1400 South 19th Avenue
Bozeman, MT 59718

March 19, 2014

To: Governor's Office, Sheena Wilson, State Capitol, Room 204, P.O. Box 200801, Helena, MT 59620-0801
Environmental Quality Council, State Capitol, Room 106, P.O. Box 201704, Helena, MT 59620-1704
Dept. of Environmental Quality, Metcalf Building, P.O. Box 200901, Helena, MT 59620-0901
Dept. of Natural Resources & Conservation, P.O. Box 201601, Helena, MT 59620-1601
Montana Fish, Wildlife & Parks:

Director's Office	Parks Division	Lands Section	FWP Commissioners
Fisheries Division	Legal Unit	Wildlife Division	Design & Construction

MT Historical Society, State Historic Preservation Office, P.O. Box 201202, Helena, MT 59620-1202
MT State Parks Association, P.O. Box 699, Billings, MT 59103
MT State Library, 1515 E. Sixth Ave., P.O. Box 201800, Helena, MT 59620
James Jensen, Montana Environmental Information Center, P.O. Box 1184, Helena, MT 59624
Janet Ellis, Montana Audubon Council, P.O. Box 595, Helena, MT 59624
George Ochenski, P.O. Box 689, Helena, MT 59624
Jerry DiMarco, P.O. Box 1571, Bozeman, MT 59771
Montana Wildlife Federation, P.O. Box 1175, Helena, MT 59624
Wayne Hurst, P.O. Box 728, Libby, MT 59923
Jack Jones, 3014 Irene St., Butte, MT 59701
Aaron Paulson, Snowcrest Ranch, PO Box135, Alder MT 59710
Ledford Creek Grazing Association, 585 Ruby River Drive, Sheridan MT 59749
John Anderson, Ruby Dell Ranch, PO Box 85, Alder MT 59710
Beau Bradley, Bradley Livestock, PO Box 89, Alder MT 59710
Vigilante Bison, PO Box 78, Alder MT 59710
US Forest Service, 420 Barrett Street, Dillon MT 59725-3572
Bureau of Land Management, 106 N Parkmont, Butte MT 59702
Dan Crismore, Ruby Valley Sportsmen Association, PO Box 11, Sheridan, MT 59749

Ladies and Gentlemen:

The enclosed Environmental Assessment (EA) has been prepared to establish a new grazing lease on the Robb/Ledford Wildlife Management Area (WMA) with the Ledford Creek Grazing Association (LCGA) for a 6-year term. The term would run from April 2014 through October 2019. This lease agreement would allow the continuation of a coordinated rest-rotation grazing system that includes the Robb/Ledford WMA, Montana Department of Natural Resource and Conservation (DNRC) lands leased by FWP, DNRC lands leased by the LCGA, and United States Forest Service (USFS), and Bureau of Land Management (BLM) lands leased by the LCGA. All of the aforementioned lands share common boundaries or are intermingled or both.

Montana Fish, Wildlife & Parks invites you to comment on the attached proposal. The public comment period will be accepted until 5:00 p.m. April 18, 2014. Comments should be sent to the following:

Robb/Ledford WMA Grazing Lease
Montana Fish, Wildlife & Parks
1400 S. 19th Ave.
Bozeman, MT 59718-5496

Or e-mail comments to: RLGrazing@mt.gov

Sincerely,

Patrick J. Flowers
Region Three Supervisor

Attachment

Draft Environmental Assessment

Robb/Ledford Wildlife Management Area
Grazing Lease

March 2014

Montana Fish, Wildlife & Parks

Environmental Assessment
MEPA, NEPA, MCA 23-1-110

I. PROPOSED ACTION DESCRIPTION

1. Type of proposed state action:

Montana Fish, Wildlife & Parks (FWP) proposes to establish a new grazing lease on the Robb/Ledford Wildlife Management Area (WMA) with the Ledford Creek Grazing Association (LCGA) for a 6-year term. The term would run from April 2014 through October 2019. This lease agreement would allow the continuation of a coordinated rest-rotation grazing system that includes the Robb/Ledford WMA, Montana Department of Natural Resource and Conservation (DNRC) lands leased by FWP, DNRC lands leased by the LCGA, and United States Forest Service (USFS), and Bureau of Land Management (BLM) lands leased by the LCGA. All of the aforementioned lands share common boundaries or are intermingled or both.

2. Agency authority for the proposed action:

Montana Fish, Wildlife and Parks has the authority under Section 87-1-210, MCA to protect, enhance, and regulate the use of Montana's fish and wildlife resources for public benefit now and in the future. Any consideration of continued livestock grazing would have to conform to objectives of maintaining or improving wildlife, wildlife habitat, and public access as outlined in the Robb/Ledford Wildlife Management Area Management Plan (1999) (Appendix A). The Fish and Wildlife Commission must approve all grazing leases on WMAs.

3. Anticipated Schedule:

Public Comment Period: March 19-April 18, 2014
Presented to the FWP Commission for Approval: May 21-22, 2014
Proposed Lease in Effect: May 23, 2014

4. Location:

The Robb/Ledford WMA is generally located in southwest Montana. It is situated on the western slopes of the Snowcrest Mountain Range and is approximately 20 miles south of Alder, Montana, along the Robb, Ledford, and Blacktail Deer Creek drainages (Appendix E). The WMA lies in portions of Madison and Beaverhead Counties. It shares boundaries with the USFS, BLM, DNRC, FWP's Blacktail WMA, and private lands (Appendix B). The WMA encompasses parts of T9S, R5W; T9S, R4W; T10S, R6W; T10S, R5W; T10S, R4W; T11S, R6W; and T11S, R5W.

5. **Project size:**

The proposed lease would comprise 17,302 acres of FWP, 10,786 acres of DNRC leased by FWP, 3,600 acres of DNRC leased by LCGA known as the McGuire parcel, and 680 acres of BLM leased by the LCGA (Appendix B). In total, these lands comprise the Robb/Ledford Coordinated Grazing System (R/L System). In addition to those acres, the LCGA coordinates annual use of their leased USFS Snowcrest and BLM Blacktail allotments with the R/L System. Cover types within the R/L System are listed by acre in Table 1.

Table 1. Habitat types and acres of present within the Robb-Ledford Coordinated Grazing System.

Cover Type	R/L Acres Present
Developed	0.0
Residential	1
Industrial	0.0
Deciduous Woodlands	72
Coniferous Woodland	1,262
Riparian	515
Floodplain	0
Irrigated Cropland	0
Dry Cropland	0
Rangeland	30,518
Total	**32,368**

Note: See Appendix C for total riparian acres by drainage and Appendix T for type, size, landownership, and location of woodland patches.

6. **Costs and Jurisdictions:**

(a) **Permits:** None

(b) **Costs to FWP:**

- Completion of an Environmental Assessment: Biologist time (130 hours) multiplied by salary plus benefits per hour ($31.71) equals $4,122.
- Monitoring livestock movements through rotation: Biologist time (~42 hours) multiplied by salary plus benefits per hour ($31.71) equals $1,332. This cost would occur annually.
- Removal of one strand electric fence from WMA: Management Technician time (40 hours) multiplied by salary per hour ($10.00) equals $400.
- See Appendix H for past investments related to livestock grazing.

(c) **Other Overlapping or Additional Jurisdictional Responsibilities:**

- Montana Department of Natural Resources and Conservation
- Bureau of Land Management

7. Need for Proposed Action:

History of Grazing Leases on Robb/Ledford

In 1987, the Rocky Mountain Elk Foundation (RMEF), supported by a $500,000 donation from Anheuser-Busch Companies Inc., purchased the property from the LCGA. Montana Fish, Wildlife and Parks acquired the property from the RMEF in 1988 and named it the Robb/Ledford WMA. The Robb/Ledford WMA was FWP's first acquisition using funds from the Habitat Montana Program. This program was established by the 1987 State Legislature through House Bill 526. It was also the RMEF's first habitat conservation project.

The Rocky Mountain Elk Foundation, FWP, and sportsmen viewed the acquisition as an opportunity to provide a showcase for cooperative management between ranching and wildlife interests. At the time of acquisition, the LCGA retained the grazing rights until November 1, 1990. From 1991 through 1999, FWP leased grazing rights to the LCGA under a rest rotation grazing formula with a total grazing allowance of 3,495 Animal Unit Months (AUM) and a grazing season extending from June 15 through October 15.

During the 1990s, controversy grew between ranchers, FWP, and sportsmen on whether FWP was managing the WMA more as a cattle ranch than a WMA. In a memo dated February 18, 1998, to the FWP Commission, Joel Peterson (former Region 3 Wildlife Manager) summarized the history as follows:

- "WMA purchased in 1988 – 9,600 AUMs on WMA."
- "Grazing reduced in 1991 from 6 to 4 months (June 15 to Oct. 15) and reduced AUMs to 5,855 on WMA."
- "Following the 1991 season, FWP determined the need to further reduce AUMs to 2,000 to reach an objective of having approximately 6 acres of primary range for each AUM of grazing. Keep in mind, not all of the WMA acreage would be available for grazing during any particular year. This is because some areas may not be in the system because they are critical winter range. Non-grazeable range would not be included, and 1/3 of the grazeable acres would not be used each year under a rest rotation system.
- The LCGA opposed the proposed 1992 reduction. Subsequently, an agreement was made between the LCGA and FWP as negotiated by George Swann representing the LCGA and Region 3 Game Manager John Cada. This agreement noted that 3,495 AUMs would be allowed from 1992 through 1995. After that, FWP would reduce AUMs to approximately 2,000 on the WMA.
- This agreement was made to give the LCGA time to prepare for the eventual cuts. The LCGA has been repeatedly reminded that these reductions were coming even though FWP had continued to extend their lease with the same 1992 AUM figure through the 1997 grazing season.
- Those extensions had been in large part due to FWP's waiting for the completion of the Turner/DNRC land trade that would affect the amount

of acreage FWP would ultimately have to base its grazing management on.

On May 12, 2000, the FWP Commission adopted a 10-year lease with the LCGA. The lease involved a six pasture rest-rotation system including FWP deeded lands, DNRC lands leased by FWP, the DNRC lands (McGuire Lease) leased by the LCGA, and BLM lands leased by the LCGA. The lease allowed up to 3,310 AUMs to be grazed annually from June 15 through October 15. Under this grazing plan, the total annual grazing intensity ranged from 5.2 to 6.5 acres per AUM, and averaged 6.0 acres per AUM over the three year grazing cycle. This is the same grazing intensity that FWP was striving for with the AUM reduction contemplated in Joel Peterson's 1998 memo outlined above. The reason FWP could accommodate the higher AUM levels (>2,000) under the 2000 grazing lease is because the Turner land exchanges were completed, placing the McGuire Place (3,600 acres) in DNRC ownership and leased by the LCGA. This lease was incorporated into the R/L system by 2000. The above grazing system and AUM distributions are detailed in the Robb/Ledford Coordinated Grazing System Livestock Grazing Plan (Appendix D).

In order to accommodate the level of grazing adopted by the FWP Commission in 2000, improvements needed to be made within the R/L System. Those improvements included:

A. Removing unnecessary internal fences. This would have been required regardless of livestock presence on the WMA
B. Construction of the Kelly Spring and the Hogback waterlines to address cattle distribution
C. Construction of new interior pasture fences to manage livestock movements, and construction of a one strand electric fence at lower elevations to keep cows off of tall larkspur (*Delphinium exaltatum*) until its toxicity to cattle diminished

By 2009, all of the aforementioned improvements had been completed with the exception of the Hogback waterline. In 2008, it was decided that the Hogback waterline would not be constructed because:

A. It would not fix the problems associated with Robb Creek riparian degradation
B. It would not fix problems associated with tall larkspur
C. It would not quantifiably improve wildlife habitat, and
D. The cost ($112,000 to 142,000) versus benefit did not justify the expense.

The final improvement to be completed was the one-strand electric fence that allowed separation of cattle from the main distribution of tall larkspur. This fence crossed the Dry Hollow, Upper Robb Creek, and Ledford Ridge pastures (Appendix F).

The Robb/Ledford Grazing Plan prescribes moving from the early use low elevation pasture to the first high elevation pasture in early July. From 2000 through 2009, in

spite of the electric fences those movements did not occur until the end of the third week of July, and not until mid-August during one year, driven by a concern over tall larkspur poisoning.

By the end of the 2009 grazing season, it became obvious that, with the electric fence, the capacity was too limited at the lower elevations to meet the standards outlined in the grazing plan of 6 acres per AUM during a two-week window and meet the management objectives of the WMA. Most notably, riparian health standards in lower pastures were not being met or improving toward desired condition especially along lower Robb Creek. Beginning with the 2010 grazing season, as outlined in the 2009 Environmental Assessment (Appendix G), electric fences were abandoned and hard livestock move dates were implemented. The LCGA had to assume the risk of grazing livestock in areas occupied by tall larkspur and take independent measures to minimize or mitigate losses.

It took 11 years to remove old fences, construct new fences, finish the Kelly Spring Waterline, and resolve tall larkspur distribution issues. Montana, Fish, Wildlife and Parks' total financial investment into the Robb/Ledford WMA during that period was $633,697. Of that total, $509,317 was allocated to grazing system improvements and $124,379 was allocated to grazing independent projects (Appendix H). The R/L System had operated, with completed improvements and as originally designed, since the beginning of the 2010 grazing season or through one complete three pasture rest-rotation cycle since these improvements were completed. Finally, in 2012 and 2013, hardened watering gaps were constructed in Lower Robb Creek at a cost of $44,666. During this 11-year period, FWP took in approximately $440,020 in grazing lease fees from the LCGA. Montana Fish, Wildlife and Park's net investment into grazing system improvements was $74,351 (Appendix H).

Need for Proposed Action

The 1999 Robb/Ledford WMA Management Plan outlined nine management objectives aimed at achieving the goals of improving soil, vegetation, and watershed productively, supporting a diversity and abundance of game and nongame wildlife, and exploring wildlife friendly livestock grazing practices. A summary of those objectives include:

(1) Maintenance or improvement of basic resources including vegetation, soil, and water
(2) Expanding benefits of FWP management to adjacent DNRC, BLM, and USFS lands
(3) Showcase the WMA as an area where wildlife and livestock can co-exist while maintaining a healthy rangeland
(4) Provide winter forage for elk (*Cervus elaphus*)
(5) Provide habitat for all wildlife utilizing the WMA
(6) Incorporate adjacent public lands into management of the WMA
(7) Provide adequate public access
(8) Maintain the natural character of the land, and
(9) Increase public awareness and appreciation for the diversity of wildlife on the WMA

Livestock grazing was identified as the best practice to meet objectives two, three, and six, and could be accomplished while meeting objectives one, four, five, seven, eight, and nine. In essence, the ultimate goal of the 1999 management plan was to demonstrate that under careful and adaptive management, the needs of game, nongame, rangelands, riparian areas, and livestock could be met on common landscapes that are administered to support multiple interests. The overall importance of this effort is finding a wildlife/habitat/livestock management program that can be implemented across landscapes under public multi-use management requirements or privately-owned lands utilized for livestock production. These types of landscapes cover the vast majority of Montana and thus support the majority of the state's wildlife. Identifying programs that meet the needs of all interested parties will prove most beneficial to the greatest proportion of Montana wildlife into the near and distant future. Identifying approaches to keep livestock producers operational ensures that native range open space, essential to all wildlife species, will be maintained on privately owned lands. Producers unable to make a living raising and selling livestock will ultimately be forced to consider land management alternatives which may not be in the best interest of wildlife conservation. An additional goal of this effort is to identify management programs aimed at managing multiple uses across large landscapes versus single uses on individual ownerships.

