IdahoRangeLivestockSymposium

INTEGRATING THE NEEDS OF **ANIMALS, RANGELANDS, AND PEOPLE**

2016

APRIL 19 - Marsing - American Legion Hall

APRIL 20 - Twin Falls - Red Lion Canyon Springs Inn

APRIL 21 - Challis - American Legion Hall

APRIL 22 - Field tour in central Idaho exploring technology applications in ranching

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

University of Idaho
Rangeland Center

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University of Idaho Rangeland Center

University of Idaho Department of Animal and Veterinary Science

Idaho State Department of Agriculture

Idaho Rangeland Resource Commission

Idaho Department of Lands

Idaho Cattle Association

Agenda

8:30 a.m.	Registration
9:00 a.m.	Welcome
9:05 a.m.	**Conservation Easements 101:** Northwest Rangeland Trust/Lemhi Regional Land Trust
10:00 a.m.	**Using Monitoring Data to Facilitate Adaptive Management:** Dr. Jim Sprinkle
10:30 a.m.	Break
10:45 a.m.	**Cooperative Rangeland Monitoring — an overview of the program and success stories with local producers:** Brooke Jacobson
11:15 a.m.	**Using Targeted Grazing to Reduce Fire Risk:** Chris Schatchschneider
11:45 a.m.	**Drone Applications in Ranching Operations:** Scott Jensen
12:00 p.m.	LUNCH
12:45 p.m.	**Market Outlook:** John Nalivka, Sterling Marketing
1:30 p.m.	Transition to animal handling site
2:00 p.m.	**Animal Handling Demonstration:** Jim Keyes, USU Extension
4:00 p.m.	Adjourn

Meal Sponsors

Owyhee Cattlemen's Association

"Since 1878"

Our mission is to promote the beef cattle industry, improve and protect our natural resources, and safeguard the interests of beef cattle producers in and around Owyhee County in southwest Idaho.

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www.sare.org

Grants and Education to Advance Innovations in Sustainable Agriculture

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carmen.stevens@bayer.com

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IDAHO BEEF COUNCIL

Created in 1967, the Idaho Beef Checkoff is a producer-funded marketing and research program designed to build the consumer demand for beef through integrated local, state, national and international programs and to increase the opportunity for producer profitability. This is accomplished through a combination of initiatives, including advertising, promotion, research, education outreach, new product development, and a variety of other marketing tools.

Checkoff dollars may be used toward six program areas: promotion, research, consumer information, industry information, foreign marketing and producer communications. It's important to note here that the law does not allow checkoff dollars to be invested in production research or to influence government policy or action, including lobbying.

Idaho Beef Quality Assurance

Conservation Easements 101

Mission Statement

The mission of the Northwest Rangeland Trust is to help Oregon, Washington, and Idaho ranch and farm families protect and preserve the long-term viability of their ecologically significant private lands.

Frank J. O'Leary

Executive Director of the Northwest Rangeland Trust

A little history about myself:

- I have been a professional administrator for 43 years
- 22 years with the Walla Walla Frontier Days
- 10 years with the Central WA Chapter of the PGA
- The last ten years I have served as the Executive Director of the ORT/NWRT.
- During most of my professional career I have been fortunate to be involved in the agricultural community raising asparagus and alfalfa for 15 years. Additionally, we raised and fed cattle for 20 years.
- Additionally, I rodeo in the PRCA for 18 years.

The Northwest Rangeland Trust was organized by the Oregon Cattlemen's Association. NWRT was incorporated as a separate 501(c)(3) corporation in 2001. ***Members of the BOD of NWRT must be members of the OCA, WCA, ICA and a majority must be producers.***

Current board members include:

- Chairmen Tom Price, Baker City, OR
- Vice-Chairmen Bob Skinner (past president of the OCA), Jordan Valley, OR
- Director Karl Amidon, Goldendale, WA
- Director Neil Kayser, Centerville, WA
- Director Larry Maxwell, Lakeview, OR
- Director Ken Bentz, Burns, OR
- Director Wayne Elmore, Prineville, OR
- Director Matt Smith, Bend, OR
- Director Jane O'Keeffe, Adel, OR
- Director Jim Little, Emmett, ID
- Director Brenda Richards, Murphy, ID

- The Northwest Rangeland Trust exists to serve the Ranching and Farming community in the States of Oregon, Washington, and Idaho.
- The thing that sets us apart form other land trusts is that we were started by the OCA, NWRT Board of Directors are members of the Oregon, Washington, or Idaho Cattlemen's Association.
- NWRT is a member of the Partnership of Rangeland Trusts, a national organizations made up of Land Trusts that are affiliated with or have a working agreement with their state cattlemen's association including California, Wyoming, Colorado, Kansas, Montana, Texas, and ourselves.

The mission of the Northwest Rangeland Trust is to help Oregon, Washington, and Idaho ranch and farm families protect and preserve the long-term viability of their ecologically significant private lands.

So what does that mean and how do we accomplish it? What is the driving driving force that necessitated the creation of NWRT:

- Many ranches and farms to are being sold for purposes other than working landscapes.
- Pressure comes from investors looking for areas of development or from those who want the ground taken out of agricultural production and use it for other purposes.
- Additional pressure is created by the line of succession issues that arise when one generation wishes to retire or there is a death in the family and taxes must be paid or retirements funded.

How do we accomplish keeping privately owned ranches and farms as privately owned working landscapes?

One way is with a Conservation Easement

- In Oregon's case we may have the worse land use laws in the states.
- A good point is that CE provides a positive alternative to the land use restrictions imposed by zoning.
- To restrict development and maintain open space Zoning imposes restrictions on land use with no compensation to the land owner.
- CE preserve working landscapes as working landscapes and compensate the landowners for the lost value that could be gain by development.

So exactly what is a conservation easement (CE)?

Simply put a CE is a non-development agreement – for funding and tax benefits the term conservation easement has significance.

