FOOTHILL RANCHER

...Practical Information for Foothill Livestock Producers

California Grazing Academy
April 25-26, 2014
UC Sierra Research and Extension Center Browns Valley, CA
This year's Academy will feature an emphasis on Drought Planning

Fees and Enrollment:
$160.00 (includes meals, and course materials - some lodging available)
Limited sleeping space available — first come, first served (bring your own sleeping bag and towel). No walk-in registrations due to set-up needed for hands-on activities. Registration is available on line at http://ucanr.edu/survey/survey.cfm?surveynumber=11984, or complete the attached registration form.

NO REFUNDS.
Your check guarantees your space.

About The California Grazing Academy
The California Grazing Academy is a unique and exciting program emphasizing practical application of controlled grazing principles to improve the environment and increase ranch profit. This challenging course consists of a minimum of lecture and a maximum of hands-on experience.

After completing the Academy, course participants will be able to:

- Assess the condition of the four basic ecological processes that determine ranch productivity.
- Apply principles of time and stock density to improve pasture productivity and stock performance.
- Estimate carrying capacity.
- Apply principles of animal behavior to reduce stress.
- Determine the supplementation needs of grazing animals.
- Design a layout to efficiently use resources and apply controlled grazing principles.
- Immediately improve grazing management on your own ranch.
- Understand underlying principles of using high stock densities.
- Managing through drought.

For More Information
Contact Roger Ingram at the UC Cooperative Extension Office/Placer County, located at 11477 E Avenue, Auburn, CA 95603, call (530) 889-7385, or email at rsingram@ucanr.edu.

WEB SITE: ceplacernevada.ucdavis.edu
Placer and Nevada Counties as well as all of California are dealing with a severe drought that is the worst experienced since the 1976-77 drought. This article is being written to give context to the drought and management responses. Drought impacts operations economically, ecologically, and emotionally. The emotion can end up being the biggest impact as it can cause knee-jerk reactions.

Dave Pratt of Ranch Management Consultants wrote in his February 12, 2014 Profit Tips: "It’s not the situation but what you do about it that counts. That’s why some people survive drought, the injury or death of a key person, or a crash in the market better than others.

There is a lot of truth to the saying, Failing to plan is planning to fail. It is not enough to react in the moment. We need a plan to prepare for, respond to and recover from the significant risks we face."

Here are some recent reactions to the drought from the Facebook page and other sources:

"...this issue (drought) is different and oh so personal."

"...It isn’t just hay that costs more. Leases are through the roof - if available and lessors are facing a sad fact - you cannot charge for something you don’t have. This is a Rubik’s cube of monumental proportion ...

"We shipped three truckloads out yesterday morning to Nebraska. Will wait to see if it’s more economical to bring them back when we have grass or sell them from there."

"February 24th grass fire in Grass Valley."

"... it’s easy to think this (drought) might be behind us when we get a little precip, but really to keep your drought plan in place is the smart thing to do."

"The only way you are going to survive a drought is to make decisions."

"It is imperative to educate the general public about what a drought means."

I have mentioned the above comments to help you see that many people are impacted by drought and have issues they are grappling with on how to proceed. The more we communicate with each other on struggles and questions, the more we see we are not alone and getting outside perspectives can help identify more alternatives.
How We Got Here

Here are rainfall totals for the calendar years (January-December) 2012 and 2013 for the CIMIS (California Irrigation Management Information System) Weather Stations for Auburn, CA and the Sierra Foothill Research and Extension Center (SFREC) in Browns Valley, CA.

Here are the rainfall totals from the CIMIS stations if we use the forage growing year (October-September):

<table>
<thead>
<tr>
<th>Forage Year</th>
<th>Auburn CIMIS Station Rainfall (inches)</th>
<th>SFREC CIMIS Station Rainfall (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct 2012 - Sept 2013</td>
<td>20.30</td>
<td>21.71</td>
</tr>
</tbody>
</table>

The Fall of 2012 brought abundant rains from October - December (over 16 inches at both Auburn and Browns Valley). Then the faucet got turned off. Timely rains in March and April resulted in the SFREC reporting peak forage yield on May 1st as 96% of normal. Seven months later in December 2013, the SFREC were showing forage yields of less than 10% of normal. January of 2014 was a little better, but still less than 20% of normal. The low to non-existent late winter and fall 2013 rains rapidly created drought conditions that through mid-February were tracking BELOW rainfall totals from the last big drought in California - 1976-77.

