



## Ranch Roundup

Greetings from the Farm Advisor,

As we creep towards the end of the year, I am looking back on 2019 and reflecting. It was a big year for me personally but also an amazing year for UCCE in Modoc County. We hired six seasonal employees over the year to conduct research on rangeland management, irrigated pasture, wildlife, wild horses, predator management, groundwater and more. These positions were possible through grants and partnerships totaling over \$200,000 this year. We were also able to host multiple field tours, workshops, and meetings educating producers from across the county.

I am looking forward to 2020 as we continue to extend our reach and impact in Modoc County. I invite you to attend two winter ag meetings showcasing our research and the importance of record keeping on your farm and ranch. The first one will be **January 22 5:30-7:30 at the Alturas Vet's Hall** and bring in speakers with more of a livestock focus and the second in **Tulelake February 28 (tentative) at the Intermountain Research and Extension Center** focusing on irrigated pasture, forage and hay crops. Meetings are sponsored by the Modoc County Farm Bureau, Modoc County Cattlemen and Cattlewomen and the Farm Service Agency (FSA). Looking forward to seeing you!

Sincerely,

*Laura Snell*

### House Keeping Corner

Would you rather get your newsletter through email?  
Let us know! We are going to start a listserve in 2020.

Is this newsletter not going to the right person?

Let us know!

Do you have a ranch manager or a friend or neighbor  
that would like a copy?

Let us know!

cmkunert@ucanr.edu, 530-233-6400

We want to hear from you!

## UCCE RESEARCH UPDATE

This year we hired six seasonal employees to work on a variety of projects throughout Modoc County. We have completed the permitting process and are starting a livestock composting project in Tulelake paired with trail camera monitoring of bones piles and non-lethal predator control workshops throughout to address increasing concerns about large predators. We also helped multiple state and federal agencies conduct research on wildlife habitat, healthy soils, and bird populations.

### Warner Mountain Meadow Monitoring

We finished up our fourth year putting cages out in meadows throughout the Warner Mountains. Along with the annual production cages, we monitor stream bank alteration, stubble height, browse species use such as willow and shrubs, and conduct landscape appearance annual use. We also utilized grazing fee credit money from voluntary permittee contributions to conduct additional monitoring in several allotments to supplement forest service monitoring efforts. We were able to conduct significant monitoring in the Warner Mountain Wilderness this year.

### Irrigated Lands Research

Preliminary results on the irrigated lands project will be presented at the Winter Ag Meeting in Tulelake at the end of February. Research plots have been established for over two years in Modoc County.

We have been looking at how irrigation water, pasture species, fertilization, haying, grazing, and management height affects production. The study aims to evaluate management practices in irrigated pastures and establish production baselines.

### Big Valley Groundwater Research

In partnership with the North Cal-Neva RC&D and Modoc County, UCCE Modoc has contributed significantly to data collection supporting the **Big Valley Groundwater Sustainability Plan (GSP)** development.

Two groundwater clusters were established in Modoc County this year, one at the Lookout Cemetery and one at the Adin Airport. These clusters have one deep well and three shallow wells that can tell us a lot about the elevation of groundwater and how groundwater is moving through the Big Valley basin. We also took groundwater samples from the deep wells and took surface and groundwater samples from multiple locations in Big Valley for evaluation. There were no undesirable results in the water samples that were taken. We looked at California drinking water standards as well as a variety of environmental metrics, and mineral levels.

UCCE Modoc went out with GEI Consulting, INC. and a geologist from Sacramento State to look at the geologic characteristics of the Big Valley Basin. We took rock samples from across the basin to have composition and age tests performed. We identified several possible groundwater recharge areas and learned about the volcanic and sedimentary history of the basin. All of this information is important for the creation of the GSP.

The joint Modoc and Lassen County GSP advisory committee has been established and members have been appointed by each board of supervisors. The first meeting will be in January and members of the public are encouraged to attend. The meeting will be held in Big Valley.

UCCE Modoc aims to help provide the best science available to be used in the GSP development. The feasibility study we are working on aims to think out-of-the-box and provide options for compliance in Big Valley that are not the typical increased taxes and decreased pumping actions taken by other basins. The unique characteristics of Big Valley provide opportunities for groundwater sustainability and longevity not available in other parts of the state.

