

UC Cooperative Extension Central Sierra Nevada MCP 2020 - 2021



Amador County · Calaveras County · El Dorado County · Tuolumne County

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 education specialists, and campus-based academics work as teams 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.



1096

volunteers donated
87,056
hours of public
service with an
estimated value of
\$2,743,119



20,488

total educational
interactions with the
public



38

peer-reviewed and
audience-requested
publications



2

activities bringing
research to policy



77

academic-led
workshops, field
days, and classes



10

news media
programs/
mentions



2,007

youth in
UC 4-H Youth
Development
Program



4,861

residents
reached by UC
Master Gardener
volunteers



8,810

participants
attended academic-
led field days,
workshops, and
classes



18,019

people reached by
healthy food and/or
physical activity
changes (CFHL,
UC)



24

new certified
California
Naturalists
stewarding the
environment

UCCE Central Sierra Nevada MCP



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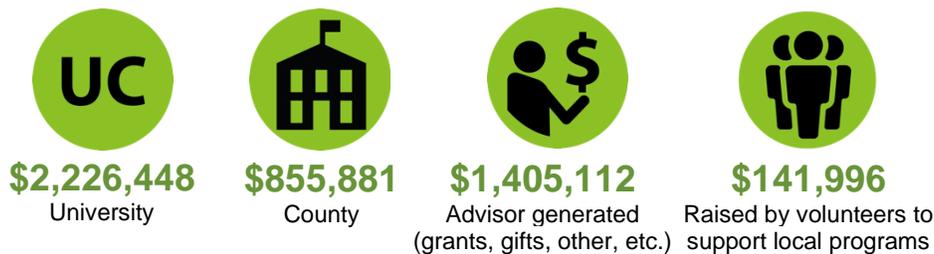


Partnering for Change

UC ANR builds partnerships based on deep and long-lasting relationships with local, state and federal governments, community-based organizations, schools, nonprofits and private industry.

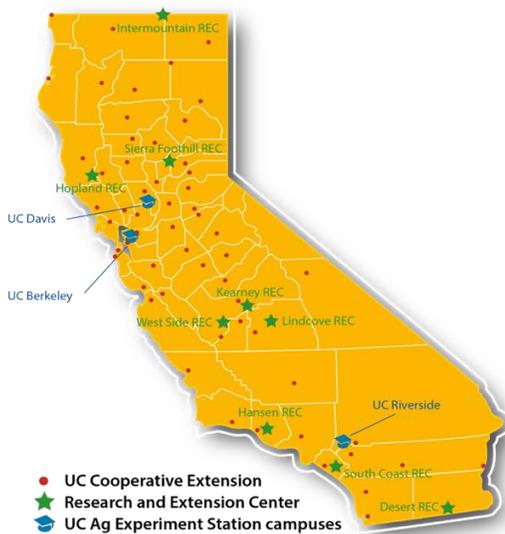
- Amador Co. Dept. of Public Health
- Amador County Fairgrounds
- Amador County Resource Conservation District
- Amador County USD
- Blue Zones Project
- Boys & Girls Club of Lake Tahoe
- CAL FIRE
- Cal PBA
- Calaveras County Fairgrounds
- Calaveras Unified School District
- California Association of Resource Conservation Districts
- California Fire Safe Council
- Cameron Park Community Services District
- City of Plymouth
- Columbia College
- Dambacher Detention Center
- El Dorado County Fairgrounds
- El Dorado County Library
- Farms of Amador
- Forest Landowners of CA
- Gardens to Grow In
- Kennedy Gold Mine
- Mother Lode Fairgrounds
- Mother Lode Lion's Club
- Motherlode Community Radio
- Motherlode Rehabilitation
- Nexus Youth & Family Services
- Prevent Child Abuse Council
- Sonora IOOF Foundation
- Tuolumne County Library
- Tuolumne Co. Public Access TV
- Tuolumne County Schools
- Tuolumne Co. Senior Providers
- Tuolumne Co. Sheriff's Posse
- USFS Region 5
- Waste Management

UCCE Funding



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

Leveraging the Power of the UC System



“The UC Cooperative Extension office is particularly important to the residents who make their living on small-scale farms, vineyards, and orchards. The 4-H program is one of the most valuable activities for children and young adults in our largely rural county. I have received great training and advice from the Ag Extension agent and have taken several of the valuable courses they offer. The Ag Extension Office provides essential training and services.”

