University of California
Agriculture and Natural Resources

Santa Barbara County Cooperative Extension

Quarterly Report October-December 2015

Dr. Ben Faber received the Award of Honor from the California Avocado Society at their October 2015 Annual Meeting. The Avocado Society's Award of Honor has been presented since 1938 for outstanding meritorious service to the avocado industry. It is not presented in every year. The official by-laws of the Society describe the Award of Honor as follows. "At the discretion of the board of directors, an award of honor may be bestowed at the annual meeting upon one or more persons who have given outstanding meritorious service on behalf of the avocado industry."

Submitted by Mary Bianchi
County Director, Horticulture Advisor
Santa Barbara County
January 30, 2016

University of California Programs- Advisors and Specialists in Santa Barbara County

PLANT SCIENCES/HORTICULTURE, led by Mark Battany, Mary Bianchi, Dr. Surendra Dara, Dr. Ben Faber, and Dr. Mark Gaskell, specializes in the science and art of growing fruits, vegetables, flowers, and ornamental plants. Advisors conduct local field research to test new crops and varieties that are best adapted to local soil and water conditions and markets, implement improvements in cultural practices and pest control methods, and offer information that optimizes production, conserves natural resources, and protects the environment. Advisors are called upon regularly by growers and the general public to assist in enterprise planning and problem solving.

UC CALFRESH NUTRITION EDUCATION PROGRAM and UC MASTER FOOD PRESERVERS are led by Dr. Katherine Soule. UC CALFRESH is funded by the USDA and delivered by the UCCE to Santa Barbara County. In collaboration with local partners, UC CalFresh provides evidenced-based nutrition education to low-income individuals and families. The program provides high-quality nutrition education curriculum and training to educators at qualifying schools. UC Master Food Preservers respond to interest and concerns regarding home food preservation.

UCCE MASTER GARDENERS, led by Mary Bianchi, provide the primary outreach and extension method for improving horticulture and science literacy for homeowners and back yard gardeners. They provide research based information for home horticulture, pest identification, landscape management, and other environmental and natural resource information. Master Gardeners interact directly with homeowners and back yard gardeners to provide information on sustainable and edible landscapes, water conservation, and environmentally sound solutions for pest problems.

4-H YOUTH DEVELOPMENT PROGRAM, led by Dr. Katherine Soule

4-H is a positive youth development organization that empowers young people to reach their full potential. A vast community of more than 6 million youth and adults working together for positive change, 4-H enables America's youth to emerge as leaders through hands-on learning, research-based 4-H youth programs and adult mentorship, in order to give back to their local communities. 4-H is the youth development program of our nation's Cooperative Extension System. The 4-H Youth Development Program is brought to the counties by the University of California, Agriculture & Natural Resources.

FIRE ECOLOGY AND MANAGEMENT, led by Dr. Max Moritz, focuses broadly on scientific questions in fire ecology and management. Research includes analysis of where various fuel management techniques are likely to succeed and be sustainable, mapping of fire weather patterns, and quantifying linkages between fire and climate change. Outreach efforts emphasize fire-related policy decisions and education of the general public to live more safely on fire-prone landscapes.

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Administrative Accomplishments- County Director, Mary Bianchi

The Challenge

Communities beyond the reach of the land grant campuses of the University of California present special challenges for outreach and extension. Cooperative Extension is the public education arm of the University of California's Division of Agriculture and Natural Resources. Cooperative Extension provides a direct link between all citizens of Santa Barbara County and the research, teaching and public service activities of the University.

Our mission is to extend research knowledge and information to empower people to improve and enhance their lives. We represent a unique partnership between the University of California, the County of Santa Barbara, and the United States Department of Agriculture.

Addressing the Challenge

County Director Mary Bianchi maintained contact with Agricultural Commissioner and County Administrative Office staff throughout the quarter as needed. Director Bianchi participated in a two day work-shop on developing meaningful performance measures for county programs, to enhance our reporting in Santa Barbara and San Luis Obispo County.

