



**2020**  
—  
**ANNUAL  
REPORT**

**UC Cooperative  
Extension, Marin County**



# UC Cooperative Extension Marin

## 2020

### Farm Advisor

The mission of the University of California Cooperative Extension Marin County Office is to sustain Marin's vital agriculture, environment, and communities. We do this by providing University of California research-based information in agriculture, natural resource management, healthy living, and youth development. Networked with the expertise of UC campuses, our educational programs use practically-applied research to solve community problems.



Participants visiting Fresh Run Farm in Bolinas during the organic production farm tour held in January 2020.



**458**

volunteers donated  
**42,437**  
hours public service  
- estimated value of  
**\$1,713,606**



**10,263**

total educational  
interactions with the  
public



**9**

peer-reviewed and  
audience-requested  
publications



**5**

activities bringing  
research to policy



**68**

academic-led  
workshops, field  
days, and classes



**23**

news media  
programs/  
mentions



**4,218**

youth in  
UC 4-H Youth  
Development  
Program



**4,800**

residents reached  
by UC Marin Master  
Gardeners



### UCCE Marin

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# Partnering for Change

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

## UCCE Funding



**\$838,051**  
University



**\$461,404**  
County



**\$345,172**  
Advisor generated  
(grants, gifts,  
other, etc.)



**\$68,000**  
raised by  
Volunteers to  
support local  
programs

It is estimated that for every

**\$1**

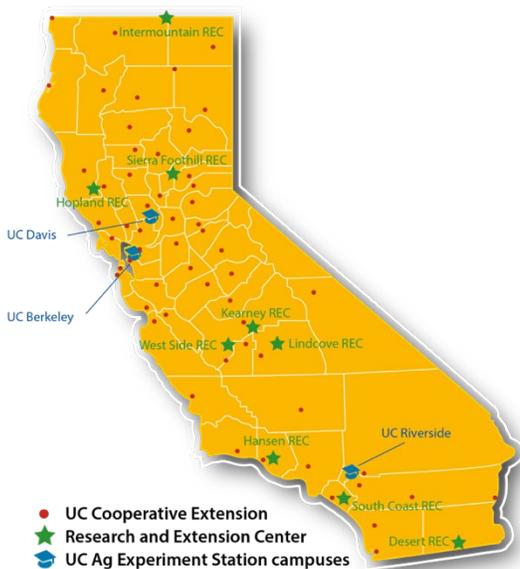
invested in agricultural  
research and extension  
there is a return of

**\$20**

to the community.

*Alston, Anderson et al (2010)*

## Leveraging the Power of the UC System



*“Thank you so much! This was extremely helpful, you answered many questions for me which I had been trying to research, unsuccessfully! You have the farmer’s perspective, it shows!”*

— Farmer describing COVID-19 Frequently Asked Questions

*“As an outsider to the food system world when I first sat in on a meeting, the council helped connect me to various organizations, helped me learn about what is happening in the county and helped me find ways to contribute.”*

— Wendy Tobiasson, Innovative Health Solutions

*“Thanks for all the work you do, the never-ending job of communicating the information everyone needs to know about sudden oak death.”*

— Deveree Kopp, US Forest Service

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# One Hundred Years of Collaboration

## In Cooperaton for 100 Years

In September 1920, [Marrett Burridge \(M.B.\) Boissevain](#) came to Marin as its first Cooperative Extension Service Farm Advisor. This started the partnership between the University of California, California's land-grant university, and the County of Marin.



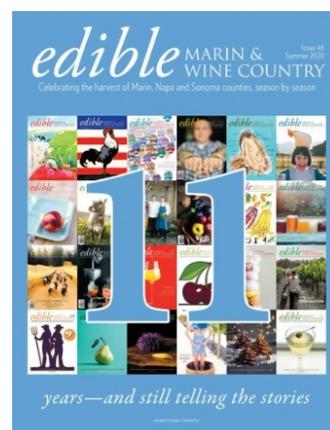
## Then and Now



M.B. Boissevain was a community member and resource through 1950. As he explained in his first annual report, this “line of work” was to establish programs that would “affect the greatest number... and... greatest good.” Boissevain set up many trials and demonstrations with Marin farmers. Today, 100 years later, the partnership continues. Our staff and academics work closely with local partnerships in Marin to accomplish the same community benefit Boissevain expressed a century ago. [Read more](#) about past and current programs.

