

# UC Cooperative Extension Mariposa 2020

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.



**119**

volunteers donated  
**8,881**  
hours public service  
— estimated value  
of  
**\$279,848**



**3,988**

total educational  
interactions with  
the public



**7**

activities bringing  
research to policy



**66**

academic-led  
workshops, field  
days, and classes  
with  
**378**  
participants



**136**

# news media  
programs/mention



**394**

youth in  
UC 4-H Youth  
Development  
Program



UC Master Gardener  
volunteers reached  
**1,287**  
residents



**6**

certified California  
Naturalists stewarding  
the environment



## UCCE Mariposa

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**Photo of CD, all staff, or of  
engaging fieldwork  
(CD adds)**

To swap this placeholder image with an actual image,  
Right-click on your mouse.  
Select "Change Picture" and choose "From file"

# 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.

- Bullet list style or logos from county depts.
- And key community partners (CD adds)
- List or logos from county depts.
- And key community partners (CD adds)
- And key community partners (CD adds)
- List or logos from county depts.

## UCCE Funding



**\$481,474**  
University



**\$182,158**  
County



**\$361,636**  
Advisor generated  
(grants, gifts, other,  
etc.)



Volunteers raised  
**\$000,000**  
to support local  
programs

It is estimated that for every

**\$1**

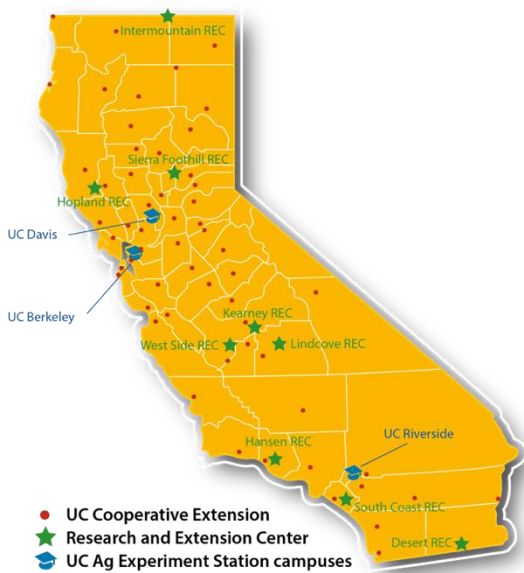
invested in agricultural  
research and extension  
there is a return of

**\$20**

to the community.

*Alston, Anderson et al (2010)*

## Leveraging the Power of the UC System



*UC ANR offers local expertise with a practical mindset and applied research. They are people who can look directly at a problem and work together with the community and campus-based experts on a solution.*

— Don Bransford, President, Bransford farms

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# UCCE Mariposa

## 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-yr degree

*Lerner, Lerner, et al. (2013)*

## Increasing effective public leaders

**Participants adopted leadership skills and extended evidence-based information to their peers and decision-makers.**



*CD adds local photo with*

UC ANR developed, evaluated, and delivered evidence-based educational programs that provided youth with leadership skills. UC Cooperative Extension (UCCE) academics provided oversight, leadership, and guidance for the statewide implementation of the UC 4-H Youth Development Program (UC 4-H). Youth who attended "Our Wild California" Virtual 4-H camp worked and learned together through breakout rooms and group sharing sessions. They reported feeling connected with other youth of their age during their time in the camp, that 4-H is an important part of who they are. (Fe Moncloa, Russell Hill)

## Improving college readiness and access

**Participants had positive attitudes and learned information about preparing for college and careers.**

In the Central Valley, 4-H Juntos promotes college readiness by working with local high schools with a lower graduation rate than the state average. Many students are English language learners or from recently immigrated families. Three students enrolled in 4-H Juntos in the Central Valley have graduated thus far, while the others in 11th and 12th grade during the Juntos program are now in their senior year and on track to graduate.



