

# Humboldt and Del Norte UC Cooperative Extension 2015 Year in Review

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*UCCE is dedicated to improving the **quality of life of Californians** by developing and delivering research-based information in agriculture and natural resources, and by supporting healthy families*



New oak research (page 5).



Using prescribed fire to manage oak woodlands (page 2).

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### Director's Report

What a relief it has been to have a good winter's rain!

In this *2015 Year in Review*, we offer highlights of how our programs touch families, communities and local businesses. To accomplish our mission we partner with Humboldt and Del Norte counties to offer **practical** solutions to life's problems, **connecting** the issues to the informational resources of the University of California and providing **trusted** research-based solutions.

2015 was rich in educational programs, and we brought many UC experts and scientists to our region. These folks shared their knowledge in oak ecology, drought management, forest genetics, family succession planning, wildland fire management, nutrition, youth development, livestock health management, cottage food business development, farm management and more.

Notable highlights for the year include: 1) completing the first phase of oak woodland research and hosting a regional oak symposium where we shared our findings with an audience from all over California and the Pacific Northwest (page 4); 2) Jeff Stackhouse helped develop an iPhone application for landowners to track ranch operations and livestock herds, and he initiated new range improvement research (page 5); 3) UC specialist Van Butsic shared his calculations of the quantity of *Cannabis* production in Humboldt County (page 4); and Jared Huffman toured Del Norte's lily farms with UCCE staff and Del Norte Farm Bureau members (page 5).

We also had some changes in our staff in 2015. Allie Hostler joined our tribal extension program, bringing her years of experience with the Two River's Tribune. Lenya Quinn-Davidson (photo to left) changed roles and is now our regional fire advisor. Each of these ladies is offering amazing programming.

You are more than welcome to stop by, give us a call or follow us on Facebook. We look forward to assisting you!

**Yana Valachovic**, County Director and Forest Advisor



Wood chips for bioenergy (page 4).



Master Gardeners at a pumpkin patch (page 7).



Fire science education (page 2).



Master Food Preservers (page 3).

# UCCE Partners with the Community through

Field tour participants explore the area burned in the Lodge Fire .



## FIRE OUTREACH AND EDUCATION

As the leads for the northern hub of the California Fire Science Consortium, Lenya Quinn-Davidson and Yana Valachovic provide a number of fire-related resources and events to landowners, land managers and other interested groups in the region. Highlights from 2015 included fire science field tours of the Lodge Fire in Mendocino County, the Oregon Fire near Weaverville and a chaparral study at UC's Hopland Research and Extension Center. UCCE also co-sponsored the 3rd annual Northern California Prescribed Fire Training Exchange (Nor Cal TREX), a two-week hands-on prescribed fire training that brings firefighters and other fire practitioners from across the country to our region to burn together and learn together. More events are planned for the coming year, including prescribed fire workshops for private landowners and this fall's Nor Cal TREX, which will be focused on women's leadership. Webinars, research briefs, and other resources are available on the Consortium website at [www.cafiresci.org](http://www.cafiresci.org) and the Council website at [www.norcalrxfirecouncil.org](http://www.norcalrxfirecouncil.org).

## DEL NORTE'S EASTER LILY

Ninety-nine percent of the world's Easter lilies are grown in Smith River, California and Harbor, Oregon by four family farms. These farms provide 250 seasonal and 40 full-time employees. Every year Deborah Giraud and Dr. Becky Westerdahl from UC Davis work with these lily growers to evaluate the effectiveness of both conventional and organic nematicides against the nematode *Pratylenchus penetrans* on bulbs planted the previous October . Dr. Deanne Meyer has also been working with growers in farm water quality management techniques. In 2015 Yana Valachovic organized a tour with US Congressman Jared Huffman and the Del Norte Farm Bureau to learn more about the advances they are making in managing their unique industry.

Congressman Jared Huffman examines a developing Easter lily bulb.



