



# ANNUAL REPORT 2023

UC COOPERATIVE EXTENSION  
MARIN



UC  
CE

# UC Cooperative Extension Marin

## 2023

University of California Agriculture and Natural Resources (UC ANR) brings the power of UC research in agriculture, natural resources, nutrition, and youth development to local communities to improve the lives of all Californians.

Our Cooperative Extension (UCCE) county-based advisors, community educators, and campus-based academics work as teams to bring practical, trusted, science-based solutions to Marin. We are problem solvers, catalysts, collaborators, educators, and stewards of the land, living in the communities we serve.



UCCE Marin staff educate participants at a defensible space Training Academy.



**438**

volunteers donated  
**43,672** hours public service — estimated value  
**\$ 1,763,475**



**24,486**

total educational interactions with the public



**10**

peer-reviewed and audience-requested publications and educational materials



**23**

activities bringing research to policy



**67**

academic-led workshops and field days, with  
**10,325** participants



**29**

news media programs/mentions



**713**

youth in UC 4-H Youth Development Program



**2,895**

UC Master Gardener volunteers reached residents



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# Partnering for Change

Our team is grateful to be a partner, contributor, and leader on many collaborations including:

- Agriculture Land Emergency Response Team
- Marin Carbon Project
- Marin Conservation League
- Marin County Farm Day
- Marin County Food Policy Council
- Marin County Integrated Pest Management Commission
- Marin Healthy Eating Active Living Steering Committee
- Marin Wildfire Protection Authority Advisory Technical Committee
- Measure A Sustainable Agriculture Element
- Sonoma Marin Agriculture County Climate Coalition
- Voluntary Pilot Weed Program

## UCCE Funding



\$ 847,814  
University



\$ 469,103  
County



\$ 995,586  
Advisor generated  
(grants, gifts, other, etc.)

It is estimated that for every  
**\$1**  
Invested in agricultural  
research and extension there  
is a return of  
**\$20**  
to the community.  
Alston, Anderson et al (2010)

## Leveraging the power of the UC system



*"Having in classroom instruction followed by a field trip where UC Marin Master Gardeners helped to answer questions was key to giving our inspectors the base that they need and the confidence to do the job they are hired to do."*

— Kathleen Cutter, MWPA Defensible Space Leader

*"On behalf of my fellow Commissioners, please know we are tremendously grateful for your participation in the Commission's Health Forum this year. Both your cogent presentation and your performance on the panel were outstanding, and the feedback from attendees was over the top!"*

— Commissioner

*"I wanted to say thank you for all of your time and effort!! You are an amazing asset for all of us struggling with this new era!"*

— Marin rancher

*"You are marvelous!!! Thank you so much for taking the time to answer someone you don't even know and to give me so many options and ideas. I can't tell you how much I appreciate it. Thank you!!!"*

— Marin gardener

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# Reaching Marin

## Educational Offerings and Consultations

In 2023, 24,356 participants were served in 108 workshops, conferences, and tours organized with our community partners. These offerings were both in person and via webinar platforms. Participants included over 2,248 youth during after school programs.

In addition to education through workshops, our team provided technical consultations to Marin agricultural producers, tree and landscape professionals, homeowners, and educators. In 2023, we provided approximately 1,530 consultations either in our office, through our gardening help desk, or in the field on farms and properties.