Continuing UCCE long-range planning for program support for Santa Barbara County, Mary Bianchi participated in meetings with other Southern California Cooperative Extension unit directors to prioritize new Advisor and Specialists positions with responsibilities in Santa Barbara County. We have identified the urgent need for an Environmental Horticulture Advisor to support the greenhouse in-dustry in Santa Barbara and will be submitting the proposal for that position to the University early in 2016. In December, she participated in interviews to hire a new Extension Irrigation Manage-ment Specialist with statewide responsibilities.

Mary Bianchi attended the Governor's Drought Task Force meeting at Cal Poly San Luis Obispo in early November and reported on the status of Central Coast agriculture and the impacts of the drought on water supplies, crop production and quality, and recovery time for agricultural industries.

Rangeland and Watershed Advisor Dr. Royce Larsen serves on the Santa Barbara Agricultural Preserve Committee and he attended October and November meetings during the quarter.

Santa Barbara County Agricultural Advisory Committee meetings in October, November, and December were attended by Mary Bianchi or Small Farms Advisor Mark Gaskell, providing updates on UCCE activities and upcoming events.

Cooperative Extension support is vital for the field and greenhouse plant industry, like this operation near Carpinteria, CA (photo courtesy of UC IPM).

Public Value

The University of California Cooperative Extension programs in Santa Barbara County:

- Ensure that science-based information developed by the University of California is available to all the people of Santa Barbara County through outreach and education provided by UCCE programs
- Narrow the gaps in information needed by county agencies and constituents to inform policy and decision-making through local research into questions and issues unique to Santa Barbara County
- Bring together the resources and expertise of the University of California and local partners to develop solutions to local problems
- Provide research and information to local partners on practices or programs that reduce costs or increase benefits for the people and environment of Santa Barbara County

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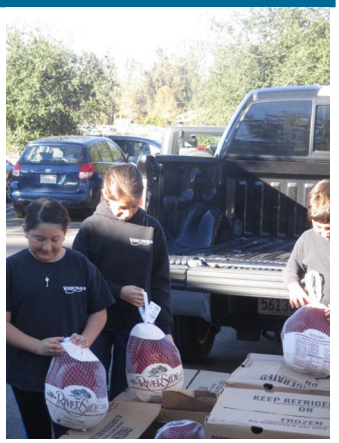
4-H Youth Development– Dr. Katherine Soule

The Challenge

Communities of scientifically literate, well-informed, and actively engaged citizens are essential to create positive changes needed to solve important issues facing our nation and help us to prosper in a global economy.

The University of California 4-H Youth Development Program provides training and resources to local volunteers who partner with youth to bring about positive change in our communities. The 4-H program equips youth with hands-on science activities, healthy living knowledge, leadership experiences, and service-learning opportunities. Participation in 4-H prepares youth to understand and acquire the skills that will allow them to become problem-solvers and astute leaders.



Kaylee, Emma and Andrew, were among the Vineyard 4-H Club members who unloaded turkeys for the Santa Barbara County Food Bank

Addressing the Challenge

4-H staff supported adult volunteers and youth members in delivering positive youth development programming to members and their families in 17 local community clubs throughout the county. Within each club, participants engaged in hands-on experiential learning projects in the focus areas of Science, Leadership, Healthy Living, and Citizenship. Several countywide 4-H activities, training meetings, and educational outreach events were delivered to 4-H clubs, families, as well as the community at large, including:

- Hands-on learning activities presented by 4-H staff, volunteers and youth members to over 500 visitors at the THRIVE Santa Maria's Healthy School Pantry (HSP) program, including displays on nutrition, arts & crafts, and science.
- The National Youth Science Day Experiment and Agua Pura watershed education activities were provided to 35 youth at *Celebrating 4-H*. 4-H adult leaders and youth members provided outreach booths and shared project activities with more than 100 community members.
- A Santa Barbara County's 4-H All Star accepted the National 4-H Week Proclamation at the County Board of Supervisors meeting.
- The 4-H Leaders and Officer Forum provided leadership training, networking, and learning experiences to 45 adult and youth volunteer leaders.
- A collaboration between 4-H and the Santa Barbara County Health Department had 30 youth participating in 6 sessions of hands-on 4-H educational activities while their parents attended Eat Healthy, Be Active Community Workshops.
- Vineyard 4-H Club donated 40 turkeys, with funds raised from their 3rd annual Ranch-a-Thon, to the Santa Barbara County Food Bank and participated in the monthly Family Volunteer Day.