## LIVESTOCK WORKSHOPS

The annual UCCE Winter Animal Health Workshop roadshow provided up-to-date information on pinkeye, invasive species management, regulatory issues, ranch to feedlot trials, new technologies and rangeland water quality. Jeff Stackhouse also provided quality assurance trainings for Humboldt and Del Norte 4-H and FFA youth. These trainings are required for youth who raise large animals and attend the state fair. In February 2015 the International Society for Range Management meetings were held in Sacramento, where Jeff provided two trade show trainings and two scientific publications on range-related issues and new technologies. These presentations sparked an invitation to Denver from the National Beef Cattle Association to conduct similar trainings on the BeefTracker prototype to some of the largest ranching operations in the nation. Lastly, UCCE co-organized and hosted Bud William's livestock handling and marketing course in the spring.

Beef cattle near Petrolia.



# Educational Programs

## EXPANDED FOOD AND NUTRITION EDUCATION PROGRAM (EFNEP)

This USDA-funded program has helped improve the lives of low-income adult and youth in our community. The program offers 8 hours of nutrition education and served 178 adults and 424 youth this past year across Humboldt and Del Norte counties. The adult lessons focus on making and eating healthy meals, reading nutrition labels, planning meals and shopping on a budget. Of the adults who completed the program, 82% showed improved nutrition practices, such as meal planning and making healthy food choices, and 81% improved their ability to manage their food resource practices, including comparing prices and creating and shopping with a grocery list. They also ate more fruits and vegetables after completing the program. Although many youth struggle with making healthy food choices, this program helps guide their decision making through the Eat Fit program, which focuses on goal setting, label reading, eating breakfast, exercising and advertising. This year the youth program expanded the Boys and Girls Club of the Redwoods partnership and provided nutrition education to all youth participating in the summer Junior Giants baseball program through their coaches. In all, 71% of youth improved their ability to choose foods consistent with dietary recommendations or knowledge gained from the program. Collaborations with community agencies such as the California Tribal and Yurok Tribe Temporary Assistance for Needy Families (TANF), Healthy Moms, Bonnie Brown and Lee Brown Programs, Humboldt County Office of Education, Eureka City Schools, Rohnerville Elementary School District, Loleta Union Elementary School District, and others. All classes are taught in English or Spanish by Jessica Rebholtz.

## SUCCESSION PLANNING

Landowners and their families learned techniques to help pass their land and its legacy on to the next generation. Workshop attendees clarified their values and goals for the family properties/business, developed tools to determine their heirs' interests, and became aware of legal considerations and financial impacts of ownership transfers across generations. Let us know if you are interested in attending a future succession planning class .

## GROUNDWATER

With the passing of the Groundwater Sustainability Act, UCCE assisted the County of Humboldt with the formation of the Humboldt County Groundwater Workgroup. Additionally, UCCE hosted (with Humboldt County Resource Conservation District (RCD) and Western United Dairymen) an annual dairy water quality workshop to assist dairy producers with reporting to remain in compliance with the North Coast Regional Water Quality Control Board. UC specialist Dr. Deanne Meyer continued her work with Humboldt and Del Norte dairy producers, in collaboration with Western United Dairymen, the RCD and the Natural Resources Conservation Service, to assist dairy operations with water quality regulatory compliance.



Youth experiencing healthy food options.



Clif Clendenen and his son Drew work together at Clendenen's Cider Works.

Pasture irrigation in the Eel River Valley.



