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30x30 Comments are due February 15th!!

Make Sure your voice is heard!

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30x30 – What is it and why should I care?

In October 2020, Governor Newsom created an executive order to conserve 30% of California land and coastal waterways by 2030, which gives us the shorthand 30 by 30. The California Natural Resource Agency (CNRA) will oversee this effort and they have a draft out for review right now. I strongly urge everyone to please take a few minutes to look at this program and make comments.

Most of us involved in agriculture, especially livestock production, know over 50% of the state is conserved – depending on the definition of "conserved". That is one of the biggest issues; how do you define conserved? To many of us "conserved" simply means the land is protected from being paved over. We may also believe that "conserved" means no land use change, so it stays as rangelands or forest for example. With that view of "conserved," we would assume that California already has more than 30% of the state "conserved" through State and federal lands alone, not counting conservation easements and other conserved lands. Looking at the maps created to track conservation, most of what we would assume is included is not. CNRA is using definitions for "conserved" to have permanent protection from conversion of natural land cover and has a mandated management plan to maintain a natural state. This is their gold standard, category 1 which includes national parks, wilderness areas, ecological reserves, and wild and scenic rivers. A local example in Stanislaus County is Henry Coe State Park and in San Joaquin County is Staten Island. Category 2 is also counted for the 30% and includes national wildlife refuges, California state parks, and national seashores. With these two categories, CNRA calculates 23.78% of the state is "conserved."

Both counties have active Habitat Conservation Plans as well as ranches with easements we would assume are included, but not all easements are counted. Ag easements, multiple-use national forests, and Bureau of Land Management lands are category 3 and not included. While grazing is not mentioned as a cause to degrade land from category 1 or 2, it does appear that "working lands" are not always meeting the CNRA definition of "conserved."

The last category is category 4 including playgrounds, public golf courses and reservoirs. While most of us can understand the exclusion of golf courses and playgrounds as natural lands, it is hard to consider the watershed around

Camanche and Pardee Reservoirs not being included. From the website, selecting the "CA Nature" tab provides maps of conserved lands, the ability to see the four categories, and selecting any marked land will provide you with information about that land.

The draft also includes actions to reach 30 by 30, with the priority action of acquiring more public lands. The next priority is to grow voluntary private land conservation programs, which would include creating public access on private lands on future conservation easements. On public lands that do not meet the definition currently, goals of strengthening current protections to raise to categories 1 or 2 are a priority.

There are 16 strategies CNRA has identified with subcategories, but these are some of the key ones I felt important to share. Please take some time to look at the document and provide comments by February 15, 2022. While the Multibenefit Purposing Program has potential to allow for more grazing opportunities, 30 by 30 does not seem as supportive of grazing as a management unit overall. Information can be found on the new 30 by 30 website:

(https://www.californianature.ca.gov)

Multibenefit Land Repurposing Program

Since the Sustainable Groundwater Management Act (SGMA) was signed in 2014, there have been discussions up and down the state on how we collectively manage our groundwater to avoid overdraft. In the past few years, retiring irrigated lands has gained traction, and will start to happen soon in some basins. In response to land coming out of irrigated agriculture, there is the new Multibenefit Land Repurposing Program, with funding to create opportunities. The plan has been released for public comments, due by January 31, 2022, and public comment workshops were held January 18 and 20, 2022. The California Department of Conservation has released the draft guidelines on their website (www.conservation.ca.gov). I will give a summary here from the public comment workshop, but I encourage anyone interested to please read the full document on their website and make any comments you might have. Our area is not a critical basin but is a high priority. Target dates moving forward for the plan is to have Guidelines released in mid-February with applications for grants due April 1, 2022, and projects awarded in mid-May. There is a total of $50 million set aside for this project.

The goals of the program can be found on page 2 of the draft. The overarching goal is to achieve groundwater sustainability in critically over drafted basins (primarily the San Joaquin Valley) as well as high and medium priority basins, where a state of emergency drought declaration has been issued. Reducing ground water usage in these basins will be key, but the department also wants to ensure that the economic vitality of the communities, including agriculture, is not sacrificed. There are opportunities to create recharge basins and habitat that all sound like they could have a nexus with grazing, creating new opportunities. There are also goals around communities, with small and medium farmers and ranchers receiving a priority in the granting process.

The Department of Conservation expects three to five regional block grants of about $10 million dollars each with completion by June 2026. These big grants will be managed by a Regional Block Grantee, a non-profit, watermaster, or a California native tribe. There will be several contractors, landowners, tribes and subgrantees all under the Regional Block Grantee to complete the project. Outreach, education, training, and monitoring are all part of the deliverables with the intent being to involve anyone interested in the effort. In theory, a substantial piece of the $10 million should filter down to the local community for "boots on the ground" efforts.

