RANGE BULLETIN

Livestock & Natural Resources Newsletter

In this issue:

Editor
Rebecca Ozeran

Phone
559-241-6564

Email
rkozeran@ucanr.edu

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News Briefs

100th Annual California Ram Sale
Porterville Fairgrounds

Saturday, April 18, 2020, beginning at 9:30 AM.
Check out the website here for more information:
http://californiawoolgrowers.org/calendar/ca-ram-sale/

Disaster Preparedness

Livestock advisors from Mariposa to Imperial are beginning to create resources for animal operations to better prepare for disasters such as wildfire. Stay tuned for more information, or contact Rebecca at rkozeran@ucanr.edu with any questions or comments.

Teaching Teachers About Fire

A team of UCCE educators is updating and adapting the FireWorks K-12 curriculum to Oak Woodlands, from the Sierra Nevada Mixed Conifer Forest curriculum. These curricula are aligned with modern science education standards and are intended for teachers to incorporate fire ecology and wildfire resilience into their lessons. Lessons can be used by formal and informal educators. Both curricula are free to use.

Trainings will be offered in Northern and Central California throughout 2020. Contact Rebecca at rkozeran@ucanr.edu if you would like to have a training for the educators in your community.

Progress with Prescribed Burning in California

With the recent drought, severe tree mortality, and devastating wildfires throughout California, there is a growing conversation on how to best manage our landscapes .

Although both grazing and fire are ancient management tools, in recent decades they became more challenging to use. While the reasons for this change can be debated at length, the good news is that they are returning to big picture conversations about proactive land management which can protect our state from destructive fires.

Prescribed burning has become an especially popular topic in the past few years. Some of my UCCE colleagues in Northern California just established a Prescribed Burn Association – the first one in the western US– and they have been phenomenal resources for the rest of us as UCCE develops ways to help communities get fire on the ground. You can read more about Lenya Quinn-Davidson's fire Extension work, here: http://cehumboldt.ucanr.edu/Programs/Fire/. The PBA has a Facebook page here: https://www.facebook.com/pg/hcpba/about/.
Thanks to a CalFire grant, UCCE in Fresno, Madera, Mariposa, and Merced Counties will be hosting a series of prescribed fire workshops as part of the renewed effort to use fire as a tool on landscapes. In November 2019, Forestry Advisor Susie Kocher (hailing from UCCE Central Sierra) organized a two-day workshop in conjunction with the annual meeting of the Southern Sierra Prescribed Fire Council.

On the first day, we had a series of presentations covering all aspects of prescribed burning, including: the history of human use of fire in California, including tribal and rancher histories; the modern-day process to get permits for a burn; and how fire can be utilized in forest and rangeland settings for various land management goals.

On the second day of the workshop, we were fortunate to join Southern California Edison in a controlled burn on some of their forest lands near Shaver Lake. In the morning, we gathered for a safety briefing. Everyone put on Nomex shirts, hard hats, and eye protection. Then, Southern California Edison (SCE) described their preparation for the burn before the workshop. They obtained the required smoke permit, observed and planned for the weather, and created boundaries with bulldozers and the topography. They also informed their neighbors and the local forest dispatch of their plans to burn, so that any calls about a fire would not be treated as a wildfire situation. It turned out that telling the local cafe was a good idea, because locals were able to find out about the plans without contacting forest dispatch when they saw our smoke.

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Prescribed Fire cont'd

SCE also told us how we would communicate throughout the day and told us what to do if we needed to get a drink or take a break from the fire line. After a successful test burn on a patch of bear clover to observe the fire behavior, we split into two groups to treat about 10 acres of forest with fire.

Figure 1. Observing the test burn on a patch of bear clover.

Everyone who wanted to participate was given a drip torch at least once during the day and was instructed on where, when, and how to apply fire onto the forest floor. Most of the day was spent observing how the fire moved and discussing the next point that needed to be burned. The fire moved slowly compared to a lot of our expectations – a sign that SCE had chosen a good day to burn. They told us that on a typical burn day, they would light the edges of a burn, make sure it was moving appropriately, then move to a new area to begin a second burn, letting the fire move itself gradually throughout the entire area they wanted to burn and checking on it regularly. By lighting the highest points and the edges of the burn area first, the fire could only move downhill, which kept it moving steadily but slowly. They also had a broad dozer line at the bottom of the hill to keep fire contained to the target area.

Figure 2. Applying fire to small spots and letting it spread on its own.