By placing a conservation easement on the property a number of positive things are accomplished:

- The property is protected from development except as provided in the easement for purposes necessary for the working landscape.
- The property owner receives taxes incentives and/or remuneration for placing the easement on the property. In August of 2006 HR4 was passed by Congress and signed into law by President Bush. This piece of legislation significantly enhanced the tax benefits for donated or bargain sale easements for those involved in agriculture. These tax incentives were made permeant in 2015.
- The property is monitored at leased once per year by NWRT to ensure that the provisions of the CE as agreed to by the landowner, NWRT, and the funders of the project are adhered to. This both protects the Landowner and ensures that the property is used as a working landscape with best practices, potentially enhancing the value of the property and the adjacent property.

Conservation Easement Appraisal

The value of an CE is determined as follows:

- First the highest and best value of the parcel is determined.
- Second the conservation elements (building sites, timber harvest, mining, commercial development) to be included in the easement are identified by the landowner.
- Third the parcel is revalued excluding the conservation elements as determined.
- The difference between the highest and best value and the value of the parcel without the conservation elements is the value of the conservation easement.
- The CE appraisal must be done by an individual that is qualified CE appraiser.

Tax & Estate Planning

- NWRT does not provide tax or estate planning advice.
- Consult professionals.
- If you are considering a CE you need to have an attorney, accounting, and estate planner that are familiar with CE.

Conservation Easements 101

Ray & Reba Barlow Assets

In this parcel there are 4,600 deeded acres with a highest and best value of $1,386,250.00.

For this example we going to use the following scenario:

- 300 acres is considered prime commercial property.
- 200 acres is timber land.
- On the remaining 4,100 acres there exists the possibility of 25 home sites at 160 acres per site.
- There are three creeks passing through the property.

Conservation Elements Included in CE

Ray and Reba are willing to include the entire 4,600 acres in the CE including the following in the conservation values:

- 300 acres of commercial property
- 200 acres of timberland
- 20 of the 25 home sites
- Riparian areas adjacent to each of the three creeks that encompass 100 acres

Value of the Conservation Easement

The qualified CE appraiser values the parcel without the CE elements at $ 831,750.00

Therefore:

Highest and best value	$1,386,250
Value without CE elements	$ 831,750
Value of the CE	$ 554,500

Bargain Sale

- To obtain funding for easements the land owner needs to participate in the project.
- In doing so they qualify for tax incentive (we are going to use the tax incentives in passed in 2015).
- Ray and Reba donate 25% of the easement value.

Therefore:

Donated value	$ 138,625
Cash value	$ 415,875
Total value	$ 554,500

CE Effect on Estate Land Value

Highest and best value	$1,386,250
Less the value of the CE	$ 554,500
2031(c) * reduction in land estate value	$ 500,000
Net estate value of the land	$ 331,750

* 2031(c) of the Internal Revenue Code provides for a reduction in the land value in an estate if a conservation easement exist on a piece of ground that prohibits more than a deminimis (limited) amount commercial recreation use.

Net value of the Conservation Easement

Cash payment for CE	$ 415,875
Tax incentives (income tax)	$ 138,625
Estate tax credit 2031(c)	$ 500,000
Total CE value	$ 1,054,500

Frequently Asked Questions #1

1.Are all land trusts the same?

2.Are all conservation easements the same? Can I negotiate things written into my easement or is it just what the land trust offers me?

3.How much time does it take to put an easement together?

4.What happens when I sell the land after I have an easement or my kids take over the ranch?

5.How do other people know that I have a conservation easement on my land? Is it recorded someplace?

6.Do I have to put the entire ranch in a conservation easement or can I just do part of it?

7.How much land do I need to own to even consider an easement as an option in my tool box?

Frequently Asked Questions #2

8. Can I still put buildings on my land after I have an easement?
9. Are there any costs for me as a rancher that I will need to pay when getting an easement?
10. Can I still cut hay, farm the land, and graze livestock?
11. What happens if the land trust that holds my easement closes?
12. If I have an easement, do I have to give everyone public access?
13. Are all easements in perpetuity?

Remember, a CE is not a "Silver Bullet"!!

- If you have poor business practices a CE is not going to save your operation rather just delay the inevitable.
- If you have poor agricultural management practices a CE is not going to save your operation, it will just delay the inevitable.
- If you are already broke we won't have time to help you, this is a long process, one year or longer.
- ***CE is a management & succession planning tool that should be looked at, if it works for you use it!!***

Northwest Rangeland Trust
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Web page: northwestrangelandtrust.org
Email: frankol@pocketinet.com

Questions Regarding Conservation Easements

When considering a conservation easement, there are many things that you need to consider and questions to ask. This list isn't all inclusive, but it is a starting point for the many conversations and discussions that will occur as you work through the process.

Initial Questions to Ask Yourself & Your Family:

- Why are we considering a conservation easement?
- What goals do we want to achieve with a conservation easement?
- Do your family values and beliefs match or are the compatible with mission and goals of the land trust organization you are considering working with?

Things to Think About:

- Reserved future building sites? Reserved future roads to access building sites? How many, if any, new residences can be constructed?
- Reserved future splits? (ie- 1000 acre ranch can be split once, leaving two 500 acre parcels)
- What are the conservation values, or unique things about the property, you want to see protected? Ranching uses? Wildlife habitat? Historic structures?
- How am I willing to take actions to protect or improve (if necessary) these values? Fencing? Grazing management plan? Water management plan? Habitat restoration projects?
- Am I willing to allow public access?
- What are my non-negotiables? What do I absolutely want included? What do I absolutely NOT want included?
- Is everyone involved in this property on board with pursuing a conservation easement?

Initial Questions the Land Trust Will Ask:

- Acreage?
- Location?
- Ownership? Is it part of a partnership or LLC?
- River/Stream Frontage? Wildlife Habitat? Other unique things about the property?
- Are you interested in a donated or purchased conservation easement?

Initial Question for You to Ask:

- How much time does it take to put a conservation easement together?
- Can I negotiate things written into my conservation easement or is it just what is offered to me?
- What is the mission and goals of your organization in respect to conservation easements?
- Are all conservation easements the same?
- Are all conservation easements in perpetuity?

Frequently Asked Questions:

- Do I need to hire an attorney to review the conservation easement on my behalf?
- Does the land under conservation easement come off the county tax rolls?
- How do annual monitoring visits work?
- Can the land trust be on my property any time they want?
- Will I be able to get financing to purchase property with a conservation easement in place?
- Do I have to fence my riparian areas?

