



THE NEW FOOTHILL RANCHER

...Practical Information for Livestock Producers

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Placer—Nevada—Sutter—Yuba Counties



January 2020

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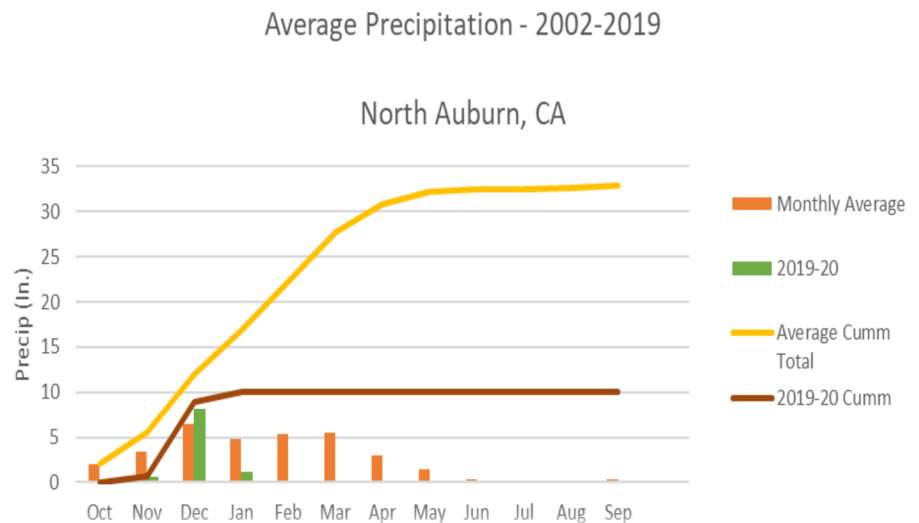
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Rainfall and Forage Growth: A Look Back and a Look Ahead



Here in Auburn, we received our first germinating rain of the 2019-2020 forage year in September. At home, I measured 2.29 inches of rain in September – and we started seeing green grass by the first of October. Other parts of the foothills and Sacramento Valley (including the UC Sierra Foothill Research and Extension Center) didn't see a germinating rain until nearly Thanksgiving. And without follow up rain in Placer County, much of our early October forage growth shriveled and died. In October and November, we measured just 0.71" in Auburn – far less than the 5.4" average we expect to receive. Our second germination occurred after Thanksgiving

December helped catch us up – with over 8" of precipitation in Auburn, we ended the first quarter of our rain year (which starts October 1) at about 74% of average. Based on the records we've kept of our sheep grazing, forage production seems to be slightly below normal as well for this time of year (UC SFREC has not yet published forage production data for October-December 2019). While we have soil moisture thanks to last month's storms, I've noticed that most of our seasonal creeks are not yet running.

Snowpack in the Central Sierra (critical to our summer irrigation needs in the foothills) also seems to be sitting at about 75% of average. Fortunately, most of our water districts went into the winter with more water in storage than typical.

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Looking ahead, at least in the short term, we appear to be headed towards a somewhat drier and warmer weather pattern through the end of January and early February. Most of Northern California and the Sierra Nevada are between 25 and 70 percent of normal, according to the NOAA Regional Climate Center. We still have 2-3 months of potentially wet weather, but October and November created a fairly deep hole.

From a forage production perspective, longer days and warmer temperatures (both air and soil) should start to accelerate growth in the next 30-45 days. We'll need to monitor soil moisture to get a better handle on what we can expect later in the spring. As always, it's probably a good idea to at least think about what we'd do with livestock if we stay below average. In other words, hope for the best; expect the worst!

Finally, we will be holding several drought planning workshops in early spring – keep watching for time and location!

WANT TO JOIN THE COMMUNITY COLLABORATIVE RAIN, HAIL & SNOW NETWORK
(CoCoRaHS)? WE HAVE OFFICIAL CoCoRaHS RAIN GAUGES!
CONTACT DMACON@UCANR.EDU TO GET YOUR RAIN GAUGE!

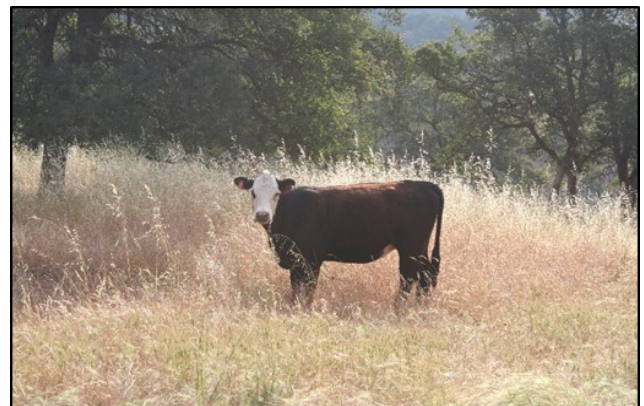
Check out the CoCoRaHS website at <https://www.cocorahs.org/>

Should I Still Vaccinate for Brucellosis?