– Deborah G., Amador County resident

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UCCE Central Sierra Nevada MCP

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 participants in 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.

4-H youth exposed to hands-on science projects early are

5x

more likely to build a career in math or science

4-H participants are

4x

more likely to complete a 4-year degree

Lerner, Lerner, et al. (2013)

"The 4-H Youth Development Program guides and directs youth to manage small businesses...They can take these skills with them to college and the world of employment. Now adults, youth I helped lead are now enjoying careers in law enforcement, natural resources, art, computers, veterinary science, and even taxidermy."

– Cathy K., Amador County 4-H Adult Volunteer

Increasing workforce retention and competency

Public speaking programs develop essential skills for career readiness.

The UCCE Central Sierra 4-H Youth Development Program strengthened youth public speaking by hosting local and regional virtual presentation events. A survey conducted by the State 4-H Office found that 95% of youth that participated in the Virtual 4-H Public Speaking component of State Field Day found the experience "very valuable" or "absolutely essential" in improving their communication skills. These effective communication skills can be achieved through public speaking programs and help develop essential skills for career readiness.

Increasing effective public leaders

Teens-as-Teachers programming increases youth leadership.

UCCE Central Sierra 4-H delivered Teen-as-Teachers programming at several sites. Teens are taught skills to teach younger students using garden-based nutrition curriculum and/or a cooking curriculum. They learn lesson planning, scheduling, inventory management, active listening, classroom management, responsibility, working in a team, and conflict management. These types of leadership experiences help prepare youth for both the workforce and higher education.



Teens-as-Teachers empowers teens to teach younger students about garden-based nutrition and cooking skills.

Improving college readiness and access

4-H Management Board scholarships increase college access.

Each year UCCE Central Sierra 4-H programs award over \$10,000 in college scholarships for youth.

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



Improved individual and household financial stability

Mentoring through community partnerships increases trade skills and sustainable practices.

UCCE Master Gardeners of El Dorado County partner with Northern California Construction Trades (NCCT) Training Program, El Dorado County Probation, El Dorado County Foster Youth Program, and El Dorado County Office of Education to work with individuals on probation and parole as they train for prevailing wage employment in the construction trades. UCCE Master Gardener volunteers mentor NCCT clients through the gardening process from propagation to harvest. This restorative justice project provides nutrition education and gives clients the opportunity to learn gardening skills and grow food for their families. (Tracy Celio)

Improved access to positive and built environments

Incarcerated participants learn skills to improve food costs.

The UCCE Master Gardeners of Tuolumne County teach juveniles and adults at county detention facilities how to grow a variety of vegetables. As more inmates learn sustainable practices from UCCE research and volunteers, future plans include growing fresh produce for the detention facility cafeterias to offset food costs. Master Gardeners volunteering with this program find it very rewarding to teach inmates how to grow their own food. (Debbie Powell)



A UCCE Master Gardener teaches a public education class at the Sherwood Demonstration Garden in El Dorado County.

Enhanced community economic development

Participants adopted sustainable gardening practices.

In Amador and El Dorado counties, UCCE Master Gardeners taught 42 classes over a 12-month period. Due to the pandemic, many new gardeners sought research-based gardening education from the UC Cooperative Extensions. Master Gardener volunteers taught classes on vegetables, orchard care and maintenance, as well as grafting and edible plant propagation.

In Amador County, 66% of participants began growing edible plants after attending a Master Gardener class and 53% expanded the variety of edibles they planted. In El Dorado County, 80% of class attendees started vegetable gardens after attending classes with Master Gardeners and of those, 44% claim a reduction in food loss due to their improved understanding. (Tracy Celio)

Increased agricultural efficiency and profitability

Agricultural productivity depends on efficient use of labor and materials; efficiency also safeguards environmental and worker health while increasing profitability.

Drift from poorly applied pesticide sprays contributes to poor pest control and wastes materials and labor, costing growers money. Farm Advisor Lynn Wunderlich worked with the Integrated Pest Management (IPM) online designer team to create for an online sprayer calibration course for the eXtension Foundation Online Campus. The interactive course uses video and visual elements to train growers, Pest Control Advisors, and pesticide applicators in safe and effective methods for efficiently applying pesticides. (Lynn Wunderlich).