Questions Regarding Conservation Easements

- Can I still cut hay, farm the land and graze livestock?
- What happens when I sell the land after I have a conservation easement or my kids take over the ranch?
- How do other people know that I have a conservation easement on my land? Is it recorded someplace?
- Do I have to put the entire ranch in a conservation easement or just a portion of it?
- How much land do I need to own to even consider a conservation easement as an option in my tool box?
- Can I still put buildings on my land after I have a conservation easement?
- Are there any costs for me as a rancher that I will need to pay to complete a conservation easement?
- What happens if the land trust that holds my conservation easement goes out of business?
- If I have a conservation easement, do I have to give everyone public access?

Interested in a conservation easement, but not sure where to start?

Visit the Idaho Coalition of Land Trusts at http://www.icolt.org to find a land trust working in your area.

Lemhi Regional LAND TRUST

P.O. Box 871
105 S. Center
Salmon, Idaho
(208)756-8879
info@lemhilandtrust.org
www.lemhilandtrust.org

Conservation Easements 101

IDAHO COALITION OF LAND TRUSTS

MEMBERSHIP DIRECTORY

Idaho Foundation for Parks and Lands
The Foundation's goals are to promote the acquisition, preservation, conservation and maintenance of open spaces and related ecosystems. It is organized to cooperate with community groups and governmental units within the state.

Jan Johns, Executive Director
565 Warm Springs Ave
Boise, Idaho 83716
www.idaholands.org

Blaine County Land, Water & Wildlife Program
The Land, Water & Wildlife Program protects and restores agricultural lands, wildlife habitat and water quality that people care deeply about and that contribute so much to our quality of life. The Program partially funds projects proposed to us by conservation partners. We also initiate our own projects. The LWWP is made possible by the citizens of Blaine County who passed a two-year tax levy that raised $3.4 million.

BLAINE

Clare C. Swanger, Program Coordinator
219 1st Ave. South
Suite 208
Hailey, ID 83333
208-788-5570
processblaine.wix.com/blainelwwp

Heart of the Rockies Initiative
The Mission of the Heart of the Rockies Initiative is to increase the pace of voluntary conservation of the most biologically, agriculturally and culturally important private lands in the Northern Rocky Mountains.

HEART OF THE ROCKIES INITIATIVE

Michael B. Whitfield, Coordinator
1790 East 2000 South
Driggs, ID 83422
208-354-2075
www.heart-of-rockies.org

Teton Regional Land Trust
The mission of the Teton Regional Land Trust is to conserve agricultural and natural lands and to encourage land stewardship in the Upper Snake River Watershed for the benefit of today's communities and as a legacy for future generations.

TETON REGIONAL LAND TRUST

Chet Work, Executive Director
PO Box 247
Driggs, ID 83422
208-354-8939
www.tetonlandtrust.org

Wood River Land Trust
Wood River Land Trust protects and restores land, water, and wildlife habitat in the Wood River Valley and its surrounding areas. We work cooperatively with private landowners and local communities to ensure these areas are protected now and for future generations.

Scott Boettger, Executive Director
119 East Bullion St.
Hailey, ID 83333
208-788-3947
www.woodriverlandtrust.org

Land Trust of the Treasure Valley
The Land Trust of the Treasure Valley's mission is to create opportunities for conserving the natural, scenic, recreational, historic and agricultural values of southwestern Idaho's open spaces through collaborative efforts for current and future generations. The Land Trust identifies lands with special natural, scenic, recreational and agricultural values, and works with willing landowners to conserve these lands through acquisition, easement, education, and good stewardship.

Tim Breuer, Executive Director
PO Box 106
Boise, ID 83701
208-345-1452
www.lttv.org

The Nature Conservancy
The mission of The Nature Conservancy is to preserve the plants, animals and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive.

Susanna Danner, Director of Protection
950 W. Bannock St., Ste 210
Boise, ID 83702
208-343-8826
www.nature.org/idaho

The Rocky Mountain Elk Foundation
The mission of the Rocky Mountain Elk Foundation is to ensure the future of elk, other wildlife, their habitat and our hunting heritage. In support of our mission, the RMEF is committed to: conserving, restoring and enhancing natural habitats; promoting the sound management of wild elk, which may be hunted or otherwise enjoyed; restoring elk to their native ranges; and educating members and the public about habitat conservation and our hunting heritage.

Aaron Swift, Lands Program Manager, ID/NV
9871 W Alliance Dr
Boise, ID 83704
208 297 6090
www.rmef.org

City of Boise
Boise City Parks and Recreation Department seeks to enhance Boise's quality of life by working in partnership with the community to foster and support citizen well being and healthy community environments. The Foothills program goal is to be a good steward of public lands in the Boise Foothills through land conservation, environmental education and trail management.

Conservation Easements 101

The Wilderness Land Trust

The Wilderness Land Trust acquires unprotected private land within wilderness, returning it to public ownership to guarantee that future generations can enjoy the enduring resources of wilderness.

David Kirk, Senior Lands Specialist
PO Box 1420
Carbondale, CO 81623
970-963-6068
www.wildernesslandtrust.org

Lemhi Regional Land Trust

The Lemhi Regional Land Trust was formed in order to generate and provide supportive funds and resources for the preservation of land and natural resources, and in particular, central Idaho ranchlands and agricultural land. As a community based, grassroots, non-profit organization, our primary goal is to maintain stewardship opportunities for landowners that allow them to conserve the land's agricultural, natural, and cultural resources.

Kristin Troy, Executive Director
PO Box 871
105 Center Street
Salmon, ID 83467
208-756-8879
www.lemhilandtrust.org

Palouse Land Trust

Our mission is to preserve the open space, scenery, wildlife habitat, and water quality of the Palouse region. We seek to improve the quality of life for current and future generations by facilitating the conservation of private lands.

Amy Trujillo, Executive Director
P.O. Box 8506
Moscow, ID 83843
208-669-0722
www.palouselandtrust.org

Payette Land Trust

The Payette Land Trust is dedicated to the protection of open spaces in Long Valley and its surrounding areas. It is the purpose of the Payette Land Trust to acquire, accept, maintain and manage lands in Long Valley and its surrounding areas in Central Idaho for the creation and perpetuation of open space. The unique character of the regions is created by its pristine rivers and streams, lush meadows, alpine lakes, forested mountains and family ranches. The Land Trust is committed to preserving the natural beauty by providing a mechanism for private landowners to permanently limit development of their properties. This goal will be accomplished by the acquisition of property interests, by gift or purchase.