By Dr. Gabriele Maier, CE Specialist for Beef Cattle Herd Health and Production
UC Davis School of Veterinary Medicine

Every state decides on the requirement for brucellosis vaccination in cattle. In California, assembly bill 1801 repealed the mandatory calfhooch 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.

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.



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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.
- 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.

But She's My Favorite Cow!

Lifetime Cow Profitability and Culling Your Open Cows

Have you had the experience of your veterinarian (or someone else who does your pregnancy testing) telling you your best cow is open? Maybe she's always raised the heaviest calf, or the nicest heifer. Regardless of the size of our operation, I suspect, there are always a few individual cows (or in my case, ewes) that stand out – and that we're sorry to see go on the truck. And if you're like me, you're probably tempted to give her one more chance!



A new paper in the *Journal of Agricultural and Resource Economics* by University of Tennessee professors Christopher Boyer, Andrew Griffith, and Karen DeLong, sheds light on the economic impacts of giving an open cow “one more chance.” The paper, titled “Reproductive Failure and Long-Term Profitability of Spring- and Fall-Calving Beef Cows,” examines data from spring- and fall-calving herds at the Ames Plantation Research and Education Center near Grand Junction Tennessee from 1990 through 2008. These herds included both commercial cows and registered Angus cattle. Using net present value (NPV) analysis, payback periods, and calf breakeven prices in Tennessee, the study evaluates likelihood of profitability on an individual cow basis. The authors assume an average production life of 11 years.

For a ranch-raised replacement heifer, the probability of lifetime profitability if she misses one calf was 50%. In other words, depending on calf prices, calf weights, heifer development costs, and annual carrying costs, a ranch-raised cow that loses a single calf has a 50-50 chance of losing money for the ranch over her lifetime.

Another way to look at this is to examine the payback period – or the age at which the discounted annual net returns from the replacement heifer become greater than the investment cost. A heifer that never comes in open will cover the cost of investment (or development) with six calves. If she misses one calf, she'll need to produce nine calves to breakeven over her lifetime. If she misses 2 calves, she'll need to produce ten calves – and by that time she'll be more than 12 years old!

Several years ago, my partner and I were going through the ewes after weaning our lambs and determining which sheep needed to be culled. A particularly nice (and formerly productive) ewe came up the alley. She hadn't brought in a lamb that year, so I said we needed to cull her. My partner said, “But she's been such a great ewe – I hate to sell her!” We talked it through further, and both came to the conclusion that an objective culling policy (which includes economic considerations) is one of the main differences between a hobby farm and a business. This research supports that conclusion!

Boyer, CN, AP Griffith, and KL DeLong. 2020. Reproductive Failure and Long-Term Profitability of Spring- and Fall-Calving Beef Cows. *Journal of Agricultural and Resource Economics* 45(1):78-91

Mix 'em Up: Avoiding Habituation with Livestock Protection Tools

While I remain convinced that the right livestock guardian dog provides the best predator protection in most commercial foothill ranching situations, I've started learning about a variety of other tools from other producers and from our local wildlife specialists with USDA Wildlife Services and Placer County. We've experimented with Fox Lights™ and I've talked with a number of Sierra Nevada ranchers who have experimented with turbo fladry (a single-wire electric fence with flags) as a deterrent to wolves. And the experts (ranchers and wildlife specialists alike) all seem to agree: Mixing up these tools – moving them around – and taking them down when they are not needed – is critical to avoid allowing predators to become habituated to these tools

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FoxLights™ (in the case of coyotes and foxes) and fladry (in the case of wolves) work because they provide novel visual stimuli that deter predators. FoxLights™ emit random flashes of white, blue, and red lights after dark. Fladry flutters in the lightest breeze, and turbo fladry (if electrified) can provide a shock if a wolf overcomes its fear of the flags.

The Wildlife Services specialist in Solano County told me that he tells producers to move FoxLights™ every other night. “This way, it keeps the coyotes off balance,” he says, adding, “which keeps the novelty from wearing off.”

Wildlife Services specialists in Lassen, Plumas, and Sierra Counties, who have been working with local ranchers over the last several years to use turbo fladry, suggest a similar strategy. “Don’t leave fladry up year round,” they report, “otherwise the wolves will get used to it.”

Finally, avoid leaving electric fence up if it’s not electrified. We know that livestock will test an electric fence (and go through it once they know it’s off!). We should expect that predators will also test these fences – and if they discover that there’s a meal on the other side of the fence, they’ll go through them.

These deterrents are all psychological – they depend on novelty and a certain amount of fear. To keep them effective, we need to keep predators off balance. We need to mix ‘em up!

Note: FoxLights™ are available from Amazon. Contact me at dmacon@ucanr.edu for information about turbo fladry suppliers.