Since 2000, the 1999 Robb/Ledford Management Plan has been implemented using formal grazing leases with the LCGA. To date, all management objectives have been achieved or progress is being made toward objective achievement.

Objective 1: In general, rangeland (Appendix I) and riparian (Appendix J) health has improved across lands within the R/L System (Hansen pers. comm.), and uplands within the R/L System have maintained a healthy component of native plant species (Harrington pers. comm.). Harrington's grassland and sagebrush assessment data is summarized in Appendix's K and L, respectively. His methods are described in Appendix M. However, the potential for improvement remains high, specific sites remain in poor condition, and additional monitoring is needed to accurately quantify condition trends with confidence. The completed improvements and set livestock move dates are expected to provide for improvements in upland and riparian condition.

Objective 2: The Robb/Ledford Cooperative Grazing System includes lands administered by FWP, BLM, USFS, DNRC leased by FWP, and DNRC leased by the LCGA.

Objective 3: The landscape provides summer livestock pasture for four southwest Montana based cattle operations while supporting diverse assemblages of game and nongame wildlife species. Elk, mule deer (*Odocoileus hemionus*), white-tailed deer (*Odocoileus virginianus*), moose (*Alces alces shirasi*), pronghorn antelope (*Antilocapra americana*), greater sage-grouse (*Centrocercus urophasianus*), blue grouse (*Dendragapus obscures*), ruffed grouse (*Bonasa umbellus*), mountain goats (*Oreamnos americanus*), Rocky Mountain big horn sheep (*Ovis Canadensis canadensis*), black bear (*Ursus americanus*), grizzly bear (*Ursus arctos*), grey wolf (*Canis lupus*), mountain lion (*Puma concolor*), coyote (*Canis latrans*), bobcat (*Lynx*

rufus), American beaver (*Castor Canadensis*), and suites of nongame species have been observed using the area within the R/L System through the last lease period.

Ritter and Gower demonstrated that small mammal diversities and densities within the R/L System are comparable to the neighboring ungrazed Blacktail WMA (Appendix N) and suggested that the rest-rotation grazing system was having no detrimental effects on small mammal assemblages. Implementation of similar monitoring efforts for passerine birds and herp species are currently being discussed. Montana Fish, Wildlife and Parks completed beaver occupancy surveys on the Robb/Ledford WMA in 2009 and 2010. Ritter and Gower (2014) surveyed Robb, Ledford, and Rock creeks. Twelve active colonies were located throughout 14 riparian miles. This equals a density of 0.86 colonies per mile. Of the 12 active colonies, 6 were located in Robb Creek, 6 were located in Ledford Creek, and none were found in Rock Creek. There was no historic evidence of beaver presence observed along Rock Creek. Observed colony density was 0.88 and 0.85 per mile along Robb and Ledford creeks, respectively. The authors cautioned that these observations should be interpreted as minimums as colonies could have been missed. Beaver colony density on the Robb/Ledford WMA (0.86/mile) was comparable to that found on the neighboring ungrazed Blacktail WMA (0.79/mile) and is within the normal range of beaver colony densities across North America described by Hill (1982).

Montana Fish, Wildlife and Parks established a series of rangeland monitoring sites on the Robb/Ledford WMA in 2003. These sites are scheduled to be read by FWP's Plant Ecologist every five years to collect vegetation composition and trend data. The sites were read in 2003, 2004, 2008, and 2013. In general, the results demonstrated that the uplands within the R\L System are healthy and contain a diversity of native vegetation fitting for the monitored range sites. Invasive plant species are present but do not occur at a level that is significantly impacting the native ecosystem. Soils are intact and show little sign of accelerated erosion. Given the short monitoring term (10 years) and the high annual variability in weather, confirming long term trends in vegetation is not feasible at this time. The results of these monitoring efforts are summarized in Appendix K (Percent Canopy Cover), and Appendix L (Sage-brush Canopy Cover). Complete raw data is available in Appendix O.

In addition to monitoring conducted by FWP, Ecological Solutions Group LLC has performed replicated riparian health assessments on Dry Hollow, Taylor, Rock, Swamp, Robb, and Ledford creeks, and the Mesa Reservoir. Their general findings are summarized in Appendix J. More detailed information follows.

<u>Ledford Creek</u>

"Ledford Creek has shown significant improvements in vegetative and physical factors. Major negative factors include increased presence of noxious weeks and channel incisement." The riparian zone along the 3.9 miles inventoried increased from 15.5 acres in 1999 to 48.3 acres in 2005, with the average riparian zone width increasing from 33 feet in 1999 to 102 feet in 2005. Thompson and Hansen (2006) attribute most of this expansion to increased beaver presence. They also documented that the number of plant species observed increased from 69 in 1999

to 113 in 2005, and attributed that growth to the expanded riparian area. "The most significant difference in woody vegetation composition since 1999 is the increased cover of sandbar willow (*Salix exigua*) due to the raised water table and expanded riparian zone and to the reduced browse utilization level. The reduced browse utilization may be the combined result of management change and decreased accessibility in the greater areas flooded by beaver." Thompson and Hansen (2006) believe that the renewed beaver activity could quickly remedy the early stages of channel incisement observed. From 2006 to 2010, Ledford Creek showed continued improvement with noxious weeds continuing to be the primary threat to riparian health (Thompson et al. 2011 C).

Robb Creek

"Robb Creek remains on average in the same broad category of health, but has suffered some decline in functional health." The most significant negative effects are heavy browse utilization and livestock-caused alteration of channel banks due to trampling in the lower end of the riparian. This issue was identified during the last environmental assessment and addressed with the construction of a riparian fence. A secondary negative impact was increased channel incisement. Thompson and Hanson (2006) suggested this could be easily remedied with beaver reestablishment similar to what occurred along Ledford Creek.

Thompson and Hansen (2006) documented the riparian area along the 2.9 miles inventoried increased from 16.4 acres in 1999 to 76.1 acres in 2005, and observed plant species increased from 67 in 1999 to 98 in 2005. For continued riparian improvement, Thompson and Hansen (2006) recommended that beaver re-establishment be allowed to continue. The implementation of hard livestock move dates in 2010 should continue to allow for additional improvement. Livestock will no longer be allowed to remain in low elevation pastures longer than recommended in the 1999 Robb/Ledford Coordinated Grazing Plan regardless of tall larkspur threat to livestock at higher elevations. A 2010 riparian assessment showed an improvement in overall health since 2005 with noxious weeds remaining a primary threat to riparian health (Thompson et al 2011. D).

Rock Creek

"The overall health of Rock Creek remained static between 2001 and 2006 with some factors showing improvement, while others declined" (Thompson and Hanson 2007). Negative observations included heavy browse utilization of preferred woody species and increased Canada thistle (*Cirsium arvense*) presence. A slight increase in physical site factors was observed between 2001 and 2006, but extensive livestock-caused alterations to stream banks kept the riparian in the non-functional category. In 2011, riparian assessments demonstrated that Rock Creek health remained stable and was barely functional. Heavy browsing and lack of establishment of preferred woody species were the most consistent driving factors (Thomson et al. 2011. E.).

Mera Reservoir

The lentic riparian health around Mera Reservoir declined slightly between 2001 and 2006, but remained at the lower end of the functioning at risk category."

According to Thompson and Hansen (2007), “vegetation health factors around the Mera Reservoir have improved somewhat since the 2001 assessment-mostly in greater total vegetation canopy cover and increased shrub presence, especially young willows. However, “physical site conditions have declined somewhat over this period due to continued trampling alteration of the shoreline by livestock.” Thompson and Hansen (2007) suggest that conditions around Mera Reservoir are such that would allow rapid improvement of functional health if livestock trampling and intense browse use were controlled.” A 2011 assessment showed that the overall health of Mera Reservoir improved slightly since 2006 but remained lower than in 2001. The primary factors affecting riparian heath in 2011 were presence of noxious weeds, heavy browsing on preferred woody plants, and livestock-caused alteration of the vegetation (Thompson et al. 2011. E.).

Swamp Creek

From 2000 until 2006, the health rating along Swamp Creek declined from 66 to 63% (Thompson and Hansen 2007). According to the authors, “this small decline may be within the expected observed variation in use of this methodology; however, greater change was recorded on some individual factors.” “All five polygons on Swamp Creek declined in the vegetation part of the health assessment. This decline is entirely due to the spread of Canada thistle. Other vegetation health factors remained essentially unchanged since the 2000 assessment.” Physical site factors showed a slight general improvement since 2000. Thompson and Hansen (2007) attributed this improvement to healing channel incisement and suggested this as an example of the system’s ability to quickly respond to improved grazing management. The 2011 assessment showed that Swamp Creek health had declined since 2006 and was in the nonfunctional category with the worst conditions present at the stream’s upper reaches. The primary factors driving the poor rating were a lack of adequate total vegetation cover of the floodplain and a shortage of preferred woody species establishment.

Taylor Creek

From 2000 until 2007, all sites inventoried on Taylor Creek showed improvement and moved into the proper functioning condition category (Thompson el al. 2008). “Overall riparian health scores on Taylor Creek improved slightly. There was a slight decrease in vegetative health, which was more than offset by improved physical health.” One negative observation was the distribution and abundance increase of Canada thistle and common houndstongue (*Cynoglossum officinale*). Thompson et al. (2008) recommended that FWP make aggressive efforts to control these species as their inevitable spread will continue to lessen riparian function. A second negative observation was that browse utilization increased from moderate to light in 2000 to intense in 2007 in all inventoried sites. If continued, reductions in browse canopy should be expected as old plants die. Browse trends are likely a combination of livestock and wild ungulate foraging. Thompson et al. (2008) suggests re-establishing beaver in lower Taylor Creek to regain perennial flow, reduce the potential for noxious weed spread, reduce channel erosion and incisement, and increase riparian habitat through increase water tables. A 2011 assessment showed that the overall health of Taylor Creek declined since 2007.

This decline was attributed to increased noxious weed presence and high levels of browse on preferred woody species (Thompson et al. 2011. E.).

In 2010, Ecological Solutions Group LLC completed upland health assessments within the Dry Hollow and Battle Place Pastures on the Robb/Ledford WMA. Their findings are generalized in Appendix I. Those findings are detailed in Thomson et al. (2011) A and Thompson et al. (2011) B. In their summary, the authors state that "although not all desired improvements have yet been realized on the Robb/Ledford WMA, improved conditions in both the Battle Place and Dry Hollow pastures, particularly physical site conditions, are obvious. These improvements have occurred since the implementation of the rotational grazing plan, and are attributed to change in timing and duration of grazing, reduced stocking rates, and improved livestock distribution through fence removal and installation and watering developments."

Overall, identified areas of concerns moving forward for FWP include controlling the spread of noxious weeds, addressing riparian health concerns in specific areas especially those riparian areas within the Swamp/Rock Creek Pasture, and continuing to establish and replicate long-term monitoring efforts.

Riparian assessments and upland vegetation transects will need to be replicated toward the end of the proposed lease period; in addition to the completed grazing cycles, the results of these assessments would also be influenced by the Robb Creek Riparian Fence and Kelly Spring Waterline.

FWP intends to work closely with the LCGA to be sure livestock are being moved to and from pastures as scheduled to avoid over use of grazed pastures and use of pastures scheduled for rest. From 2000 through 2009, the lower elevation pastures had a two-week grazing prescription without hard movement dates. What occurred during that period is an actual use in the low elevation pastures of five to eight weeks resulting in a 2-3 acre per AUM grazing intensity, more than double what was prescribed. This higher grazing intensity resulted in a loss of cover and forage for wildlife that far exceeded prescription resulting in riparian resource concerns on lower Robb Creek. In order to address the movement prescriptions in the grazing plan, hard dates were implemented starting in 2010 and will continue. Any new lease will only allow for no more than two weeks of grazing in the low elevation pastures at the current stocking rate. The livestock owners have committed to the use of Silent Herder, a mineral supplement commonly used to minimize tall larkspur poisoning. The livestock owners have committed to accepting those losses without violating movement dates.

Objective 4: Wintering elk continue to use lands within the R/L System (Appendix V), However, over the past decade wintering elk have utilized neighboring federal, state, and private lands with more frequency, all of which have some form of livestock grazing. In addition to forage provided to ungulates on the WMA, the LCGA members annually provide habitat, including forage, for up to 825 wintering elk, 125 wintering mule deer, 125 year around antelope, and approximately 300 year around white-tailed deer on their 20,295 deeded acres (Barnosky pers. comm.). The LCGA's private lands also provide year around habitat for an

unknown number of upland game bird, waterfowl, small mammal, passerine, fish, furbearer, predator, reptile, and amphibian species.

Objective 5: No wildlife species documented in the 1999 Robb/Ledford WMA Management Plan have been confirmed as no longer occurring on the WMA since implementation of rest-rotation grazing practices. Elk, mule deer, moose, antelope, and grouse species continue to utilize the area year around as conditions allow, and mountain goats occasionally use the WMA at higher elevations within the Rock/Swamp and upper Robb Creek pastures. However, species not included as present in the original management plan, including grizzly bears, grey wolves, and bighorn sheep, have since been documented using the WMA and surrounding areas. Thompson and Hansen (2006) documented increased beaver presence within several riparian areas. Reptile, amphibian, and song bird surveys are currently being discussed.

Objective 6: Neighboring lands administered by DNRC, BLM, and USFS have been incorporated into the system. Rest one out of every three years and growing season rest during two out of every three years is ensured on BLM (680 acres) and DNRC (14,386 acres) lands within the R/L System. Use of the USFS Snowcrest and BLM Blacktail allotments are used annually but in coordination with the R/L System. This coordination likely reduces the intensity of use on these allotments.

Objective 7: Implementation of the Robb/Ledford Coordinated Grazing System does not reduce the public's ability to access the WMA or surrounding public lands. At any point throughout the grazing period, June 22 to October 15, livestock are present in only one of 6 pastures within the R/L System, and no livestock are present on the WMA from October 15 until June 22 of the following year. Livestock are absent from the BLM Blacktail Allotment from mid-September until mid-August of the following year and absent from the USFS Snowcrest allotment from October 1 until July 15 of the following year.

Additional offsite sportsmen access is realized through working cooperatively with the LCGA. The LCGA provides approximately 1,230 hunter-days annually for all huntable species on their deeded land and public land leases (Barnosky pers. comm.). Access to the LCGA's deeded lands also generates further public access opportunities to neighboring public lands.

Objective 8: Since implementing the Robb/Ledford Management Plan, some fences and water tanks have been constructed while others have been removed. There have been no structure developments outside of wind and solar power sources installed at an existing cabin. No roads have been authorized while several have been decommissioned. Additionally, by maintaining summer pasture for the LCGA, their own operations totaling 20,295 deeded acres have remained as intact native rangeland available to wildlife.

Objective 9: Since implementing the Robb/Ledford Management Plan, FWP has completed three environmental assessments on the property, completed small mammal distribution and abundance surveys, completed beaver activity assessments within riparian areas, annually complete winter elk and spring and winter mule deer surveys which includes documentation of non-target wildlife

observations, implemented rangeland monitoring sites that includes identifying all plants by species, and contracted riparian and upland assessments that identify plants by species. Future monitoring plans include replicating past efforts to monitor trend and completing baseline inventories for bird, reptile, and amphibian species.

