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COVID-19 Updates

Ranching During a Pandemic

As I write this in the first week of April 2020, all of California is under a "shelter at home" order in an effort to limit the spread of COVID-19. Governor Newsom's directive specifically notes that the production of food and fiber is "essential business" and is therefore exempt from this order. In other words, we can continue ranching, but we do need to change some of the ways in which we work.. The work of ranching - especially at this time of year - doesn't shut down. Animals need to be fed, irrigation systems need to be prepared, fence needs to be built - the work goes on.



That said, we farmers and ranchers - and agricultural researchers - still need to take precautions, though. We need to avoid large gatherings, maintain social distancing, **WASH OUR HANDS FREQUENTLY!** Our farms and ranches, and the communities who depend on the food and fiber we produce, are depending on us to stay healthy.

I can't speak for others, but at times the news has been a bit overwhelming. I realized last month as I was trying to set up my home office and continue to do my extension work that I was having difficulty focusing on any specific task. Fortunately, a number of friends have called during the last several weeks, just to catch up. We've talked about forage conditions and lambing, about our families and about the times we're living through. Having that direct interaction (as opposed to texting or emailing) has helped me relax and focus.

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Based on that experience, I've decided that I will call a friend and/or family member once a day - social distancing doesn't need to be isolating. I've also decided that I'll check in on my older friends at least once a week. I know we need to be cautious about spreading COVID-19 to older folks, but that doesn't mean we shouldn't reach out to them to make sure their needs are being met. Twenty-first Century medical and information technology are amazing, but our sense of community - our willingness to help our neighbors - will be critical to getting through this crisis.

To ensure that we are taking all appropriate COVID-19 precautions within UC Cooperative Extension, the Placer, Nevada, and Sutter-Yuba UCCE offices are closed for face-to-face, in-person service through **May 3, 2020**. While these measures may be inconvenient, we are taking these precautions to support our communities. And while our offices may be closed, we are still at work – mostly from home. If you have a livestock or natural resource question during the closure, please email me directly (at dmacon@ucanr.edu) or leave me a voice mail at 530/889-7385. I will be checking both voice mail and email regularly during the closure, and will respond as quickly as possible.

During the closure, we will not be holding any in-person workshops or meetings. However, I have several webinars and other online programs in the works – stay tuned for details! Also, I will be updating my blog, FaceBook pages, and Instagram IGTV channels regularly. Follow the links below to view these resources:

- UCCE Placer-Nevada-Sutter-Yuba Livestock and Natural Resources website: <https://ucanr.edu/sites/Livestock/>
- UCCE Foothill Farming website: <https://ucanr.edu/sites/placernevadasmallfarms/>
- Ranching in the Sierra Foothills Blog: <https://ucanr.edu/blogs/RanchingintheFoothills/index.cfm>
- UCCE Sustainable Foothill Ranching FaceBook page: <https://www.facebook.com/FoothillSustainableRanching/>
- UCCE Foothill Farming FaceBook page: <https://www.facebook.com/FoothillFarming/>
- Instagram (including IGTV channels): follow me @flyingmule (note: I'm posting short videos about grazing management, stockmanship, and other topics - and lots of photos of lambs!)
- Twitter: @flyingmulefarm

Also, I am able to do ranch calls and consultations by phone or by video conferencing (including FaceTime) – if you have a question or an issue that involves looking at a particular resource or livestock issue, this might be an option!

I realize that this is a very challenging time for all of us. I also know that livestock need to be cared for, pastures need to be managed, and bills need to keep getting paid regardless of what is going on around us. Take care of your families, your communities - and yourselves! Please feel free to contact me – I look forward to hearing from you!

Coronaviruses in human and animal health

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

Now that we are in the midst of the Covid19 outbreak, you might wonder about how this virus is different from coronaviruses that infect livestock and other animals. Let's try and answer some questions you might have with regards to this topic.

How widespread are coronaviruses?

Disease from coronaviruses is very common in humans and animals. Many species have their own version of coronavirus. In fact, one of the causes of the common cold in people is a coronavirus. What's important to understand is that in general, these viruses stick with a species based on how their surface proteins fit receptors on the cells of their target species, in a lock and key fashion. The reason this novel coronavirus is such a threat is because it is new to our species, there is no immunity to it in the population, it spreads easily, and it can cause severe disease.

What is the source of the novel coronavirus?

