MINUTES
REGULAR MEETING OF THE BOARD OF LAND COMMISSIONERS
Monday, May 20, 2013 at 9:00 AM
Justice Building, Supreme Court Courtroom
215 N. Sanders
Helena, MT

Please note: *The Land Board has adopted the audio recording of its meetings as the official record, as allowed by 2-3-212, MCA. These minutes provide an abbreviated summary of the Land Board discussion, public testimony, action taken, and other activities. The time designations listed are approximate and may be used to locate the referenced discussion on the audio recording of this meeting. Access to an electronic copy of these minutes and the audio recording is provided from the Land Board webpage at http://dnrc.mt.gov/LandBoard. The written minutes summary, along with the audio recordings, are listed by meeting date on the Land Board Archive webpage.*

Members Present

Governor Steve Bullock
Attorney General Tim Fox
Commissioner of Securities and Insurance Monica Lindeen
Secretary of State Linda McCulloch
Superintendent of Public Instruction Denise Juneau

Members Absent

None

Testifying Staff

John Tubbs, DNRC Director
Hugh Zackheim, FWP Lands Program Manager
Kevin Chappell, DNRC Agriculture and Grazing Bureau Chief
Tommy Butler, DNRC Legal Counsel
Shawn Thomas, DNRC Trust Land Management Division Administrator

Attachments

Related Materials, Attachment 1 – Sign-in Sheet
Related Materials, Attachment 2 – Sterling Miller testimony (513-2F)

Call to Order

00:00:01 Governor Bullock called the meeting to order.
00:00:12 Mr. Fox moved to approve the April 15, 2013, minutes. The motion was seconded by Ms. Lindeen and carried unanimously.

Business Considered

513-1 FWP: Murray-Douglas Conservation Easements

00:00:26 Mr. Tubbs gave an overview of the item.
00:02:06 Governor Bullock

Public Comment

00:02:08 Mr. Zackheim
00:04:31 Governor Bullock
00:04:34 Jay Coughlin, Blackfoot River Ranch
00:06:23 Governor Bullock

Board Discussion/Comments
00:06:34 Ms. Juneau
00:07:06 Governor Bullock

00:07:09 Ms. Lindeen moved to approve 513-1. The motion was seconded by Ms. Juneau and carried unanimously.

513-2 Agriculture and Grazing Leases: Competitive Bid Hearings

A. Lease No. 3060529 – John & Valerie Warehime (Lessee)/Brian Carrison (Bidder)

00:07:26 Governor Bullock
00:07:46 Mr. Tubbs gave an overview of the item.
00:09:34 Governor Bullock
00:09:40 Mr. Tubbs
00:11:02 Governor Bullock

Board Discussion/Comments
00:11:23 Ms. Juneau
00:12:43 Mr. Tubbs
00:14:17 Governor Bullock
00:14:37 Mr. Tubbs
00:14:41 Ms. Juneau
00:16:13 Governor Bullock
00:16:47 Mr. Tubbs
00:18:03 Governor Bullock

00:18:06 Ms. McCulloch moved to approve item 513-2A. The motion was seconded by Mr. Fox and carried unanimously.

B. Lease No. 3629 – Cayuse Livestock (Lessee)/ Chris Kittler (Bidder)

00:18:24 Mr. Tubbs gave an overview of the item.
00:20:04 Governor Bullock
00:20:06 Mr. Fox moved to approve item 513-2B. The motion was seconded by Ms. Lindeen and carried unanimously.

C. Lease No. 3997 – Gordon Williams (Lessee)/Leroy Ballard (Bidder)

00:20:30 Mr. Tubbs gave an overview of the item.
00:21:57 Ms. Lindeen moved to approve item 513-2C. The motion was seconded by Ms. Juneau and carried unanimously.

D. Lease No. 4247 – Hidden Valley Colony (Lessee)/Lowell Johnson (Bidder)

00:22:16 Mr. Tubbs gave an overview of the item.
00:25:24 Governor Bullock

Board Discussion/Comments
00:25:35 Ms. Lindeen
00:25:48 Mr. Tubbs
00:26:53 Governor Bullock
00:27:21 Mr. Tubbs
00:27:47 Mr. Chappell
00:30:41 Governor Bullock
00:30:43 Ms. Lindeen
00:30:52 Mr. Chappell

00:31:35 Governor Bullock

00:31:44 Mr. Fox moved to approve item 513-2D. The motion was seconded by Ms. Juneau and carried unanimously.

E. Lease Nos. 4028, 4216 - Wyatt Wood (Lessee)/Heidi Billmayer (Bidder)

00:32:02 Mr. Tubbs gave an overview of the item.
00:33:33 Governor Bullock
00:33:39 Mr. Tubbs
00:33:41 Governor Bullock

00:34:00 Ms. Juneau moved to approve item 513-2E. The motion was seconded by Ms. McCulloch and carried unanimously.

F. Lease No. 3854 – Elmer Habets, Kim Malcom, Jamie Parks (Lessees)/Sterling Miller (Bidder)

00:34:20 Mr. Tubbs gave an overview of the item.
00:36:46 Governor Bullock

Public Comment

00:36:59 Sterling Miller, high bidder (*see Attachment 2*)
00:46:43 Governor Bullock
00:46:46 Mr. Miller
00:48:28 Governor Bullock
00:48:41 Elmer Habets, lessee
00:50:11 Governor Bullock

Board Discussion/Comments

00:50:16 Mr. Tubbs
00:50:51 Governor Bullock
00:50:53 Mr. Tubbs
00:51:04 Ms. Juneau
00:51:25 Governor Bullock
00:51:30 Mr. Butler
00:52:51 Governor Bullock

00:52:31 Ms. McCulloch moved to approve item 513-2F. The motion was seconded by Ms. Lindeen and carried unanimously.

