Keeping Landscapes Working

A Newsletter for Managers of Bay Area Rangelands

Volume 6, Issue 1 University of California Cooperative Extension Winter 2009

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A newsletter provided by UC Cooperative Extension Natural Resources Program in the San Francisco Bay Area. This newsletter provides information to managers of both public and private rangelands. RANGELAND, which is land characterized by natural vegetation i.e., grass, forbs and shrubs and managed as a natural ecosystem, is the predominate source of OPEN SPACE in the San Francisco Bay Area.

Sheila Barry, UCCE Bay Area Natural Resources/Livestock Advisor
Certified Rangeland Manager #63

In This Issue

Keeping Landscapes Working
is published through the cooperative efforts of the University of California Cooperative Extension and Contra Costa and Santa Clara Counties.

This issue of *Keeping Landscapes Working* includes information on two upcoming meetings that provide in-depth coverage of recent research findings. A workshop on drinking water quality and livestock management will be held on January 29, 2009 in Stockton (page 2). An international conference on Beef Improvement will be held April 30- May 3, 2009 in Sacramento (page 7). In addition, this issue provides some information on internet weed assistance (page 1) and an article on a decision some cattlemen may be facing to reduce costs: Smaller Cows or Smaller Herds (pages 3-6).

Weed Assistance on the Web

http://wric.ucdavis.edu

This is the website for UC Davis Weed Research and Information Center in addition to information about upcoming events, i.e. UC Davis Weed Day and Weed Science School it includes a couple of very useful tools:

1) Weed Susceptibility Chart- This chart lists weed by common name and their susceptibility to various herbicides.
2) Weed Identification Tool- This new tool allows the user to input information they know about a particular weed to narrow down the ability to identify it by photo and description.

http://www.cnr.uidaho.edu/rx-grazing/prescriptions.htm

This site provides grazing prescriptions for individual plant species. It includes prescriptions for some forbs, woody plants, and grasses. The goal of the prescriptions are based on the following criteria: 1) target plants must be acceptable as forage, 2) grazing should be timed to inflict damage during a vulnerable time of the weed's life cycle, 3) livestock are controlled to minimize damage to non-target species and other ecosystem components. Current research will continue to update this site.

Upcoming Livestock Meetings:
Water Quality, Range, Pasture, and Livestock Management
January 29th, 2009
Robert J. Cabral Ag Center

2101 E. Earhart Avenue
Stockton, CA 95206

Purpose

Share recent research results from northern California on the: 1) quality of water in pasture and rangeland runoff, streams and rivers, and the Sacramento/San Joaquin Delta, 2) potential risks range and pasture management pose to water quality and management options to reduce these risks; and 3) use vegetative filter strips and wetlands to clean-up range and pasture runoff. Provide practical management options to protect water quality, and comply with water quality regulatory programs.

Audience

Anyone interested in water quality, range, and pasture management. This includes livestock/range/pasture managers, agricultural water quality coalitions, agricultural and environmental advocacy organizations, irrigation districts, resource conservation districts, municipal water districts, water quality regulatory agencies, natural resources management and conservation organizations, and environmental consulting firms among others.

Presenters:

Dr. Rob Atwill, Professor of Environmental Animal Health and Medical Ecology, School of Veterinary Medicine, UC Davis
Dr. Randy Dahlgren, Professor of Biogeochemistry, Department of Land Air and Water Resources, UC Davis
Dr. Toby O'Geen, Soil Resource Specialist, Department of Land Air and Water Resources, UC Davis
Dr. Ken Tate, Rangeland Watershed Specialist, Department of Plant Sciences, UC Davis

8:30 Registration, Coffee, Breakfast snacks

9:00 ***Topic 1:*** The water quality concerns associated with livestock, range and irrigated pasture management.

10:00 ***Break***

10:10 ***Topic 2:*** Livestock, range, and pasture management practices to decrease risks to water quality.

11:30 ***Break***

11:40 ***Topic 3:*** Use of vegetative filter strips and wetlands to filter pollutants in runoff from rangeland and irrigated pasture.

1:00 ***Summary and Lunch***

To Register please send a check for $10 made payable to the UC Regents by January 17th to:
Theresa Becchetti, 3800 Cornucopia Way, Ste A, Modesto, CA 95358.
For more information please call Theresa at 209-525-6800.

Funding for this project has been provided in full or in part through an agreement with the State Water Resources Control Board. The contents of this document do not necessarily reflect the views and policies of the State Water Resources Control Board, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

Smaller Cows or Fewer Cows?