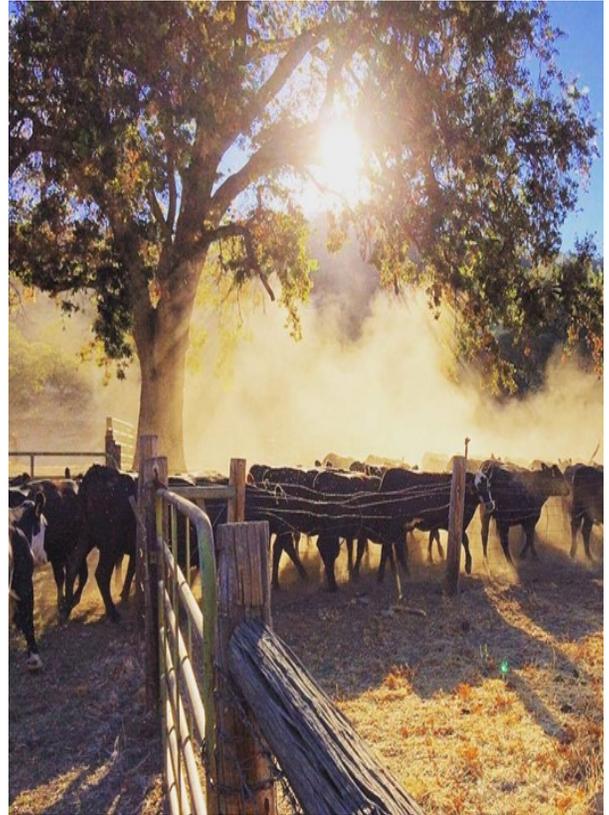
SARS-CoV-2, the official name of the new coronavirus, is thought to have jumped from animals to humans. The exact source is still unknown, but, at the moment, the most likely explanation is that it came from bats. You probably remember the SARS outbreak from 2003, which was caused by a similar coronavirus. Bats were found to be the likely source of the virus in the 2003 SARS outbreak, and probably passed it on to other animals that were sold in markets in China, such as the palm civet, a cat-like animal. Along the way the virus underwent mutations and finally was able to infect a new host – humans. Most importantly, it was able to spread from person to person. A similar mechanism was likely at play for this new coronavirus outbreak but with new information coming forward, this idea may change.

How is the novel coronavirus different from coronavirus in cattle?

The good news is that the bovine coronavirus we have in the US belongs to a **different strain** of coronaviruses than the SARS-CoVs that have jumped to humans during the 2003 SARS and the current Covid19 outbreaks. Bovine coronavirus is a cause of calf diarrhea, winter dysentery in adult cattle and is thought to cause respiratory disease, for example as part of the shipping fever complex. There is no expectation that the novel coronavirus can infect cattle or that the bovine coronavirus that is endemic in the US causes disease in people. There is also **no evidence** that imported animals or animal products pose a risk for spreading Covid19, according to the CDC. Overall, there is no connection between coronavirus in cattle and SARS-CoV-2.

What about coronaviruses in other animals?

Epidemiologists are often worried about pigs as a mixing vessel for viruses that affect people and animals, e.g. for influenza viruses. Pigs have their own versions of coronaviruses that are the cause of Porcine Epidemic Diarrhea (PED) and Transmissible Gastroenteritis (TGE). However, just like in cattle, the coronaviruses in pigs are different and there is no evidence that pigs can get infected with SARS-CoV-2 or that they can transmit and spread it.



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Should I worry about my pets?

At this time, there are also no reports that pets can get infected with or transmit SARS-CoV-2. However, the CDC cautions to restrict contact with pets while you are sick from Covid19 because there is still a lot we don't know about this new virus.

Would the coronavirus vaccine we have for cattle work in people?

Unfortunately, the corona virus vaccine for cattle would not work for people in the current pandemic because of the difference in strains. In fact, intentional or unintentional injections of animal vaccines in people can have adverse effects such as toxic inflammation or allergic reactions and must be avoided.

Additional resources

It is hard to escape information about Covid19 during this time. While there is a lot of information out there, not everything may be accurate. A reliable and up to date source is the CDC webpage including a page about animals:

<https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/animals.html>

As time goes by, we may find out more about the source of the virus and other important facts, so check back occasionally for the latest information and recommendations.

To Fertilize or Not to Fertilize? That is the Question!

(With apologies to William Shakespeare)



I'm often asked whether it pays to fertilize irrigated pasture. As a frugal (some would say, cheap) sheep producer, I've always assumed that the answer was no – that if I could get the grazing management right on my pastures, fertility would take care of itself. However, a local rancher who is re-planting his irrigated pasture recently sent me the results from his soil test with a question about whether he should apply fertilizer pre-planting. His question forced me to re-examine my preconceived notions!

My colleague Rob Wilson is the director of UC's Intermountain Research and Extension Center (IREC) in Tulelake, and also Farm Advisor and County Director for UC Cooperative Extension in Siskiyou County. He recently gave a talk on fertilizing grass hay and pasture at an irrigated pasture workshop at IREC.