*Marin County Agriculture Team members making connections between ranch practices and policies.*

## Online Resources

Complementing our educational offerings is the portfolio of web resources we curate to make up-to-date information available for use by Marin residents. These include:

- [UCCE Marin](#)
- [UC Marin Master Gardeners](#)
- [Grown In Marin](#)
- [Sudden Oak Death](#)
- [Marin Knotweed Action Team](#)
- [Marin Food Policy Council](#)

During 2023, these websites had more than 207,420 discreet views. Popular webpages include:

- [Fire-Smart Landscaping](#)
- [Drought Management for Farmers](#)
- [Solving Garden Problems](#)
- [Sudden Oak Death Diagnosis and Management](#)
- [Find Marin Ag Products](#)
- [How to Choose Plants for Your Garden](#)
- [Oak Identification](#)
- [Farm Labor Requirements Resources](#)
- [Sustainable Practices for Farmers](#)
- [Build Your Foundation of Garden Basics](#)

# Bringing Value Through Programs

## Developing a Qualified Workforce for California

UC ANR's youth and community development programs equip the next generation for college, successful careers, and to be active contributors to their communities. Growers and land managers learn cutting-edge skills that increase workforce competency and advance innovation. UC ANR helps develop a qualified workforce to increase opportunities for individuals to ensure a robust and thriving state economy.

**78%**  
of alumni say  
4-H helped them succeed  
in their work and career  
4-H (2020)

4-H participants  
are  
**1.8x**  
more likely to graduate with  
a Bachelor's degree  
UC 4-H (2021)

## Improving college readiness and access

### Cultivating tomorrow's science leaders

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 Marin County will require young people that are civically engaged and possess scientific literacy to contribute to their communities.

UCCE Marin, led by Dr. Steven Worker, the 4-H Youth Development Advisor, hosted the 11th annual [North Bay Science Discovery Day](#) on March 11, 2023. The event is 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 talked to professional scientists and engineers and explored rockets and beehives, robots and sharks, catapults and cow's hearts, animation, animals, art, and more.



North Bay Science Discovery Day participant learning about squid anatomy.



## Increased civic engagement

### Access increased and participation grows through 4-H project catalogue

The UC Cooperative Extension Marin youth development program focuses on contributing to an inclusive and equitable society, improving scientific literacy, and increasing civic engagement by ensuring youth have access to high quality youth development programs during afterschool and out-of-school time. Our new unified 4-H club structure is fully implemented. We released the Marin 4-H Club project catalog in English and Spanish, including a Winter Supplement. We also secured sponsorship to waive enrollment fees. Enrollment has increased through the remodel. Enrollment for program year 2024 to-date and program year 2023 compared with program year 2022, prior

to the unified club remodel, indicate a doubling of adult leaders and nearly 20% increase in participating youth. Our youth development team will be conducting surveys and other evaluation efforts to confirm how the new structure was successful in engaging youth and reducing administrative burden on volunteer leaders.



*Peer-counselors leading a program at Marin 4-H 2023 Summer Camp.*

# Promoting Economic Prosperity in California

UC ANR partners with public, nonprofit, and private groups to create and extend new knowledge about agricultural and natural resource management.

Participants change practices that result in increased yield and efficiency as well as reduced inputs, thus increasing economic return. UC ANR also conducts research and education leading to improvements in individual and household financial management practices. These changes improve individual and business financial stability, increasing the viability of

California's economy and maintaining our role as a global leader.

The estimated annual Expanded Food and Nutrition Education Program (EFNEP) graduates reported an average of  
**\$58.10**  
monthly food cost savings. In one year California EFNEP families collectively saved over  
**\$1.5M**  
on food costs. (EFNEP 2020)

The value of adoption of the UC Integrated Pest Management Program recommendations is  
**\$323-500M**  
to California agriculture  
*Giannini Foundation of Agricultural Economics (2016)*

## Improved animal management, productivity, and efficiency

### Communicating to customers about climate smart initiatives

As livestock producers implement climate smart agricultural practices, consumers are becoming increasingly attentive to the benefits to communities and the ecosystem. Our Dairy and Livestock Team developed a guidebook for ranchers which includes talking points, economics, and overall climate impact in an easy to use, bound notebook. An accompanying worksheet helps producers capture emissions avoidance and carbon sequestration calculations. Empowering the voice of producers to tell their beneficial climate story offers opportunities to gain consumer trust and encourage adoption of practices by fellow producers.