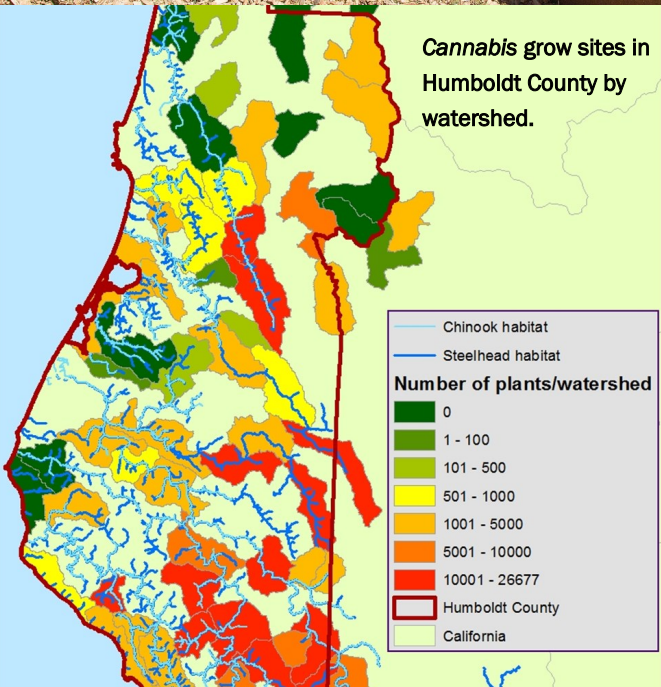
# UCCE Creates Knowledge through



Douglas-fir getting a stronghold in an oak woodland.



Processing forest residues for bioenergy.



## OAK WOODLAND RESEARCH, POLICY, AND EDUCATION

2015 was a busy year for oak woodland-related efforts at UCCE. Yana Valachovic and Lenya Quinn-Davidson wrapped up a three-year, UC-funded research project on conifer encroachment in white and black oak woodlands, showing clear patterns of Douglas-fir establishment in woodlands across the North Coast. Their research assessed the relative ages of oak and fir—with oaks being substantially older even when they’re smaller—and it looked at the negative effects of conifer encroachment on biodiversity and oak growth and health. They also secured funding for new research on the effectiveness of oak woodland restoration treatments, and led a partnership of agencies and organizations in bringing in a \$2.6 million grant for oak woodland restoration on private lands. In November, UCCE hosted a large conference on oak woodland ecology, bringing experts from throughout the Pacific Northwest to present on various ecology and management topics. The conference also included field tours to Redwood National Park and to private ranches in the Bridgeville area. The UCCE team has also been actively involved in oak-related policy changes, working to create new pathways for timely, cost-effective oak woodland restoration work. There is significant momentum on oak issues right now, and the coming year promises to be full of exciting opportunities around oak woodland conservation and restoration.

## BIOENERGY FOR HUMBOLDT

In 2015 Yana Valachovic and Dan Stark were awarded a grant to support public awareness of bioenergy. Forest and mill residues can provide a renewable source of energy and simultaneously help forest health and wildfire prevention. This outreach is just in time for the developing Humboldt Community Choice Aggregation (CCA) program. A CCA program will allow Humboldt County to pursue its own priorities, such as local energy generation, and to support economic development. See the back page for information about upcoming public workshops in May 2016.

## HOW MUCH MARIJUANA IS GROWN IN HUMBOLDT?

UC Berkeley specialist Van Butsic and his research team have completed their first round of analysis to quantify marijuana (*Cannabis*) operations in Humboldt County. The goal of this research is to evaluate water use and other environmental impacts. Dr. Butsic used aerial photographs from 2012 to quantify all visible marijuana grows in half of Humboldt County’s watersheds. His research observed ~4200 separate grow sites with up to 300,000 plants being grown in 2012. It is estimated that marijuana plants use 5.8 gallons of water per day. Using these numbers, 300,000 plants may use ~800 acre feet of water per year. Because these estimates are for only half of the watersheds in Humboldt and are derived from 2012 imagery, this is likely an underestimate of the total water usage in Humboldt’s *Cannabis* industry. The timing of the water use and the proximity to riparian habitats needs further analysis and are important considerations of the industry’s impacts.