At the end of the day, about six hours after we began the burn, the area was still slowly burning. SCE would continue to monitor the burn for several days until it exhausted the fuel available on site. We gathered at the end of the day for workshop participants to talk about what they learned, liked, and disliked. Many of the participants had never been on a controlled burn before and told us they had been nervous at the beginning of the day. By the end of the day, though, everyone felt much more comfortable with putting a controlled fire on the ground – a great success in building capacity for landowners and managers to implement their own burns.

Susie shared a brief video of part of the burn, here: https://www.youtube.com/watch?v=zdkC2tbAhEY. Copies of all the workshop presentations are available here: https://ucanr.edu/sites/forestry/Prescribed_fire/Rx_workshop/.

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Prescribed Fire cont'd

Figure 3. Gathering at the end of the day to debrief.

Future workshops will be organized like this one. Especially for those who have never participated in a burn before, attendees gain immense value from actively participating in putting fire on the ground. For instance, this workshop was only the second time I personally have used a drip torch, and I already feel more comfortable with the techniques of prescribed fire.

The experience of a full day working with the workshop group also helps to build connections with other people who might be interested in collaborating to get prescribed fire going in your area. To me, this was the most important aspect. Prescribed fire helps build community and better connects us with people, resources, and expertise for land stewardship.

The next prescribed burn workshop is tentatively being planned for March 19-23, 2020, in Mariposa County, in conjunction with a cultural burn led by the North Fork Mono tribe. Stay tuned for more information!

Should I still vaccinate for brucellosis?

By Dr. Gabriele Maier, CE Specialist for Beef Cattle Herd Health and Production

This article was written in January 2020.

Every state decides on the requirement for brucellosis vaccination in cattle. In California, assembly bill 1801 repealed the mandatory calfhood vaccination for intact female beef breeds 12 months of age or older and sold within the state as of January 1, 2020. In other words, it is not a requirement anymore that beef breed heifers or cows show evidence of Bangs vaccination before they can be sold within this state. To be clear, there was no requirement to vaccinate beef breed heifers before this law was passed in California if they didn't change ownership. For dairy breed heifers, the story is quite different. They still need to be Bangs vaccinated if they are moved within the state as young as 4 months of age, with some exceptions, e.g. if they are sold directly to slaughter or an approved feedlot.

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Brucellosis cont'd

The new freedom raises the question: should I continue vaccinating my heifers for brucellosis? Let's first take a step back and talk about what brucellosis is: brucellosis is a serious and contagious livestock disease that causes late-term abortions in cattle. The causative agent in cattle is *Brucella abortus*. The disease poses a significant public health risk because it can be transmitted to people. Drinking raw milk or eating soft cheese made from raw milk from infected animals is a common risk factor to contract the disease. Exposure to tissues and fluids from cattle aborting due to brucellosis is another way that farm workers can catch brucellosis.

In humans, the disease is also known as undulant fever because of its ability to cause intermittent bouts of fever. Other symptoms include joint and muscle pain, gastrointestinal symptoms, and orchitis (inflammation of the testes) in men. Brucellosis in people often results in chronic disease lasting months or years. No wonder there was a huge effort in eradicating this disease from cattle in the United States.

Through a combination of vaccination, testing and quarantine, removal of positive animals and continued surveillance, we have reached a state where the entire United States has been officially declared brucellosis free. The last infected herd in California was found in 1997 and there hasn't been a case here in cattle since. The only pocket where brucellosis is still around in the US is the Greater Yellowstone Area in the Montana/Wyoming/Idaho region, where brucellosis still lingers in wildlife such as elk and bison and occasionally spills over into a cattle herd. Regulations around vaccination and testing of cattle in the Designated Surveillance Area of that region are strict, e.g. a negative blood test is required for movement or change of ownership for all breeding cattle with few exceptions.

Here in California, far away from any possible brucellosis cases, why one should still vaccinate for a disease we don't have seems to be a legitimate question. Here are some thoughts on what the advantages and disadvantages may be:

Benefits of continued vaccination:

The vaccine RB51 we use for brucellosis must be administered by an accredited veterinarian. This annual vet visit could serve to go over other vaccination or treatment protocols, renew prescriptions or talk about anything else cattle health related. Remember that your vet needs to document a valid veterinary client patient relationship to be able to write prescriptions and being familiar with the operation and the animals is part of this requirement.

Brucellosis vaccination comes with automatic official ID, the orange Bangs tag that is applied at vaccination. Official ID is required for interstate movement under certain conditions. We don't know what the future of the metal orange tag is with increasing efforts to implement all official ID to be electronic, but the requirement for official ID for brucellosis vaccinated cattle will likely stay.