8. Alternatives:

Alternatives A, B, and C were developed to assess two decisions; 1) to continue grazing livestock under the current rest-rotation grazing system and stocking rate or discontinue livestock grazing completely, and 2) lease the grazing rights at the standard (high) lease rate and FWP assume all fence and water systems maintenance or lease the grazing rights at the DNRC (low) lease rate, and the LCGA assumes fences and water system maintenance. The decision was made not to assess alternative grazing systems because:

1) The current system meets FWP's minimum standards for grazing (Appendix P),
2) Insufficient time (one grazing cycle or three years) has passed since significant investments and adjustments were implemented to fully understand ecological responses.
3) Under the current system, the Robb/Ledford Management Plan Objectives are either being met or there are observed gains toward objectives being met. The primary concern remains riparian heath trends, but adjustments continue to be made to address those concerns. Continued upland and riparian monitoring are needed to fully understand plant and soil trends occurring, especially now that the system has had hard move dates and watering gaps incorporated.
4) A variety of alternatives assessing AUMs and grazing season date alterations were explored in the 2009 Environmental Assessment. None were considered viable options at that time, and little has changed over the past four years since those assessments were conducted.

The following are general proposed lease terms common to Alternatives A and B:

1. For partial payment of its McGuire lease under an exchange of use agreement, the LCGA would fully incorporate grazing management of the DNRC McGuire unit into the R/L System. Montana Fish, Wildlife and Parks would credit the LCGA 1/3 of the total McGuire Lease ($27,045/3 = $9,015) annually for their willingness to rest the parcel once out of every three years.
2. The LCGA would be allowed to graze a maximum of 2,955 AUMs or 1,118 cow/calf pairs and steers.
3. Livestock grazing would occur during a 3.75-month period from June 22 until October 15 annually using the rest-rotation system described above.
4. Minerals, supplements, or any livestock attractant would be placed well outside of any riparian area to reduce livestock congregation on those critical and sensitive habitats.
5. Vaccination of the LCGA's livestock per Montana law.
6. The LCGA would follow the State of Montana's Brucellosis Action Plan.

7. The LCGA's livestock must reside in the state for 30 days prior to being placed on the WMA to prevent establishment of noxious weeds.
8. No more than two weeks of grazing would be allowed in the lower pastures during spring or fall treatments. More specifically in the spring, livestock would be required to move to the first high elevation pasture on or before July 6.
9. The lessees would be responsible for moving their cattle at the prescribed times regardless of tall larkspur conditions, and they would be entirely responsible for protecting their animals from larkspur poisoning.
10. This would be a six-year lease. The lease term would coincide with the LCGA's remaining lease on the McGuire portion of the R/L System. Ending both lease terms at the same time would allow FWP and the LCGA the opportunity to assess the entire R/L System and make cooperative decisions on how to proceed beyond 2019.
11. The new lease would be with individual members as represented by the LCGA.
12. A new lease may be considered by the Fish and Wildlife Commission prior to the 2020 grazing season. Consideration would be based in part on the LCGA's adherence to movement requirements as well as how livestock grazing management fits with current and future WMA management objectives.

Alternative A (the Proposed Alternative): The grazing system would run from June 22 to October 15 with a maximum of 2,955 AUMs. It is the current grazing system. Montana Fish, Wildlife and Parks would annually lease the grazing rights to the LCGA. Montana Fish, Wildlife and Parks deeded land would be leased at the standard rate. This rate is based on the Montana average cash lease for grazing livestock on private lands as published by the USDA National Agricultural Statistics Service. DNRC leases held by Montana Fish, Wildlife and Parks would be leased at the standard rate or two times the DNRC rate, whatever is lower. Under this alternative, Montana Fish, Wildlife and Parks would assume all fence and waterline maintenance and repair responsibilities.

This alternative will continue the consolidation of FWP deeded (17,302 acres) and state (10,786 acres) leased lands as well as state (3,600 acres) and BLM (680 acres) lands leased by the LCGA into a common grazing system known as the R/L System. Livestock utilizing the R/L System will also make coordinated use of the adjacent USFS's Snowcrest and BLM's Blacktail allotments.

The 3,600 acres of DNRC land leased by the LCGA (McGuire Parcel) would be included in the R/L System through an exchange of use agreement. In exchange, the LCGA receives the grazing rights on FWP deed and leased lands, and FWP would credit the LCGA 1/3 of their McGuire Lease ($27,045/3 = $9,015) for resting it one out of every three years. Because of the McGuire Parcel's value to wintering elk, FWP believes maintaining grazing rest on it is important to this elk population.

Montana Fish, Wildlife and Parks would lease the grazing rights at the standard rate and assume fence and waterline maintenance responsibilities. The standard rate would equal the lesser of the Montana average for private

lands leases (currently $21.00/AUM) or twice the DNRC lease rate (currently $11.41/AUM, twice equals $22.82/AUM).

Grazing System Methodology

The R/L System involves rest-rotation grazing principles described by Hormay (1970). Livestock grazing occurs during a 3.75-month period from June 22 until October 15 annually. Livestock are rotated through low and high elevation pastures. On June 22, cattle are placed in a low elevation pasture until July 5. All cattle are moved from the first low elevation pasture into the first high elevation pasture on or before July 6 regardless of the maturity of tall larkspur. On July 15, 352 AUs are moved to the USFS's Snowcrest Allotment. The remaining livestock (766 AUs) remain in the first high elevation R/L System pasture until August 15 which is the approximate seed ripe point for bluebunch wheatgrass (*Pseudoroegneria spicat*). On August 15, 400 AUs are moved from the first R/L System high elevation pasture into the BLM's Blacktail Allotment. The remaining livestock (366 AUs) in the R/L system are moved to the second high elevation pasture scheduled for use. On September 15 and October 1, cattle from the BLM and USFS allotments return to the R/L System, respectively. They join cattle in the second high elevation pasture. On October 8, all livestock are allowed to drift into the second low elevation pasture. By October 15, all livestock are removed from the R/L System (Table 2). Appendix Q outlines the R/L System pasture use schedule for the six-year period.

Table 2. Robb Ledford Coordinated Grazing System move dates and AUMs by proposed alternative.

Rotation	Alternative A	Alternative B	Alternative C
1,118 animal units enter the first low elevation pasture in the R/L System	June 22	June 22	No Livestock Grazing
1,118 animal units leave the first low elevation pasture and enter the first high elevation pasture.	By July 6	By July 6	No Livestock Grazing
352 animal units leave the first high elevation pasture and enter the USFS Allotment. 766 animal units remain in the first high elevation pasture.	July 15	July 15	No Livestock Grazing
766 animal units will be removed from the first high elevation pasture. 400 will be moved to the BLM Allotment and 366 will be moved to the second high elevation pasture with the R/L System.	August 15	August 15	No Livestock Grazing
400 animal units will be moved from the BLM Allotment and into the second high elevation pasture within the R/L System.	Sept. 15	Sept. 15	No Livestock Grazing
352 animal units will be moved from the USFS Allotment and into the second high elevation pasture within the R/L System. All 1,118 animal units are returned to the R/L System.	October 1	October 1	No Livestock Grazing
1,118 animal units are allowed to drift into the second low elevation pasture.	October 8	October 8	No Livestock Grazing
1,118 animal units are removed from the R/L System. The grazing season is done.	By October 15	By October 15	No Livestock Grazing

In this system, one-third of the pastures are grazed from June 22 until seed ripe (August 15), one third are grazed from seed ripe until October 15, and one third are rested. Annual livestock grazing on the WMA is rotated so that over a three-year period each pasture receives all three treatments (Appendix Q). Plants grazed by livestock during the growing season (June 22 through August 15) receive grazing rest during the next growing season and complete grazing rest the following year. Livestock presence in pastures post seed-ripe facilitates seed planting and seedling plant establishment. Late use (August 15 through October 15) pastures receive complete grazing rest during the following year which allows seedling plants the opportunity to develop root structure. Animal stocking is based on levels that will allow for the maintenance and enhancement of riparian, upland, and wildlife values within the system. Considering only the acreage grazed in a particular year and an approximate average of 6 acres/AUM, a maximum of 1,118 cow/calf pairs and steers or 2,955 AUMs will be allowed through the R/L System

annually. The R/L System also employs riparian grazing strategies described by Ehrhart and Hansen (1997) and Ehrhart and Hansen (1998) which include salting, herding, and stock water developments away from riparian areas. Riparian areas along lower Robb Creek that have shown little to no improvement have been fenced to prevent livestock use. Hard move dates from low elevation pastures will further reduce riparian pressure in these areas.

Under this alternative, FWP will remove the electrical fencing that was originally used to deter livestock grazing from tall larkspur at higher elevations. FWP staff would likely be responsible for removal of this fence.

Livestock enter the system after June 21, which is long after wintering ungulates have left for summer ranges, and are removed by October 15, which is well before wintering ungulates typically arrive and more than one week prior to the beginning of the general big game hunting season. At any given time, livestock are only present in one of the six pastures within the R/L System leaving the remaining five pastures for wildlife. Livestock are present in the BLM and USFS allotments for four and six weeks, respectively, leaving those allotments for wildlife during the remaining 48 and 46 weeks annually. This system ensures that nesting sage grouse remain undisturbed by livestock throughout the majority of the nesting season and across the majority of the R/L System landscape annually.

Remaining in this system, which is allowing management objectives to be achieved, will maintain summer pasture for the four members of the LCGA. This will ensure they are able to maintain their deeded lands as functioning cattle ranches or open space native rangelands available to wildlife and sportsmen. Continued cooperation with the LCGA will help maintain their high tolerances for robust wildlife populations utilizing their deeded lands. It would maintain grazing rest within the valuable McGuire Parcel. This new lease would continue to allow FWP to work with the BLM, USFS, DNRC, and the LCGA to implement a grazing system that provides for livestock production, diverse wildlife populations, and healthy ecosystems which is implemented on a landscape scale, not simply limited to a single land ownership.

<u>Specific Terms of the Lease</u>

- Specific terms are in addition to the general lease terms outlined above.
- Montana Fish, Wildlife and Parks would maintain all WMA fencing and its portion of the Kelly Spring Waterline.
- The LCGA would be responsible for checking fences to ensure their ability to hold livestock and closing all gates as appropriate prior to livestock turnout. The LCGA would be responsible for notifying FWP of any needed repairs. Minor or even temporary repairs that help to retain livestock will need to be completed by the lessee to assure proper function of the system and to allow time for FWP staff to complete timely repairs. Gates in unused pastures will be left open, and all gates will be left open at the end of the grazing season to facilitate wildlife movement and reduce wildlife impacts to fences.
- The LCGA will be responsible for communicating with contractors operating the Kelly Spring Waterline to ensure that water tanks are turned on in use pastures and that all unused water tanks are turned off by October 15. Montana Fish,

Wildlife and Parks would be responsible for covering the annual maintenance costs of the Kelly Spring Waterline.

Costs of Lease

The estimated annual cost of Alterative A to FWP is outlined in Appendix S. It should be noted that livestock lease rates may fluctuate annually depending on published cash lease averages, and any change in them would impact the income to FWP.

Summary

This alternative implements a grazing system that is achieving or trending towards the objectives of the Robb/Ledford WMA Management plan while at the same time meets the needs of the livestock operators. This combination of results is achieving the overall goal of developing a management program to meeting the needs of Montana's wildlife and livestock industry on common landscapes. This alternative would require FWP staff to allocate more time towards fence and waterline maintenance (Appendix S) which allows less time for other land management activities.

This Alternative has been discussed with the LCGA, and it is our understanding that it would be compatible with their grazing interests. The LCGA requested time to calculate the cost benefits of accepting the high rate without fence and maintenance responsibilities. Although a longer lease term was desired by the LCGA, the lease length established for six years (two rotations) would allow FWP to evaluate against objectives and adapt language in any new lease beyond that time in a way that would address additional necessary changes to the R/L System.

Alternative B: Similar to Alternative A but Montana Fish, Wildlife and Parks would lease the grazing rights on its deeded and leased lands to the LCGA at the DNRC lease rate. The LCGA would assume all fence and waterline maintenance and repair responsibilities.

This alternative will continue the consolidation of FWP deeded (17,302 acres) and state (10,786 acres) leased lands as well as state (3,600 acres) and BLM (680 acres) lands leased by the LCGA into a common grazing system known as the R/L System. Livestock utilizing the R/L System will also make coordinated use of the adjacent USFS's Snowcrest and BLM's Blacktail Allotments.

The 3,600 acres of DNRC land leased by the LCGA (McGuire Parcel) would be included in the R/L System through an exchange of use agreement. In exchange, the LCGA receives the grazing rights on FWP deed and leased lands, and FWP credits the LCGA 1/3 of their McGuire Lease ($27,045/3 = $9,015) for resting it one out of every three years. Because of the McGuire Parcel's value to wintering elk, FWP believes maintaining grazing rest on it is important to this elk population.

Montana Fish, Wildlife and Parks would lease the grazing rights at a low rate, and the LCGA would assume all fence and waterline maintenance

responsibilities. The low rate would equal the DNRC lease rate (currently $11.41/AUM).

Grazing System Methodology

See Alternative A.

Specific Terms of the Lease

- Specific terms are in addition to the general lease terms outlined above.
- The LCGA would be responsible for maintaining and repairing all R/L System fencing. Montana Fish, Wildlife and Parks would provide all materials for maintenance and repairs.
    - The LCGA would be responsible for checking fences to ensure their ability to hold livestock and closing all gates prior to livestock turnout. The LCGA would be responsible for making any needed repairs. Repairs are defined as:
        - A) Maintaining all interior and boundary fences associated with the R/L System in a manner that prevents the loss of livestock and trespass livestock from neighboring properties whether or not the pasture is currently in use by LCGA livestock.
        - B) Maintaining fence wires in good condition including keeping the wire stretched and taunt so that they do not become wildlife entrapment hazards. Fence splices will be performed with twin strand barbless horse wire, barbed wire, or approved splice connectors. Soft wire (i.e., single strand number 9) will not be used for fence repair.
        - C) Raising and lowering any unused drop fences and gates. Gates in unused pastures are to be left open when pastures are not in use. Any drop fences are to be lower no more than two weeks post livestock leaving the pasture. Any drop fences or gates are to be raised prior to livestock turnout.
        - D) Identifying and replacing broken t-posts, wood set posts, and braces in a manner that keeps the fences in good condition.
        - E) Keeping trees and debris removed from the fences and repairing any damage those results from trees or debris falling on the fence.
        - F) Repairing damages caused by negligence on the part of the lessee or their agent (i.e., a range rider). An example of this would be when the lessees do not lower an unused drop fence or open an unused gate at the end of the grazing season and, as a result, it is damaged by wildlife or sliding snow.
        - G) All fence repairs will be completed such that the resulting fence meets the wildlife friendly guidelines described by the FWP guide titled, A landowners Guide to Wildlife Friendly fences: How to Build Fence with Wildlife in Mind: Second Edition Revised and Updated 2012.
        - H) Under Alternative B, the WMA maintenance crew will be responsible for; 1) Assuring that materials are provided to the LCGA to allow repairs to be made, 2) Assisting with relocation

of fences (either permanent or temporary) to address functional problems with the grazing system, and 3) Assisting with fences that are too derelict to be maintained. An example of this would be for the WMA crew to help string electric fence along a section of jack-leg fence that has fallen over from age, as a stop gap measure, until the derelict fence can be replaced by FWP.

l) Montana Fish, Wildlife and Parks staff will make any needed minor repairs (i.e., one broken wire) they identify while on site.

