as it relates to climate change, these programs and projects include:

- **Strategic Prescribed Grazing Program.** UCCE's prescribed grazing program maximizes the benefit of livestock grazing for fuels reduction. The strategic prescribed grazing program will target landscapes, to maintain fuel breaks, control shrub encroachment, and reduce vegetation near the wildland-urban interface (WUI). The program intends to increase the total grazable acreage in Sonoma County; working with landowners and managers to better manage these lands to achieve climate mitigation and conservation goals.

- **Grazing Management Technologies.** UCCE conducts outreach on the use and implementation of advanced grazing techniques, such as innovative fencing and GPS collars, to demonstrate a strategic long-term grazing program on private and public properties.

- **Match.Graze.** UCCE's Match.Graze resource is , an online platform that already has over 200 users throughout the Bay area. Sonoma County has a unique opportunity to support the economic development of a full-scale grazing program - from cooperative grazing units, contract grazing, and commercial grazing for commercial livestock producers.

Stephanie Larson, PhD | Range and Livestock Advisor



Vegetation Management Resources

In 2022, UCCE recognized a gap in private landowners' ability to navigate the complexity of balancing the ecological benefits of fuels management and wildfire resilience.UCCE's Vegetation Mitigation Program Manager worked in synergy with many county departments to delivery Vegetation Management programs and projects to enhance the resilience of communities, critical infrastructure, and ecosystems, including:

- **Wildfire Resilience Decision Support Framework Tools.** In collaboration with Sonoma Water, UCCE led the development of the Wildfire Resilience Planner (a landscape-level asset prioritization tool) and its integration with the popular Wildfire Fuel Mapper 1.0.

- **Wildfire Fuel Mapper 2.0.** Based on landowner feedback, an enhanced version of the Wildfire Fuel Mapper will be released in early 2023. The new version is a dynamic mapping tool that will allow landowners to manipulate parcels for better vegetation management through a large scale planning process. This will result in a more resilient Sonoma County landscape, one that will be better at withstanding the ever-changing climate.

- **Forest Conservation Working Group.** UCCE developed a vision for a conference focused on the practical aspects of becoming a fire adapted community in Sonoma County. UCCE has partnered with the Sonoma County Forest Conservation Working Group and Shone Farm on this conference and is working closely with Goldridge RCD to facilitate the conference planning committee. Living with Fire Forest Management Conference (June 2023).

- **PG & E Collaboration.** UCCE continues to work with PG&E to develop better coordination of their routine and Enhanced Vegetation Management (EVM) work with both public agencies and private landowners.

Sashi Sabaratnam | Vegetation Mitigation Program Manager
Steven Swain | Environmental Horticulture Advisor

Reducing Climate Impacts of Dairies

Reducing Climate Impacts of Dairies

UCCE, with funding from the California Water Quality Control Board, is working to determine manure application rates in Sonoma County through manure and forage sampling on various farms throughout the region. With this data, dairy producers will be able to more precisely apply manure and ensure optimal forage growth and protect water quality.

- **Assisting local dairies to reduce climate and nutrient impacts**. Dairy cow manure provides dairy producers with a valuable resource to ensure adequate nutrition for their pasture and croplands. These producers act as good stewards of the land through responsible application of slurry manure and effluent water; a practice often referred to as the Sonoma Aroma. However, with a push from local and state legislators to increase compost application on land, producers have gained interest in on-farm compost production.

- **Compost Application.** UCCE hosted a composting workshop for dairy producers to acquire hands-on experience in composting basics and mechanics of creating and using composting on their farms. Three Sonoma County producers, with assistance from UCCE, were also awarded a California Department of Food and Agriculture Alternative Manure Management Program grant totaling over $2.2 million to separate manure solids and increase compost production for land application. Though many farms are shifting to increased compost production, ensuring responsible nutrient application when spreading slurry or liquid manure remains a fundamental practice for dairy producers. Manure application rates have been established within other parts of the state, though water availability, crop type, cow management, etc. vary significantly, making use of those rates impractical for Sonoma County dairies.

