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Bureau of Land Management

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March 2014

Woodhawk Allotment (20031)
Grazing Permit Renewal

Location: Upper Missouri River Breaks National Monument
Townships 22 and 23 North, Ranges 19, 20, 21 and 22 East
Fergus County, Montana

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Chapter 1
Introduction

Introduction

The Bureau of Land Management (BLM) is required to complete an environmental analysis when issuing/renewing 10-year grazing permits/leases. Through this process, the BLM proposes to issue a permit to allow livestock grazing on public land in the Woodhawk allotment (allotment) for the 10-year period of March 1, 2009 to February 28, 2019. The allotment is located in Central Montana approximately 20 miles northeast of Winifred, Montana, in Fergus County. The Woodhawk allotment consists of approximately 27,200 acres of public lands which currently provide 3,120 animal unit months (AUMs) of permitted use.

On December 31, 2008, the initial term grazing permit for the Woodhawk allotment expired. The BLM began the process of renewing the Woodhawk allotment term grazing permit by completing an allotment evaluation and determination document and issuing an environmental assessment (EA) and proposed decision in April 2009. The final grazing decision was challenged in court. In June 2013, the court ruled that the BLM's range of alternatives in the EA did not satisfy the National Environmental Policy Act (NEPA). This EA analyzes both a No Grazing and a Reduced Grazing Alternative. The EA also includes current conditions and updated resource information to serve as basis for a decision regarding the proposed term grazing permit.

Purpose and Need for the Proposed Action

The purpose of this EA is to analyze whether to issue a 10-year permit to allow livestock grazing on public land in the Woodhawk allotment. The EA will analyze a range of alternatives that will address whether BLM can implement a grazing management program to maintain or improve riparian-wetland and aquatic habitats (vegetation composition, structure, streambank stability, channel morphology), while protecting the objects of the Upper Missouri River Breaks National Monument (Monument).

The need for this action is established by the Taylor Grazing Act (TGA), the Federal Land Policy and Management Act (FLPMA), and the Upper Missouri River Breaks National Monument Resource Management Plan, which require that the BLM respond to applications to fully process and renew permits to graze livestock on public land.

Achieving land health standards is a requirement of all uses of BLM-administered lands, including those in the Monument. While achievement of land health standards are minimum conditions required for uses of BLM-administered lands, these conditions are what yield higher values on the landscape, such as fish and wildlife habitat, good water quality, and aesthetic values. In other words, by managing for healthy lands, the land is also being managed for the values for which the Monument was created.

Conformance with BLM Land Use Plans

The proposed action is in conformance with the Approved Resource Management Plan for the Upper Missouri River Breaks National Monument (Monument), approved on December 4, 2008. The proposed action is also in conformance with the Approved Judith Resource Area Resource Management Plan (RMP) (BLM 1994).

Under the Approved Monument RMP, the BLM will continue to implement the completed watershed plans and will update the plans as necessary during the renewal of 10-year grazing permits. Livestock grazing will continue to be managed through development and monitoring of grazing activity plans and supervision of grazing use (page 50).

Under the Approved Judith Resource Area RMP, livestock grazing will be managed through the development and monitoring of grazing or similar plans to maintain or improve ecological condition, enhance vegetation production, maintain and enhance wildlife habitat, and protect watersheds (p. 12).

Livestock grazing is managed under the Lewistown District (Lewistown and Malta Field Offices) Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997). Standards are statements of physical and biological condition or degree of function required for healthy sustainable rangelands, and guidelines focus on establishing and maintaining proper functioning conditions. The application of the guidelines is dependent on individual management objectives established in the Approved Resource Management Plan for the Upper Missouri River Breaks National Monument .

Relationships to Statutes, Regulations and Other Plans

This proposal is in accordance with federal law, regulation and policy, which includes the signed Proclamation by President Clinton for the Upper Missouri River Breaks National Monument on January 17, 2001. In part, the Proclamation states that the BLM shall follow all laws, regulations, and policies in issuing and administering grazing permits or leases on all lands under its jurisdiction consistent with protecting objects of the monument.

All management of grazing on BLM land will be in accordance with the grazing administration regulations found in 43 CFR 4100. This allotment was previously analyzed in the Woodhawk Watershed Management Plan Environmental Assessment (BLM 1998a) and the selected alternative was detailed in the Woodhawk Watershed Interdisciplinary Management Plan (BLM 1998b). The custodial portion of this allotment was previously analyzed in the Two Calf Watershed Management Environmental Assessment (BLM 1998c). These documents are available from the Lewistown Field Office and on the internet at the following address:

http://www.blm.gov/mt/st/en/fo/lewistown_field_office/Watershed_Plans.html.

Chapter 2
Description of Alternatives

Introduction

This environmental analysis examines four alternatives. The alternatives were developed in response to resource conditions on the allotment and with input from the grazing permittee and interested public. Alternative 1 (1998-2008 Grazing Permit**)** is considered and analyzed to provide a baseline for comparison of the other actions.

Alternatives Considered but Not Analyzed in Detail

North River Proposal, Grazing Permittee Proposal

Two alternatives from the 2009 EA (North River Proposal, Grazing Permittee Proposal) were considered but not analyzed in detail because they no longer meet the purpose and need of this EA. Since 2009, riparian habitat condition have improved, and BLm has determined that these alternatives will not sufficently improve riparian habitat conditions when compared to alternative 2,3, and 4, and therefore, do not meet the need of this EA.

Riparian Areas would be Managed for Potential Natural Community (PNC)

The goals for the condition of riparian areas in the Woodhawk allotment are described in the affected environment section of this EA. PNC is a plant community representing the highest successional stage attainable on a specific, hydrologically influenced surface. Noxious weeds and nonnative grasses were the basis for not attaining the higher ecological status of potential natural community (PNC). Limiting factors such as invasive plant species, upstream dam operations, etc. may make PNC unattainable in some locations, and therefore, an unreasonable objective. The limiting factors affecting riparian-wetland condition are described in detail in the Missouri River PFC Assessment Reaches #5 and #6 available on the Lewistown Field Office website at http://www.blm.gov/mt/st/en/fo/lewistown_field_office.html.

Actions Common to All Alternatives

- Noxious weeds will be managed to the extent possible as outlined in the Upper Missouri River Breaks: Guidelines for Integrated Weed Management Plan (BLM 2012), and other invasive plants will be addressed on a project specific basis.

- Unauthorized impacts in the Wilderness Study Area, such as vehicle routes or other structures, would be restored to natural conditions. A combination of approaches may be used to accomplish rehabilitation, including signs, barricades, fencing and physical obliteration of the road surface.

- BLM would maintain discretion to utilize grazing to manage vegetation within existing exclosures to control invasive grasses and reduce hazard of wildfire.

Alternative 1 (1998-2008 Grazing Permit)

This alternative would continue management of the Woodhawk allotment as it was managed from 1998-2008 (Map 1). A new 10-year term grazing permit would be issued with the same terms and conditions as the expired permit in accordance with the Woodhawk Watershed Interdisciplinary Management Plan, (BLM 1998b) and the Two Calf Watershed Management Plan (BLM 1998c). The BLM would issue the new grazing permit for 3,120 animal unit months (AUMs) The grazing schedule under Alternative 1 is shown in Table 2.1.

There would be no new range improvements. Maintenance would continue on the existing improvements.

Table 2.1
Alternative 1 Grazing Schedule

Pasture and AUMs	Year			
	2009	**2010**	**2011**	**2012**
North River 643 AUMs total (266 public AUMs)	June 1 to Sept 24 150 cattle	June 1 to Sept 24 150 cattle	June 1 to Sept 24 150 cattle	June 1 to Sept 24 150 cattle
East Riparian 432 AUMs total (432 public AUMs)	Non-use	May 1 to June 15 285 cattle	May 1 to June 15 285 cattle	Non-use
West Riparian 447 AUMs total 410 public AUMs)	May 1 to June 15 295 cattle	Non-use	Non-use	May 1 to June 15 295 cattle
West Upland 928 AUMs total (587 public AUMs)	June 15 to Aug 15 460 cattle	Sept 1 to Oct 31 460 cattle	Sept 1 to Oct 31 460 cattle	June 15 to Aug 15 460 cattle
East Upland 1148 AUMs total (1040 public AUMs)	Aug 16 to Oct 31 460 cattle	June 15 to Aug 31 460 cattle	June 15 to Aug 31 460 cattle	Aug 16 to Oct 31 460 cattle
Two Calf Custodial 356 AUMs	Mar 1 to Feb 28	Mar 1 to Feb 28	Mar 1 to Feb 28	Mar 1 to Feb 28
Woodhawk Custodial 29 AUMs	Mar 1 to Feb 28	Mar 1 to Feb 28	Mar 1 to Feb 28	Mar 1 to Feb 28

Note: The four-year rotation would continue through the term of the grazing permit. Multiple permits may be issued within the 10-year period based on the duration of the base property leases or transfer of base property ownership as long as the terms and conditions of the proposed term grazing permit remain unchanged.

Alternative 2 (Current Grazing Management)

This alternative was developed in 2009 with input from the BLM interdisciplinary team, interested public, and the grazing permittee to address riparian and water quality; and to maintain livestock distribution through maintenance of the existing range improvements (Map 2). This is the current grazing system, which was implemented in 2009.

The BLM would issue a new grazing permit for 3,120 AUMs (see Table 2.2) with the following changes from the previous permit:

- The boundary between the East and West Riparian pastures would be changed, which would reduce the East Riparian pasture grazing by 27 AUMs and increase the West Riparian pasture grazing by 27 AUMs. This relocated boundary would include the river bottoms in Sections 1 and 2 in the West Riparian pasture and facilitate livestock management by using natural barriers.

- The season of use in the East Riparian pasture would be decreased from 42 days to 26 days.

- The reservoir near the junction of Woodhawk Creek and the Woodhawk Trail in the East Upland pasture would be fenced to exclude livestock use.

- The North River pasture would be divided using natural barriers and short fence segments. The southern portion would be used in a custodial manner in conjunction with private lands. The river portion would be used between May 1 and May 20 for two years and then rested for two years.

- Range improvement projects would be reconstructed or maintained in cooperation with the permittee. Specific actions include cleaning out, repairing and maintaining up to 14 reservoirs which would consist of repairing spillways and removing silt, but would not increase storage capacity or create disturbance outside the original footprint; installing cattleguards to replace gates on DeWeese Trail; and reconstructing the fence between the East and West Upland pastures with a 3-wire fence (2 barbed wires with a bottom smooth wire) built to BLM specifications.

Table 2.2
Alternative 2: Current Grazing Program
Grazing Schedule

	Year			
Pasture and AUMs	**2009**	**2010**	**2011**	**2012**
North River (River Portion) 131 AUMs total (104 public AUMs)	Non-use	May 1 to May 20 198 cattle	May 1 to May 20 198 cattle	Non-use
(South Portion Custodial) 512 AUMs total (162 public AUMs)	March 1 to Feb 28	March 1 to Feb 28	March 1 to Feb 28	March 1 to Feb 28
East Riparian 405 AUMs total (405 public AUMs)	Non-use	May 21 to June 15 472 cattle	May 21 to June 15 472 cattle	Non-use
West Riparian 474 AUMs total (437 public AUMs)	May 1 to June 15 315 cattle	Non-use	Non-use	May 1 to June 15 315 cattle
West Upland 928 AUMs total (587 public AUMs)	June 15 to Aug 15 460 cattle	Sept 1 to Oct 31 460 cattle	Sept 1 to Oct 31 460 cattle	June 15 to Aug 15 460 cattle
East Upland 1148 AUMs total (1040 public AUMs)	Aug 16 to Oct 31 460 cattle	June 15 to Aug 31 460 cattle	June 15 to Aug 31 460 cattle	Aug 16 to Oct 31 460 cattle
Two Calf Custodial 356 AUMs	March 1 to Feb 28	March 1 to Feb 28	March 1 to Feb 28	March 1 to Feb 28
Woodhawk Custodial 29 AUMs	March 1 to Feb 28	March 1 to Feb 28	March 1 to Feb 28	March 1 to Feb 28

Due to human and environmental factors, dates of livestock use and cattle numbers may vary slightly from year to year, but would not exceed 3,120 AUMs. There may be adjustments to reflect grazing conditions and permittee requests. Custodial pastures would be used in conjunction with private and state lands. BLM only regulates the animal units months within custodial pastures. The four-year rotation would continue through the term of the grazing permit. Multiple permits may be issued within the 10-year period based on the duration of the base property leases or transfer of base property ownership as long as the terms and conditions of the proposed term grazing permit remain unchanged.

Alternative 3 (No Grazing)

This alternative was developed to analyze a full range of alternatives addressing whether BLM can implement a grazing management program to maintain and/or improve riparian-wetland and aquatic habitats (vegetation composition, structure, streambank stability, channel morphology), while protecting the objects of the Monument. Under this alternative the BLM would not issue a new term grazing permit, and livestock grazing would be eliminated on the allotment.

Approximately 30 miles of boundary fence would be built between the Two-Calf and Woodhawk Custodial Pastures and other BLM lands to keep livestock from accessing public lands. Livestock-related range improvements would be abandoned or removed and reclaimed where there is no clear benefit to other resources. This includes approximately 10 miles of interior allotment fence, 17 reservoirs, four water savers, one pipeline, and approximately 5 water tanks.

Alternative 4 (Reduced Grazing)

This alternative was developed with input from the BLM interdisciplinary team. This alternative would reduce the permitted AUMs for the allotment by 54 AUMs. The reduction of AUMs would exclude grazing in all, or portions of, the river corridor in the East Upland, East Riparian, and West Riparian Pastures (see Map 3). The reduction would reduce the permitted AUMs for available forage within two existing exclosures that were never given AUM reductions (Campground Exclosure and Nelson Homestead Exclosure), and would propose further reducing AUMs within two large unconstrained zones on the River through fencing in the vicinity of Cow Island and Sturgeon Island.

Although the reduction of AUMs is a small percentage (1.7%) of the current total active AUMs, the reduction is meaningful in that the reduction of AUMs would occur entirely along the river corridor where the majority of riparian habitat and recreational use occurs.

The BLM would issue a new grazing permit for 3,078 AUMs, a reduction of 54 AUMs. The 54 reduced AUMs would be suspended with the following changes from the previous grazing permit (see Table 2.3 and Map 3):

- Exclude livestock grazing in the existing 92-acre Campground Exclosure and reduce grazing by 14 AUMs.
- Reduce AUMs in the existing 77-acre Nelson Homestead by 12 AUMs.
- Exclude approximately 54 acres in the Cow Island area from livestock grazing through construction of drift fences and/or fence exclosures. Continue with the 5/21-6/15 turnout date. Reduce grazing by 8 AUMs.
- Exclude approximately 127 acres in the Sturgeon Island area from livestock grazing through construction of drift fences and/or fence exclosures. Continue with the 5/1-6/15 turnout date. Reduce grazing by 20 AUMs in the West Riparian Pasture.
- The reservoir near the junction of Woodhawk Creek and the Woodhawk Trail in the East Upland pasture would be fenced to exclude livestock use.
- Range improvement projects would be reconstructed or maintained in cooperation with the permittee. Specific actions include cleaning out, repairing and maintaining up to 14 reservoirs which would consist of repairing spillways and removing silt, but would not increase storage capacity or create disturbance outside the original footprint; installing cattleguards to replace gates on DeWeese Trail; and reconstructing the fence between the East and West Upland pastures with a 3-wire fence (2 barbed wires with a bottom smooth wire) built to BLM specifications.