## Organically Growing Organic in Edible Marin

The summer 2020 edition of *Edible Marin & Wine Country* featured an article about UC Cooperative Extension celebrating its 100th anniversary. The article [Organically Growing Organic](#) interviews a number of local farmers and ranchers, explains the background and history of the Cooperative Extension model, and describes UC Cooperative Extension Marin's work in the county as “Researchers and scientists from the University of California that work with local farmers and ranchers to develop and integrate the most innovative practices for long-term viability.”



## Friend of Marin County Farm Bureau



At its February 2020 annual meeting, the Marin County Farm Bureau recognized UC Cooperative Extension Marin with the “Friend of Farm Bureau” award. The award and presentation made during the meeting commemorated the 100-year anniversary of UC Cooperative Extension in Marin and its cooperation with Marin County Farm Bureau. The current UCCE Marin team attended, along with UC Agriculture and Natural Resources Vice President Glenda Humiston, Advisors Emeriti Ellie Rilla and Paul Vossen, and retired Agricultural Ombudsman Lisa Bush.

# Reaching Marin

## Educational Offerings and Consultations

In 2020, nearly 10,500 participants were served in 68 workshops, conferences, and tours organized with our community partners. These offerings were both in person and virtual. Participants included over 5,200 youth during in-person and after school offerings.

In addition to education through workshops, our program teams provided technical consultations to Marin agricultural producers, arborists and landscape professionals, homeowners, and educators. In 2020, we provided approximately 1,500 consultations either in our office, through our gardening help desk, or in the field on farms and properties.



*Farmers gathered to share ideas for integrated pest management options.*

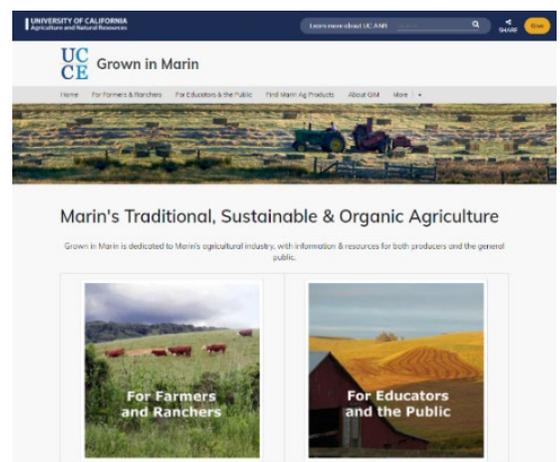
## Online Resources

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

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

During 2020, these websites had more than 348,079 discreet views. Popular webpages include:

- [Top 20 Garden Problems](#)
- [Monthly Plant & Garden Care Checklist](#)
- [How to Grow Fruits, Vegetables, and Herbs](#)
- [How to Start a Community Garden](#)
- [Oak Identification](#)
- [Sudden Oak Death Diagnosis and Management](#)
- [Find Marin Ag Products](#)
- [Getting Started in Farming & Ranching in Marin](#)
- [Getting Started with Food Gardening](#)
- [Fire-Smart Landscaping](#)
- [What is Japanese Knotweed](#)



*Grown In Marin was relaunched in 2020, providing farmers and community members a go-to, online repository for agriculture in Marin.*

# 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 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 are  
**1.7x**  
more likely to plan and  
pursue a career in  
math or science

Girls in 4-H are  
**2x**  
more likely to plan and  
pursue a career in  
math or science

## Improving college readiness and access

### Youth improve their agricultural knowledge and skills

Over 350 people attended the Agriculture and Animal Science Field Day held on February 8, 2020 co-hosted by UC Cooperative Extension and the Sonoma-Marín Fairgrounds. The purpose was to provide agricultural education to youth (and their adult leaders, teachers, and mentors). Dr. Temple Grandin, renowned animal behavior expert, author, and Professor of Animal Science at Colorado State University provided the keynote. Workshops covered a variety of topics including: Science of wildland fire; Building and enhancing the client-veterinarian relationship; Communicating the value of agriculture and animal science at public exhibitions; Embracing working landscapes; Basic husbandry and disease prevention in backyard poultry; Enhancing awareness of agricultural career opportunities; The joys and pains of integrating livestock into vegetable cropping systems; and Supporting positive animal welfare practices. 97% of participants reported that the field day was an effective learning experience; and 98% improved their knowledge of an agricultural-related topic.



Participants interacting at the 2020 Agriculture and Science Field Day, including keynote speaker Dr. Temple Grandin (center of left photo).