- **Implementing Climate Smart Agriculture Practices in Sonoma and Marin County Soils.** Farmers and ranchers across Sonoma and Marin counties are taking big steps toward improving soil health and sequestering greater amounts of carbon in their soil through a change in conventional farming practices. UCCE advisors and specialists worked closely with those who were awarded $3.5 million in CDFA Healthy Soils Program grants to strategize implementing these practices on their farms. The majority of these projects consisted of the application of compost, (purchased from a certified facility or produced on-farm) to the grazing and crop lands of Sonoma and Marin counties. UCCE worked with 37 local farmers who will have sequestered 4669 MTCO2e after their first year (2022) of their 3-year projects and will have sequestered 12577 MTCO2e by the time these projects are completed in 2024.

- **Healthy Soils Program.** Awardees were asked to participate in the study by answering survey questions regarding continuing the Healthy Soils Program. The statewide team of 9 Climate Smart, Community Education Specialists began a case study in 2022 to see how California farmers and ranchers continued implementing these same climate smart farming practices after the 2017 Healthy Soils Program funds had ended. All 2017 Healthy Soils Program awardees were asked to participate in the study by answering survey questions regarding continuing practices and struggles faced with practice implementation as well as soil sampling these fields to test for increased levels of organic matter. Several local awardees have volunteered to participate in the study which will continue into the new year

Randi Black, PhD| Dairy Advisor
Amanda Charles | Community Educational Specialist

Creating Sustainable Forests

A big focus of the UCCE Sonoma Forestry Program in 2022 was forest health issues and recommending management practices that could be to implemented address those issues and help create healthy and sustainable forests that are resilient to future disturbances. Extensive conifer mortality was observed in North Coast conifer forests. Persistent and severe drought conditions preceded by other significant disturbances, such as wildfire, and changes in land use (e.g., expansion of the wildland-urban interface) have created unhealthy forest conditions, facilitating bark beetle other forest pest outbreaks (Figure 1). These data were presented to the Sonoma County Vegetation Management Technical Advisor Committee.

Figure 1. Scattered Douglas-fir decline in mortality.

On a positive note, the drought conditions slowed the spread and rate of tree mortality associated with Sudden Oak Death (SOD). However, the newly detected invasive Mediterranean oak borer was found at additional sites in the county (Figure 2).

Figure 2. Valley oak heavily infested with the invasive Mediterranean oak borer

Another large project for the UCCE Sonoma Forestry Program is the continued collaboration with Permit Sonoma on the update of the Tree Protection ordinance and the development of the Oak Woodland Protection Ordinance. Further data analysis was conducted to continue to identify areas within the county and oak species that could benefit from additional protections as part of the county interest in Climate Action and carbon management. A series of stakeholder workshops and townhalls were conducted to receive input from community members and professionals and help further develop the ordinances.

- **Woodland Resilience Through Sudden Oak Death Outreach.** Oak woodlands are being hit on all sides – drought, pests, fire, and disease. One of these stressors, Sudden Oak Death is estimated to have killed more than 50 million trees and infected another 100 million, with Sonoma County leading the list statewide. The UCCE SOD Outreach Program seeks to increase resiliency to this disease by educating people and influencing behavior, while also tracking regional spread.

- **Train the Trainers.** In 2022 the SOD program placed an emphasis on "training the trainers". SOD Specialist Master Gardeners led a workshop for new Master Gardener graduates and a hike for California Native Plant Society members. The program co-directors both spoke at professional conferences and University events, and the program coordinator presented a poster at the statewide CA Oak Symposium. Additionally, they held a graduate student SOD orientation on Sonoma Mountain, and engaged high school teachers and environmental educators who work with underserved populations in the SOD Blitz citizen science effort.

Michael Jones, PhD | Forestry Advisor
Kerry Wininger | SOD Coordinator

Reducing the Effects of Wildfire with Fire Science Resources

The UCCE Sonoma Fire Science Program started in August of 2022 with the hiring of Tori Norville as the new Fire Advisor. Tori is a Registered Professional Forester (RPF) with a background in disturbance ecology. Disturbance ecology is the study of the effects on an ecosystem after an event such as fire has occurred. Tori's passion is working holistically with disturbances on the landscape to foster healthy forests and ecosystems that can be able to persist and adapt through time. Her research focus will be mainly in vegetation management and prescribed fire portions of the program. Sonoma County has a long history of fire that is not going to go away. However, the Fire Science Program is working to help reduce the effects was wildfires through fire adapted communities, reducing the potential smoke impacts and learning from past fires to become more prepared and resilient in the future. Specifically, she will focus on:

- **Introduction of Fire**. Exploring how California re-introduce fire back to the landscape using prescribed fire given legal, social, and scale barriers.
- **Maintenance Regimes for Shaded Fuel Breaks.** Examining the maintenance regimes for shaded fuel breaks and vegetation management projects long term.
- **Effects of Prescribed Fire.** Examining the effects of prescribed fire on coast Redwood/Douglas-fir mixed forests.
- **Examination of the Management Practices**. Examining if current forest and vegetation management practices need to be altered to create a more fire adapted ecosystem.
- **Stewardship on the Landscape.** Leading efforts in working with landowners and managers to achieve more stewardship on the landscape using a variety of tools including prescribed fire.
- **Education of home hardening and defensible space.** Assisting the education of home hardening and defensible space and helping to create more fire adaptive neighborhoods and cities.
- **Transforming Community Perspectives of fire from one of fear to one of respect.** Leading efforts to change the perspective of fire from one of fear to one of respect. The Fire Science Program will utilize workshops, education materials and working with collaborators to reach a board audience.
- **Program Needs Assessment**. Time was spent assessing the needs of the community to help focus the program goals. This coming year will begin education and outreach efforts based on the last 4 months' findings. UCCE is excited to offer local programs such as a Pile Burning Workshop, and a Youth Fire Science Workshop, as well as statewide post-fire recovery webinars.

Tori Norville | Fire Advisor

North Coast Integrated Pesticide Management

The Integrated Pest Management (IPM) program advisor works with the agricultural industry in the research and implementation of alternative pest control methods, in order to decrease the use of pesticides. The current emphasis in the North Coast is on pest management systems for wine grapes, olives, walnuts and pears.

Controlling Grapevine Red Blotch Vector. The North Coast UCCE IPM advisor developed a stage-structured degree day model to time ground vegetation management that removed feeding hosts and starved the immature stages of the three-cornered alfalfa hopper (TCAH). The three-cornered alfalfa hopper (TCAH) is an important insect vector of Grapevine red blotch virus (GRBV) which continues to affect North Coast winegrowers. The North Coast IPM Advisor validated the model in five grape-growing regions (Geyserville, Healdsburg, Calistoga, Glen Ellen, and Mt. Veeder) in addition to Oakville where the data was collected to develop the model. Growers can now use their local weather data (CIMIS) to predict the ideal time to till under or remove ground vegetation/cover crops in their vineyard. The North Coast IPM Advisor explained the model and how to use it at the 2021 North Coast IPM seminar. The video of this presentation can be viewed at: http://ucanr.edu/ncipm2021videos

Protecting Olives. Olive fruit fly is an invasive species that affects the quality and value of olive oil produced. Currently, only two insecticides and one deterrent are registered on olives for control of olive fruit fly. In order to effectively manage their orchards, olive growers need alternative options to be able to rotate modes of action in an IPM program to prevent insecticide resistance from occurring. The North Coast IPM Advisor conducted an IR-4 project on olives in 2022. IR-4's mission is to facilitate registration of pesticides on high value, but low acreage specialty crops by funding research that tests a pesticide's efficacy and residue needed for registration with the Environmental Protection Agency (EPA). This years results were very promising with an organic pesticide performing better than the conventional industry standard pesticide. This research will be repeated in 2023 to validate results. The North Coast IPM Advisor plans to continue olive fruit fly research in Sonoma County that addresses the IPM needs of olive growers.

Cindy Kron, PhD | IPM Advisor

North Coast Integrated Pesticide Management

Programs for Sonoma County Industry Members

- **The North Coast IPM Seminar.** This is 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. Videos from previous year's presentations can be viewed: http://ucanr.edu/ncipm2021videos
- **Annual North Coast Olive Field Day.** The 1st Annual North Coast Olive Field Day took place in August 2022 and brought olive researchers to growers set in an olive orchard to cover the topics of olive fruit fly, canopy management, 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 available: https://ucanr.edu/vineyardants. Ants are a pest in vineyards and 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 later becomes a vector viruses to that cause Grapevine Leafroll Disease. Properly identifying the ant species allows growers to apply the most attractive, and therefore effective, ant bait for control.