Students in the civic science project have shown a growing civic awareness, and preliminary qualitative findings suggest improved science learning. Overall, students enrolled in 4-H Juntos reported an improved sense of belonging at school, stronger academic focus, and improved engagement with school personnel, indicating positive trajectories towards high school completion. (Russell Hill)

Mariposa County partnered with surrounding counties and UC Merced to develop an integrated learning and research project titled "4-H Story Mapping Project".

This project introduced youth members to using digital tools to examine and analyze historical objects found in the UC Cooperative Extension Archives dating back to 1916. Using the archives, youth learned to look for an analyze data, identify research topics, and create digital exhibits. Youth learned to use ArcGIS Story Map software and other digital tools, and present final product/projects to others while exploring careers in library science, agriculture, youth development, nutrition, fire science, and more. (Ira Jones)

# UCCE Mariposa

## Increased civic engagement

### 4-H Members joined community efforts.

Mariposa County 4-H Members organized and participated in many citizenship/civic engagement projects to include: local fundraising, parade and animal clean up, memorial day wreath dedications, Veterans Day Field of Service, delivery of K-12 Ag in the Classroom curriculum for use in distance learning, Mariposa County Fair exhibits and demonstrations, YMTB collaborations, recycling efforts, town cleanup events, Safe Families events, Public Speaking groups meeting with County Government and the Board of Supervisors, partnering with FFA and 4-H clubs in other counties in creating awards and recognitions for Ironstone Concours D'elegance, making animal toys for the local SPCA, and many others. (Ira Jones)



## Promoting Economic Prosperity in California

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.

UC ANR partners with public, nonprofit, and private groups to create and extend new  
UC Integrated Pest Management Program recommendations is  
**\$323-500M**  
The estimated annual value of adoption of the to California agriculture  
Giannini Foundation of Agricultural Economics (2016)

## Improved individual and household financial stability

### Increased access to programs and eliminated fees.

Mariposa County 4-H Program Coordinator sought out and obtained local grant funding to cover enrollments fees for all new and returning members for the 2020-2021 program year. (Ira Jones)

## Improved animal management, productivity, and efficiency

### Animal Management and Quality Care-

Mariposa County delivered quality instruction on the care of animals by way of local animal project meetings in more than a dozen species. Youth members individually completed YQCA certifications and proudly exhibited these learned skills at the Mariposa County Fair. (Ira Jones)



# UCCE Mariposa

## Increased agricultural and forestry efficiency and profitability

**Participants learned and intended to adopt practices for more productive and sustainable land management.**

To promote sustainable and resilient ecosystems, the UCCE Mariposa Prescribed Fire Program hosted a series of educational workshops and field days to educate and train local (as well as national and international) participants to utilize a variety of land management techniques to build ranch and forest health. UCCE Mariposa collaborated with local ranchers and private landowners in multiple forest ecosystems (oak woodlands, mixed conifer forest, rangeland, and foothill chaparral) in Mariposa, Fresno and Madera counties to establish a local Prescribed Burn Association to assist participants in forest and land management techniques (Sheri Mace).



*Southern Sierra Prescribed Burn Association Members, Jared Dahl Aldern and Ben Kimball, at a prescribed fire prep day.*

## Endemic and Invasive Pests and Diseases

**Science-based information was applied to integrated pest management policy and decision-making.**



invasive species.

*Potential pesticide drift,  
Mariposa County*

Pests, diseases, and invasive plants decrease California's agriculture efficiency and profitability. UCCE Mariposa Master Gardeners act as a funnel to connect private landowners with Integrated Pest Management techniques to identify and reduce the influx of endemic and invasive species as well as to reduce pesticide drift. Our Helpline collaborates with the local Department of Agriculture and UC Advisors to extend new knowledge and provide integrated pest management advice to our collaborators and local landowners. This focus on sustainability benefits not only private landowners, but also local small growers by reducing pesticide drift and



## Increased emerging food economies and markets

**Youth membership builds local market animal meats and availability.**

Mariposa County 4-H youth experience learn-by-doing animal projects. Topics that range from breeding, showing, and sale. 4-H programs increased the available local meats and food markets and economy. (Ira Jones)

# UCCE Mariposa

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

### Improved food security

One out of seven Californians does not know where their next meal will come from. Of the 4.2 million Californians struggling with food insecurity, 1.3 million are children. In partnership with the local communities and allied organizations, UCCE Mariposa promotes educational programs that contribute to overall food security.