- The LCGA will be responsible for communicating with contractors overseeing the Kelly Spring Waterline to ensure that water tanks are turned on in pastures utilized by livestock and to ensure that all unused water tanks are turned off by October 15.

Costs of Lease

The estimated annual cost of Alterative B to FWP is outlined in Appendix S. It should be noted that livestock lease rates may fluctuate annually, and any change in them would impact the income to FWP.

Summary

This alternative implements a grazing system that is achieving or trending towards the objectives of the Robb/Ledford WMA Management plan while at the same time meets the needs of the livestock operators. This combination of results is achieving the overall goal of developing a management program to meeting the needs of Montana's wildlife and livestock industry on common landscapes. This alternative would require FWP staff to allocate less time towards fence and waterline maintenance (Appendix S) which allows more time for other land management activities.

This Alternative has been discussed with the LCGA, and it is our understanding that it would be compatible with their grazing interests. The LCGA requested time to calculate the cost benefits of accepting the high rate without fence maintenance responsibilities. Although a longer lease term was desired by the LCGA, the lease length established for six years (two rotations) would allow FWP to evaluate against objectives and adapt language in any new lease beyond that time in a way that would address additional necessary changes to the R/L System.

Alternative C: No Action, discontinue the grazing lease and halt all grazing on the WMA.

This alternative would terminate livestock grazing on 32,378 acres within the R/L System. Montana Fish, Wildlife and Parks would no longer influence grazing management on the 3,600 acre DNRC McGuire parcel or the 680 acres of BLM lands leased by the LCGA or annual use of the USFS Snowcrest and BLM Blacktail allotments. Furthermore since the LCGA would likely continue grazing the McGuire parcel, FWP would need to fence the boundary between it and the WMA. This would require approximately 14.5 miles of new fence and would cost approximately $114,840. Eventually, Montana, Fish, Wildlife and Parks would need to remove

approximately 23.1 miles of existing internal fence at a cost of approximately $73,181. Montana Fish, Wildlife and Parks would need to build approximately 4.1 miles of new boundary fence between FWP deeded and federal lands which would cost approximately $32,472. Overall, 4.5 fewer miles of fence would be present on the landscape. See Appendix R for the expected fence structure if Alternative C is chosen.

Under Alternative C, previously installed improvements (water system and fencing) of the R/L System would be abandoned, removed, or reconfigured. Since 2000, FWP invested $121,972 into the Kelly Spring Waterline, $404,075 installing necessary fence, and $21,731 removing unnecessary fence to meet the pasture designations of the R/L System. Since allocating these funds, only one complete grazing cycle (three years) has been implemented. This period of time is insufficient for understanding the ecological responses to the grazing system and associated recent improvements.

The Kelley Spring Waterline will continue to be used by down-line users even though WMA portions will be turned off and will require annual maintenance on the WMA. Benefits from a coordinated and collaborative effort between sportsmen, ranchers, federal land management agencies, and FWP will be lost. Management of grazing would be compartmentalized by lease and ownership, leaving some areas without any livestock grazing and other areas with more intensified grazing. Removing neighboring operators from leasing the Robb/Ledford WMA for grazing could affect 1) future support for wildlife conservation, both in the local community and beyond, and 2) the willingness or even the ability of landowners to continue to manage their private lands in a manner that is compatible with wildlife and public hunting.

9. Other Livestock Activities within the WMA

Domestic sheep trailing through the upper reach of the WMA has occurred since prior to FWP purchasing the property from the Rocky Mountain Elk Foundation. Greater than 10,000 domestic sheep are trailed across the Rock/Swamp and Upper Robb Creek pastures in the spring and fall annually. They typically overnight on the WMA. The administrative rules that guide commercial uses on WMAs became effective in January 2007. However, in 2011 the state legislature passed MCA 87-1-303(3) which states that:

"The commission may not regulate or classify domestic livestock trailing as a commercial activity or commercial use that is subject to licensing, permitting, or fee requirements. Domestic livestock trailing on land owned or controlled by the department is exempt from the requirements of Title 75, chapter 1, parts 1 through 3. The commission may adopt rules governing the timing of and the route to be used for domestic livestock trailing activities to the extent that the rules are necessary both to enable the trailing of domestic livestock across the designated wildlife management area and to protect and enhance state lands. The rules may not:

(i) require a fee for domestic livestock trailing or related activities; or

(ii) prohibit or unreasonably interfere with domestic livestock trailing activities.

(4) For the purposes of this section, the following definitions apply:

(a) "Domestic livestock" means domestic animals kept for farm and ranch purposes, including but not limited to horses, cattle, sheep, goats, and dogs.

(b) "Domestic livestock trailing" means the entering upon and crossing of department lands and the use of the lands for forage by domestic livestock for a maximum of 96 consecutive hours.

II. EVALUATION OF IMPACTS ON THE PHYSICAL ENVIRONMENT

1. Vegetation

The Robb/Ledford WMA ranges in elevation from approximately 6,000 feet at the mouths of Ledford and Robb creeks to 9,200 feet on the upper reaches of the WMA. Average annual precipitation is 15-20 inches, much of which occurs in the form of snow. Rock outcrops exist, but soil is generally free of gravel to depths of 6-12 inches. The basic character of the land involves open rolling rangelands intersected with perennial streams and a small amount of timber in the upper reaches. Rangelands are grass and grass-shrub mixes with timber, primarily Douglas fir (*Pseudotsuga menziesii*). bluebunch wheatgrass, and Idaho fescue. Big sagebrush (*Artemisia tridentata*), black sagebrush (*Artemisia nova*), rubber rabbitbrush (*Ericameria nauseosa*), Rocky Mountain juniper (*Juniperus scopulorum*), and curl-leaf mountain mahogany (*Cercocarpus ledifolius*) are present**.** Sandbar willow stands are common along stream courses and in wet areas. Scattered patches of quaking aspen (*Populus tremuloides*) and serviceberry (*Amelanchier* alnifolia) can be found in areas where soils have a higher moisture level.

From 1958 to 1988, landowners grazed about 2,200 cow/calf pairs annually following a semi-regular schedule that involved using the same pastures at the same time each year on what is now the Robb/Ledford WMA. Grazing occurred from early May through November. Several meadows along Robb and Ledford creeks were irrigated for hay harvest and cattle grazing. This continued until the latter 1980s when the irrigation ceased. Evidence of these meadows remains today. Under FWP's ownership and rest-rotation grazing management, riparian areas along all of the streams have responded positively and are visibly improved. Challenges remain along lower Robb Creek and within the Rock/Swamp Creek pasture where livestock pressures continue to show impacted riparian vegetation.

There have been ongoing (1999 through 2011) riparian inventories conducted by Bitterroot Restoration, Inc., (now known as Ecological Solutions Group LLC.) on streams that flow through the Robb/Ledford WMA. All riparian areas were heavily and negatively impacted prior to FWP ownership. Most have at least stabilized, and many are showing improvement in physical site factors and vegetation. Overall vegetative cover has improved along Robb Creek including improvements in preferred tree and shrub species regeneration and in browse utilization rates. Physically, Robb Creek has experienced a decline in condition since 1999. Channel incisement and livestock-caused alterations to the entire riparian zone have more than offset the modest improvements in rootmass protection and livestock-caused bare ground (Thompson and Hansen 2006). This decline was primarily attributed to lack of water in upland areas and a dependency on Robb

Creek from two different pastures by livestock. There was high and concentrated pressure along 2.5 miles of Robb Creek that was causing this decline. In response, a fence containing livestock water gaps was constructed to prevent livestock from using this stretch of the riparian area.

Montana Fish, Wildlife and Parks established long-term vegetation monitoring sites on the Robb Ledford WMA in 2003 and 2004 at five locations. All five sites provide quantified canopy cover data. Vegetation monitoring includes 40 transects, 80 photo points, 400 photo plots, and 400 Daubenmire quadrats. The monitoring sites are measured once approximately every five years and were measured in 2003, 2004, 2008, and 2013. Data collected to date are insufficient to detect any long-term vegetation trends but accurately describe the current vegetation composition. In general, the WMA hosts the variety of desired native plants expected for the ecological settings. Non-native plants are present on the WMA uplands but in small amounts and are not causing a negative shift in plant composition. Soil surface data indicates stability with no signs of accelerated soils loss (Harrington pers. comm.). Refer to Appendixes K and L for vegetation monitoring data. Non-native plant species that have been identified on the WMA include spotted knapweed (*Centaurea maculosa*), Canadian thistle, field scabiosa (*Knautia arvensi*), blackleaf henbane (*Erica cinerea*), houndstongue, musk thistle (*Carduus nutans*), and mullein (*Verbascum thapsus*). The most common invasive plant on the WMA is houndstongue.

Tall larkspur (*D. barbeyi, D. occidentale*), a native species, is widely distributed in the upper pastures of the R/L System. Larkspur is very palatable but can be toxic to cattle. The plants are most toxic during early growth, and toxicity gradually declines over the growing season.

Alternative A (Proposed Alternative):

The degree and timing of grazing will determine the level of impacts on the land. Livestock grazing impacts soil and vegetation, and hoof action can remove vegetative cover. The impacts of these activities would not be detrimental to overall soil and vegetative health in a properly managed system. Livestock grazing can be managed in a manner that will allow for soil and vegetation maintenance or improvement (Anderson and Scherzinger 1997, Frisina and Morin 1991, Frisina 1991, Alt et al. 1992, Yeo et al. 1993, and Werner and Urness 1996). Impacts of grazing livestock on the WMA will be mitigated through a properly managed grazing system. Plants need adequate rest to increase root mass and carbohydrate storage. The rest-rotation grazing, as developed by Hormay (1970), will allow plants two years of growing season rest out of every three. This allows plants adequate opportunity to establish and maintain their vigor. Additionally, grazing strategies in riparian areas will include herding, salting, riparian fence with water gaps, and water distribution systems to reduce livestock concentrations in these areas (Ehrhart and Hansen 1997, Ehrhart and Hansen 1998). The positive effects of this management system will be manifested on FWP's deeded and associated DNRC and federal lands within the R/L System.

Since implementing the R/L System, the native complement of vegetation has been assessed by FWP's Plant Ecologist four times. In general, results to date show the

composition and abundance of native plant species is in line with range site potential. At this time, there is no indication of a decline in native plant community health. Non-native plants are present on the WMA but are not causing a substantial shift in plant composition. Soil surface data indicates stability of the soil surface with no signs of accelerated soils loss. These data indicate that the current grazing system is not causing detrimental impacts to upland resources.

The installation of a water gap fence along Robb Creek has assisted in redirecting cattle from eroded stream banks and overgrazed riparian vegetation. The establishment of the fence has and will protect riparian vegetation from further grazing pressure which will allow willows and other vegetation to become more vigorous over time and will further allow stream banks to stabilize. The establishment of this riparian fence will also provide an ungrazed control to compare with grazed riparian areas in the future.

Under this alternative, continuation of grazing livestock on the WMA for the six year lease period is not expected to cause substantial negative consequences to desired plant communities.

The spread of invasive plants within the WMA is controlled and managed primarily through the application of herbicides per the guidance of the 2008 Statewide Integrated Noxious Weed Management Plan (Appendix W). Noxious weed infestations continue to challenge WMA staff, especially along riparian areas where the application of herbicides is difficult.

Alternative B: Similar to Alternative A but Montana Fish, Wildlife and Parks would lease the grazing rights on its Deeded and leased lands to the LCGA at the DNRC lease rate. The LCGA would assume all fence and waterline maintenance and repair responsibilities.

All vegetative impacts would be the same as Alternative A with the exception of noxious weed management. Under Alternative B, the WMA maintenance crew would not be responsible for fence maintenance and repair which will make more time available for other land management work.

Alternative C: No Action, discontinue the grazing lease and halt all grazing on the WMA.

Under this alternative, the coordinated grazing management plan across 32,378 acres would cease. The vegetation within the 28,098 acres owned or leased by FWP would no longer be part of a livestock grazing system. Accordingly, forage and cover for wildlife may increase for a time. The long-term impacts to forage quality are unknown. If insufficient disturbance was present to periodically reduce residual grasses and release new vegetation, it is expected that forage quality would decline over time. Montana Fish, Wildlife and Parks would continue to monitor and manage noxious weeds on the WMA. The WMA maintenance crew would be responsible for boundary fence maintenance and repair. This would reduce the time and resources available for other land management responsibilities.

The LCGA would continue to graze the DNRC McGuire property. The benefits of the R/L System to plant community health on the McGuire lease would be lost if continuous grazing practices were implemented. Additionally, forage availability and cover would be severely reduced on the McGuire Lease under an anticipated higher stocking rate. Grazing scenarios that the DNRC, BLM, and USFS might adopt if the R/L System were eliminated are unknown.

2. Fisheries and Water Resources

The WMA contains portions or all of Crow's Nest, Ledford, Robb, Rock, Swamp, and Taylor creeks. A viable fishery presently occurs on the WMA (for a full report of the fisheries values on the WMA, please consult the Management Plan). Species present include rainbow, rainbow-cutthroat hybrids, brown trout, brook trout, Westslope cutthroat trout (WCT), mountain whitefish, and mottled sculpin. Historic livestock and farming uses have influenced stream and riparian conditions, but all of the riparian corridors have responded positively since implementation of the R/L System.

Ledford Creek supports rainbow, rainbow-cutthroat hybrids, brown trout, and mottled sculpin. Based on an inventory in 1991, trout density was estimated at 240 per mile. Brown trout were the predominant species representing 74% of the catchable (6 inches or longer) fish.

Robb Creek is dominated by brook trout but maintains small populations of WCT and mottled sculpin. Based on an inventory in 1991, trout densities were estimated at 496 per mile. Brook trout averaged nearly eight inches in length with the largest exceeding 12 inches. Westslope cutthroat trout comprised only 6% of the game fish population. Sizes ranged to 9 inches in length. Habitat in the surveyed area consisted primarily of a network of beaver ponds connected by short reaches of stream. The majority of habitat was provided by the ponds or woody debris associated with the dams.

Rock Creek contains exclusively WCT. Population densities range from 160 to 300 catchable size fish per mile with the largest fish exceeding 12 inches in length. Fish habitat is limited throughout most of the stream. Two reservoirs appear to provide over-winter habitat to a significant portion of the population. Primary factors influencing habitat include the outlet of the upper reservoir which has eroded a 15-foot gully for approximately 200 yards. This has largely obliterated habitat features for a significant distance downstream. Additionally, a natural slump has confined the channel resulting in steep and eroding banks. The genetic status of this population has not been adequately determined. Preliminary analysis of cutthroat collected in 1995 indicated this population was genetically pure. Subsequent fish collected in 1997 and analyzed in 1998 suggest that the population is either slightly hybridized or carries a rare WCT allele that is electrophoretically indistinguishable from that characteristic in Yellowstone cutthroats or rainbow trout.

Fisheries inventories have not been conducted on Crow's Nest, Taylor, Swamp, or Indian creeks, thus their status is unknown. No surveys have been completed within Ledford, Robb, and Rock creeks since the 1990s.

Alternative A: The grazing system would run from June 22 to October 15 with a maximum of 2,955 AUMs. It is the current grazing system. Montana Fish, Wildlife and Parks would annually lease the grazing rights to the LCGA. Montana Fish, Wildlife and Parks deeded land would be leased at the Standard (Montana average) rate. Montana Fish, Wildlife and Parks DNRC leases would be least at the standard rate or two times the DNRC rate, whatever is lower. Montana Fish, Wildlife and Parks would assume all fence and waterline maintenance and repair responsibilities.