Example projects the Department of Conservation expects to see include: restoration of habitat, multibenefit recharge areas, transitioning to dryland farming or rangelands, renewable energy projects, incentives payments to landowners to implement multibenefit projects, reestablishment of tribal land uses, implantation of tribal cultural practices and creation of parks or community recreation areas. There are a lot of possibilities where grazing can benefit from this program, by gaining access to more

grazing lands and even direct payments to ranchers if grazing can provide a public benefit for 10 years.

If you have any interest, please make comments. If you are in an area where there may be a project, be sure to engage in the process. I am currently working on a research project with some colleagues with part of the project examining if almond orchards were to be pulled out of production do to SGMA, what potential is there for annual rangelands again? My two big questions concern the seedbank and how does water movement differ, and will it impact what forages might be present once irrigation is not allowed? Trees have much deeper rooting depths than annual forages, so will rainfall all percolate in the soil below the rooting depth of annual grasses due to the cultural practices of the orchards? If so, how would this impact the growing season? We hope to have some of those answers after our field season this year. To me, this is important as we talk about repurposing irrigated land. As to what is in the seedbank, the cultural practices on orchard floors has removed Medusahead grass, an unpalatable, invasive grass, creating a benefit for grazing. As we finish the grant, we will share the information broadly for anyone who is interested.

Again, please take some time to look at the program before January 31, 2022.

The Importance of Using Non-lead Ammunition

Matt Parker, Institute for Wildlife Studies

The habitat and resources that ranchers provide to wildlife form the deeply intertwined roots of ranching and conservation. Another way that ranchers can deepen their conservation roots is by using non-lead ammunition whenever dispatching an animal with a firearm is required. Situations may arise that require the use of a firearm such as depredation, vertebrate pest removal, or dispatching old or sick livestock. The type of bullet used to dispatch an animal can have lasting consequences on the landscape. If lead-based ammunition is used to dispatch an animal, even something small like a ground squirrel, then it becomes a potential pathway of lead exposure for any organism scavenging on the remains of that animal. Using non-lead ammunition benefits scavenging wildlife by providing a healthy, nutritious, and lead-free food source.

The Biology

Working in California's Central Valley, it can be easy to forget that you're also in one of the most biodiverse states in the country. Some of the more common critters you may see are scavengers like the turkey vulture, common raven, yellow-billed magpie, and a plethora of raptor species. These are the animals that keep our landscapes clear of dead and decaying organisms, called carrion. These are also the animals most likely to suffer from lead exposure when lead bullets are used to dispatch wildlife.

In 2019, California became the first state to require non-lead ammunition to dispatch animals with a firearm. Two years after implementation, lead poisoning cases are still prevalent in California scavengers. What does this mean? Lead ammunition is still being used to some degree in California and scavengers are getting exposed to it. Why does this matter? Scavenging wildlife provide a tremendous environmental service by eating carrion, resulting in lower rates of disease and less decaying organisms on the landscape. Furthermore, many opportunistic scavengers like Swainson's or red-tailed hawks, provide additional services to agricultural communities by consuming rodents and other pestilential species.

The reason that lead-core bullets are so problematic to scavengers is because lead bullets will fragment when they travel at fast rates of speed, and make contact with a solid object like an animal. Even in small calibers like .22lr, hundreds of lead fragments can result from a single bullet. The image below is a radiograph of a Richardson ground squirrel dispatched with a .22 caliber lead-core bullet that illustrates the magnitude of fragmentation. (*IMAGE 1 squirrel*). Another issue with lead fragments is that smaller pieces are more problematic because they have a greater surface-area to volume ratio. What this means is that they dissolve more easily in the highly acidic environment of a scavenger's stomach. If a scavenger were to consume this squirrel, there is a

strong likelihood that animal would ingest lead. However, if the shooter chose to use a non-lead bullet, then a scavenger could enjoy a safe and healthy meal, while not being at risk of suffering from lead poisoning.

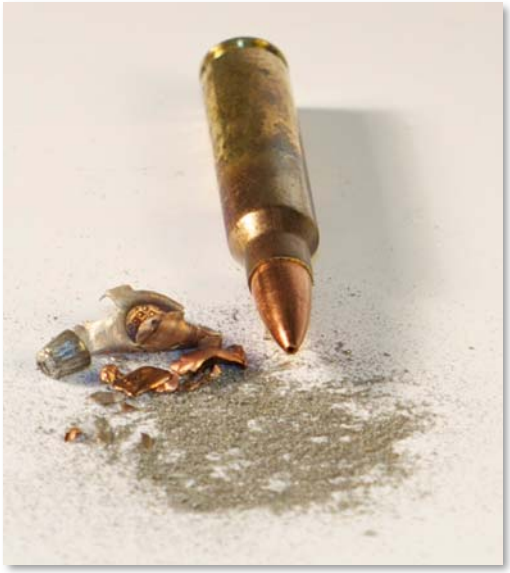
(IMAGE 1 squirrel)

The Ballistics

Non-lead ammunition is accurate and effective. There is a considerable amount of variety for non-lead ammunition. Knowing the different options and how they perform can encourage more of their use. For large caliber rifles, a monolithic copper or copper alloy projectile is the main alternative to lead. (*IMAGE 2- lead/non-lead*). There are notable differences between copper and lead bullets and understanding these can help you be a more competent shooter. Copper is less dense than lead, so to compensate for this disparity, manufacturers lengthen copper bullets to achieve equal weights. Dropping the grain weight of a solid copper bullet by 15-25% of what you typically used with lead is recommended to experience similar performance. A lighter bullet may not seem desirable, however solid non-lead bullets retain much greater levels of weight and are typically moving faster; as a result, the energy deposited into the animal is typically greater.