Robert Vosskuhler, Executive Director
309 E Lake Street
McCall, ID 83638
208-634-4999
www.payettelandtrust.org

Sagebrush Steppe Land Trust
SSLT's mission is to protect and enhance wildlife habitat, natural lands, and working farms and ranches in Southeastern Idaho, now and for future generations.

Jerry Debacker, Executive Director
PO Box 1404
Pocatello, ID 83204
208-241-4662
www.sagebrushlandtrust.org

The Conservation Fund
The Conservation Fund forges partnerships to conserve America's legacy of land and water resources. Through land acquisition, community and economic development and training, the Fund and its partners demonstrate balanced conservation solutions that emphasize the integration of economic and environmental goals.

Mark W. Elsbree, Vice President & Northwest Director
Post Office Box 1524
Sun Valley, ID Post Office Box 1524
208-726-4419
www.conservationfund.org

The Vital Ground Foundation
The mission of The Vital Ground Foundation is to protect and restore North America's grizzly bear populations by conserving wildlife habitat for future generations.

Ryan Lutey, Director of Lands
Building T-2
Fort Missoula Road
Missoula, MT 59804
406-549-8650
www.vitalground.org

Kaniksu Land Trust
A nonprofit land trust that helps willing landowners permanently preserve natural areas, forests, lakes, streams, farms, ranches, recreational opportunities and wildlife and fish habitat in north Idaho and Sanders County, Montana.

Eric W. Grace, Executive Director
PO Box 2123
Sandpoint, ID 83864
208-263-9471
www.kaniksu.org

Conservation Easements 101

The Trust for Public Land
The Trust for Public Land (TPL) is a national, nonprofit, land conservation organization that conserves land for people to enjoy as parks, community gardens, historic sites, rural lands, and other natural places, ensuring livable communities for generations to come.

Deb Love, Northern Rockies Director
Emerson Cultural Center
111 South Grand Avenue, Suite 203
Bozeman, MT 59715
406-522-7450

www.tpl.org

Western Rivers Conservancy
Western Rivers Conservancy protects outstanding river ecosystems throughout the western United States. We acquire land to conserve critical habitat, provide public access for compatible use and enjoyment, and cooperate with other agencies and organizations to secure the health of whole ecosystems.

Dieter Erdman Interior West Program Director
303-645-4953
http://www.westernrivers.org

Applying Adaptive Grazing Management

Jim Sprinkle, Extension Beef Specialist, University of Idaho
Nancy M. Cummings Research Extension, Education Center
16 Hot Springs Ranch Road, Carmen, Idaho 83462
(208) 756-2749, sprinkle@uidaho.edu

Inventory of Resources

Ideally, you would have past stocking rates for the irrigated pasture or rangeland you intend to graze. This approach is called "stock and monitor" and relies on the validation of the stocking rate or carrying capacity of the pastures in question through repeated observations over time. If yearly stocking rates are compared with some measurements of the status of the land this provides additional reliable information from which to base future grazing plans. For example, ground cover and vegetation should be monitored over time. Measurements of ground cover often include gap intervals between vegetation, bare ground, basal cover of perennial plants, litter (e. g. detached and dead plant stems, sticks, etc.), persistent litter (> ½" deep like pine duff, cow fecal patties, tree branches, etc.), gravel, and rocks. Vegetation measurements over time usually follow such things as individual plant species frequency, species composition (for comparison to ecological site guides), canopy cover and density, (for shrub dominated plant communities especially), plant structure (usually associated with wildlife), forage production, and forage utilization. Monitoring information can be separated into short-term and long-term monitoring (see citations on monitoring methods at the conclusion of this article). Long-term monitoring provides information about the efficacy of your grazing management and the climate in which you operate over a period of years and usually follows changes in ground cover and plant species from year to year. Short-term monitoring tracks your management and/or the influence of climate within a single year and includes such things as forage utilization and forage production. These measurements are usually coupled with some measurement of yearly or twice yearly precipitation (inexpensive rain gauges can be made from 2" PVC to which oil and antifreeze are added). Although these short-term measurements do not typically drive long-term trend within a single year, they certainly can influence long-term trend with an accumulation of years. For example, excessive forage utilization over a period of years can be expected to reduce the presence of desirable plant species and to increase the presence of bare ground. Having a record of the timing, duration, intensity, and frequency of past grazing events for a particular pasture and its influence on ground cover and vegetation can be invaluable. A history can be compiled which can be compared to patterns of temperature and precipitation for the current year. Opportunities for influencing vegetation can be identified with this type of information. For example, a burn will often increase the amount of bare ground present for a couple of years because the fire burns up surface litter. Applying grazing to the burned section of rangeland following seed set and forage dormancy after the first growing season can help restore surface litter to the ecosystem and this can be verified with monitoring.

What if you have no reliable long term grazing and monitoring information to help you set stocking rates? In these circumstances, one needs to consider an inventory based approach for grazing management for the first year or two of the new management. One approach is to use estimation tools available for different soils types by location that are available on the web. For most of Idaho, one such tool is the Natural Resources Conservation Service (**NRCS**) Web Soil Survey http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm , from which one can zoom to a location of interest (by address or by clicking on map) and then generate estimates of the productivity of the soils in question. Most private lands are available and are tied to an existing soil survey on this resource. Idaho Department of Lands and Bureau of Land Management rangeland sites are generally available and tables of favorable, normal, and unfavorable forage production values (lbs/A) are produced. Rangeland sites on U. S. Forest Service lands are not available on this resource, though they do have internal soil survey information that can be accessed. It is important to remember that public lands agency professionals will set stocking rates for the allotments being used in accordance with agency policy and goals. Per-

mittees with a long and trusted relationship with the land management agencies, validated by rangeland monitoring, may have the capability for more flexible stocking rates up to the permitted numbers on the grazing allotment. Stocking rates exceeding the maximum number established by the grazing permit (for example when good management practices and land treatments have resulted in improved conditions on the ground) will usually need to be approved with a new National Environmental Policy Act (**NEPA**) document for the grazing allotment.