Cooperative Extension, University of California, Davis
Jim Oltjen, Specialist, Department of Animal Science
Dan Drake, Farm Advisor, 1655 So. Main St., Yreka, CA 96097

A hot topic among beef producers is methods to reduce feed demands and costs. Cost of feed has risen dramatically, drought has reduced feed supply as well as restricted irrigation water supply, and generally land for cattle feed has shrunken over the years. Some producers desire increased amounts of forage for their weaned calves to increase their selling weights in response to predicted demand for heavier in-weights for feedlots. One approach to creating more feed for weaned calves, when feed is restricted, is to reduce feed demands for cows. Others want more forage to convert into hay for the high hay market. Whatever the reason, with current conditions, a reasonable response by beef producers is to consider reducing herd size so less feed is required, or raising smaller cows that require less feed. Each option has different outcomes and consequences. We have made some comparisons of those options to demonstrate the differences.

For our comparisons, we use a herd of 100 cows and only a small difference between cow size; mature weights of 1,100 or 1,200 pounds. We are not suggesting that 1,100 or 1,200 pounds is the ideal cow size. We are looking at a difference in size, in this example 100 pounds. Producers may want to weigh a few cows to determine their actual weight. We are only comparing cow size, so in this example milk production is the same for all the cows. Cows of 1,100 pounds mature weight will consume between 70 and 100 pounds less dry matter feed each month (NRC, 2000) than 1,200 pound cows of equal milk production (Figure 1). *(See figure 1).* Annually the smaller cow will consume about 1,192 pounds less of hay equivalent feed. The required quality of the feed is the same since they both produce the same amount of milk. The amount of feed consumed varies due to their size differences.

The cost of feed varies throughout the year depending on source but for this example we can estimate the annual average cost at the hay equivalent of $80 per ton (this would be a mixture of pasture and supplement). Therefore the 1,100 pound cow will consume about 1,192 pounds less feed, costing $48 less, e.g. ($80/2000) X 1,190= $47.69 (Table 1). *(See Table 1).* For a herd size of 100, the smaller cows require about 60 tons less hay equivalent feed and at $80/ton basis about $4,768 dollars less in feed. Specific dollar values will vary.

If instead of reducing cow size we wanted to reduce the ***herd*** size (keeping the same size cows), but we wanted to reduce the feed level to the same feed level as smaller cows, we would need to reduce to about 88 cows (88.42 cows). A herd size of about 88 head of 1,200 pound cows would require about the same amount of feed as 100 cows of 1,100 pound (Table 1).

Perhaps the first and most obvious consequence of this type of change would be lighter weaning weights or fewer calves sold. Smaller cows with similar milk production and muscling to heavier cows will generally be smaller frame size and wean a smaller calf. This can be estimated (NRC, 2000) and for our purposes steers calves at 9 months of age are estimated weighing 655 for 1,100 pound cows and 682 for 1,200 pound cows are used. The difference is 27 pounds. We can calculate the weight of sale calves and income based on a 90 percent calf crop and $1.10 per pound sale price, 50 percent heifers at 5 cents discount, 50 pound lighter weaning weight for heifers and 15 percent replacement heifer retention rate. Based on these estimates changing to smaller cows shows an increase in income over feed cost of about $2,348, while changing to a smaller herd is almost the opposite with a reduction of about $2,000 annually (Table 1).

The most sensitive value in this example is the estimated weaning weight of the calves. If the difference in weaning weight of calves between the smaller and larger cows was about 50 pounds instead of 27 (as used in the example), then smaller cows would be about equal in economic returns.

The smaller herd size with the same size cow ***would*** be a reduction in income over feed costs but income would decline more than the reduction in feed costs. The smaller herd size is probably not as deleterious as shown here because other costs that are “per head based” would likely decline and could account for the roughly $20 per head difference

Based on these estimates it would appear that smaller cows offer some potential for reducing feed costs while not significantly lowering income. There are some other un-intended consequences and additional alternatives.

Mature cows of 1,200 pound size generally have finished steers calves of about 1,180 pounds. If the dressing percent is 61 percent then the carcass weights would be about 720 pounds. This is a desirable carcass weight. Cows of about 1,100 pounds would be expected to produce steer calves finished at 1,050 pounds and a carcass weight of 640, which is on the light side. There could be price discounting, which could easily wipe-out any feed cost savings: the proverbial rock and a hard place.

There is a relatively simple solution to this dilemma: a way to have reduced feed costs while still producing ideal-size market animals. It is much simpler than recording data for age and source verification. Breed the mature cows to a larger frame size bull to produce intermediate frame size calves that will have the desired carcass weight. Producers could also use EPDs for growth and carcass traits to select bulls for growth and larger carcass traits for this specific breeding scheme (terminal sires). Another alternative might be to use a different bull breed for these terminal crosses. For example, Charolais bulls on adult English-breed type cows. Always sell all of these calves, steers and heifers. Only use the growth-type (larger frame size) bulls on mature cows that have grown out to avoid calving problems and ***don't use much larger*** bulls. Note that feed use will be slightly higher for these cows (stimulated to produce more milk by larger calves), and actual forage intake by the larger calves before weaning. Use younger females to develop replacement heifers. These will be bred to bulls to produce replacements that grow into adults with mature size of 1,100 pounds.