513-3 Timber Sales

A. Good Shepherd

00:52:50 Mr. Tubbs gave an overview of the item.
00:54:11 Governor Bullock
00:54:30 Ms. Lindeen moved to approve item 513-3A. The motion was seconded by Ms. McCulloch and carried unanimously.

B. Scout Lake #6

00:54:52 Mr. Tubbs gave an overview of the item.
00:55:47 Governor Bullock
00:55:58 Mr. Fox moved to approve item 513-3B. The motion was seconded by Ms. McCulloch and carried unanimously.

513-4 Communitization Agreement: Oasis Petroleum North America LLC

00:56:14 Mr. Tubbs gave an overview of the item.
00:56:56 Governor Bullock
00:57:09 Ms. Juneau moved to approve item 513-4. The motion was seconded by Ms. McCulloch and carried unanimously.

513-5 Land Banking Parcels: Final Approval for Sale

00:57:22 Mr. Tubbs gave an overview of the item.
00:58:11 Governor Bullock

Board Discussion/Comments

00:58:22 Ms. Juneau
00:58:30 Mr. Tubbs
00:58:44 Ms. Juneau
00:59:07 Mr. Tubbs
00:59:38 Ms. Juneau
01:00:02 Governor Bullock

01:00:25 Ms. McCulloch moved to approve item 513-5. The motion was seconded by Mr. Fox and carried unanimously.

513-6 Request to File for Intervenor Status: *Friends of the Wild Swan et al. v. Salazar et al.*, Case No. C-13-61-M-DWM, U.S. District Court, Missoula Division

01:00:43 Mr. Tubbs gave an overview of the item.
01:03:03 Governor Bullock

Board Discussion/Comments

01:03:15 Mr. Fox
01:03:26 Governor Bullock

01:03:47 Mr. Fox moved to approve item 513-6. The motion was seconded by Ms. McCulloch and carried unanimously.

513-7 Easements

A. Rights-of-Way
B. Cost Share: Mosquito
C. Cost Share: Pasture – Sawdust

01:04:08 Ms. Juneau
01:04:13 Mr. Tubbs
01:04:15 Ms. Juneau
01:04:23 Mr. Tubbs gave an overview of the items 513-7A through 513-7C.
01:08:55 Governor Bullock

Board Discussion/Comments

01:09:00 Ms. Juneau
01:09:12 Mr. Tubbs
01:09:21 Mr. Thomas
01:09:32 Ms. Juneau
01:10:08 Mr. Tubbs
01:10:44 Ms. Juneau
01:11:01 Mr. Thomas
01:12:36 Ms. Juneau

01:12:40 Mr. Thomas
01:13:00 Ms. Juneau
01:13:05 Mr. Thomas
01:13:08 Governor Bullock
01:13:32 Ms. McCulloch

01:13:50 Ms. McCulloch moved to approve items 513-7A through 513-7C. The motion was seconded by Ms. Lindeen and carried unanimously.

General Public Comment

None

Adjournment

01:14:20 Adjournment

PRESIDENT	ATTEST
/s/ Steve Bullock	/s/ John E. Tubbs
Steve Bullock, Governor	John E. Tubbs, DNRC Director

Related Materials
Attachment 1

LAND BOARD MEETING SIGN-IN SHEET
May 20, 2013

NAME	AFFILIATION	E-MAIL	*Check to be added to the interested parties list.*
Jay Camille Coughlin	Blackfoot River Ranch	coughlin5671@gmail.com	
Sterling Mike	Dunrovin Ranch	sterlingmike@gmail.com	✓
Elmer Haketz		E Haketz3@hotmail.	
Dan Boyce	MJRR		

Contact Lucy Richards at lrichards@mt.gov or indicate on this sign-in sheet if you would like to be placed on the monthly agenda distribution list.

Related Materials, Attachment 2 contains documents outside of the administrative record which were offered by Sterling Miller to the Land Board on May 20th, 2013 (during public comment on item 513-2F), but not produced by Sterling Miller at the competitive bid hearing before the Department of Natural Resources and Conservation director on May 9th, 2013.

Comparison of state interests supported by extending the existing lease on Lease No. 3854 (Lolo) to Elmer Habets with benefits associated with accepting the high bid from Sterling and SuzAnne Miller (Dunrovin Ranch). (* indicates these interests are documented in handouts provided).

Interest involved	Dunrovin Ranch	Existing Lessee
Retains the existing management and lessee	No	Yes
Product produced is small amount of beef (10-13 cows)	No	Yes
Wide diversity of high-value community benefits produced (see below)	Yes	No
More income to the school trust.	Yes ($78.13/AUM)	No ($41.10/AUM)
More purchases of DNRC land-use licenses.	Yes (mentioned at hearing)	No
Demonstrate that the DNRC "competitive bid" process is legitimate and does not always result in maintenance of the *status quo* bias toward existing lessee. This encourages better management practices by lessees as they know they don't necessarily have guaranteed tenure with the lease.	Yes	No
Remove risk of reversion to minimum bid lease rate (existing prior to 2008) because of discouragement of completion for the bid.	Yes	No
Science-based grazing management plan presented at hearing and involvement of professional range management consultant.	Yes*	No
Active encouragement of public use in a recreationally valuable area within 10 miles of Missoula.	Yes*	No
Active educational program at both K-12 and university levels.	Yes*	No
Engagement of non-profit organizations in activities on leased land.	Yes*	No
Science-based range health monitoring plan presented at hearing. Potential demonstration project for modern range management practices.	Yes*	No
Stop ongoing damage by cattle to valuable officially-designated wetland.	Yes*	No
Elimination of need to use naturally occurring water for livestock including in marsh and in side sloughs of the Bitterroot River.	Yes*	No
No need to fence off wetland (and create new barriers for recreational uses) to prevent livestock damage to natural water sources.	Yes*	No
Removal of fences and gates that inhibit and discourage public use both along the river and internally.	Yes*	No
Stop ongoing removal of brushes and shrubs that are critically important for wildlife (food and cover). Enhance natural biodiversity. Management by professional natural resource managers who understand ecological principles.	Yes*	No
Eliminate harassment of public users of property by current lessee.	Yes	No
Supports a business with large amount of spin off benefits to other business locally and throughout Montana (Dunrovin clients take trips throughout Montana).	Yes	No
Attracts tourists from throughout the US and internationally to Montana. Over 200 non-local tourist clients/year.	Yes	No
Supports a business that creates local jobs working at the business ($75,000/year payroll at Dunrovin)	Yes*	No