Take Half, Leave Half

Forage production can also be estimated on your grazing lands by clipping and drying the forage on offer. Figure 1 illustrates a simple method of doing this for small acreages. Clipping 10 to 20 randomized plots of forage, drying them in the oven for 24 hours at 150°F, and converting the grams of dry forage to lbs/A is described. Forage production determined at peak standing crop on rangelands at the conclusion of the growing season will be a good estimate of the total amount of forage available for consumption after adjusting for the amount of forage that should be left for plant sustainability. On irrigated pastures, forage production may need to be estimated at the conclusion of each 30 to 45 day period of regrowth following grazing.

Most often, forage harvest on irrigated small pastures is managed by maintaining an adequate stubble height. Graze bunchgrasses (such as orchardgrass, smooth brome, fescue, ryegrass) to no lower than 4 inches and then allow them to grow back 8 inches before re-grazing. Graze sod grasses (such as bluegrass) to no lower than 2 inches and allow them to grow back up to 4 in. before re-grazing. Allow 4 to 5 inches of stubble for bunchgrass at the conclusion of the growing season for overwintering. On most Northwest US rangelands, sustainable harvest of forage is defined as "take half, leave half". At this level of use, plants will be able to maintain a healthy root system. Most of the weight of a plant is towards the bottom of the plant, so taking half of the available forage is not ½ of the total height, but ½ of the above ground biomass. You can estimate 50% utilization of forage using the "balance method" or for native rangeland with a USFS Forage Utilization Gauge which has correction values applied for the height of grazed plants (Figure 2). With the USFS Forage Utilization Gauge, a sample of ungrazed plants (at least 10 plants, 20 is better) is obtained to determine the average ungrazed plant height and then **ALL** plants (usually 50 to 100) are sampled along a transect line and the average plant height (including both grazed and ungrazed) is calculated and compared to utilization percentages on the Utilization Gauge.

Figure 1. Determining Average Forage Production on Small Acreages

Instructions:

1. Clip 20 randomized plots of all rooted palatable forage to ground level (Can do a randomized number of feet with a calculator or spreadsheet; randomized direction of travel done with second hand on watch or compass)
2. Place contents in lunch bags
3. Dry for 24 to 48 hours at 150°F in oven on center rack with bags open on a cookie sheet
4. Weigh samples with gram scale
5. Multiply gram average weight by 100 to convert to lbs/A

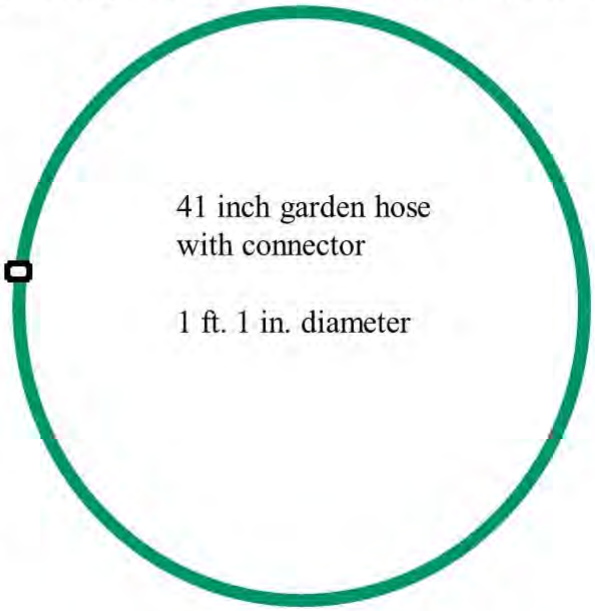
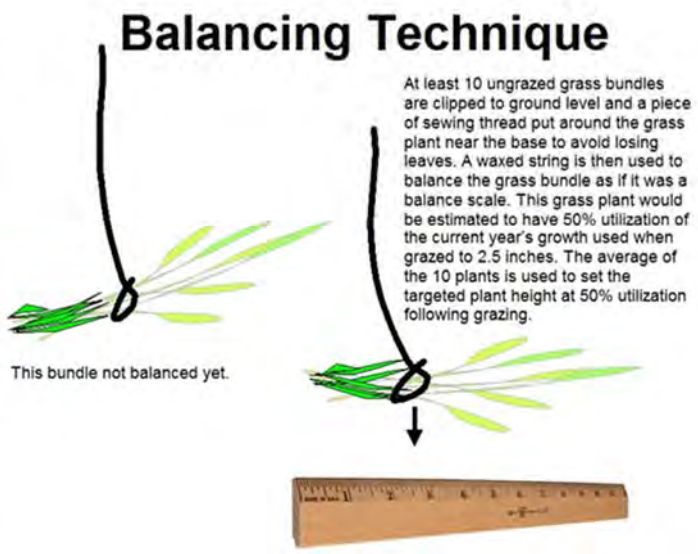


Figure 2. Methods for Estimating Forage Utilization

Problems: Not all plant species are on the wheel.
Note: This is designed to be used at the end of the growing season.



Animal Demand

The output for private lands from the NRCS Web Soil Survey, irrigated and non-irrigated, will be expressed as the number of Animal Unit Months (**AUM**s) which each acre can support. An AUM is a method of standardization used for grazing animals by range professionals. An AUM consists of the forage intake for a 1,000 lb. cow plus her calf for 30 Animal Unit Days (**AUD**s), which is 26 lbs/day. A larger animal within species is adjusted by a simple body weight multiplier (Table 1); for example, a 1,300 lb. cow with a calf by her side would be rated at 34 lb. for an AUD. When considering stocking rate on private lands, the AUD is usually adjusted downward when non-lactating. Across species, allowances are adjusted for the peculiar grazing habits of the species in question. For example, simple arithmetic would suggest that 6.67 sheep could take the place of a 1,000 lb. cow and her calf. In reality, the forage intake of sheep (3%) is much higher than a cow when expressed as a percentage of body weight. Therefore, the Animal Unit Equivalent for a sheep is set at 0.17 instead of 0.15. Although horses will typically only eat about 2% of body weight when idle and fed hay, they increase their intake substantially with their long and extended grazing patterns.