Healthy riparian vegetation and stable stream banks are critical to maintaining a properly functioning stream, clean water, and quality fish habitat. The R/L System established a rest-rotation grazing system, riparian fences in needed areas, and upland water sources (i.e. water tanks) to ensure impacts to riparian areas decrease and their overall health improves. These methods have proven effective in riparian management systems (Ehrhart and Hansen 1997, and Ehrhart and Hansen 1998).

Livestock will consume and trample vegetation and walk on stream banks. However, if managed properly these impacts can be minimized. Although intensive livestock grazing prior to FWP's purchase of the WMA resulted in poor riparian health, the conditions in most riparian areas has improved under the R/L coordinated grazing system (Paul Hansen, Riparian and Wetland Ecologist, pers. communications). Lower Robb Creek and the riparian areas within the Rock/Swamp Creek Pasture have been slower to respond to changes in management. FWP installed a water gap fence along lower Robb Creek to redirect cattle watering locations to designated locations. FWP will continue monitoring riparian habitats in the Rock/Swamp Creek Pasture to determine if further protective measures need to be taken.

Under this alternative, the overall diversity and population of fish species in the WMA's creeks are not expected to be negatively impacted by the presence and movements of cattle through the R/L System pastures.

Alternative B: Similar to Alternative A, but Montana Fish, Wildlife and Parks would lease the grazing rights on its deeded and leased lands to the LCGA at the DNRC lease rate. The LCGA would assume all fence and waterline maintenance and repair responsibilities.

Impacts to fisheries resources under Alternative B would be expected to be the same as under Alternative A.

Alternative C No Action, discontinue the grazing lease and halt all grazing on the WMA.

Riparian habitat health within WMA deeded lands would continue to improve, perhaps at an accelerated rate because woody vegetation would not be subjected to cattle grazing pressures. However, fish diversity and abundance are expected to be similar to that of the grazed alternatives.

Fisheries resources would possibly be negatively impacted by grazing changes that occur on federal and state lands that would no longer be a part of the R/L System. Although the grazing changes on these lands are unknown, the assumption could be made that the LCGA would utilize all of their AUMs on the McGuire parcel annually. This scenario could lead to a decline in riparian health in those areas and could negatively affect fisheries diversity and abundance in Robb Creek.

3. Wildlife

The Robb/Ledford WMA was acquired primarily as an elk winter range. At the time of FWP's acquisition, there was a wintering population of 500-800 elk utilizing it and adjacent lands. Over the last 15 years, an average of 2,038 (range = 1,029 – 2,761) elk have utilized the Robb/Ledford WMA and surrounding lands during the winter months (Appendix V). During the most recent winter survey in February 2013, 2,069 elk were documented on the winter range including the Robb/Ledford WMA. Over the last 10 years, elk have taken advantage of more prevalent south-facing slopes, available forage, and less snow at lower elevations in the Spring Brook and Wagner Creek drainages adjacent to the Robb/Ledford WMA. This has created issues because a large proportion of this area is privately owned lands that provide for summer livestock production. These wintering elk have been consuming forage that could be used by livestock and have been causing significant damage to private fences. The exact cause of this shift has not been determined. Hypotheses include poor vegetation quality on the Blacktail WMA resulting from extended livestock absence, wolf-caused displacement of elk, extended hunting season pressure from 2004 through 2008 on traditional winter range, and more suitable winter habitat at lower elevations. Elk have made use of all areas and ownerships to date during the 2013-14 winter. This elk herd principally summers in the Gravelly, Snowcrest, and Centennial mountain ranges on federal lands.

Mule deer occupy the Robb/Ledford WMA and surrounding lands during all seasons with the greatest occupancy occurring during the winter and early spring months. Over the last 14 years, an average of 214 (range = 93-317) mule deer were observed on and surrounding the Robb/Ledford WMA during winter surveys. During the same time period, an annual average of 366 (range = 224-572) mule deer were observed on the Robb/Ledford WMA and surrounding lands during spring trend surveys (Appendix V). During the 2013-14 winter survey, 107 mule deer were observed. Fifteen (14%) were on the WMA while the remaining 86% were occupying neighboring private, federal, and state lands.

White-tailed deer occupy the Robb/Ledford WMA during snow free months. However, numbers are relatively low and often less than 25. Robust white-tailed deer populations occupy the Ruby River riparian north of the WMA. White-tailed deer occupancy on the WMA is expected to increase as riparian areas continue to recover and expand under more restrictive and structured livestock management.

Moose utilizing the WMA are mostly part of the population in Hunting District 331 and likely include migrants from Hunting District 332. Since the winter of 1987-88, winter moose surveys have been completed in Hunting District 331 13 times. The average number of moose observed per survey was 57 (range = 20 – 135). The

most recent survey was completed during the winter of 2010-11. Seventy-five moose were observed. Four of 75 (5%) were observed on the Robb/Ledford WMA (Appendix V). Moose use of the Robb/Ledford WMA is expected to increase as riparian areas continue to recover and expand under more restrictive and structured livestock management.

There is a population of antelope in Hunting District 321 which includes the Robb/Ledford WMA. A segment of this population makes use of the WMA yearlong. From 2000 through 2011, the antelope population in Hunting District 321 was estimated annually. The annual mean was 2,578 (range = 1,303 – 5,222) antelope (Appendix V). During the 2007 survey, approximately 150 of 1,596 (9%) observed antelope were on the Robb/Ledford WMA.

Bighorn sheep were reintroduced to the Greenhorn Mountains north of the Robb/Ledford WMA in 2003 and 2004. This population remains present and has been documented occupying the western Greenhorn, northern Snowcrest, and entire Ruby Mountain ranges yearlong. The last structured survey of this sheep population was in May 2009. Thirty bighorn sheep were observed with eight (27%) observed on or surrounding the Robb/Ledford WMA. Three bighorn rams were observed on DNRC lands in Snowslide Creek during the 2013 post hunting season mule deer survey. Several bighorn sheep observations were reported in the same area by hunters during the 2013 general hunting season.

Grizzly bears, black bears, mountain lions, and wolves frequent the area. Wolves have denned on or near the area in the past. There have been no confirmed livestock losses from bears, wolves, or lions on the WMA. However, there have been on surrounding private, DNRC, and federal lands. One wolf pack was removed from the area in 2009, but only after incremental removals of individuals failed to stop the depredation. Livestock depredation on this landscape is to be expected. Because of large home range sizes and abilities, and propensities for large predators to move long distances, whether there are livestock on the WMA or not will not greatly increase or decrease depredation losses. Grizzly bears remain on the threatened list and will receive additional protection consideration.

Blue grouse, sage grouse, ruffed grouse, and Hungarian partridge occur on the WMA as well as a variety of small mammals, but no population estimates have been made for these species. Sage grouse winter on the WMA, but no leks have been documented on the WMA. Waterfowl nesting occurs along the riparian areas containing beaver dams. The primary waterfowl use is by mallards (*Anas platyrhynchos*) and Canada geese (*Branta Canadensis*). Nesting and brood rearing habitats for waterfowl are likely to increase with beaver presence and the rest-rotation grazing system implemented on the WMA. Ritter and Gower (Appendix N) demonstrated negligible differences in small mammal diversity and abundance on the Robb/Ledford WMA and ungrazed Blacktail WMA.

Alternative A (Proposed Alternative):

Livestock grazing will impact vegetation across the WMA relative to food and cover for a variety of game and nongame species. The impact will result in the reduction of vegetative cover on portions of the WMA. Under the existing grazing system

and stocking level, significant residual forage in rest pastures and on secondary range (i.e., steeper terrain) in grazed pastures has provided standing crops of lightly or ungrazed grass providing good wildlife cover and forage throughout much of the WMA. Shamhart et al. (2012) demonstrated, as they predicted, that rest pastures within rest-rotation grazing system are important to and selected by wintering elk. This is of no surprise because rested pastures provide the greatest amount of winter forage.

Impacts to available forage would be managed in the proposed grazing lease by continuation of the R/L System which includes: 1) one-third of the WMA being completely rested annually; 2) one-third of the WMA will not be grazed until after seed ripe in mid-August; and 3) the stocking density will average 6 acres/AUM compared to around 3.5 acres per AUM allowed on many public land leases in the area. Also, more vegetation will be left in the low elevation, early use pastures than prior to 2010 because grazing will be limited to no more than two weeks as compared to the five to eight weeks of use under the former R/L System grazing practice. Continuation of the R/L System will maintain grazing rest and conservative stocking rates on associated state and federal lands expanding the footprint of wildlife friendly livestock grazing.

Livestock grazing has positively benefited elk in other areas. In the Elkhorn Mountains (Hunting District 380), Grover and Thompson (1986) found that elk selected feeding sites that were grazed by cattle the previous growing season. The removal of older forage by livestock helps establish more attractive forage for elk the following spring (Frisina 1992). Domestic livestock grazing has been shown to improve accessibility, palatability, and nutritive quality of forage plants preferred by wild herbivores (Jourdonnais and Bedunah 1990). It should be noted that any increased elk use on the WMA grazed lands may be more tied to the reduction in older standing residual forage than to increased nutritive value since the nutritive value of grass is greatly diminished during the winter months when elk are normally on the WMA.

Shamhart et al. (2012) suggested that the rest-rotation grazing system on the Wall Creek WMA had minimal effects on overall elk winter distribution. It resulted in subtle shifts in elk distribution within the grazing system. Elk selected for rested pastures. However, no large scale shifts in elk distributions into or out of the WMA were quantified. Although, wintering elk showed tendencies to select rested pastures on the Wall Creek WMA, it is important to remember that rested pastures are part of the grazing system. That is, rested pastures are not the same as rangelands devoid of livestock grazing. Elk use of the Wall Creek WMA as winter range nearly tripled following the implementation of structured livestock grazing on the WMA. Shamhart et al. (2012) cautioned that this increase was not the result of the grazing system. It was the result of elk populations increasing across the entire herd unit. However, the results support the concept that productive elk winter range and summer livestock grazing can occur on common landscapes. Similar increases in wintering elk have been observed on the winter range containing the Robb/Ledford WMA post rest-rotation grazing implementation. Wintering elk numbers there increased from 500-800 at the time of purchase in the late 1980s to a more recent 15-year average of 2,038 (Appendix V). Again, these increases should not be attributed to the grazing system because populations increased

across the entire elk management unit. However, they further support the concept that productive elk winter range and summer livestock grazing can overlap. Frisina and Morin (1991) found increasing elk utilization of the grazed portion of the Fleecer Mountain Winter Range in the years following the implementation of a rest-rotation grazing system.

In summary, Shamhart et al. (2012) recommended that “wildlife managers employing livestock grazing systems on ungulate winter range maintain rested pastures in existing rotational grazing systems.” The authors noted that their results “do not indicate that resting the entire grazing system would benefit elk” and based on findings from Alt et al. 1992, “it is unlikely that resting the entire area would improve vegetative resources for elk.” The authors go on to suggest that “rested pastures within a grazing system may be an effective tool for shifting the distribution of wintering elk from adjacent private lands to publically owned lands employing rotational grazing systems” and that “the collaboration between wildlife and livestock managers to maintain grazing systems on lands managed for wildlife may also foster cooperation between the two groups.”

The distribution of grazed and ungrazed pastures creates a mosaic of habitats that have accommodated a wider variety of species with different habitat requirements. Resident and transient wildlife species have benefited from the increased food and cover that has resulted from R/L System compared to the habitat health under previous ownership. No significant differences have been documented between wildlife use within the R/L System and the ungrazed Blacktail WMA. However, additional rigorous comparisons need to be completed.

Small mammal inventories completed by Ritter and Gower (Appendix N) showed no significant difference in small mammal diversity of abundance between the grazed Robb/Ledford and ungrazed Blacktail WMAs. Douglass and Frisina (1993) demonstrated that deer mouse (*Peromyscus maniculatus*) and montane vole (*Microtus montanus*) densities are greatest within the rest pasture of a rest-rotation grazing system but also noted that grazed pastures make mice and voles more susceptible to raptors. The authors suggest that the dynamic of rest pastures producing greater mouse and vole densities and grazed pastures exposing mice and voles to raptors is beneficial to the raptors. Douglass and Frisina (1993) summarized that “ The Montana Department of Fish, Wildlife and Parks is meeting its primary goal of using the grazing system to help provide high quality habitat for elk while at the same time providing habitat to maintain substantial prey base for hawks and owls as watchable nongame wildlife.” Beaver colony inventories completed on the grazed Robb/Ledford and ungrazed Blacktail WMAs had no significant difference in colony density (Ritter and Gower 2014).

Under Alternative A, the presence of cattle on the WMA’s landscape will not significantly impair or disturb general wildlife movements. The continuation of the R/L System will limit impacts to forage and cover for wildlife and continue to maintain and enhance quality and palatability for ungulates and nongame species. Additionally, the six-year lease term will allow FWP adaptability to continue to evaluate the landscape’s response to the R/L System after two additional grazing cycles.

Alternative B: Similar to Alternative A but Montana Fish, Wildlife and Parks would lease the grazing rights on its Deeded and leased lands to the LCGA at the DNRC lease rate. The LCGA would assume all fence and waterline maintenance and repair responsibilities.

Impacts to wildlife resources under Alternative B would be expected to be the same as under Alternative A.

Alternative C: No Action, discontinue the grazing lease and halt all grazing on the WMA.

Greater amounts of winter forage will exist on deeded and DNRC lands leased by FWP since cattle will no longer be consuming a portion of the vegetation each year. By not grazing livestock, potential benefits from removing old forage improving the quality and palatability of grass for ungulates and nongame species would not occur on FWP deeded or leased lands. Literature on grazing improving the nutritional quality of wintering elk forage is conflicting. Detling et al. (1979) demonstrated increased nutritional quality of blue gramma (*Bouteloua gracilis*) following simulated grazing and McNaughton (1983) showed that grazing removed old plant materials which stimulated new growth and increased plant nutrition. Ganskopp et al. (1992) found that in the absence of herbivory, dead vegetation builds, making the area less desirable for grazers due to the abundance of unpalatable structural plant material. On the contrary, Wambolt et al. (1997) demonstrated that spring grazing did not significantly increase winter nutritional quality in bluebunch wheatgrass which is a primary elk forage on the Robb/Ledford WMA. Regardless of plant nutrition, Alt et al. (1992) noted that during the 21 years that livestock grazing was absent from Wall Creek WMA, elk use of the areas was limited and game damage complaints on adjacent private lands increased. Shamhart et al. (2012) suggest that it is “unlikely that resting the entire area would improve vegetation resources for elk.”

Any impacts caused by cattle movements through bird nesting or burrow sites would be eliminated. Nesting bird surveys need to be completed and compared to the ungrazed Blacktail WMA to better understand the impact, if any, livestock are having.

Small mammal inventories completed by Ritter and Gower (Appendix N) showed no significant difference in small mammal diversity of abundance between the grazed Robb/Ledford and ungrazed Blacktail WMAs. The small mammal and raptor benefits decribed by Douglass and Frisina (1993) would be lost.

Since the DNRC McGuire property would not be a part of a cooperative grazing regime, residual forage and cover available to wildlife would likely be substantially reduced because of continual grazing by cattle. Montana Fish, Wildlife and Parks considers this scenario less than desirable because of the high value of this parcel to wintering elk. It is unknown what management direction the BLM and USFS might take in this situation since grazing on their lands has been tied to the R/L System.

