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Now is the Time to Consider Irrigated Pasture Renovations

By Josh Davy, Livestock and Natural Resources Advisor (UCCE – Tehama/Glenn/Colusa) and Dan Macon, Livestock and Natural Resources Advisor (UCCE – Placer/Nevada/Sutter/Yuba)

Spring is the perfect time to start thinking of pasture improvement. It provides ample time to look for potential improvement areas and the opportunity to make a plan to act on them. Here's some things to consider:

- **How much clover is in the pasture?** Clover provides the high quality portion of the pasture and fixes some nitrogen. If by late spring if it appears the stand is far below 25% of the pasture, it's most commonly a phosphorus deficiency causing the problem. Very seldom is adding clover seed necessary when pasture has been in production for multiple years. A soil test is a cheap way to determine if phosphorus is low ([A&L Western Laboratories](#) in Modesto can perform soil tests). Usually 50 lbs/acre of actual phosphorus (100 lbs/acre 11-52-0) will fix the problem. It's possible to bank phosphorus with higher rates because it is not mobile in the soil, which could eliminate the need to reapply phosphorus for several years, but higher rates could cause excessive clover leading to bloat. Phosphorus can be fertilized any season of the year.
- **Is there an adequate amount of cool season grasses?** These include fescue and orchardgrass. Cool season grasses provide the bulk of forage at all times except the mid-summer months when dallisgrass prevails. Besides production, cool season grasses provide soil cover in late spring, which can help prevent weed invasion. If these grasses are not producing adequately it could be for several reasons.
 1. *Nitrogen deficiency:* the grasses may be present but they are low in production because they aren't getting enough nitrogen for growth. This could be the case if clover levels are low, pastures are frequently hayed, or a fertility program is needed. Applying 50-70 lbs/acre of actual nitrogen can alleviate this problem. An adequate stand of clover can also provide some needed nitrogen.
 2. *Pastures are grazed to closely or too early during establishment.* Pastures need to be fully established before they are heavily grazed; grazing too soon can result in plants being pulled from the ground. More commonly, established pastures are grazed too short, which limits the root system, and

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- requires longer rest periods between grazing bouts. This is common in winter grazed pastures. Consider adopting a rotational grazing system that will provide enough rest for plants to recover.
3. Cool season perennial grasses were never there or died out. In many cases, cool season grasses never established. This is frequently seen in mixes containing annual ryegrass (which also can be volunteer), which has strong seedling vigor that can crowd out the establishing perennials. Annual ryegrass is valuable in already established pastures, but can be very detrimental during establishment. Perennial ryegrass is also commonly added to pasture mixes. Although a high quality grass, perennial ryegrass has a short life span of only 3-4 years. It would need to be replanted frequently to maintain it as a component of the pasture. If plants simply don't exist, early fall planting can bring this component back to the pasture. Planting in early fall favors early germination and better establishment. Winter seedlings may not germinate until March leaving little time for establishment before the grazing season. Refrain from older tall fescue varieties. New varieties cost more (\$3 vs \$2 per lb.), but have much better quality and palatability. Orchardgrass variety selection is less important.
 4. Is irrigation adequate? Pasture roots grow in the presence of water, not with a lack of it. Of course, over irrigation doesn't help and leads to rush growth rather than grass, but a dry pasture will cease production. Consider monitoring soil moisture periodically during the irrigation season to determine whether you're getting adequate water to the root zone. Soil moisture can be monitored with moisture sensors or by simply by feel (here's a link to monitoring soil moisture by feel:
https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_051845.pdf)

- **Does the summer slump cause a lack of feed?**

Dallisgrass production can be high in the summer provided it has adequate nitrogen and irrigation water. Economical increases in production can be attained by applying 50-70 units of actual nitrogen. This practice can actually eliminate the common "summer slump" seen in irrigated pastures that have adequate moisture.