Producing compost on-farm is one of many practices ranchers are using to reduce emissions and increase carbon sequestration.

## **Increased agricultural and forestry efficiency and profitability**

### **Increasing Marin County staff understanding and appreciation for Marin agriculture**

With funding from the USDA National Institute for Food and Agriculture and Western Sustainable Agriculture Research and Extension, our Sustainable Agriculture Team assembled a cross-departmental group of 22 staff from Marin County public agencies that took the lead on ag-related projects ranging from diversification to natural resource management to climate adaptation. This group, the Marin County Agriculture Team, participated in 12 learning engagements to orient clientele to the dynamics within the food system and familiarize them with the unique challenges and opportunities on Marin County farms and ranches. Ag Team members have provided anecdotal evidence of renewed and improved relationships with the agricultural community as well as important insights that have benefitted development of new policies.



*Marin County Agriculture Team members on a tour to learn about value-added processing of agricultural products.*

# Safeguarding Sufficient, Safe, and Healthy Food for all Californians

UC ANR's research creates practical solutions leading to improvements in food production and processing practices. Given one out of every eight Californians does not know where their next meal will come from, UC ANR educational programs enable individuals and households to improve their food budgets and food management practices. As a result, Californians have increased access to abundant, affordable, safe, and healthy food.

Enhancing food assistance programs such as school food programs, food banks, and CalFresh acceptance at farmers markets increases access to fruits and vegetables.  
*County Health Rankings (2020)*

**54%**  
Of UC Master Gardener event participants across the state applied gardening practices that reduced food loss.  
*UC Master Gardener Program (2022)*

## Improved food security

### Expanding access to farmers markets in Marin and the North Bay

Our Food Systems Team continued its community-engaged research to expand access to farmers markets in collaboration with community partners such as Agriculture Community Events Farmers Markets and Petaluma Bounty. 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.



Farmers market berry farmer with CalFresh and Market Match sign to welcome customers.

### Building community resilience

Food Systems Advisor Julia Van Soelen Kim launched a new \$1.5 million regional project to establish the North Coast Emergency Food System Partnership. This multi-year project, funded by a USDA Regional Food Systems Partnership grant, seeks to increase the local food system's level of preparedness and speed its recovery in times of disaster. The Partnership also invests in broad community resilience against all manner of shocks. This project brings together a diverse set of partners from across the North Coast including community-based organizations, local and Tribal governments, UC Cooperative Extension, emergency planners, and food systems stakeholders to build on shared experiences responding to natural disasters and the pandemic and



North Coast Emergency Food System Partnership members convene to kick-start regional collaboration.

expand collective capacity to build strong emergency food systems.

## Promoting Healthy People and Communities

UC ANR produces tools, programs, and policy-relevant research that result in healthy living for individuals and communities. Program participants adopt healthier lifestyles and communities gain improved access to green spaces and healthy foods. Benefits also include safe drinking water, clean air, and reduced exposure to pesticides. In this way, UC ANR promotes public health for people and the communities where they live, learn, work, and play. Collectively these efforts contribute to a healthier California, improving public health and reducing healthcare costs.

UC Master Gardener participants improved green spaces on **3.8 million** square feet of home, school, and community gardens across California.  
*UC Master Gardener Program (2020)*

**71%** of CFHL, UC adult participants surveyed statewide ate more fruits and vegetables.  
CFHL, UC (2022)

## Improved community health and wellness

### New Community Nutrition and Health Advisor

In April 2023, Dr. Zaw Wai Htoo joined the UCCE Marin team as the Community Nutrition & Health Advisor. He holds a master's degree in public health and a doctorate degree in human nutrition- public health from Kansas State University. This is in addition to a medical degree from the University of Medicine, Mandalay. Zaw Wai brings experience and knowledge from a diversity of assignments and programs, including service as a National Officer for the United Nations World Food Programme and Programme Assistant for UNICEF. He also has been a teaching assistant and Adjunct Faculty with Kansas State University and Southern California University of Health Sciences, teaching clinical and public health undergraduate and graduate courses. He has focused his research on older adults' health and nutrition, exploring the intersection of diet, physical activity, lifestyle, and how they contribute to wellbeing and quality of life. His research and extension program interests include, lifespan nutrition, food security, aging, gut-brain-axis, and social determinants of health. Zaw Wai is already collaborating with Marin County Health