Former UCANR videographer Ray Lucas with UCIPM online designers Cheryl Reynolds and Petr Kosina filming at Lava Cap vineyard in El Dorado County.



Farmers Market at the Demonstration Garden. (Photo: Tracy Celio)

Increased emerging food economies and markets

Local farmers markets promote health for the community and income stability for growers.

Calaveras County Master Gardeners work with a local farm organization called Calaveras Grown to help promote healthy eating by providing the public with a Farmer's Market which is located at the Calaveras Master Gardener Demonstration Garden. The Farmer's Market and the Calaveras Master Gardener Plant Sale operates year-round. In-person activities are June through October and then migrates to an online ordering system. EBT cards are accepted for purchasing food. In this area of Calaveras County, there is only one other grocery store for the residents. By providing access to locally grown food, this provides the residents with fresh produce and provides the local farmers with income stability. (Debbie Powell)

UCCE Central Sierra Nevada MCP

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

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



Young children work with a Master Food Preserver of El Dorado County during the Junior Jams and Jellies class.

Improved food safety

Participants adopted home food safety practices.

UC ANR statewide programs conducted extension activities about individual and household food safety. UC Cooperative Extension (UCCE) academics provided oversight, leadership, and guidance for the statewide implementation of the UC Master Food Preserver statewide programs, which used culturally appropriate, research-based practices to teach strategies for safely preserving food in the home, reducing food waste, increasing food security, and providing engaging ways for families to explore healthy food across the state. The Central Sierra Master Food Preserver Program held courses for adults on pressure canning and preserving and offered *Junior Jams and Jellies* courses for youth. The program observed that adult participants made sustained, positive changes to their behaviors by preserving more food at home in safe ways. (Katie Johnson)

Improved food security

Science-based information applied to food security policy and decision-making.

UCCE Advisors in the Central Sierra worked with UC ANR's Nutrition Policy Institute to assess the impact of the 2019 federal government shut down on recipients of the Supplemental Nutrition Assistance Program (SNAP). Focus groups with rural residents in Tuolumne County helped identify confusion about benefits disruption, institutional distrust, and communications issues that affected access to benefits. The results of the study were shared across UC ANR, published in a peer-reviewed journal. Study findings from SNAP research by National Policy Institute (NPI) and local UCCE advisors were adopted by Feeding America for federal advocacy purposes. (Katie Johnson)

UCCE Central Sierra Nevada MCP

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

Studies show that for every **\$1** invested in EFNEP, more than **\$8** is saved in current and future healthcare costs.
Pradhan and Goldman (2006)

Improved health for all

Participants gained knowledge about and changed attitudes toward healthy eating practices.



Students from Calaveras Unified School District harvest and prepare locally harvested produce.

UC ANR's Sustainable Agriculture Research and Education Program (SAREP) provides technical assistance and evaluation of school districts' farm-to-school programs. In FY19-20, SAREP partnered with Calaveras Unified School District to evaluate the effectiveness of offering more fresh and local food to students and staff. UC ANR's Sustainable Agriculture Research and Education Program (SAREP) program partnered with Calaveras Unified School District on farm-to-school, generating knowledge and behavior change in youth and adults. Out of 400 youth, 300 gained knowledge about eating more specialty crops. Additionally, 119 adults reported increased knowledge about the benefits of eating in-season fruits and vegetables and were introduced to 22 new fruits or vegetables. One hundred and sixty adults reported increased knowledge on how to access specialty crops in season. (Gail Feenstra)

UC Cooperative Extension (UCCE) academics provided oversight, leadership, and guidance for the CalFresh Healthy Living, UC (CFHL, UC) statewide implementation in 32 counties. The program offers educational resources for California residents eligible for CalFresh Healthy Living, California's Supplemental Nutrition Assistance Program-Education (SNAP-Ed). CFHL, UC delivered nutrition education programs such as Happy Healthy Me, Eat and Play Together!, and Shaping Healthy Choices to nearly 73,000 youth and adults and implemented over 2,500 healthy food tastings with over 52,000 students (not an unduplicated count since students could participate in