Public Value

In Santa Barbara County, the University of California 4-H Youth Development Program is focused on providing youth with opportunities to develop strong, positive youth-adult partnerships while engaging in meaningful activities, which lead to:

- Reduced participation in risky behaviors (e.g. underage drinking, pregnancy, gang activity), which can decrease related public costs
- Increased academic success and/or science literacy, which contributes to a highly qualified and productive workforce
- Increased civic engagement, which can strengthen communities through youth training in leadership skills, innovation, critical thinking, and healthy living
- Increased youth literacy in science, engineering, and technology through special programming, projects, and access to University curricula
- Increased environmental stewardship and agricultural knowledge, which ensures a safe, sustainable, and secure food supply

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Master Food Preserver Program- Dr. Katherine E. Soule

The Challenge

A resurging interest in food preservation in Santa Barbara County in recent years highlighted the lack of local information and resources on up-to-date and safe food preservation practices, critical in reducing serious illness.

Responding to the community's interest and concerns regarding home food preservation, the UCCE in San Barbara County launched the Master Food Preserver program.

Preserving nature's seasonal bounty one can at a time.

Addressing the Challenge

In October, the Master Food Preserver (MFP) Program conducted interviews to recruit volunteers for the program's 2016 MFP Training. Two residents from Santa Barbara County will be participating in the training and will complete the extensive 10 week course in April as a certified UCCE MFP. Once certified , MFP's are able to coordinate with Santa Barbara Master Gardeners in providing educational public classes, host Farmers' Market booths, as well as partner with the 4-H Youth Development Program in Santa Barbara County.

The implementation of the Junior Master Food Preserver 4-H project is underway. This joint collaboration between the MFP Program and the 4-H Youth Development Program provides youth the opportunity to establish preservation skills, where they are able to learn a variety of food preservation methods such as water-bath canning, pressure canning, dehydrating, and freezing. This new project hopes to be implemented in 2016 with representatives from Santa Maria, Lompoc, Goleta, and Santa Ynez.

Additionally, further collaboration is being fostered between the MFP Program and Master Gardener Program. In December, a conversation was taken place about the possible outreach efforts that both programs can do simultaneously. The MFP program coordinator, as well as an MFP, will be attending a Master Gardener planning meeting in January 2016 to build a stronger and cohesive relationship, as well as discuss potential public classes opportunities.

Public Value

The UC ANR Master Food Preserver program is a public service for residents who want to learn safe methods of preserving produce sources from farmers' markets, local grocery stores, or gardens. These efforts benefit Santa Barbara County through:

- Decreasing health care costs by reducing instances of food borne illness through safe home food preservation practices
- Increasing community wellness by creating co-capacity building with volunteers who are trained to provide services at lower costs to community residents
- Increasing environmental sustainability through decreased food waste by teaching residents how to preserve food that might otherwise spoil before consumption
- Increasing economic stability by growing the purchasing power of residents who can use home food preservation techniques to maximize their food resources
- Increasing the economic vitality of resident food producers by empowering consumers to choose locally grown commodities

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Master Gardeners- Mary Bianchi & Program Director, Fiona Brennan

The Challenge

Communities beyond the reach of the land grant campuses of the University of California present special challenges for outreach and extension of research in new horticulture practices to home gardeners.

Research based information about home horticulture, pest management; sustainable landscape practices and other environmental and natural resource issues support informed decisions by home gardeners promoting healthy, safe and prosperous communities in Santa Barbara County. Local Master Gardener volunteers, trained by the University of California, provide information and problem solving opportunities.

Master Gardeners (L-R) Deborah Meade, Janet Townsend, Leyla Williams, Dulcie Sinn, and Linda Oakley

Addressing the Challenge

Master Gardeners presented three workshops to close out the year:

- "Life beneath your feet–Soil health and why it matters" presented the importance of soil and plant health to 31 attendees. Master Gardeners explained how to recognize and maintain healthy soil, highlighting plant and soil biodiversity.
- "Put Your Garbage to Work–Composting and Vermiculture" a workshop held in North county ,was attended by 16 community members and explained how to use garbage for compost and how to care for vermicomposting worms.
- "A Winter Deciduous Pruning Clinic" was attended by 12 people at La Huerta Garden at the Mission. Master Gardeners provided information on drought tolerant trees, water management, and winter garden management. Pruning techniques were demonstrated with pomegranate, plum, peach, and mulberry.