- **Do you have the grazing right?** Appropriate grazing management is crucial to maintaining your investment in irrigated pasture productivity. Adjusting the rest period between grazing periods to match the recovery rate of pasture plants can help maintain root vigor. Leaving adequate stubble height to accommodate rapid recovery from grazing can also help reduce weed invasion.



If you have questions about your irrigated pasture, contact me at dmacon@ucanr.edu to schedule a ranch visit!

Turns Out – We are in a Drought!

During the last 6 months, I've felt like the boy who cried wolf. When we didn't get a germinating rain until November, I worried about drought. When we ended December at less than 50% of our average season-to-date precipitation, I worried about what our forage conditions would look like when we started lambing two months later. In March, as the blue oaks leafed out and I realized that none of our seasonal creeks were going to flow at all this winter, I worried about stock water and springtime forage conditions. Now that we're in early April, with no rain on the horizon for at least two weeks and a below average snowpack in the Sierra to our east, I think it's safe to say, "We're in a drought!"

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From a ranching perspective, our drought strategies need to help us balance supply (that is, the quantity and quality of forage available to us) with demand (the number of mouths we need to feed on this forage). A number of ranchers here in the foothills have reported that they've already taken steps to achieve this balance – some sold older cows last fall; some have weaned calves earlier this spring. Unlike the 2014 drought, however, the cattle market isn't red-hot this year – a down market makes these decisions more complicated.

In our small-scale sheep operation, we decided a year ago that fall forage conditions might be difficult, especially if we didn't get an early germinating rain. We culled heavily last year with an eye towards keeping the number of sheep we knew we could sustain on our fall/winter rangeland. When it didn't rain until November, we decided to purchase supplemental protein (in the form of alfalfa) to allow our sheep to utilize the dry forage we'd saved. And fortunately, we already had the equipment necessary to haul stock water to our sheep.

Ultimately, managing through a drought requires flexibility. The tools we have available to us may be proactive (that is, we can use these tools before drought occurs) or reactive (tools that we use once we're facing drought). In my experience, the proactive tools I've chosen set up the reactive tools available to me. For example, our conservative stocking rate resulted in enough dry forage to make it through December and January, as long as we provided supplemental protein. Alternatively, if you identify the animals that could be sold in the event of drought, you might sell older, less productive cows if you run short on forage. The table below outlines some of the key strategies available.

	Forage Supply Flexibility	Forage Demand Flexibility
Proactive Tools	<ul style="list-style-type: none"> • Conservative stocking rate • Grass-banking • Pasture rest • Pasture/range insurance 	<ul style="list-style-type: none"> • Identifying animals that could be sold • Incorporate additional classes of livestock • Multi-species grazing
Reactive Tools	<ul style="list-style-type: none"> • Supplemental feeding • Substitution feeding • Stock water development or hauling • Apply for government assistance • Rent additional land 	<ul style="list-style-type: none"> • Early weaning • Selling replacements • Culling • Allow body condition to decline

Here in the foothills, our irrigation districts appear to have enough water in storage to meet demand this summer – which is a tremendous relief. If your summer water deliveries will be reduced, you might start thinking about how you'll use the water you do get strategically. As dry as our soils seem to be, irrigating now (while knowing your season may end early) could be one approach.



Longer term, it's not too early to start thinking about fall forage. Will you have dry feed to return to after irrigation season (or mountain meadow grazing) has ended? When will you know what your fall feed inventory looks like? What steps can you take now to balance fall forage demand with supply? Having ranched through the 2012-2015 drought, I know these are not easy decisions – but they are necessary. Talking your options through with your family, with your neighbors – even with your farm advisor – might help your strategies take shape!