# Developing a Qualified Workforce for California

## Improving college readiness and access

### Learning that happens outside of school

Partnering with Bay Area Community Resources Learning Enrichment in Afterschool Program and the Canal Kids Club, Dr. Steven Worker provided curriculum training and professional development for 74 afterschool youth educators. This included strategies and models for successful “out-of-school” youth engagement and learning as well as specific lesson plans for computer science and confidence building in Science, Technology, Engineering, and Math (STEM). This partnership reached more than 4,000 Marin youth countywide.



*Dr. Steven Worker demonstrating STEM education after school youth curriculum.*

## 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.

## Improved access to positive and built environments

### Tour of community gardens strengthened benefits for senior residents

Our Community Garden Program initiated focused technical assistance to community gardens that serve Marin’s seniors. This was done with the understanding of the high population of seniors in Marin and the benefits of these gardens on the well-being of this demographic of Marin residents. In fall 2019, Community Garden Program Coordinator Lauren Klein organized a tour of these gardens for advocates and support organizations. Visiting four senior gardens, participants were able to experience a wide range of gardens, including large, small, well-supported, and not so well-supported! This tour and resulting interactions led to more broad awareness and support for senior residence community gardens throughout Marin. [Read this blog](#) for a recounting of the tour.



*The Robert Sinclair Scott Vegetable Garden at The Redwoods Retirement Community, Mill Valley.*

# 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.

## Improved animal management, productivity, and efficiency

### A mobile option and cooperative for meat processing infrastructure

With further contraction of ranch private-label meat processing, local ranchers were faced with the impossible choice of shutting down or hauling animals hundreds of miles. True to the cliché, necessity is the mother of invention, and area ranchers came together to pursue a third path. Through the winter and into the summer ranchers convened to analyze the potential for a mobile processing unit and the formation of a [rancher cooperative](#). Sustainable Agriculture Coordinator Vince Trotter has provided technical support and facilitation throughout the process, assisting ranchers with feasibility assessment, business plan development, and cooperative governance. Next steps include securing capital, procuring a unit, and starting service. In support of this effort, we continue to provide group facilitation, connections to industry and regulatory experts, and technical assistance on financial projections, operational design, regulatory considerations, and ranching community outreach.



*Bar-C Rancher Cooperative members discussing business plan elements with Sustainable Agriculture Coordinator Vince Trotter.*

### Re-using local by-products for compost on dairies



*Dairy Advisor Dr. Randi Black chipping wine grape by-products to test as feedstock for dairy composting.*

Local landowners and agricultural producers often have by-products, like wine grape vines or pomace, which are often discarded as unwanted products. Dairy producers, already common recyclers of many by-products, may be able to utilize some of these products in composting efforts for soil amendments. UCCE's dairy program is testing these local by-products for their suitability in compost, potentially developing a by-product system which will put carbon in the soil instead of the atmosphere. This will also alleviate some financial burdens on dairies with cheaper feedstocks for their compost production.

# Promoting Economic Prosperity in California

## Increased agricultural and forestry efficiency and profitability

### Bridging organic certifiers and dairy operations

As part of our work to grow the shared understanding between regulators and the agricultural community, we organized a series of in-service trainings for Organic certifiers to better understand the on-the-ground realities of dairy farming in Marin. Dairy Advisor Dr. Randi Black and Livestock & Rangeland Management Advisor Dr. Stephanie Larson led sessions in forage evaluation, animal health and quality of life, as well as basics of formulating livestock feed rations and medicine. The program ended with a capstone visit to a Certified Organic dairy where certifiers could speak with the dairy operators and expand their understanding of daily operations and the unique needs of the ranchers.



*Organic certifiers review approaches for estimating livestock forage demands with Drs. Stephanie Larson and Randi Black.*

### Organic production field day connects experts from the campus to the farm



*Dr. Joji Muramoto and vegetable growers discuss problems and solutions for organic farming, even in the rain.*

The hiring of a new statewide Organic Production Specialist, Joji Muramoto, presented an opportunity to convene Marin County organic producers and conduct some practice-sharing and community building. We brought Dr. Muramoto to Marin and assembled vegetable producers from around the region to visit 6 farms in Marin and Sonoma Counties. Growers had the opportunity to explain their own organic production systems, ask questions of Dr. Muramoto, and share best practices with each other. Dr. Muramoto also gave a presentation on organic management of soil-borne pathogens in strawberries and fielded numerous questions about newly researched methods. Information shared was then compiled into a single page for our comprehensive website, [GrownInMarin.org](http://GrownInMarin.org).

# 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.

## Improved Food Security

### Farm boxes provide innovative market channel for small-scale farmers



Example of a farm fresh food box prepared and sold during this pilot program.