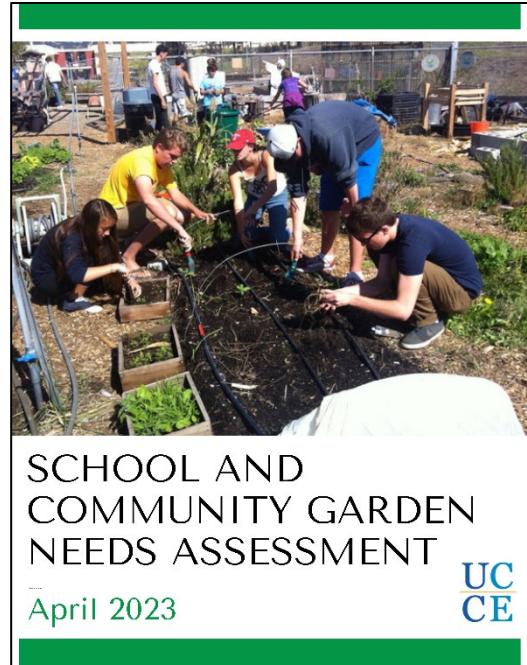
UCCE Community Nutrition & Health Advisor, Dr. Zaw Wai Htoo, participating in a Marin Commission on Aging Panel.

and Human Services colleagues, including serving as a member of the Healthy Eating Active Living Steering Committee.

## Improved access to positive and built environments

### Documenting the needs of Marin's community gardens

There are more than 150 community and school gardens in Marin. To update earlier needs assessment of these gardens and gardeners, our Food Systems Team and UC Marin Master Gardeners conducted a survey and focus groups. Response to the survey and participation in the focus groups included input from 50 garden sites that serve approximately 6,755 community members. Among other needs, participants consistently identified physical resource opportunities to improve community gardens. For example, “*Compost is a relatively easy but necessary item that could be coordinated across the county if various sites were to be provided with a load (or partial load as part of a local route) of quality locally created compost.*” The complete needs assessment is available [here](#). The findings are already being used by garden leaders to guide coordination and fundraising for these sites.



The 2023 publication "School and Community Garden Needs Assessment" shares survey results and insights from the community.

### How-to instructional videos for you and your garden

The [UC Marin Master Gardeners](#) have always worked creatively to bring science- and research-based information to the community through their help desk, public seminars, *Marin IJ* articles, and other means. Now, they're producing beautiful instructional videos. Formed in 2019 and ramping up during the pandemic, the 14-person Video Team has now produced 27 how-to installments for Marin gardens and gardeners. The films have received more than 270,000 views in the United States and around the world. These videos, including newer offerings, are available on the program's [YouTube channel](#). Popular 2023 productions include [Color Your Garden with California Native Plants](#) and [Earth-Friendly Gardening](#).



Earth-Friendly Gardening video on the Marin Master Gardeners YouTube channel.

# Protecting California's Natural Resources

UC ANR translates research into actionable management strategies to protect our farming, ranching, forestry, and urban environments. Through outreach and education, participants learn to adopt recommended practices such as sustainable grazing and rangeland management, sustainable use of forest and wildland resources, protection against fire, and water conservation. These measures contribute to improving air, soil, and water quality while also protecting wildlife and plant habitat. Increased ecological sustainability of agriculture, forestry, and urban landscapes helps California realize the many benefits of the state's rich and diverse natural resources.