Sterling Miller and Dunrovin Ranch's bid on State Grazing Lease No. 3854

1. Bid amount and community standards: Our bid of $2,500 is consistent with local standards:
    - Dunrovin Ranch currently leases a 20 acre dry land field from the Lolo School District for $1,000/year; or $50/acre/year. This field is situated well above the flood plain and lacks an irrigation system. It thus yields significantly less forage/acre than the bottomland where State Lease No. 3854 is located.
    - State Lease No. 3854 includes 160 acres; our bid of $2,500 represents $15.63/acre/year.
    - The local cost of pasture horse boarding is $250/month. The 32 AMU's on the east side only of State Lease No. 3854. represent 24.6 (AMU per horse = 32/1.3) months of horse grazing which has a value of $6,150.
    - We attach a quotation from the internet from Harmony Stables in Missoula quoting $325/horse/month for pasture grazing plus some extra amendities.
    - We can provide references to private parties in the Lolo and Missoula area who provide pasture boarding for horses starting at a minimum of $250/month.
    - Grazing leases adjacent to a property owner's private land command a premium price.
2. Economic benefits to the State: Our bid provides substantial economic benefit to the state:
    - An increase of $2,500/year to the Montana State School fund.
    - We would encourage public recreation use of the state land which can generate substantial DNRC State Land Use Permit Fees.
    - Our ranch has a significant economic impact on the local economy.
        - Dunrovin Ranch employees one full time, three part time, and three seasonal employees. Its 2012 payroll was over $75,000.
        - Dunrovin Ranch purchases over $50,000 worth of services and commodities from local businesses.
        - Dunrovin Ranch annually donates services and goods worth over $10,000 to over 20 local area nonprofit organizations which they use to raise in excess of $20,000.
        - Dunrovin Ranch brings in excess of 200 out-of-state or out-of-country tourists to the Missoula area where they spend money in the local economy.
        - Dunrovin Ranch's osprey web camera hosted over 300,000 unique viewers last year; these viewers spent over 28,000,000 minutes watching the ranch. Many have indicated a strong desire to visit Montana; and a number of them have actually come.
3. Social benefits to the State: Our bid provides substantial social benefit to the state
    - State Lease No. 3854 is completely surrounded by private land, offering no public access except via the Bitterroot River. As a public, commercial property, Dunrovin Ranch offers public recreation and outdoor education opportunities for a variety of people:
        - Each year Dunrovin Ranch has partnered with the following organizations to offer outdoor day camps for youth and at-risk adult populations:
            1. Boys and Girls Club of Missoula and Lolo
            2. YWCA's GUTS - Girls Using Their Strengths

3. Opportunity Resources (adults with disabilities)
4. Winds of Change (emotionally or mentally challenged adults)
5. Rotary International (camp for children with parents serving in the military)
6. Missoula and Bitterroot Families First (families at risk)
7. Missoula Area Chamber of Commerce (youth leadership)
8. Lolo School District

- If granted the grazing lease, Dunrovin Ranch will partner with the pasture management consulting firm Rhizoterra to incorporate both on site and an internet educational component to our grazing management program.

4. Information outlined in April 5, 2013 letter from DNRC regarding State Grazing Lease No. 3854

- (i) an intended grazing or cropland management plan for the new term of the lease

  Dunrovin Ranch intends to graze horses. We will follow an intensive rotational management plan developed in partnership with Rhizoterra which offers significant soil, forage, and livestock benefits (see attached).

- (ii) experience associated with the classified use for the land

  Dunrovin Ranch has supported horses on it property since 1998 and is partnering with Dr. Jill Clapperton to develop and implement it pasture and grazing management plans. Dr. Jill Clapperton is a research scientist, and the President of Rhizoterra Inc. She works internationally on projects designed to link soil health to nutrient density of food and further understand how soil and crop management strategies influence soil health. Jill has a keen interest in cover crops and how the properties of different plant species can be used to improve longterm soil health.

- (iii) other nonstate lands that are fenced and managed in common with the state land

  Dunrovin Ranch owns and manages 11 acres of bottomland and irrigated pastures adjacent to the state land; and it leases 20 dry land acres from the Lolo School District that are not contiguous with either the state land or its own property.

- (iv) intended grazing or cropland improvement that will benefit the health and productivity of the state land.

  Intensive rotational management offers significant soil, forage, and livestock benefits (see attached). Additionally, our horses will be rotated onto the state land in short periods that will not require their having access to water and will not cause soil erosion near water sources.

- (v) weed management plan

  Dunrovin Ranch will partner with Dr. Jill Clapperton to develop and implement a weed management plan that avoids the use of herbicides and relys on replacing weeds by seeding native and agricultural plants that will out-compete the weeds.

- (v) management goals and objectives and monitoring procedures to determine if they are being met

  Dunrovin Ranch and Dr. Jill Clapperton will aim to increase forage production and soil health. Monitoring will consist of collecting data on forage growth, soil health, and occurrence of weeds through the use of transects and enclosures. Development, implementation, and monitoring of the pasture and grazing management plan will be incorporated into both Dunrovin Ranch's and Rhizoterra's educational outreach efforts.

- (v) the method or route used to access the state land

  Dunrovin Ranch has one gate connecting its property to the state land; and it will install two more gates to allow for easier access to the state land.

