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Another Strange Year

Researchers at the [UC Sierra Foothill Research and Extension Center](#) (SFREC) in Browns Valley have been collecting rangeland forage production data since 1979. I find it fascinating to look back at the tremendous variability in forage growth over the last 39 years – in large part, I suppose, to help predict the short-term future (in other words, this year's spring growth). From a practical standpoint, I find this dataset helpful for longer term grazing planning purposes, as well.

Since the beginning, SFREC staff has noted germination dates for each year. Since the mid 1990s, the staff has also measured total available rangeland forage on the first day of the month from December through peak standing crop (which generally occurs sometime in May or early June). The average germination date over that time is October 21 - although germination has occurred as early as September 2 (in 2000) and as late as December 12 (in 2002). Interestingly, total production was right at average in 2000-2001, while the much later germination year (2002-2003) produced 145% of normal forage. Timing of precipitation after germination, as well as soil and air temperature, seems to be a critical factor!



As I said at the outset, annual rangeland forage production is incredibly variable. Total production over the last 39 years has ranged from 1,071 pounds of dry matter per acre in 1987-88 to 4,696 pounds per acre in 1992-93. Monthly production is also all over the board - on February 1, 2014, the crew measured just 98 pounds of dry matter per acre (average for the date is 533 pounds).

Forage production on annual rangeland, obviously, is tied to precipitation. The relationship, however, is complex. Total precipitation is probably not as important as the timing. Air and soil temperatures are also related to grass growth, as this year's numbers clearly demonstrate. Here in Auburn during the 2017-2018 water year (and I suspect in Browns Valley), our seasonal rainfall has been up and down. We had good rains in November, a relatively dry and warm December, and a wet and warm January. February started off warm and dry, turning wet late in the month. This wet pattern held through March – and as of April 1 in Auburn, we're right about normal for the season.

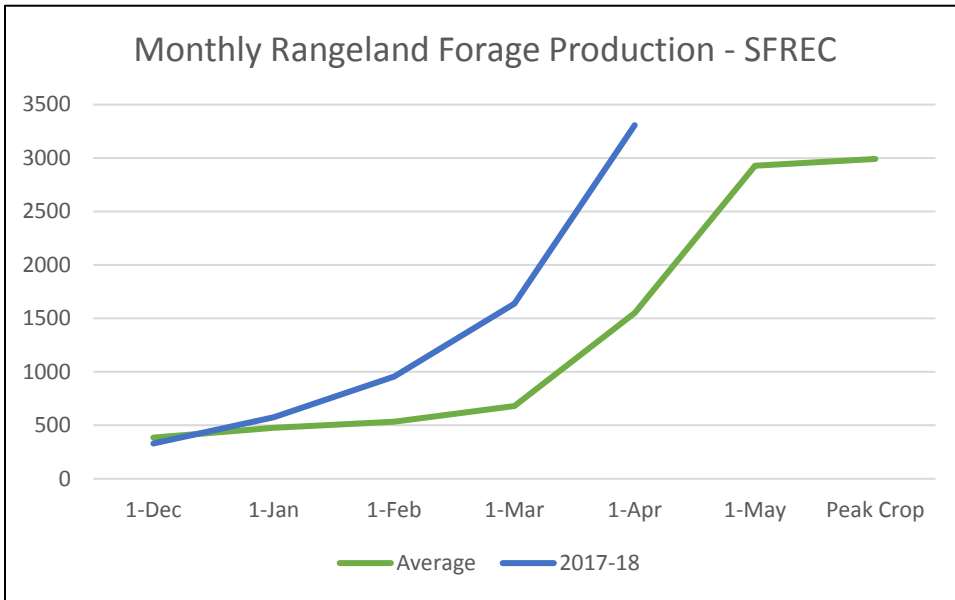


Figure 1: Average vs. 2017-18 forage production in Browns Valley, CA. Source: SFREC

Looking at forage production for this grass year, warm weather and adequate moisture seems to have pushed our annual forage growth beyond normal. This productivity has been spotty, though – other parts of the Sacramento Valley seem to have been missed by many of the storms that hit our foothill region. At SFREC, this year's March 1 forage production at SFREC was a whopping 1,637 pounds of dry matter per acre – more than 240 percent of normal for the date. SFREC's April 1 forage numbers are equally impressive – 3,308 pounds per acre (213 percent of normal). And to think that back in late

December many of us were worried about having enough grass this spring!