# Research and Special Projects

## COYOTE BRUSH RESEARCH TRIAL

Jeff Stackhouse initiated a two-year research trial to assess efficacy of four different herbicides on coyote brush. Three application techniques are being tested: 1) foliar spray to wet; 2) drizzle spray to wet; and 3) hack and squirt. Final statistical results will be available next year, however, early results indicate incomplete kill following the hack and squirt method, that smaller plants appear to be more susceptible to treatments than larger plants, imazapyr and glyphosate are more effective, and that drizzle appears to work faster than foliar spray and requires less labor and chemical. Jeff has also initiated milk thistle control trials using both conventional and organic methods.

## TRIBAL EXTENSION PROGRAM

In 2015 Deborah Giraud, Andrea Lanctot, Norma McAdams, Allie Hostler, Kaelie Pena and Nicole Woodrow delivered the Federally Recognized Tribes Extension Program (FRTEP). This program is supported by a USDA grant to address a long-standing need among tribes for equal access to extension, with a focus on youth and production agriculture. The 2015 program included: 1) school garden projects in Klamath, Weitchpec, Pecwan and Orleans where youth had hands-on lessons about plant life cycles, seed propagation, transplanting, composting, vermicomposting, water conservation, nutrition and more; 2) support for the Hoopa High School garden club greenhouse project; 3) a three day college tour to UC Berkeley, Sonoma State, and Santa Rosa Community College; 4) support to the Klamath Siskiyou Outdoor School for natural resource restoration and outdoor skills camp; 5) Hoopa Rodeo grounds revitalization support; 6) staff support for the Hoopa 4-H club Harvest Festival; and 7) canning, food preservation, cottage food and fruit tree pruning workshops in Smith River, Klamath, Hoopa, Weitchpec and Orleans.

## BEEFTRACKER IPHONE APPLICATION

Jeff Stackhouse has been pioneering a BeefTracker Application for the National Beef Cattlemen's Association. This inventory tool is an iPhone-based application that tracks cattle inventories and locations across one or many ranches. This technology provides ranchers and ranch managers with stocking histories that can be used for better management of cattle and grazing resources, as well as data on the productivity of the ranch over multiple years. The BeefTracker application allows operators to set up individual ranch maps and calculates pasture size or ranch-wide grazing acreages. The maps can be complex or simple and can include infrastructure (e.g., fences, corrals, water troughs, etc.) as well as conservation efforts (e.g., NRCS projects, weed management, controlled burns, reseeding, etc.). The application can be used for range monitoring to store location-specific monitoring photos or even more technical data if desired.

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UCCE staff at the Humboldt County Agriculture Center

# UCCE Partners with the Community and

## COMMUNITY PARTNERS

**UCCE contributes to the community through partnerships and collaborative activities with local groups, organizations, and agencies to achieve common goals. The following is a list of some of the partners with whom we collaborated this past year. We appreciate working with each of you. Thank you for your service to our community!**

American Ag Credit	James Able Forestry
Buckeye Conservancy	Karuk Tribe
Bureau of Land Management	LatinoNet
Bonnie Brown Residential Treatment Center	Learn and Serve America, EHS Project Serve
CAL FIRE	Les Brown Residential Treatment Center
CA Beef Cattle Improvement Association	Mattole Restoration Council
CA Center for Rural Policy	McKinleyville Family Resource Center
CA Department of Fish and Wildlife	Natural Resources Conservation Service
CA Department of Parks and Recreation	Northcoast Co-op
CA FarmLink	Northcoast Environmental Education Network
CA Fire Science Consortium	Northcoast Gardening Collaborative
CA Oak Mortality Task Force	Northcoast Regional Land Trust
College of the Redwoods	Northern CA Prescribed Fire Council
Community Assistance Network	Northern CA Society of American Foresters
Crescent Elk Middle School	Northwest California Resource, Conservation & Development Council
Decade of Difference	Pregnancy Care Center
Del Norte Co. Dept. of Health and Human Service	Redwood Coast Institute
Environmental Protection & Information Center	Redwood Community Action Agency
Food for People	Redwood National and State Parks
Food Council of Del Norte Co. and Adjacent Tribal Lands	Redwood Region Logging Conference
Fortuna Family Resource Center	Rio Dell Family Resource Center
Friday Night Live	Small Business Development Corporation
Green Diamond Resources Company	Society for Range Management
Healthy Moms, Eureka	St. Joseph Hospital—Madre a Madre Program
Hoopla Valley Tribe	Temporary Assistance for Needy Families (CA Tribal, Yurok)
Humboldt and Del Norte Cattlemen's Association	USDA Forest Service
Humboldt Area Foundation	Watershed Research and Training Center
Humboldt Community Network	Western United Dairymen
Humboldt Co. Department of Health and Human Service	Westside Community Improvement Assoc.
Humboldt Co. Farm Bureau	Wiyot Tribe
Humboldt Co. Fire Safe Council	Women in Timber
Humboldt Co. Food Policy Council	Yager/Van Duzen Environmental Stewards
Humboldt Co. Office of Education	Yurok Tribe
Humboldt Co. Resource Conservation District	
Humboldt Co. Weed Management Area	
Humboldt Co. Wool Growers Association	
Humboldt Redwood Co.	
HSU Forestry and Wildland Resources Department	