4. Soil Resources

Some rock outcrops exist, but soil is generally free of gravel to depths of 6-12 inches. Over the past 50 years, soils of the WMA have been exposed to disturbances from livestock use as well as resident and transient wildlife.

Alternative A (Proposed Alternative):

Montana Fish, Wildlife and Parks vegetation monitoring data has demonstrated that soil surfaces have remained stable with no signs of accelerated soils loss (Harrington pers. comm.). After greater than 10 years under the current rest-rotation system, soil loss has not been identified as a major issue within riparian areas, even those experiencing poor health. These conditions are not expected to decline if the current grazing system is continued.

Alternative B: Similar to Alternative A but Montana Fish, Wildlife and Parks would lease the grazing rights on its Deeded and leased lands to the LCGA at the DNRC lease rate. The LCGA would assume all fence and waterline maintenance and repair responsibilities..

Impacts to wildlife resources under Alternative B would be expected to be the same as under Alternative A.

Alternative C: No Action, discontinue the grazing lease and halt all grazing on the WMA.

Impacts to soil resources under Alternative C would be expected to be the same as under Alternative A.

5. Access and Recreation

The Robb/Ledford WMA is open to unlimited public access from May 15 through December 1 annually. The WMA is closed to all public access from December 2 through May 14 annually to provide security to wintering wildlife.

The Robb/Ledford WMA is located in deer and elk Hunting District 324. Recreational hunting pressure for elk is high. Over the past five years, hunter effort data shows that an average of 1,373 elk hunters have spent an average of 8,317 hunter days afield in Hunting District 324. Alder Check Station data from 2013 showed that 44% of hunters hunting in the upper Ruby River Watershed utilized Hunting District 324. Thirty-one percent of hunters resided in Madison County while the remaining 69% were from some other Montana County (59%) or were non residents (10%). Elk hunting opportunities on the WMA are most available during years with early and deep snow or both.

Recreational hunting pressure for deer is relatively low. Antlered buck and antlerless mule deer harvest are both limited by permits. There are currently 25 permits available for antlered buck and no licenses available for antlerless mule deer. From 2007 through 2011 (most current data), an average of 430 hunters spent an average of 2,703 days hunting deer in HD 324. Mule deer utilize the

WMA year around with greatest concentrations occurring during winter months. Therefore, some level of mule deer hunting is present on the WMA during the entire fall hunting seasons. White-tailed deer are present in low numbers, and the majority of hunting and harvest is opportunistic. Limited white-tailed deer hunting is available on the WMA until snow accumulation begins. At that point, white-tailed deer migrate down in elevation to the Ruby River.

Moose utilize the WMA year around with the greatest concentrations occurring during winter months. Therefore, some level of moose hunting is present on the WMA during the entire fall hunting seasons. Moose harvest opportunities in HD 331 are currently limited to 5 antlerless and 8 antlered bull moose.

Pronghorn utilize the WMA year around, and hunting opportunities are ample throughout the fall seasons. The WMA is located in Pronghorn HD 321. Hunter harvest opportunities are limited by permit. However, from 2008 through 2012, an average of 321 antelope hunters spent an average of 1,064 hunter-days afield in HD 321.

Upland game bird hunting opportunities exists for blue grouse, sage grouse, occasional ruffed grouse, and Hungarian partridge. The abundance of birds available for harvest varies annually. Trapping opportunities exist for predator and furbearer species while the WMA is open for recreational access.

Fishing opportunities for various species of trout exist in many of the creeks within the WMA. Specific species locations were previously identified in Section II, Fisheries and Water Resources.

The WMA also provides public access to neighboring federal and state lands that offer hunting and fishing opportunities for a variety of species. Access to and through the WMA provides opportunities for non-consumptive recreational pursuits such as hiking, camping, wildlife viewing, plant viewing, and photography.

Alternative A (Proposed Alternative):

The presence of cattle would not significantly restrict recreational use of the WMA. Some individuals may find livestock along their fishing stream or in other areas offensive, but this is not expected to be a significant problem to the majority of the public that use the WMA. Livestock would only occupy one of six pastures within the R/L System at any given time during the grazing season and would be absent from the entire R/L System from October 16 through June 22 of the following year. Livestock would be present in one of six pastures during most of the big game archery and upland game bird seasons and a portion of the antelope rifle season. Livestock would be absent from the R/L System during the entire general rifle season. This level of livestock presence could offend some hunters, however the majority of users will be unimpacted.

Non-consumptive recreation would be impacted aesthetically if individuals recreated in use pastures. However, livestock is a part of the Montana landscape and users have varying tolerances for livestock presence. No significant changes to recreational opportunities are anticipated if this alternative was implemented.

Alternative B: Similar to Alternative A but Montana Fish, Wildlife and Parks would lease the grazing rights on its Deeded and leased lands to the LCGA at the DNRC lease rate. The LCGA would assume all fence and waterline maintenance and repair responsibilities.

Impacts to wildlife resources under Alternative B would be expected to be the same as under Alternative A.

Alternative C: Alternative C: No Action, discontinue the grazing lease and halt all grazing on the WMA.

Impacts would be the same as Alternative A with regard to recreational access. Cattle would not be present on the WMA and therefore potential negative impacts would not occur.

6. Community Impacts and Land Use

Alternative A (Proposed Alternative):

Alternative A will result in up to 2,955 AUMs of summer pasture available to the LCGA. In return, the LCGA cooperators will most likely maintain their 20,295 acres of deeded land as undeveloped native range available to up to 825 wintering elk, approximately 125 wintering mule deer, 125 antelope year around, 300 white-tailed deer year around, and 1,230 hunter-days per year. Maintaining these deeded lands as open space native range will also benefit suites of nongame, upland game bird, furbearer, and waterfowl species.

Alternative B: Similar to Alternative A but Montana Fish, Wildlife and Parks would lease the grazing rights on its Deeded and leased lands to the LCGA at the DNRC lease rate. The LCGA would assume all fence and waterline maintenance and repair responsibilities.

Impacts to wildlife resources under Alternative B would be expected to be the same as under Alternative A.

Alternative C: No Action, discontinue the grazing lease and halt all grazing on the WMA.

Under Alternative C, no grazing would be allowed on WMA and DNRC lands controlled by FWP. Montana Fish, Wildlife and Parks would continue to manage the WMA for the benefit of its natural resources (wildlife, fisheries, and vegetation) while providing public access for hunting, fishing, trapping, and non-consumptive activities.

The cooperative grazing program between FWP and the LCG would be dissolved. Grazing practices on all land ownerships beyond the boundaries of the WMA would likely intensify to try maintain existing livestock production in the area. Under this scenario, the native wildlife habitat and open spaces provided on ranches associated with this lease may be in more jeopardy of alternative uses that are less

conducive for wildlife. Tolerance for wildlife and recreation on the LCGA's 20,295 acres of deeded land may also erode. Montana Fish, Wildlife and Parks' standing in a ranching-dominated region would also erode. The department's ability to develop, maintain, or restore working relationships with private landowners could also be threatened. Increased fuel loads would increase the risk of wildfire which could have negative impacts to the local communities and their resources.

7. Cultural and Historic Resources

Alternative A (Proposed Alternative):

If Alternative A was implemented, the grazing of cattle on the WMA is not expected to disturb cultural or historic resources. Previous fencing and water system improvements that were installed as part of the 2000 grazing lease did not uncover previously unknown sensitive sites. If cultural or historic resources are discovered during future projects, FWP will contact the State Historic Preservation Office (SHPO) for guidance and assistance.

Alternative B: Similar to Alternative A but Montana Fish, Wildlife and Parks would lease the grazing rights on its Deeded and leased lands to the LCGA at the DNRC lease rate. The LCGA would assume all fence and waterline maintenance and repair responsibilities.

Impacts to wildlife resources under Alternative B would be expected to be the same as under Alternative A.

Alternative C: No Action, discontinue the grazing lease and halt all grazing on the WMA.

Under Alternative C, no impacts to cultural or historic resources are anticipated.

8. Risk/Health Hazards

Alternative A (Proposed Alternative):

The presence of cattle on the WMA would include a very low risk of human injury if a cow were to chase or attack a recreationist.

Alternative B: Similar to Alternative A but Montana Fish, Wildlife and Parks would lease the grazing rights on its Deeded and leased lands to the LCGA at the DNRC lease rate. The LCGA would assume all fence and waterline maintenance and repair responsibilities.

Potential Risk of Health Hazards under Alternative B would be expected to be the same as under Alternative A.

Alternative C: No Action, discontinue the grazing lease and halt all grazing on the WMA.

Alternative C would remove the risk of tall larkspur poisoning of livestock and the low risk of human injury resulting from livestock presence on the WMA.

9. Public Services

Alternative A (Proposed Alternative):

This alternative will result in the commitment of FWP's funds for the Kelly Spring Waterline oversight and continuing management and maintenance of the R/L System. Some ongoing maintenance of fences is expected because of cattle and bison presence on adjacent private and state lands, and wildlife occurrence on all lands. Any maintenance expenses will be covered by the existing operations and maintenance budget for the WMA.

Alternative B: Similar to Alternative A but Montana Fish, Wildlife and Parks would lease the grazing rights on its Deeded and leased lands to the LCGA at the DNRC lease rate. The LCGA would assume all fence and waterline maintenance and repair responsibilities.

Impacts to wildlife resources under Alternative B would be expected to be the same as under Alternative A with the exception that under Alternative B the LCGA would be responsible for maintaining fences.

Alternative C: No Action, discontinue the grazing lease and halt all grazing on the WMA.

This alternative would require FWP to install a fence along the McGuire property boundary to keep the LCGA's cattle from grazing on the WMA. This boundary fence would be approximately 14.5 miles long and would cost approximately $114,840. Additionally, there are no boundary fences separating WMA lands from the BLM Blacktail and USFS Snowcrest allotments. Assuming the BLM and USFS continues to graze these parcels, FWP would need to install 14.6 miles of boundary fence to prevent those livestock from grazing on the WMA. This cost would be approximately $115,632

Under this alternative, the previously installed improvements (water system and fencing) within the WMA for the benefit of R/L grazing system would be abandoned, removed, or reconfigured. The Kelley Spring Waterline would no longer be used by FWP, but it would remain on the WMA to service downstream users. Montana Fish, Wildlife and Parks would no longer contribute funds to have the waterline maintained. In 2013, FWP paid $5,055 toward this maintenance.

Internal fencing completed for the R/S System may be removed over time from within the WMA. This effort would involve removing approximately 23.1 miles of fence, costing approximately $73,181. Impacts to FWP would be most significant under this alternative, both in terms of financial and staffing resources.

10. PUBLIC PARTICIPATION

1. Public involvement:

The public will be notified in the following manners to comment on this current EA, the proposed action, and alternatives:

- Two public notices in each of the following papers: Bozeman Chronicle, Butte Standard, and the Madisonian.
- One statewide press release.
- Public notice on the Fish, Wildlife & Parks web page: http://fwp.mt.gov, and
- Copies of this environmental assessment will be distributed to the neighboring landowners and interested parties to ensure their knowledge of the proposed project.

2. Duration of comment period:

The public comment period is currently proposed for 30 days from March 19 through April 18. Written comments will be accepted until 5:00 p.m., March 18, 2014 and can be mailed to the address below:

Robb/Ledford WMA Grazing Lease
Montana Fish, Wildlife & Parks
1400 S. 19th Ave.
Bozeman, MT 59718-5496

Or e-mail comments to: RLGrazing@mt.gov

PART V. EA PREPARATION

1. Based on the significance criteria evaluated in this EA, is an EIS required? (YES/NO)? No
2. If an EIS is not required, explain why the EA is the appropriate level of analysis for this proposed action.
3. Based upon the above assessment, which has identified a very limited number of minor impacts from the proposed action that can be mitigated, an EIS is not required and an environmental assessment is the appropriate level of review.

2. Persons responsible for preparing the EA:

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3. **List of agencies or offices consulted during preparation of the EA:**

Ecological Solutions Group, LLC
Montana Fish, Wildlife & Parks:
Fish and Wildlife Division, Legal Bureau
United States Forest Service, Ennis, Montana
Bureau of Land Management, Dillon, Montana

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APPENDICES

A. General location map for the Robb-Ledford WMA
B. Robb Ledford Wildlife Management Area landownership and leases

C. Riparian acres by drainage within the Robb-Ledford Coordinated Grazing System
D. Woodland Patches by Type, Size, and Landownership within the Robb/Ledford System Area
E. Robb/Ledford Wildlife Management Area Investment from 2000-13
F. Current Robb/Ledford Coordinated Grazing System Fences
G. Big Game Survey Trends Associated with the Robb/Ledford Wildlife Management Area
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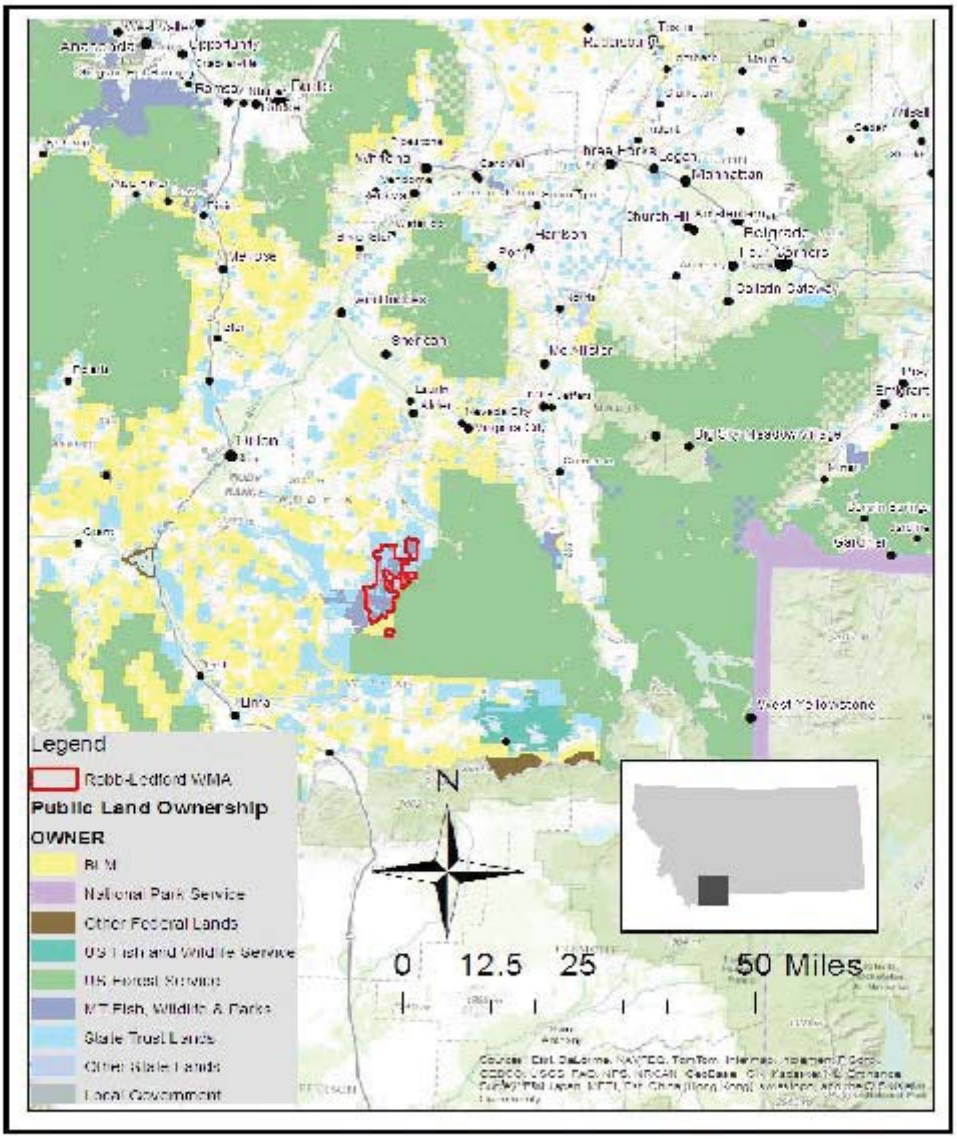
I. Robb/Ledford System Proposed grazing Rotation Schedule
J. Robb/Ledford Wildlife Management Area Grazing Lease Annual Income and Costs by Alternative
K. Expected Fence Structure on the Robb/Ledford Wildlife Management Area if Livestock Grazing No Longer Occurred

