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 employed by or seeking employment with the University on the basis of race, color, national origin, religion, sex, gender, gender expression, gender identity, pregnancy (which includes pregnancy, childbirth, and medical conditions related to pregnancy or childbirth), physical or mental disability, medical condition (cancer-related or genetic characteristics), genetic information (including family medical history), ancestry, marital status, age, sexual orientation, citizenship, or service in the uniformed services (as defined by the Uniformed Services Employment and Reemployment Rights Act of 1994 (USERRA), as well as state military and naval service. This policy applies to all employment practices, including recruitment, selection, promotion, transfer, merit increase, salary, training and development, demotion, and separation. This policy is intended to be consistent with the provisions of applicable state and federal laws and University policies.

University policy also prohibits retaliation against any employee or person seeking employment for bringing a complaint of discrimination or harassment pursuant to this policy. This policy also prohibits retaliation against a person who assists someone with a complaint of discrimination or harassment, or participates in any manner in an investigation or resolution of a complaint of discrimination or harassment. Retaliation includes threats, intimidation, reprimands, and/or adverse actions related to employment.

In addition, it is the policy of the University and the Division of Agriculture and Natural Resources to undertake affirmative action, consistent with its obligations as a Federal contractor, for minorities and women, for persons with disabilities, and for covered veterans. The University commits itself to apply every good faith effort to achieve prompt and full utilization of minorities and women in all segments of its workforce where deficiencies exist. These efforts conform to all current legal and regulatory requirements, and are consistent with University standards of quality and excellence.

In conformance with Federal regulations, written affirmative action plans shall be prepared and maintained by each campus of the University, including the Division of Agriculture and Natural Resources. Such plans shall be reviewed and approved by the Office of the President and the Office of the General Counsel before they are officially promulgated.

Inquiries regarding the University's equal employment opportunity policies may be directed to Linda Marie Manton, Affirmative Action Contact, University of California, Agriculture and Natural Resources, 2801 Second Street, Davis, CA 95618, (530) 750-1313.
Rice Strawlage Field Tours
Two tours available—December 15, 2014 and December 17, 2014
Please RSVP for the December 15 tour to ensure enough food.
For more information or to RSVP,
call Tehama County Cooperative Extension at (530) 527-3101

It has been demonstrated that baling rice straw immediately after harvest (called rice strawlage) greatly increases its nutritional value for livestock. Baling at 30 to 40 percent moisture can have the challenge of mold management. With the help of producers, the University of California has been researching rice strawlage during the last two years. Two tours will offer livestock and rice producers a chance to determine if rice strawlage would work in their operations.

Monday, December 15, 2014
12:00—3:30 PM
Tour and hosted lunch at the Parker Ranch in Williams and Sand Creek Ranch in Arbuckle
Meet at the Shell gas station directly off of the Interstate 5 exit for Highway 20 (on the south west side of the off ramp) at 12:00 noon and we will head to the ranch from there. Discussion with Doug and Judy Parker will cover the multi-big bale wrapper process which includes treatments of rice straw with molasses sprayed on at baling, anhydrous ammonia added after wrapping. Storage Mate (propionic acid) and bacteria inoculants, both applied at baling. Forage quality data providing initial treatment differences will be presented. The tour will then go to Ron LaGrande’s Sand Creek operation at Arbuckle to see rice strawlage that was professionally tarped and cattle currently consuming the fall harvest of strawlage. Remember to RSVP to Joseph Davy at (530) 527-3101 to make sure there’s enough hamburgers.

Wednesday, December 17, 2014
9:00—11:00 AM
Tour of the research heifers on rice strawlage at the Sierra Foothill Research and Extension Center at 8279 Scott Forbes Road in Browns Valley
Results from the first 5 week feeding phase showing animal performance and nutritional evaluation will be covered. The treatments include a control (Quadris only), Storage mate (propionic acid), bacteria inoculant and both propionic acid and bacteria. The 600 pound heifers will be on their second feeding phase and producers can see the different kinds of rice strawlage being consumed. Some are currently consuming 20 pounds of strawlage per day. How to stack and tarp the strawlage will be covered.