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Brucellosis cont'd

Having official ID helps animal health officials trace animals back to their origin that may be found at slaughter to have a foreign animal disease or a disease that is regulated by USDA or state agencies, such as tuberculosis or brucellosis. Having the capability of tracing the animal back to its origin is the best way of minimizing the spread of the disease to other animals or people, if it is a zoonotic disease.

If you plan on selling cattle to a state that still requires Bangs vaccination for entry of breeding female cattle, you need to accomplish vaccination before the heifers are 12 months old. At the moment, California does not allow mature vaccination, which is routine vaccination of females over 12 months of age.

If everyone stopped vaccinating, we would end up with a naïve population of cattle and a new introduction of the disease could cause critical damage. However, the risk of introduction of brucellosis through an animal from the Greater Yellowstone Area into California is very small according to a risk analysis model.

The California Cattlemen's Association strongly encourages all California ranchers to vaccinate beef heifers that will be added to the breeding herd to keep them protected from the disease.

On the other hand, you could consider the drawbacks:

There is some cost and stress to the animals involved in having your vet vaccinate heifers.

If a heifer is pregnant at the time of vaccination, she may abort and potentially spread the disease to herd mates or people getting in contact with the aborted fetus and placenta. Obviously, heifers should not be pregnant when they are vaccinated for brucellosis, which is why we have the age restriction of 12 months at time of vaccination. In some small studies, where pregnant heifers were vaccinated to test the safety of the vaccine, no abortions were seen. However, because RB51 is a live vaccine, it is a concern.

At the end of the day, you will need to have a conversation with your veterinarian to decide on what is the best decision for your herd in your situation when it comes to brucellosis vaccination.

Public Safety Power Shutoff Needs Assessment Project

The Public Safety Power Shutoff Needs Assessment Project *of the UCANR Extension Disaster Education Network (EDEN) team supported in part by a grant from the National Institute for Food and Agriculture.*

This assessment will be distributed in early 2020. Please consider sharing your experiences.

Background: In 2019, electrical utilities in California began proactively shutting off power across large areas, and for thousands of customers, during predicted high wind ("red flag") events. This strategy has been adopted after numerous major wildfires were ignited by electrical transmission infrastructure.

These large, anticipated public safety power shutoffs differ from smaller incidents, or power outages caused by natural disasters in important ways. The shutoffs have affected large regions, causing impacts to people throughout their communities including at home, work, businesses, schools, or on farms and ranches. Since so many locations were affected, many people lost access to essential goods such as groceries, fuel, medical care and communication infrastructure including telephone and internet.

However, because these power shutoffs are announced in advance, there is an opportunity, albeit sometimes too brief, for individuals, communities, and local government to prepare for these events in a different way than for the incidental loss of power. Since these shutoffs are expected to continue during upcoming power seasons, there is also the potential to increase our capacity to adapt to these conditions through preparation activities including outreach and education on power shutoff survival strategies.

Power shutoff survival strategies: Utility companies have provided a few educational resources to California residents on power shutoffs. However, the number and scope of these are quite limited. Our search for existing material from other states and the Extension Disaster Education Network (EDEN) showed that materials exist primarily on concerns about the lack of refrigeration - food spoilage and food safety. Few resources address other issues that arose due to power shutoffs.

Project approach: The goal of the project is to help Californians develop the capacity to better withstand future power shutoffs. We propose to assess the need for educational resources to help individuals and communities prepare for and respond to power outages. We will do this by disseminating an online survey through email lists developed by UCANR staff. We hope to reach people in affected areas of California including extension personnel and volunteers, urban and rural residents, and agricultural producers and processors.

We plan to use the results of the needs assessment to develop additional education resources on:

- Establishing and maintaining back-up power options (generators, solar with on-site storage, etc.)
- Planning for agricultural needs for harvest and food storage and processing
- Preparing for health disruptions and serving disabled individuals
- Developing alternative systems to meet basic needs
- Other topics related to living without power in the home or workplace.

UCANR EDEN Team: Brian Oatman - Director, Risk & Safety Services; **Susie Kocher** - Forestry Advisor, Central Sierra; **Faith Kearns** - Academic Coordinator, California Institute for Water Resources; **Sabrina Drill** - Natural Resources Advisor, LA and Ventura Counties; **Vikram Koudinya** - Evaluation Specialist, UC Davis; **Katie Panarella** - Director, Nutrition, Family/Consumer Sciences Program.
CONTACT: sdkocher@ucanr.edu