Roots and Resilience – Inviting Ranchers to Submit Stories

We invite you to submit an essay or poem about California ranching. Your stories of land history, food and fiber production, droughts, fire, and development pressure will be shared in a book project called *Roots and Resilience: California Ranching in the 21st Century*. Rangeland agriculture in California is a unique blend of culture, environment, and economics. The people, the land, and the animals (both wild and domestic) are unique in North American ranching; these stories deserve to be told widely.

Our intended audience is as varied as California’s ranching landscapes. This book will be used in high school and university classrooms. It will be stocked on the shelves of museums, visitor centers, and bookstores across the West and beyond. It will be a tool that will help humanize the day-to-day work involved in caring for livestock, rangelands, and communities. *Roots and Resilience* will tell future rangeland managers, researchers, and ranching families about the context in which early 21st century California ranchers operate.

We are pursuing this project in partnership with the California Rangeland Trust and the Buckeye Conservancy – two nonprofit organizations that have made a tremendous impact in conserving ranchland and ranching in the long-term. A portion of the proceeds from the sale of this book will go to each organization.

This book is inspired by *Home Land: Ranching and a West that Works*, which close to a thousand students have read in introductory range courses at Humboldt State University. They were deeply affected by essays and poems written by authors like you, as evidenced by their written responses. Now we want them to read about California ranchers.

Your submission will be considered by a small panel of editors. We seek authentic pieces that tell heartfelt or humorous stories of resilience, that is, survival and conservation in the face of physical and societal challenges, especially in the context of the Golden State. We also seek stories of family and beauty in rangeland settings.

Submissions are due on December 21, 2020. Please limit your submission to 2,500 words (or no more than 10 pages in a paperback book). Longer pieces may be considered for excerpts. Submit in a Word (.doc) or pdf format to: rootsandresilience@humboldt.edu or https://fwr.humboldt.edu/roots-and-resilience-project

Submit handwritten pieces to: C/O Roots and Resilience (Marshall), Forestry & Wildland Resources, Humboldt State University, 1 Harpst Street, Arcata, CA, 95521.

If your submission is accepted and published, we will provide you with complimentary copies of the book. Publication is anticipated by December 2021. Thank you for considering this project. Please contact Dan or Susan if you have any questions!

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As of mid-October, CAL FIRE reports that over 4.1 million acres of California have burned in almost 9000 individual fires. Even in areas of the state not directly impacted by fire, immense smoke plumes impacted everyone’s lives for several weeks. As fall begins, fire season slows down, giving us time to evaluate the damage and plan for recovery. On the following few pages are multiple post-fire resources that have been created throughout the state. We will also soon host a video “library” on post-fire recovery and management topics on the UC ANR Fire website, here: https://ucanr.edu/sites/fire/.

Financial Resources for Livestock Producers Impacted by Fire

Local branches of the USDA Farm Service Agency (FSA) has financial assistance programs available to livestock producers after disasters. Click here for a resource guide developed by FSA and Northern California UC Cooperative Extension to learn more. FSA can assist producers impacted by the Creek Fire, SQF and other fires that caused forage loss, infrastructure loss (e.g. fences, barns, water systems), livestock death and more. Local USDA Service Centers can connect you to FSA assistance:

**FRESNO SERVICE CENTER**
4625 W JENNIFER AVE STE 109  
FRESNO, CA 93722-6424  
(559) 276-7494  
(844) 206-6971 fax

**MADERA SERVICE CENTER**
425 N GATEWAY DR STE E  
MADERA, CA 93637-3163  
(559) 674-4628  
(844) 206-6984 fax

Fire Retardant & Grazing

*By Rebecca Ozeran, Livestock and Natural Resources Advisor in Fresno and Madera Counties*

When returning livestock to a burned landscape, you might see fire retardant on forage. In general, modern fire retardants shouldn’t be a problem for livestock. Common fire retardants used by the U.S. Forest Service and CAL FIRE are listed on https://www.fs.fed.us/rm/fire/wfcs/msds.htm. All of their Material Safety Data Sheets (MSDS) are posted to that website and can provide you with general guidance on safety for humans. In the most common long-term retardants, the Phos-chek mixes, ammonium phosphate is the active ingredient. Fortunately, there is no evidence that ammonium phosphate is harmful to livestock. In fact, it's sometimes used as a ruminant feed additive. Ammonium phosphate can cause mild skin irritation, however.