Pierce's Disease Research. Pierce's disease costs California $104 million a year of which $56.1 million is borne by grape growers for lost production and vine replacement. The North Coast IPM Advisor partnered with the Napa county's Viticulture Advisor for the third year to conduct long-term regional trapping of the blue green sharpshooter in Sonoma and Napa counties. The blue-green sharpshooter is the main vector of Xylella fastidiosa that causes Pierce's disease in grapevines. Pierce's disease usually occurs in vineyards at low rates annually but a large increase in disease incidence occurs periodically. A better understanding of this sharpshooter's population fluctuations throughout the season and their association with riparian areas, vineyards and locations with ornamental plants is needed to contribute to our understanding of their relationship with epidemic years in which a high incidence of Pierce's disease occurrence is documented. 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.

Cindy Kron, PhD | IPM Advisor

North Coast Viticulture

Throughout 2022, the North Coast Viticulture Extension Program expanded its operations to support growers and vineyard managers alike while maintaining the objective of developing climate-adaptive viticultural practices across Sonoma County.

- **Microclimate-adaptive grapevine rootstocks project.** This recently funded study focuses on classifying microclimates within the north coast counties of California and identifying grapevine rootstocks suitable to the changing weather conditions of the region. The initial phase of this work includes five, commercial collaborators and is synthesizing valuable information from local community members' support. Going forward, the *Microclimate-adaptive grapevine rootstocks project* will expand across the state of California and become a UCCE, organization-wide project with headquarters in Sonoma County.

Frequency of extension, outreach, and education events has also increased in 2022. These events were organized through a collaboration between the North Coast Viticulture Extension Program, Sonoma County Vineyard Technical Group, UC ANR IPM program, and local pest control advisors. Some examples of the educational seminars held in 2021 are the UCCE Vineyard Ant Identification Workshop, Water resilience for vineyards in drought, and the North Coast Frost Protection and Management Seminar; two of which were held in Santa Rosa, CA. Such events address and make accessible the information and resources growers require to adapt to changing climates in the region. These events have been widely welcomed within the viticulture community in Sonoma County and will continue at regular intervals into the foreseeable future.

Chris Chen, PhD | Viticulture Advisor

Specialty Crops

The new Specialty Crops Advisor was hired in early 2023. The focus of the Specialty Crop Advisor will be to implement extension education and applied research programs to build the viability of conventional and organic local farmers, processors, and marketers in local agriculture while promoting sustainable practices. This program will be driven by needs and opportunities related to high value specialty fruits, vegetables, olives and olive oils, specialty grains, and cut flower production.

Ellie Andrews joined UCCE Sonoma as the new Specialty crops advisor and plans to conduct a needs assessment in order to understand the interests and needs of specialty growers in Sonoma, Marin, and Napa counties. This needs assessment will be conducted via surveys, focus groups, and farm visits. Findings will inform future projects and ensure this program is oriented around growers' central priorities and goals.

Ellie Andrews, PhD | Specialty Crop Advisor

Racial Equity & Social Justice

Sonoma County's collective wellbeing and prosperity continue to be impacted by significant natural disasters, socio-economic disparities, and racial inequities. UCCE continues to expand their current programs and look for innovative deliver methods to increase our programmatic outreach. We conducted surveys to determine what were needs and barriers to entering into agriculture production, especially focused on food production. UCCE continues to build strong community resources to meet needs related to food insecurity, disaster response, land access, succession planning, and youth development.

Increasing Land Access for Farmers & Ranchers

UCCE Sonoma's Agricultural Ombudsperson (Ombuds), Kerry McGrath completed her first year and continues to work with producers on their individual needs with regard to the regulatory burdens of our farming community. She spent her first year as the Ombudsperson getting to know the community better and building her role as a liaison and educator with regulators, local partners, and producers.

Kerry has made equitable land access a high priority in Sonoma County. Her work has been instrumental in helping Ag + Open Space forge new relationships with producers and has been a strong partner in their land access study and advised on their Farmland for All program. Kerry continues to work with beginning farmers and ranchers of all backgrounds who have the skills to start their own operations but need secure access to land. She looks forward to continuing to work with private landowners and public agencies on more creative solutions to land access. She also continues to work with aging farmers and ranchers on their succession planning and helping keep the land in agricultural use. Over the last year, Kerry has been working directly with our local Farm Service Agency on outreach and demystifying their funding opportunities for climate smart farming, disaster programs and loan opportunities.