## 4-H IN HUMBOLDT AND DEL NORTE

### WHAT IS 4-H?

The 4-H Youth Development Program, coordinated by Dorina Espinoza and Thomas Stratton, is an informal and practical educational program for all youth 5-19 years of age. In the 4-H program, youth experience a sense of belonging within a safe and inclusive environment, master their skills through hands-on learning, develop their independence through leadership opportunities, and learn generosity through service learning projects. All these experiences are fostered through partnerships with caring adult volunteers. Together youth and adults partner to 'Make the Best Better' at the local level.

### CARING ADULT MENTORS

Nearly 250 adult volunteers are partnered with over 630 youth through the Humboldt and Del Norte 4-H programs. The adults are screened, trained and supported to work with youth in a safe and inclusive environment. These 4-H adult volunteers bring their expertise and interests to 4-H to lead projects and activities and extend the research-based experiential learning to youth's interests and curiosity. Volunteers receive trainings to equip them with the resources, support and tools to guide youth in attaining their full potential.

### EQUIPPING WITH LIFE SKILLS

All 4-H activities engage youth to develop the skills they will need to be successful throughout life. The adult volunteers use UC curricula for over 50 hands-on projects ranging from archery to animal husbandry to gardening. These activities engage youth in the learning process to help them understand connections within the subject area. Working with adult volunteers on these projects, youth gain the ability to self-correct, learn, be self-motivated and create.

### DEVELOPING YOUTH LEADERS

The 4-H program helps youth reach their fullest potential through opportunities to acquire skills and confidence for leadership and self-discipline, and develop independence for decisions made and actions taken. In Humboldt and Del Norte counties, youth have the opportunity to serve in leadership roles as club officers, committee members or chairs, camp counselors, county and state ambassadors, and more. In addition, 157 youth in the region attended the NorthCoast Youth Summit to learn leadership, job, and career skills, among other learning. Youth who exercise influence over their lives develop their potential to become self-directing, autonomous adults who actively participate in their future.

### STRENGTHENING RELATIONSHIPS

The 4-H adult volunteers are caring adults that serve as advisors, guides, and mentors and help youth by creating expectations and setting boundaries. Within this youth-adult partnership, youth have the opportunity to serve as leaders while being guided by the support of adults. Youth learn how to accept and work with those within intergenerational groups, which helps youth strengthen their family and peer relationships. Connecting youth with others provides solutions to the needs of today and the future for themselves, their families, their communities and their world.

# Extends Services through Volunteer Programs

## MASTER FOOD PRESERVERS

Forty Master Food Preservers provide educational outreach in food preservation in both Humboldt and Del Norte counties. The 4th train-the-trainer program was held in March 2015, and included 14 graduates who attended 8 classes delivered through a combination of lectures, videos and practiced hands-on preparation of preserved foods. These trained and certified volunteers can be seen in the farmers' markets, where they have prepared recipe sheets to highlight what's in season. Additionally they can be found offering bi-monthly demonstration classes at the Eureka Co-op and have recently offered classes at the food bank. By buying in season and in bulk, families can preserve foods and save money on their food budget. If you would like a demonstration for a group of your friends or neighbors, give us a call and we will match you up with a volunteer or two!