*This article continues*
Retardant cont’d
Any skin irritation is more likely to impact people than grazing animals, but might discourage your animals from grazing heavily sprayed forage. These formulations of fire retardant also should wash away after rain. Because ammonium phosphate is a fertilizer, you may also see strong regrowth on your landscapes in the spring after fire retardant was applied. More about long-term retardants is shared here: https://www.fs.fed.us/rm/fire/wfcs/ret.htm.

Foam retardants are slightly different, because they include detergents, which are ingredients that – similar to what is used in laundry detergent, which is water soluble but also attaches to dirt particles – help the liquid portion of the retardant to attach to surfaces like plants and buildings. Detergents are what cause the retardant to be foamy. They are typically biodegradable and nontoxic if ingested in small amounts.

Aside from the active ingredient, some Phos-Chek products include additional ingredients. Iron oxide (essentially, rust) is added to many fire retardants for the red color; it is not a problem mineral for livestock. Other Phos-Check products include attapulgite, a kind of clay included at less than 5% of the total weight of the retardant mixture. Attapulgite clay is chemically harmless. The only caution with attapulgite is that, if a person somehow eats a lot of the clay, the clay can create blockages in the digestive tract. Because attapulgite is such a small component of retardant and it is sprayed so sparsely across the landscape, a grazing animal shouldn't consume enough of it to be a problem.

When to be concerned:
Ammonium phosphate does threaten fish because it can create too much dissolved ammonia when in water. As such, it isn't allowed to be sprayed near water bodies. It can still accumulate in puddles after rain, and in that case you may want to fill small puddles with sand or another absorbent material so that your animals and wildlife don’t drink large amounts of fire retardant.

NOTE: The concentration of ammonium phosphate in fire retardants is higher than in commercial fertilizers, so it may “burn” the leaves of any living plants. You might see leaves die and fall off of oaks and other trees or green plants, but they should recover in a few months as long as the fire itself didn’t cause additional damage.

Further reading (click on description to visit the webpage or download a PDF):
CAL FIRE Frequently Asked Questions about Fire Retardants, 2018
Wildland Fire Chemical Clean-up from US Forest Service Wildland Fire Chemical Systems, 2007
Environmental Briefs (short documents) from US Forest Service Wildland Fire Chemical System
Summary scientific paper describing the effects of ammonium phosphate on humans, animals, and plants, 2000

Caution to Prevent Pine Needle Calf Abortions
By Tracy Schohr, Livestock and Natural Resources Advisor in Butte, Plumas, and Sierra Counties

With reduced forage production this year, ranchers in the mountains should be extra vigilant as we end the grazing season to prevent cattle ingestion of pine needles. The California Animal Health and Food Safety (CAHFS) Laboratory at UC Davis reported in early October, “pine needle ingestion was a probable contributing cause of late-term abortion and weak calves in a beef herd with 60-70 pregnant cows, of which 13 aborted 3 weeks before their due date, over a 3-day period.”
Pine needles cont’d

Pine needles contain a chemical compound called isocupressic acid that is known to cause abortions for pregnant cattle in the third trimester. It is important to prevent ingestion of pine needles. Management tips include:

- Preventing access to pine forest during late pregnancy;
- Providing ample feed to prevent hungry cattle from eating pine needles;
- When providing supplemental feed, space so all cattle have access; and
- Do not feed hay on top of pine needles that can lead to involuntary consumption.

To read the CAHFS report click here. To learn more about pine need toxicity from a past edition of the California Cattleman Magazine Vet Views from Dr. Maas click here.