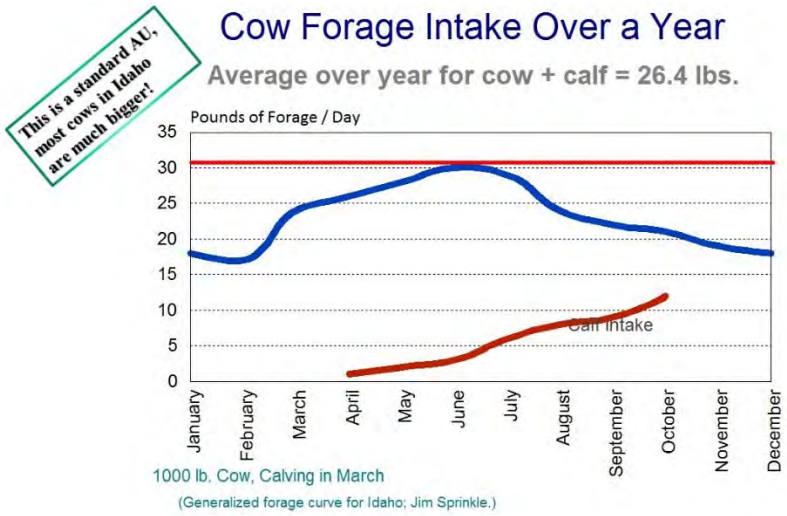
Table 1. Animal Unit Day Adjustments for Animal Class and Size.

Animal Unit Equivalents

Animal	Animal Unit Equiv.	Forage Intake, lbs.
1000 lb. dry cow	0.8	20
1000 lb. cow + calf	1.0	26
1200 lb. cow + calf	1.2	31
1500 lb. bull	1.50	39
150 lb. mature sheep	0.17	4.5
1200 lb. horse	1.4	36
600 lb. steer	0.6	15

Cattle will change their level of forage intake by the season of year and stage of production (Figure 3). Over a year, the intake of a 1,000 lb. cow plus per suckling calf will average around 26 lbs/day. If protein supplement is provided on rangeland during winter, forage intake can increase slightly. The AUM value used for cattle on federal grazing permits is averaged over the entire year. When applying grazing on private irrigated lands, more precise grazing management can be applied.

Figure 3. Yearly Forage Intake on Rangeland



Adjusting Animal Days for Forage Utilization

There is a formula that allows you to calculate how many extra head of cattle or how many extra days you can remain in a pasture when forage utilization was under targeted levels or alternately how many fewer days or fewer cattle should have been allocated with forage over-utilization.

Allowable utilization X number of livestock or days grazed = targeted stocking rate or animal days
Actual utilization

For example, consider you had 150 head of 1,100 lb. cows on a 750 acre rangeland pasture for 45 days. When you estimated utilization at several places in the pasture, utilization was around 35%. You would like to know how many additional days you could stay in the pasture and still meet the targeted utilization of 50%.

50 X 45 days = 64 days total grazing or 19 additional days of grazing
35

Keep in mind that forage utilization which occurs while forage is still growing is considered to be "relative" or "seasonal" utilization and when measured again at the end of the growing season will usually be lower than the forage utilization previously measured. Also, keep in mind that an adequate amount of forage should be left over the winter to provide plant cover against erosion and to allow for regrowth during the spring. Targeting no more than 50% utilization on native rangelands and leaving 4 to 5 inches stubble height (bunchgrasses) for irrigated pastures will usually provide the plant protection needed.

Rotational Grazing

For effective grazing management, it is preferable to have acreages divided into several pastures to allow for regrowth of the forage and sustainability of preferred plant species. For native rangelands, deferred rotational grazing systems allow one to utilize different pastures at different times of the year instead of grazing pastures at the same time every year. The impact on the health of the plant with respect to root growth is greatest when plants are grazed during the early boot stage of growth. Declines in root mass with Thurber needlegrass the year following grazing were minimal when plants were grazed after flowering in an Oregon study (Ganskopp, 1988, Journal of Range Management) but about 61% of the previous

year for early boot grazing. Spreading this early season grazing over different pastures during different years will allow plants to compensate.

Putting it All Together

A set of 50 early weaned 460 lb. replacement heifers are purchased in late August and placed on a 300 acre native range pasture in the foothills, 90% of which is accessible to livestock. It is anticipated the heifers will gain around 1.3 lbs/day while on this pasture, so the weight of the heifers a month later is projected to be 500 lbs, which is 0.5 AUD, or around 13 lbs of forage intake per day. Forage production at two different areas of the pasture is estimated by clipping and is 350 lbs/A. Wildlife use this time of year is usually around 5%. How long can you graze the heifers and stay within the 50% utilization guideline?

Forage supply = 300 * .90 accessible * 270 A; 270 A * 350 lb/A = 94,500 lbs of forage
Allowable use = 50% - 5% for wildlife = 45%
Forage for harvesting = 94,500 lbs * 0.45 = 42,525 lbs
Forage demand = 13 lbs AUD * 50 heifers = 650 lbs/d
Days in pasture = 42,525 lbs ÷ 650 lbs/herd AUD = 65 days

In reality, at this stage of plant growth the heifers will probably not be able to consume 2.6% of body weight due to less forage quality decreasing the passage rate of the forage. However, this is a conservative projection for utilizing the pasture. At around 45 to 60 days, this operator should start looking closely at forage utilization to see if projections are correct. The rancher should also look for localized heavier grazing in some locations and attempt to redistribute livestock with salt and protein supplements.