Rob suggests a number of reasons to consider fertilizing irrigated pastures. We can increase yield (or in the case of those of us who harvest forage with livestock, increasing carrying capacity). We can increase protein and forage quality. We can maximize forage production from other inputs, like irrigation and labor. On the cost side of the equation, Rob says, we have

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to consider the cost of the fertilizer as well as the cost of applying it. In addition, we can potentially accumulate nitrates in our forage, and create the potential for nutrient leaching and runoff.

So how do we know if our pastures are deficient in any particular nutrient? The best way is to take a soil sample. Rob recommends taking 15-20 samples at rooting depth (1-8 inches) and mixing the soil in a bucket. Try to discard the top inches of the soil sample that are comprised mainly of root material. Several commercial labs can provide soil testing services. Tissue samples (from the forage) can also help detect specific deficiencies, like sulfur and micronutrients, but these samples must be collected at the appropriate growth stage.

The basic nutrients for plant growth are nitrogen, phosphorous, and potassium. Grasses are very good at obtaining phosphorus from the soil, but legumes can sometimes benefit from added phosphorous. A soil test will help identify how much you need. Similarly, most soils have enough potassium to support forage production – again, check your soil test.

Nitrogen, then, is often the most critical nutrient in pasture production. The nitrogen cycle, according to Rob, “is a leaky system. Nitrogen is constantly being lost to leaching, denitrification, volatilization, and excessive accumulation by plants.” In pasture systems (as opposed to hay fields), some nitrogen is returned through manure and urine deposition, but some is removed by livestock as muscle, bone, and hair/wool. In our part of the Sierra foothills and Sacramento Valley, we add nitrogen through atmospheric deposition from air pollutants generated to our west – in one study, the Sierra Foothill Research and Extension Center received more than 6 lbs. per acre per year.

Because nitrogen is mobile in our pasture systems, the best time to apply is in the springtime as our cool season grasses are coming out of dormancy. Ideally, we should apply nitrogen just before the first irrigation to ensure rapid uptake by plants. Split applications are also more effective (that is a spring application followed by an early fall application when our cool season forages are recovering from the “summer slump”).

But does fertilizer pay? Does it increase forage production and nutritional value enough to justify the cost? Will you be able to run more cows? Will your steers gain more weight during the summer due to improved nutrition? Rob’s work has focused on irrigated pastures in northeastern California, but the answer seems to mostly be yes. Obviously, the cost: benefit analysis depends on the cost of getting the fertilizer and applying it to your pasture, as well as the efficiency of the rest of your management system. If you’re interested in working this out for your operation, let me know! Rob offers a few rules of thumb for considering nitrogen fertilization on irrigated pasture:

- Take species composition, water availability, and irrigation uniformity into account. Don’t apply fertilizer if the pasture does not have adequate soil moisture at the time of fertilizer application nor if irrigation or rainfall are not possible in the near future.
- Rob recommends collecting a nitrate soil test in the spring and fall. It’s easy to collect, costs less than \$20 per sample, and is a good way to see if fertilizer is needed shortly before application. It also allows you to develop a history of soil nitrate in your pastures, which will allow you to see trends. In the future, you may want to sample below the root zone to see if N is accumulating below the root zone and alter your irrigation management accordingly.

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- Most irrigated perennial cool-season grass pastures will benefit from the application of 80-100 lbs. of nitrogen per acre applied in the springtime. It's not worth putting out less than 50 lbs. per acre – the application costs will be the same, but the boost in production will be lower.
- Don't apply N when establishing a new pasture – you'll only boost weed growth. Seedling grasses need more frequent irrigation than established grass. They can benefit from nitrogen after the seedling growth stage but only if weeds are not a problem or weeds are controlled with herbicides. Wait until the planted species have germinated and started growing before applying nitrogen.

If you're interested in doing some fertilization trials, send me an email at dmacon@ucanr.edu. I'm interested in looking at a variety of nutrient sources, including compost and organic sources.

Moderate Drought Persists in Northern California

Despite COVID-19's dominance of our news cycle and our family conversations, normal, everyday ranching concerns continue. Even with close to average rainfall in March, and more rain predicted for early April, we're still need to be thinking about drought.