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More Drought Information

In early March 2021, USDA declared Placer, Nevada, Sutter, and Yuba Counties (along with 46 other California counties) to be primary disaster areas due to drought. This declaration makes producers eligible for a variety of USDA disaster relief programs. The links below provide additional information on disaster aid and emergency loans:

Emergency Loan Program: <https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdaprograms/FactSheets/2019/emergency-loan-program.pdf>

Livestock Disaster Forage Program (LFP): https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdaprograms/FactSheets/livestock_forage_program_lfp-fact_sheet.pdf

Noninsured Crop Disaster Assistance Program (NAP): https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdaprograms/FactSheets/noninsured_crop_disaster_assistance_program-nap-fact_sheet.pdf

For more information, contact your local Farm Service Agency office. You can find a directory of county offices at <https://offices.sc.egov.usda.gov/locator/app?state=ca&agency=fsa>

Drought Planning Decision Support Tool – Volunteers Needed!

Along with my colleague Grace Woodmansee, the livestock and natural resources advisor in Siskiyou County, I am developing a drought planning decision support tool for ranchers. This planning tool is designed to help ranchers select the drought strategies and critical dates that best fit their individual operations.

We need your feedback! If you're interested in beta-testing this tool and providing feedback on how we can improve it, please contact me at dmacon@ucanr.edu!

Shepherding Fire: Lessons from our Prescribed Fire on Working Landscapes Workshop



As I wrote in a blog post in February ([Working with Fire](#)), at one time, fire was part of the ranching culture of the foothill communities where I grew up. At some point, though, we lost the cultural affinity for – and know-how about – using fire as a tool for preventing larger, catastrophic wildfires (and for improving rangeland conditions). Fire became the domain of professionals – we simply couldn't trust ranchers – or our communities, really – with such a potentially dangerous tool. When I graduated from college and started my career in the early 1990s, very few ranchers were using fire in the foothills.

In late March, we held a Prescribed Fire on Working Landscapes at Edwards Family Tree Farm in Colfax. Nearly 30 ranchers, forest landowners, agency staff, and NGO staff joined us for two days of learning about – and actually using – fire to manage fuel loading. At one point, our host landowner Allen Edwards told me, “Dan, try to shepherd that fire down to the next check line.” Allen’s simple direction made me realize that using prescribed fire, in many ways, is very similar to low-stress livestock handling. This might seem like a stretch, but let me explain!

- **Communication is critical!** Before we struck the first match, our workshop leader (Chris Paulus, a retired CalFire battalion chief and prescribed fire practitioner) led us in a pre-burn briefing. We discussed our

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burn plan, our safety measures, and what role each of us would play during the burn. We continued communicating during the burn, and Chris ended the workshop with a post-burn debriefing. Similarly, when we're moving sheep at the ranch – or working cattle at someone else's ranch, we try to talk through our plan (even if it's simple) before we get started. Outlining expectations – and what to do when plans change – is vitally important!

- **Don't force it – observe behavior and respond as appropriate.** My predecessor Roger Ingram, who had a chance to work with legendary stockman Bud Williams, says this about our attitude when working stock:

Old Attitude: "I'm going to MAKE that animal do what I want."

New Attitude: "I'm going to LET that animal do what I want."

This shift in attitude requires careful observation of livestock behavior – if we pay attention, the animals will tell us when they're comfortable – and when they're stressed!

Chris taught us to pay attention to what the fire was telling us. A subtle shift in the wind, or a change in fuel type or dryness, changed fire behavior. Chris and Allen prepared the burn unit to help account for these variations – pre-established check lines and the strategic application of just a little water, for example, helped us LET the fire consume the fuels we wanted to impact while protecting the trees we wanted to save.

- **Movement is good!** When I first started riding horses or training sheep dogs, my natural tendency when things started moving too fast was to shut down all movement. A standing horse couldn't buck me off; a dog in a lie down wouldn't chase the sheep. As I gained more experience, though, I realized that we all made progress (me, dogs, and horses alike) when we were moving. I could begin to shape behaviors and improve communication by working through those times when we were all responding to one another.