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Research from the Camp Fire
Wildfire Impacts on Livestock Drinking Water Quality

By Tracy Schohr, Livestock and Natural Resources Advisor for Butte, Plumas, and Sierra

The Camp Fire burned over 150,000 acres, 14,000 homes and 5,000 other buildings. These structures were at the top of the Butte Creek Watershed that provide livestock drinking water for hundreds of cattle. UC Cooperative Extension conducted weekly livestock drinking water testing during the 2018-2019 winter on 4 waterways below the Camp Fire. Toxicology analysis showed that the metal concentrations were unremarkable for 4 locations below the Camp Fire that provide livestock drinking water. Click here to learn more.

Wildfire Ash: Impacts on Forage Crops

By Besy Karle, Dairy Advisor for Butte, Glenn, Tehama, Shasta, Yuba and Sutter

UC Cooperative Extension in 2018 researched the impacts of wildfire ash deposition on crops grazed or harvested for livestock feed across Northern California. During this study 5 irrigated pasture locations were sampled in Butte County during the Camp Fire. Though there were some compounds of interest and a few high levels of heavy metals detected in the samples during the research project, results were generally unremarkable and did not suggest that wildfire ash was consistently associated with heavy metals in forages. Click here to learn more.

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How will fire affect annual rangeland and what should you consider doing?

By Josh Davy, Livestock and Range Advisor, Tehama, Glenn, Colusa; and Larry Forero, Livestock and Range Advisor, Shasta, Trinity

A fire on foothill annual rangeland will undoubtedly result in a reduction of grass production for several seasons following the fire.

This article continues ➤
Annual range cont’d

The effect the fire has on the resulting vegetation and production can vary based on the intensity, quality of ground, rainfall, and timing of the fire.

Regardless of most factors, the production year after a dry season fire will result in dominance of filaree due to the lack of cover going into the first rains (excessive cover = grass, little cover = filaree). In measuring the end of season production following a burn almost 50% reduction is possible in the following year, and over 20% the second year (Davy and Dykier, 2017). Losses this high would be mostly expected in better quality soils, and less so on shallow soils. With no grass mulch to conserve moisture, a dry year following a burn may produce little to no usable forage until spring. With hotter fires, such as those with brush, the losses can continue for three years (Frost 1988).

In grass fires the timing of the fire is important. Grass seed on the soil surface isn’t affected by fire. With the exception of wild oats (technically slender oat), most seeds don’t mature and fall to the soil surface until after June. So burns that occur before July will result in a reduction of grass seeds such as soft chess the next season. On the upside, this timing would control weedy grasses such as medusahead. Wild oats mature and shatter seed in early spring so if a stand of oats was present before the fire this should help in grass returning.

If a stand of wild oats was not present, it is worth considering reseeding desirable grasses in early season fires to provide forage and prevent the rapid reinvasion of weedy grasses. Seeding would best be done immediately prior to fall rains as grass fires don’t provide enough ash for seed to settle in to and be adequately covered. Broadcast seeding to early results in birds eating the seed prior to germination. Drilling or covering the seed with a harrow after broadcasting is the most desired method of seeding, but commonly isn’t feasible, leaving broadcast (airplane) seeding just prior to rain the most practical option. Grass fires that occur in July and later should have little effect on seed laying on the soil surface, negating much benefit in seeding. Production will still be less due to the lack of soil cover, especially if it’s a dry winter.

Brush burns get hot enough to affect seed on the soil surface. Their advantage is that they do provide a nutrient rich seed bed and source of cover for seed to fall in to. Reseeding these areas can be successful by dropping seed into the white ash. Because weed competition is usually eliminated by these hot fires, and fertility is high, these seedings have been successful in the past.

If seeding is necessary your local Cooperative Extension office can help in designing the most appropriate mix. Site conditions, management, and rainfall vary between properties which can change appropriate seeding recommendations. It’s worth getting this part right otherwise the effort may be wasted.
Soft brome sold as ‘Blando’ brome is a good choice as an annual grass that works well in most valley/foothill soils. Coastal grass mixes would benefit from annual ryegrass, but it should be viewed as a short term investment in valley foothill areas. Mixes of subterranean clovers with differing maturities are good choices for sites with good soils or dependable rainfall. Mixes containing annual medics may be better choices than sub clover in areas with lower quality soils and rainfall. In high quality valley soils perennial grasses such as ‘Flecha’ fescue and ‘Berber’ orchardgrass could be options if they fit management needs.