5. Infrastructure:
   - The only existing infra structure that Dunrovin Ranch will retain is the existing cross fence gate that belongs to us that we installed approximately 10 years ago.
   - The existing barbed wire perimeter fence will be move back from the river and replaced with barbless wire.

6. Wetlands protection:
   - There is a unique and valuable wetland marsh on the southwest corner of the property that is being damaged by current grazing practices which do not exclude livestock from this wetland.
   - We will fence off this wetland so our livestock cannot access this wetland marsh and thereby allow the wetland, which used to have nesting sandhills cranes, to recover.

Harmony Stables
Missoula

Harmony Stables is a 20-acre horse facility conveniently located in Missoula s Rattlesnake Valley--only two miles from downtown Missoula. You can ride from the barn to miles of trails in the Rattlesnake Wilderness and surrounding hills. The owner/manager of Harmony Stables lives on-site to monitor and provide personalized care for your horse. Our 175 x 90 sand bed arena is watered often for comfortable dust-free training, lessons, and conditioning. Amenities include: Irrigated hay (grown on the property) fed twice a day Large pastures and runs Barn-60 x40 Large tack storage & grooming area Riding arena Arena lights (for evening riding) Access to many miles of trails (ride from the barn) On-site manager Harmony Stables is a small facility. The land can support up to eight horses. This small number allows more individual attention for each horse. Our current rate is $325 per horse per month (multiple-horse discounts available).

Services Highlights for this Missoula, Montana Horse Boarding Farm include: Outdoor Arena, Overnight Stabling, Western, Full Care, Horseback Riding, Pastures, Layovers, Stopovers, Individual Turnout, English, Stables, Stalls, Pasture Board, Trail Riding and Trails.

Marranch Horse Boarding
6 miles from Missoula

Six miles west of Lolo on scenic hwy 12. One half mile from Lolo Peak Arena. Miles of accessible forest trails to ride. We offer 24x24 foot pens with shelters,that are cleaned daily. Twice daily feedings.

Services Highlights for this Lolo, Montana Horse Boarding Farm include: Weekly Stays, Overnight Stabling, Layovers, Stopovers, 4-H, Youth, Trail Riding, Open Seven Days, Beginner Lessons On Own Or School Horses., Trails, Outdoor Arena and Horseback Riding.

RHIZOTERRA
Healthy Soil for a Healthy World

April 10, 2013

Department of Natural Resources and Conservation
PO Box 201601
Helena, MT 59620-1601

RE: Competitive Grazing Lease #3854

To Whom This May Concern:

RE: Dunrovin Ranch (Sterling and SuzAnne Miller) for DNRC grazing lease # 3854 in Lolo that is adjacent to Dunrovin Ranch.

I have been asked by SuzAnne and Sterling Miller ("The Miller's) to write a letter outlining the grazing management plan they have implemented on their property to increase both the forage quality and quantity for their horses.

In 2012, Rhizoterra Inc and The Miller's fertilized and broadcast seeded all the pastures to increase the forage value of the pastures at Dunrovin. We successfully increased the forage production on the South pasture by implementing a rotational grazing and irrigation schedule. The riparian area was sprayed for noxious weeds in the fall of 2012, and has been seeded with grasses and forbs that tolerate flooding, most of which have germinated and are currently providing quality forage for wildlife. Under the current grazing plan, the riparian area will not be included in the grazing rotation until this fall at the earliest.

In 2013, we will continue with the rotational grazing and irrigation schedule on the south and north pastures. The soils from all the ranch pastures were fertilized according to soil test recommendations, and then broadcast seeded to once again increase the forage productivity of the pastures during the summer and fall. We will continue to pasture seed with annual forages that allow for grazing over the late spring and summer. The Miller's have taken serious steps to improve their pastures and pasture management, and want to set a good example for other land and horse owners.

Rhizoterra Inc and the Miller's are committed to improving the soil health, forage productivity and quality on Dunrovin. Rhizoterra continues to monitor and coach The Miller's and their staff with respect to appropriate grazing, and grazing rotations. This would be extended to include the DNRC state land lease. Jill Clapperton has published research finding with respect to grazing practices on native sub montane grasslands along the Rocky Mountain front.

Rhizoterra is a committed to assisting farmers, ranchers and land managers to improve soil health and thus the productivity and nutritional quality of the food and forage they produce. Jill Clapperton the Principal Scientist and President of Rhizoterra Inc is an internationally recognized expert on soil health. She last conducted USDA NRCS training sessions on soil health and integrated livestock grazing funded by SARE in Missouri in September 2012. More recently, she was again involved in a soil health USDA NRCS training workshop in Carroll Ohio.

Jill Clapperton coaches and consults for a number of land and horse owners in the Bitterroot, Blackfoot, Rock Creek and Clark Fork Valleys, all of which have successfully improved pasture, rangeland and wildlife habitat productivity by improving soil health.

Regards,

Jill Clapperton Ph.D.

Related Materials
Attachment 2

Fringe Benefits of Rotational Stocking

R.L. Dalrymple, Noble Foundation, Ardmore, Oklahoma

A rotational grazing unit, with its increased paddock numbers and higher stock densities, coupled with appropriate management can provide the benefits of rotational stocking. The cumulative benefits, which are ever evolving, depend heavily upon the level of management within the unit and the benefits the manager is trying to achieve.

Samuel Roberts Noble Foundation

Some Assumptions
For our purposes, let us assume that the grazing unit is a well-managed system with 8 to 24 main paddocks per herd. Because many of the fringe benefits are also dependent upon high quality electric fences, let's assume that these fences are part or all of the fencing of the unit.

Major and Fringe Benefits
Benefits may be considered in two basic categories: 1) major benefits and 2) fringe benefits. Perhaps some thought on word definition is in order. Webster's Dictionary defines "major" primarily as, "greater in importance." The reference defines "benefit" as "advantage" or "help". So a major benefit might be defined as, "a greatly important advantage."