Disaster Preparation for Your Ranch

Over the last several weeks, I’ve been preparing a talk on disaster preparation for commercial ranches. Previously, I’d mostly thought about wildfire, but as I’ve researched material for this talk, I’ve realized the issues are much more broad!

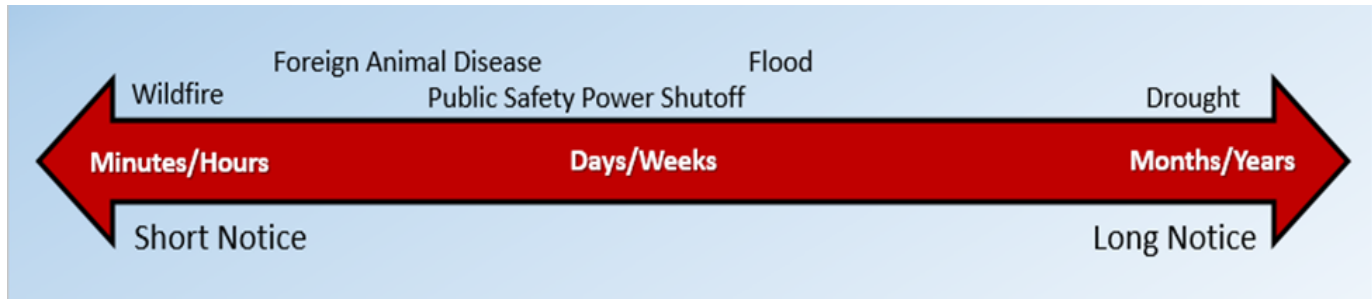
First, commercial livestock operations are different than homes or other types of businesses when it comes to disaster planning. They are often both homes and businesses. Unlike backyard livestock operations, we often can’t evacuate all of our livestock in a single trip. Ranches may be in remote locations – and they may be in multiple locations. Finally, we may not have access to leased properties (because the address of the property doesn’t match the address on our identification) during an emergency.

Beyond the seasonal threat of wildfire, there are a number of other potential problems we should think about in our planning. Going seven days without electricity during PG&E’s public safety power shutoffs last fall made me glad we have gravity-fed stock water. I was also glad we didn’t have a season’s worth of meat stored in our freezers for future farmers market sales. Flooding is also a potential problem. Here in the foothills, flooding may create access problems; in the valley flooding can be more disastrous. Drought is always a possibility, especially given our increasingly variable climate. Finally, while the possibility of a foreign animal disease (like foot and mouth disease) maybe relatively unlikely, an outbreak could seriously disrupt regional livestock operations.

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The Disaster Planning Horizon



Sometimes, these disasters occur with little or no warning (as in the case of wildfire). Other disasters occur over a lengthy period (like drought). The planning horizon (or amount of warning we receive) may dictate our response. For example, we would need 5-6 gooseneck loads to move all of our sheep in June – we couldn't move the entire flock if a fire was minutes away.

As I consider our sheep operation, I think there are five categories of risk that we need to address:

Human Health & Safety	Livestock Health & Safety	Property & Infrastructure	Forage	Access
<ul style="list-style-type: none"> • Direct (life & death) risks • Health risks • Mental health 	<ul style="list-style-type: none"> • Direct (life & death) risks • Health risks • Stress-induced production losses 	<ul style="list-style-type: none"> • Home(s) • Barns & outbuildings • Corrals & fences • Human drinking water • Stock water • Meat storage • Equipment • Information and data 	<ul style="list-style-type: none"> • Standing forage • Stored forage (hay) • Seasonal impacts (fall/winter forage) 	<ul style="list-style-type: none"> • Owned vs. leased land • Physical barriers • Law enforcement barriers • Ability to move livestock

In making a plan to address these risks, I've started thinking about what I would need to do to protect human health and safety (including keeping insurance and medical records safe); protecting buildings, infrastructure, and records; and protecting our forage. We've also thought about where we might be able to shelter our sheep in place.

The last step – and one that's easy to overlook – is the importance of communicating the plan. I've realized that keeping it all in my head – or on my own computer – doesn't help my family or my partner if I'm not around. I've started putting a basic plan (with contact information, livestock locations, and other information) on a 1-page chart, with a hard copy provided to everyone associated with our operation. The next step will be to learn what law enforcement and fire officials will require to allow us to access leased pastures in an emergency.

I'm planning to do a workshop on this topic in the spring – stay tuned! In the meantime, please share your approaches to disaster planning. Contact me at dmacon@ucanr.edu.

Save the Date!

Saturday, March 7: Pasture Lambing School (Auburn, CA)
Friday-Saturday, May 15-16: California Grazing School (Auburn, CA)

Additional 2020 Workshops (stay tuned for dates and locations)

- ◆ Drought Strategies for Ranchers
- ◆ Disaster Preparation and Planning
- ◆ Irrigated Pasture Management
- ◆ Targeted Grazing School

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