more than one tasting). CFHL, UC policy, systems, and environmental interventions such as Coordinated Approach To Child Health Early Care Education (CATCH ECE) and Shaping Healthy Choices Program integrate to create comprehensive overweight and obesity prevention programming. In the Central Sierra region, 1,731 students in Calaveras County who tried healthy food grown in school gardens were willing to eat them if served again (80%) and were willing to ask for the item at home (79%) according to the Youth Taste Test Tool. For 2,207 students in Amador County, these numbers were 68% and 67%, and for 5,804 students in El Dorado County, they were 77% and 74%, respectively. CFHL, UC educational classes helped students reduce sugar-sweetened beverage consumption and increase water consumption by 27%. Over 13,000 Harvest of the Month taste tests in 13 public schools reached 3,621 students, with 64% of students rating their taste test with a “Loved It” rating. (Katie Johnson)

Youth participants adopted healthy eating practices.

UC ANR’s Sustainable Agriculture Research and Education Program (SAREP) provides technical assistance and evaluation of school districts’ farm-to-school programs. In FY19-20, SAREP partnered with Calaveras Unified School District to evaluate the effectiveness of offering more fresh and local food to students and staff. The 400 students that participated in UC ANR SAREP’s Farm to School partnership with Calaveras Unified School District reported eating more fruits and vegetables (42%), increasing fruit servings to 3 or more a day (42%), and increasing servings to 3 or more a day (57%). (Gail Feenstra)

Improved community health and wellness

Partners adopted community-level changes that contribute to improved community health and wellness.

Cal Fresh Health Living (CFHL), UC programs such as Coordinated Approach to Child Health; Smarter Lunchrooms Movement; Gardens; and School Wellness Policy were conducted to increase healthy choices, food-based gardening, and quality physical activity in early childhood centers, schools, and community environments. In the Central Sierra region, policy, systems, and environmental changes (PSE) made in partnership with CFHL sites reached an estimated 13,579 individuals by working with 34 different sites or organizations to implement 110 changes to their policies, systems, and physical environments. Changes included promoting farm-to-school activities and supporting school gardens, developing and implementing wellness policies at schools and community organizations, improving school lunchrooms and conducting school-wide Harvest of the Month projects, guiding youth in developing their own community health projects, improving physical education programs, and more. (Katie Johnson)



Calaveras Unified School District students participate in a hands-on learning experience at the elementary school garden.

Students develop healthy eating habits when exposed to school gardens.

Calaveras Master Gardeners are involved in school gardens throughout Calaveras County. UCCE Master Gardeners have been teaching all the third-grade classes at Michelson Elementary for over 20 years. During Covid-19 they went to an online platform to provide instruction and also provide take home kits to their students. Every school within the Calaveras Unified School District now has a school garden. Master Gardeners continue to be involved in these school gardens depending on the Covid 19 status. Research has shown that students that have been exposed to a school garden are more likely to eat fresh fruits and vegetables. Tuolumne Master Gardeners are also involved at a variety of schools and after school programs throughout the county. (Debbie Powell)

UCCE Central Sierra Nevada MCP

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 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

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)



PBA members after the first Motherlode PBA burn in Long Barn, December 2021. (Photo: Susie Kocher)

Improved management and use of land

New prescribed burn associations formed in the Central Sierra.

UCCE academics organized two local prescribed burn associations (PBA) –the El Dorado/Amador PBA and the Motherlode PBA (Calaveras and Tuolumne). Both started via zoom meetings in the summer, leading to in-person workshops on regional burn planning and strategies in the summer and fall. The goals for the PBAs include empowering landowners to help each other learn more about prescribed burning. Both groups have held a first burn, one in Long Barn (Tuolumne County) and one in Pilot Hill (El Dorado County.) Landowners are happy with the outcomes of the burn on their properties. Both PBAs are receiving funding for a coordinator from the CA Department of Conservation, allowing them to expand operations in 2022. (Susie Kocher and Rob York)

Protected and conserved soil quality

Participants learned about or intended to adopt recommended soil management practices.

One UCCE academic learned through a survey of over 100 farmers that zero farmers had sampled their cover crop to quantify nitrogen and were unable to understand its role in the nitrogen budget. A pictorial guide was created to address this issue, linking images of a typical cover crop to quantities of nitrogen and carbon returning to the soil based on grower field sampling. The Cover Crop Pictorial Guide was read by 115 recipients. More than 80% of

growers reported improved accuracy and confidence with reporting their state-mandated nitrogen after attending a nitrogen management workshop. Forty-five percent of growers reported that the workshop motivated them to utilize soil tests for their farm, and 65% of participants increased understanding of nitrogen availability in organic amendments. (Margaret Lloyd)

Research-based, high-quality information made accessible to all growers.