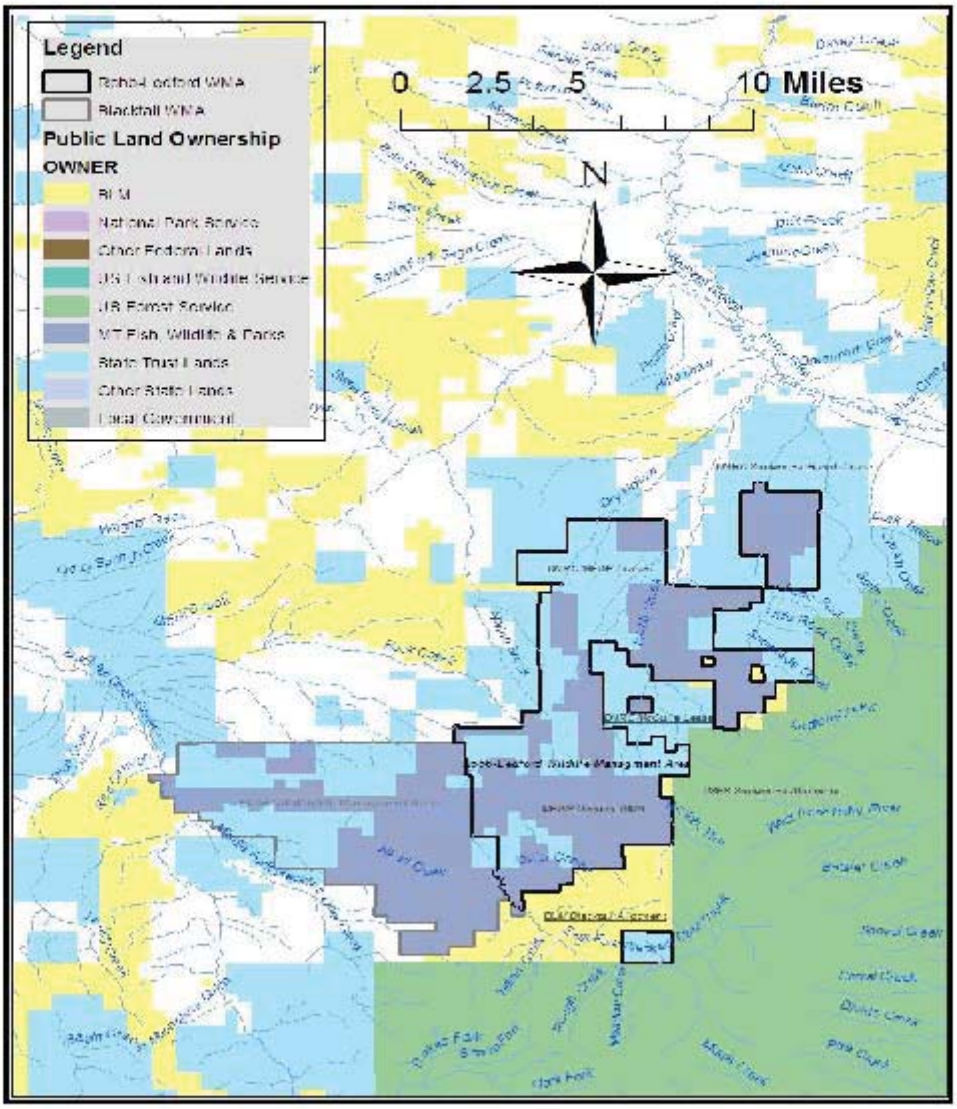
Appendix A

General Location Map for the Robb/Ledford Wildlife Management Area



Appendix B

Robb/Ledford Wildlife Management Area Landownership and Leases



Appendix C

Riparian Acres by Drainage within the Robb-Ledford Coordinated Grazing System AREA

Drainage	Acres	Ownership
Spring Creek	9.3	MFWP
Robb Creek	150.9	MFWP
Ledford Creek	90.6	MFWP
Dry Hollow	23.6	MFWP
Rock Creek	54.0	MFWP
Swamp Creek	12.2	MFWP
	340.6	**MFWP TOTAL**
Robb Creek	114.0	McGwire Lease
	114.0	**McGwire Lease Total**
Robb Creek	47.3	MFWP DNRC Lease
Rock Creek	13.0	MFWP DNRC Lease
	60.3	**MFWP DNRC Lease Total**
	514.9	**Total**

Appendix D

Woodland Patches by Type, Size, and Landownership within the Robb/Ledford System Area

Lat	Long	Acres	Ownership
	Deciduous Woodland		
44.9673	-112.1483	15.3	MFWP
44.9203	-112.1701	4.8	MFWP
44.9204	-112.1718	1.1	MFWP
		21.2	**MFWP Total**
44.9542	-112.1663	4.8	McGwire Lease
44.9542	-112.1494	14.5	McGwire Lease
44.9509	-112.1444	2.9	McGwire Lease
44.9476	-112.1406	2.8	McGwire Lease
44.9462	-112.1369	5.0	McGwire Lease
44.9413	-112.1499	20.6	McGwire Lease
		50.6	**McGwire Lease Total**
	Coniferous Woodland		
44.9679	-112.1219	7.7	MFWP
44.9653	-112.1238	5.1	MFWP
44.9626	-112.1259	19.1	MFWP
44.9539	-112.1235	66.7	MFWP
44.9433	-112.1106	164.0	MFWP
44.9513	-112.1125	9.1	MFWP
44.9539	-112.1147	9.8	MFWP
44.8901	-112.1493	236.0	MFWP
44.8669	-112.1937	418.0	MFWP
44.8969	-112.1937	8.1	MFWP
44.9140	-112.1984	14.2	MFWP
		957.8	**MFWP Total**
44.9675	-112.1020	79.8	MFWP DNRC Lease
44.9605	-112.1025	93.0	MFWP DNRC Lease
44.9222	-112.1403	3.2	MFWP DNRC Lease
44.9154	-112.1453	25.6	MFWP DNRC Lease
44.9131	-112.1485	4.0	MFWP DNRC Lease
44.8782	-112.2056	35.6	MFWP DNRC Lease
44.8831	-112.2130	15.6	MFWP DNRC Lease
		256.8	**MFWP DNRC Lease Total**
44.9553	-112.1306	7.0	McGwire Lease
44.9339	-112.1338	3.0	McGwire Lease
44.9318	-112.1331	3.0	McGwire Lease
		13.0	**McGwire Lease Total**
44.9593	-112.111	44.0	BLM
		44	**BLM Total**

Appendix E

Robb/Ledford Wildlife Management Area Investments from 2000 through 2013

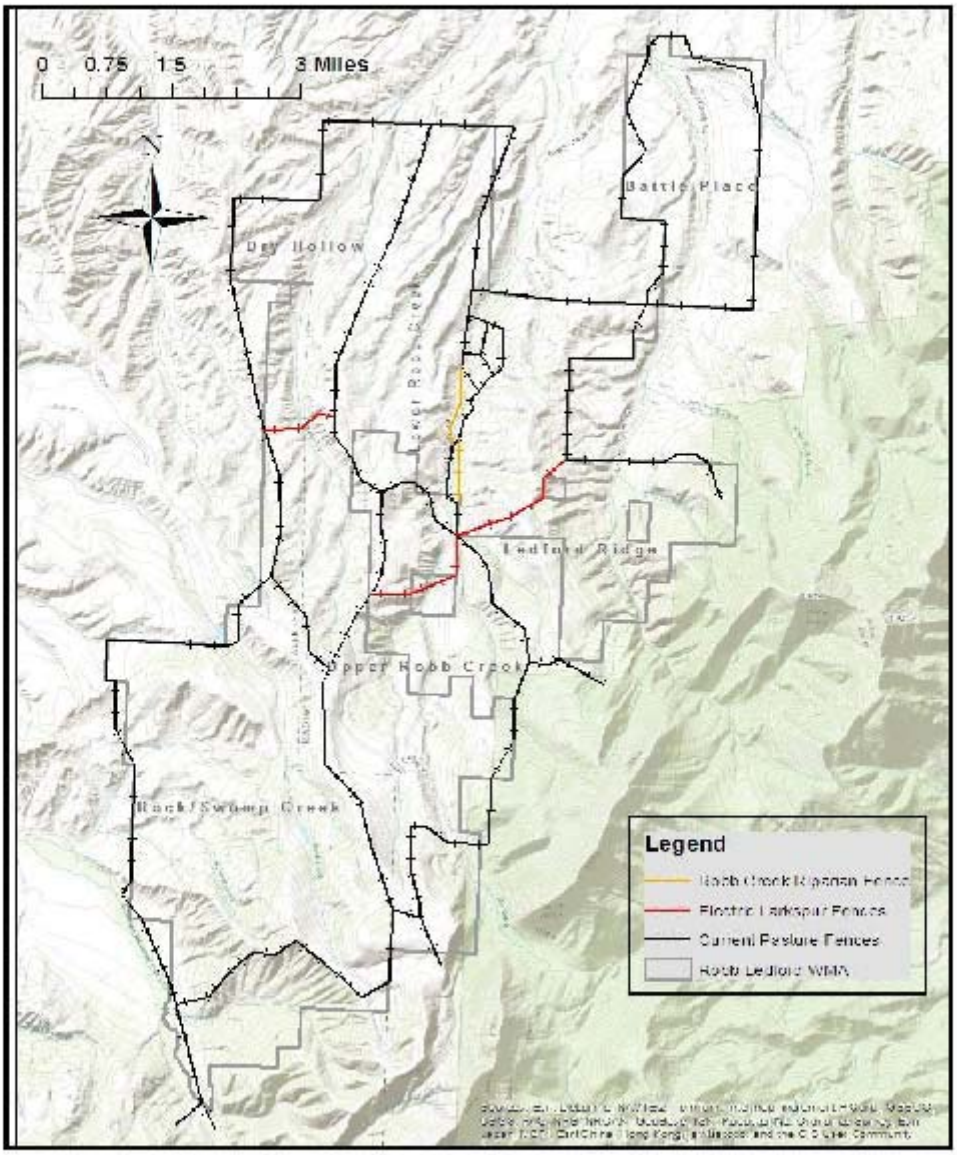
From 2000 through 2009				
Grazing Associated		Non Grazing Associated		Total
Investment	Cost	Investment	Cost	
Interior Fencing	*$149,081*	*Solar/Wind Power to cabin**	*$25,008*	
Kelly Spring Waterline	*$121,972*	*Dismantle 4 Buildings*	*$2,197*	
		Robb/Blacktail; repair doors, window, remove cross fence		
		Vegetation Assessments completed by Bitterroot Restoration	*$26,566*	
Grazing Fencing	*$ 94,947*	*Fence removal/cattle guard/demolish building*	*$8,000*	
Fencing – McGuire/Ledford/ E Robb Creek/remove cattle guard at Ledford Creek	*$ 69,884*	*South end fence removal*	*$4,999*	
		Install cattle	*$4,999*	
Lease Payment Received From LCGA (FY10-13)	*-($314,300)*	*guard/gate/remove fence upstream on Ledford Ck/remove hay corrals*		
		Install entrance sign	*$4,997*	
		Survey costs	*$850*	
From 2010 through 2013				
Riparian Fence Construction (FY 11)	*$ 23,766*	*Vegetation Health Assessment (FY 11)*	*$22,903.*	
		Fence Removal (FY 11)	*$8,000*	
		Vegetation Health Assessment (FY 12)	*$24,925*	
Water Gaps and Developments (FY 13)	*$ 44,666*	*Replacement of Boundary Fence (FY 14 - proposed)*	*$17, 000*	
Kelly Spring Waterline Maintenance (FY 13)	*$5,055*	*Cabin Repairs (FY 13)*	*$569*	
Lease Payment Received From LCGA (FY10-13)	*-($125,720)*			
Fence Maintenance Agreement with LCGA	*$5,000*			
Total	**$74,351**		**$151,013**	**$225,364**

*The solar and wind power investments to the Robb-Ledford cabin were made using federal grant and not sportsmen's funds.

Note: All expenses were rounded to the nearest whole dollar.

Appendix F

Current Robb/Ledford Coordinated Grazing System Pasture Fences



Appendix G

Big Game Survey Trends Associated with the Robb/Ledford Wildlife Management Area

Total elk observed during annual winter surveys of Hunting District 324.

Winter	Total Elk Observed
1999-00	2,550
2000-01	2,664
2001-02	2,761
2002-03	2,515
2003-04	1,029
2004-05	2,491
2005-06	1,827
2006-07	1,786
2007-08	1,928
2008-09	2,086
2009-10	2,060
2010-11	2,049
2011-12	1,145
2012-13	1,611
2013-14	2,069
Mean	**2,038**

Note: These elk utilize the Robb/Ledford WMA, Blacktail WMA, and surrounding federal and private lands at lower elevations during the winter months.

Appendix H.

FWP MINUMUM STANDARDS FOR GRAZING LIVESTOCK

Introduction

The following grazing standards represent the minimum required by FWP of a landowner who reserves the right to pasture and graze livestock (private and public land). These standards apply to all FWP funded projects; at times it may be necessary to provided more rest from grazing than described as minimum to meet specific wildlife or fisheries habitat objectives. The minimum is most frequently applied (without additional adjustment for wildlife and fisheries needs) on projects like conservation easements and Upland Game Bird Habitat Enhancement Projects where the property remains in private ownership and agricultural use remains the primary objective. On FWP WMAs, wildlife production and habitat conservation are the primary objective and when livestock grazing occurs it is not unusual for the amount of rest from livestock grazing to exceed that required by the minimum standard. Also, on some areas where wildlife production is the primary objective, grazing intensity may be reduced to a level significantly lower than allowable by the minimum standard. These standards are designed to address management of both upland and riparian landforms.

Why a minimum standard?

Livestock grazing is the predominant land use in Montana. As the state's primary fish and wildlife management agency, FWP is actively involved with livestock grazing as it influences fish and wildlife habitats throughout Montana.