Through a multi-year pilot program, North Bay Food Systems Advisor Julia Van Soelen Kim collaborated with area farmers and store owners on a USDA funded Farm Fresh Food Box project. This collaboration tested the market potential for boxes of locally grown, seasonal produce without the commitment of a full season subscription to be sold at rural convenience stores. The promising model expanded market opportunities for small-scale farmers, identified the importance of rural retailers and other helpful marketing partners, and expanded access to healthy food to a wider audience, with outreach efforts in Spanish as well as English. A [toolkit](#) is now available, providing guidance for implementing these channels between farmers and retailers.

### Responding to increased food insecurity during the pandemic

Working with the [Marin Food Policy Council](#), our Food Systems team helped convene local community-based organizations and government agencies involved in emergency food response efforts in the wake of the pandemic and wildfires in the North Bay. These various events helped provide coordination and collaboration on emergency food needs for the pandemic, discuss preparation for current and future emergencies, and share emerging promising practices regionally. This coordination led to a local adaptation of the [Grow Extra Food](#) campaign and was the precursor to programs and responses by Marin's Healthy Eating Active Living Collaborative and Food Distribution Group coordinated by Marin Health and Human Services and Marin Volunteer Organizations Action in Disasters (VOAD).



**MFPC**  
MARIN FOOD POLICY COUNCIL

*The Marin Food Policy Council brings local food system stakeholders together to solve food access issues.*

# 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.

## Improved management and use of land

### Grazing that protects against fire, one match at a time

Livestock and Range Advisor Dr. Stephanie Larson led the launch of "Match.Graze" ([matchgraze.com](http://matchgraze.com)), an online database that connects landowners who don't have grazing animals to livestock owners with animals that can provide vegetation management services. Match.Graze is expanding the use of grazing throughout the North Bay to achieve collective fuel reduction goals. As Marshall Turbeville, CAL FIRE Battalion Chief observed, "Areas that have been grazed have reduced the spread of dangerous and costly fires." Grazing is one of many vegetation management tools that include prescribed fire, mowing, or herbicide treatments. Match.Graze makes the option for grazing a reality for more of the landscape and more land managers.



*Livestock grazing is a viable vegetation management option for reducing fire fuels and wildfire intensity.*

### Fire-Smart landscaping to create defensible space



*[This and other educational videos](#) are providing thousands of Marin homeowners specific research-based information for creating defensible space.*

Managing the space around homes to minimize the risk presented by fire may seem simple at first glance. It turns out that just about anything is complicated if you ask enough questions, and home landscaping to mitigate the risk of fire is no exception. Homeowners, local governments, and even fire departments have lots of questions when it comes to landscaping, and we are working to provide answers. In collaboration with the Marin Conservation League, FireSafe Marin, and the Ecologically Sound Practices (ESP) Partnership, we are developing landscaping guidelines to achieve defensible space, support pollinators, reduce pesticide use, and increase food production. Additionally, our staff and UC

Marin Master Gardeners reached more than 2,000 homeowners through presentations and demonstrations and even more individuals through our media articles and videos. [Fire-Smart landscaping](#) resources and information are available on the UC Marin Master Gardener website.

# Protecting California's Natural Resources

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

### Homeowner collaboration continues progress of noxious weed eradication

Stream-side parcel owners throughout the San Geronimo Valley Watershed have collaborated for a third year in a row in the management of Japanese knotweed (*Fallopia japonica*). Led by Program Coordinator Anna Dirkse, this management is reducing the number of patches and patch size of known knotweed locations on residential

parcels. The ultimate result of this effort is lowering the risk this plant poses to stream habitat and to homes and other structures. Collaboration through [Marin Knotweed Action Team](#) is ensuring that management of knotweed extends throughout the Lagunitas Creek Watershed, protecting this important Coho salmon and steelhead trout watershed.



Comparison of knotweed patch before (left) and after (right) management.



Larval tunnels start as leaf spots where larvae appear to circle until they find a lateral vein, eventually finding their way to tree twigs. Sometimes they go the wrong way.