**Save the Date!**  
Winter Ag Meeting

**Farm Service Agency (FSA)  
programs, crop reports, diversified  
forage crops, irrigated lands  
update, and more!**

**February 28, 2020**  
10:30 am

**IREC Center**  
2016 Havlina Road  
Tulelake, CA 96134

Lunch Provided by  
Modoc County Farm Bureau  
RSVP to (530) 233-6400



## COMPARISON OF TWO RIPARIAN SPRINGS: UNMANAGED WILD HORSES AND MANAGED CATTLE



There is sometimes skepticism regarding the negative influence of wild horse overpopulation on natural resources. When this happens, cattle grazing is often villainized as the origin of poor ecosystem health and is the first factor to be removed in an attempt to alleviate disturbance. However, cattle actually have a minimal impact if managed properly.

This study took place within the Devil's Garden Wild Horse Territory, an area managed by the Modoc National Forest in northeastern California. Wild horse populations have significantly increased beyond the appropriate management level and migrated outside of the designated territory. We selected two springs to compare, one on private land and one on public, but with similar soil types and topography. This location was uniquely situated with the boundary fence dividing the two springs allowing for side by side comparison of the two grazing management types. The private spring is within a ~32 acre pasture which has historically been grazed by cattle. This year, the pasture had 22 head from June 15 through August 16.

We measured four attributes including streambank alteration, stubble height, water quality, and macroinvertebrate presence. The FS spring exhibited high use based on nearly 100% streambank alteration while the private spring had approximately 50%. Both springs were within the 3-5" ideal for stubble height, but the FS spring averaged just over an inch taller than the private. When analyzing water quality, we found that the private spring had higher average dissolved oxygen, lower temperature, lower turbidity, and lower pH. These results are indicative of higher water quality and healthy habitat. This was further evidenced by the presence of sensitive macroinvertebrate species, including caddisflies, in the private spring.

These data suggest that wild horses have a negative impact on spring health. Unmanaged, year-round grazing compared to cattle which are only turned out seasonally is a huge contributor. Another factor to keep in mind is that horses are more aggressive in their grazing methods than cattle due to their prehensile anatomy. Because cattle lack upper incisors, they cannot bite off plants as close as horses can. Observations of the horses' behavior from game camera footage revealed them walking around in the spring which is likely the source of the increased turbidity and lower water quality. In contrast, the cattle tended to remain outside the streambank.

While the FS spring exhibited signs of heavy disturbance, it does appear to be in a state of recovery. In the past 3 years a total of about 300 horses have been removed from the area. Additionally, higher levels of precipitation received this year may have resulted in other watering holes being available and less concentration around this particular location. When examining 4 years of historical stubble height data, we recorded the tallest stubble height records this year.



## MY SUMMER WITH UCCE

### Selby Boerman, 2019 UCCE Intern

The past 6 months working as an intern for UCCE in Alturas have been a blur of summer and snow, grass and soil, wild horses and livestock, and small-town agriculture. When I stepped into this community two days after college graduation in June, I immediately fell in love with all that Modoc County has to offer. From the beauty of the Warner Mountains to the ruggedness of the Devil's Garden, it has been amazing to be able to live and work in such a diverse area.

This internship provided a huge variety of experiences, connections, and educational opportunities with various agencies.

One of the most notable experiences was assisting the Modoc National Forest with the 2019 wild horse gather, allowing a view behind the scenes of the wild horse issues and gather operation. I enjoyed being able to write about my experiences with the gather and help educate about some of the misconceptions surrounding wild horses. I also assisted the Forest Service with annual fall monitoring data collection and was able to gain more insight into grazing allotments.

Over the summer, I helped other agencies including USFWS and Cal Deer, and learned about wildlife projects related to goshawks and beavers.

Other projects I assisted with included a UCCE irrigated meadow study and a groundwater management project. The groundwater project was a unique

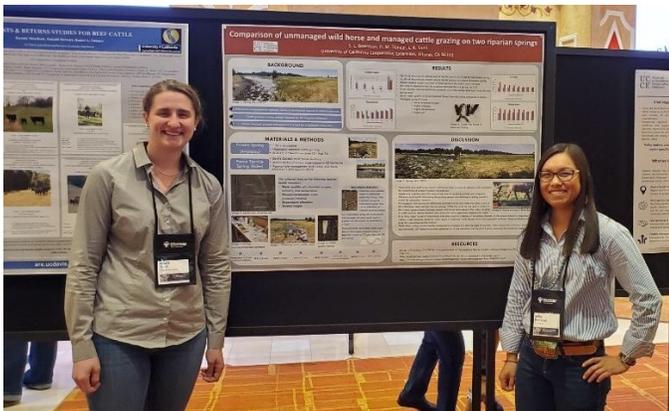
opportunity to learn about geology, drilling wells, and working with the contractor and engineers. All these projects allowed me to learn about new aspects of natural resource management.