My entire previous experience with prescribed fire was with pile burning – where movement of fire is undesirable! Last week, I learned about broadcast burning – about how to keep fire moving across the landscape safely. Chris and Allen showed us how to use simple techniques, like moving fire with a pitchfork and burning pine needles. By burning down-slope and into the wind (a backing fire), we were able to keep fire safely moving through the acre-plus demonstration site.

- **Never stop learning!** As I've gained more experience in handling livestock (and working my border collies), I've realized how much I don't know. Stockmanship, I think, requires a lifetime of observing and learning. Getting my first hands-on experience last week with broadcast burning was similar; I am realizing how much more there is to know about fuel types, burn conditions, terrain and topography, timing, etc. – we barely scratched the surface. Like stockmanship, prescribed fire requires both an intellectual understanding of the tool AND hands-on experience in a variety of settings.

The key takeaway for me from the burn at Allen's was that fire – like grazing – can be an iterative process. A single burn – like a single graze period – won't necessarily convert a fire-prone site to a fire-safe site. Last week's burn consumed fuel on the surface, but not the deeper material that had been moistened by previous rainfall. Allen also emphasizes that two-thirds to three-quarters of the cost of the burns he's conducted so far were incurred "before we ever struck a match," adding, "without the mastication, hand clearing, and pruning, a fire would destroy most of my trees."

Most importantly, last week's burn seemed simple. All of us who were on site wore cotton or wool work clothes, sturdy boots, and work gloves. We had a variety of hand and power tools (fire rakes, McLeod hoes, pitchforks, backpack pumps, chainsaws, and leaf blowers), plus a pick-up bed water tank and trash pump for extra water. Chris brought a unique combination of professional knowledge and landowner practicality to the burn. While Chris is definitely an advocate for "good" fire, he's also sympathetic to the concerns and questions that landowners have about returning fire to the tool box. I'm looking forward to learning more!



A Few Tips for Hiring a Targeted Grazing Contractor

Are you thinking about hiring a targeted grazing contractor this year? Well-managed targeted grazing can be used to address site-specific landscape goals. Targeted grazing can impact specific invasive weeds (like yellow starthistle, medusahead or Himalayan blackberries). By controlling competing vegetation at specific times, targeted grazing can enhance habitat restoration efforts. Targeted grazing can reduce or modify fine fuels and ladder fuels to reduce wildfire danger in many environments. Indeed, targeted grazing and prescribed fire are the only fuels treatment methods that actually remove fuel.

Typically, targeted grazing is a cost-effective vegetation management alternative where other options are ineffective. Specifically, targeted grazing can be more cost effective on landscapes that are too steep, rocky, or remote for conventional vegetation management (like mowing or chemical treatment), or in the urban-wildland interface where burning is not an option.

Targeted grazing is a different business model than simply grazing for livestock production. Targeted grazing, as outlined above, focuses on impacting target vegetation at exactly the right time for specific goals. Grazing for livestock production, on the other hand, focuses on providing optimal nutrition to increase production (like number of lambs or pounds of gain, for example). The table on the next page summarizes the differences between targeted grazing and more traditional livestock production businesses.

Targeted grazing companies are essentially service providers. Consequently, experience, responsiveness and attention to detail are critical. Consumers should look for companies with experience in grazing projects in similar environments and situations. Ask potential contractors about their experience level – and ask for references.

Targeted grazing may not be the least costly vegetation management option (especially compared to mowing or herbicide treatment). As outlined above, targeted grazing is often the best alternative where other treatments aren't possible or are less desirable.

Most targeted grazing contractors will provide an estimate on a per acre basis, allowing consumers to compare targeted grazing to other vegetation management options. In addition, contractors will provide an estimate of the project start date and duration. These estimates can be somewhat uncertain depending on year-to-year changes in vegetation quantity.