Most graziers consider the major benefits of rotational stocking as: 1) increased livestock product yield per unit of land area and 2) livestock performance control. These two benefits are primarily financially driven at the grazier level.

"Fringe benefits," as defined by Webster's Dictionary, are "marginal, secondary, additional advantages." So outside and beyond the major benefits are innumerable fringe benefits to rotational stocking. In many cases, the economic accumulation of these benefits can outperform the economics of the major benefits.

Fencing Fringe Benefits
Inherent in today's rotational stocking management is the incorporation of high quality, long lived, high powered, low impedance, electric fencing. In effect, it is a fringe benefit because it is quick and easy to construct and the most economical of all common fences. High quality, one-wire fences usually cost about $400 per mile for materials. Fencing, and in particular electric fencing, makes rotational stocking more physically feasible and economically viable. These fences are assumed a part of the "wholeism" management of a rotational stocking unit operation. Temporary polywire type fences also may be a part of the unit. They offer considerable fringe benefits due to their ease and the flexibility of use.

Plant Fringe Benefits
The first impact of rotational stocking is at the plant or vegetation level. Itemized below are some plant related fringe benefits: Managing for forage plant vigor, quantity and quality through control of the recovery period, intensiveness of grazing (shorter vs. taller) and residue left at seasons end.

- Managing for revegetation and/or plant succession in true native vegetation stands, plus pseudo-native and introduced swards. Adequately managed rotational stocking allows whatever plants are present to develop to the highest level capable, relative to the unique inputs of that location.

Related Materials
Attachment 2

- Rotational stocking allows innumerable forage mixtures to perform well within a given season. The short grazing periods, relatively uniform grazing and adequate recovery periods are all responsible for this success. Examples are: bermudagrass-crabgrass mixtures, crabgrass-lespedeza mixtures, rye-wheat-ryegrass-vetch mixtures, etc.
- Rotational stocking allows and makes successful several multiple forage cropping and double cropping mixtures. The same factors as above cause this success. Examples are: bermudagrass-cereal rye-annual ryegrass-legume-crabgrass-johnsongrass forages in a given paddock, winter pasture-crabgrass in a given paddock, etc. Each grazing causes the use and release of one or more of the forage components. Multiple paddocks, allows the practice of integrated forage management. It is possible to have a different forage, or forage use, within each paddock.
- Planting of many forage seeds is practical through tread-in by livestock during grazing with relatively high stock densities. The stock, in effect, become a piece of equipment by assisting with final seed placement. Some forage seeds may be dispersed through livestock by feeding seeds and allowing the livestock to disperse them into the paddocks in their manure. This is a very inefficient system, but somewhat useful. This happens automatically in all grazing units when livestock eat a seed and pass it in another location. It cannot be stopped.
- Nutrient recycling from manure and urine can be managed relatively easily in a rotational grazing unit. This recycling causes the reuse of any nutrient consumed. At each deposit more forage grows, fewer numbers of weed herbage emerge, and the weeds are more palatable, causing more weed use and greater other forage production. Nutrient recycling goes on indefinitely.
- Higher stock densities cause increased browsing of broadleaf weeds, more physical abuse by trampling and lower weed populations. This happens in both fertilized and non-fertilized situations. Most weeds are either preferred or acceptable to grazing beef cattle. Relatively few weeds are useless as livestock feed.
- In this situation we might consider the analogy that fencing functions as a sprayer and the livestock are, in effect, the herbicide or mowing equipment.
- Higher stock densities result in excellent woody plant, small sprout, bush or tree control through browsing since physical impact results in less woody plants. In many paddocks, these plants are kept at a low level through stock impact.
- There have been cases when aphids, army worms, or leaf diseases infested certain paddocks and were controlled through grazing and trampling at high stock densities, thus illuminating the need for chemical controls if that were an option.

Livestock Fringe Benefits

Rotational stocking sets up the possibility of many fringe benefits to livestock management. Itemized below are some livestock related fringe benefits:

- The grazing unit sets up a "machine" that can be employed to help manage stress on livestock. Because of relatively frequent, closer, and hopefully gentler handling of livestock, they become more docile and easier to manipulate. The constant rotation of livestock to another paddock causes them to become more settled and easier to handle.
- It is well accepted that good electric fencing is a catalyst for getting livestock to settle more quickly and easily.
- Sick livestock are easily detected and less time is needed for such detection in a rotational stocking unit. Sick livestock tend to be the last in a rotation line and are thus easy to observe and separate from the herd for treatment.
- Livestock movements from one paddock to another automatically have a limiting effect on fly populations. Flies do not move far from the manure pat, and many make contact with a host only by the host passing immediately by them. This phenomenon functions to a degree on even very small, less than 50-acre units, but it works best on larger units because of the greater distances and increased time between fly eggs, flies and livestock-host close contact.
- The use of a portable fly and lice wipe, salt and mineral feeder (all one tool) is made more useful and almost 100 percent effective because all the livestock are relatively close to the tool. Rotational stocking (cattle all close by) facilitates the use of the tool and the tool facilitates rotational stocking. Livestock naturally key on the tool for its use and trail it to the next paddock as it is moved. The tool is as low stress as is imaginable for both livestock and human in the prevention and control of external parasites and mineral/salt supplementation. There have been cases where one herd of a two-herd system had fly control via a wipe and the second herd never developed a serious fly population -- possibly due to that control and regular livestock movement to another paddock.
- Internal parasites may, or may not, be controlled through rotational stocking. There is data to support both cases. Rotational stocking sets up the possibility of limited or controlled internal parasites, but not the surety of it. The system, however, sets up a very easy means to observe livestock visually for potential parasite problems and an easy means to sample manure from any or a combination of individuals for fecal testing. There is also data to support not doing unnecessary deworming when stock are on high quality abundant forage which can be set up, in part, by rotational stocking.
- Rotational stocking automatically sets up the easy feasibility of automatic creep grazing. This is so because of the

number of paddocks containing the same or different forage, some of which is of a higher quality, higher palatability and has greater availability through creep accesses. Creep grazing accesses are easily engineered under electric fences or through any fence. There are many designs.

