

JANUARY 2019

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University of Idaho

# IDAHO RANGE LIVESTOCK SYMPOSIUM

## Integrating the Needs of Animals, Rangelands, and People

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A one-day traveling symposium and networking event—packed with information on industry-relevant topics for producers and rangeland managers.

### Idaho Locations

- January 7: American Legion Hall, Marsing
- January 8: CSI Herrett Center, Twin Falls
- January 9: Liberty Hall Event Center, Pocatello
- January 10: BYU Idaho Ag Science Center, Rexburg

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# IDAHO RANGE LIVESTOCK SYMPOSIUM

January 2019

## AGENDA

- 9:00 am Registration
- 9:30 am Dr. John Ritten—Value and Economics of Range Improvements, Do They Pencil Out?
- 10:30 am Break
- 10:45 am Dr. Benton Glaze and Dr. John Hall—Preconditioning Programs
- 11:25 am Les Nunn and Ben Eborn—Is Preconditioning Profitable?
- 12:00 pm Lunch and Sponsor Speaker
- 12:45 pm Dr. Phil Bass—Capturing Value through Beef Carcass Quality
- 1:35 pm Matt Cahill—Threat-Based Land Management Collaboration in Southeast Oregon
- 2:15 pm Dr. John Ritten—The True Cost of Replacement Heifers: Raising vs. Buying
- 3:00 pm Adjourn

## Symposium Partners and Planning Committee

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**Partners:** University of Idaho Extension, College of Agricultural and Life Sciences, College of Natural Resources, and Rangeland Center; Idaho State Department of Agriculture, Idaho Rangeland Resources Commission, Idaho Department of Lands, Idaho Cattle Association, and the Natural Resources Conservation Service.

**Planning Committee:** Sarah Baker, Brendan Brazee, Melinda Ellison, Benton Glaze, Danielle Gunn, John Hall, Tyler Hamilton, April Hulet, Gretchen Hyde, Brooke Jacobson, Scott Jensen, Jason Laney, Rebecca Mills, Les Nunn, Joel Packham, Travis Pehrson, Samantha Roberts, Tyanne Roland, Jim Sprinkle, Carmen Stevens, Austin Terrell, Tate Walters, Carmen Willmore, Karen Williams, Shannon Williams.

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# NOTES

# Dr. John Ritten



John Ritten is an Associate Professor in the Department of Agricultural and Applied Economics at the University of Wyoming. His work focuses on the intersection of production agriculture and natural resource management. He teaches farm and ranch management at the University of Wyoming and is the state's agricultural systems extension specialist. He is currently the co-director of the newly formed Center of Excellence in Rangeland Systems housed in UW's College of Agriculture and Natural Resources. He has participated on numerous projects that show the economic implications of alternative ranch management strategies across the West.

## Value and Economics of Range Improvements— Do They Pencil Out?

We look at the costs and benefits of various grazing management strategies for both a cow/calf system and a stocker system.

For the cow/calf system, a multi-period linear programming approach was used, aimed at quantifying rancher benefits for forage production responses from various hypothetical practices implemented to improve forage productivity over time. Rancher benefits were quantified as the difference in maximum net present value of profits for various forage responses over a 35-year horizon given typical resource limitations and cost/return parameters representative of Fremont County, WY. As expected, results show forage response timing and initial conditions drive private benefits from practices aimed at increasing forage productivity. The benefits were compared to the costs of implementing a rotational grazing plan, as a potential practice aimed at improving soil health on private rangeland. Scenarios experiencing greater implementation costs than projected benefits suggest additional incentives may be necessary to promote certain practices on private rangeland.