**UC Master Gardener participants improved  
4 million square feet pollinator habitat statewide**

*UC Master Gardener Program (2020)*

Adoption of California Irrigation Management Information Systems (CIMIS) weather station data can save California nearly **147 billion gallons of water annually**

*Zilberman, et al. (2019)*

## Improved management and use of land

### Partnering to reduce impacts from weeds to Marin farms and ranches

Through the leadership of Marin County Agriculture Department, a partnership was formed to work with ranchers on a Voluntary Pilot Weed Management Program. The Program combined four elements to reduce the spread of weeds like Wooly Distaff thistle and improve the overall soil quality on pastures and rangelands in Marin's working landscapes: education, practice-sharing, weed management plan development and cost shares. As partners on the project, our Rangeland and Dairy team members provided educational support at rancher meetings and assisted with management plan development through one-on-one consultations.

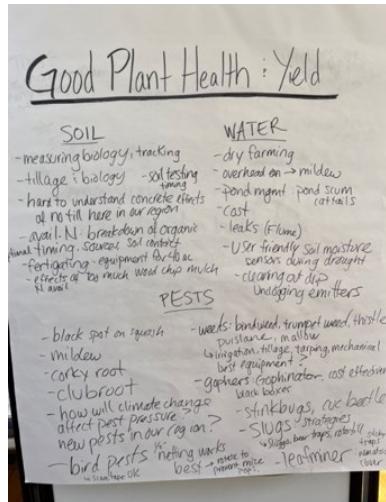


Dense patch of Wooly distaff thistle on Marin rangelands.

# Increased ecological sustainability of agriculture, landscapes, and forestry

## New Specialty Crops Advisor is building farm fertility and sustainability

Dr. Ellie Andrews joined the team in January 2023. After completing her bachelor's degree in Field Ecology, Ellie spent several years working on small-scale organic farms in Ohio. From there she pursued a master's degree in plant health management from Ohio State University, followed by a PhD in Horticulture & Agronomy at UC Davis. Her research focused on using organic matter amendments to improve farm nutrient cycling, soil-plant water dynamics, and soil microbial communities. Using identified gaps and opportunities from her local needs assessment, Ellie is delivering a program to support area farmers with improved practices in soil management, organic Integrated Pest Management, and water management. Information she is providing to area growers can be accessed online through her [program page](#) and on the [UCCE North Bay Specialty Crops YouTube channel](#) she established.



Notes (left) from a needs assessment brainstorming session with Marin county growers hosted at Star Route Farm (right).

## Experts provide options and outcomes for managing an invasive weed in California watersheds

Japanese knotweed is an herbaceous perennial that grows to 12 feet tall. It spreads from its woody rhizomes (subsurface stems) or from fragmented stem sections that can take root. It can move long distances along water ways. It is native to Japan, China, and Korea where it commonly colonizes volcanic geology and soils. Japanese knotweed is considered one of the top 10 most aggressive, destructive and invasive plants in the world. In 2019, the [Marin Knotweed Action Team \(MKAT\)](#) formed to coordinate management efforts across private and public lands in the Lagunitas Creek Watershed, including San Geronimo Creek. On March 1, 2023, our Environmental Horticulture Team and MKAT co-hosted the virtual symposium *Japanese Knotweed in a Summer-dry Watershed*. A panel of scientists and management agency representatives shared information and options for managing Japanese Knotweed in climates like California. A recording of the symposium can be viewed [online](#).

REGISTER: [ucanr.edu/MKAT\\_symposium](https://ucanr.edu/MKAT_symposium)

JAPANESE KNOTWEED  
IN A SUMMER-DRY WATERSHED  
A Zoom Webinar Symposium  
WEDNESDAY, MARCH 1, 10AM - 1PM PST

**SPEAKERS**

- Bobby Simpson, Californian Invasive Plant Biologist (retired)
- Rachel Kesel, Golden Gate Parks Conservancy
- Anna Dirkse, County of Marin Dept of Ag, Weights and Measures
- Mark Heath, PCA, On Point Land Management
- Chris Borkent, California Department of Food and Agriculture

QUESTIONS: [ilevinger@ucanr.edu](mailto:ilevinger@ucanr.edu), or [ucanr.edu/sites/MarinKnotweedActionTeam](https://ucanr.edu/sites/MarinKnotweedActionTeam)

**MKAT**  
Marin Knotweed Action Team

**UC  
CE**

Virtual symposium on information and options for managing Japanese Knotweed in climates like California.