- The paddocks of a grazing unit can be easily organized for strip grazing -- the highest practical management level of rotational grazing. Strip grazing will provide the greatest potential of product yield and fringe benefits.
- Single wire electric fences, and to some degree multiple wire electric fences and non-electric fences, can be used as a feed trough or hay bunk. This is because supplemental feeds can be scattered directly under the electric wire, thus saving the cost of feeders. This approach adds human safety because the feed person can be on the opposite side of the fence from the stock. The technique also provides a "clean plate" for the feed because most manure and urine is dropped more than two feet from the fence. The electric wire prevents stock from trampling the feed into the soil or crumbling and wasting it. When this is done with electric fences, it automatically causes livestock to be calmer at feeding as they avoid and respect the electric fence.
- The rotational stocking unit readily permits the mixing or combinations of livestock species and classes in the same or different paddocks to accomplish objectives not possible with one livestock species or class or with one pasture in continuous stocking. Cattle and sheep combinations are an example, but the list is more extensive. I know a stockman that has cattle, hair sheep, wool sheep and goats all in one grazing unit.
- The grazing unit readily accommodates the use of special stock for weedy plant and brushy plant use the more effective use of "guard animals." Donkeys, sheep, goats, cattle, and guard dogs or other animals can all be employed for this job. This technique can be extended to cause livestock to do "seedbed preparation" in summer fallow winter pasture fields to offset machinery use and labor.

Soil, Water, and Environmental Fringe Benefits
Rotational stocking, done appropriately, can benefit the soil environment. Itemized below are some soil, water and environmental related fringe benefits:

- Rotational grazing, with adequate recovery periods, increases forage production. Runoff water and water contained in streams and impoundments is clearer and presumably of higher quality for stock and human use. This is possible because rotational stocking, wisely done, allows the control of residue height (stubble) left after each grazing and a more rapid regrowth.
- These grazings also cause and allow the accumulation of litter (horizontal residue) directly on the soil surface. This litter helps prevent erosion.
- Greater herbage and residual vegetative cover leads to less soil erosion. The combined effects of this protection cause interception of raindrops plus a "tarp" or "duck's back" on the soil surface to restrict and nearly eliminate soil erosion.
- Rotational stocking causes the buildup of physical organic residue. This organic residue composts on the soil surface and slightly into the soil surface to build and improve that horizon of soil.
- There is some indication that rotational stocking will increase chemical the organic matter content of soils. However, in Oklahoma nearly three decades of rotational stocking on formerly tilled cropland did not show any increase in chemical organic matter in the upper soil profile. It took eons of time to build high organic matter soils and three decades may not be long enough to rebuild those losses.
- The rotational stocking unit and its necessary fences often set up a means to control livestock access to reservoirs, ponds, lakes, streams and rivers and the associated margins. This is done by fencing these water sources out of the main units and building controlled accesses (usually with electric fences) for stock water. These accesses increase edge vegetation cover, maintain or improve water quality, protect and improve riparian habitat and limit waste and parasite recycling in the water, plus they improve wildlife habitat.

Social (Human) Fringe Benefits
While the grazier's interest in rotational stocking is likely centered more on forage, livestock and economic advantages, there are "people" advantages, some of which I have already listed. Here is a list of some more grazier friendly items:

- One grazier said, "The biggest advantages to me personally is that there is only one gate to open." In his one-herd case, all livestock were in one paddock at a time, allowing him to leave all other gates open and travel nonstop to that paddock. Conversely, with stock in every pasture, many gates had to be opened and closed to check the livestock, etc.
- When a well-organized grazing unit is set up and operating, less total time is needed to check livestock, etc., because they are in a known, relatively confined, area.
- Labor needs are more predictable and regular. This results in less total time needed and more efficient management. This is more important for large operations. This time management option can result in getting more done with the available time, or in needing less total labor (people) for the same jobs. It takes more time to plan and set up the unit, but once in place, it takes little time to operate a good unit.
- A grazing unit and rotational stocking can be a wholesome teaching tool for youth (and others) interested in

Related Materials
Attachment 2

responsibility training and biological systems management.

Economical Fringe Benefits
The economic advantages to lowering input costs and raising net value of the product per acre are scattered throughout this summary. Cumulative advantages to fringe benefits of rotational stocking can total $100 per acre or more (Newport, 1993). However, not all fringe benefits apply to all grazing circumstances, so the value may be more or less than stated.

In Retrospect
A fringe benefit to a given grazier may be a disadvantage to another grazier. For example, woody plant control on a unit with abundant woody plants may be desirable. However, the grazier managing a unit sparsely populated with woody plants may wish to preserve and increase that component for wildlife interests or their perception of aesthetics. This summary has been written from the prospective of a grazier whose goal is to produce good conservation cover, good forage production, and good livestock production in an environmentally friendly unit.

References Newport, Alan. 1993. Fringe benefits. Oklahoma Farmer Stockman. June issue. pp. 6-7.

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LEASE AGREEMENT
BETWEEN
LOLO SCHOOL DISTRICT NO. 7
AND
Dunrovin Ranch – SuzAnne Miller, Owner

THIS LEASE is made and effective on this 13th day of February, 2013, by and between LOLO SCHOOL DISTRICT NO. 7 (hereinafter referred to as "Lessor"), and SuzAnne Miller/Dunrovin Ranch, (hereinafter collectively referred to as "Lessee").