Bilingual Master Gardeners provided instructions on growing food for home gardens for the Santa Barbara Food Bank–"Grow Your Own Way" project at three events reaching 103 largely Spanish-speaking community members.

Master Gardeners at Santa Barbara Farmers' Market reached 53 home gardeners, answering questions on the Asian Citrus Psyllid (ACP), drought tolerant landscapes, pests, mulch, and fruit trees. New contacts were made at the new Master Gardener project at Mesa Harmony Garden highlighting eco-social resilience. Our volunteer work at Alice Keck Park Memorial Gardens and La Huerta Garden reached 896 community members and helped raise awareness of beneficial insects, sustainable methods of planting, seed identification and collection and soil management .

Master Gardeners volunteered 799 hours to community education representing $21,473 in educational activities.

Public Value

The University of California Master Gardener Program is focused on promoting extending research based information on sustainable landscape practices. This effort benefits Santa Barbara County through:

- Safe gardening practices that help to protect water and water quality, support healthy ecosystems and enhance wildlife and biodiversity
- Sustainable local food systems that enhance food security for families, neighborhoods, and communities
- Sustainable landscape practices that create efficient communities by conserving water and energy, and reducing and reusing green waste
- Effective prevention, detection and management of invasive and endemic species through public outreach and education that helps to preserve a prosperous agricultural economy
- Increasing science literacy of Master Gardeners and their clientele through quality education and outreach

UC CalFresh Nutrition Education– Dr. Katherine Soule

The Challenge

In 2009, the Santa Barbara County Department of Public Health reported that approximately 1/2 of adults and 1/3 of teens in the county are overweight or obese. Obesity is a contributing factor of disease and death. Rates of obesity are generally higher among low -income populations.

To improve the health of the public, the University of California CalFresh Nutrition Education Program (UC CalFresh NEP) provides high-quality, nutrition and physical activity education programs for youth and adults in Santa Barbara County, focusing on low-income populations.

Student leading stretches to warm classmates up for physical activity.

Addressing the Challenge

In an effort to address an identified need in Santa Barbara County for more opportunities for moderate to vigorous physical activity, UC CalFresh has been building programming around physical education curricula and Zumba dance fitness activities.

In November, UC CalFresh staff trained 16 Santa Maria High School (SMHS) students to deliver CATCH (Coordinated Approach to Child Health) physical activity curricula. The 16 students work in three elementary schools conducting P.E. lessons with students in kinder-garten through 6th grade. The SMHS students were trained in fun, developmentally appropriate physical activities with a focus on movement skills, social development and increasing students' levels of moderate to vigorous physical activity. The CATCH program emphasizes games that are fun and easy to implement while increasing participant motivation and understanding of the importance of lifelong physical activity.

Additionally, in October through December, UC CalFresh Educators collaborated with the Santa Maria and Guadalupe Boys and Girls Club after-school programs to provide weekly nutrition education and Zumba dance fitness to 45 youth. The goal of the physical activity programming is to identify youth that are motivated to develop their own dance fitness choreography and/or eventually lead dance fitness classes with their peers.

In addition to this new physical activity programming, UC CalFresh continued to collaborate with the Santa Maria-Bonita school district to provide nutrition education and obesity prevention services focused at three school sites reaching approximately 2560 students and 84 teachers.

Public Value

The UC CalFresh NEP is focused on improving the health of the public, which in turn reduces public costs by providing research-based quality nutrition education. These efforts include:

- Serving as a vital bridge between the learning and knowledge of the UC system and our community.
- Promoting healthy living, food safety, food budget maximization, and physical activity to CalFresh recipients and other low-income individuals, families, and youth.
- Tailoring the latest science, curriculum and information to the needs, culture and language of low- income communities to provide culturally sensitive programming that meets nutrition education and resource needs in Santa Barbara County.
- Enhancing individual efforts to make healthier lifestyle choices by utilizing the Socio-Ecological Model (SEM) to encourage social and environmental (e.g. home, school) changes.