Table 2.3
Alternative 4: Reduced Grazing
Grazing Schedule

	Year			
Pasture and AUMs	**2009**	**2010**	**2011**	**2012**
North River (River Portion) 131 AUMs total (104 public AUMs)	Non-use	May 1 to May 20 198 cattle	May 1 to May 20 198 cattle	Non-use
(South Portion Custodial) 512 AUMs total (162 public AUMs)	March 1 to Feb 28	March 1 to Feb 28	March 1 to Feb 28	March 1 to Feb 28
East Riparian 395 AUMs total (395 public AUMs)	Non-use	May 21 to June 15 261 cattle	May 21 to June 15 261 cattle	Non-use
West Riparian 474 AUMs total (418 public AUMs)	May 1 to June 15 300 cattle	Non-use	Non-use	May 1 to June 15 300 cattle
West Upland 928 AUMs total (587 public AUMs)	June 15 to Aug 15 460 cattle	Sept 1 to Oct 31 460 cattle	Sept 1 to Oct 31 460 cattle	June 15 to Aug 15 460 cattle
East Upland 1148 AUMs total (1014 public AUMs)	Aug 16 to Oct 31 440 cattle	June 15 to Aug 31 434 cattle	June 15 to Aug 31 434 cattle	Aug 16 to Oct 31 440 cattle
Two Calf Custodial 356 AUMs	March 1 to Feb 28	March 1 to Feb 28	March 1 to Feb 28	March 1 to Feb 28
Woodhawk Custodial 29 AUMs	March 1 to Feb 28	March 1 to Feb 28	March 1 to Feb 28	March 1 to Feb 28

Due to human and environmental factors, dates of livestock use and cattle numbers may vary slightly from year to year. There may be adjustments to reflect grazing conditions and permittee requests. Custodial pastures would be used in conjunction with private and state lands. BLM only regulates the animal units months within custodial pastures. The four-year rotation would continue through the term of the grazing permit. Multiple permits may be issued within the 10-year period based on the duration of the base property leases or transfer of base property ownership as long as the terms and conditions of the proposed term grazing permit remain unchanged.

Chapter 3
Affected Environment/Environmental Consequences

Introduction and General Setting

The Woodhawk allotment is located in Central Montana 20 miles northeast of Winifred, Montana in Fergus County. It contains approximately 27,200 acres of public land (BLM), 10,000 acres of private land and 4,900 acres of State of Montana land. Approximately 23,900 acres of public land are located within the Upper Missouri River Breaks National Monument (Table 3.1). The northern boundary of the allotment is the Missouri River.

Table 3.1 **Federal Land Status (BLM) on Woodhawk Allotment by Acre**	
Lewistown Field Office	3,300
Upper Missouri River Breaks National Monument	23,900
Total Acres	27,200

The majority of the topography for the allotment is typical of the Missouri Breaks (very rough and broken). The land has undergone active geologic erosion due to a diversion of the Missouri River from its former course in the Milk River drainage which occurred during Pleistocene glaciation. The intermittent-Woodhawk Creek runs west to east through the allotment. The allotment is in the 11 to 14 inch precipitation zone. The soils developed from sandstone and shale parent materials and the prevalent soil types include clayey, dense clay, shallow clay, exposed shales and rock outcrop. Most soils in the allotment are susceptible to erosion.

On December 31, 2008, the initial term grazing permit for the Woodhawk allotment expired. The BLM began the process of renewing the Woodhawk allotment term grazing permit by completing an allotment evaluation and determination document and issuing an environmental assessment (EA) and proposed decision in April 2009. The final grazing decision was challenged in court. In June 2013, the court ruled that the BLM's range of alternatives in the EA did not satisfy the National Environmental Policy Act (NEPA). This EA analyzes both a No Grazing and a Reduced Grazing Alternative. The EA also includes current conditions and updated resource information to serve as basis for a decision regarding the proposed term grazing permit.

In the original, April 2009 Woodhawk allotment Grazing Permit Renewal EA, BLM determined that the allotment was not meeting the riparian and water quality standards because of livestock grazing management. To see the 2009 EA go to the following link: http://www.blm.gov/mt/st/en/fo/lewistown_field_office/Watershed_Plans.html

Riparian and Water Quality

Affected Environment

The Woodhawk Creek, Missouri River – Sturgeon Island, Missouri River – Gist Ranch, and Missouri River – Hideaway Coulee subwatersheds (6^{th} level hydrologic unit codes (HUCs)) were selected for direct, indirect, and cumulative effects analysis areas because these are the subwatersheds that could be affected by the proposed structural projects (i.e. fencing) and associated changes in livestock grazing management. Only a very small portion (less than ¼ mile) of the Missouri River in the Woodhawk allotment is in the Missouri River – Hideaway Coulee subwatershed.

Table 3.2				
Subwatershed	**Subwatershed Acres**	**Rivers/Streams in the Woodhawk Allotment**	**Stream Miles on BLM-administered Land in the Woodhawk Allotment**	**Riparian Condition of BLM-administered Streams in the Woodhawk Allotment**
Woodhawk Creek	25,052	Woodhawk Creek	18	4 miles (FAR), 14 miles (PFC)
Missouri River – Sturgeon Island	19,445	Missouri River	10	10 miles (PFC)
Missouri River – Gist Ranch	12,572	Missouri River	8	8 miles (PFC)
Missouri River – Hideaway Coulee	30,961	Missouri River	< ¼	< ¼ mile (PFC)

Missouri River – Sturgeon Island, Missouri River – Gist Ranch, and Missouri River – Hideaway Coulee Subwatersheds

The BLM and the National Riparian Service Team (NRST) conducted assessments of riparian conditions on the entire 149-mile Upper Missouri National Wild and Scenic River in 2010. The upstream 6 miles of the Missouri River (i.e. above Sturgeon Island) within the Woodhawk allotment are within assessment Reach #5; and the remaining 12 miles of the Missouri River in the allotment are within assessment Reach #6. This information is available online at http://www.blm.gov/mt/st/en/fo/lewistown_field_office.html. Reach #5 was rated by the BLM interdisciplinary team to be approximately 50 percent between proper functioning condition (PFC) and PNC. Reach #6 was rated to be roughly 30 percent between PFC and PNC. One could think of these percent values between PFC and PNC as an estimate of the current condition rated between the minimum, land-health standard of PFC and the highest ecological status the reaches could obtain. Key attributes and processes responsible for the ratings of PFC on both reaches were adequate riparian-wetland species diversity, age class, vigor, cover of riparian-wetland plants with medium to high stability ratings on the streambanks, stable streambanks, and channel attributes and functions within the range of conditions appropriate for this reach. Invasive weeds and non-native grasses were identified as the basis for not attaining a higher ecological status.

Riparian habitat and river bank areas along the Missouri River, especially those sites that have the capability to support woody riparian vegetation such as cottonwood (e.g. unconstrained river bottoms), have important wildlife, water quality, aesthetic, and recreation values. The Monument was created for many of these values that are associated with the health of river bank areas.

Based upon the qualitative assessment conducted in 2010, the ID team was satisfied that the livestock grazing management within the Woodhawk allotment on the Missouri River was compatible with not only riparian function, but also the attainment of riparian values such as late-seral herbaceous vegetation on streambanks and woody riparian plant communities. However, quantitative trend monitoring to ensure maintenance of the apparent upward trend is important. The ID team identified three factors at the allotment scale that are important for future trend monitoring.

- What is the composition of the plant communities on the streambank and how are they being affected by management?
- What are the woody species size classes and are they recruiting where they are expected?
- What are the use levels (livestock and wildlife) on both woody and herbaceous vegetation and what effect are use levels having on those communities?

Based upon these three important factors, the BLM's goals for riparian conditions on the Missouri River in the Woodhawk allotment are:

- Maintain streambank plant communities of stabilizing vegetation (e.g. sedges, rushes, willows, etc.).

- Support the recruitment of desirable, woody riparian plant communities (e.g. cottonwood, willow, green ash, etc.) on sites capable of supporting such species.
- Ensure livestock grazing use levels are compatible with the maintenance of both woody and herbaceous riparian plant communities.

To monitor these goals, the BLM developed a protocol for monitoring the trend of riparian vegetation on the Missouri River in the Monument. Due to the unique nature of the Upper Missouri River, the ID team determined that a customized monitoring approach is needed and should be based on, to the extent possible, currently approved and tested BLM monitoring protocols. The "Multiple Indicator Monitoring (MIM) of Stream Channels and Streamside Vegetation" protocol by Burton et al. (2011) meets this requirement. Although the MIM protocol was designed for and tested on small stream systems (usually less than 10 meters wide), with some modifications, several procedures described in MIM can be used to obtain meaningful data on large river systems such as the Missouri River. The Field Guide: Vegetation Monitoring Protocol for the Upper Missouri River in the Upper Missouri River Breaks National Monument (Smith et al., 2013), which includes instructions for monitoring site selection, is available at http://www.blm.gov/mt/st/en/fo/lewistown_field_office.html. The procedures included in this document will be used to monitor the trend of the important riparian vegetation attributes on the Missouri River in the Woodhawk allotment.

The BLM determines achievement of the water quality land health standard by evaluating the condition of the lands adjacent to or within the watershed of water quality impaired streams. The BLM does not determine which streams are water quality impaired; that is the responsibility of Montana Department of Environmental Quality (MDEQ). In this particular case, assessments of riparian conditions on the Missouri River rated the riparian conditions on the Missouri River to be not only PFC, which is the minimum condition required to achieve land health standards, but also supporting the attainment of other riparian values such as the recruitment of cottonwood/willow species on sites capable of supporting such species and late-seral riparian-wetland vegetation on river banks. Based upon a 2010 memorandum of understanding (MOU) between the BLM and MDEQ and using watershed function as a leading indicator of water quality (Aron et al., 2013), PFC is recognized as a condition that increases the likelihood that these areas will not produce unacceptable amounts of non-point source pollution.

Woodhawk Creek Subwatershed

Woodhawk Creek had 14.02 miles that were in proper functioning condition (PFC) and 4.17 miles that were functional at risk (static trend) because of impacts from livestock grazing management in 2008. The 4 miles of Woodhawk Creek that were functional at risk (static trend) were within approximately a one-mile radius of a heavily used water source near the bottom of Woodhawk Creek. Heavy use levels in this area led to concern regarding the condition of streambank vegetation. No formal reevaluation was completed for Woodhawk Creek since implementing the 2009 grazing management program; however, based upon observations made by specialists during site visits to the allotment, Woodhawk Creek did exhibit channel enlargement on reaches that were both PFC and FAR following an extremely rare flood event in 2013 (i.e. greater than a 100-year flood). Riparian areas in PFC can generally withstand frequent events like 5-, 10-, and 20-year events. Extreme events such as a 100-year flood event can cause riparian-wetland areas in excellent condition to unravel, at least in places. Regardless of the functional rating of the reach prior to the 2013 flood events, the important features for recovery of Woodhawk Creek are adequate streambank vegetation and appropriate stream channel dimensions.

Based upon these two important factors, the BLM's goals for riparian conditions on Woodhawk Creek in the Woodhawk allotment are:

- Increase streambank stabilizing vegetation.
- Decrease stream channel width.

These attributes will both be monitored using the procedures found in the MIM protocol (Burton et al., 2011).

The Field Guide: Vegetation Monitoring Protocol for the Upper Missouri River in the Upper Missouri River Breaks National Monument (Smith et al., 2013) and the MIM monitoring protocol (Burton et al., 2011) are stronger monitoring protocols than what had been used previously. These protocols randomly select monitoring sites in riparian complexes that are most sensitive to management, have greater statistical strength to detect change and

show trend, are more repeatable (i.e. measurements rather than ocular estimates), and are focused, efficient efforts to monitor the goals and important attributes identified by the assessments.

Environmental Consequences

Alternative 1 (1998-2008 Grazing Permit)

Woodhawk Creek Subwatershed

On Woodhawk Creek, the 4.17 miles of stream that are within roughly a one mile radius of the reservoir near the bottom of Woodhawk Creek would receive a disproportionate amount of livestock grazing use. This alternative would not alleviate the concern regarding livestock grazing use levels and the effect on the condition of streambank vegetation and stream channel dimensions in this area.. Stream channel width would decrease and streambank vegetation would increase on the other 14 miles of stream.

Missouri River – Sturgeon Island, Missouri River – Gist Ranch, and Missouri River – Hideaway Coulee Subwatersheds

On the Missouri River, the 3.21 miles in the North River pasture would have a livestock grazing season of June 1 to September 24 every year. While functionality of the riparian area would still occur, the density and canopy coverage of willow species within this pasture would be affected by the 4-month grazing season, including three months of hot-season use (i.e. July, August, September). No recruitment into mature willow would occur, and the height class of willow within this pasture would be below browse level.

The 6.10 miles of Missouri River in the West Riparian pasture and the 3.59 miles in the west portion of the East Riparian pasture would continue to be in good vegetative condition. These areas would not only be in at least proper functioning condition, but they would also continue to support pioneer woody species recruitment such as cottonwood/willow. The early season of use (May 1 to June 15) combined with rest (2 years rest out of every 4 years) would continue to support limited use levels on other riparian trees/shrubs such as green ash, chokecherry, box elder, etc. Riparian area succession would continue to be impeded by leafy spurge and invasive species like smooth brome.

On the backside of Cow Island, 2.60 miles of Missouri River would receive a disproportionate amount of livestock use under this alternative. While this area would be grazed under a similar strategy as the portions of the West Riparian and East Riparian pastures that are in good vegetative condition, the backside of Cow Island seems to be a focal point for livestock congregation, which has resulted in intense utilization on trees and shrubs, high streambank alteration levels, and poor vigor of streambank vegetation in this particular area under this grazing system.

Within the Woodhawk Bottoms exclosure, 2.78 miles of Missouri River would remain in proper functioning condition and would also have the ability to move toward its ecological capability. The maximum amount of protection to the riparian area would continue. Furthermore, the understory condition within this reach would continue to rank high in species richness and structural complexity. Riparian area succession would continue to be impeded by leafy spurge and invasive species like smooth brome.

This alternative would not address water quality concerns within the Woodhawk allotment, nor would it be compatible with management of riparian and streamside areas agreed upon in the MOU between the BLM and MDEQ. This alternative would result in degraded riparian conditions adjacent to water quality impaired streams (i.e. the Missouri River). Riparian areas in less than proper functioning condition would potentially contribute excess levels of non-point source pollution to the water quality impaired water body. Those areas in proper functioning condition or above would continue to mitigate non-point source pollution.

Cumulative Effects

Woodhawk Creek Subwatershed

In the Woodhawk Creek subwatershed, past, present, and reasonably foreseeable activities and land uses that could affect riparian, stream channel, and water quality conditions include farming, livestock grazing, stockwater ponds, and roads.

The current condition of Woodhawk Creek on BLM-administered lands reflects all of the existing land uses in the subwatershed, and there is no forecast or trend for an increase in agricultural farm land, livestock grazing, and stockwater ponds on private land. All range improvement facilities, including stockwater ponds, on BLM-administered lands would be maintained at existing levels under this alternative. Therefore, no additional cumulative effects would occur beyond the direct and indirect effects identified for Alternative 1. Assessment of the condition of Woodhawk Creek did not identify agricultural farm land, livestock grazing on private land in the subwatershed, or stockwater ponds in the subwatershed as existing limiting factors.

Following the 2013 flood, the concrete drive-through crossing where Woodhawk Trail Road crosses Woodhawk Creek washed out. The BLM is currently evaluating the replacement of the concrete drive-through crossing or installing two 8-foot box culverts through separate NEPA analysis. This activity would be cumulative to the effects of livestock grazing management on stream channel function identified in the direct and indirect effects for Alternative 1.

Missouri River – Sturgeon Island, Missouri River – Gist Ranch, and Missouri River – Hideaway Coulee Subwatersheds

The Missouri River in the Woodhawk allotment has a drainage area that extends to the Montana/Idaho border. In fact, the drainage area at Fred Robinson Bridge, which is just downstream from the Woodhawk allotment is 40,987 square miles. Relative to the scope and scale of management actions proposed in this EA, the entire Missouri River watershed is too large to provide a meaningful cumulative effects analysis. For that reason, the Missouri River – Sturgeon Island, Missouri River – Gist Ranch, and Missouri River – Hideaway Coulee subwatersheds, which contain the Woodhawk allotment, were selected for cumulative effects analysis.