There is usually assistance from the USDA Farm Service Agency (FSA) and Natural Resource Conservation Service (NRCS) in replacing lost forage, livestock, and fences. When evaluating livestock losses it’s important to remember that lameness may not be present for up to two weeks after the fire in some cattle (laminitis). These cattle would not be expected to recover. Reporting losses prior to this time may result in a lower number than is actually present. Check with a local FSA county office to make sure that all production acreage is on file so that it is covered, and that all applicable programs are signed up for. In many cases there are deadlines to file for assistance that are put in place once losses occur. University of California Cooperative Extension publication 9446 “Estimating the Cost of Replacing Forage Losses on Annual Rangeland” can be downloaded free of charge to assist with calculating ranch losses and help reporting to the Farm Service Agency. The Natural Resources Conservation Service offers financial assistance in the form of a cost share (EQIP) for reseeding rangeland. This program is valuable because it provides enough financial help to make the practice economical.

When calculating losses most often the equivalent in hay is considered in monetizing the forage loss value (1 ton of forage lost = the cost of a ton of hay). USDA releases a weekly California Hay Report that can be used to determine the cost of replacement forage. This is usually the most practical method, but there are other costs to consider. With an ongoing forage loss of 50%, turning out the regular number of cattle would eliminate any possibility of new green feed establishing. If cattle are not sold, many would need to be fed in a dry lot. If a daily feeding commitment isn’t possible they may need to be hauled to a feed yard. Local feedyard costs are around $3/hd/day for a maintenance ration.

A call to a local marketing rep is valuable in calculating the best economic plans. Cull cow prices tend to drop in the fall when pregnancy testing causes the supply to go up, and the fire situation may not help that. Acting sooner may be of value if a marketing rep advises that as a way to go. Most counties in California have emergency drought declarations which could help in avoiding capital gains taxes if cattle are replaced at a later date. This also means it would be prudent to discuss options with an accountant.

References:

Do you own forest land? You might be interested in joining our upcoming Forest Stewardship Workshop—a 9-week series which will help you to update or create a new forest management plan.

California Forest Stewardship Workshop

Online beginning November 3, 2020 – January 11, 2021, and in-person Saturday, November 21st, Mariposa County

Join the workshop to understand and protect your forests by developing a Forest Management Plan. Topics include:

- Forest management objectives and planning
- Forest health, insects and disease
- Forest and fire ecology, wildlife, watersheds
- Fuels reduction and forest resource marketing
- Mapping, inventory and silviculture
- Project development & permitting
- Getting professional help and cost-share opportunities

Participants will utilize online resources on their own time to complete learning modules and short activities. Zoom meetings with all participants and presenters will take place once a week on Mondays, 6-7:30pm. The in-person field day will cover silviculture, forest inventory and mapping activities. Participants who complete the workshop will be eligible for a free site visit with a California Registered Professional Forester.

Workshop registration is $60. Sign up now at ucanr.edu/forestryworkshops/

Questions? Contact Kim Ingram, kcingram@ucanr.edu.

Hosted by University of California Cooperative Extension in collaboration with:
American Forest Foundation • CAL FIRE • California Association of Resource Conservation Districts • California Fire Safe Council • Forest Landowners of California • USFS Region 5

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Online Resources

Emergency Preparedness
Recordings now posted!

Seven videos cover statewide and local emergency systems, wildfire preparedness, and more.

https://www.youtube.com/playlist?list=PLF0VajUgoFLmHxlMvbBUVhi7_IDb0thjO

“Sheep Stuff Ewe Should Know”
Conversations with UCCE livestock advisor, Dan Macon

Multiple videos are available on YouTube:
https://www.youtube.com/channel/UChmJnrOY-7XboaNe5fVXSQw/videos

Beef Quality Assurance videos from Kansas Beef

Dr. Tarpoff, Kansas State Beef Extension Veterinarian covers low-stress cattle handling, vaccine effectiveness, proper injections, and facility design.
https://youtu.be/Yljea5ur9pw

More BQA resources are available at https://www.bqa.org/