Pictured are Gale and Jeff Pylman. Jeff has served as Nevada County Agricultural Commissioner in Nevada County since July 2006. He will retire on December 31, 2014. Jeff did a wonderful job as Agricultural Commissioner and was a tireless advocate for agriculture. I want to thank him for all of his hard work and wish him the best of luck in the future. Jeff and Gale have big plans for a new business venture in the future.
DROUGHT UPDATE
Roger Ingram, UCCE County Director
and Livestock and Natural Resources Advisor

Rainfall Review
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.

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Auburn CIMIS Station Rainfall (inches)</th>
<th>SFREC CIMIS Station Rainfall (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>36.2</td>
<td>36.35</td>
</tr>
<tr>
<td>2013</td>
<td>6.48</td>
<td>8.4</td>
</tr>
<tr>
<td>2014 (through December 1)</td>
<td>23.18</td>
<td>17.7</td>
</tr>
<tr>
<td>Average</td>
<td>34</td>
<td>28.9</td>
</tr>
<tr>
<td>2014 % of Normal</td>
<td>68.1%</td>
<td>61.2%</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Forage Year – October - September</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>
<tr>
<td>Average</td>
<td>34</td>
<td>28.9</td>
</tr>
<tr>
<td>2014 % of normal</td>
<td>65.1%</td>
<td>57.4%</td>
</tr>
</tbody>
</table>

Here are the monthly rainfall totals for October – December from the CIMIS stations.

<table>
<thead>
<tr>
<th>Station</th>
<th>October</th>
<th>November</th>
<th>December</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auburn CIMIS Station Rainfall (inches) - 2014</td>
<td>1.26</td>
<td>3.25</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>1.79</td>
<td>4.13</td>
<td>5.81</td>
</tr>
<tr>
<td>Auburn Difference</td>
<td>-0.53</td>
<td>-0.88</td>
<td></td>
</tr>
<tr>
<td>SFREC CIMIS Station Rainfall (inches) - 2014</td>
<td>0.59</td>
<td>3.21</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>1.8</td>
<td>3.91</td>
<td>4.91</td>
</tr>
<tr>
<td>Difference</td>
<td>-1.21</td>
<td>-0.70</td>
<td></td>
</tr>
</tbody>
</table>
The California Data Exchange Center shows these reservoir storage totals on November 30, 2014 (http://cdec.water.ca.gov/cdecapp/resapp/getResGraphsMain.action)

<table>
<thead>
<tr>
<th>Reservoir</th>
<th>Total Capacity (%)</th>
<th>Historical Average (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake Shasta</td>
<td>23</td>
<td>39</td>
</tr>
<tr>
<td>Lake Oroville</td>
<td>26</td>
<td>43</td>
</tr>
<tr>
<td>Folsom Lake</td>
<td>28</td>
<td>59</td>
</tr>
<tr>
<td>Average</td>
<td>34</td>
<td>28.9</td>
</tr>
<tr>
<td>2014 % of Normal</td>
<td>68.1%</td>
<td>61.2%</td>
</tr>
</tbody>
</table>

The data above shows that we are still have dry conditions even with increased rainfall compared to 2013. While it is encouraging to see some green grass and more frequent storms, **WE ARE STILL IN A DROUGHT!!!!!!!**

Since we are still in a drought, remember this statement:

**NEVER FEED YOUR WAY OUT OF A DROUGHT!**

**Next Steps**

1. **Determine a Critical Date**
   
   This is the date by which, if it has not rained and there has not been significant growth, you know that you 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, most people would wait until sometime in May to assess feed conditions. Others might view March 1 as a trigger to monitor forage growth and rainfall and April 1 could be the critical date.

   Last 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.

   This year, I feel that February 1 could serve as potential critical date. Last year, SFREC had 1 inch of rain in December and January combined. Auburn only had 0.6 inches of rain in the same time period. If a similar pattern emerged this year, February 1 would seem to be a likely candidate.