However, there are important limiting factors, outside of these subwatershed's boundaries, that do affect the condition of the Missouri River in the Woodhawk allotment and are worth discussion. Two significant dams (Canyon Ferry Dam on the Missouri River and Tiber Dam on the Marias River) regulate flows on the Upper Missouri River through the Woodhawk allotment. Although the frequency of flood pulses and the timing of a snow-melt dominated hydrograph has not changed, the magnitude of large peak flows has been reduced from 40% to 50% as a result of regulation (Bovee and Scott, 2001). Examination of post-dam recruitment patterns of cottonwood by Scott and Auble (2002) identified that all stands originating in the post-dam period occurred within unconstrained channel reaches. Reduction in the magnitude of peak flows has resulted in establishment of stems at lower elevations that are subject to more frequent disturbance. If patterns continue, cottonwood recruitment would be limited to unconstrained reaches.

The possibility does exist that the capability of this reach in terms of flow regime may move closer to potential. BLM, Bureau of Reclamation (BOR), and other groups and organizations have been investigating the potential for augmenting flow releases from reservoirs to mimic natural flow regimes. Social and economic constraints will not allow for a completely natural flow regime, but efforts to increase peak flows would change the capability of this system and river reach closer to potential. A key factor affecting potential is the decrease in the magnitude of fluvial disturbances on the Upper Missouri River associated with both climatic shift and dams. A shift from wetter conditions in the mid- to late 1800s, combined with the effect of flow regulation, has resulted in a process of channel narrowing (Scott and Auble, 2002). This affect has resulted in establishment of cottonwood trees as existing back channels have filled in. Currently, this increase in trees has mitigated the effects of the loss of trees from higher surfaces and current amounts of cottonwood forest are similar to amounts in 1890 (personal communication, G. Auble (USGS) and M. Scott (USGS)). However, this is a one-time response as the channel would not be capable of narrowing indefinitely.

Vegetation potential on the Upper Missouri River is also influenced by non-native plants and invasive weed species. Evidence exists that direct competition between native plants and areas dominated by exotic plants (non-native and invasive weeds) can result in the disappearance of native species. Kudray (2004) found reduced species richness was most strongly correlated with greater exotic herbaceous cover and also had a negative correlation with native woody species richness. Five invasive weed species were documented by Kudray (2004) within the Upper Missouri River including: leafy spurge, Canada thistle, spotted knapweed, diffuse knapweed, and houndstongue.

All of the fore mentioned species are actively controlled as part of BLM's invasive species program through biological, chemical, and mechanical treatments. If control methods are successful for the above listed weeds, particularly leafy spurge and knapweed, the capability could change. However, even with aggressive control strategies, it is highly unlikely that these weeds would be completely removed from the Missouri River ecosystem.

No Russian olive is present within the Woodhawk allotment; however, it does occur near Gist Bottom on the opposite side of the Missouri River. Salt cedar (Tamarisk) occurs on U.S. Fish and Wildlife Service land just below the Monument and the Woodhawk allotment. The potential would exist for invasion of these two species into the riparian areas within the Woodhawk allotment. The BLM's early detection/rapid response strategy for invasive species would help mitigate this cumulative effect.

Alternative 2 (Current Grazing Management)

Woodhawk Creek Subwatershed

Under this alternative, livestock use would be precluded from the pit reservoir near the bottom of Woodhawk Creek through exclosure fencing. The 4.17 miles of Woodhawk Creek within the vicinity of this reservoir would begin immediate improvement. By the time (i.e. late summer) livestock rotate to the pastures that contain Woodhawk Creek, there is usually no water in the stream. Furthermore, the streambank vegetation is composed of saline-tolerant species which lose palatability later in the summer. By excluding access to the reservoir through installation of an exclosure fence, livestock would have little reason to spend large amounts of time on the creek bottom. Streambank alteration levels would decrease, and the condition of the vegetation would improve. Therefore, sediment trapping would increase and floodplain development would progress. Stream channel width would decrease and streambank vegetation would increase on the other 14 miles of stream.

Missouri River – Sturgeon Island, Missouri River – Gist Ranch, and Missouri River – Hideaway Coulee Subwatersheds

The North River pasture would be split under this alternative. The southern portion of the pasture, which is primarily deeded property, would be authorized for custodial use. The river portion of the pasture would be changed from season long summer use to spring use (May 1 to May 20). The shift from season long summer use to restricted permitted dates outside of the hot season, has resulted in the improvement in riparian area condition on the 3.21 miles of Missouri River, as documented in the 2010 PFC assessment. The riparian area would continue to be in proper functioning condition, and the willow species would have a greater opportunity to mature into older age classes. This action would address water quality concerns on the Missouri River by improving the condition of river bank areas.

The 6.10 miles of Missouri River in the West Riparian pasture and the 3.59 miles in the west portion of the East Riparian pasture would continue to be in good vegetative condition. These areas would be in at least proper functioning condition, and continue to support pioneer woody species recruitment such as cottonwood and willow. The early season of use combined with rest would support limited use levels on other riparian trees and shrubs such as green ash, chokecherry, box elder, etc. Riparian area succession would be impeded by leafy spurge and invasive species like smooth brome.

Behind Cow Island, the season of use in the East Riparian pasture would be 26 days of use in May and June two years in a row. Then, it would be rested two years. This would lead to a period of use of only 7½ weeks of cool season use out of every four-year period. Use levels on preferred woody species would decrease along with streambank alteration levels. Non-point source pollution would be mitigated.

Within the Woodhawk Bottoms exclosure, 2.78 miles of Missouri River would remain in proper functioning condition and would have the ability to move toward its ecological capability. The maximum amount of protection to the riparian area would continue. Furthermore, the understory condition within this reach would continue to rank high in species richness and structural complexity. Riparian area succession would be impeded by leafy spurge and invasive species like smooth brome.

Cumulative Effects

Woodhawk Creek Subwatershed

Under this alternative, livestock use would be precluded from the pit reservoir near the bottom of Woodhawk Creek through exclosure fencing. The 4.17 miles of Woodhawk Creek within the vicinity of this reservoir would begin immediate improvement. This would be a direct, indirect, and cumulative benefit to riparian condition and stream channel function on Woodhawk Creek.

Other limiting factors and cumulative effects would be the same as those identified for Alternative 1.

Missouri River – Sturgeon Island, Missouri River – Gist Ranch, and Missouri River – Hideaway Coulee Subwatersheds

This alternative would maintain conditions on the 18 miles of Missouri River between PFC and PNC. Noxious weeds and nonnative grasses would continue to limit the attainment of the higher ecological status of PNC.

Other limiting factors and cumulative effects would be the same as those identified for Alternative 1.

Alternative 3 (No Grazing)

Woodhawk Creek Subwatershed

Removal of livestock grazing from public land in the allotment would address the 4.17 miles of Woodhawk Creek that were functional-at-risk with a downward trend because of livestock grazing management. Streambank alteration levels would decrease, and the condition of the vegetation would improve. Therefore, sediment trapping would increase and floodplain development and channel function would progress. Stream channel width would decrease and streambank vegetation would increase on the remaining 14 miles of stream.

Missouri River – Sturgeon Island, Missouri River – Gist Ranch, and Missouri River – Hideaway Coulee Subwatersheds

The 18 miles riparian-wetland areas along the Missouri River would remain in proper functioning condition, and they would have the ability to move toward their ecological capability. The maximum amount of protection to the riparian area would occur under this alternative. Riparian area succession would continue to be impeded by leafy spurge and invasive species like smooth brome.

Cumulative Effects

Woodhawk Creek Subwatershed

The 4.17 miles of Woodhawk Creek within the vicinity of this reservoir would begin immediate improvement. This would be a direct, indirect, and cumulative benefit to riparian condition and stream channel function on Woodhawk Creek.

Other limiting factors and cumulative effects would be the same as those identified for Alternative 1.

Missouri River – Sturgeon Island, Missouri River – Gist Ranch, and Missouri River – Hideaway Coulee Subwatersheds

The maximum amount of protection to the riparian area along the Missouri River would occur under this alternative, and these areas would have the ability to move toward their ecological capability. Riparian area succession would continue to be impeded by leafy spurge and invasive species like smooth brome.

Other limiting factors and cumulative effects would be the same as those identified for Alternative 1.

Alternative 4 (Reduced Grazing)

Woodhawk Creek Subwatershed

Same as Alternative 2 (Current Management).

Missouri River – Sturgeon Island, Missouri River – Gist Ranch, and Missouri River – Hideaway Coulee Subwatersheds

Under this alternative, there would be three unconstrained river bottoms on the Missouri River excluded from livestock grazing. Unconstrained river bottoms on the Missouri River have the greatest potential to support riparian woody plant communities, and these areas would have the ability to move toward their ecologic capability. The existing exclosure at Woodhawk Bottom (2.78 river miles) and new exclosures at the Cow Island (1.25 river miles), and Sturgeon Island (1.9 river miles) would receive the maximum amount of protection under this alternative. Riparian area succession would be impeded by leafy spurge and invasive species like smooth brome.

Effects to riparian areas and water resources outside of the above mentioned locations would be identical to those described under Alternative 2 (Current Management).

Cumulative Effects

Woodhawk Creek Subwatershed

Same as Alternative 2 (Current Management).

Missouri River – Sturgeon Island, Missouri River – Gist Ranch, and Missouri River – Hideaway Coulee Subwatersheds

The maximum amount of protection to the unconstrained riparian areas along the Missouri River within the Woodhawk allotment would occur under this alternative, and these areas would have the ability to move toward their ecological capability.

Effects to riparian areas and water resources outside of the unconstrained river bottoms would be identical to those described under Alternative 2 (Current Management).

Other limiting factors and cumulative effects would be the same as those identified for Alternative 1.

Wildlife, Fisheries, Threatened, & Endangered Species, and Species of Concern

Affected Environment

Refer to Chapter 3, beginning on Page 179 in the Upper Missouri River Breaks National Monument Proposed Resource Management Plan and Final Environmental Impact Statement, Volume 1, dated January 2008, for a complete description of wildlife species present or potentially present within the Woodhawk Grazing allotment and

surrounding area. A description of wildlife habitat and resources can be found within the original Woodhawk watershed plan, which is available on the following web site: http://www.blm.gov/mt/st/en/fo/lewistown_field_office.html

Wildlife

Wildlife species within this area include typical species associated with the Missouri River Breaks habitat. Mule deer, bighorn sheep, raptors, migratory birds, sharptail grouse, coyotes, furbearers, numerous small rodents, reptiles and amphibians are found in the area. The proposed action is within year-round mule deer and elk habitat. Greater Sage-Grouse year-round habitat, including winter habitat, occurs in the East Upland and West Upland pastures (primarily West Upland). Bighorn year-round habitat occurs primarily in the East Riparian, West Riparian, and East Upland pastures. Mule deer and elk occur in all pastures, with fewer animals or lower densities occurring in the badland habitat occupied by bighorn sheep. Tree nesting raptors such as Golden Eagle (Designated Sensitive Species, SS), Swainson's hawk (SS), red-tailed hawks, and great horned owls are known to inhabit the area.

Reptiles in the area likely include prairie rattlesnake, bull snake, garter snake, racer, and short-horned lizard (SS). These species are widespread throughout the monument and Missouri River Breaks, and no crucial habitat will be impacted by the proposed action or connected actions. There are small earthen reservoirs which likely provide limited habitat for amphibians, as well as the Missouri River.

Region wide and on a landscape-scale, the alteration of sagebrush ecosystems and habitat fragmentation has occurred from conversion to cultivated crops, the conservation reserve program (CRP), road construction, oil and gas production, and other construction activities. The loss or alteration of sagebrush ecosystems has led to declines in species diversity, provides opportunities for invasive species to establish and fragments quality habitat for all wildlife species. Over the long term, changes in plant community composition has occurred from grazing and browsing by livestock and wildlife, wildfire, suppression of wildfire, increase in recreation use and noxious weeds. Impacts can vary depending on the degree of habitat change and the requirements of each wildlife species.

These changes and activities have occurred on both public, private and state land and have resulted in habitat loss for some species, fragmented habitat, the creation of smaller islands of habitat and isolated blocks of public land that are surrounded by extensive areas of agricultural lands. Expansion of roads for grazing management, recreation and during gas development, and the noise and disturbance associated with maintenance activities, have also disrupted wildlife populations.

BLM Montana Designated Sensitive Species

BLM Sensitive Species are designated by BLM State Directors with input from BLM, State and Natural Heritage Program Biologists, and other recognized specialists. This species list includes federally designated candidate species, species proposed for listing and delisted species for the five years following their removal from the list. Sensitive species are species requiring special management considerations to promote their conservation and reduce the likelihood and need for future listing under the Endangered Species Act (ESA). Most Montana BLM Designated Sensitive Species (BLM, 2004b) have no suitable habitat within the project area; these species are not considered to be part of the affected environment.

Northern goshawk, bald and golden eagle, long-legged and long-eared myotis and Townsends big-eared bats all have habitat and could occur within available habitat; however, there are no documented roosting or nesting sites within the allotment. There are black-tailed prairie dog towns on public, private and state land within the allotment. Loggerhead shrike and red-headed woodpecker likely occur within the allotment but have not been documented. The greater short-horned lizard, Northern leopard frog and plains spade-foot toad occur in the allotment.

On March 5, 2010, the United States Department of Interior Fish and Wildlife Service (FWS) announced that listing of Greater Sage-Grouse as an endangered species under the Endangered Species Act (ESA) is warranted, but the need to address higher priority species and limited funding precluded immediate listing action. As a result, Greater Sage-Grouse are now candidate species for protection under the ESA. The FWS will make a listing decision of the species by the end of September 2015. Candidate species do not receive statutory protection under the ESA and

individual states are responsible for their management. BLM manages sensitive species habitat to promote their conservation and reduce the likelihood and need for future listing under the ESA.

The Greater Sage-Grouse habitat within the allotment is only a small part of the Core Habitat within Fergus County, Montana. Greater Sage-Grouse Preliminary General and Preliminary Priority Habitat (core) were identified by MT Fish, Wildlife, & Parks on a large landscape scale. Due to steep breaks habitat and timber, future ground truthing may indicate that many of these areas are unsuitable Greater Sage-Grouse habitat.

Within Woodhawk allotment and custodial allotments, FWP identified 2,941 acres of Priority Habitat and 3,890 acres of General Habitat on BLM lands, inside and out of the monument. There are much larger acreages of habitat occurring on private or MT DNRC lands, primarily outside the monument and Woodhawk allotment, but within custodial allotments. There are three leks within the allotment, one in the allotment but not in the Monument, one on an isolated 40 acre BLM tract, and one on DNRC lands. The latter two are within the custodial portion of the allotment. Winter habitat is part of the much larger block of habitat contiguous to the allotment on private and Montana State lands. Portions of the allotment may be used for wintering birds in any given year.

Management of this allotment is in conformance with BLM IM-043-12 and the following principles;
1) Protection of unfragmented habitats;
2) Minimization of habitat loss and fragmentation; and
3) Management of habitats to maintain, enhance, or restore conditions that meet Greater Sage-Grouse life history needs.

Migratory Birds

The Migratory Bird Treaty Act (16 USC 703-711) protects all migratory birds including those listed as BLM Sensitive Species. The sagebrush/grassland and ponderosa pine/Douglas-fir habitat types within the allotment are considered minor components of the larger adjacent habitat for Neotropical Migratory Birds. The species present are those common to these habitat types within north central Montana. The riparian woodland community along the Missouri River is important nesting, feeding, roosting and stopover for many migratory species, including several Designated Sensitive Species.

Threatened and Endangered Species and Species Proposed for Listing

Pallid sturgeon is protected by the Endangered Species Act (ESA) and can be found adjacent to the allotment in the Upper Missouri River. This portion of the Missouri River is part of the Pallid Sturgeon critical habitat and within the recovery area. There would be no affect to them or critical habitat from any alternative. There are no other species protected or proposed for listing under the ESA within the allotment. As pallid sturgeon evolved in a very turbid natural system, upstream dams have removed a great deal of sediment loading, management will improve riparian vegetation, and livestock grazing will not affect water quality on a watershed scale, it was determined that proposed management would have no effect on pallid sturgeon.