Last month, I was invited to give a presentation during the California-Nevada Drought Early Warning System regular bimonthly webinar. The first two talks covered current conditions and future outlook - and even with the rain and snow we had in our part of the Sierra Nevada and Sacramento Valley last week, we remain in drought conditions. If you're interested in the details, there is a recording of the webinar talks on the website (mine is the third talk in the webinar). The first two talks confirmed my observations. After last month's rain, I checked soil moisture on our winter rangeland - even with three inches of precipitation, the soil was only 50-75 percent saturated (which explains the lack of water in our seasonal creeks). We're starting to see some of our annual grasses head out, indicating the possibility of an earlier-than-normal decline in forage quality. While the snow in the mountains was welcome, our snow water content remains well below average for this time of year.

As I was preparing my talk, I started thinking about how my approach to this year's drought was different from how we managed through 2013-14 (one of the driest years in my memory). While every drought is unique (in terms of severity, timing, and scope), I think I've also learned from my experience. In 2013, we moved our sheep to Rio Vista, where I helped manage a 1900 ewe operation. Here's a quick comparison of the steps we took in the fall of 2013 and early winter of 2014, versus our strategies in 2019-20.



2013-2014 Drought (late germination, followed by extended dry period and warm January temperatures)

- We fed our entire year's supply of alfalfa during lambing (October-December) because there was virtually no grass on our annual rangelands.
- In late January, we sold approximately one-third of our ewes to reduce our forage demand once they started to lamb.
- In mid-February, we moved our sheep back to annual rangeland in the foothills near Auburn (to ensure that the larger commercial flock would have access to rangeland in Rio Vista).
- In late February, we ultra sounded our ewes to determine whether they were pregnant. We sold a handful of open ewes.
- We weaned our lambs four weeks earlier than normal (in late May) to reduce our stocking rate and save dry forage for fall.

2019-2020 Drought (late termination, followed by wet December, dry January, record dry/warm February)

- For the first time ever, we took our ewes to alfalfa stubble in the Sacramento Valley (near Nicolaus) from mid-November until mid-December. While we incurred some additional expense, this allowed us to rest our winter rangeland for an additional 30 days.
- Because we've kept detailed grazing records since the previous drought, we were able to put together detailed, 2-month grazing plans. We identified additional forage resources on our winter rangeland that allowed us to extend our forage supplies.
- We will cull any ewe without a lamb when we ship the flock back to spring/summer pasture in April. We'll cull additional ewes at weaning (for poor mothering, bad udders, missing teeth, etc.)

I'm curious as to how your drought strategies have changed! Are you doing anything differently this year? Is this the first drought you've experienced? Share your tips and experiences on the Facebook Farmer-Rancher Drought Forum (<https://www.facebook.com/groups/farmerrancherdroughtforum/>)

CA Dept of Fish and Wildlife Launches Human-Wildlife Conflict Website



Given the nature of rangeland livestock production in California, some conflict with wildlife is probably inevitable. In our part of the Sierra Nevada and Sacramento Valley, grazing livestock and wildlife (including a number of predators) often occupy the same landscapes. Private ranch lands and public grazing lands alike provide important habitat for a wide variety of game and nongame species.

In recognition of the potential for conflicts between human activities and wildlife, the California Department of Fish and Wildlife has launched a new website focused on reducing these conflicts. Managed by the Wildlife Investigations Lab, this new resource includes information on a dealing with wildlife problems in urban, suburban, and rural settings.

Here's a link: [CDFW Human-Wildlife Conflicts Program](#)

Virtual Meetings!

Just because we're practicing social distancing doesn't mean we can't keep learning from one another! Join us for two virtual meetings this month!



The Importance of Mother: Evaluating Maternal Behavior in Ewes – Instagram Live Event (Wednesday, April 8 – 3:30 p.m.):

Join me while I interview UC Davis PhD student Kaleiah Schiller about her research into maternal behavior in sheep. We'll discuss maternal traits and their impact on lamb survival and labor efficiency. To join the event, follow me on Instagram at @flyingmule. The live event will begin at 3:30 p.m. and will also be archived in my Instagram Stories!



Virtual Coffee Shop – Zoom Meet-up (Tuesday, April 21 – 6:30 a.m.):

Are you missing catching up on the latest ranching news, weather, and weaning weights now that you can't meet your neighbors for coffee and breakfast? Join us for our first Virtual Coffee Shop meet-up on Zoom. You can join by phone or by computer! Register at http://ucanr.edu/virtual_coffee_shop and I will send you a link to join the meeting. We'll talk drought, irrigated pasture, and other livestock-related topics! Bring your own coffee!

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UC COOPERATIVE EXTENSION
LIVESTOCK and NATURAL RESOURCES Program?
 Please take this short survey to help me better meet
 your information needs!

<http://ucanr.edu/livestockinfosurvey>

For a hard copy of the survey,
 please call (530) 889-7385
 or email me at
dmacon@ucanr.edu.

Thank you!

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