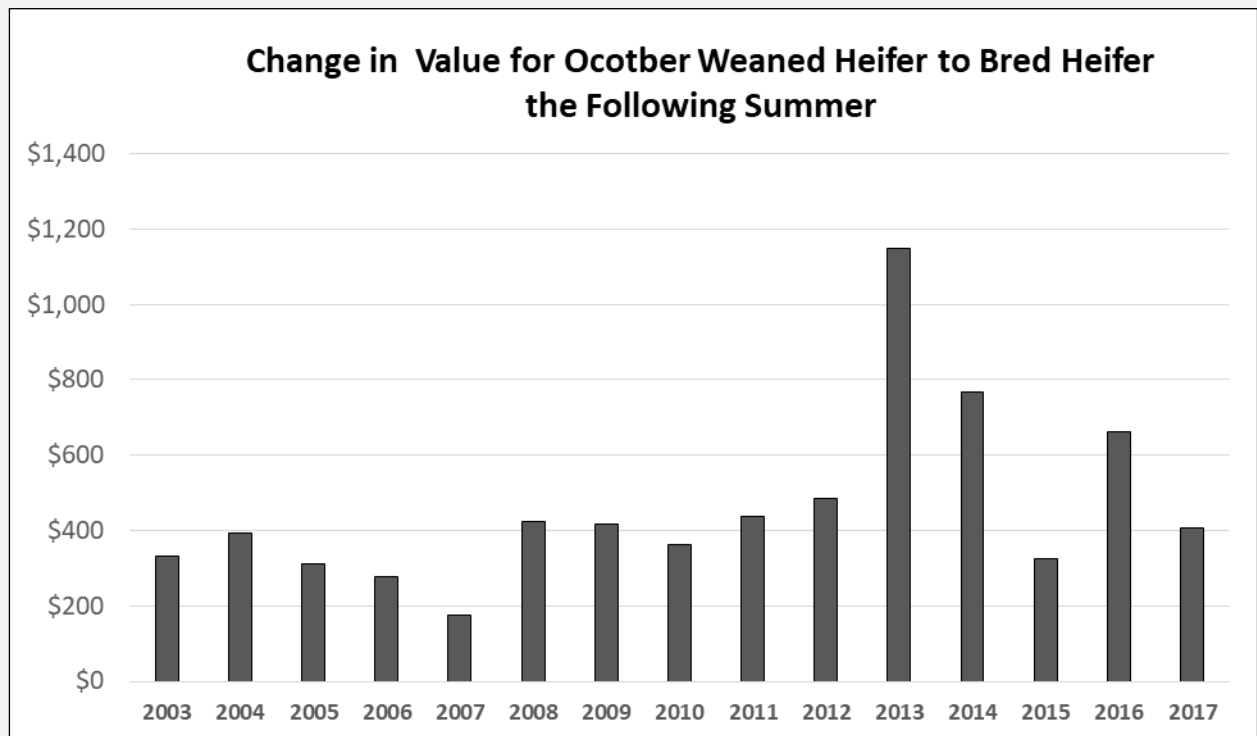
For the stocker system, we use economic data from a long-term USDA-ARS study in northern Colorado to determine if there are profit differences between season long continuous and adaptively-managed rotational grazing strategies. We evaluate the costs that are expected to differ between the two systems, mainly fencing and water infrastructure and labor, over a suite of initial ranch conditions (contiguous vs. non-contiguous ranches grazed either continuously or rotationally). Actual steer performance from the study and long-term cattle market data for Colorado were then used to calculate annual revenues using a Monte Carlo Simulation. Our results indicate that the additional infrastructure required to convert from a continuous to a rotational grazing system makes rotational grazing unlikely to be profitable in the short-term without cost share assistance. However, rotational grazing results in lower labor costs due to the increased stocking density of the herd, resulting in time available to be allocated elsewhere on the ranch. We also find that contiguous pasture ranches are significantly more profitable than non-contiguous ranches, a finding that could be especially pertinent to ranchers just starting out in the business.

# The True Cost of Replacement Heifers: Raising vs. Buying

In order to determine whether it is better to buy or develop replacements we need to determine the costs and benefits of both approaches. First, what will it cost to convert a weaned calf to a bred heifer? I calculate the feed and breeding costs of developing heifers to range between \$450-700 depending on the management strategy. Another major cost to consider is that not all heifers that get bred, but we still pay to 'develop' them. We look at how changes to pregnancy rates impact heifer development costs.

So, does it pay to develop our own heifers? When looking at the change in value from an October weaned heifer calf to a bred heifer the following summer over the last 15 years (attached figure), we would only save money developing rather than buying bred heifers in 2 or 3 years. But that doesn't necessarily mean we should start relying on the market to provide our breeding stock. I always wonder why those heifers are at the sale barn. In other

words, why is someone else selling them? Will they match our calving date? Do their genetics (including the calf) match our management goals? But again, there are some reasons to consider buying. One benefit is that we could sell our calves in the fall and not need to purchase bred heifers until the summer, freeing some capital for 6 or more months. And, if you only need a few heifers, you can let someone else take advantage of economies of scale by developing a larger number of heifers. Regardless of how we acquire them, the heifers that make the most money get bred, stay in the herd, and are retained at low points in the price cycle. We can address the first two with proper management, and current forecasts suggest we are near the low in the current price cycle (barring any major drought or unforeseen decrease in demand). Heifers kept, and properly developed, in the coming few years have a very good chance of being more profitable over their life than heifers kept (or purchased) in the last few years.