1. **DESCRIPTION OF PROPERTY AND USES**. Lessor leases to Lessee the District-owned property of twenty (20) acres and situated in the Northeast Quarter of the South Half (NE1/ S1/2) of Section 35 Township 12 North, Range 20 West Principal Meridian Montana, Missoula County, Montana (hereinafter referred to as "Property").

2. **LESSEE OBLIGATIONS**. Lessee shall reasonably maintain the Property in good condition and improve its appearance to good order at no expense to Lessor. Maintenance shall include the following activities:

a. Concerted efforts toward weed control. Weed control should use appropriate, effective and as frequent as may be needed weed control substance which is not harmful to grass, people, stock. Lessor and lessee shall communicate and agree on appropriate substance and frequency and include in following space:
   a. Forefront application in spring when appropriate.
   _____
   _____
   _____
   _____

b. Litter control; and
c. Fence repair/maintenance (if sections of the fence are damaged or are otherwise in need of repair/maintenance)
d. Responsibilities for any associated utility costs (electrical, water, etc) are included in the Lessee's obligations.
e. In the event lease is to discontinue, replacement seeding of appropriate grass/fertilization for any areas that may be worn down due to heavy usage.

Lessee shall make repairs and replacements to the Property as required to maintain all aspect of the Property. Lessee shall pay and discharge, as they become due, any expenses necessary for upkeep and maintenance of the Property, which shall include miscellaneous expenses deemed necessary and appropriate by Lessor to maintain the safety, appearance and integrity of the Property.

Lessee is responsible to monitor conditions of the Property to determine if maintenance or repair activities necessitate major work or the major replacement or moving of sections of fencing or other significant expense of labor, time, and money. Major is defined as exceeding $500 in cost for any particular project expense. In such event, Lessee shall

notify Lessor. Lessor, at its option, may enter into negotiations with Lessee regarding the major maintenance or other major work to be performed, the cost and reimbursement terms, and the time for completing such work. Lessor, at its option, may agree to accept labor and materials from Lessee in lieu of lease payments. In the event such other work is negotiated, the terms of such work shall be in writing as an addendum to this Lease.

Lessee shall notify and seek prior approval of Lessor prior to making any permanent additions to the Property, including, but not limited to, perimeter fencing and gates, construction of power poles, and construction of any buildings or sheds. Any such additions shall remain as permanent fixtures to the Property and cannot be removed from the Property by Lessee upon termination of this Lease unless otherwise agreed by Lessor in writing.

Lessee may act at its own discretion to minimize any injury to persons or property and shall take all reasonable steps under the circumstances to mitigate any damages.

If there is evidence of Lessee abuse or neglect involving maintenance or repair, Lessor will have the right to perform maintenance and repairs and to charge Lessee for the direct cost of the maintenance and repairs, or to terminate the lease pursuant to Section 9 of this Lease.

The Property shall will be kept in a sanitary and good condition and be kept free of pests to the extent feasible.

Lessee has inspected the Property and accepts the same in its present condition, agreeing to maintain the Property as set forth herein.

3. **USE**. Lessee may only use the Property for reasonable grazing and/or for a riding track which utilizes temporary obstacles unless Lessor gives advance written consent to another use. Lessee shall not commit waste, create a nuisance, or use the Property for any illegal purposes. Lessee acknowledges that neither Lessor nor Lessor's agents have made any representation or warranty as to the present or future suitability of the Property for Lessee's intended use.

4. **TERM AND POSSESSION**. The term of this Lease shall be approximately one year, commencing on February 13, 2013 through February 1, 2014, unless extended or sooner terminated pursuant to any provision contained herein. Provided Lessor and Lessee can agree upon the terms of renewal, Lessee may renew this Lease for an additional one year under terms and conditions agreed upon, subject to approval by the Board of any new terms. If a majority of the Board determines not to renew, or if the parties can not agree upon terms of renewal, the lease shall terminate at the end of the initial term.

5. **ACCEPTANCE OF PROPERTY**. Lessee accepts the Property **"AS IS"** and in its present condition. Lessor has provided Lessee and/or Lessee's representatives with ample opportunities to examine the Property to their satisfaction.

6. **RENT**. Lessee shall pay an amount of $1000 for the annual lease of the Property. Full payment is required prior to signing the Lease.

Fig. 1. Lock intalled on gate on cross fence on state land by Elmer Habit in retaliation for Dunrovin Ranch's having entered a competitive bid for the grazing lease when it expired in 2008. Mr. Habit said Dunrovin Ranch "Tried to steal my lease" and said that he would remove the lock only if Dunrovin paid him $2,000/year which is more than he is paying the DNRC. The DNRC has told Mr. Habit that he must unlock the gate when requested to do so for our personal use but Mr. Habit has consistently ignored our requests that he do so. During summer 2009, Mr. Habit chased on his 4-wheeler after riders from Dunrovin Ranch legally using the property while cracking a bullwhip at them; this incident resulted in the filiing of a police report.

Fig. 2. Steer on state land drinking from Bitterroot River. Spring 2009.

Fig.3. Cattle on Bitterroot River. Spring 2009.

Fig 4. Close up of cattle damage to riverbank at site illustrated above. Spring 2009.

Fig. 5. Cattle damage to riverbank on state land. Looking north toward Dunrovin Ranch. Spring 2009.