My favorite days of the internship were when we took horses on an overnight trip to the Emerson Allotment of the Warner mountains to collect rangeland data. We spent the night at Patterson Lake, and the views and wildflowers were amazing.

Another of my favorite projects was a study we did comparing two springs on the Devil's Garden, one being grazed by wild horses and one being grazed by cattle. I made a poster highlighting this project and displayed it at the California Cattlemen's Convention in Reno, and will also present it at the Society for Range Management meeting in Denver in February.

The internship was not all work, however. I appreciated the educational aspect as well by attending workshops of a wide range of topics. These included prescribed fire, BLM wild horses, and beef cattle reproduction.

I really enjoyed the atmosphere of this internship and the efforts of everyone I worked with to make it a learning experience. I feel that it has been a great asset toward being successful in the agriculture industry in the future, and it was an experience I will take with me wherever I go.



Selby grew up near Montague, CA and has a small herd of beef cattle. She graduated from Cal Poly in June 2019 with a degree in Animal Science and will soon move to Nebraska to work with the University of Nebraska at the Gudmundsen Sandhills Research Center. We wish her luck in her new endeavor and thank her for all her hard work this year.

## DEVILS GARDEN COLT CHALLENGE

### Kira Olson, 2019 UCCE Intern

This year, UC Cooperative Extension and 4-H/FFA will hold the first Devil’s Garden Colt Challenge in Modoc County, a youth training program that provides youth between the ages of 9-18 a chance to learn more about wild horses. The program will be the first wild horse youth training program in California, and serves to provide knowledge to the community about the Devil’s Garden wild horses and their placement into good homes. 20 youth from 4-H or FFA in Modoc, Siskiyou, and Lassen Counties will be given a weanling from the Devil’s Garden plateau. The youth will have full responsibility for caring for and training the weanlings under the supervision of a mentor. The youth trainers will have approximately 5 months to train and work with their weanling before they compete in the Colt Challenge. This year the Colt Challenge will be held at the Modoc County Sheriff’s Posse show in Modoc County in May. There will be three classes that the youth trainers will compete in including halter, showmanship, and an obstacle course. High point and class awards totalling \$2500 were sponsored by the USFS-Modoc National Forest. Youth trainers will also have the opportunity to show their weanlings in both the Siskiyou County Golden Fair and the Modoc Junior Livestock show. High point winners in these two shows will receive a \$100 award. This new program will not only be an excellent learning experience for the youth, but will also provide more insight to the community about wild horse adoption and sale. It will show that these wild horses can be trained and used much like any other domestic horse. We encourage the community to attend the Sherriff’s Posse Show in May and support the 4-H and FFA members that will be competing in the Colt Challenge.



## Save the Date!

### Winter Ag Meeting

Learn about Farm Service Agency (FSA) programs, record keeping, preparing for the upcoming calving season, and more!

**Dinner Provided**  
RSVP to (530)233-6400

**January 22nd**  
**5:30-7:30**

Alturas Veterans Hall  
500 South Main St.  
Alturas, CA 96101



Sponsored by:  
Modoc Cattlemen & Women  
Modoc County Farm Bureau  
UCCE Modoc

## FROM THE MODOC COUNTY AG DEPARTMENT

Restricted material permits expire December 31.  
All applicators require an applicators license.

### Upcoming Grower Meetings:

Alturas 2/19/2020 Brass Rail  
Cedarville TBA March 2020 Fairgrounds

Applicator testing available by appointment at the Alturas and Tulelake offices and at the Modoc Ag Expo March 13th in Cedarville

Receive continuing education credits at several meetings in Modoc County this spring.

WE ARE ON THE WEB  
CEMODOC.UCANR.EDU

Non-Profit Organization  
U.S. Postage Paid  
Alturas, California  
Permit # 22

## COOPERATIVE EXTENSION

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## FUTURE EVENTS OF INTEREST

INSIDE THIS ISSUE:	
Research update	2
Grazing	3
Intern Experience	4
Colt Challenge	5

Alturas Winter Ag Meeting (Livestock Focus)  
January 22 5:30-7:30 Alturas Vet Hall

McArthur Winter Meeting  
February 11

Tulelake Winter Ag Meeting (Irrigated pasture, cropping focus)  
February 28 (Tentative) Intermountain Research and Ext. Center

Modoc Ag Expo  
March 13 9:30-1:00 Modoc County Fairgrounds– Cedarville