## Increased ecological sustainability of agriculture, landscapes, and forestry (continued)

### Helping farmers and the rest of us better understand guardian dogs for protecting livestock

Protecting farm animals from predators requires a diversity of tools and practices including the use of livestock guardian dogs. Helping the off-farm community to understand how these working dogs are different from pets and how we can be better neighbors by respecting their important role has been a focus of our Human Wildlife Interactions Advisor, Dr. Carolyn Whitesell. Partnering with our Livestock and Rangeland Team members, Carolyn has produced a brochure and provided educational talks to help educate the general public about livestock guardian dogs. More about Carolyn and her program can be found on the [Human-Wildlife Interactions program webpage](#).

**Some common LGD breeds in California**

- Great Pyrenees
- Akbash
- Anatolian Shepherd
- Kangal Dog
- Maremma
- Spanish Mastiff
- Karakachan
- Polish Tatra

And many more! Many LGDs are also a cross between two or more LGD breeds. Our LGDs are:

Please refer to our dogs by their names. Our dogs' names are:



**Concerned about our LGDs or have a question?**

**Please reach out to us first!**  
Being a good neighbor is important to us. Sometimes a problem may arise that needs to be addressed when dealing with livestock or livestock guardian dogs.

The best way to handle an issue is to call us. We can talk about what is happening and work together to solve the problem. Most problems can be addressed with a simple, calm conversation.

**We can be reached at the following number or email:**

To learn further science-based information on LGDs, contact UC ANR Advisors Dan Macon ([dmacon@ucanr.edu](mailto:dmacon@ucanr.edu)) or Carolyn Whitesell ([cawhitesell@ucanr.edu](mailto:cawhitesell@ucanr.edu))



**LIVESTOCK GUARDIAN DOG GUIDE FOR YOUR NEIGHBORS**

**UNIVERSITY OF CALIFORNIA**  
Agriculture and Natural Resources

Pamphlet sharing information about livestock guardian dogs and how they keep livestock safe.

## Improved water-use efficiency

### Improving water use, one garden at a time

Despite the extreme wet year, with a total of more than 44 inches of rainfall, homeowner interest in water conservation for gardening was high. Our team, in partnership with Marin Water, redoubled outreach to home gardeners about the Garden Walk service. We also provided additional training for UC Marin Master Gardeners to conduct these walks. Thanks to the partnership with Marin Water and the dedication of our volunteers, we provided 144 individual Water Walks across the county in 2023, bringing the total number of walks since 2008 to 2,192.



Garden walk volunteer working through water usage audit with client homeowners.

# Building Climate-Resilient Communities and Ecosystems

UC ANR conducts research to understand and develop solutions to increase the resilience of agriculture, communities, and natural ecosystems to extreme weather and climate change. Our programs assist communities, farmers, and ranchers in implementing climate-smart soil and water management practices, reducing greenhouse gas emissions in forested and working landscapes, and expanding public awareness of climate risks and effective adaptation strategies. As a result, communities are better prepared and able to deal with the growing risk of fire, droughts, and flood hazards. Our work leads to a safer, more climate-resilient California.