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Viticulture– Mark Battany

The Challenge

Growers of wine grape vineyards throughout California face challenges with increased competition for limited water supplies and potential changing climate conditions.

Improved information on climate conditions resulting from local field research can provide growers with the knowledge to make the most informed decisions possible to ensure that their vineyards remain productive and economically viable under these changing conditions.

The efficient management of irrigation water will become increasingly more critical in the future. Limitations of water supplies will force all farmers and other water users to generate the maximum possible returns from their available water.

Water-stressed Chardonnay at bloom in Santa Barbara County, with very limited foliage.

Addressing the Challenge

The 2015 season saw very low crop yields in many vineyards on the Central Coast. This was most severe in parts of San Luis Obispo County, but vineyards in Santa Barbara County did not pass unscathed. When such conditions are observed on a large regional basis like this, it is likely that regional weather conditions were the primary culprit. The two weather conditions that proved challenging for grape growers in 2015 were the continuation of the drought, and the very cool temperatures at some sites during the critical spring flowering period.

With the additional year of drought, soil moisture conditions continued their drying trend, with ever less moisture being available at the deeper soil depths as compared to earlier years in the drought cycle. Thus, conditions were set for vines to suffer if an even greater amount of irrigation was not available to water the vines and replace the diminished supply. This was not available at all sites, and early season growth in particular often suffered as a consequence. Flowering success is reduced on such vines.
These drought stress conditions were exacerbated with excessively cool conditions at some sites; the successful fertilization of flowers and resulting set of fruit requires that temperatures are sufficiently warm. Too-cool temperatures led to poor fruit set, if the timing of the cool temperatures coincided with the critical flower susceptibility period.

At sites where both drought stress and cool-temperature flowering stress occurred, yields were diminished significantly.
The summary article can be viewed at the Grape Notes Blog .

Public Value

The University of California Viticulture/ Soils program in Santa Barbara County is focused on developing and extending critical research-based information to help wine grape growers maintain sustainable production. This effort benefits Santa Barbara County through:

- Achieving sustainable wine grape vineyards that enhance productivity, crop quality and economic returns to growers with benefits to the entire local economy.
- Vineyard irrigation and soil management practices that help reduce water use and maintain soil productivity, thus relieving the strain on impacted water resources and ensuring more reliable supplies for all water users.
- Improved understanding of frost conditions and protective measures to help achieve effective practices that minimize impact on water resources

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Small Farms and Specialty Crops– Dr. Mark Gaskell

The Challenge

Small-scale fruit and vegetable growers rely on relatively higher value, lower volume specialty crops to remain economically competitive. UCCE field trials and educational programs are focused on developing new crop alternatives and alternative cultural practices to make small-scale agriculture more viable and competitive in Santa Barbara County.

Field trials are conducted often and the results of these trials, associated greenhouse or laboratory studies, and the experiences of other specialists are then assembled into educational outreach programs to educate and guide growers and industry representatives on the best current science- based information.

One-year old planting of coffee inter-planted with avocados – Gaviota, CA.

Addressing the Challenge

Development of alternative crops and new markets is one important aspect of assisting California small farms to remain viable, competitive, and successful. In a collaborative effort that began in 2001 between UC Small Farm and Specialty Crops advisor Mark Gaskell and Santa Barbara grower Jay Ruskey of Goodland Organics, coffee has emerged as a viable new small farm crop for coastal and southern California. This research and development effort with coffee over the past several years has found that multiple varieties of coffee can be productive under coastal California conditions; but more importantly with appropriate management, will produce exceptional specialty coffee that consistently produces quality on a par with the best coffees in the world. New coffee plantings are now established on multiple Santa Barbara County farms and on a total of 16 farms between Cambria and Temecula in San Diego County.

Critical to the success of coffee production in California is the growing demand for specialty coffees and roasting techniques and the evolution of marketing alternatives for small lots of coffee beans to alternative local and international markets. Different California metropolitan centers are enjoying new coffee outlets of all types. This along with local and regional processing options and interest in "local" products generally, has prompted a growing demand for locally grown, processed and roasted California coffee. But the potential market also extends to international markets in Asia and elsewhere via the internet. New coffee plantings are planned for at least a dozen additional farms in early 2016.