The Pallid Sturgeon Recovery Plan (1993) pointed out that water quality in the Missouri River is better than it was historically, likely to the detriment of native species which evolved under those conditions. The Pallid Sturgeon Recovery Plan (1993) recommended that efforts be made to "Restore the dynamic equilibrium of sediment transport within the Missouri River", and stated "Main stem Missouri River dams have trapped sediments in reservoirs and bank stabilization has reduced erosion in riverine reaches. Additional sediment input, initially within high-priority recovery areas, is necessary to restore instream habitats and turbid waters. Opportunities to restore the dynamic equilibrium of sediment transport should be pursued". These recommendations show that grazing at the very least, may have a slight positive impact for native fisheries. " These recommendations show that grazing will have no negative impacts for native fisheries, including pallid sturgeon.

Fisheries

The Upper Missouri River supports the only fisheries within the allotment. These fish populations are managed by Montana Fish, Wildlife & Parks. The Missouri River is a major river system with endangered pallid sturgeon and

numerous sensitive species, including paddlefish, sauger, sturgeon chub, pearl dace and spiny softshell turtle (river restricted reptile). The native species present evolved under same condition described above for pallid sturgeon, and are likely affected the same way. Improved water quality with lower sediment levels may have negative impacts on native species, while favoring introduced non-native species.

Environmental Consequences

Alternative 1 (1998-2008 Grazing Permit)

While the allotment is meeting the biodiversity standard for rangeland health, grazing use prior to 2008 was resulting in overuse of some riparian habitat important to migratory birds and other wildlife. Past observations indicate that current grazing management may have been over-utilizing herbaceous cover on small portions of the Greater Sage-Grouse habitat within the allotment. Continuing past grazing practices may have reduced the habitat available to Greater Sage-Grouse and other species dependent on sagebrush grassland, and reduce available riparian habitat for migratory birds. There would be no impact to any designated sensitive species from this alternative.

Man-made and natural water sources would remain the same providing habitat for larva of the Western Encephalitis mosquito which may be carriers of West Nile Virus (WNV). This mosquito prefers shallow, still water with emergent vegetation. Steep sided stock tanks are not considered good habitat. Man-made reservoirs with emergent vegetation may favor this species but also provide important habitat for Greater Sage-Grouse and many other species, including many birds, invertebrate and amphibian predators of the mosquito species and its larva. This alternative would not increase or reduce habitat for the Western Encephalitis mosquito. This analysis is included as per guidance in BLM, Instruction Bulletin MT-2011-033, July 2011.

Maintaining existing stock waters would provide reliable water for big game in areas without natural water. Benefits to big game would be most notable during drought years.

Alternative 2 (Current Grazing Management)

Riparian habitat-dependent species, including many migratory bird species, would benefit from this alternative, as riparian areas receive longer rest and develop successionally. Big game habitat in the uplands would receive greater use as livestock are better dispersed. These impacts are expected to be minimal, as much of this habitat currently receives little to moderate use and is in excellent condition. Maintenance of the livestock reservoirs would benefit many species, including big game, bats, amphibians, and migratory birds. No BLM designated sensitive species would be impacted by this alternative, but there may be some minor benefits from improved distribution and increased availability of water.

Wildlife habitat would continue to meet the biodiversity standard for rangeland health. The upland areas in the allotment would be used at different times throughout the grazing season and receive deferment or rest at some time during the multi-year grazing cycles. Cleaning and repairing reservoirs could improve livestock distribution and provide additional habitat and water sources for many species.

Man-made and natural water sources would remain the same providing habitat for larva of the Western Encephalitis mosquito which may be carriers of West Nile Virus (WNV). This mosquito prefers shallow, still water with emergent vegetation. Steep sided stock tanks are not considered good habitat. Man-made reservoirs with emergent vegetation may favor this species but also provide important habitat for Greater Sage-Grouse and many other species, including many birds, invertebrate and amphibian predators of the mosquito species and its larva. This alternative would not increase or reduce habitat for the Western Encephalitis mosquito. This analysis is included as per guidance in BLM, Instruction Bulletin MT-2011-033, July 2011.

Maintaining existing stock waters would provide reliable water for big game in areas without natural water. Benefits to big game would be most notable during drought years.

Alternative 3 (No Grazing)

The removal of grazing by domestic livestock would increase native vegetative cover and health benefiting many species, including Greater Sage-Grouse, by providing more food, escape and nesting cover. Removing grazing would improve native vegetative health and vigor, allowing for greater productivity of herbaceous vegetation. The increase in forbs would benefit big game and delay use on browse species by wildlife. Additional vegetative cover would provide protection from predators for big game fawns and calves until they become mobile. An increase in herbaceous cover would provide additional protection from predators for Greater Sage-Grouse and other ground nesting birds. As residual herbaceous vegetation increases, the potential for wildfires would also increase. If a fire occurred it would be expected to spread more rapidly and burn more intensely. Following a fire there may be benefits to vegetative and successional diversity for many wildlife species within sagebrush/grassland habitat. However, a wildfire within Greater Sage-Grouse habitat would remove Wyoming big sagebrush, which is easily killed by fire and can take many years to reestablish, potentially reducing or eliminating Greater Sage-Grouse populations within the monument, from impacted areas. All wildlife species are considered "Objects " of the monument and several species were specifically named. Sage grouse would be negatively affected by a large increase in non-native invasive grasses, whether or not a wildfire occurs. Prairie dogs would not be affected unless a wildfire burns through surrounding sagebrush, in which case their habitat will expand to fill open habitat.

All herbaceous vegetation will increase throughout the allotment. This includes invasive grasses which have reduced value to wildlife. These invasives include smooth brome, cheatgrass, Japanese brome, quackgrass, and non-native cultivar of reed canarygrass. These species will out-compete native species, form mats of litter and become fire hazards which can remove native vegetation. Without regular grazing to reduce these invasives, the quality of wildlife habitat will decline over time and then dramatically after any wildfire. Examples of human caused fires occurred twice on Grand Island, at Hole in the Wall campground and at The Wall campground. These risks are greater where people concentrate to camp, including campsites within this allotment.

Without periodic maintenance and repairs, many of the man-made reservoirs would silt in or breach and lose their value for wildlife. Any wildlife species which benefit from these water sources and associated riparian-wetland habitat would be impacted in the long-term by the loss of open water.

This alternative would provide additional habitat for the Western Encephalitis mosquito which may be carriers of West Nile Virus (WNV). Without maintenance of reservoirs, the amount of shallow water and stagnant pools would increase as reservoirs silt full creating habitat for larva of the Western Encephalitis mosquito (BLM, Instruction Bulletin MT-2011-033, July 2011). Some species of amphibians and invertebrate predators of the mosquito and their larva would also increase. In addition, the loss of open surface water would impact waterfowl, shore birds, bats, big game and many other migratory and resident species, including Greater Sage-Grouse.

In the short-term, emergent cover around the shoreline of each man-made, stock water reservoir would increase and water quality would improve. Increases in riparian-wetland vegetation would benefit many wildlife species by providing additional forage, nesting and escape cover. This would benefit migratory birds and some Designated Sensitive Species, including Greater Sage-Grouse and amphibians. There would be an increase in habitat for aquatic and terrestrial invertebrates providing food for many bird, reptile and amphibian species. Man-made reservoirs with emergent vegetation and stock tanks are often favorable mosquito breeding habitat, but also provides important habitat and water for Greater Sage-Grouse and many other species, including many bird, invertebrate and amphibian predators of the mosquito species and its larva.

Maintaining external allotment boundary fences would still be necessary to control livestock on adjoining grazing allotments and would continue to be obstacles for wildlife movement and have the potential to cause mortality. Removing interior barb wire fences would benefit wildlife, reducing the risk of entanglement and mortality. However, due to the location of private and state land within the allotment, fencing the boundaries would require additional fences, creating additional wildlife obstacles. Fences constructed on private and state land would not be subject to BLM fencing standards for areas with deer, elk, bighorn sheep, and Greater Sage-Grouse further restricting their movement and potentially increasing the number injured and killed. Vehicles used to construct new fences would impact Wyoming big sagebrush and other vegetation which would have minor and short term impacts on wildlife in the area. Levels of traffic and road use to manage livestock and maintain projects would likely increase. The addition of fences around private and state land would require maintenance and BLM would be required to allow vehicle access to isolated properties. Greater Sage-Grouse and other species would be affected by increased traffic.

Alternative 4 (Reduced Grazing)

Riparian habitat-dependent species, including many migratory bird species, would benefit from this alternative, as riparian areas receive rest and develop. Big game habitat in the uplands would receive greater use as livestock are dispersed. These impacts are expected to be minimal, as much of this habitat currently receives little to moderate use and is in excellent condition, with important grazing and browse species plentiful and with good vegetative health. Quality available forage is not currently a limiting factor for any of the big game species. Maintenance of the livestock reservoirs would benefit many species, including big game, bats, amphibians, and migratory birds. No BLM designated sensitive species would be impacted by this alternative, but there may be some minor benefits from improved distribution and increased availability of water. All fences are obstacles to wildlife and will impact movements, use area, and occasionally cause mortality. Any additional fencing increases those impacts.

Wildlife habitat would continue to meet the biodiversity standard for rangeland health. The uplands areas in the allotment would be used at different times throughout the grazing season and receive deferment or rest at some time during the multi-year grazing cycles. Cleaning and repairing reservoirs could improve livestock distribution and provide additional habitat and water sources for many species.

Man-made and natural water sources would remain the same providing habitat for larva of the Western Encephalitis mosquito which may be carriers of West Nile Virus (WNV). This mosquito prefers shallow, still water with emergent vegetation. Steep sided stock tanks are not considered good habitat. Man-made reservoirs with emergent vegetation may favor this species but also provide important habitat for Greater Sage-Grouse and many other species, including many birds, invertebrate and amphibian predators of the mosquito species and its larva. This alternative would not increase or reduce habitat for the Western Encephalitis mosquito. This analysis is included as per guidance in BLM, Instruction Bulletin MT-2011-033, July 2011.

There are wildlife species within the allotment which benefit from degraded or declining range conditions. This includes black tailed prairie dogs and species which prefer prairie dog towns, degraded range conditions and bare ground. These would include but are not limited to burrowing owl and the short-tailed lizard, which are Designated Sensitive Species. While black tailed prairie dogs might expand into areas where vegetation has been removed through grazing, wildfire and mechanical control, no expansion of existing towns has been documented in the allotment. Species adapted to earlier seral stages would be excluded from areas protected from grazing.

Levels of traffic and road use to manage livestock and maintain projects would continue at current levels with impacts to wildlife remaining the same.

Herbaceous vegetation in cattle excluded areas will increase. This includes invasive grasses which have reduced value to wildlife. These invasives include smooth brome, cheatgrass, Japanese brome, quackgrass, and no-native cultivar of reed canarygrass. These species can out compete native species, form mats of litter and become fire hazards which can remove the riparian woodlands. Without regular grazing to reduce these invasives, wildlife habitat along the river could decline over time and then dramatically after any wildfire. Examples of human caused fires starting in ungrazed areas occurred twice on Grand Island, at Hole in the Wall campground, at The Wall campground, and Gillmore Dugout cabin. These risks are greater where people concentrate to camp, including campsites within this allotment. The ability to prescriptively graze the livestock exclosures, combined with invasive species control efforts, could minimize these impacts.

Cumulative Effects

The assessment area for cumulative effects is defined as the 417 hunt unit boundary identified by Montana Fish Wildlife and Parks.

Common to All Alternatives

Riparian areas and preferred woody species on the Missouri River are also being affected by recreational impacts, particularly the understory species such as green ash, box elder, and chokecherry. Most recreation campsites are located underneath old cottonwood groves. Recreation use can impact understory species by camping, trampling,

and firewood gathering. At popular campsites, shrub elimination and soil compaction can preclude the site from returning to a shrub-dominated site, which can lead to the loss of disturbance intolerant species. These impacts could affect migratory birds, including many Designated Sensitive Species, nesting raptors (bald & golden eagle), reptiles(snakes), deer, elk, and many smaller species. Road construction, range improvements(fences, artificial waters), land conversion for farming, recreational development, and other man created disturnbances will continue to impact wildlife, through disturbance, fragmentation, and loss of habitat. Many of the impacts are occurring on lands under different ownership, or these impacts have occurred over decades. These impacts will continue to occur at same levels, until disturbances are either removed or habitat is restored. Any new recreational development, range improvements, roads, or invasive species dominance will increase these impacts to wildlife and wildlife habitat.

Upland Vegetation

Affected Environment

The allotment is in the 11 to 14 inch precipitation zone. The soils developed from sandstone and shale parent materials and the prevalent soil types include clayey, dense clay, shallow clay, exposed shales and rock outcrop. Most soils in the allotment are susceptible to erosion. Two ecological sites dominate the allotment: Clayey 11-14" and Shallow Clay 11-14".

Clayey 11-14"

The physical aspect of this site in the Historical Climax Plant Community (HCPC) is that of a level to undulating grassland dominated by cool season grasses, with forbs and shrubs occurring in smaller percentages. Approximately 85−90% of the annual production by weight is from grasses and sedges, 1–5% is from forbs, and 5–10% is from shrubs, half-shrubs, and cacti. Canopy cover of shrubs is typically 1−5%. Trees are not significant on this site.

Dominant species include bluebunch wheatgrass, green needlegrass, western or thickspike wheatgrass, and a diverse group of short grasses, such as Sandberg bluegrass, blue grama, and prairie junegrass. There are abundant forbs (purple and white prairie clover, prairie coneflower, dotted gayfeather) which occur in smaller percentages. Shrubs such as Wyoming big sagebrush and winterfat are common.

This plant community is well adapted to the Northern Great Plains climatic conditions. The diversity in plant species and presence of tall, deep-rooted perennial grasses allows for drought tolerance. Plants on this site have strong, healthy root systems that allow production to increase significantly with favorable moisture conditions. Abundant plant litter is available for soil building and moisture retention. Plant litter is properly distributed with very little movement off-site and natural plant mortality is very low. This plant community provides for soil stability and a functioning hydrologic cycle.

Shallow Clay 11-14"

The physical aspect of this site in the HCPC is that of a gentle to steep sloping grassland with scattered shrubs on steeper slopes. Approximately 70–75% of the annual production is from grasses and sedges, 5–10% from forbs, and 5–15% is from shrubs and half-shrubs. The canopy cover of shrubs is 1−5%.

Dominant species include bluebunch wheatgrass, green needlegrass, plains muhly, and western or thickspike wheatgrass. Short grasses such as Sandberg bluegrass and prairie junegrass are also present. There are abundant forbs (purple and white prairie clover, prairie coneflower, dotted gayfeather) which occur in smaller percentages. Shrubs such as Nuttall's saltbush and winterfat are common. Rocky Mountain juniper may also occur on steeper slopes.

This plant community is well adapted to the Northern Great Plains climatic conditions. The diversity in plant species and presence of tall, deep-rooted perennial grasses allows for drought tolerance. Plants on this site have strong, healthy root systems that allow production to increase significantly with favorable moisture conditions. Abundant

plant litter is available for soil building and moisture retention. Plant litter is properly distributed with very little movement off-site and natural plant mortality is very low. This plant community provides for soil stability and a functioning hydrologic cycle.

The Natural Resource Conservation Service (NRCS) has indicated that managed livestock grazing is suitable on both site as it has the potential to produce an abundance of high quality forage. These sites are often preferred for grazing by livestock, and animals tend to congregate in these areas. In order to maintain the productivity of this site, grazing must be managed carefully on adjoining sites with less production. Management objectives should include maintenance or improvement of the plant community. Shorter grazing periods and adequate re-growth after grazing are recommended for plant maintenance and recovery. Heavy stocking and season-long use of this site can be detrimental and will alter the plant community composition and production over time.