UC ANR contributed to reduced fire risk through prescribed burns in over **6,800 acres across the state (2021)**

UC Climate Smart Agriculture Educators helped growers statewide reduce greenhouse gas emissions equivalent to removing **7,000 cars from the road**  
Based on CDFA calculators (SWEEP and HSP 2021)

## Increased preparedness and resilience to extreme weather and climate change

### Youth engaging in fire science learning

Youth engage with defensible space concepts at the Youth Fire Science Information and Resilience Education workshop. The Youth Fire Science Information and Resilience Education (Y-FIRE) workshop was a pilot program held in spring 2023 to teach teens aged 13-17 how to become more fire-wise and fire prepared. This one-day workshop covered wildfire & fire ecology, Native American fire applications, fire-smart landscapes and homes, and emergency preparedness.

Participating youth also explored opportunities in firefighting and related careers. The program was well received by the students, with post-workshop surveys showing increased knowledge in all of the topics covered during the course.

Future considerations for Y-FIRE include expansion and partnerships with additional organizations like One Tam, local fire agencies and facilities, schools, and other professionals.

There is even potential to amend program content to appeal to adult audiences.



Youth engage with defensible space concepts at the Youth Fire Science Information and Resilience Education workshop.

## Increased preparedness and resilience to extreme weather and climate change (continued)

### Integrating fire-smart landscaping with defensible space training

Our Fire-smart Landscaping Team collaborated with Defensible Space Lead & Certified Wildfire Mitigation Specialist Kathleen Cutter to provide educational support to 20 new Defensible Space Inspectors as part of their Training Academy. These Inspectors are part of the Marin Defensible Space Alliance representing five of the MWPA agencies (Marin County, Central Marin, Kentfield, Ross Valley, West Marin). The training was tailored specifically for the needs of the inspectors. Through an in-classroom component and an outdoor field trip, inspector trainees learned about garden design and maintenance principles that contribute to defensible space. This included hands-on exposure to plants and mulch materials they will encounter in home gardens. This training experience helped prepare the Inspectors for the valuable public service they provide the community with their home consultations.



Training Academy participants at a defensible space presentation.

### Building fire safety and readiness with Marin's agricultural producers

Wildfires in the North Bay and across California have required evacuations of homes and farms. With the understanding that some farming and ranching tasks need to continue, even during emergencies, California counties have established [Agricultural Pass Programs](#). In an Ag Pass program, so long as fire conditions allow and training requirements have been met, agricultural producers can receive a pass to enter evacuated areas for activities like feeding and watering animals. In collaboration with the Marin County Agriculture Department, Marin Sheriff, and Marin County Fire, Marin's Agriculture Pass Program was established. Our Dairy Team organized and delivered the required Fire Safety training for the first year of this program. A summary of the trainings is available [here](#) on our Grown In Marin website.

UNIVERSITY OF CALIFORNIA  
Agriculture and Natural Resources

UC ANR Publication 8685 | December 2020  
<https://doi.org/10.3733/ucanr.8685>  
<https://anrcatalog.ucanr.edu>

### Preparing for Disaster: Establishing an Ag Pass Program in Your Community

**INTRODUCTION/THE THREAT**

In the last several years, Californians have witnessed some of the largest and most severe wildfires in the history of their state, with growing numbers of homes and lives lost. The causes include changing environmental conditions and expanding human development on fire-prone land (Schultz et al. 2017; Radloff et al. 2018). In fact, fires that in the past were generally easier to contain may now qualify as disasters. To counter this trend, California is increasingly emphasizing comprehensive approaches to reducing risk before fires are ignited. These approaches include removing hazardous fuels, retrofitting structures to reduce ignition vulnerabilities, and planning for evacuation (Moritz et al. 2014). Funds are increasingly available to support these activities, particularly in the wildland-urban interface—that is, areas where urban development meets and intermingles with natural flammable vegetation (Radloff et al. 2005).