Public Value

Small-scale agricultural producers need reliable and current information on the most promising crop alternatives and the most efficient cultural practices if they are to remain economically viable. Recent research and educational outreach programs have included:

- Development of alternative small fruit – berry crop varieties and cultural practices
- Contributed to establishment of blueberries, blackberries, and raspberries as profitable new crops in Santa Barbara County
- Development of new information and practices to guide organic strawberry and other long season organic fruit growers for efficient management of nitrogen and water
- Provided the research and educational base for establishment of coffee and tea as new crops in Santa Barbara County

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Strawberries and Vegetables – Dr. Surendra Dara

The Challenge

Public health and environmental resources are protected through efficient use of agricultural inputs and safe agricultural practices. Strawberry and vegetable growers and pest control advisors are continually in need of information on improved production technologies and strategies for managing endemic and invasive pests, diseases, and weeds. Optimizing inputs and maximizing returns with food safety in mind are key strategies for healthy, safe, and prosperous agricultural operations. The Strawberry and Vegetable program identifies growers' needs, develops solutions based on sound scientific research, and extends information in a timely and proactive manner.

Attendees at the annual UCCE Santa Maria Strawberry Meeting

Addressing the Challenge

During this quarter, the following activities were accomplished:

- Completed irrigation and nutrient management studies in strawberries and cauliflower. Also completed a Bagrada bug management study in organic broccoli. Initiated a weed management and erosion control study in strawberries. Continued monitoring for the brown marmorated stink bug.
- Authored eight extension articles about the risk of lygus bug in celery and tomato bug in tomato and other vegetables, role of lygus bug in strawberry fruit damage, strawberry IPM studies, conserving irrigation water in strawberries with micro-sprinklers, and the importance of IPM in crop production.
- Published the revision of Spanish strawberry manual and the first version of English strawberry manual produced in collaboration with Cachuma RCD. Published a review article about the virus decline of strawberries and management options.
- Organized UCCE annual strawberry meeting, with 57 attendees.
- Articles in two eNewsletters were viewed about 16,074 times and the IPMinfo app was downloaded 39 times during this quarter.
- Provided input for four media enquiries about various crop production and protection topics. UC ANR's Green Blog featured the micro-sprinkler study, American Phytopathology Society's newsletter wrote about the strawberry virus decline article, and Entomological Society of America's Entomology Today wrote about the article on a potential invasive pest.
- Reached out to 233 people through direct contact and 355 through extension meetings.

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Public Value

The UCCE strawberry and vegetable program promotes a prosperous local economy, as well as a safe and healthy food system through:

- Improved production practices by optimizing input costs and increasing yields
- Innovative research on alternatives to chemical fumigants, insecticides, miticides, fungicides, and improved Integrated Pest Management practices
- Efficient use of fertilizers and irrigation water which contribute to reduced leaching of nitrates, reduced ground water contamination, and water conservation
- Education on invasive pests and diseases that impact both the farming community and home gardeners better equips them to take appropriate preventive and/or control measures

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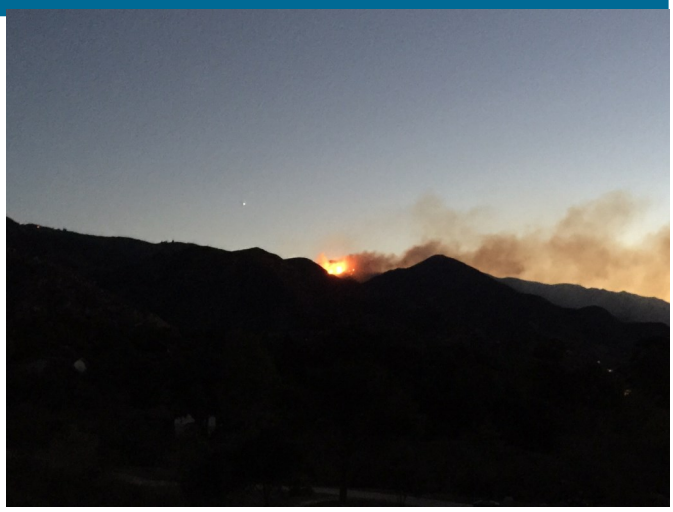
Fire Ecology & Management- Dr. Max Moritz

