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- Baa’s and Bleat’s
- California Ag Today

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## Policy Impacting California Rangelands and Ranching

Introduced by Senator Laird (District 17, the Central Coast) this year, Senate Bill 977 proposes to establish the California Conservation Ranching Incentive Program that would oversee grants to fund ranching practices to benefit wildfire resilience, ground water recharge, healthy soils, climate resilience, conservation of special status species (California Tiger Salamander for instance), and protection of wetlands and riparian areas. Essentially, this would be a program to provide payments for ecosystem services and has been backed by California Audubon. Specific details would need to be ironed out (i.e., would you have to change practices to increase carbon sequestered on your ranch already like for other programs, or maintain good practices that are providing for carbon sequestration already?), but the plan is to increase involvement in different practices that are known to be scientifically sound, benefiting the land. A management plan was required as well as annual reporting documenting the conditions on the ranch. This moved through the Senate, but has since stalled in the Assembly. It likely will not pass this year, but I’m sure we will see something similar in the future. The topics Senator Laird wanted to cover are not going away. And the ability to be paid for good, sound range management would increase the income streams for the ranch. There was a discussion on how the program would be implemented, and if ranchers would have to pay to have management plans created by a Certified Rangeland Manager or not. Now in the “suspense” category, it likely will die in the Assembly. Odds are good there will be a similar bill introduced in the future.

Another bill that did not move forward would have required “natural and working lands” to sequester carbon, 60 million metric tons by 2030 and 75 million metric tons by 2035. While we do know that rangelands can sequester carbon, there is still some basic information on some practices to completely understand how we can successfully sequester carbon. Between these two bills that did not move forward this year, I would not be surprised if there are more proposed next year and into the future.

Monitoring stock ponds is something everyone has had to learn to do and thanks goes to Senator Laird. The short course developed by University of California Cooperative Extension is now waiting for the Governor’s signature

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to become permanent law, allowing ranchers to take the course and monitor their own property instead of having to hire a consultant.

The Ag Pass was signed into law last year, and counties are working on establishing a protocol for the Ag Pass and it's required training. The Ag Commissioner in each county has taken lead on the program, and Stanislaus County expects to have the county program to the Board of Supervisors at the September board meeting. Be on the lookout for more information and when the first training will be held locally. The next newsletter should have more information about our local Ag Passes and opportunities for the required training.

## Forage Production 2021-2022

After an excellent start in December, again, we had a below normal year. Farm Services Agencies (FSA) should be releasing information shortly on what programs will be available for the 2021-2022 forage year. My forage plots in the counties ranged from 88% below normal to just above normal, with most places falling in the 55-60% loss on both sides of the valley. This is just one piece of information FSA uses to trigger drought programs. This does not account for the fact that this year our peak standing crop, when the annual grasses and forbs have set seeds, but before seeds are falling to the ground, when the forages will weigh the most, occurred almost six weeks early this spring, or the fact that there was very little growth in February. All of that information as well as feedback from ranchers, if provided to FSA for the county committees to have a complete understanding of the forage conditions and drought losses, can be accurately and fairly established. With more years being in a drought lately, it might be a good idea to look into all of FSA's programs and see which ones might best fit your operation. Some do require you to sign up the fall prior.



## Neospora in Beef Cattle

By Dr. Gabriele Maier, UCD Beef Cattle extension veterinarian

### What is Neospora?

*Neospora caninum* is a single celled, parasitic protozoal organism, and the most commonly diagnosed cause of bovine abortions in many regions of the world. Although it may be more common in dairy cattle, beef herds are not immune to it. In the US, studies found a median seroprevalence of 13% in beef cattle estimated to cause an annual loss of US \$111 million. Cows and other ruminants are intermediate hosts, while dogs and other canids are definitive hosts, in which *Neospora* undergoes sexual replication. Dogs, coyotes, or gray wolves typically get infected through consumption of aborted fetuses or infected meat. They will pass the infective form of *Neospora* called oocysts in the feces. When oocysts are accidentally ingested by intermediate hosts such as cattle, they sporulate in the gut and release so-called tachyzoites, which make their way out of the gut and into muscle as well as through the placenta to the developing fetus. The outcome is an aborted fetus, a mummy, a stillborn calf, or rarely a calf born with neurologic deficits such as abnormal gait or birth defects. However, transmission can also occur from infected cow to her fetus where a normal calf is born. Birds, including chickens, sparrows, and crows have also been identified as intermediate hosts and may contribute to the dissemination of *Neospora* when eaten by canids, but more research is needed to confirm. People do not seem to become infected with *Neospora*.

### Can cows transmit *Neospora* between each other?

A cow can only infect her own fetus with *Neospora*, there is no cow-to-cow transmission even when a cow aborts from *Neospora*.