#### **Participants received training on gardening practices that contribute to increased access to fresh produce.**

UCCE Mariposa responded to increased interest in Victory Gardens and vegetable gardening during the 2020 pandemic. UCCE Mariposa Master Gardeners published ten articles on establishing and refurbishing gardens which were distributed to local newspapers, to our listserv and online via social media. In addition, the Master Gardeners produced a five part video series on vegetable gardening which plays on our YouTube channel. Likewise, we have produced several standalone videos focusing on specific crops, such as garlic. The Master Gardeners likewise produced a series of six tomato videos. Our weekly radio program ran multiple shows discussing gardening practices to improve access to fresh produce as well as to deal with local pest problems (Sheri Mace).

#### **Increased community access to healthy food, including fresh produce.**

UCCE Mariposa Master Gardeners partnered with a local Plant-a-Row program to promote increased community access to fresh produce. Master Gardeners donated 1,000 vegetable seedlings to Plant-a-Row who distributed the seedlings to local landowners willing to grow the plants in their gardens and donate the produce to several local programs, including the local Senior Center, food banks and community shelter programs. Similarly, Master Gardeners partnered with Plant-a-Row to glean produce from local farms to donate to those without consistent access to fresh produce.



*Local grower, Dave Kanarowski, with UCCE Community Education Specialist, Maxwell Rygiol, filming*

### Improved food safety

#### **Volunteers receive safe food handling training.**

Mariposa County 4-H volunteers successfully complete safe food handling trainings (Make it safe – Keep it safe) and apply these skills to numerous cooking and fundraising activities throughout our program year. (Ira Jones)



# UCCE Mariposa

## 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*

### Improved health for all

Each of the programs at UCCE Mariposa works to promote healthy and active living. Collaboration across programs that included nutrition education, gardening, and food preservation helped to bolster programs like the Healthy Habits Ambassador program to deliver Live, Grow, Eat, Go curriculum at local schools. To adapt to COVID-19 stay-at-home orders, programs quickly shifted to virtual delivery platforms and employed innovative strategies such as newsletters for parents on cooking and gardening.

#### **Participants adopted edible gardening practices and spent more time outdoors.**

UCCE Mariposa Master Gardeners and 4H Healthy Habits Ambassador programs collaborated to “bring the garden home” during the pandemic closures. Virtual content was filmed at local gardens to offer parents and teachers access to healthy activities and educational content on edible gardening practices and outdoor experiences. The Healthy Habits Ambassador program partnered with the UCCE Mariposa Master Gardeners to deliver the Learn, Grow, Eat, Go curriculum at our local K-8 school garden, reaching 94.9% of the school’s students, as well as recruiting parent volunteers to help in the garden to deliver the curriculum.



*CD adds local photo with caption*

#### **Participants learned about landscape management practices that contribute to improved community health.**

UCCE Mariposa Master Gardeners trained five master gardeners on promoting native plants and supporting pollinators to promote improved community health. Subsequently, the master gardeners have produced a series of six videos on propagating native plants as well as a virtual tour of the milkweeds of Mariposa County.

