

University of California  
Agriculture and Natural Resources  
Making a Difference for California



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# Livestock, Range, & Watershed

San Luis Obispo, Santa Barbara & Monterey Counties

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### A Call for Email

As you have noticed, mailing of newsletters have decreased significantly. Our mailing budgets have been drastically reduced. As a result, a newsletter can only be mailed occasionally. But there is solution, by providing your email, I would have the ability to provide information on workshops, events, and important announcements promptly. If you are already signed up for email, please disregard this notice. If you are not signed up, and would like to be, please provide your email to me at [relarsen@ucanr.edu](mailto:relarsen@ucanr.edu). If you do not use email, that is ok, I will continue to mail out newsletters as much as I can. If you do not want to provide me with your email, another option would be to look at our website from time to time where my announcements are listed:

<http://cesanluisobispo.ucanr.edu/>,

or at the page:

[http://cesanluisobispo.ucanr.edu/Custom\\_Program355/Newsletter\\_810/](http://cesanluisobispo.ucanr.edu/Custom_Program355/Newsletter_810/)

Emails are free, confidential and secure, and much faster to get information out!

### Updates from Recent Research Projects on the Central Coast

There are four recent journal articles, which highlights research conducted on the Central Coast, I would like to mention. These articles cover research about several different issues we face here on our rangelands. These 4 articles cover the topics: grazing and mowing to control medusahead, modeling soil erosion on rangelands, results of a state-wide survey of *Cryptosporidium* and *Giardia* in cow-calf herds, and in estimating forage production using remote sensing techniques.

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### **Managing the Invasive Grass Medusahead**

With increasing density of the invasive grass medusahead, on the Central Coast, understanding better ways to control it is important. Medusahead, *Taeniatherum caput-medusae*, reached the Central Coast area more than 25 years ago. Since then it has become a significant problem in the Parkfield area, along with some known populations in Paso Robles, and San Luis Obispo areas. The recently released paper, "Using Phenology to Optimize Mowing and Grazing Treatments for Medusahead" discusses ways of grazing and mowing to help reduce plant density of medusahead populations. There is only a short window of 10 to 15 days, in which grazing can effectively reduce medusahead reproductive tillers. In contrast, successful mowing to reduce reproductive tillers is about 35 days. The full journal paper can be found at: Brownsey, P., J. James, S. Barry, T. Becchetti, J. Davy, M. Doran, L. Forero, J. Harper, R. Larsen, S. Larson-Praplan, J. Zhang, E. Laca. 2017. Using phenology to design optimal mowing and grazing treatments for medusahead (*Taeniatherum caput-medusae*). *Rangeland Ecology and Management*, 70 (2017) 210-218. <http://dx.doi.org/10.1016/j.rama.2016.08.011>

### **Soil Erosion on Rangeland**

Soil erosion and water quality have long been a concern for water quality. How soil erodes and gets into waterways has been a focus for lots agencies that work on water quality issues in our streams and lakes. Many management practices, such as road building, grading, construction, and even grazing if done improperly, all have the potential for increased soil erosion during any storm event. A recent paper focused on erosion potential that could be caused by grazing on rangelands. The results showed that if grazing is managed properly, e.g. that of leaving proper soil cover by leaving the proper amounts of old dry vegetation (or residual dry matter) then the erosion potential risk is very low. The full paper can be found at: Salls, Wilson B. Royce E. Larsen, David J. Lewis, Leslie M. Roche, Danny J. Eastburn, Allen D. Hollander, Mike Walkinshaw, Stephen R. Kaffka, Kenneth W. Tate, Anthony T. O'Geen. 2018. Modeled Soil Erosion Potential is Low Across California's Annual Rangelands. *California Agriculture* 72 (3) pp 179-191.

### **Prevalence of *Cryptosporidium* and *Giardia* in Livestock**

While we all like to eat, food safety has been a concern for a long time. A newly released study discusses some the major parasites of concern, *Cryptosporidium spp.* and *Giardia*. Though these parasites can come from many sources, livestock are of concern because they can possibly carry these parasites as well as do wildlife and people. We cannot manage wildlife, but we can manage livestock, and proper management reduces risks of pathogens coming from cow-calf herds. The newly released paper discusses the prevalence found in livestock, and management practices that reduce the risk. You can find the paper at: Xunde li, Kristopher A. Flores, Sheila Barry, Theresa A. Becchetti, Morgan Doran, Julie A. Finzel, Royce Larsen, David Lile, Neil McDougald, Tran Nguyen, Chengling Xiao, Edward R. Atwill. 2019. Statewide Cross-Sectional Survey of *Cryptosporidium* and *Giardia* in California Cow-Calf Herds. *Rangeland Ecology and Management* Volume 72 (2019) 461-466.

### **Measuring Forage Production on Rangelands**

As you are aware, the last few years we have faced one of the worse droughts seen in California for a long time. An article in *Scientific American*, on December 5, 2014 suggest that the drought we have gone through recently, has been the worse for California in the last 1100 years. This recent drought has seen major effects on the livestock industry, as well as many other industries and all citizens as well. One way the University of California has been helping the livestock industry is by measuring forage production, which then helps with management issues and helps provide information to the USDA Farm Service Agency and the Agricultural Commissioners in each county in declaring drought. This information is used to help bring federal aid for the financial losses to ranchers and farmers due to drought. Measuring forage production though is generally difficult due to the high variability from year to year, and from the coast to the eastern portions of the counties. A newly released paper looked at new ways of measuring forage production by using remote sensing data and small unmanned aerial drones. The study found that use of aerial and satellite remote sensing technology does support adaptive rangeland management by providing near-real-time forage production estimates. You can find the full paper at: Liu, Han, Randy Dahlgren, Royce Larsen, Scott Devine, Leslie Roche, Anthony O'Green, Andy Wong, Sarah Covello, and Yufang Jin 2019. Estimating Rangeland Forage Production Using Remote Sensing Data From a Small Unmanned Aerial System (sUAS) and PlanetScope Satellite. *Remote Sens.* 2019, 11(5), 595; <https://doi.org/10.3390/rs11050595>