2. **Review or Develop a Culling Policy**
   
   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. In addition, the rising cattle market would mean you are selling high, which is not a bad position to be in.

**Culling Strategies**

This process should be given careful consideration as if they developed. 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. This would become the core of your culling policy. If you think through possible strategies while it is raining and there is green feed, it will take a lot of the emotion out making these difficult decisions. Developing a written plan provides a roadmap for implementation while still allowing for adjustments to the plan.

An example of culling strategies for 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.
3. Monitor Rainfall, Cover, Forage Growth, Livestock Condition, and Cash Flow
   a. **Rainfall** - The California Irrigation Management Information System (http://www.cimis.water.ca.gov) compiles weather data from weather stations across California. You can view or download weather data. An even better option would be to get rain gauge and start recording rainfall on your own property.

   b. **Cover** - Bare soil is your enemy. Bare soil means you do not have plants available to capture sunlight energy. Less plants means reduced carrying capacity and lowered stocking rates. Bare soil means increased risk of losing topsoil and creating a thick hard crust on the soil surface (capping). This causes rainfall to run off versus soaking in and lowers the oxygen level in the soil that reduces soil microbe numbers. Less soil microbes results in less cycling of manure and organic matter. There are two types of cover - canopy and basal. Canopy is the leaves and basal is the rooted plant. You should be most concerned with basal cover as we should desire to have an increased density of plants in a given area. Ground cover is important as well as it includes plants, litter, rocks or gravel. Here is a good reference on cover - http://www.webpaes.uidaho.edu/range357/notes/cover.pdf

   Estimating ground cover can be challenging when first starting out. I would suggest using a square foot frame or hoop to concentrate your eyes on a given space. You could set up a transect line that is 200 feet long and take 4 readings (every 50 feet). Be sure to mark the line so you could come back to the same spot next year. I would find someone who is experienced in estimating ground cover to help calibrate your eyes.

   c. **Forage Growth** - You would want to know the amount of forage you have (quantity) and the growth rate (slow or fast). Quantity can be measured by clipping or doing a visual estimate of the number of stock days per acre. Growth rate can be assessed going back to an area you grazed a couple of weeks ago. If little growth has occurred, you are in slow growth; if forage has started to grow, you may be in fast growth. A soil thermometer would be helpful as well. Grass growth slows to a crawl below 50 °F, starts to increase growth above 50 °F, and grows rapidly once it gets to 60 °F.

   Knowing the growth rate is important as it defines the rest period (slow growth - long rest; fast growth - short rest). Adjusting the rest period to the growth rate of the plant allows us to minimize overgrazing (grazing a plant before it has recovered from the previous grazing). Minimizing overgrazing will increase or maintain basal cover and keep bare ground from increasing.

   d. **Livestock Condition** - Body condition scoring is a way to assess the current nutritional status of your animals. For cattle, you would use a scoring system of 1-9 (1=emaciated, 9=obese). Sheep and goats use a system of 1-5 (1=emaciated, 5=obese). Body condition scoring is the measure of the relative fatness of the animal.
The main thing is to train your eye to assess whether animal condition is thin, moderate, or fat. As with most everything, moderate is the target. It is possible to score cows just looking at them. Sheep will need to be handled in order to assess their condition. You should also handle goats to assess their condition.

Here are some links with information:

Beef Body Condition Scoring - University of Purdue
http://www.iqbeef.org/TBC/Video/BodyConditionScoring.html

Sheep Body Condition Scoring - Oregon State
http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/14303/ec1433.pdf

Goat Body Condition Scoring - Langston University
http://www2.luresext.edu/goats/research../bcshowto.html

Goat Body Condition Scoring Video with Dr. An Peischel
http://ucanr.edu/sites/placernevadasmallfarms/Livestock/SheepGoats/Multi-Species_Academy_Reference_Information/

e. **Cash Flow** - Cash flow shows the flow of money in and out of the business. If you are making a decision on whether to buy hay and feed or sell animals, please run a cash flow analysis to assess the financial impact of management decisions. 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.