### What do you see in affected cattle?

Aborting cattle show no other signs of disease and abortions can happen at any time during pregnancy starting at 3 months but are most common during mid-gestation between 4 - 7 months of pregnancy. There may be abortion storms where many cows abort at the

same time or there may just be an uptick in abortions above the background level that typically occurs during a season. Infection in early pregnancy may lead to more severe consequences though than infection during the last trimester of pregnancy.

### **Is there a vaccine or treatment?**

No commercial vaccines are available, neither are any drug treatments. The only option to deal with *Neospora* is through management and preventive measures.

### **How do you know you are dealing with Neospora abortions?**

It is always good to call the diagnostic lab and ask what tissues they would like to have submitted for a particular case. In general, for abortions, placenta, fetus, and blood from the dam are all important. For *Neospora* in particular, the most common found sites in the fetus are the brain, heart, or liver. If you don't have a placenta or a fetus, which is often the case, it might still be helpful to submit blood from cows that have aborted and those that have not aborted, to support a diagnosis of *Neospora* abortion. A positive test means that the cow was exposed to *Neospora* in the past, will stay infected for life, and is more likely but not guaranteed to abort because of it. Infected cows may also test negative on a blood test early in the infection but will likely test positive later on. Serial blood tests several months apart can help detect those cases.

It is not known what triggers the recrudescence of *Neospora* once a cow is infected. Recrudescence means, she got infected sometime in the past, *Neospora* formed tissue cysts in muscle that stay mostly undetected by the immune system, but later on, *Neospora* causes an abortion. Stress, disease, pregnancy, or other immune-suppressing events may be involved, but the science is still lacking to clearly define the cause of recrudescence.

### **Should you test herd additions?**

If you are concerned about *Neospora* in your herd, it is good to ask about abortion history in the seller herd. To be on the safe side, an ELISA screening test will help to eliminate those that test positive and who

might be at higher risk of *Neospora* abortion in the future.

### **How to manage Neospora once you know it's in the herd?**

Testing and culling may be one option, depending on the percent positive in the herd. However, that may not be feasible if there are a lot of cows that test positive. Another option is not to keep replacement heifers from positive cows or test them before making that decision, so the problem does not propagate. Testing calves before they drink colostrum would be ideal, so there is no confounding with maternal antibodies. Since there is very little chance of positive cows transmitting *Neospora* other than to their own calves, keeping those cows does not elevate the risk of *Neospora* infections or abortions in other cows. Positive cows are more likely, however, to abort or have a calf that is infected in utero.

### **What about cows with high genetic merit that test positive?**

Embryo transfer is a way to protect a calf from a dam with high genetic merit and that has tested positive. Make sure the embryo recipient tests negative. In this manner, you can still take advantage of a cow's genetics without running the risk of a *Neospora* abortion.

### **What about dogs and coyotes?**

There is no good test for dogs, and they are only infected for brief periods of time. It is, therefore, not recommended to get rid of dogs on the ranch if there is a problem with *Neospora*. However, keeping dogs from defecating anywhere near feed is an important control measure. In addition, promptly cleaning up any parts of the placenta or aborted fetus so dogs don't have access to them is important as well. Protecting feed sources from coyotes, and having a rodent control program, so coyotes aren't attracted to feed sources that may be infested with rodents, can also lower the risk.



# California Ewe Mastitis and Lamb Survivability Survey

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**\*\*Lambing season may be behind you, but please take a moment to read through and respond to the survey. They are still interested in hearing from people.\*\***

Has the lambing season left you sick of grafting orphaned lambs and/or dealing with bottle babies? It may be necessary to improve ewe udder health on your farm.

To highlight areas for future research, Dr. Rosie Busch, Sheep and Goat Extension Veterinarian at UC Davis, and her research lab in collaboration with UCCE Livestock Advisors have developed a survey for sheep producers about management of ewes and care of mastitis. If you own or manage breeding ewes and are willing to participate, please scan the QR code below or click here to complete the survey. This survey will take less than 10 minutes and can help us improve ewe and lamb health in California!

## What is Mastitis and why do we want to prevent it?

In pasture-raised sheep operations, the highest percentage of lamb losses occur within the first 72 hours of birth. This directly impacts productivity and profitability of the flock. Udder pain is one of the main reasons for ewes to reject lambs. In range or pasture rearing systems, rejection of the lamb by the ewe can create orphan lambs or lead to lamb starvation if noticed too late. Mastitis (inflammation of the mammary gland aka udder) in ewes is a significant cause of lamb morbidity, but research is lacking in prevention and control of the disease. In the most recent Sheep NAHMS Survey, producers across the United States noted mastitis as one of the top reasons for culling ewes and for antibiotic use in breeding animals. Mastitis can be caused from trauma to the udder as well as different types of viral (OPP) and bacterial (Staph, E.coli, Mannheimia) infections that can be passed from animal to animal, or from the environment to the animal. The risk for mastitis can vary due to the ewe's nutritional status, housing



An ewe that can't raise a twin lamb and has an asymmetrical udder and wool break should be checked for mastitis.

conditions, number of lambs, and other management practices.