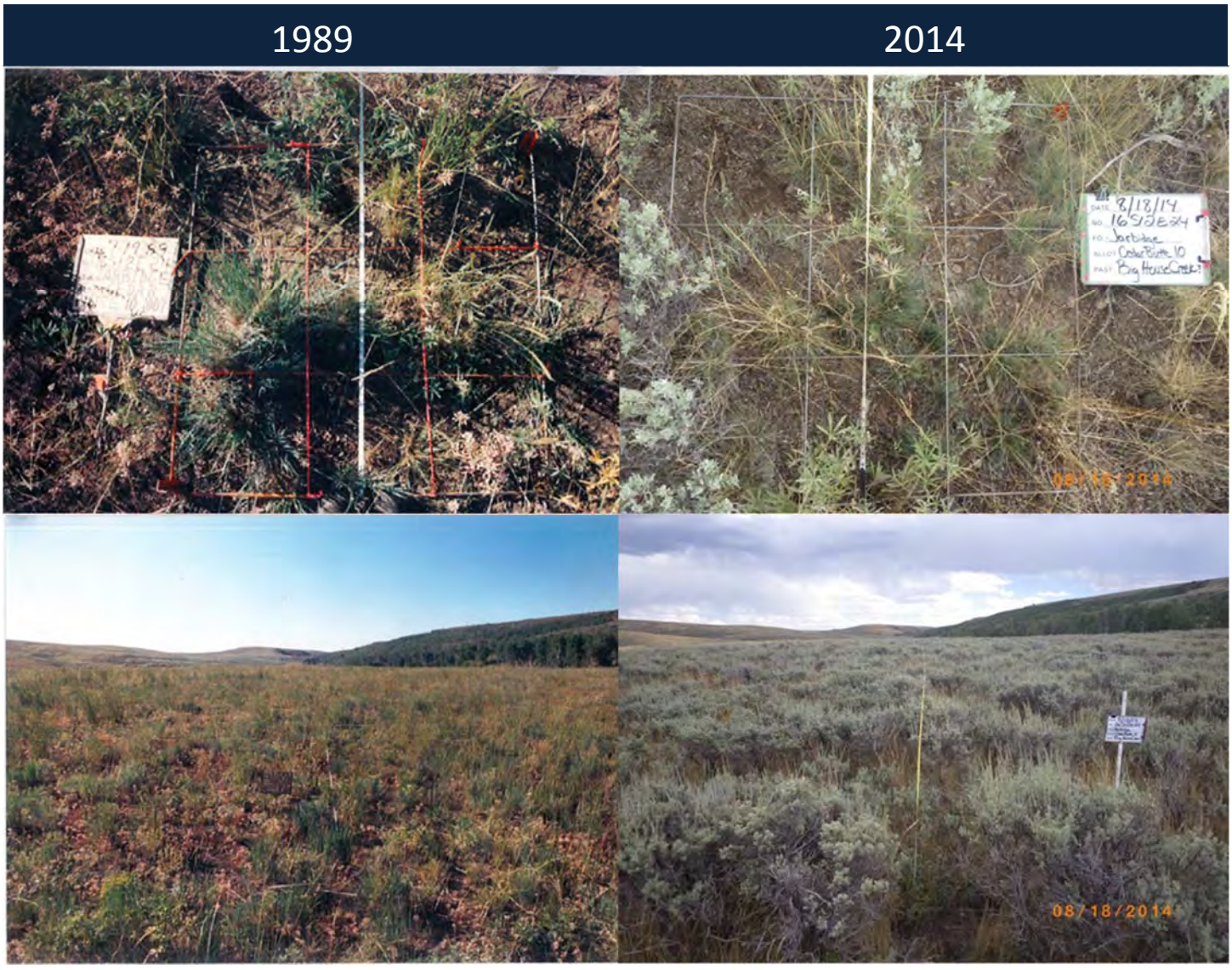
Range Monitoring Methods Literature Citations

Sampling Vegetation Attributes: BLM Technical Reference 4400-4
http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044175.pdf
Utilization Studies and Residual Measurements
http://www.blm.gov/nstc/library/pdf/utilstudies.pdf
Arizona Rangelands (can download Guide to Rangeland Monitoring & Assessment; Videos)
http://globalrangelands.org/arizona
Jornada Monitoring Manual
http://jornada.nmsu.edu/monit-assess/manuals/monitoring
Multiple Indicator Monitoring (MIM) of Stream Channels and Streamside Vegetation
http://www.blm.gov/nstc/library/pdf/MIM.pdf
Monitoring the Vegetation Resources in Riparian Areas (Alma Winward)
http://www.fs.fed.us/rm/pubs/rmrs_gtr047.pdf
A Photographic Utilization Guide for Key Riparian Graminoids: Technical Report INT-GTR-308
http://www.fs.fed.us/rm/pubs_int/int_gtr308.pdf
Grazing Management Processes and Strategies for Riparian-Wetland Areas
http://www.blm.gov/or/programs/nrst/files/final_tr_1737-20.pdf
Sublette County WY Conservation District Website, Permit Renewal Workshop Materials
http://www.sublettecd.com/pid/60/range-program.aspx
Setting Up a Range Monitoring Program for Your Ranch
https://extension.arizona.edu/sites/extension.arizona.edu/files/resources/2001july-aug-settingup-range-monitoring.pdf

Cooperative Rangeland Monitoring

Brooke Jacobson and Tyler Hamilton, Idaho State Department of Agriculture

Maintaining the health of public lands for grazing is integral to the well-being and sustainability of Idaho's ranches. To help support these goals, the Idaho State Department of Agriculture (ISDA) recently entered into a Memorandum of Understanding (MOU) with the Bureau of Land Management (BLM) for cooperative photo monitoring. The MOU provides a framework for upland photo monitoring data to be collected by permittees and used in grazing permit renewals and management decisions. The ISDA and BLM collaborate with and assist ranchers in performing monitoring using the methods identified in the MOU. ISDA, BLM, and ranchers coordinate to obtain copies of photo data currently existing in an allotment and determine if these monitoring sites are adequate or if additional sites need to be established. The ISDA provides training to permittees according to the MOU protocol during the first year a rancher participates in the program, and then ranchers or their representatives conduct annual repeat photography. Photos are submitted to BLM and ISDA to be verified and used as monitoring data in the grazing permit renewal process. Continuous years of photo monitoring data that is collected consistent with BLM policy helps fill data gaps and "tell a story" about how an allotment is responding to management and other factors over time. ISDA believes that with the strong collaborative approach that this photo monitoring program provides, land management agencies will be better equipped to make well-informed decisions that are supported with good, current monitoring data, all while facilitating the exchange of producer information and knowledge regarding the management of their individual allotment during permit renewal.