Rangeland Health Assessments completed in 2008 indicates the allotment is meeting the upland health standard. In 2013 BLM installed Line Point Intercept transects on the allotment.

Cumulative Effects

No cumulative impacts are expected to this resource.

Environmental Consequences

Alternative 1 (1998-2008 Grazing Permit)

Upland vegetation would continue to meet standards.

Alternative 2 (Current Grazing Management)

Upland vegetation would continue to meet standards. The uplands areas in the allotment would be used at different times throughout the grazing season and receive deferment or rest at some time during the multi-year grazing cycles. Cleaning and repairing reservoirs could improve livestock distribution, benefitting upland vegetation.

Alternative 3 (No Grazing)

As the 2008 upland assessments indicated that the upland health standard was being met, no change would be expected to the identified upland vegetation communities. Trend, indicated by the amount of litter, bare ground and desirable plant species would remain static or increase. The upland standard would continue to be met and allotment would continue to be in conformance with the upland health standard (Standard 1).

Alternative 4 (Reduced Grazing)

Installation of grazing exclosures would allow the BLM to manage the timing or intensity of grazing within certain exclosures, while eliminating grazing within other exclosures. Timing refers to when grazing would occur while intensity refers to how much of the plant is used.

The effect of plant community would be similar to that of the proposed action. Upland vegetation would continue to meet standards. The uplands areas in the allotment would be used at different times throughout the grazing season and receive deferment or rest at some time during the multi-year grazing cycles. Cleaning and repairing reservoirs could improve livestock distribution, benefitting upland vegetatio

Invasive Species

Affected Environment

Executive Order 13112 defines invasive species as “an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health” and “a species that is non-native to the ecosystem under

consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health." Not all alien or exotic species are considered invasive.

Management of many of the invasive plant species within the Upper Missouri River Breaks falls under the Guidelines for Integrated Weed Management Plan (BLM 2012). The management outlined in this plan covers mainly state and county listed noxious weeds. Noxious weeds known to occur in the allotment include leafy spurge, Russian knapweed, and Canada thistle. These species are usually associated with roads and riparian areas. Other invasive species known to occur include annual bromes (downy and field), smooth brome, quackgrass and crested wheatgrass.

Environmental Consequences

Common to all alternatives

Weed control is conducted primarily as a containment strategy to keep invasive plants from expanding their distribution on the river bottoms and from invading upland areas. Integrating management techniques is the best strategy for treating invasive plants. However, herbicide formulations and application techniques can be limited by non-target vegetation and proximity to surface and ground water. Non-classical biological control (use of domestic animals, primarily sheep and goats) is restricted due to the threat of pathogen transmission to bighorn sheep populations. For upland sites and exclosures, the BLM would maintain discretion to utilize livestock (cattle) grazing for the purpose of managing invasive vegetation such as annual bromes. Classical biological control (use of insects and pathogens) is not appropriate for the type of infestations that occur due to their small size. Many of the classical biological control agents have already moved to these infestations from other release sites. Physical treatments such as hand pulling are inappropriate for most species other than spotted knapweed due to their perennial deep spreading root systems. Due to these limitations, invasive species will continue to persist at some level regardless of the alternative chosen.

Alternative 1 (1998-2008)

Grazing use prior to 2008 was resulting in the overutilization of some riparian areas and potentially small portions of Sage Grouse habitat. Overutilization can lead to an increase of invasive and undesirable plants that are unpalatable, unusable, or poisonous to livestock and over time direct vegetation communities towards alternate steady states dominated by undesirable exotic species.

The ability to utilize grazing to manage vegetation within existing exclosures to control invasive grasses and reduce hazard of wildfire would reduce potential impacts within the exclosures.

Alternative 2 (Current Grazing Management)

Under this alternative, the vegetation communities should be more stable and sustainable as compared to the overutilization described in some areas in Alternative 1 and underutilization in Alternatives 3 and 4. Stable and healthy plant communities are thought to be less prone to invasion. More uniform grazing across the allotment due to improvements should help limit pockets of over and under grazed sections that can lead to conditions favoring invasive plants.

The ability to utilize grazing to manage vegetation within existing exclosures to control invasive grasses and reduce hazard of wildfire would reduce potential impacts within the exclosures.

Alternative 3 (No Grazing)

Herbaceous cover, including invasive species, would increase within the allotment without livestock grazing. This could lead to stands of decadent vegetation and litter buildup that over time would allow open spaces for the invasive plants to establish and expand. The expansion of invasive plants would be expedited should the increased fuel loads of underutilized vegetation lead to fire. Fire reduces competition from desirable species and creates disturbance that allows for rapid colonization of invasive plants if a seed source is present.

The elimination of livestock use would not eliminate other natural or anthropogenic dispersal mechanisms such as recreational activities, wildlife use, wind, and flooding. Thus it is assumed that some spread will continue regardless of alternative. It would be difficult, if not impossible, to measure the dispersal attributed to specific mechanisms to quantify dispersal for this analysis. Because of the biology and competitive nature of invasive plant species, they will persist regardless of alternative chosen, particularly along roads, in the river corridor and in riparian areas which experience frequent disturbance and are often exposed to invasive plant seed or other reproductive plant parts.

Alternative 4 (Reduced Grazing)

The potential effects of this alternative would be the same as those in Alternative 3 within the exclosures identified. However, the ability to utilize grazing to manage vegetation within existing exclosures to control invasive grasses and reduce hazard of wildfire would reduce potential impacts within the exclosures.

Cumulative Effects

Noxious and invasive plant management would continue to the extent possible with the goal of containing and reducing established infestations and eradicating new invaders when possible. This management is being applied throughout the Upper Missouri River Breaks National Monument through the Upper Missouri River Breaks, in accordance with the Guidelines for Integrated Weed Management Plan (BLM 2012). Though many species may continue to persist, coordinated management should result in less degradation caused by invasive plants through prevention of new infestations, reduced rate of dispersal on managed infestations, and potentially the containment of some species.

Since BLM would maintain discretion to utilize grazing to manage vegetation within existing exclosures to control invasive grasses and reduce hazard of wildfire. Suspended AUMs may be activated for these purposes.

Recreation Resources

Affected Environment

The Woodhawk allotment spans for approximately 20 miles along the Missouri River within the Upper Missouri River Wild and Scenic River (WSR) Corridor and also includes segments of both the Lewis and Clark and Nez Perce National Historic Trails. The WSR and National Trails were identified as Monument Objects. The primary recreational uses in the allotment are river recreation, such as canoeing and fishing, and hunting in the fall. Recreational use is present within the area year round but is dependent upon river conditions from November thru March and road conditions every month of the year.

Public Access and Uses

Recreational use of the allotment is focused on the wild and scenic river corridor. Most users, with the exception of fall hunters, access the allotment from the river. The Wild and Scenic River corridor with pockets of cottonwood forest that that provide shade and shelter from the otherwise hot summer conditions, offers outstanding primitive recreation opportunities that are desirable to recreation users. Twenty miles of public riverfront property is accessible to boaters, hunters and fishermen, sightseers, history buffs, and outfitters.

There are three primary overnight destinations along the river corridor within the allotment. The majority of recreational use is concentrated within the Lower Woodhawk Recreation Area, which is located on the river near the eastern edge of the allotment This popular area has one primitive campground which is accessible by both river and low standard motorized routes. In addition to Lower Woodhawk, there are two primitive boat camps, Upper and Middle Woodhawk, located a little further upstream. Visitors to Lower Woodhawk have the opportunity to experience the nearby Nelson Homestead and a segment of the Nez Perce National Historic Trail, as well as the Lewis and Clark Trail. The historic values of the Monument were also specifically identified as objects and values of the National Monument. These three campsites are fenced and exclude about two miles of the Missouri River from livestock grazing, which prevents interaction with livestock and protects high value riparian resources associated with the confluence of Woodhawk Creek (Map 3).

A study of campsites along the WSR conducted in 2002 by the University of Montana recorded 118 campsites along the Wild and Scenic River, which included everything from primitive, one-time use sites without amenities, to developed boat camps with toilets, fire rings, and picnic tables. Seven campsites were recorded within the allotment. With the exception of Lower Woodhawk, these areas are not frequently used due to the absence of easily accessible campsites with steep vertical banks, excessive mud during low water, and expansive thickets of willow growth that deters boating recreationalists from establishing permanent campsites. Subsequent monitoring of sites in this section was conducted in 2006, 2009, and 2013. The most recent observations reflect the previously mentioned drawbacks that deter recreationalists from camping in this area and in some cases the previously recorded campsites have naturalized, indicating very low levels of use. Past grazing practices that allowed for summer long grazing may have also deterred camping in this area due to degraded riparian conditions and the desire to avoid livestock and their remains. Other camping options are also available on the north side of the river, outside of the allotment, where several established campsites receive continuous use from early spring through the hunting season.

Although these areas were traditionally popular for use by recreationists, recent changes in bank structure and emergent vegetation has reduced use, particularly river users. Lower Woodhawk campsite has traditionally received the greatest amount of use due to easy access by river as well as being accessible by vehicle. Recently this location received large amounts of sediment deposition from Woodhawk Creek with subsequent re-vegetation hindering access from the river, which has deterred use by boaters in the past few years. In 2007, the Upper Woodhawk campsite experienced severe erosion of the bankside access and has been rendered virtually unusable by boaters. Middle Woodhawk experienced the same impact in 2007 with bank erosion and subsequent sediment deposition creating a large sandbar with vertical banks inhibiting use of the once suitable landing site for watercraft. Regeneration of riparian vegetation has further reduced access by reducing visibility and ease of access. Due to these conditions, the site is rarely used except by unauthorized (trespass) vehicle traffic that occurs primarily during the fall hunting period. Though access has become more difficult, the cottonwood forest and riparian vegetation create a desirable recreation opportunity for those seeking a more primitive recreation experience.

Visitor use on the river is recorded from May thru October using self-registration and face to face contact from BLM staff at specific launch points within the river corridor. Recreational use along the UMNWSR from 2003 – 2012 indicates a total of 48,645 registered visitors engaged in boating activity on the Upper Missouri with 9,860 of that number (20%) reporting use in the area downriver from Judith Landing to include the area of the Woodhawk allotment. Further deduction of these estimates indicates that during the timeframe of the current grazing period (1 May – Jun 15) 1,487, or 15% of river users traversed this area with the majority of any overnight camping taking place at Gist Bottom, located on the North side of the river outside of the allotment, and Lower Woodhawk Campsite. These sites receive the bulk of recreational use in this reach of the river during the boating season and throughout the fall hunting season, because they offer the highest quality camping locations in this section of the river. Commercial river outfitters and larger user groups account for the majority of use at this site during the boating season, and hunters who access the site by road and water access during the fall/winter months.

Other primitive recreation opportunities are available in the upland areas, including the Woodhawk Wilderness Study Area (WSA). The uplands are accessed by primitive vehicle routes and by hiking from the river. The amount of use in the uplands has not been recorded with any accuracy, but overall the use is thought to be low and limited to the hunting season. People looking to find solitude would find ample opportunities in the uplands of the allotment. Day hiking and hunting from river camps is thought to be the primary recreational use, though there have been some primitive campsites identified in the uplands that were likely established during the hunting season. A limiting factor to recreational use of this area is the lack of natural water sources. While excellent opportunities for primitive recreation exist in the uplands, most use is concentrated on the WSR corridor.

Environmental Consequences

Alternative 1 (1998-2008 Grazing Permit)

Livestock use under the former grazing system resulted in both direct and indirect impacts to recreation users. These impacts would be expected if the former grazing system was reauthorized. Season long presence of cattle, and their remains has the potential to conflict with user desires and expectations for experiencing the Wild and Scenic River. Visual impacts from riparian vegetation that was not meeting the standard in the East and North

Riparian Pastures would impact the scenic quality and recreation experience along this popular segment of the Missouri River. Under this alternative, livestock would be present in at least one of the pastures during the entire peak recreation season, which could create conflicts between recreational users and livestock. Livestock grazing along the Missouri River could impact recreation users within the sight and sound of cattle and for multi-day, overnight users camping in these areas, due to direct impacts involving livestock waste at sites used jointly by visitors and livestock. The presence of cattle and the associated impacts primarily impacts users seeking solitude.

Alternative 2 (Current Grazing Management)

Potential impacts from the proposed action are greatest in highly visited riparian areas along the river, where both cattle and recreationists congregate. Under this alternative, use of riparian pastures would occur prior to the high use recreation period, with reduced levels of AUMs, which would reduce direct conflicts between livestock grazing and recreation users when compared to Alternative 1. Some residual impacts would be expected after livestock are removed, due to the removal of vegetation and the presence of fecal matter that could persist into the primary use season. It is expected that potential impacts from vegetation removal would be minimal to unnoticeable after sufficient time has been allowed for regeneration. Long-term improvements to range health and riparian conditions would benefit recreation users, particularly along the river, where visitors come to experience the scenic beauty of the wild river corridor. As previously mentioned visitor use during the proposed grazing period is at its lowest point of the recreational season indicating that direct impacts from interaction with livestock would be minimal.

Alternative 3 (No Grazing)

The no-grazing alternative would eliminate conflicts between recreation users and livestock. Potential impacts from direct interaction with livestock and their remains, as well as livestock support facilities would not occur under this alternative. This alternative would reduce current impacts from livestock grazing to vegetation within the river corridor, which is considered desirable to some visitors. However, unrestricted growth of the understory could complicate access to camping areas, create wild fire hazards and contribute to the presence of undesirable wildlife, as well as tripping and falling hazards throughout the corridor. These conditions, however, would not detract from the primitive recreation opportunities expected along a Wild and Scenic River.

Alternative 4 (Reduced Grazing)

Impacts under this alternative would be essentially the same as described for Alternative 2, with the following exception. In addition to improving resource conditions throughout the allotment, it proposes to exclude livestock grazing from two additional riparian areas in the vicinity of Sturgeon Island and Cow Island (Map 3). These areas contain functional riparian zones much sought after by recreational users for camping due to the availability of shade, fuel, and potential opportunities for hiking, hunting, fishing and sightseeing. The drawback to both of these areas for boating recreationalists is the absence of quality campsites due to bank structure that inhibits or in some cases prohibits the landing of watercraft. Steep vertical banks, excessive mud during low water, and expansive sections of impenetrable willow growth all combine to deter boating recreationalists from establishing permanent campsites in this reach of the river corridor. Despite the drawbacks to access, this alternative would provide ample opportunities to camp in protected riparian zones without impacts from grazing use. This alternative would best maintain the Outstanding Remarkable Values of the WSR and the setting of the historic trails.

Visual Resources

Affected Environment

The allotment contains sensitive visual resources associated with the WSR, two National Historic Trails, and the Woodhawk Wilderness Study Area. The area offers high quality scenery with a high level of public sensitivity to visual change. The RMP established visual resource objectives for the entire Monument, including the allotment, which contains 18,231 acres of VRM I, and 5,537 acres of VRM II. The portion of the allotment outside of the WSR Corridor and Monument boundaries is managed for VRM III and IV; 33 acres and 3,399 acres respectively. The scenery and historic setting of the National Trails and WSR are important values of the Monument.

Public lands within the allotment were assigned a VRM class based on a process that evaluates scenic quality and sensitivity to changes in the landscape contingent upon the viewing platform from which a project or proposal would be seen by the casual observer. The objective of VRM Class I is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude limited management activity. Wilderness Study Areas and WSR classified as Wild are automatically designated as VRM I by policy, which is not necessarily based on visual quality, sensitivity to change, or location in the visual horizon. The Monument RMP allowed for the development and maintenance of structures within WSAs where consistent with policies for managing Wilderness Study Area. The allotment contains fence lines, water developments and primitive roads that were an established part of the grazing system prior to designation as a WSA. The object of VRM Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. The objective of VRM III class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should bot dominate the view of the casual observer. The objective of VRM Class IV is to provide for management activities that require major modifications of the existing character of the landscape. The vast majority of the allotment is managed to retain visual quality and minimize contrasts created by management activities or uses.