Kerry McGrath | Agricultural Ombudsperson

4-H Youth Development

Sonoma County 4-H continues to provide hands-on learning programs for youth throughout the county. Sonoma 4-H continues to grow and build new community partnerships to provide access to more families while providing new opportunities and support to our existing 4-H Clubs and Programs. During 2022, the 4-H summer camp program resumed, as well as the annual Chicken Que event, the 4-H soccer league, and numerous short-term programs focused around citizenship, healthy living, and STEM. These programs allowed youth to engage in new and exciting projects such as: robotics, soccer, art, nature exploration, and much more. New families were able to experience a variety of 4-H programs. All of these exciting programs wouldn't be possible without the hard work of staff and volunteers who passionately, and tirelessly, dedicated their efforts to bring these programs back to Sonoma County.

The program continues to support youth-led community service opportunities, with teens from the 4-H clubs demonstrating great leadership as they developed community service projects around Sonoma County. Sonoma 4-H has made strides to connect with more teens in the county with new age-appropriate programs and activities. One of the programs is the 4-H Mentoring Program which works with youth in Roseland providing mentorship, career education, and extracurricular activities for teens who attend the schools in the Roseland area. Sonoma 4-H continues to be committed to growing the program and working with the community to bring programming that meets the needs of the families of Sonoma County

Diego Mariscal | 4-H Regional Coordinator
Steven Worker, PhD | 4-H Advisor

Master Food Preservers

The UC Master Food Preserver Program of Sonoma County (MFP) is growing and expanding outreach and education in the community around food waste reduction, food safety and food insecurity. In 2022, in partnership with the County's "Zero Waste Week," MFPs were hosted by Sonoma Clean Power's Advanced Energy Center (Santa Rosa, CA) where they conducted workshops focusing on food waste reduction and clever ways to use food scraps. The workshops were held in the fully electric demonstration kitchen at the Advance Energy Center.

MFP's held a workshop at Bayer Farm, a community garden in in Southwest Santa Rosa with high population of Spanish-speaking residents. Holding the workshop in the garden was a great educational setting that allowed MFP's to demonstrate how the bounty of the garden can be preserved for future use. Four topics were presented, including information about the use of water bath, steam bath and pressure canners, a delicious demonstration of refrigerator pickles to use up bits and pieces of your harvest, a comprehensive use of all parts of apples in many ways and herb use: fresh, dried, and frozen. The workshop was translated into Spanish in real-time to provide resources for Spanish-speaking attendees.

The MFP's also held another workshop at the Advanced Energy Center called "Gifts from the Kitchen". This workshop included demonstrations about food preservation ideas for holiday gifts.

At the end of 2022, the MFP Program began planning for the next recruitment cycle of volunteers in 2023/2024. The MFPs seek to continue growing membership and serving all residents of Sonoma County. There is a lot of interest in food preservation and food waste reduction in the community and word is spreading that the local MFP program is a great resource!

Deborah Curle | Master Food Preserver Coordinator

Sonoma County Master Gardeners

In 2022 the UC Master Gardener Program of Sonoma County (UCMGSC) celebrated its' 40th anniversary. UCMGSC has a long and rich history of extending sustainable landscaping educational outreach to our community with a vision to cultivate environmental stewardship one garden at a time. In 2022, UCMGSC's 250 volunteers volunteered nearly 17,000 hours in service to our community. UCMGSC adapted to delivering more digital outreach during the pandemic; their YouTube channel now hosts over 158 educational videos -- a single video on summer pruning of a cherry tree has had over 13,000 views since its' release in August 2020! UCMGSC's web page has been significantly revamped in 2022 and received nearly 200,000 visits. UCMGSC continued a partnership that started with the Press Democrat in 2021 with 24 columns printed, including 4 in the Spanish language La Prensa publication.

UCMGSC's information desk is once again being manned several days per week in person; 675 community members had their home gardening questions answered by the MG volunteers in 2022. UCMGSC continued its 9-year partnership with Sonoma Water on the award-winning Garden Sense program which has conservatively helped save over 7.5 million gallons of water since its inception. Food Gardening specialists led workshops and created food gardening videos at our partner community gardens, Harvest for the Hungry and Windsor Community Garden. UCMGSC completed the development of a Climate Forward Trees project in partnership with the City of Santa Rosa and hosted a workshop in the summer of 2022 to launch the tree list as a resource for the community. UCMGSC also started two new demonstration gardens in partnership with Petaluma Bounty and the Sebastopol Center for the Arts. UCMGSC's comprehensive outreach including various methods of digital and in-person communication ensures we are reaching members of our community where & how they would like to receive the information.