Mastitis can be classified as clinical or sub-clinical. Clinical cases of mastitis have visual signs of milk or udder abnormalities (see photo). Ewes with clinical mastitis will typically not allow lambs to nurse due to udder pain, leading to increased lamb morbidity. Ewes may become sick from their mastitis, or have scarring in the mammary gland that prevent them from being able to produce milk for their current lambs or future lamb crop. Thus, it is very important to monitor and control for signs of clinical mastitis.

Sub-clinical mastitis indicates that there are no visual abnormalities of the milk or udder, but the ewe may have a drop in milk production. Sub-clinical mastitis is diagnosed by testing for increased numbers of inflammatory cells in the milk (i.e., California Mastitis Test, see photo). Sub-clinical mastitis can become clinical. "Hard bag," which is typically related to mastitis caused by the Ovine Progressive Pneumonia (OPP) virus, is a chronic infection leading to the udder feeling firm and having little to no milk production.

All of these forms of mastitis lead to production losses on the farm. Mastitis prevention and control may limit lamb production losses, the number of bottle lambs, and improve lifetime productivity of your ewes. Help us improve our knowledge in this area by taking our survey.

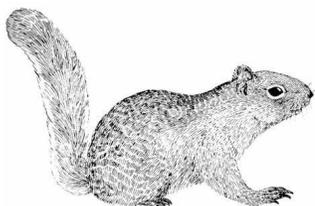
Scan the QR code below or click here to complete the survey.



## Ground Squirrels on Rangelands

Ground squirrels are common on most California rangelands, and some areas are just lucky to have more of the pesky critters running around. But a rancher asked one of my colleagues – just how much forage does a ground squirrel eat? In drought years, how much feed am I losing to the squirrels on my ranch that could support my cows? Working with our vertebrate pest specialist at UC Davis, a group of us wanted to find the answer. This was a fairly simple project, locate ranches in different parts of the state with a large ground squirrel population; within each ranch locate four areas that were classified as high, medium, low or zero density ground squirrels and establish a one-acre plot in each of the densities to count ground squirrels. Of course, the areas were spread far enough apart that we were certain squirrels were not moving between them, skewing our data. For example, the zero density plots, our control, were nowhere near the other plots, so squirrels were not just leaving our control to forage elsewhere. Then we spent time out on the ranch counting ground squirrels in the morning and afternoon when they are most active and gathered some basic information on the amount of forage in the area. What we found was interesting. Squirrels definitely have an impact on forage. We did this project in the spring of 2019 and 2020, which provided us with different forage production years as well.

Our initial time spent scoping out the ranches for distinct ground squirrel densities did provide the range we were hoping for with 0-1 squirrels/acre for our control, 2-6 for our low, 7-15 for medium, and greater than 15 for our high-density areas. We had for our high-density plots, 19-30 ground squirrels. Counting was fairly easy to do, using our vehicles as a “blind” and allowing ground squirrels to acclimate to the parked truck close by and resuming their normal foraging activities before we started counting. We also were able to gather grazing information on almost all ranches. Our study estimated each ground



squirrel consumes just over 24 lbs./acre of forage during the growing season. While that may not be much if you

have a low density of ground squirrels, at our upper count of 30 ground squirrels per acre, that will mean on average 720 lbs. of forage per acre during the growing season is removed by squirrels. In drought years, that could make a big difference. We conducted this project in May and June, calculating the reduction of forage at the end of the growing season associated with ground squirrels. They will be consuming forages throughout the summer, which we did not estimate. Just how much more might they consume? We are not sure, but a loss of 720 lbs. of feed per acre is substantial.

A separate project was conducted in 2018 and 2019 where we wanted to see if the delivery of bait made an impact in levels of the anticoagulant in their livers. This is of interest when trying to determine if there might be unintended secondary kills by any animals who consume the dead squirrels. We had plots using bait stations, spot treatments, broadcast treatments and of course our control with no bait. Squirrels were caught, radio collared, and released back from the area they were caught. Radio telemetry was used daily to locate each collared squirrel and determine if the squirrels were dead or alive, and if they were dead, we had the job of retrieving the carcass. Most of the time we need a jackhammer as well as shovels to dig down in the rocky soils. To escape the summer heat, the squirrels were fairly deep into their borough systems. We did not find any differences in anticoagulant levels between the different bait delivery systems. There was more bait used in the bait station plots compared to the others, but no difference in the potential for secondary kills. While statistically there was also no difference in how fast the collared squirrels died in each plot, squirrels in the bait stations did tend to die faster. Bait stations also reduce the risk of unintended animals consuming bait.

If I had a large population of ground squirrels on my ranch, now knowing how much forage they are consuming during the growing season, knowledge that regardless of the bait delivery I can reduce unintended secondary kills, I would probably opt to use bait stations in areas with high density of squirrels. To reduce the risk of livestock damage to the bait stations, attaching them to the fence line is a good option.