About 2.4 million cattle are maintained in Montana. Livestock grazing occurs on about 69% of the state's land surface. Potential impacts to fish, wildlife and their habitats caused by grazing are well documented in the literature. Also well documented are potential benefits for conservation that can be derived for some wildlife species through carefully planned livestock grazing strategies. Conserving wildlife habitat while continuing livestock grazing typically requires management strategies that differ from those employed for the sole purpose of maintaining a sustainable livestock forage base that maximizes livestock production. One reason for the difference in management strategies is because vegetation is much more than a forage base for wildlife. Vegetation species composition, structure, and diversity are important aspects of cover essential to the survival and production of wildlife. Healthy riparian communities are critical not only for aquatic species but for proper channel and flood plain function. Seventy-five percent of all Montana wildlife species rely on riparian areas for all or a portion of their live. This includes many species covered in the FWP's Comprehensive Fish and Wildlife Strategy. When livestock grazing occurs, it is not unusual for cover to be the population limiting factor for many species. Aldo Leopold referred to this concept of habitat quality as 'Quality of Landscape'. Addressing cover is especially important in implementation of FWPs Comprehensive Fish and Wildlife Strategy. It is therefore possible that a livestock operator may be employing a grazing strategy that maintains a sustainable forage base on most of the property, but may not be providing adequate forage, cover, or floral diversity for important fish and wildlife species.

Sustainable livestock production often employs grazing strategies emphasizing production and maintenance of grass species while placing less emphasis on the maintenance of forbs and woody plants. Many wildlife species require grazing strategies that emphasize healthy woody plants and availability of forbs and grass seed heads on at least portions of the landscape every year. The maintenance of robust woody vegetation and cover is also a very important component of healthy riparian systems. Healthy ecological systems are essential for a variety of aquatic and terrestrial riparian obligates.

The purpose of FWPs minimum grazing standards to achieve a balance between maintaining sustainable agriculture and quality fish and wildlife habitat on working ranches yet provide flexibility to conserve and protect habitat needs where they are the primary objective and agriculture is secondary. FWP has applied the standard successfully over the past 30 years on a variety of projects ranging from working cattle ranches to FWP WMAs. There are examples in Montana and other states where a grazing standard similar to FWPs is being applied by livestock operators independent of FWP.

Grazing Plan

Prior to grazing livestock the Landowner and FWP must agree upon and implement a grazing plan. A grazing plan includes a map of the pastures, a grazing formula specific to those pastures, the class of livestock, and other information pertinent to the management of livestock. Format for the grazing plan is included as part of the management plan template for conservation easements. The grazing plan will be included as part of the Management Plan for

easement projects, and will define the limits and extent to which grazing may occur. The Management Plan may be amended by mutual consent, as more particularly described in Paragraph II.E. of the Conservation Easement. For other projects the management plan will be included as an attachment to the grazing lease or contract. On conservation easements the grazing plan will be enforceable only on lands covered by the easement.

Upland Minimum Grazing Standard for Summer/Fall Systems

This standard applies to upland pastures in native plant communities (i.e. generally on soils that have never been plowed) and for all riparian pastures. The grazing plan must meet or exceed minimum levels of periodic rest from livestock grazing to allow native plants adequate opportunity to reproduce and replenish root reserves. The minimum amount of rest required for any pasture grazed in one year during the plant growing season is defined as rest throughout the following year's growing season (i.e. grazing deferred until seed-ripe), followed by one year of yearlong rest, as shown in Table 1. Each pasture receives only one grazing treatment per year, and the treatments are rotated annually as shown in Table 1. The growing season is defined as beginning with the period of rapid plant growth (generally early to mid-May) until seed-ripe for the latest maturing native grasses, such as bluebunch wheatgrass or western wheatgrass (generally early August). Because the exact dates can vary as much as a few weeks depending on the location in Montana, specific dates for livestock movement are developed for each project. Occasionally it may be necessary for the grazing system to allow for some livestock to be in the pasture scheduled for

the A treatment (Table 1) beyond the growing season.

A three-pasture grazing system is used as an example (Table 1) to show how the landowner might typically rotate livestock through pastures to meet the minimum levels and required sequence of rest from livestock grazing. In practice, the landowner is not limited to any particular number of pastures; many projects include more than three pastures. In some instances, sub-pastures are employed to meet riparian or other objectives on the land. If livestock are grazed, they must be moved through the pastures in compliance with these standards and the grazing plan. Where grazing occurs during the growing season, the three-treatments outlined in Table 1 are essential and the total number of pastures and/or sub-pastures will vary between projects.

Table 1. Livestock Grazing Formula using a three pasture approach as an example.

Grazing Seasons	Pasture 1	Pasture 2	Pasture 3
Year One	A	B	C
Year Two	B	C	A
Year Three	C	A	B
When all treatments have been applied to all pastures, the grazing rotation begins again at year one.			
A = livestock grazing allowed during the growing season; B = livestock grazing begins after seed-ripe time; C = rest from livestock grazing yearlong.			

Winter and/or Early Spring Grazing

In some situations, an early grazing treatment (prior to mid- May) may be considered. However, it must be kept in mind that grazing capacity and forage production in the year a pasture is grazed from winter to beyond mid-May, will be temporarily reduced. On projects where early spring grazing (prior to rapid plant growth) is combined with summer (active growing season) grazing the three grazing treatments described in Table 1 must be employed.

It is usually more efficient to manage winter grazing separately from spring-summer grazing. If livestock are to be grazed in a native range or riparian pasture in winter or early spring (generally December through early May), and a separate grazing formula is required, it must be coordinated with the summer-fall grazing system as follows: Minimum required rest in pastures where livestock are grazed and/or fed hay during winter is one winter of rest in every two (2) years. Hay, grain, salt, protein or other supplements will not be placed in riparian areas during winter or any other season. Minimum required rest in pastures where livestock are grazed in spring, prior to early May, is one spring of rest in every two years. Any pastures grazed later in spring than early-mid May require the greater amount of rest shown in the table 1. As a minimum, when grazing is limited to winter or the non-growing season period, a two-pasture alternate use approach is frequently used. The area designated for winter grazing is divided into two pastures and each year one pasture is grazed during winter months and the other rested and use is alternated from year to year.

During winter months cattle tend to concentrate in wooded areas (shrub or tree-dominated areas) for shelter. This must be kept in perspective when assessing the impacts to woody vegetation. It is often the case that with careful placement of hay, cattle impacts to woody vegetation can be kept to a small portion of the area. If this is not the case, it might be necessary to fence a portion of the woody vegetation to protect it from damage, but should only be done once efforts to control livestock distribution by other means have proven ineffective. An acceptable level of impact will vary depending on the objectives (i.e. a level of

woody vegetation impact acceptable for a working cattle ranch may be much different than for a WMA).

Scope

The goal is to include as much of the lands under easement as possible within the grazing system, but one must be realistic in recognizing the animal husbandry needs of a livestock operation. It may be necessary to set aside small areas as animal husbandry units to be used at the landowner’s discretion. Such areas might include calving pastures, branding pastures, sorting pens, bull pastures, or holding corrals. As long as the majority of the lands involved are within a grazing system, meeting the minimum standards, this is acceptable.

Non-native Pasture

It is common for livestock operators to have pastures on their land that are non-native range. The landowner's goal is usually to keep these pastures productive as non-native pasture. The pastures typically are seeded with an exotic pasture grass or grass mix. On occasion forbs like dry-land alfalfa are included in the planting. The FWP minimum grazing standard does not apply to these pastures. In cases of non-native pasture a grazing strategy that is coordinated with the grazing system and meets the needs of the ranch should be worked out. In the case of crested wheatgrass pasture it may be necessary to allow grazing early (late-winter or early spring) each year to maintain palatability. In the case of other pasture grasses, such as smooth brome, a deferred approach works well; a pasture is grazed during the growing season in year one then deferred from grazing until near seed-ripe in year 2 (about the time such

grasses would normally be harvested as hay). This will maintain the productivity of the non-native species until replanting is necessary and in some cases maintain them as attractive feeding sites for large wild ungulates. It is important to keep in mind that these areas, unlike native range, are essentially cropland and whether grazed or left idle will eventually need some sort of agricultural practice to maintain their productivity.

It is usually best to leave irrigated pasture management to the landowners discretion. If important riparian is included in the field it might be necessary to fence the riparian zone from the irrigated pasture to protect it from livestock grazing. Usually grazing strategies employed on irrigated pasture are not consistent with proper management of key native riparian plants. In such situations it may be necessary to apply the guideline *Series entitled: The Need for Stream Vegetated Buffers Parts 1 through 3,* Montana Department of Environmental Quality 2008.

Livestock operators often place cows in hayfields during winter months. In such cases the field should be managed at the landowner's discretion and in some instances it might be necessary to fence out riparian from the hayfield to protect it from grazing.

Stocking Rate

Usually FWP does not require a maximum stocking rate as part of the grazing strategy on easements or Upland Game Bird Habitat Enhancement Projects. In such cases it is clearly stated in the grazing plan, that the maximum stocking rate will be ultimately determined by the operators ability to conform to the grazing

system. In other words the livestock numbers may increase as long as the plan can be followed and livestock movement dates are not compromised. Such an approach is consistent with the reality that, for most easement projects, the primary use of the land is agricultural.

Occasionally a landowner has requested that an upper limit stocking rate be established as a stipulation in the easement. As long as the number of livestock is realistic this is not a problem.

On lands owned by FWP any grazing that occurs will be at stocking levels determined by the agency and approved by the FWP Commission.

Mineral and Other Supplements

On privately owned grazing lands the landowner is given more discretion on locations for placement of mineral block than on FWP lands. However, regardless of land ownership the placing of mineral block within riparian areas will be strongly discouraged. On FWP lands the placement of mineral block will be described as part of the grazing plan. Supplements will be placed away from riparian areas, ponds, and roads. Rocky (stable soil) areas on ridge tops or in the trees are preferred sites.

On FWP lands livestock within pasture grazing systems are not to be fed hay.

Flexibility

Rarely, a severe environmental influence (i.e. fire, drought, grasshoppers) may require a one time deviation from the prescribed grazing plan. In such cases the landowner is to notify the local FWP representative of the problem. In a timely manner the local FWP representative, Habitat Section representative, and

landowner will meet to discuss the issue and work out a solution. It is important to keep in mind that short term adjustments to the grazing plan must be the exception rather than the rule. Allowing grazing to occur in a pasture scheduled for rest is always a last resort. FWP has managed grazing systems across Montana through a variety of severe environmental events. This experience has shown that when a legitimate problem exists an alternative can usually be found that avoids grazing the pastures scheduled for rest.

Appendix I

Robb/Ledford Wildlife Management Grazing System Rotation for the Years 2014 through 2019

Year	Pasture 1L Battle Place	Pasture 2L Lower Robb Creek	Pasture 3L Dry Hollow	Pasture 1H Ledford Ridge	Pasture 2H Upper Robb Creek	Pasture 3H Swamp/Rock Creek
2014	A	B	E	C	D	E
2015	B	E	A	D	E	C
2016	E	A	B	E	C	D
2017	A	B	E	C	D	E
2018	B	E	A	D	E	C
2019	E	A	B	E	C	D

A = Graze from June 22 until July 6.

B = Graze from October 8 until October 15.

C = Graze from July 6 until August 15.

D = Graze from August 15 until October 8.

E = Rest from grazing.

Appendix J

Robb/Ledford Wildlife Management Area Grazing Lease Annual Costs to MFWP by Alternative

Alternative A

Item	Rate	AUMs	MFWP Personnel Hours	MFWP Income	MFWP Cost	Lease Credit Given	Total MFWP Income
Lease MFWP Deeded to the Association	$21.00/AUM	1,213	NA	$25,473	none	none	$25,473
Lease MFWP DNRC Leased to the Association	$21.00/AUM	683	NA	$14,343	none	none	$39,816
McGuire Lease Credit*	NA	NA	NA	none	none	$9,015	$30,801
Kelly Spring Waterline Maintenance Contract**	NA	NA	0	none	$5,000	none	$25,801
MFWP Fence Repair Time/Costs****	NA	NA	360	none	$3,888	none	$21,913
Total MFWP Costs	**$21.00**	**1,896**	**360**	**$39,819**	**$8,888**	**$9,015**	**$21,913*** **

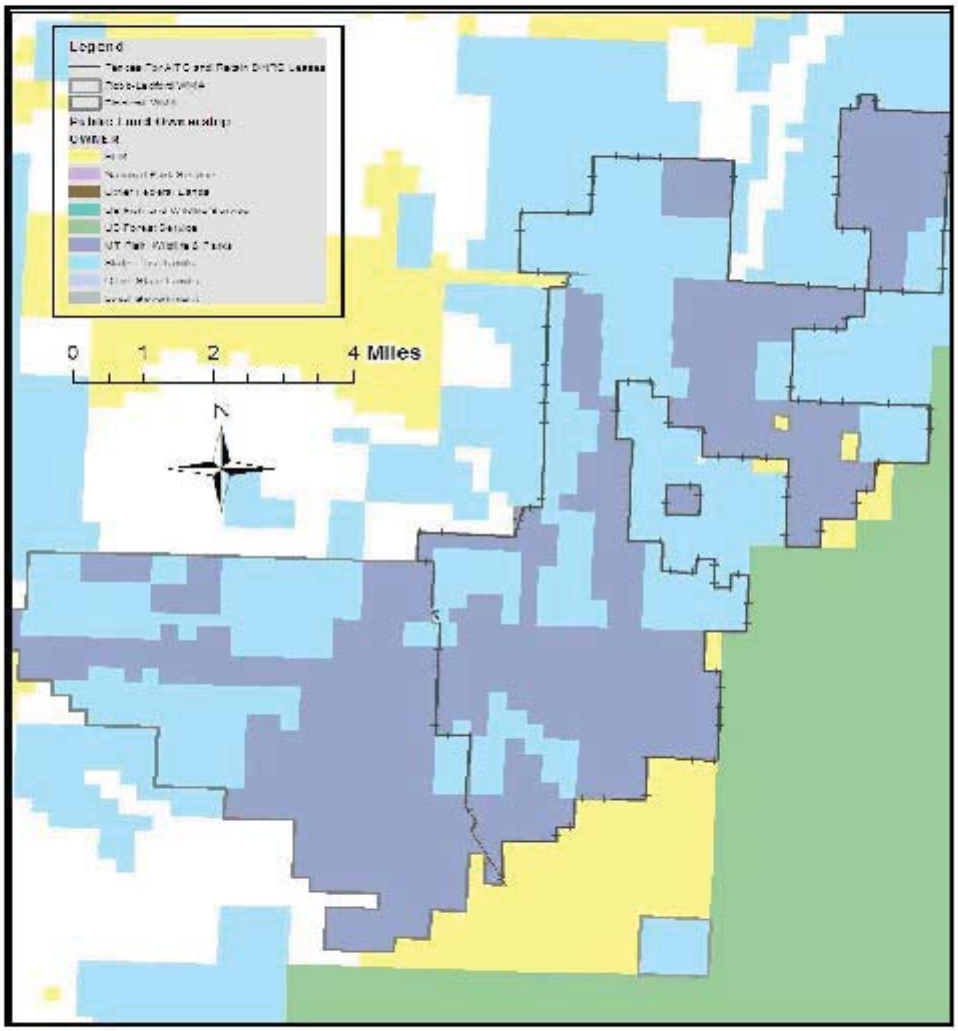
*MFWP would give the Association a credit valued at one-third of the value of their McGuire Lease annually in exchange for resting that lease from grazing one of every three years.

**The cost of this contract will fluctuate annually depending on the number of pastures utilized. The $5,000 estimate is expected to be the highest of the three years in a grazing cycle.

***This total does not factor in the costs of fence materials which annually variable.

**** This estimate is based on Technician wage of $10.80/ hour.

Note: Grazing lease rates may change annually which would influence MFWP's income.

Appendix K

Expected Fence Structure on the Robb Ledford Wildlife Management Area if Livestock Grazing no Longer Occurred.