# Dr. Benton Glaze



Benton Glaze is an Extension Beef Cattle Specialist in the Department of Animal & Veterinary Science at the University of Idaho. He is stationed and works out of the Twin Falls Research & Extension Center in Twin Falls, Idaho. Originally from Muleshoe, Texas, Glaze received a B.S. degree in animal science from Tarleton State University and M.S. and Ph.D. degrees in beef cattle breeding and genetics from the University of Missouri and Kansas State University, respectively. Glaze coordinates beef Extension programming throughout the state and serves as a resource for stakeholders including beef producers, allied industries representatives, veterinarians, Extension educators and the general public. His Extension program focuses on breeding and genetics, general management, reproduction, and beef quality assurance.

# Dr. John Hall



John is a Professor and Extension Beef Specialist with the University of Idaho. He also serves as the Superintendent for the UI Nancy M. Cummings REEC near Salmon, ID and oversees cattle and infrastructure at the Rinker Rock Creek Ranch. The Nancy Cummings Center is the University of Idaho's primary cow-calf research center. Dr. Hall has been with UI for 11 years and has been an Extension Beef Specialist and researcher for over 27 years. His area of expertise is reproduction and cow-calf management. He has been involved in the cattle industry and Extension in the Southeast, Midwest and West. John is a 7th generation agriculturalist. He and his wife, Beverly, live in Carmen, ID.



# Preconditioning Programs

Preconditioning programs offer an opportunity for ranchers to add value to their calves and increase marketing options for the calf crop. Calves that have been preconditioned experience less stress when moved to the feedlot or stocker operation. Preconditioned calves have reduced morbidity and mortality. The quality of the final product is improved in calves that maintain a high health status throughout their lifetime.

Preconditioning traditionally was defined to include:

- Vaccination for bovine respiratory disease complex – 2X
- Vaccination against clostridial diseases – 2X
- Vaccination for Mannheimia (pasturella) – 1X
- Weaned at least 30 days
- Treated for internal and external parasites
- Broke to eat out of a bunk and drink out of a trough

However, over the years the beef industry has developed a dizzying and confusing array of vaccination programs with and without weaning. What constitutes a preconditioning program and the differences among programs will be covered.

Weaning is a key to adding value to calves. However, it can be a highly stressful time for ranchers and calves. Strategies for weaning include drylot, fenceline, nose flaps and the ubiquitous “on the truck”. The impacts, techniques and outcomes of these strategies vary among the systems. Understanding the systems will help ranchers decide which option will be right for their operation.

Finally, nutrition during the preconditioning process can greatly influence response to vaccines. The type of feed and rate of gain during preconditioning can affect marketability and profitability. In general, gains of 1.5 to 2.0 lbs per calf per day are needed in an effective preconditioning program.

The focus of this presentation will focus on:

- The benefits of preconditioning throughout the lifetime of the calf
- Describing the various programs commonly accepted by the industry
- Strategies for weaning
- Nutritional options for preconditioning

How to effectively market these value-added calves will be the topic of the following presentation.

# Les Nunn



Les received his bachelor's from the University of Idaho and master's in ranch management from the King Ranch Institute for Ranch Management, Texas A&M University-Kingsville. He has been involved in the ranching industry throughout his life and he thrives on seeing ranches implementing progressive and innovative ideas that improve the bottom line.

Les has been married to his wife Hollis for 18 years. They have one son and four daughters. They enjoy working and recreating together, which generally means, working and recreating in an agricultural setting. They enjoy focusing on stockmanship as a way to increase profitability, animal well-being and quality of life. In their spare time they ride and train horses, rope and work their stockdogs.

## Is Preconditioning Profitable?

Many studies and articles suggest and tout the many benefits to preconditioning calves. These may include, lower costs of gain from improved feed efficiency, lower treatment rates and death loss, and market premiums to the producers. Benefits such as lower treatment rates and death loss may be a strong argument for some that preconditioning is an animal welfare issue and for this reason alone encourage producers to precondition their calves.

What these studies and articles often leave out is that there is also an added cost to preconditioning calves and those costs are usually not the same for every producer. So, while preconditioning may have several benefits and premiums that should be carefully considered; do they outweigh the costs to justify a preconditioning program? The net returns from a preconditioning pro-

gram must be at least as high, if not higher, as the net returns of selling the calves at weaning. Cow-calf producers are only likely to adopt a preconditioning program if it is profitable.