The North River, West Riparian, and East Riparian pastures are located primarily within the WSR corridor, which is managed for VRM I objectives. A large portion of the East Uplands pasture is managed for VRM Class IV with WSA and Monument portions managed as Class I and II. The West Upland and Two Calf Custodial pastures are primarily VRM Class IV.

Environmental Consequences

Alternative 1 (1998-2008 Grazing Permit)

The grazing system up to 2008 was not meeting land health standards in portions of the riparian areas, which created contrasts in color and form in vegetation that detracted from the scenic quality of the area. These impacts were most pronounced in the riparian corridors and near water sources where cattle congregate. Visual impacts from riparian vegetation that was not meeting the standard in the East and North Riparian Pastures would impact the scenic quality of this popular segment of the Missouri River. Under this grazing system, VRM objectives for Class I and II were not being attained in site specific areas. Fences, reservoirs and other developments can detract from the visual environment, particularly when native vegetation is overgrazed and development becomes more readily apparent. However, these facilities can also provide for better livestock distribution and protect sensitive resources, such as Cottonwood forests, which would benefit visual resources across the allotment by improving resource conditions. This alternative would not meet VRM objectives in portions of the allotment, as resource conditions would be expected to continue their decline in those areas that were not meeting land health standards.

Alternative 2 (Current Grazing Management)

Visual resource conditions would improve under this alternative due to changes in livestock grazing that would limit the season of use in the riparian pastures. Under the current grazing system, resource conditions have improved, which has reduced or eliminated visual contrasts from areas that were overgrazed under the previous system (Alternative 1). Fences, reservoirs and other developments can detract from the visual environment, but the improved grazing system would reduce contrasts by maintaining resource conditions through adequate rest and alternating seasons of use that would prevent overuse of any one pasture. These facilities can also provide for better livestock distribution and protect sensitive resources, such as Cottonwood forests, which would benefit visual resources across the allotment by improving resource conditions. Installation of an exclosure fence on Woodhawk Creek and maintenance of reservoirs and other range improvement projects may create short-term visual impacts for time periods immediately following installation, but visual contrasts would decrease as native vegetation reestablishes in disturbance areas. In the long-term, improved livestock distribution throughout the East Uplands Pasture would ultimately improve resource conditions along Woodhawk Creek as a whole, which would benefit visual resources, including the historic setting of the Nez Perce Trail. The Nez Perce Trail is an identified object of the Monument.

Alternative 3 – No Grazing Alternative

This alternative would eliminate grazing impacts to vegetation, allow for the removal of fences and other range developments, thereby reducing the visual contrasts from management activities and uses. This alternative would achieve the VRM objectives for the allotment and protect scenic objects and values of the Monument, including the historic setting of the Lewis and Clark and Nez Perce Trails, and viewshed from the Wild and Scenic River.

Alternative 4 – Reduced Grazing Alternative

Impacts under this alternative would be similar to those described for Alternative 2. However, this alternative would provide maximum protection for the areas with the most potential to develop cottonwood forests within the allotment on public lands. Allowing the regeneration and recruitment of additional woody vegetation toward PNC would enhance the visual quality as seen from the primary viewing platform along the WSR and Lewis and Clark Trail. Minor impacts to visual resources could be expected in some small, site specific areas in the immediate vicinity of the proposed exclosure fences. However, these impacts could be minimized through the use of temporary fencing that would be removed during the primary use season or through use of drift fences that would located out of sight from the river corridor. The scenic resources and historic setting of the WSR and National Trails would be enhanced through establishment of riparian vegetation, including cottonwood forest in the unconstrained portion of the Missouri River that would be excluded from livestock use.

Cumulative Impacts

The assessment area for Visual Resources includes the public lands within the boundary of the National Monument. This area was chosen because the entire National Monument has similar VRM standards as the allotment and scenic resources throughout the Monument are important to maintaining or enhancing Monument objects, such as the historic setting of the National Trails and viewshed of the WSR which span throughout the Monument. There are many projects that would be implemented in conformance with the RMP over the course of the next 5-10 years that could contribute cumulatively to protection and restoration of scenic resources.

Alternatives 1-4

Cumulative effects would be minimal to moderate for visual resources within the analysis area under any alternative. Restoration of native vegetation through revised grazing systems, treatment of invasive species, plantings, and management of recreation uses would be expected in the future throughout the Monument and particularly the river corridor, which would benefit visual resources. Removal or relocation of facilities and decommissioning of unauthorized vehicle routes would also contribute cumulatively to enhancing scenic resources. These actions would improve the historic setting of the National Trails and viewshed of the WSR throughout the Monument, which would help maintain and enhance Monument objects.

Woodhawk Wilderness Study Area

Affected Environment

The Woodhawk Wilderness Study Area (WSA) contains approximately 8,100 acres. The 1991 Montana Statewide Wilderness Study Report states on page 93 that, “The area appears mostly natural, with the following exceptions . . . ” and continues with mention of the reservoirs, roads, and other human imprints within the Woodhawk WSA boundary. Scenic vistas from the end of DeWeese and Sunshine Ridge roads provide outstanding panoramic views of Cow Creek to the north and historic Cow Island crossing in the Missouri River channel below. The Cow Creek WSA, which can be seen across the river to the north, spreads out toward the Little Rocky Mountains and gives the observer an appreciation for the great expanse of the Upper Missouri River Breaks area. One vehicle way and one cherry stem road are available to motorized vehicles in the Woodhawk WSA.

The WSA portion of the allotment is lightly used, with exception of the river corridor. River use in the vicinity of this WSA is most aptly described as a “paddle through” area. As previously mentioned, 118 campsites were recorded during a study of campsites along the UMNWSR by the University of Montana. These campsites included every level from primitive to developed boat camps. In many cases the campsites consisted solely of flat, unobstructed areas, typically within riparian areas that presented evidence of human use, such as visible fire scars,

rock fire rings and obviously established sites with metal fire rings, picnic tables and various other amenities. Within the Woodhawk WSA the data collection recorded one primitive campsite. This site was one of several along the river section from Judith Landing to Kipp Recreation Area that was newly recorded in 2009. The site consisted of a level, grassy clearing adjacent to a pair of small cottonwood trees approximately 80 yards from the river bank. There was no evidence of a rock fire ring, though a shallow fire pit was observed. The original data collection in 2002 and previous observations in 2006 did not reflect a primitive site at this location. Subsequent monitoring in 2013 indicated the site had not been used since the initial recording. Data from the monitoring suggests the drawback to these areas for boating recreationalists is the absence of quality campsites due to bank structure that inhibits or in some cases prohibits the landing of watercraft. Steep vertical banks, excessive mud (especially during low water), and expansive sections of impenetrable willow growth all combine to deter boating recreationalists from establishing permanent campsites on this (south) side of the river corridor. Primary seasonal use of this area is in the form of hunting during the fall months.

Primitive Site at River Mile 128.5 (Woodhawk WSA)

The WSA is currently within VRM Class I (8,100 acres). Maintenance of existing range improvement projects (fences and reservoirs) is allowed to keep them in an effective, usable condition in accordance with Manual 6330 – Management of Wilderness Study Areas.

Environmental Consequences

Alternative 1 (1998-2008 Grazing Permit)

Some of the natural characteristics of the Woodhawk WSA, specifically Woodhawk Creek and the Missouri River stream banks, would continue to be impacted under the this alternative.

Alternative 2 (Current Grazing Management)

Improved cattle distribution and rehabilitation of unauthorized impacts would enhance wilderness characteristics. The small pit reservoir near Woodhawk Creek is outside the WSA boundary and would be fenced to restrict livestock grazing. This would not directly impair the WSA, but may reduce cattle impacts along portions of Woodhawk Creek within the WSA. The maintenance of the existing reservoirs (4) in the WSA may create short-term disturbances that would become less apparent over time. These impacts would be offset by improved cattle distribution and were present at the time of WSA designation, indicating that they did not substantially detract from naturalness of the WSA.

Alternative 3 (No Grazing)

The no-grazing alternative would eliminate impacts from livestock grazing within the WSA. Removal of facilities would restore visual resources and minimize human caused disturbances related to livestock grazing.

Alternative 4 (Reduced Grazing)

Impacts under this alternative are similar to those described for Alternative 2 with the following exception. Excluding livestock grazing from one riparian area in the vicinity of Cow Island (Map 3), would provide maximum protection for resources sought after by recreational users for camping due to shade, fuel and potential opportunities for hiking, hunting, fishing and sightseeing, thereby benefitting primitive recreation opportunities within the WSA.

Cumulative Impacts

Cumulative impacts are not anticipated under this alternative.

Cultural Resources

Affected Environment

The BLM broadly defines cultural resources as any traditional lifeway belief or cultural property. Cultural properties are defined as distinct evidence in areas of past human occupation, activity, and use. Traditional lifeway beliefs are defined as traditional value systems of religious beliefs, cultural practices, or social exchange that are not closely and tangibly defined or identified with definite locations (BLM 1992b).

Early peoples in the study area were mobile hunters and gatherers throughout and up until the historic period. The following brief overview explains changes through time as summarized by other archaeologists (Frison 1978; Ruebelmann 1983).

The Early Prehistoric period (roughly 10,000 – 5,700 B.C.) is characterized by a tool assemblage consisting of large, lanceolate and/or fluted spear points, and multipurpose tools made of stone or ivory. Subsistence strategies specialized in hunting megafauna but smaller game and plant foods were utilized as well. Typical site types include kill and butchering sites, open air camp sites, and limited activity sites.

The Middle Prehistoric period (roughly 5,000 B.C. – A.D. 400), is characterized by a shift in tool types from thrusting spears with lanceolate spear heads to spear throwers and darts with diagnostic spear points. Groundstone tools also begin to show up in the assemblages. Subsistence strategies shift from more specialized hunting of megafauna to a broader spectrum strategy which becomes focused on bison by the end of this period. Plant procurement and use also occurs. Evidence of storage in the form of storage pits begins to show up during this period as do large cooking pits. Site types typical of this period include kill and butcher sites, camp sites, and rock shelters. Stone circle sites are rare in this area.

The Late Prehistoric period (roughly A.D. 500 – 1800), is characterized by a technological shift from spear throwers and darts to bow and arrows. Tool assemblages consist of small side, corner, or tri-notched points. Some ceramics become evident in the record in limited number on the Northwest Plains at this time. Grooved mauls, bone fleshers, and shell beads are common. Subsistence strategies continue to focus on bison procurement. Large communal bison kill/jump sites, rock shelters, wind breaks, and caves are the site types typically found in this area. Stone circle sites are rarer compared to northern areas.

During the historic period, settlers by the thousands came into the area to live on homesteads. Germans and Scandinavians came from the Midwest, as did eastern European immigrants like Bohemians and Yugoslavs (BLM 1992b).

Cultural sites can be considered significant for several reasons; some because information about the past can be learned through methodical study of the sites, while other sites communicate a sense of a particular time period they represent in history. Finally, sites can be considered to be important because of the current use or values associated with the location.

An important consideration for management actions in this area is preserving the values of the cultural properties contained within. In order to preserve the integrity of a cultural property, it is sometimes necessary to preserve the location in which the cultural property is found. This is an important consideration when the management actions have the potential to affect the location of a cultural property, thus affecting the overall integrity of the cultural property.

The cultural resource site database maintained by the Montana State Historic Preservation Office was reviewed on January 29, 2008. A printout from the database was compared to the Woodhawk planning area which shows land status. Archaeologists for the State of Montana and the BLM completed inventories primarily for road upgrades and for range developments (pipelines, wells, fences, reservoirs, tanks).

A total of twenty cultural sites have been formally documented within the watershed area on private land and land administered by the BLM. Additionally, the Nez Perce National Historic Trail and a Lewis & Clark campsite – part of the Lewis & Clark National Historic Trail – are present within the analysis area. The prehistoric sites include lithic scatter sites and fire hearths/roasting pits. The historic sites relate primarily to homesteading and early agriculture, and historic trash/dumps. Of the twenty sites, three have been identified as being eligible for listing on the National Register of Historic Places and two are ineligible. The fifteen sites identified as being unevaluated receive the same protection as those sites that are eligible, until such time as their eligibility can be determined.

Table 3.2 lists the total cultural resources identified within the watershed area.

Table 3.2
Cultural Resources Identified within
The Woodhawk Allotment

	Eligible	***Ineligible***	***Unevaluated***	***Total***
Historic	2	2	3	7
Prehistoric	1	0	12	13
Total	3	2	15	20

Seventy-five percent of the sites within the analysis area have not had their eligibility determined. This is directly related to the types of projects with which the inventories were associated. For those sites discovered during the course of an inventory for a range development, an avoidance strategy was employed which generally involved relocating or rerouting the proposed range development. By moving the project, the site was no longer within the area of potential effect, removing the need to determine the site's eligibility. The historic sites documented along the river were recorded as part of an analysis of the suitability of the Missouri River's designation as a wild and scenic river. Follow-up documentation of the sites occurred as part of a thematic look at homesteading along the Missouri River.

Environmental Consequences

Alternative 1 (1998-2008 Grazing Permit)

Under the 1998-2008 management, cultural sites would remain static to slightly deteriorating. Direct impacts to specific sites from BLM-approved actions would be reduced or eliminated where possible. Visual impacts from BLM actions would be mitigated or eliminated where setting contributes to the integrity of a site eligible for listing on the National Register of Historic Places. Less specific impacts such as the gradual loss or deterioration through erosion or weathering would continue. Loss and damage would also continue to occur as a result of unauthorized

and unlawful collection and/or vandalism.

Cultural sites eligible for listing on the National Register of Historic Places would be identified for stabilization or mitigation of deterioration as time and funding allow. Site monitoring would continue, and eligibility determinations would be made as undertakings are proposed in areas that contain cultural resources that have yet to be evaluated.

Alternative 2 (Current Grazing Management)

Effects from grazing practices would be the same as identified in Alternative 1. Season of use changes in other analysis areas in the Lewistown Field Office have not been shown to affect cultural resources.

Some minor beneficial impacts could result from management actions that reduce erosion. Proposed surface-disturbing activities, especially water developments at springs and other water sources could create negative impacts if mitigation were not incorporated into project designs. A file search and/or Class III cultural resource inventory would be conducted prior to all surface disturbance actions proposed in this watershed plan to determine the presence of historic properties within the proposed areas of potential effects. Possible benefits could include identification of additional resources during inventories.

As specific project designs are developed the number of sites that could potentially be affected is expected to decrease. Excavation associated with pipeline installation, and concentrated cattle impacts on prehistoric sites with stock tank placement have the greatest potential to affect sites. All of the proposed improvements that are new construction would be reviewed as described in the previous paragraph. If a conflict were to exist between the proposed action and the presence of cultural resources, mitigation measures would be factored into the project's design. Such measures could include complete documentation of the site to exhaust its information potential, evaluating the site and making a determination that the site is not eligible for inclusion on the National Register of Historic Places, avoiding the site through project redesign, or implementing protective measures to prevent impacts to the characteristics of the site that make the site eligible. Such measures could include installing fences or barriers to protect sites, placing mats or other pads to prevent erosion or soil compaction if a site needed to be crossed, or installing sections of jack-leg fence in areas where subsurface disturbance would be a concern. Proposed maintenance work at existing reservoirs would be reviewed if the construction of the reservoir predated the need to complete a cultural resource inventory. At this time the proposed fences and pipeline and tank developments have no known conflicts with documented sites. The proposed reservoir removal is in an area with a known prehistoric site, and also is near the Nez Perce National Historic Trail. The proposed removal should be monitored, particularly if ground disturbance is necessary outside of the area disturbed by the reservoir and its construction zone. The proposed cattle guard is in the vicinity of an unevaluated prehistoric site. That project would need to be reviewed to ensure that ground disturbance would not affect the integrity of the prehistoric site, if the site proves to be eligible for listing on the National Register.