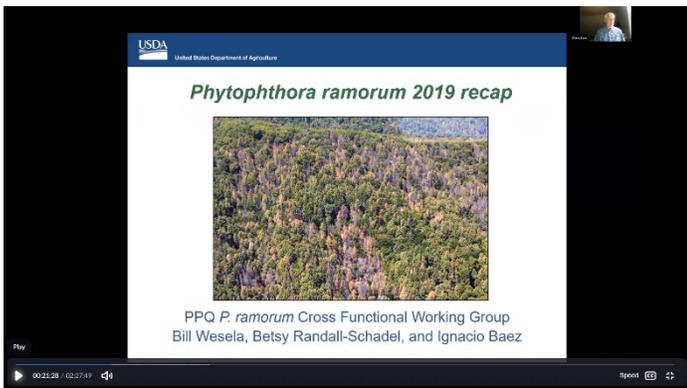
### Confirming and naming an unknown and often unseen moth

It was 2014 when local landscape professionals started seeing the impact of a pest on small strawberry trees, a popular choice for landscaping since the 1970s. The symptoms and resulting death of trees pointed to a leaf miner. Six years later after considerable laboratory and field investigation, the pest's life cycle has been documented. This included the difficult step of capturing adult moths in the field and comparing DNA from them to previously captured caterpillars. Environmental Horticulture Advisor Steven Swain contributed to the collaboration with California Department of Food Agriculture, the Smithsonian, and colleagues in Europe, that confirmed this tiny moth (less than 2mm long) is new to science. This team is now evaluating how prevalent the pest is in plant nursery stocks and developing best management practices that protect susceptible trees from its impacts.

# Protecting California's Natural Resources

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

### Protecting forests and ecosystems from plant diseases



Virtual COMTF Executive Committee meeting.

Our forest health team, Janice Alexander and Bonnie Nielsen, provides a hub for researchers and landscape management practitioners to share and access the state of knowledge for a multitude of diseases threatening forest plant communities. This included additions and improvements to the [maps and visual aids](#) on [SuddenOakDeath.org](#). It also included hosting two internationally attended webinars – one on the [latest science for sudden oak death](#) and the other on the [management of phytophthoras](#) in native plant nursery stock and ecological restoration sites.

## Improved water-use efficiency

### Making every drop count in the garden

Marin Friendly Garden Walks is a partnership between Marin Master Gardeners and Marin Municipal Water District to provide homeowners in Marin with information and advice on improving their irrigation practices to help conserve Marin's precious water resources. This year Marin Friendly Garden Walks celebrated its eleventh successful year serving Marin residents. Led by Program Coordinator Pam Polite-Fisco and trained by MMWD conservationists and UC Marin Master Gardener trainers, pairs comprised of the 52 volunteer UC Master Gardener Garden Walkers visit a client's garden to conduct a garden water usage audit. Following COVID safe protocols, walks in 2020 occurred in clients' gardens wearing masks and using safe social distancing practices. Supported by UC Cooperative Extension Program Coordinator Pam Polite Fisco, walkers focus on reduced water usage and soil and plant health, identifying irrigation improvements, and suggesting plant selection to encourage sustainable landscaping. Having visited more than 1,800 gardens throughout Marin since its launch, the program's results have shown a measurable 5-7% reduction in the MMWD clients' water usage.



Garden walk volunteer reviews water usage audit with client homeowners.

# Supporting the community during the Pandemic

## Adapting to online program delivery

There are examples throughout this report of our team adapting to the pandemic and the limitation on being in person that COVID-19 presented. Most notable is the quick shift made to online education program delivery. This includes our 4-H and Marin Master Gardener programs and partnerships with Marin Free Library, Marin Conservation League, FireSafe Marin, and others.



Marin 4-H's annual Achievement Day was a virtual affair in 2020, organized by Program Coordinator PeeBee Van den Toorn to recognize youth and adult leaders for their contributions and successes.

We also were able to secure approval for our field activities, including farm calls and educational services for homeowners and professional landscape personnel. This meant we could continue ongoing and long-term research and monitoring projects as well as provide troubleshooting services on ranches and in gardens.

Photo to the right: Dairy Advisor Dr. Randi Black making a farm call to an area dairy producer using COVID-19 precautions.



## Efforts and services to address impacts

More compelling, and a privilege for our team in service to Marin, are the efforts and services we provided to address the impacts on the community that the pandemic has imposed. We convened partners to confirm and coordinate options and support for Marin farmers and ranchers. This also included audience-specific information such as:

- [COVID-19 Resources for Marin Communities](#)
- [COVID-19 FAQs for Farmers](#)
- Updates to the 4-H Youth Development network about [precautions](#)

# UC Cooperative Extension Marin 2020 Farm Advisor



While the 2020 Farm Day was canceled, there were virtual events and entries were received and recognized. Ms. Pick's kindergarten class submitted this artwork expressing the 2020 theme "Come Soar with Us."