Master Food Preservers at the Arcata Farmers' Market.

## MASTER GARDENERS

This year the 13-week Master Gardener classes were held in both Eureka and Crescent City. After completing their training, Master Gardeners share their knowledge by volunteering with various projects throughout the counties. Deanna Beeler and Jamie Levitan help at the Deep Seeded Farm kids day and the Co-op pumpkin patch; Bernadette Clueit provides local workshops to garden clubs and volunteers at the Coastal Grove school garden; Zeal Stefanoff volunteers at the Native Plant Society nursery; Claire Perricelli supports the Ryan Garden and the Trinidad school and Trinidad native plant garden; and a recent group of Master Gardeners developed a rain garden at the Ryan House and Garden in Eureka. The rain garden acts as a biofilter where the soil microbes can digest and reduce pollutants and reduce runoff to storm drains. If you would like to develop your gardening skills, consider becoming a Master Gardener.



Master Gardeners at the Seed and Plant Exchange.



Pastels on the Plaza, Arcata October 2015



4-H members at the Board of Supervisors for 4-H Week.

**University of California  
Cooperative Extension-Humboldt and Del Norte  
5630 South Broadway  
Eureka, CA 95503-6905**

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## RETURN SERVICE REQUESTED



If you have special needs,  
please let us know.

### Upcoming workshops and events

#### 2016 Events

- Master Gardener training.** Weekly till May 19. Ag Center, Eureka.
- Prescribed Fire in Southern Humboldt workshop.** April 14. Redwood Playhouse, Garberville.
- Farmer and Rancher Financial Workshop.** April 22. Agriculture Center, Eureka.
- Soil Health: Build you bottom Lines.** May 12, Agriculture Center, Eureka.
- Workshop on oak woodland restoration and conifer girdling.** May 19, hosted on a private property near Redway.
- Biomass: Making Energy from Wood.** May 17, Agriculture Center, Eureka and May 19, Hopland Research and Extension Center, Hopland.
- Forestry Institute for Teachers– K-12 teacher curriculum enhancement program:** July 10-16, Humboldt State University, Arcata.
- Coast Redwood Forest Symposium: Past Successes and Future Directions.** September 13-15, Sequoia Conference Center, Eureka.
- Nor Cal Prescribed Fire Training Exchange (TREX)/Women's TREX.** Late October, across northwestern CA.

### Useful Resources

This collection of excellent informational resources can help you in the home, garden or with your agriculture or natural resource business.

- **Pest management** information for your home or garden [ucipm.ucdavis.edu](http://ucipm.ucdavis.edu)
- **Forestry resources**, publications and big ideas on how to steward California forest lands [ucanr.org/sites/forestry](http://ucanr.org/sites/forestry)
- Tips on how to grow a successful home **orchard** [homeorchard.ucdavis.edu](http://homeorchard.ucdavis.edu)
- **Small and family farms** resources and information [sfp.ucdavis.edu](http://sfp.ucdavis.edu)
- Research-based information on important issues facing the **horticulture industry** [ohric.ucdavis.edu](http://ohric.ucdavis.edu)
- Downloadable **publications** regarding agriculture and natural resources [anrcatalog.ucdavis.edu](http://anrcatalog.ucdavis.edu)
- UC research-based information, accomplishments, and statewide extension activities in planting, growing, and harvesting **fruits and nuts** [fruitsandnuts.ucdavis.edu](http://fruitsandnuts.ucdavis.edu)
- Information relevant to California vegetable **consumers, growers and processors** [vric.ucdavis.edu](http://vric.ucdavis.edu)
- Research in **weed management** [wric.ucdavis.edu](http://wric.ucdavis.edu)