In another project, UCCE presented an on-farm extension meeting about compost to growers with low-level English proficiency, entry-level knowledge, and very small-scale production with often less than one acre. UCCE research determined nitrogen release rates for six categories of organic amendments, which led to usable guidelines for organic growers and regulatory agencies particularly helpful in tackling one of the most difficult nutrient challenges of organic farms. This and other nitrogen management research findings were shared through extension efforts to growers to help with California's nitrogen planning. Small growers in the Sacramento Valley's Mien farming communities changed attitudes and understanding of compost. This change was observed by UCCE after receiving its first phone call requests for compost after three consecutive years of education efforts. The impact of using compost is that it protects and conserves soil quality. (Margaret Lloyd)

Science-based information was applied to soil decision-making.

One UCCE academic learned through a survey of over 100 farmers that zero farmers had sampled their cover crop to quantify nitrogen and were unable to understand its role in the nitrogen budget. A pictorial guide was created to address this issue, linking images of a typical cover crop to quantities of nitrogen and carbon returning to the soil based on grower field sampling. The Cover Crop Pictorial Guide was read by 115 recipients. Growers who used the UCCE Cover Crop Pictorial Guide reported via emails and conversations that they use the pictures to estimate total nitrogen available and integrate it into their nitrogen plans and regulatory reporting. This demonstrates how UCCE successfully responded to a knowledge gap between recognizing the benefits and grower's ability to successfully reap those benefits and how UCCE supports small-scale growers comply with California regulations around nitrogen reporting. (Margaret Lloyd)



This cover crop in a vineyard provides good habitat for beneficial insects and is aesthetically pleasing. (Photo: Cover Crop (340) in Organic Systems Western States Implementation Guide)

Increased ecological sustainability of agriculture, landscapes, and forestry

Participants learned strategies for reforestation.

University of California Cooperative Extension (UCCE) academics collaborated to focus on outreach around tree mortality and reforestation needs due to unprecedented tree loss in the Sierra Nevada region associated with California's 2012-2016 drought. A collaborative research project established a tree mortality data network, which involved forest plot measurements of tree health, size, and mortality agents in eight public and private sites. Extension efforts shared information with land managers about addressing the challenges of disposing of dead trees and replanting. Forest land managers who attended UCCE workshops reported increased understanding of how to respond to tree mortality (60% of 120). (Susie Kocher, Jodi Axelson)

Participants adopted recommended practices for forest management.

UC ANR is uniquely positioned to utilize our outreach and education expertise and collaborate with local, state and federal partners to provide the resources and support private forest landowners needs. Since January 2020, UC ANR's



Forest Stewardship workshop participants attend a forestry and forest ecology learning session with Susie Kocher. (Photo: Kim Ingram)

Forest Stewardship Education Initiative hosted workshops to help landowners learn how to articulate their vision for their forest land and identify the steps needed to achieve it. Throughout the workshop, participants gather site-specific information to better understand their forest and focus their goals on developing a management plan. With 13 completed workshops, UC ANR has engaged 249 forest landowners across California. After completing the forest stewardship workshop, 66% of participants have written out their management goals, and 60% made progress on developing a management plan. Additionally, participants who complete the workshop are eligible for a free initial site visit by an RPF. This visit can start a working relationship between the landowner and the RPF, leading to a completed management plan submitted for cost-share funding. To date, 39% of workshop participants have made contact with an RPF, and 15% have begun a cost-share funding process. Seventy-eight percent have started implementing some management activities from their plans, demonstrating improved management that contributes to protecting California's forests. (Kim Ingram, Susie Kocher, Michael Jones, Ricky Satomi, Ryan Tompkins)

Improved water quality

Science-based information was applied to water quality policy and decision-making.