Current Conditions in the Foothills

February 2014 brought welcome relief from the drought. I am writing this article on March 4th. Here are the rainfall totals from January 1 - March 3, 2014:

<table>
<thead>
<tr>
<th>Dates</th>
<th>Auburn CIMIS Station Rainfall (inches)</th>
<th>SFREC CIMIS Station Rainfall (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 1, 2014 - March 3, 2014</td>
<td>12.5</td>
<td>8.38</td>
</tr>
<tr>
<td>2013</td>
<td>6.48</td>
<td>8.00</td>
</tr>
</tbody>
</table>

Since January 2014, we have exceeded rainfall totals for all of 2013. From a forage perspective, this is good news and means we will have growth in March as soil temperatures continue to rise and photoperiod increases (day length). When soil temperatures reach 60 degrees and photoperiod is over 12 hours that is when we get the spring flush. Soil temperatures are currently around 54 degrees and photoperiod is 11 hours and 30 minutes. This assumes adequate soil moisture.

If you live in a different area, you can go to the CIMIS website and find information on a weather station closer to you. Here is the website link: [http://www.cimis.water.ca.gov/cimis/welcome.jsp](http://www.cimis.water.ca.gov/cimis/welcome.jsp)

Better yet, get a rain gauge and start tracking rainfall on your own property. The numbers I have reported are specific to the location of the weather stations. Your totals may be more or less even though you may live in the general area.

Critical Date

I have been thinking quite a bit about critical dates over the last 3 months. This is the date by
which, if it neither has not rained or there has not been significant growth, you know that your are in a drought and will be short of feed. This is the trigger date by which you will implement your destocking plan.

In a typical California foothill rainfall year, March 1 might serve as a red flag to monitor forage growth and rainfall and April 1 could be the critical date. Most people would wait until sometime in May to assess feed conditions. This year was different. The pro-active critical date was January 1 or earlier and February 1 was definitely a time to implement the destocking plan.

A major grazing management principal is adjust the stocking rate to changes in carrying capacity on an annual and seasonal basis. Stocking rate is the number of mouths out there grazing (demand) and carrying capacity is the amount of forage (supply). We determine how many animals we will graze (stocking rate). Mother nature determines how much feed we grow (generally high rain means at least adequate forage growth; low rainfall means less than adequate forage growth). While we don’t have control over when and how much rain we will receive, we do have control on how we stock the range.

Culling earlier rather than waiting things out reduces hay feeding costs, leaves more available forage for the remaining herd, and allows you to sell in a more normal market. One blessing has been that the market has remained relatively high due to previous droughts in other parts of the country that have kept downward pressure on cattle numbers. These areas have started to recover from drought and are looking for animals to purchase.

**Culling Strategies**

This process should be given careful consideration as they develop. I would encourage you to run your ideas by others to receive their input and perspective. You could have levels of culling that would be implemented as drought conditions worsen.

An example of culling strategies could be the following in low forage years:

- Cull any unbred (open) females.
- Cull any generally unproductive or animals with persistent health, eye, feet or bag problems.
- Cull any hard to handle animals.
- Check teeth on older animals and cull those who are missing teeth and appear to be thin.
- Cull any older animals you are trying to get one last baby out of as they most likely have a higher maintenance requirement.
- Cull by not retaining replacement females or only a few.
- Cull by not retaining any stockers.
- Cull anything that does not fit your genetic program.

Another way to reduce demand is early weaning. Lactation increases nutrient demand by over 60%. Weaning would reduce stocking rate by transitioning from lactation to drying up. You would need to decide what to do with the calves. People I have talked with have immediately sold them rather than keeping them.

You could reduce demand by shipping animals to another part of the United States that does have
forage. You would need to consider the trucking and monthly per head charge to determine if it could work for you or not.

Other people deal with drought by developing long-term stocking rate decisions. One example would be someone that keeps stocking rate based on the worst forage production possible. This translates to figuring out what to do with extra forage in high rainfall years or not having to cull in bad years. Others might stock for the worst year plus an additional 10-20% so that only having to cull a little more gets demand in line with supply. The above is a sample list. You need to develop culling strategies that fit your operation.

Hard to Cull Enterprises

You want to have enterprises that provide culling flexibility in drought-prone areas, which pretty much encompasses the west. Stockers offer more flexibility than cow-calf for example. One enterprise that makes culling decisions more difficult would be operations that primarily market breeding animals for sale to individuals.

Niche meat enterprises offer little flexibility in the face of drought. Your customers will stay loyal to you if you can provide them product. If you can not, they will move on to other people with product to sell.