# UCCE Mariposa

## Improved community health and wellness

### 4-H addresses community health and wellness.

Mariposa County 4-H clubs participated in many community health and wellness events this program year. We have organized, promoted, and executed our annual 10 mile bike-a-thon to support Multiple Sclerosis by raising more than \$5000. Spanning civic engagement opportunities in connection with County Safe Families programs, our participation and exhibitions promoted and improved health and wellness. Mariposa County Staff completed First aid and CPR training. (Ira Jones)



## Improved access to positive and built environments

### Participants learned and changed attitudes about the environment.

During COVID-19, statewide programs designed innovative educational solutions to help Californians stay engaged with active living, natural environments, and environmental education. Highlights include 4-H Advisors that co-lead a collaboration among seven academics, 31 staff, volunteers, and youth representing 20 counties, four UC ANR Research and Extension Centers, and the California 4-H Office offering a 4-H Virtual Camp, "Our Wild California." Our Wild California was the first-ever 4-H virtual camp in the state. The team formed to respond to the need to offer engaging summer opportunities for youth, as in-person camps were canceled due to the pandemic. The program reached



108 youth campers from 18 counties the opportunity to learn about the outdoors. The weeklong camp consisted of various activities designed to grow youths' appreciation for nature. Youth who participated in the "Our Wild California," 4-H virtual camp rated learning about wildlife and making new friends as the top two reasons for youth to participate in the camp. One of their top-rated activities was classifying objects as part of the "Coding a Clean Ocean" activity. (Fe Moncloa, Russell Hill)

Staff who developed and delivered these virtual camps received the California Golden Clover Award, California Excellence in Camping award and also the Western National Excellence in Camping award. (Ira Jones)



# UCCE Mariposa

## 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.

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)*

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

## Improved management and use of land

Public and private land in Mariposa is managed for a wide variety of uses. Challenges include loss of productive working landscapes, human and wildlife conflicts, protecting water quality, living in fire-prone areas, and a better understanding of ecosystem services. Research and extension are needed to help land managers and owners balance the social, economic, and ecological benefits.

### **Participants learned about and intended to use strategies and techniques for sustainable land management.**

UCCE Mariposa has supported local sustainable land management through a series of collaborative efforts. Due to high fire severity in the county, collaborative educational programs like the Fire in the Sierras workshop and the Forest Stewardship Course have allowed local landowners to learn about and put into practice research-based land management techniques. Collaboration with the Souther Sierra Prescribed Fire Council and the Mariposa County Fire Safe Council, CalFire, Mariposa Fire and Mariposa Air Pollution Control District have led to increased community awareness of extreme threats to county land resources. The development of the Southern Sierra Prescribed Burn Association provides local landowners and ranchers an opportunity for field experience to promote sustainable and ecologically diverse landscapes in the myriad of ecosystems present in our foothill community.



*1 A local rancher, UCCE Mariposa, and CalFire collaborate on a training burn to reduce invasive Medusahead.*

# UCCE Mariposa

## Improved air quality

More than 90% of Californians breathe unhealthy air sometime during the year. California's San Joaquin Valley is home to 10% of the state's population and has some of the most polluted air in the United States, some of which originates as wildfire smoke from foothill communities to the east, such as Mariposa. UCCE Mariposa has taken a proactive stance on reducing the threat of wildfire in our local community through innovative practices including prescribed fire, grazing, and community education efforts.

## Increased ecological sustainability of agriculture, landscapes, and forestry

Nearly 33 percent of California's land is covered by forest, and rangeland covers an additional 57% of the state. Forest and range provide clean air, carbon sequestration, clean water, and habitat for plants and wildlife. There is a critical need for landowners and managers to understand the impacts of a variety of different management practices, including restoration and conservation to these services. Identifying ecosystem restoration methods and ecosystem management practices is needed for California's plants, wildlife, and other natural resources to continue to thrive.