(*IMAGE 2- lead/non-lead*).

Similarly, rim-fire or small caliber firearms have had a lot of advancement with non-lead alternatives. Several non-lead metal materials are being utilized by manufacturers including copper, tin, zinc, and various alloys combining these metals. Beyond materials, different bullet designs can offer the shooter specific performance attributes that may be desirable over lead. One example is a frangible bullet, highly effective for depredation or pest removal but not recommended for game you wish to consume. Frangible rounds are composed of a compressed copper powder matrix that produce a shallow but devastating wound channel with rapid expansion. A frangible round offers a quick and humane kill, and the powdered copper left in an animal does not pose a threat to scavengers that consume it (*IMAGE 3 - frangible*).



(*IMAGE 3 - frangible*).

The Future

Non-lead bullets are an advancement of bullet technology and offer more options than has ever been available. Choosing to use a non-lead bullet is the right choice for individuals who want to further illustrate their commitment to conservation, while not sacrificing on the performance of the tool. There are always challenges that could infringe this choice, such as a stockpile of lead-core ammunition or trouble finding non-lead in your caliber. These are real challenges, but they are worth overcoming for the benefit to wildlife and conservation. If you have questions, need help finding non-lead ammunition or would like to know more, we encourage you to check out huntingwithnonlead.org.

Grass Tetany Reminders

We started off the season with the best December storms in years, and now a dry January. I am hopeful that rain will return because if we stay with the warm temperatures (60's in January?), we could have the potential for grass tetany (hypomagnesemic tetany), a metabolic disease affecting ruminants (cattle and sheep primarily).

The most important condition that causes grass tetany is low blood magnesium concentrations, and there are many different situations that can cause it in cattle. Rapidly growing grasses in the spring tend to be low in magnesium, starting the potential for grass tetany. On top of low levels, there are interactions both in the grasses and the animal that increase the risk of grass tetany. In the plant, ammonia fertilizer can impact magnesium levels, reducing the already naturally low levels. In the animal, ammonia (crude protein) and potassium both can block absorption of magnesium, and fertilized grasses will be higher in ammonia and potassium. Heavier milking cows have a higher requirement for magnesium, so are at a higher risk, and it is normally your "better cows" who you will find dead. Potentially before you realize you have an issue. If there are signs of a struggle such as grass and dirt moved away from their feet and head, this can help lead to a diagnosis of grass tetany, instead of a poisonous plant or other disease such as Redwater. A necropsy can be performed to positively identify the cause of death by collecting the fluid within the eye. This is the only place in the body that does not increase in magnesium concentrations near death, and therefore is the one location needed to be sampled. Contact your vet as soon as you find a dead cow to determine the best procedure(s) for conducting a necropsy.

If cattle are found alive, they may be weak, disoriented, have convulsions, or attack people or inanimate objects. Keeping these animals calm is important to prevent the convulsions that will lead to death. Intravenous solutions of magnesium and calcium need to be administered to live cattle determined to have grass tetany. Cattle should be moved to an area where alfalfa hay and magnesium and calcium supplements can be given while monitored for relapse. For downed animals, two ounces of magnesium chloride or magnesium sulphate (Epsom salt) in a 200 mL warm water solution can be given as an enema. Blood magnesium levels can increase after 20 minutes. As with any treatment, you should discuss with your vet the different treatment options.

Prevention is the best course of action for grass tetany. Salt-mineral mixes of molasses supplements are the most common methods. Beet molasses is high in magnesium and is normally a large percentage of molasses made in the west. You should read the labels closely and if the supplement contains urea, it may not help prevent grass tetany, since urea breaks down easily in the rumen to ammonia. Homemade recipes can work just as well, such as one-to-one proportion of magnesium oxide to dried molasses, offered free choice or one-to-one-to-one-to-one proportions of magnesium oxide, salt, dicalcium phosphate, corn meal (cottonseed meal or soybean meal can work as well) fed at a rate of four ounces per head per day, minimum. Corn meal can be increased if cattle are not eating enough. The goal is to supplement one ounce of magnesium oxide and one ounce of dicalcium phosphate per head, per day. So, the saying "an ounce of prevention is worth a pound of cure" definitely applies here.