My friend and colleague Matthew Shapero (who is the livestock and natural resources advisor in Santa Barbara and Ventura Counties) forwarded me a publication that suggests that temperature change, rather than precipitation variability, is the main driver in determining when our annual grasses will head out (Chow et al. 2008). Given the warm temperatures of the last week of March and this first week of April, we may be seeing our annual forages reach peak standing crop earlier than normal this year – stay tuned!

So what can we do with these numbers from a practical standpoint? I use the monthly numbers for planning purposes - a dry, cold autumn followed by a dry December and January means we'll be tight on forage in February (like 2013-14). Conversely, adequate moisture and warmer-than-usual temperatures (like last year and, at least in our region, this year) means extra forage in February. I also use the peak standing crop information to plan for summer and fall grazing. If we know how much we've grown, we can ration out our dry forage and make sure we leave enough residual to protect the soil when the rains start again in the fall.

Experienced ranchers, obviously, know the difference between a good grass year and a poor one. The data collected at SFREC helps put numbers to these observations - numbers that can help all of us become better managers! If you're interested in learning more about planned grazing, consider signing up for this year's California Beef Cattle Grazing School (see below)!



New Forage Varieties

Forage productivity on foothill and valley rangelands is a key factor in ranch carrying capacity – and an important part of ranch profitability. A recent study published in the Oct-Dec 2017 issue of *California Agriculture* compares 22 annual and perennial forage varieties, evaluating ease of establishment, survivability, and productivity. These species were also evaluated for their ability to suppress or prevent the spread of invasive weeds (like yellow starthistle or medusahead).

These variety trials were conducted the Tehama County foothills (near Paskenta) on two different soil types (Arbuckle and Tehama). Weeds were controlled prior to seeding using glyphosate (Roundup WeatherMax). Grass plots (where no broadleaf varieties were planted) were sprayed in late February in the year of seeding only with 2, 4-D (Weedar 64) and carfentrazone (Shark EW) to control broadleaf weeds. Plots were planted in early December using a Truax Flex II grass drill at rates recommended by seed suppliers.

The research team found that Gulf annual ryegrass and Blando brome provided high cover and rapid production in the year they were seeded, making them viable options where short-term forage production and weed suppression are priorities. Of the broadleaf herb varieties tested, Winfred forage brassica produced a robust stand in the year of seeding but did not persist due to lack of seed production. Perennial herbs Tonic plantain and Grouse chicory also established well in the first year, but did not persist into year 3. The team suggests that these broadleaf herbs are options for short-term forage needs, but their lack of persistence limits their longer term utility.

The top-performing perennial grasses included Flecha tall fescue, hardinggrass (Perla koleagrass, Holdfast, or Advanced AT) or Berber orchardgrass. These species appeared to display enough summer dormancy to survive the rain-free summers typical of the Sierra foothills. These species also appeared to suppress invasive annual weeds.

To read the complete article, go to <http://calag.ucanr.edu/archive/?article=ca.2017a0025>.

Source: Davy J, Dykier K, Turri, T, Gornish E. 2017. Forage seeding in rangelands increases production and prevents weed invasion. *Calif Agr* 71(4):239-248.



New Publication Outlines Livestock Protection Tools

A new online publication from the University of California provides ranchers with detailed information regarding a variety of nonlethal livestock protection tools, including livestock guardian animals, fencing systems, night penning, and fright tactics or devices, among others. The 15-page booklet includes a combination of research-based information and on-the-ground observations from experienced producers. Download the publication at <http://anrcatalog.ucanr.edu/pdf/8598.pdf> or contact our office at (530) 889-7385 for a hard copy.