### **Participants learned and adopted recommended practices for forest management.**

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 in Mariposa were eligible for a free initial site visit by an RPF. (Kim Ingram)

### **Expanded community gardens.**

UCCE Mariposa Master Gardeners have developed a robust community garden program. In collaboration with local schools and institutions, we have assisted in the development of multiple county landscape improvement programs. As part of an ongoing project, CalFire and the Master Gardeners have developed a firewise, drought tolerant demonstration area at the CalFire MMU site to demonstrate the use of native and Mediterranean plants in the process of landscaping for fire safety. Similarly, in collaboration with Mariposa County, we developed a tribute to the various ecosystems of Mariposa County in the 11<sup>th</sup> Street Paseo Project community exhibit, highlighting native plants that grow at various elevations in Mariposa County. In concert with Mariposa County, the Miwok Tribe and UC Merced, the Master Gardeners and Prescribed Fire programs offered a series of educational programs on native riparian plants as a precursor to the development of the Mariposa Creek Parkway Restoration Project which will commence in 2021.



*2 UCCE Mariposa and the Miwok Tribe present local plants and cultural fire practices to UC Merced Landscape Design students as part of the Mariposa Creek Parkway Restoration Project.*

# UCCE Mariposa

## 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  
(SWEEP and HSP)*

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

The associated effects of climate change are increasing the risk of extreme weather events that negatively impact California's ecosystems and communities. Because of our changing climate, rangelands, forests, and peri-urban areas are experiencing the effects of intense wildfires and persistent droughts. Land managers and landowners need effective response and adaptation strategies to best manage the land to better prepare to deal with the growing risks. Communities need to be better prepared to deal with the growing risks of hazards from fires and droughts.

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

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%). The five-part virtual series attracted 497 live participants. Follow up workshops and annual membership meetings in collaboration with the Southern Sierra Prescribed Fire Council yielded a core group of 75 interested private landowners who joined the Southern Sierra Prescribed Burn Association, leading to 18 locations in which to conduct future field work and prescribed burning. (Susie Kocher and Sheri Mace)



*CD adds local photo with caption*

# UCCE Mariposa

## Developing an Inclusive and Equitable Society

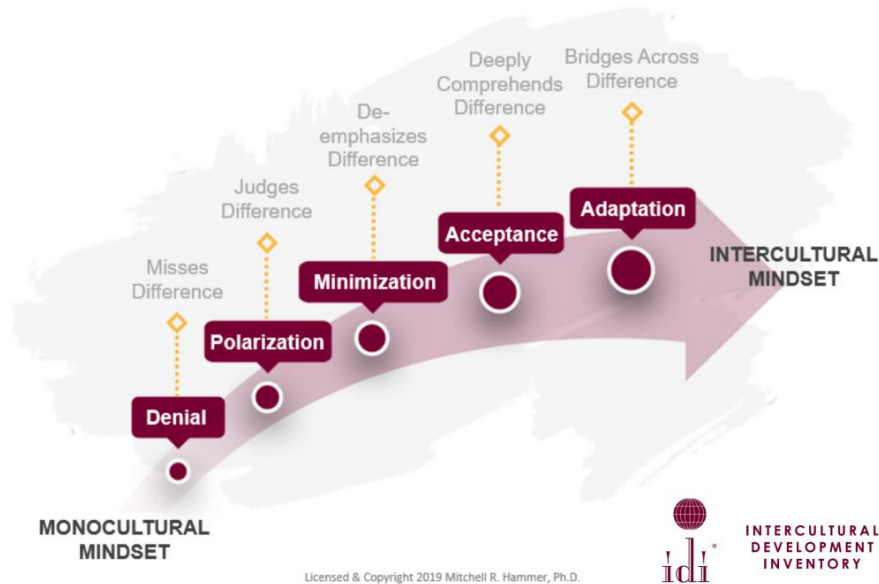
UC ANR is committed to reaching all segments of the state's population. UC ANR academics live and work in all California communities, building trust and credibility to solve local problems together. UC ANR builds cultural competency skills, implements community-centered programs, and develops proactive 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)*

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

### Intercultural Development Continuum (IDC™)



### Workforce Training

Mariposa County Staff worked collaboratively to discuss topics and issues that improved diversity, inclusiveness, and cultural competency. Our programs are offered to all and advertised as non-discriminatory. Additionally, Staff members completed Intercultural Diversity trainings, surveys, and other professional development opportunities. (Ira Jones)