One UCCE Advisor was invited by the El Dorado Agricultural Water Quality Corporation to assist its members in meeting requirements for submitting nitrogen budget plans. In the region, agricultural production occurs on sloped land in a range of microclimates and soil types using limited resources. Farms are typically adjacent to sensitive natural resource lands or growing residential areas. All growers are now required to submit a nitrogen budget plan, even if they are not in a high vulnerability area. These plans require a good understanding of both nutrient use and irrigation methods. The Advisor presented information on nitrogen in plants and invited a UC Davis post-doctoral student to present information on calculating nitrogen additions from fertilizer. The region's members were better able to comply with California's nitrogen budget plan requirements for agricultural producers. (Lynn Wunderlich)

Science-based technology was applied to water quality policy and decision-making.

Two UCCE Advisors' 7-year project with East Bay Municipal Utility District (EBMUD), the Range Health Conditions Assessment and Monitoring Program, addresses several land-management issues, especially related to concerns over livestock grazing and its potential impact on drinking water. UCCE built a web-based platform for field staff and ranchers to collect and use geographic information system (GIS) data, which improves how data is collected and used to inform management decisions. EBMUD adopted the UCCE-built web-based platform on mobile devices as well as the use of geographic information system (GIS) technology for data-driven decision making. Other EBMUD divisions, including the integrated pest management team and the recreation unit, are also adopting the technology. As a result of this change, EBMUD, the largest landowner along the Mokelumne watershed, is protecting water quality to the 1.3 million customers in the Bay area. (Scott Oneto, Theresa Becchetti)

UCCE Central Sierra Nevada MCP

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



Landowner learns to use a drip torch during a UCCE prescribed fire workshop in Tuolumne County. (Photo: Susie Kocher)

Increased preparedness and resilience to extreme weather and climate change

Participants gained understanding of prescribed fire strategies to respond to climate change and extreme weather.

One University of California Cooperative Extension (UCCE) Advisor organized 11 prescribed fire workshops on private lands in the Sierra Nevada region which were attended by almost 400 landowners and staff from partner organizations. The two-day workshop begins in the classroom and where participants are educated on the use of prescribed fire to manage forest ecosystems and rangelands, including air quality management, permitting, and technical assistance. The field-based instruction on day two covers burn unit preparation, equipment, tools, and firing techniques. Sierra Nevada prescribed fire workshop participants reported improved understanding of why and how to use prescribed fire (73%), prescribed fire logistics (87%), and how to carry out prescribed fire on the lands they manage (81%). (Susie Kocher)

Science-based information was applied to fire and climate-resilient policy and decision making.

UCCE academics conduct post-fire reforestation and restoration research and extension, particularly on the silvicultural methods that establish post-wildfire forests that are resilient to re-burning in future wildfires. This project established improved practices and demonstrated the benefits of underutilized tools in the national forest toolbox. UCCE extended concepts and tactics used to inform fire resilient restoration plans on recent fires across the Forest Service, Bureau of Land Management, and private lands in the northern Sierra, including the 2018 Camp Fire, the 2019 Walker Fire, and the 2020 North Complex fires. (Ryan Tompkins, Susie Kocher)

UCCE Central Sierra Nevada MCP

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.

UC ANR led efforts to
increase inclusiveness,
which is shown to
increase volunteer
commitment to programs.

Studer and von Schnurbein (2013)



Participants learn the parts of a sprayer during a training at a Plymouth vineyard in Amador County.

Improved living and working conditions for California's food system and farm workers

Participants adopted practices to improved farm worker safety.

Integrated Pest Management (IPM) uses biological, mechanical, and cultural controls to manage pests. As a last resort, pesticides can be an important tool, but drift from poorly applied sprays contributes to poor pest control and is also a health concern for farmworkers, surrounding farm and school communities, and the environment. To improve agricultural pesticide applications and reduce drift, UCCE-

Central Sierra Farm Advisor Lynn Wunderlich organized and led a team of UC and private industry professionals who developed, delivered, and evaluated a hands-on training program and an online training for growers, farm supervisors, and pesticide applicators working with air blast sprayers in vineyards and orchards. (Lynn Wunderlich)

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

Bilingual training opportunities ensure best practices and safety for all farm workers.

Funded through the California Department of Pesticide Regulation's Pest Management Alliance grant program, Wunderlich's team delivered five hands-on Air Blast Calibration trainings, two of them in Spanish, to nearly 200 participants, and was honored as a recipient of the 2020 California Department of Pesticide Regulation's IPM Achievement Award. (Lynn Wunderlich)