Cooperative Rangeland Monitoring

For more information and to participate in the program, contact ISDA: Brooke Jacobson (208-332-8561) or Tyler Hamilton (208-332-8566). To read the MOU, go to http://www.agri.idaho.gov/AGRI/Categories/NewsEvents/Documents/ISDA%20BLM%20Monitoring%20MOU.pdf or http://www.blm.gov/id/st/en/media_center/newsroom/2014/august/blm_and_isda_partner.html
and follow the link at the bottom of the page.

Snapshot of a Local Producers' Range Monitoring Program
Marsing: Chris Black, Bruneau, Idaho
Twin Falls: Steven Wells, Buhl, Idaho
Challis: Gary & Jackie Ingram, Clayton, Idaho

Targeted Grazing to Reduce Wildfire Spread

Chris Schachtschneider

Increasing wildfire extent and severity is a growing concern throughout the world with wildfires increasing in size and suppression cost. Targeted grazing has been suggested as a tool to create and maintain strategic fire breaks by reducing fine fuel load and subsequently fire behavior metrics. We evaluated the effect of no grazing and cattle grazing at two seasons, summer and fall, and two utilizations levels, low and moderate, on fire behavior metrics, flame height and rate of spread, in big sagebrush (Artimesia L.) communities in six treatment blocks. Cattle grazed 30 x30 m treatment plots within each block in their respective season and at the targeted utilization level. Shrub cover and herbaceous biomass before and after grazing were estimated in 2014 and 2015. Average shrub cover ranged from 0% to 78% in our plots and herbaceous biomass ranged from 74 to 1190 kg/ha. Prescribed burns were applied in September of 2015 where fire behavior metrics were recorded by observers and video cameras. Statistical analysis revealed that grazing reduced fire behavior metric when shrub cover was low. However, as shrub cover increased, the effects of cattle grazing for fine fuel reduction may be limited due to the wildfire's potential to carry thought the shrub canopy.

Drone Applications in Ranch Livestock Management

K. Scott Jensen, UI Extension Educator, Owyhee County

Unmanned aircraft systems or drones have been in development and use for many years. While initially developed for military purposes, drones have now been developed for a variety of uses. Crop farmers and fruit growers have benefited from drones by using the high quality aerial imagery captured to identify insect and disease issues in their crops. Early detection of issues can lead to more rapid treatment and reduced impact of plant disease and insect losses.

There are also potential benefits to drone use in range livestock production. Aerial imagery for rangeland monitoring could enhance other monitoring efforts. Drones provide opportunity to gather imagery in a shorter period of time and over a greater portion of the landscape. Additionally drones could provide quick and easy options checking livestock water, checking and/or locating cattle, and even spot-spraying weeds in difficult terrain. In all reality, the sky is the limit!

Useful links:

http://www.dji.com/

http://www.marketwatch.com/story/how-drones-will-drastically-transform-us-agriculture-in-one-chart-2015-11-17

http://fortune.com/2015/05/18/drone-agriculture/

Market Outlook

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www.sterlingmarketinginc.com

The economic landscape faced by the beef industry has changed significantly. The changes include longer term changes concerning both domestic and global consumers, structural changes as the industry adjusts to capacity across the supply chain, and food safety concerns. As these changes redefine the beef industry, producers, feeders, and packers have to adjust production and marketing strategies for long term sustainability.

But, in addition to the longer term changes in the industry, cattlemen are also faced with sharply lower prices and market volatility as the industry comes off record prices for the prior two years. This situation alone presents a challenge for many and understandably so. In his presentation to the Range Livestock Symposium, John Nalivka will present his perspective on longer term changes in the market and what these mean to cattlemen and combine this with his analysis and outlook for the beef industry in order to assist ranchers in understanding and evaluating both their short and long term plans for their ranching business.

As Nalivka has often said in his presentations, "it's about marketing the right cattle into the right market." But, at the end of the day, "cattlemen still have to financially survive the short term if they are to be around for the long term."

Low Stress Livestock Handling

Jim Keyes, USU Extension

Improving cattle handling practices provides many advantages. Cattle that remain calm during handling have improved weight gain and are less likely to have dark cutting meat. Dark cutting is a serious quality defect where the meat is darker and drier than normal and it has a shorter shelf life at the grocery store. Another advantage of adopting low stress cattle handling methods is to reduce injuries to both people and cattle.

http://www.americancattlemen.com/articles/importance-low-stress-cattle-handling#sthash.TzNIpbyM.dpuf

https://www.youtube.com/watch?v=gycWs6q1GBw

http://beefproducer.com/story-low-stress-cattle-handling-0-129067

NOTES...

Friday, April 22, 2016

8:30 a.m. **Meet at UI Extension Office Parking Lot** (Challis Community Event Center, 411 Clinic Road, Challis)

- Travel to Pahsimeroi Valley

O'Neal Ranch

- Fourth Generation Cattle Ranch, Conservation Easement: *O'Neal Family*
- Fencing Project on Furey Lane Easement Property: *Custer Soil & Water Conservation District (SWCD); Natural Resources Conservation Service (NRCS)*

Landowner Driven Anadromous Fish Recovery Projects

- Furey Lane Diversion, Irrigation & Pipeline Project: *Custer SWCD; NRCS*
- Hooper Lane Bridge & Reconnect Projects: *Custer SWCD; NRCS*
- P-13 Pipeline, Irrigation, Stock-water & Reconnect Project: *Custer SWCD; NRCS*

12:30 p.m. **Lunch at Cottonwood Campground Pavilion**

- Sage-grouse ROD, Land-use Plan Amendment Updates: *USFS; BLM*
- Boulder-White Clouds Wilderness Planning Updates: *USFS; BLM; Custer County NRAC*

1:45 p.m. **Depart for Spar Canyon**

2:30 p.m. **Spar Canyon/Hwy 93**

- Sage-grouse Collaring & Mapping Overview: *USFS; BLM; USFWS*
- Wild Horse Impacts on Riparian Areas Research Project: Mountain Springs Ranch; *University of Idaho*
- Technology Applications in Ranching (bring Ipads and Smartphones)
  - ◊ Drone Demonstration
  - ◊ Apps for Ranchers
  - ◊ Rangeland Monitoring Apps

4:00 p.m. **Adjourn. Travel home.**

TOUR

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Thanks to Mary Blackstock and Sarah Baker for sharing their photos.