For the cow-calf producer, there are basically two economic benefits to be considered from a preconditioning program. First, the price premiums received for having preconditioned calves and second, the additional weight gained during the preconditioning phase. Both come with additional costs and other market risks that could negatively affect revenue.

It is essential for producers to do their own partial budgeting prior to implementing a preconditioning program to determine if it is economically the right course of action for their individual businesses.

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# NOTES

# Dr. Phil Bass



Dr. Phil Bass earned his bachelor's and master's degree in animal science at California Polytechnic State University and his doctorate in meat science from Colorado State University. Dr. Bass served as the Senior Meat Scientist for the Certified Angus Beef brand for several years where he led educational programs for the betterment of the brand and beef community. Dr. Bass transitioned to a faculty position in the Animal & Veterinary Sciences Department with the University of Idaho in 2017 and now leads the introductory animal science class as well as the meat science course.

## Capturing Value through Beef Carcass Quality

The primary reason consumers purchase beef is because of taste. Taste, in the discipline of meat science, is measured in the terms of palatability which is the assessment of the characteristics of flavor, tenderness, and juiciness. Beef research continues to demonstrate that as marbling, or intramuscular fat, increases in the beef carcass, so does palatability. Marbling is affected by nutrition and genetics. Increases in marbling, and subsequent increases in overall beef carcass quality grade, can lead to greater financial returns for the producer. Great improvements have been made in the percentage of high-quality beef carcasses observed in the United States over the years. These improvements in quality grade indicate a pull-through demand for high-quality beef products which leads to a higher profitability potential for the cattle raising community.

Challenges that arise within the beef industry, however, as a result of the higher quality carcasses that are being targeted are advanced maturity and over-sized non-conforming beef carcasses. Although beef producers have become more and more efficient at raising cattle over the years, the unintended

consequences of some of those ultimately larger cattle can lead to advanced maturity of the carcass, physiologically speaking, and carcasses that are indeed too big for what the beef merchandising industry is looking for. Adjustments have been made recently to the USDA beef grading system where mitigation of carcass physiological maturity can now return value on carcasses that otherwise would be considered less desirable. However, very large carcasses continue to be a concern in the beef packing community as they are more difficult to fabricate and more challenging to merchandise. Advancements in the meat science community has allowed for alternative merchandising strategies to be rolled out that are meant to alleviate some of the sizing concerns, however, more remains to be done to gain consumer acceptance.

Current value-based pricing of beef carcasses is designed to financially encourage desirable carcass quality and sizing characteristics. Producers should consider all aspects while marketing their cattle in order to obtain the optimum price and profitability. It is important to balance quality and carcass size in order to fit what the end-user is targeting.

# Matt Cahill

Matt Cahill has been working with The Nature Conservancy for nearly four years on rangeland and sagebrush-steppe conservation. His role bridges science and ecology with communication and collaboration and covers a broad set of topics related to restoration and management of rangelands in the Northern Great Basin. He has an M.S. in Plant Biology from the University of Vermont and a B.A. in ecology from Sterling College, also in Vermont.



## Threat-Based Land Management and Collaboration in Southeast Oregon

Successful conservation of sage-steppe ecosystems must balance science-based prioritization and management with diverse stakeholder participation and implementation. Such ecosystem-based conservation efforts can be challenging because stakeholders are likely to have widely varying opinions and values associated with the ecosystem and the environmental and management factors which influence change. In southeast Oregon, a collaboration of federal, state and private partners approached this issue with mental models to distill complex ecology into simplified bins. These bins form the foundation of “Threat-based Land Management”, framing distinct ecological problems – woodland expansion and annual grass invasion – that threaten ecosystem function, wildlife habitat and rural grazing economies alike.

In Oregon, this successful compromise between complexity and communication is now foundational to the State Sage-grouse Action Plan, to private landowner

conservation programs and to federal agencies’ cross-boundary conservation efforts. Though this approach greatly simplifies a complex ecological system, several projects demonstrate landscape-level links between these simple mental models, wildlife habitat needs and important ecosystem services. These efforts underscore the need for decision-support systems operating at scales relevant to land managers and the lands and problems they manage.

Created in 2014 during the scramble of the potential sage-grouse Endangered Species Act listing, this approach shows how collaboratives can address conservation issues with responsive, adaptive and science-based frameworks that strike an innovative balance between complexity and communication. The reward in Oregon has been stakeholders leaning in to obtain large-scale conservation.



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