Alternative 3 (No Grazing)

The decision to remove grazing from the planning area would have no effect on historic properties. Removing range developments from the landscape could restore historical setting for sites that predated grazing, including the Nez Perce National Historic Trail and the Lewis & Clark National Historic Trail. Those sites that are associated with livestock and agricultural development within the planning area (i.e. Nelson Homestead) could lose some aspects of integrity (setting, materials) with the removal of fencelines and other visual indicators of the historic agricultural setting in the Missouri River Breaks. New fence construction would need to be analyzed to determine if sites are known in the area of potential effect.

Alternative 4 (Reduced Grazing)

Effects from grazing practices would be the same as identified in Alternative 1. Season of use changes in other analysis areas in the Lewistown Field Office have not been shown to affect cultural resources.

Cumulative Impacts

Cumulative impacts are not anticipated under this alternative.

Climate

Affected Environment

Ongoing scientific research has identified the potential impacts of anthropogenic "greenhouse gas" (GHG) emissions and their effects on global climatic conditions. These anthropogenic GHGs include carbon dioxide; methane; nitrous oxide; and several trace gases, as identified by the Intergovernmental Panel on Climate Change (IPCC). The general consensus is that as GHG emissions continue to rise, average global temperatures and sea levels will rise, precipitation patterns will change, and climatic trends will change and influence earth's natural resources in a variety of ways.

Montana's GHG emissions were recently updated and a forecast was made of expected emissions through 2020 (MDEQ 2007). The inventory indicates that Montana's electricity generation, heating needs, commerce, agriculture practices, and transportation needs accounted for 0.6% of the GHG emissions in the United States in 2005 or about 37 million metric tons of gross consumption-based carbon dioxide equivalent. The state's forests, cropland, and rangeland provide a vast terrestrial carbon sink that helps balance the state's emissions, however, a 14% increase in GHG emissions from 1990 to 2005 moved Montana from a net carbon sink to a net carbon emitter.

Cumulative Impacts

Cumulative impacts are not anticipated under this alternative.

Environmental Consequences

Alternatives 1 (1998-2008 Grazing Permit), Alternative 2 (Current Grazing Management), Alternative 3 (No Grazing), Alternative 4 (Reduced Grazing)

Potential impacts to natural resources due to climate change are likely to be varied. For example, if global climate change results in a warmer and drier climate, increased particulate matter impacts could occur due to increased windblown dust from drier and less stable soils. Cool season plant species' ranges could potentially move north and due to the potential loss of habitat, or from competition from other species whose ranges shift northward, the population of some animal species could change. While many existing climate prediction models are global or regional in nature, the lack of scientific tools designed to predict climate change on local scales limits the ability to project potential future impacts of climate change on the specific area for this project. It is not possible to predict with any certainty site-specific effects on climate change relative to the proposed action.

Social and Economics

Certain existing demographic and economic features influence and define the nature of local economic and social activity. Long-held customs, social cohesion, and history of an area provide valuable insight into how events or changes to the area may affect the livelihood and quality of life of the residents. While linkages exist across various social and economic environments, the affected environment discussed here consists of Fergus County, Montana and due to the nature of this EA will focus on agriculture/grazing aspects of Fergus County.

Affected Environment

The Woodhawk allotment is contained within Fergus County, Montana, which had an estimated total population of 11,435 in 2012 (U.S. Census 2014a). While much of the land area is rural (99% in 2010), over 52 percent of the population resided in urban areas in 2010 (U.S. Census 2010a). From 2000 to 2010 the population has seen an increase in the age of the population with the age group of 55-64 years old seeing the largest increase; moreover, over 34 percent of the households in 2010 included individuals 65 years or older (U.S. Census 2000; U.S. Census 2010b, 2010c). Per capita personal income in 2011 for Fergus County was $34,428 (BEA 2012) while the median household income was $40,114 in 2012 (SAIPE 2013).

On the northern border of Fergus County is the Missouri River while the Big Snowy and Little Snowy Mountain Ranges border the southern portion of the county. Rolling prairies, mountains to the south, and access to the Missouri River provide ample opportunities for recreational activities. The rural landscape also provides for ample agricultural activities. In 2007, Fergus County had 898 farms with almost 2.5 million acres in farms (NASS 2007). The county has ranked second in the state from 2010 to 2013 for the number of cattle and calves (105,000) and in 2012 ranked third in winter wheat production and first in alfalfa production (NASS 2013a). Agriculture has and continues to provide a foundation for the culture and economy of Fergus County.

While state and local government employment and payroll (education and non-education related) was the top industry in terms of jobs[1] in 2012 for Fergus County (835 jobs or 11 percent of total jobs); grain farming was second in employment (736 jobs or 9.7 percent of total jobs) when looking at individual sectors (IMPLAN 2012). When looking at aggregated sectors[2], the resource based industries of agriculture, forestry, fish and hunting (NAICS sector 11) provided 16 percent (1218 jobs) of the jobs in Fergus County in 2010 (IMPLAN 2012). In addition to the jobs that grain farming contributed to this sector, cattle ranching and farming provided 193 jobs, all other crop farming provided 148 jobs, and support activities for agriculture and forestry provided 102 jobs (IMPLAN 2012), while the remaining jobs were spread across several other individual sectors aggregated within NAICS sector 11. This information highlights that agriculture in Fergus County is important to contributing to the local economy.

Government, including federal, state, and local (NAICS 92), contributed over 1100 jobs (14.7 percent of total jobs), health and social services (NAICS 62) provided 11 percent of the jobs, while retail trade (NAICS 44-45) provided 10 percent of the jobs. Accommodation and food services (NAICS 72) and construction (NAICS 23) each contributed over 7 percent to the total jobs. The remaining jobs were spread across the remaining sectors (IMPLAN 2012).

Grazing is allowed on BLM lands under the Taylor Grazing Act and FLPMA for the purpose of fostering economic development for private ranchers and ranching communities by providing ranchers access to additional forage (GAO 2005). The Taylor Grazing Act The major contribution of BLM to the area's livestock industry is largely through providing grazing lands. Livestock grazing on BLM lands is authorized on an annual basis. The established preference limit for grazing on public BLM lands within the Woodhawk allotment is 3,120 AUMs. This preference is the maximum number of AUMs that could be offered annually under ideal forage conditions. A number of factors including drought, wildland fire, transfer of grazing permits, financial limitations on operators, and implementation of grazing management to improve range conditions are known to make range conditions less than ideal. In order to achieve and maintain rangeland health standards, stipulations on the season and level of use have been set forth in the permits and leases issued to public land ranchers.

Although BLM forage comprises a relatively small share of the total AUMs in Fergus County, this forage may be particularly valuable to a permittee of this allotment because the grazing fees are very favorable and it is often available during a critical period of the year when forage on private hay fields and meadows is being grown to provide forage for the winter. The BLM grazing fees ($1.35/AUM in Fiscal Year (FY) 2013) are considerably lower than the statewide average of $20.50 per AUM for private grazing fees in Montana (NASS 2013b). If the BLM were to charge a market-based fee, the price would likely not equal private or state fees because of factors such as range productivity services provided by the landowner and access to the land (GAO 2005).

[1]In this context, employment refers to jobs and is defined as the average annual employment, including all full-time, part-time, and temporary positions. Thus, 1 job lasting 12 months= 2 jobs lasting 6 months each= 3 jobs lasting 4 months, etc.

[2] These aggregated sectors are referring to the 2 digit North American Industry Classification System (NAICS) industries. NAICS is the standard used by federal agencies to classify business establishments. (see U.S. Census, North American Industry Classification System for more information: http://www.census.gov/eos/www/naics/)

The Woodhawk allotment currently provides 3,120 AUMs for cattle/calves. Under the assumption that permittees and lease holders are located within Fergus County and that in 2013 there were 105,000 cattle/calves in the county, the Woodhawk allotment provided 0.25 percent of the forage needs for the cattle/calves in Fergus County. However, for a permittee of this allotment, the forage needs provided by BLM AUMs could provide a much greater percentage of the permittee's overall livestock forage needs. Livestock grazing on this allotment involves Section 3[3] grazing permits (grazing on public lands within grazing districts, BLM Manual 1373.12), and grazing on land acquired under the Bankhead-Jones Land Utilization Act. On public domain lands, 50 percent of revenues from Section 15 grazing fees are distributed to the state and in Montana the state then reallocates all of it back to the counties in which the fees originated; 12.5 percent of grazing fees from Section 3 permits are distributed to the state and counties. On lands acquired under the Bankhead-Jones Land Utilization Act, 25% of revenues from both Section 3 and Section 15 lands are distributed to the counties. Within the Woodhawk allotment, 85 percent of the BLM surface land base is grazed under Section 3 of the Taylor Grazing Act (2,652 AUMs) and 15 percent of the grazing leases are on Bankhead-Jones acquired land (468 AUMs). In 2013, the federal government collected $4,212 from grazing receipts associated with AUMs on the Woodhawk allotment; of this, approximately $605 went to the state and Fergus County. Specifically the $448 from grazing on Section 3 lands went to the state which reallocated 50 percent to Fergus County and the other 50 percent went into the state general fund to be used for Fergus County elementary BASE funding programs for the county's school districts (MCA 17-3-222) while the $158 from grazing on Bankhead-Jones lands went directly to Fergus County.

The above information provides a context for understanding what potential social and economic impacts may occur from the different alternatives.

Environmental Consequences

Consequences Common to All Alternatives

No alternative will affect population numbers or demographics in Fergus County. Job distribution across the sectors will not be changed by any of the alternatives given the assumption that even with the no grazing alternative jobs associated with BLM grazing will remain in the county. For the analyses it is assumed that the BLM grazing fee will stay at $1.35/AUM and that Fergus County will maintain a cattle/calf population of 105,000.

Consequences Common to Alternatives 1 (1998-2008 Grazing Permit), Alternative 2 (Current Grazing Management)

Although there are differences in these alternatives, all alternatives will maintain the same number of AUMs for cattle/calves in the same percentages across Section 3 and Bankhead-Jones lands. These alternatives, like the current situation will have 85 percent of the Woodhawk authorized AUMs on Section 3 lands (2,652 AUMs) and 15 percent of the AUMS will be on Bankhead-Jones acquired land with Section 15 grazing leases (468 AUMs). These alternatives will continue to provide 0.25 percent of the forage needs of the 105,000 cattle/calves in Fergus County on an annual basis. Grazing revenues will remain the same as the current situation with $4,212 in federal government revenues with approximately $605 going to the state and Fergus County on an annual basis. Of the $605, the $448 from grazing on Section 3 lands would go to the state which would reallocate 50 percent to Fergus County and the other 50 percent would go into the state general fund to be used for Fergus County elementary BASE funding programs for the county's school districts while the anticipated $158 from grazing on Bankhead-Jones lands would go directly to Fergus County. The revenues associated with grazing on Bankhead-Jones lands will be equally split between county schools and roads. Total grazing revenue associated with a 10 year permit is estimated to be $42,120 in federal government revenues with $6,055 going back to the state and county.

Costs to a permittee may vary across the alternatives given the different mechanisms for range improvements. Costs incurred could include such improvements as rebuilding fences, moving cattle at different times, decrease in days of use, or improvements to reservoirs as well as other mechanisms.

[3] Section 3 and Section 15 pertain to sections of the Taylor Grazing Act which distinguish between grazing in or out of grazing districts.

Table 3.3. Annual Grazing Revenues from Alternatives 1-4

AUMs	3,120
Total Federal Revenues (AUMs X $1.35)	$4,212
Section 3 revenues (Fed. Revenues X 12.5%)	$448
Bankhead Jones (Fed. Revenues X 25%)	$158

Consequences to Alternative 3 (No Grazing)

The decision to remove grazing from the Woodhawk allotment reduces federal revenues associated with grazing fees to zero dollars, meaning that no funds will be reallocated to the state and Fergus County. This means that Fergus County will lose approximately $381 of grazing revenue associated with the Woodhawk allotment that goes to the county treasury. Additionally, money going to the county's school districts elementary BASE programs will be lost. The loss of this revenue will have minimal effect to Fergus County's overall revenues which totaled $10,546,446 in 2013 (Olness & Associates, P.C. 2013). The cost of private land grazing for 3,120 AUMs is estimated to be $63,960 using the statewide average of $20.50 per AUM for private grazing (NASS 2013b). This amount could be an economic hardship for a permittee. However, recent research has shown that, in spite of the difference in fees for grazing on public verse private land, when other factors are considered (such as animal loss, rangeland improvement, and herding), the cost of forage on public land compared to private land is generally similar. See Rimbey, N. and L.A. Torell, 2011. Ranchers have a range of options available to them in terms of how they respond to changes in the permitted number of AUMs on their range allotment(s). With no grazing on the Woodhawk allotment a permittee might choose to decrease herd size, change grazing months, retain or sell animals at their headquarters, lease new ground, move to irrigated pasture, adjust feed lot contracts, completely change operation types, and so on. Given the number of uncertain variables and the range of possibilities, it is not feasible to anticipate how individual ranches will react to changes in their specific grazing permits. Also unknown are any associated business decisions made in response to prevailing markets, federal and state agricultural policies, and personal values.

BLM acknowledges that as a result of a no grazing alternative, there are likely to be multiplier effects within the economy that serves the associated ranching community. Because it is not possible to quantify the specific monetary impacts on individual ranches, it is also not possible to accurately estimate the resulting multiplier effects.

Consequences to Alternative 4 (Reduced Grazing)

The decision for reduced grazing from Section 3 lands will have minimal effect on Fergus County. This alternative will provide 0.24 percent of the forage needs of the anticipated 105,000 cattle/calves in Fergus County. It is anticipated that the reduction of AUMs would be associated with Section 3 grazing permits. This alternative will still have 85 percent of the Woodhawk authorized AUMs on Section 3 lands (2,610 AUMs) and 15 percent of the AUMS will be on Bankhead-Jones acquired land with Section 15 grazing leases (468 AUMs). Grazing revenues will decrease $57 from the current situation and anticipated revenues in alternatives 1-4. It is estimated that the federal government grazing revenue on the Woodhawk allotment under alternative 6 will be $4,155 with approximately $598 going to the state and Fergus County on an annual basis. Of the $598, the $440 from grazing on Section 3 lands would go to the state which would reallocate 50 percent to Fergus County and the other 50 percent would go into the state general fund to be used for Fergus County elementary BASE funding programs for the

county's school districts. The anticipated $158 from grazing on Bankhead-Jones lands would go directly to Fergus County. The revenues associated with grazing on Bankhead-Jones lands will be equally split between county schools and roads. Under this alternative the total grazing revenue associated with a 10 year permit is estimated to be $41,553 in federal government revenues with $4,562 going back to the state and county.

Given the number of uncertain variables and the range of possibilities, it is not feasible to anticipate how an individual permittee will react to changes in his/her specific grazing permits. Also unknown are any associated business decisions made in response to prevailing markets, federal and state agricultural policies, and personal values. There is the possibility of a negative economic impact associated with reducing AUMs on this allotment.

Cumulative Impacts
Cumulative impacts are not anticipated under this alternative.

Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, states "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations…" (Executive Order 12989). Therefore, based upon by Council on Environmental Quality (CEQ) guidance under the National Environmental Policy Act (CEQ 1997) and BLM Environmental Justice principles outlined in BLM H-1601-1 Landuse Planning Handbook, the Environmental Justice considerations for this planning action include the following:

- Identification of low-income and/or minority populations;
- Determination of disproportionately high and adverse human health effects on low-income, minority populations and/or Indian tribes;
- Determination of disproportionately high and adverse environmental effects on low-income, minority populations and/or Indian tribes;
- Identification and implication of differential patterns of consumption of natural resources by low-income, minority and/or Indian tribes; and,
- Provision of opportunities for full involvement of low-income, minority and/or Indian Tribes in BLM decision making processes.

Low-income populations are determined by the U.S. Census Bureau based upon poverty thresholds developed every year. Minority populations as defined by Council on Environmental Quality (CEQ) guidance under the National Environmental Policy Act (CEQ 1997) include individuals in the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. A minority population is identified where "(a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater…" (CEQ 1997). Additionally, "[a] minority population also exists if there is more than one minority group present and the minority percentage, as calculated by aggregating all minority persons, meets one of the above-stated thresholds" (CEQ 1997).