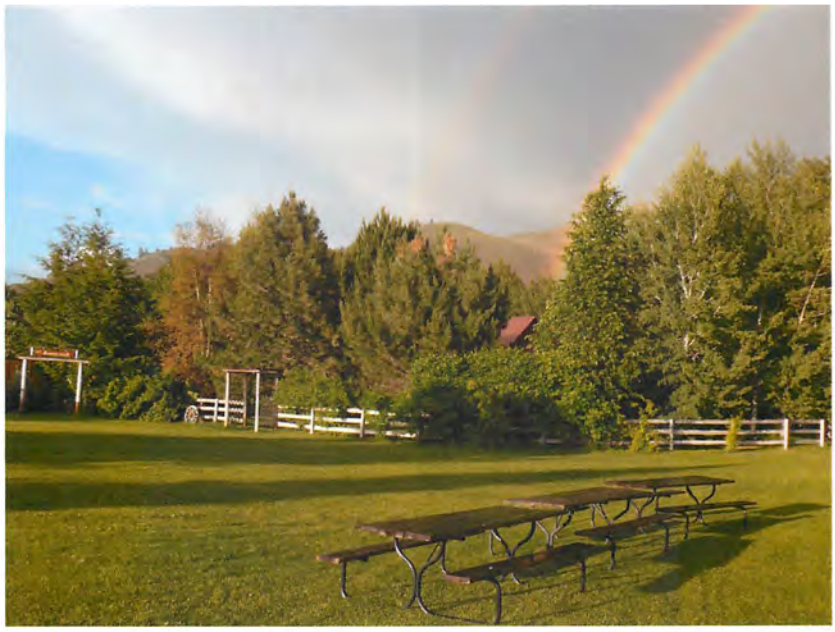
Fig. 6. Cattle trail leading to Bitterroot River on state land. Looking east. Subsequent to this picture, dDuring summer 2009, fencng was installed apparently to restrict cattle access to the river to only this trail.

Fig. 7. Junk stored on state land by Mr. Habit and rutting caused by his vehicles. DNRC apparently has asked Mr. Habet to remove this junk that was there for at least the preceeding 10 years as it was removed during summer 2009.

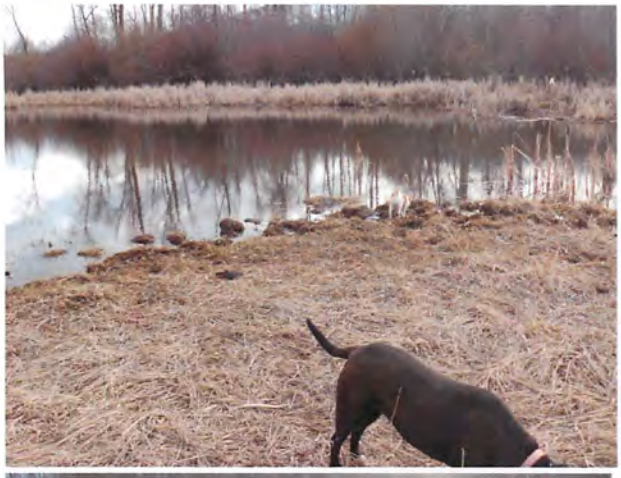
Fig. 8. Junk stored on state land in another place by Mr. Habet. DNRC apparently has asked Mr. Habet to remove this junk that was there for at least the preceeding 10 years as it was removed during summer 2009.

Fig. 9. One of a number of apparently illegal culverts installed on state land by Mr. Habit that has resulted in altered water flows. View looks west.

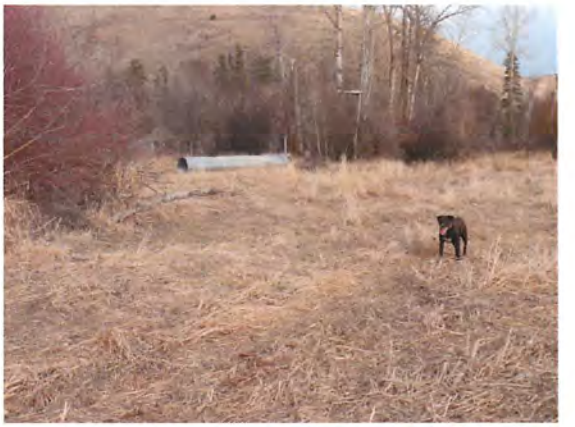
Fig. 10. Culvert brought to state land by Mr. Habet that is still there. DRNC informed us they told him he couldn't install it. Although the purpose he intended for the culvert isn't clear, we believe he intended to use it to drain the cattail marsh in the background that is shown above. View looks west.



Scenes from Dunrovin Guest Ranch, Lolo, MT. www.DunrovinRanchMontana.com. See also www.DaysAtDunrovin.com



Photos showing previous year's cattle damage to cattail marsh and (bottom) to the outflow stream from the cattail marsh. Note the tall cattails on the far side of the marsh where the cattle cannot damage the vegetation. Non-systematic observations indicate a decline in waterbird diversity and abundance in the cattail marsh where, since 2009, sandhill cranes no longer nest. Contrary to a DNRC report, there is no natural barrier preventing cattle from watering in this cattail marsh and, since 2009 whe access by cattle to the Bitterroot River was restricted, is the primarly source for water for the leasee's cattle.



Top 2 photos taken in April 2013 of large culvert brought into the DNRC lease land in 2009 and left there until April 2013 at which point it was moved to private land west of the DNRC lease managed by Mr. Habbit. We reported to the DNRC in 2009 that we suspected that the leasee intended to use the culvert to drain the cattail marsh shown opn the previous page. Mr. Habbit denied to DNRC that draining the marsh was his intention but he never used the culvert for any other reason.

Slide slough to the Bitterroot River damed up to provide a watering hole for cattle on the DNRC property. April 2013 prior to cattle being put into this portion of the lease.

Photos of fencing along river restricting movement of fishermen and hikers from walking along Bitterroot River. Also shows that the fencing of cattle away from the river is not 50' from the river. (April 2013).

Images taken on May 18, 2013 showing the riparian habitat on Dunrovin Ranch adjacent to the Bitterroot River 2 days after maximum flood stage. Photos taken looking southeast toward the river from a bench above the floodplain. The DNRC land can be seen in the lower right hand photo. Note the greater amount of shrubby vegetation on the Dunrovin Ranch riparian area which results from control of shrubby vegetation wildlife habitat on the DNRC land by the current leasee.

Images of various pastures on Dunrovin Ranch. Photos taken May 18, 2013.