The Challenge

Understanding the nature of fire in California can help to save lives, minimize property damage, and protect the environment. Focusing broadly on fire ecology and management, this program brings UC research expertise to Santa Barbara County on the following topics:

- Quantifying the natural ranges of variation in fire regimes including frequency, size, seasonality and intensity) within fire-adapted vegetation.
- Understanding where and when various fuel management techniques are likely to succeed and be sustainable.
- Mapping fire weather patterns, which historically have been associated with the greatest losses.
- Modeling linkages between fire activity and climate change.



Early morning shot of the Gibraltar Fire, October 29, 2015. Photo: Max Moritz

Addressing the Challenge

During this quarter Specialist Max Moritz continued working with local citizen science volunteers to maintain local Live Fuel Moisture (LFM) data sampling and processing, which feed into regular updates and distribution though the Santa Barbara Botanic Garden website. He continued to work with Santa Barbara City Fire on a Memorandum of Understanding to continue long-term access to LFM sampling sites on local public land.

As a board member of the Santa Barbara County Fire Safe Council, Moritz continued to work with local constituents on fire-related issues. With colleagues at UCSB, he also submitted a proposal for restoration in the Zaca Fire area of Santa Barbara County. With potential funding through the Los Padres National Forest for post-fire restoration , this project would look at how well Bigcone Douglas-fir is regenerating in the footprint of the Zaca Fire.

Public Value

Fire is an important and natural process in almost every terrestrial ecosystem of California, yet it is one of the most persistent threats facing communities that live on fire-prone landscapes.

Communicating and implementing the latest scientific information about fire research is crucial for making communities safer, reducing property damage, saving lives, and protecting the environment.

UC Cooperative Extension helps Santa Barbara County create safer, healthier and more prosperous communities through efforts that emphasize the following:

- Education of homeowners about fire danger and preparedness steps
- Communication with fire managers, policy makers, and planners about long-term fire-related decision making.

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Soils, Water, Subtropicals- Dr. Ben Faber

The Challenge

Santa Barbara County's agricultural competitiveness depends on adopting new scientific and technological innovations derived from new knowledge in agriculture. Research and educational efforts must enhance the opportunities for markets and new products. Creating a sustainable local agricultural economy also depends upon improving water quality, quantity, and security; managing pests and diseases; and improving cultural management practices for subtropical producers.

The Soils/Water/Subtropicals Program has a 60 year history of local research and extension that optimizes crop production, maximizes net farm income, conserves natural resources and protects the environment.

Santa Barbara is famous for Cherimoya fruit.

Addressing the Challenge

Ben Faber continues his extension work with Santa Barbara County subtropical fruit growers, providing evidence based information via phone and email regarding production issues and water delivery cutbacks, with more than 40 grower contacts during this quarter.

Ben also coordinated and/or authored 36 articles for the Topics in Subtropics blog http://ucanr.edu/blogs/Topics/ with current I nformation for growers of subtropical crops. This readily accessed information on crop production had 32,035 direct hits during this report period. Typical viewership is more than 350 hits per day. A lthough this information is not specific to Santa Barbara County, it is information that is readily accessible and useful to Santa Barbara producers and is used by local growers.

Ben responded to ongoing drought conditions by developing and publishing information on Irrigating Citrus with Limited Water. This is UC Pub 8549 and is available as a free download at http://anrcatalog.ucanr.edu/pdf/8549.pdf .

Ben's significant contributions to avocado production in California was recognized by the California Avocado Society's with their 2015 Award of Honor.

Public Value

Healthy people and communities, healthy food systems, and healthy environments are strengthened by a close partnership between the University of California and its research and extension programs and the people of Santa Barbara County.

The Soils/Water/Subtropical Program provides innovation in applied research and education that supports:

- Sustainable, safe, nutritious food production through the delivery of information on soil and water management
- Economic success in a global economy through production of high quality fruit
- A sustainable, healthy, productive environment through improved water and nutrient management
- Science literacy within the agricultural community promoted by rapid access to evidence based information

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