Data for the identification of low-income is from the U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE). The SAIPE program produces yearly single year poverty estimates for states, counties, and school districts and is considered the most accurate for these geographic scales, especially for areas with populations of 65,000 or less (U.S. Census 2014). Minority populations are identified using the U.S. Census Population Estimates program which provides estimates for the resident population by age, sex, race, and Hispanic origin at the national, state and county scales. Estimates from SAIPE and the Population Estimates program are used in federal funding allocations.

The analysis was conducted at the county level. The aforementioned data is used to determine whether the populations residing in Fergus County constitute an "environmental justice population" through meeting either of the following criteria:

- At least one-half of the population is of minority or low-income status; or

- The percentage of population that is of minority or low-income status is at least 10 percentage points higher than for the entire State of Montana.

CEQ guidance does not provide specific criteria for determining low-income populations as it does for minority populations so for this planning effort we will use the criteria for minority populations, which are discussed above, as the criteria for low-income populations. We identify low-income and minority population percentages that are "meaningfully greater" as at least 10 percentage points higher than for the entire State of Montana.

Table 1 indicates that the populations in Fergus County do not meet the criteria above for minority or low income environmental justice populations. Therefore no additional analysis is needed for this EA.

Table 3.4: Percent Area Population that is Minority or Below Poverty, Fergus County, 2012 Estimates

	Race and Ethnicity: Percent of Population[1]							Poverty- All Ages[2]
	Race alone					Two or More Races	Hispanic	Percent Poverty
	White	Black or American	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander			
Montana	89.7%	0.6%	6.5%	0.7%	0.1%	2.5%	3.1%	15.6%
Fergus County	96.5%	0.3%	1.3%	0.3%	0.0%	1.6%	1.8%	14.1%

Source: [1]U.S. Census Bureau, Population Division, Annual Estimates of the Resident Population by Sex, Race, and Hispanic Origin for the United States, and Counties: April 1, 2010 to July 1, 2012. Accessed on 3/3/2014 from: http://www.census.gov/popest/data/counties/asrh/2012/PEPSR6H.html and http://www.census.gov/popest/data/state/asrh/2012/index.htm

[2]U.S. Census Bureau, Small Area Income and Poverty Estimates, Accessed on 3/3/2014 http://www.census.gov/did/www/saipe/data/statecounty/data/2012.htm

Chapter 4
Consultation and Coordination

During preparation of the 2009 EA, the public was notified of the proposal by letter and a press release to the local media. A public meeting was held on April 30, 2008 to discuss the proposal, issues, and alternatives. A 30-day public comment period followed release of the Preliminary EA.

The following people, agencies and organizations were consulted:

- Grazing permittee and base property owner
- Attendees of a public meeting on April 30, 2008
- Woodhawk mailing list

List of Preparers

The Woodhawk EA was prepared by a team of interdisciplinary specialists, including:

Name	***Title***	***Area of Responsibility***
Tom Darrington	Rangeland Management Specialist	Team Lead; Upland Vegetation and Grazing Management
Chad Krause	Hydrologist	Water Resources and Riparian
Jody Peters	Wildlife Biologist	Wildlife, Fisheries, T&E
Mark Schaefer	Outdoor Recreation Planner	Recreation, WSA, and Wild and Scenic River
Kenny Keever	Natural Resource Specialist	Weeds
Zane Fulbright	Archeologist	Cultural Resources
Jessica Montag	Socioeconomic Specialist	Social/Economics/Environmental Justice
Dan Brunkhorst	Planning and Environmental Coordinator	NEPA

Comments to the Preliminary (2008) Environmental Analysis

In October 2008, the preliminary environmental analysis was distributed to the permittee, interested parties, organizations, the Central Montana Resource Advisory Council and members of the public. The EA was developed by the BLM in consultation with the grazing permittees, local landowners, conservation groups, state agencies, and other federal agencies. The summary of comments and responses from the 2009 EA can be found at the following link: http://www.blm.gov/mt/st/en/fo/lewistown_field_office/Watershed_Plans.html.

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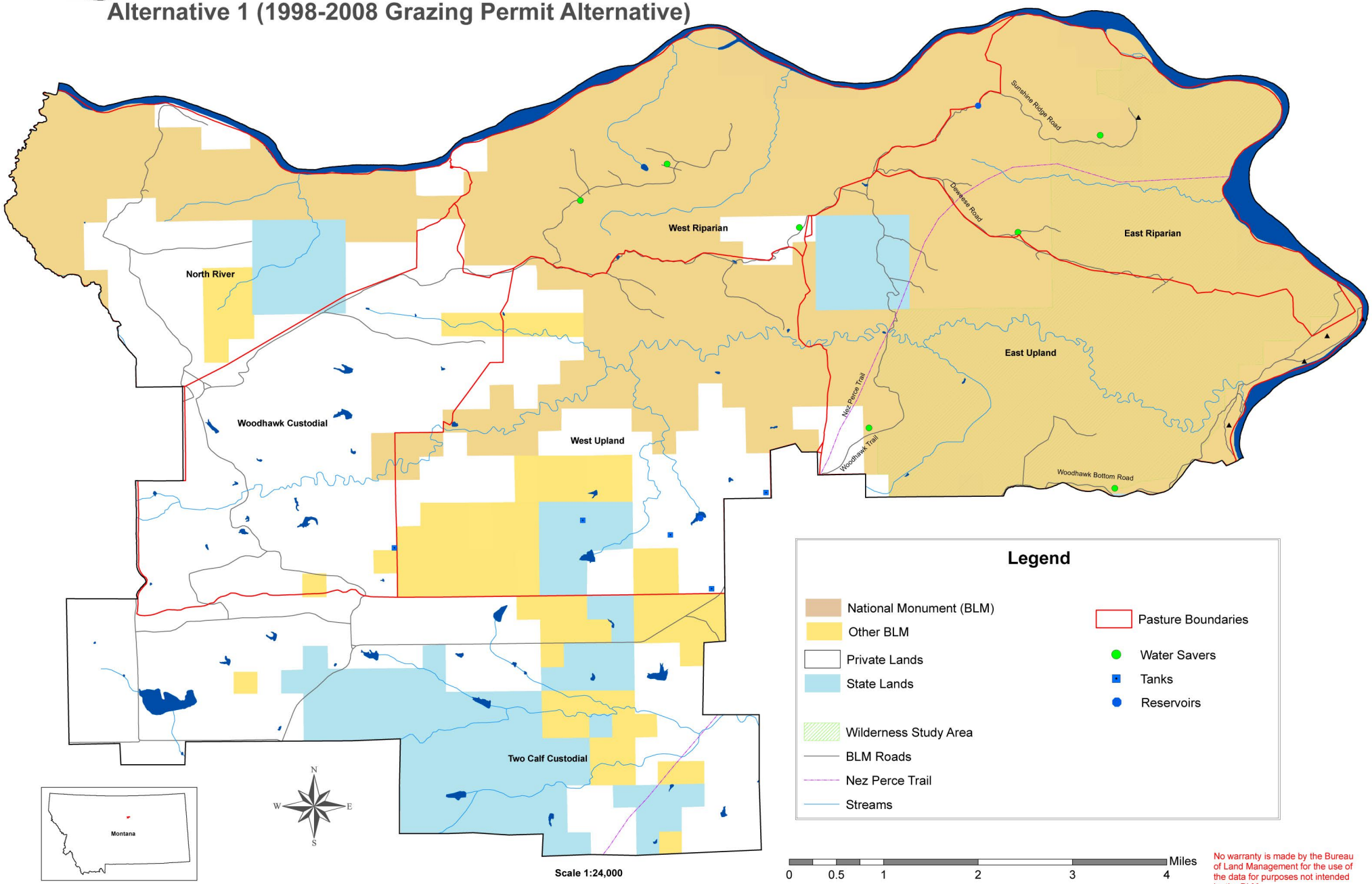
Appendix A – Maps

Woodhawk Allotment

Alternative 1 (1998-2008 Grazing Permit Alternative)

Map #1



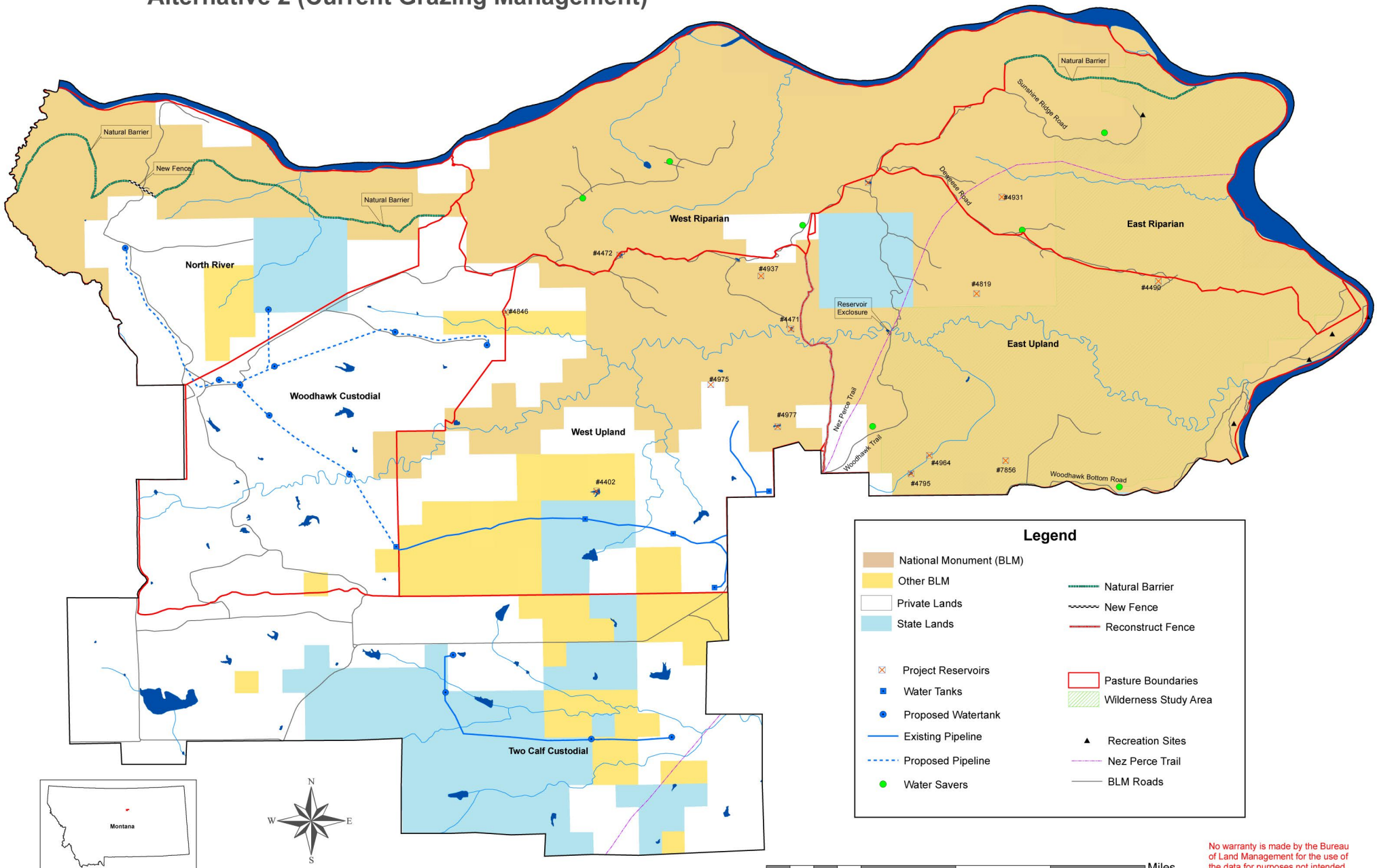
Final Map Created March 2014.

No warranty is made by the Bureau of Land Management for the use of the data for purposes not intended by the BLM.

Woodhawk Allotment

Alternative 2 (Current Grazing Management)

Map #2

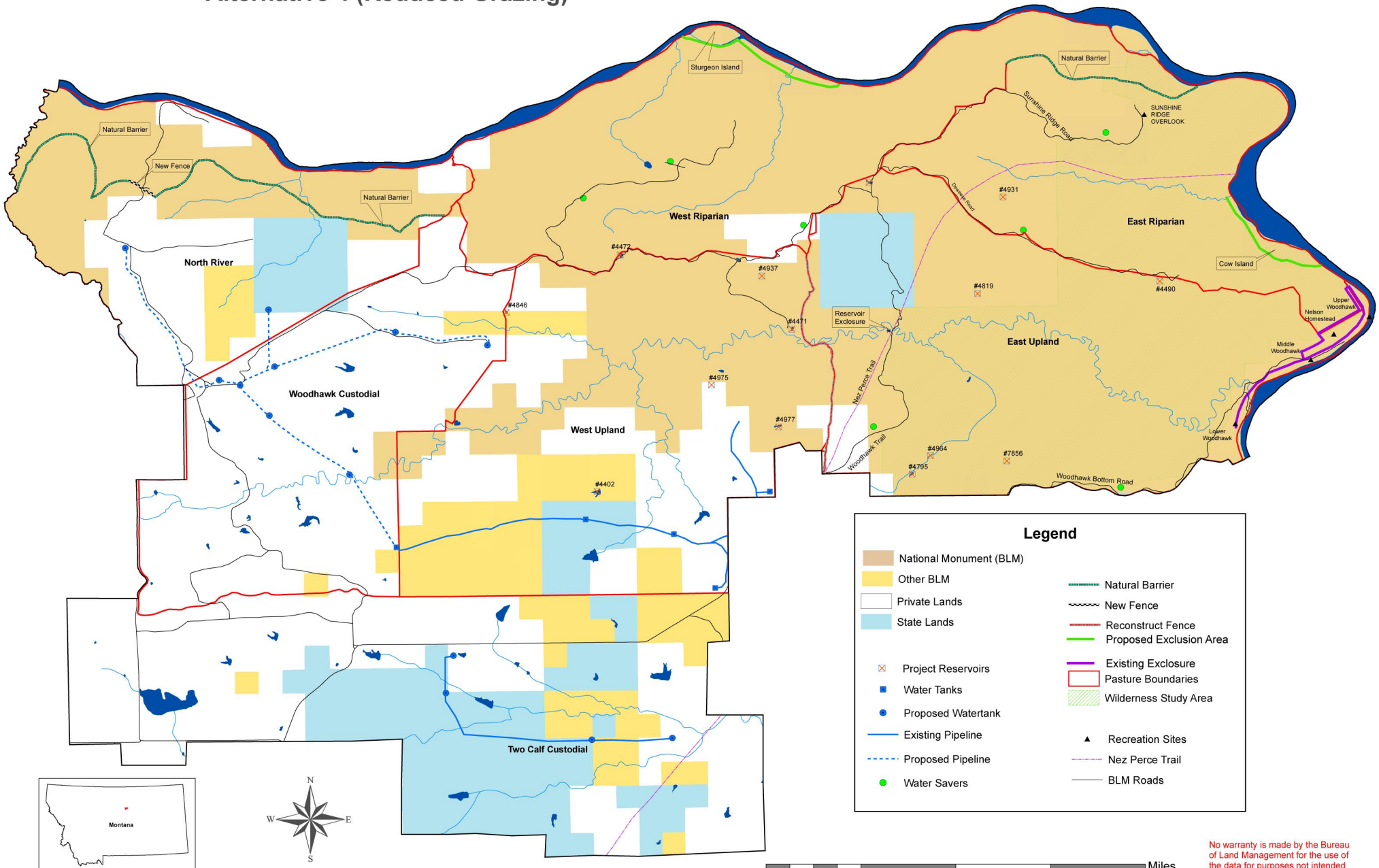


Final Map Created March 2014.

Woodhawk Allotment

Alternative 4 (Reduced Grazing)

Map #3



Final Map Created March 2014.