Producers often don't have control over feed costs nor the desired carcass weight. But they do have control over breeding decisions. There are good cattle in all breeds of varying mature size. Using this type of system, called terminal sires, requires discipline, self-confidence, and long range planning. But it is something that can pro-actively be accomplished. In many cases younger females are already being bred to different bulls than mature adults. A terminal sire system would just make those breeding plans more specific. From this example, smaller cows clearly reduce feed costs, but may have reductions in sales that wipe-out any gains. A terminal sire program could allow smaller cows, for feed savings while still for most of the herd, production of highly desired calves.

The root of the feed cost issue is animal maintenance expenditures. Some producers have attempted to select for improved cow efficiency by comparing the cow's output (the calf weight) to her own weight. Her own weight reflecting the amount of feed required. This ratio has been shown to be no better than selecting for weaning weight alone for improving efficiency.

Actual feed intake and feed efficiency has been examined in more detail with the advent of computer assisted feeding stations. Research has shown that a series of measurements can be made to calculate a residual feed intake, (RFI). This value is defined as the actual feed intake minus the expected feed intake and may be a better value than feed to gain ratio or conversion. RFI is more independent of growth rate, size and maturity of the animals. Australia and Canada have been using RFI, while it is just beginning to be used in the U.S. In the coming years, there may be opportunities to improve efficiency by selection using RFI. RFI could be used in conjunction with smaller cows to find those animals that are inherently more efficient in the use of nutrients.

Historically, when feed conditions are not limiting, larger cow mature size has generally been more profitable. More recently conditions have changed and feed conditions seem to be trending more and more towards limitations that may be conducive to smaller cow size. This must be balanced with the demands from others in the beef production chain that tend to favor larger carcasses. During tough times producers can also take a good look at problem cows. It is always a good time to remove cows that may have at best only a hope of raising a calf or that favorite cow that needed to be shipped 2 years ago.

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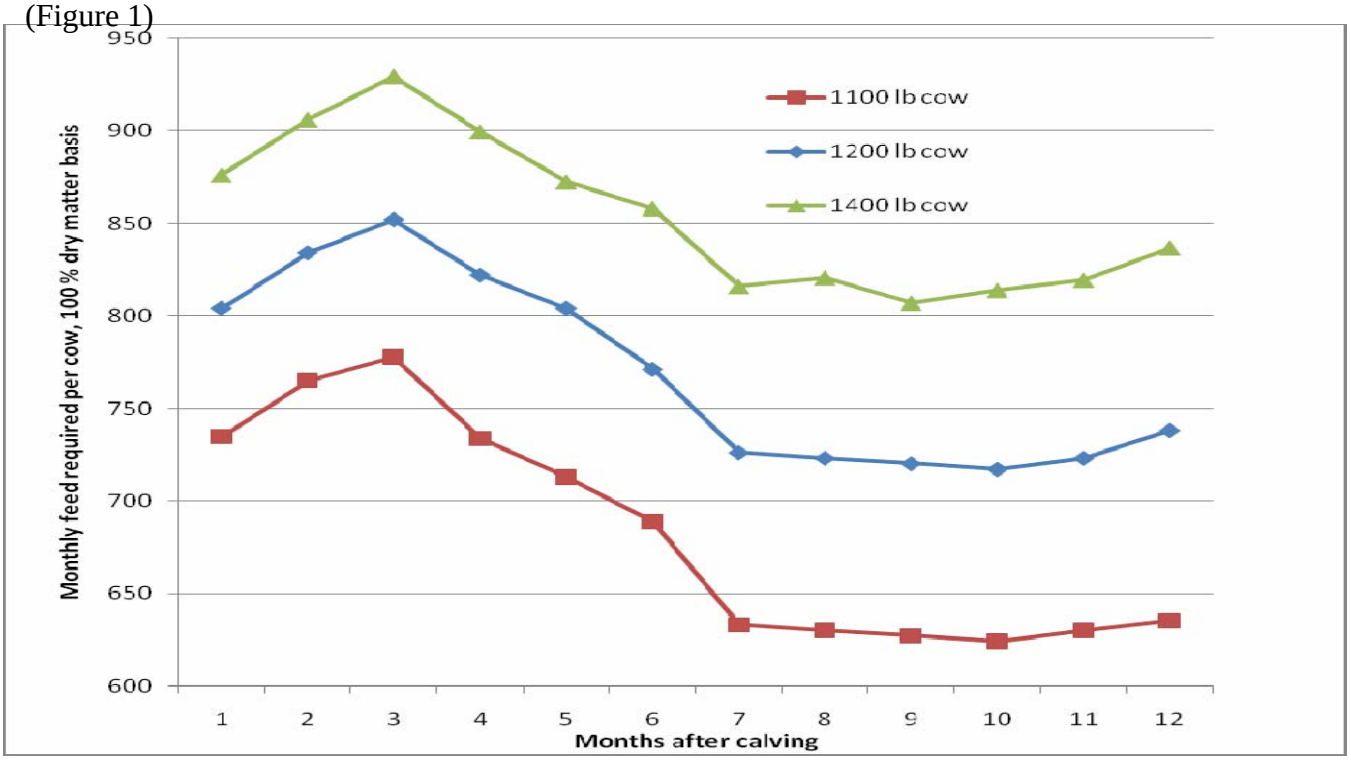
(Figure 1)