There are a variety of factors that impact the cost of a particular targeted grazing project, including:

- Relative ease (or difficulty) of setting up infrastructure, including loading and unloading facilities. Projects in steep or difficult-to-access terrain require more labor (and, therefore, are typically costlier).
- Access to livestock water. Easily accessible water can make the project less costly; projects without access to water may require the contractor to haul water to the livestock.
- Other risks, like vandalism, toxic plants, or proximity to high-value landscaping may increase the cost.
- Multi-year contracts are typically cheaper on a per acre basis. Livestock and targeted grazing staff become more accustomed to a particular property (and therefore more efficient) if the contract is for multiple years.
- Headache factors – like free-roaming pet dogs or neighbors who object to livestock or livestock guardian dogs – can increase the cost of a project.



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Targeted Grazing versus Livestock Production

	Targeted Grazing	Sheep or Goat Production
Flock characteristics and species	<ul style="list-style-type: none"> • May be mixed species (sheep/goats) • Mixed age classes • May include older wethers (castrated males) to impact brush and coarser vegetation (because these animals are not used for reproduction, their maintenance nutrition requirements are often lower than reproducing females) 	<ul style="list-style-type: none"> • Sheep or goats • Breeding flock + replacement females often grazed separately • Wethers are marketed to generate income
Primary income streams	<ul style="list-style-type: none"> • Grazing contracts 	<ul style="list-style-type: none"> • Sale of lambs or kids • Sale of wool
Secondary income streams	<ul style="list-style-type: none"> • Sale of lambs/kids • Sale of wool 	<ul style="list-style-type: none"> • Seasonal targeted grazing (usually while ewes/does are not lactating or pregnant)
Management emphasis	<ul style="list-style-type: none"> • Make animals available for grazing contracts • Maximizing days on paid contracts • High stock density to impact vegetation • May accept drop in body condition to facilitate desirable impacts to low quality vegetation 	<ul style="list-style-type: none"> • Reproduction and lbs. of lamb/kids marketed • Wool quality and lbs. of wool marketed • May use high stock density to improve forage quality and production • Focus on body condition at specific production stages (pre-breeding, breeding and pre-lambing) • Requires irrigated pasture or other summer green forage
Reproduction	<ul style="list-style-type: none"> • Timed to allow maximum days on grazing contracts • Lower conception and weaning rates may be accepted in exchange for increased grazing income 	<ul style="list-style-type: none"> • Timed to match peak demand (late gestation and lactation) with peak forage quality/quantity

Landowners and managers should contact targeted grazing contractors well in advance of the desired project start date. Targeted grazing contractors are busiest during the spring and early summer months; scheduling these jobs typically occurs in the late fall and winter.

For a list of local targeted grazing contractors, go to https://ucanr.edu/sites/Livestock/Contract_Grazers/

CDFA Offers Free RFID Cattle Ear Tags

Cattle producers can obtain free electronic identification (ID) tags through a program offered by the United States Department of Agriculture (USDA) and the California Department of Agriculture (CDFA). The USDA is providing states (CDFA) with no-cost, official 840 series, low radio frequency identification (RFID) half duplex button cattle ear tags. These tags are intended to be used in dairy and beef herd replacements with a focus on those producers not currently using RFID tags.



RFID tags are considered official ID. Official ID is required to move an animal interstate or when testing or vaccinating for regulatory purposes (e.g., Tuberculosis test, Brucellosis vaccination, Trichomonosis test). Additionally, RFID tags can be incorporated into many herd management software packages if a compatible reader is available. [Click here for more information.](#)

CDFA is distributing two types of RFID tags:

- White RFID tags are available to producers through their veterinarians with no restrictions.
- Orange RFID tags are available to private veterinarians only and can be applied at the time of Brucellosis vaccination.

The CDFA Animal Health Branch (AHB) is managing the distribution of RFID tags in California through the district offices. Producers are encouraged to speak with their herd veterinarian or their local CDFA AHB district office about the use of RFID tags. Tags may be requested by contacting district offices or emailing evet@cdfa.ca.gov.

Locations and contact information for CDFA AHB district offices can be found on the AHB webpage:
www.cdfa.ca.gov/ah.



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