Wool Testing

With shearing season in full swing, many sheep producers are exploring options for marketing their wool. While many small-scale producers focus on handspinners and local markets, commercial scale operations often depend on commodity marketing outlets. Regardless of how you market your wool, knowing your wool quality can help you make an informed decision about wool value. Knowing your current quality can also help you make genetic decisions that will improve your wool clip quality in the future.

The Montana State University Wool Lab offers micron testing for sheep producers throughout the West. Out-of-state producers (like those of us in California) can get our wool tested on MSU's ODFA2000 testing machine for just \$3 per sample.

If you're interested in having your wool tested, we'll be sending multiple samples into the lab in late May. If you'd like help selecting samples of your wool for testing, or if you simply want to send a sample as part of our group, please let me know! Contact me at dmacon@ucanr.edu or at (530) 889-7385 for more information!

WORKSHOP CALENDAR

California Beef Cattle Grazing School

April 27-28, 2018

UC Sierra Foothill Research and Extension Center
8279 Scott Forbes Road, Browns Valley, CA

This two-day, hands-on grazing school will provide participants with practical, field-based experience in applying the principles of managed grazing on rangeland and irrigated pasture. Working in teams, participants will learn about grazing planning, paddock design, range ecology and monitoring, and drought planning.

COST: \$180 (includes all meals and course materials) No refunds – your payment guarantees your space.

Registration deadline: April 17, 2018

LODGING: Dormitory and camping available at SFREC on a first come, first served basis. Hotels are available in Grass Valley and Marysville.

REGISTER ONLINE: <http://ucanr.edu/2018grazingschool> – class limited to 25 participants.

Shepherd Skills Workshop Series – Wool Handling and Shearing Management

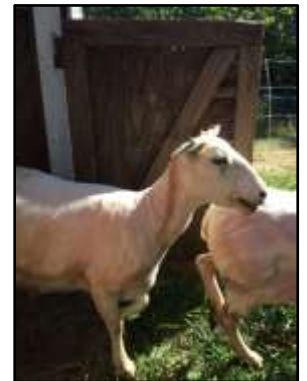
May 12, 2018 – 8 a.m. to 3 p.m.

Flying Mule Farm, Auburn, CA

Learn how to set up and manage a small- to medium-sized shearing facility for small flocks. Participants will learn about sheep handling, shearing preparation, wool handling, and wool marketing. (Note: this is not a shearing school).

COST: \$5 per student. Lunch not included.

REGISTER ONLINE: <http://ucanr.edu/woolhandling2018>



Irrigated Pasture Workshop

May 19, 2018 – 8:30 a.m. – 12:00 p.m.

Robinson Ranch, Penn Valley, CA

This practical, field-based workshop is sponsored by the Nevada Irrigation District and the Nevada County Resource Conservation District. Learn about water and nutrient management, soil health, grazing on irrigated pasture, and cost-share opportunities. This workshop is available for irrigated pasture owners and managers from Nevada and Placer Counties.

COST: FREE!

REGISTRATION: Call or email Kaycee Strong at NID – strongk@nidwater.com or (530) 273-6185, ext. 244.

Prescribed Fire on California Rangelands Workshop
May 16-17, 2018
UC Sierra Foothill Research and Extension Center
8279 Scott Forbes Road, Browns Valley, CA

Are you interested in exploring prescribed fire as a tool for improving rangeland productivity? If so, this 2-day workshop will include valuable information about burn planning and preparation, including working with local air quality management agencies, CalFire, and others. The cost is just \$15 per day and includes lunch! Conditions permitting, Day 2 will include a prescribed fire training burn!

For more information, go to: http://ucanr.edu/sites/forestry/Wildfire/Prescribed_fire/Rx_workshop_2018/.

Contact Dr. Kate Wilkin, Forestry/Fire Science & Natural Resource Advisor for Yuba, Butte and Nevada Counties for more information (kwilkin@ucanr.edu; (530) 822-7515).

How do you prefer to get information from your local UC Cooperative Extension Livestock and Natural Resources Program? Please take this short survey to help me better meet your information needs!

<http://ucanr.edu/livestockinfosurvey>

For a hard copy of the survey, please call (530) 889-7385 or email me at dmacon@ucanr.edu.

Thank you!

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