Capital Considerations

Selling animals means a near-term cash surplus and a later term potential cash deficit. You should project a cash flow to make sure you can pay bills while preserving the excess capital. Another consideration would be tax consequences. There are a couple of options that you should discuss with your accountant. One would be deferring the excess sale income to the following year, or using the capital to purchase livestock once the drought ends to avoid paying capital gains taxes. Here is a link to more detailed information:

http://ucanr.edu/sites/placernevadasmallfarms/files/179950.pdf

Feeding Your Way Out of a Drought

I realize some of you are reluctant to reduce numbers. You may have invested generations of time to build a genetic base that is suited to your environment and are unwilling to make any substantial reductions beyond normal culling. Small operations with off-farm income might make the decision to not cull and could stand the extra hay cost. If this describes you, please confine your animals to the rockiest ground or worst place and hammer that area versus impacting the whole ranch by keeping stocking rates higher than carrying capacity and overgrazing over a large area.

I am sure I do not have to tell you that hay prices are high. I sat down with one ranch that had bought a load of hay and had fed most of it to the herd in one month. The per head feed costs were close to $60 per head for the month. If you are running a commercial business, I am not sure there are many months you can afford a monthly $50-60 feed cost per head.

Fall 2014

You should be thinking about the amount of residual dry matter (RDM) you want to leave as ungrazed dry matter. It is defined as the dry plant material remaining from the previous year’s growth. I would suggest leaving a minimum 800-1,000 of RDM for the Placer and Nevada County area. This ensures adequate cover for rangelands
as we move into the 2014-15 forage year (October 2014 - September 2015).

Residual dry matter provides the following benefits to the range:

- Favorable micro-environments for early seedling growth
- Soil protection against erosion
- Soil organic matter
- Source of low quality forage for livestock

You can view RDM as providing the needed cover or blanket to protect the soil from erosion, feed the billions of soil microbes below the surface of the soil, provide more favorable germination conditions, and provide feed for animals on a maintenance diet with appropriate protein supplementation to feed the microbes in the rumen. If you do not reduce animal numbers, you will reduce RDM to low levels and create bare soil.

Bare Soil Is Your Enemy

Forage grows by capturing sunlight energy through green leaves. It is an inefficient process and you need as many green growing leaves as you can. Creating bare soil results in capturing less sunlight and reduces forage growth. Bare soil increases the likelihood that erosion will take place and you will lose part or most of your topsoil. This will create hard capped soils that cause any rain to run-off instead of soak in on your property. Capped soils mean less oxygen below the surface and less organic matter. This results in reduced number of soil microbes which slows the rate of decomposition.

You minimize overgrazing by letting the growth rate determine the needed rest period. Typical rest periods in the spring of around 30 days would be short as the growth rate is fast. Rest periods of around 90-120 days are longer during summer, fall and winter on annual range because the growth rate is slower. This length of rest period would encourage any perennial grasses that might be present. During drought, we may need to lengthen the rest period as recovery rate slows.

When grazing, the old adage of “take half, leave half” works best as it will maintain a healthy root system, especially if grazing perennial plants.

Everything is interconnected. Reduced energy capture, increased soil and water runoff, less cycling in the soil due to lower number of soil microbes can result in a couple of negative impacts. It can shift desirable, healthy plant populations to either an at-risk or unhealthy state; or it can shift desirable plant populations to undesirable ones. Examples would be increased numbers of yellow starthistle, medusahead, and goat grass plants. Populations of these types of plants lowers carrying capacity.

Minimize Overgrazing

Overgrazing is re-grazing a plant before it has recovered from the previous grazing. It occurs in two ways:

1. The animals stay too long (graze period) and get a second bite of re-growth before the plant has recovered from the previous grazing.
2. The animals come back too soon (rest period) and get a second bite of re-growth before the plant has recovered from the previous grazing.
Another strategy that could be helpful would be to combine herds. This will provide more paddocks per herd, improve uniformity of grazing, and help minimize overgrazing. Increasing the number of paddocks by using temporary fencing in combination with combining herds can help you keep grazing periods short while maintaining adequate rest (provided stocking rate matches carrying capacity).

Poisonous Plants
When forage becomes scarce, animals will start to eat plants they normally would ignore or only eat a little. A prolonged drought could mean more issues with poisonous plants as consumption may increase. Given the recent rains, this is probably less of a current concern, but something to keep watching. I have 3 different poisonous plants books and am happy to assist with plant identification and researching whether they pose any risk. You can call 530-889-7385 or email at rsingram@ucanr.edu.