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 considerations 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
Scholarship Opportunity for California Ranchers to Attend the Society for Range Management 2015 Annual Meeting in Sacramento, CA

A scholarship opportunity to support California ranchers' attendance at the upcoming Society for Range Management (SRM) conference (rangelands.org/sacramento2015/index.html) in Sacramento, CA from January 30, 2015- February 7, 2015, is now available. Scholarship funds will be used to reimburse up to 50% of successful applicants' cost to attend the conference. To apply online click here. (ucanr.edu/survey/survey.cfm? surveynumber=14238) Applicants can select to attend part of or the full conference. All California ranchers are eligible to apply for this funding. The scholarships, which have been made available through the Renewable Resources Extension Act, are intended to give ranchers an opportunity to hear some of the most current information available on the ecology and management of rangeland ecosystems. SRM conference proceedings include information on current technical and policy issues affecting the ranching community and emerging concepts, technology and tools to better manage rangelands. Topics to be covered at the upcoming SRM conference include climate change, ecosystem services, conservation practices, weed management, use of technology for information dissemination, low-stress livestock handling and adaptive and collaborative management of rangelands. The information presented at SRM annual conferences can provide important insights for improving overall ranch productivity and adapting to new issues as they arise.

Ranchers attending the conference can expect to:

- gain more ideas about how to improve production
- learn how to manage their resources in a sustainable manner
- gain a better appreciation of the importance of collaborative and adaptive management
- build more established networks with other ranchers and professionals
- share their knowledge with peers at organized discussion sessions
- be energized to attend future SRM conferences

Participants will meet with the following Livestock and Natural Resources Farm advisors: Fadzayi Mashiri, Julie Finzel and Sheila Barry, before the conference to help navigate the conference offerings and after, to provide feedback regarding their experience.
UPCOMING EVENTS

Drought Update Meeting - Placer
December 8, 2014
Planning Commission Hearing Room
Community Development Resource Development
Agency Building
3091 County Center Dr., Auburn, CA 95603
5:30 – 7:00 PM

Rice Strawlage Field Tours
December 15, Noon-3:30 PM
Parker Ranch, Williams, CA
December 17, 9:00 – 11:00 AM
Sierra Research and Extension Center

More information on these field days is included in this newsletter.

Drought Update Meeting - Nevada
December 17, 2014
Board of Supervisors Chambers, Rood Center
950 Maidu Ave, Nevada City, CA 95959
4:30 – 6:00 PM

Predator Protection for Small-Scale Livestock Producers
January 11, 2015
Nevada County’s Sustainable Food and Farm Conference
Grass Valley Charter School
225 South Auburn St, Grass Valley, CA 95945
http://foodandfarmconference.com/index.html

Shepherding School
Introduction to Sheep Production
January 15, 2015
UCCE Extension Office
11477 E Ave, Auburn, CA 95603
6:30-8:30 PM

This evening classroom session will provide information on the basic economics of small-scale commercial sheep production, on marketing, and on creating a basic sheep management calendar.

Shepherding School
Introduction to Sheep Production Field Day
January 17, 2015
UCCE Extension Office
11477 E Ave, Auburn, CA 95603
8:00 AM - Noon

This field day will provide students with hands-on learning opportunities regarding administering vaccinations and medications, assessing foot health and trimming feet, evaluating external and internal parasite loads and administering de-worming products, and developing individual animal identification systems.

Participants should wear work clothes appropriate to working outside with livestock in winter weather!

California Grazing Academy
April 24-25, 2015
Sierra Research and Extension Center

This two day school features hands-on experience with electric fencing, cell design, grazing cattle, ecology, nutrition and supplementation, grazing and drought planning, and monitoring.

Registration information will be posted soon.

Contact Roger Ingram at rsingram@ucanr.edu or 530.889.7385 for more information on the academy or short course.

Roger Ingram
County Director, Placer and Nevada Counties
Livestock & Natural Resources Advisor