Firewise Landscaping: Creating Sustainable Defensible Space

Protecting property from wildfire starts with vegetation management around the home. The UC Master Gardener Program of Sonoma County (UCMGSC) continued to hold design and maintenance workshops in 2022 to help community members better prepare the area around their home from the threat of wildfire in partnership with the Resilient Landscapes Coalition, funded by grant funding from the County of Sonoma. The result will be the use of plant materials, design, and maintenance practices that translate to appropriately hydrated, less flammable landscapes that reduce water consumption and enhanced wildlife habitat. The Coalition developed a trifold brochure in Spanish and English as well as a new website to help communicate this critically important preparedness information to our community.

Mimi Enright | Sonoma County Master Gardener Coordinator

Strengthening Local Food Systems.

A strong and connected local food system and a flourishing agricultural sector provide healthy food on a daily basis, help the community respond to and recover from disasters, and provide social, economic, and environmental benefits that act as protective factors for vulnerable communities. Ultimately, a robust local food system is an indicator of a resilient community. UCCE Sonoma is engaged in several initiatives that support community resilience and expand food access.

- **Empowering Community Members to Grown Their Own Food.** The UC Master Gardener Program of Sonoma County extends sustainable landscaping education to our community including outreach on food gardening. In 2022 they hosted workshops in partnership with local food security projects such as Harvest for the Hungry, Windsor Community Garden and Petaluma Bounty and created a series of short videos called Summer Garden Minute focused on seasonal food gardening topics.

- **Expanding Community-Engagement with Farmers Markets**. UCCE Sonoma led community-engaged research to identify barriers and opportunities to support CalFresh users and Latinx community members to shop at farmers markets in collaboration with Petaluma Bounty, the Northern California Center for Well-Being, and Farmers Market LIFE—a network of four farmers market organizations operating 15 farmers markets in Sonoma County. Based on research findings, the project developed innovations to make farmers markets more welcoming to the whole community, expand the customer base of farmers markets, and improve the financial viability of farmers market vendors. The project launched websites in English (ourfarmersmarkets.org) and Spanish (nuestrosmercados.org) to promote all farmers markets in Sonoma County.

- **Increasing Food Recovery & Decreasing Food Waste.** UCCE Sonoma chaired the Sonoma County Food Recovery Coalition, a group of non-profit organizations, government agencies and individuals dedicated to creating a community where food is shared equitably and there is a deeper understanding of the valuable resources that go into producing our food. In 2022 UCCE Sonoma partnered with Zero Waste Sonoma, Zero Foodprint and Petaluma Bounty to secure a USDA Carbon Sequestration & Food Recovery grant to expand capacity of food recovery non-profits and reduce food waste in landfills.

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Emergency Food Response & Building Community Resilience

- **Supporting Emergency Food Response.** UCCE Sonoma continued to support coordination of emergency food response during disasters, including wildfires, floods, and the pandemic. In 2022, UCCE Sonoma co-chaired the Community Organizations Active in Disaster (COAD) food access group to build collaboration to meet the skyrocketing need for emergency food aid during the pandemic and plan for future disasters. Together, the COAD food access group worked to decrease barriers to food access for low-income communities.

- **Building Community Resilience.** In 2022, UCCE Sonoma was awarded a $1 million USDA Regional Food Systems Partnership grant with an additional generous $250,000 commitment from the County of Sonoma Board of Supervisors. Over the next three years, the project will create a North Coast Emergency Food System Partnership to build regional emergency food systems that expand sales and mitigate risk for local food producers while reducing food insecurity. Centering equity across all activities, the project will mitigate geographic isolation, increase self-sufficiency in times of emergency, and reduce disproportionate social, environmental, and economic impacts from disasters. The project brings together a diverse set of partners from across the North Coast including food producers, food policy councils, community-based organizations, local and tribal governments, cooperative extension, and emergency planners to build upon shared experiences from responding to climate-change induced natural disasters and the pandemic.

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