(Table 1)	1,100 pound cow, 100 head	1,200 pound cow, 100 head	1,200 pound cow, 88.42 head	Difference between 1,100 & 1,200	Difference between 1,200 cows; 100 or 88 head
Total annual feed dry matter basis, lbs./cow	8,191	9,264	9,264	-1073	
Total annual feed on hay equivalent basis, lbs./cow	9,101	10,293	10,293	-1192	
Total annual feed cost/cow @ $80 basis	$ 364	$ 412	$ 412	$ (47.69)	
Feed required for the herd (hay equivalent basis)	910,111	1,029,333	910,137	-119,222	-119,197
Feed costs for the herd (size as indicated)	$ 36,404	$ 41,173	$ 36,405	$ (4,769)	$ (4,768)
Estimated 9 month weaning wt of steers, lbs/hd	655	682	682	-27	0
Number of steers sold	45	45	39.78	0	-5.2
Number of heifers sold	38.25	38.25	33.82	0	-4.4
Total $ from steers	$ 32,423	$ 33,759	$ 29,850	$ (1,337)	$ (3,909)
Total $ from heifers	$ 24,298	$ 25,383	$ 22,443	$ (1,084)	$ (2,939)
Total calf sales	$ 56,721	$ 59,142	$ 52,293	$ (2,421)	$ (6,849)
Total sales minus feed costs	$ 20,316	$ 17,968	$ 15,888	$ 2,348	$ (2,081)

2009 Beef Improvement Federation meeting to be held in Sacramento, CA

Reprinted from the Western Livestock Journal, October 3, 2008

The California Beef Cattle Improvement Association and California Cattlemen's Association will host the International Beef Improvement Federation (BIF) Conference in Sacramento, CA, April 30-May 3, 2009. BIF works with cattle breeders to improve the science and technology applied by the beef industry with the purpose of improving production. More than 750 cattle breeders, commercial producers, university researchers, and supporting businesses and organizations are expected to attend the four-day conference.

"This is a rare opportunity for cattlemen from throughout the western U.S. to come together to learn the latest in breeding technology, science and adaptability to continue to improve one of our nation's leading industries," said Thomas Freitas, vice president of the California Beef Cattle Improvement Association. "We are honored to have this conference in California and host our fellow cattlemen from throughout the nation and the world."

"While we are a leading industry in the United States, and most certainly California, we do some of our best learning from each other, so this exchange amongst industry producers and professionals is an incredible opportunity for cattlemen and women who work so hard every day to continue to improve upon what we do best, raising beef cattle," he continued.

The conference will be held at the Sheraton Grand Hotel in Sacramento. Session topics will include Genome Selection in the Cattle Industry, Genetic Goals in an Era of High Input Costs, and Economics of Beef Cattle Production. The federation will also hold their annual committee meetings for producers addressing six topic areas: Producer Technology Application, Cow Herd Efficiency and Adaptability, Emerging Technologies, Live Animal, Carcass and End Product Evaluation, Selection Decisions, and Genetic Prediction.

Tours of some of northern California's top producing cattle operations, including Duane Martin, who is one of the top 10 cow/calf operators in the U.S., and Drake's Bay Family Farm, which raises grass fed beef and oysters, will be a part of the conference tours and festivities along with wine tasting and a cutting horse demonstration at Rancho Murietta's equine facility.

For registration and hotel information, visit www.calcattlemen.org/bif2009.html. You may also contact the organizing committee cochairs, Dr. Alison Van Eenennaam at 530/752-7942, alvane@ucdavis.edu, or Terry Jochim at 916/ 709-2159, dustytrl@cattlemen.net, for additional information and conference details

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