Livestock Water Development
Developing more livestock water points can be an important drought management tool. The Natural Resources Conservation Service and Farm Service Agency can provide some cost share funds to help develop livestock water. This might include installing water lines and developing springs. When combining herds, there will be more demand on your water trough and storage tank or reservoir. Keep in mind the re-charge rate to ensure there is adequate water for the herd.

Lots to Consider
Drought management has a lot of considerations. For now, you may have to make your best guesses and move forward. For the long-term, it would be best to set aside a couple of days to develop a draft drought plan, preferably while it is raining. It is much easier to develop culling strategies when there is plenty of forage rather than making decisions based on not having forage and making tough decisions on the fly. Please contact me if you need help, information, or questions answered.

2014 California Grazing Academy to Highlight Drought Planning
This year’s California Grazing Academy will again feature participants working in teams and having a herd of cattle to manage. We will cover principles of controlled grazing, pasture and range ecology, working with temporary electric fencing, cell design, range nutrition and supplementation, feed budgeting, grazing planning, and monitoring.

There will be added presentations and activities related to drought planning. You will leave the academy with the ability to estimate the days of grazing that you have if you assumed no more rainfall. This is normally done at the end of the annual rangeland growing season, but can be used when you have dry conditions and are trying to determine how many days of grazing you have left. This is all related to estimating carrying capacity.

Those estimates of carrying capacity will be paired with a feed budgeting to determine how many days of grazing you have with your current stocking rate. We can then make quick adjustments to assess the impact of different culling levels on stretching remaining forage resources without having to rely on feeding hay.

Grazing planning will enable you to see how to map out the grazing on your property or those that you lease. Mapping out the grazing determines if we are meeting rest period targets and see how we can plan animal moves to fit best with the production year. For example, what paddocks do we want to graze when animals are having babies or being bred. The 2014 California Grazing Academy can help you get started on developing your drought plan for your ranch. Sign up today.
UPCOMING EVENTS

Contact Roger Ingram at (530) 889-7385 or rsingram@ucanr.edu to register or if you have questions. Check website for updated information at ceplacer.ucdavis.edu

Livestock Drought Management Workshop
Monday, March 24, 2014
6:30-8:30 PM
UC Cooperative Extension Office
11477 E Ave
Auburn, CA  95603
This workshop will cover grazing planning basics, health and nutrition drought considerations, and implementing early weaning.

Irrigated Pasture Water Management Workshop
Saturday, April 12, 2014
Location: TBA
This workshop will discuss water demand by pasture grass through the growing season, how to measure water soil moisture, types of irrigation, irrigations scheduling, maintenance, and grazing management.

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Sierra Foothill Research and Extension Center
Browns Valley, CA
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Roger Ingram
County Director, Placer and Nevada Counties
2014 California Grazing Academy Registration Form

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Cost: $160.00 (includes meals, and course materials—some lodging available, first come, first served—bring your own sleeping bag and towel. NO WALK-IN REGISTRATIONS DUE TO SET-UP NEEDED FOR HANDS-ON ACTIVITIES)

Register: Complete this form, mail with your check payable to University California, Regents, to:
Roger Ingram
California Grazing Academy
11477 E Ave.
Auburn, CA  95603
OR, visit our website: http://ceplacernevada.ucdavis.edu and follow the links.

Location: UC Sierra Research & Extension Center, Browns Valley, CA

First Name ___________________________ Last Name ___________________________
Address: ____________________________ __________________________
City ____________________________ State/Zip ____________________________
Email: ____________________________ Phone Number: ____________________________

What types of animals do you graze or manage? _______________________________________________________________
______________________________________________________________
______________________________________________________________

How many head: ____________________________ On how many acres: ____________________________

It is the policy of the University of California (UC) and the UC Division of Agriculture & Natural Resources not to engage in discrimination against or harassment of any person in any of its programs or activities (Complete nondiscrimination policy statement can be found at http://ucanr.edu/sites/anrstaff/files/169224.pdf )

Inquiries regarding ANR’s nondiscrimination policies may be directed to Linda Marie Manton, Affirmative Action Contact, University of California, Davis, Agriculture and Natural Resources, 2801 Second Street, Davis, CA 95618, (530) 750-1318.
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8. Managing through drought

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Auburn, CA 95603

**OR**

An on-line registration form is available at ceplacernevada.ucdavis.edu – Just follow the link to Livestock and Natural Resources and then to California Grazing Academy.