Awareness is not the norm. When disasters threaten communities, agriculture is typically underserved because orchards, vineyards, and crops are not top priorities for firefighters. Their focus is on lives and structures (largely, residential structures). This leaves a gap in protection for important agricultural assets. Farmers may not feel safe in their fields themselves, even though farm fields are often in their position in the landscape and their foliage may be thicker than in surrounding areas. Livestock producers may likewise be left to fend for themselves. In short, while fields and grazing lands to lower fuel loads—can also create buffers (Nader et al. 2007). Agricultural practitioners must learn how to use their lands to protect their assets and livelihoods. In particular, they have sought access to their land during wildfire evacuations, when certain areas are closed to the general public (fig. 2).

Figure 1. In December of 2017, this avocado orchard in Ventura County buffered the spread of wildfire out of a riparian area.

This publication outlines a blueprint for establishing an Ag Pass, designed to allow farmers and ranchers special access to their lands during natural disasters.

## **Increased preparedness and resilience to extreme weather and climate change (continued)**

### **Team gains Fire Science Advisor**

In August 2022, Tori Norville joined UC Cooperative Extension as the Fire Advisor. Previously, Tori was at the California Department of Forestry and Fire Protection in the Jackson Demonstration State Forest. She had been leading fire fuel reduction research and working to bring prescribed fire into coast redwood landscapes. Tori is passionate about “re-introducing fire back into the California landscape for ecological benefits and management purposes.” She holds a Bachelor’s and Masters of Science in Forestry from California Polytechnic State University, San Luis Obispo, and is a Registered Professional Forester. Information Tori is providing to land managers and agency partners can be accessed online through her [program page](#).



*Prescribed fire in mixed oak woodland landscape.*

### **Bringing emergency assessment and assistance to Marin farms**

Farms and ranches have suffered incredible losses in the wake of the COVID-19 pandemic and a four-year period of extreme dry conditions followed by extreme wet conditions. The financial and emotional toll, when spread across a rural landscape, can be hard to grasp. In response, our Sustainable Agriculture Team engaged in a purposeful campaign of reengagement to understand the situation in which producers now find themselves and draw conclusions about where and how assistance can best be applied. This work primarily took the form of visits to farms and ranches, phone calls, emails, and pull-asides at community events. Efforts evolved into multi-stakeholder collaborations that were focused on response and recovery including implementation of long-standing emergency programs as well as development of new ones. The work further expanded through targeted on-on-one technical assistance to access Federal, State, and local assistance programs.



*Farm visits were used to assess needs and provide assistance in times of emergency.*

# Developing an Inclusive and Equitable Society

UC ANR is committed to reaching all segments of the state's population. UC ANR academics live and work in all California communities, building trust and credibility to solve local problems together. UC ANR builds cultural competency skills, implements community-centered programs, and develops proactive policies to increase diversity and inclusiveness. UC ANR is recognized as a nationwide leader in researching and addressing inclusion and diversity in youth-serving programs. Through these efforts, Californians experience greater access to social and economic opportunity and advancement.

**19,000+**  
volunteers statewide  
donated time  
to local UC programs.  
(2022)

**UC ANR led efforts to increase inclusiveness, which is shown to increase volunteer commitment to programs.**  
*Studer and von Schnurbein (2013)*

## Increased diversity, inclusiveness, and cultural competency in California's workplaces

### Landscaping professionals bridging languages to build skills and knowledge

In 2023, 10 students participated in the Spanish Bilingual Landscapers' class. The class is aimed at small, independent landscaping companies or contractors whose primary language is Spanish. The class is taught in English, with Spanish language materials and discussions held in both languages. Our Environmental Horticulture Team covers a broad range of topics, including proper irrigation and troubleshooting, post-fire landscape management, proper pruning, and Integrated Pest Management. Graduates of the program are listed on the UCCE Marin website:

[cemarin.ucanr.edu/Programs/Green\\_Gardener/Class\\_graduated/](http://cemarin.ucanr.edu/Programs/Green_Gardener/Class_graduated/)



*Bilingual landscaping students refining their tree pruning techniques.*

# UCCE Marin



Youth explore fruits and vegetables at Farm Day 2023.