

**United States Department of the Interior
Bureau of Land Management**

**Malta Field Office
Glasgow Field Station**

**Glasgow Field Station
Larb Creek Watershed Report**

September 2005



Upper End of Rattlesnake Coulee

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Executive Summary for the Larb Creek Watershed Report

This report is an assessment of the rangeland health in the Larb Creek Watershed in South Valley County, Montana (see Map 1). The document also addresses cultural resources and recreation management in the allotments. These resource programs were included to determine if there are conflicts or significant resource issues that need to be considered during the development of the recommended actions. The table below summarizes rangeland health assessments and recommended actions by grazing allotment.

Abbreviations: PFC = Proper Functioning Condition, FR =Functioning at Risk, NA = Not Applicable

Allotment # & Name	Are Healthy Rangelands Standards Being Met?				Is livestock grazing a significant factor in allotment not meeting standards?	Narrative Explanation and Recommended Actions
	Upland	Riparian/ Wetland	Water quality	Wildlife/ Bio-diversity		
# 4500	Yes	N/A	Yes	Yes	N/A	No changes at this time.
#4501 Miles Crossing	Yes	N/A	Yes	Yes	N/A	No changes at this time.
# 4502 Lower Miles Crossing	Yes	N/A	Yes	Yes	N/A	No changes at this time.
# 4504	Yes	N/A	Yes	Yes	N/A	No changes at this time.
# 4508 Little Horn Coulee	Yes	N/A	Yes	Yes	N/A	No changes at this time.
# 4509 Tank Coulee	Yes	N/A	Yes	Yes	N/A	Recommend initiating a rest rotational grazing system in this allotment.
# 4510 Big Coulee	Yes	N/A	Yes	Yes	N/A	No changes at this time.
# 4513 Rattlesnake Coulee	Yes	No	Yes	Yes	Yes	Evaluate season of use change or the construction of a riparian fence.
# 4514 Payne Place	Yes	N/A	Yes	Yes	N/A	No changes at this time.
# 4519 Larb Creek	Yes	No	Yes	Yes	Yes	Modify the season of use in the riparian pasture.
# 4526 Lower Square Creek	Yes	N/A	Yes	Yes	N/A	No changes at this time.
# 4527 Sandstone	Yes	N/A	Yes	Yes	N/A	No changes at this time.
# 4528	Yes	N/A	Yes	Yes	N/A	No changes at this time.
#4529 Square Coulee	Yes	N/A	Yes	Yes	N/A	No changes at this time.
#4530 Lower Coon Coulee	Yes	N/A	Yes	Yes	N/A	No changes at this time.
# 4531 Upper Square Coulee	Yes	N/A	Yes	Yes	N/A	No changes at this time.

Allotment # & Name	Are Healthy Rangelands Standards Being Met?				Is livestock grazing a significant factor in allotment not meeting standards?	Narrative Explanation and Recommended Actions
	Upland	Riparian/ Wetland	Water quality	Wildlife/ Bio-diversity		
# 4546 Lost Coulee	Yes	No	Yes	Yes	Yes	Continue to monitor as a new riparian fence has recently been completed.
# 4547	Yes	N/A	Yes	Yes	N/A	No changes at this time.
# 4548 Boxelder Coulee	Yes	Yes	Yes	Yes	N/A	No changes at this time.
# 4549	Yes	N/A	Yes	Yes	N/A	No changes at this time.
# 4550 South Shed Coulee	Yes	Yes	Yes	Yes	N/A	No changes at this time.
# 4569	Yes	N/A	Yes	Yes	N/A	No changes at this time.
# 4570	Yes	N/A	Yes	Yes	N/A	No changes at this time.
# 4571 Grant Coulee	Yes	Yes/No	Yes	Yes	Yes	Meeting riparian standard in Korman area, not meeting in Palm area of use. AMP Revision.
# 4572 Corral Coulee	Yes	Yes	Yes	Yes	N/A	Recommend revising AMP to assist new management.
# 4578 Grandpa Coulee	Yes	N/A	Yes	Yes	N/A	Recommend revising AMP to assist new management.

The issue of scale must be kept in mind in evaluating each standard. It is recognized that isolated sites within a landscape may not be meeting the standards; however, broader areas must be in proper functioning condition. No single indicator provides sufficient information to determine rangeland health. They are used in combination to provide information necessary to determine rangeland health.

All the allotments in the watershed met the Upland Standard.

These allotments are not meeting the Riparian Standard:

4546 Lost Coulee, # 4513 Rattlesnake Coulee, # 4519 Larb Creek and Palm portion of Grant Coulee # 4571.

Before any of the above recommendations could be implemented on these site-specific areas further environmental analysis will be completed. Implementation is contingent upon staffing to complete the analysis and adequate construction funding.

Based on my review of the Assessment Team's recommendation and other relevant data and information, I have determined that the allotments in the Larb Creek Watershed meet the Standards for Rangeland Health and Guidelines for Grazing Management for BLM lands in Montana except allotments as noted above and in the Executive Summary table.

The people involved in the above assessments were John Carlson, Wildlife Management Biologist, Raymond Neumiller, Rangeland Management Specialist, Jennie Jennings, Hydrologist, Jon Collins, Outdoor Recreation Planner, Christopher Rice, seasonal Range Technician, Amy Hladek and Meagan Gates, Wildlife Biologist Interns. Detailed data for each allotment is available at the Glasgow Field Station upon request.

Authorized Officer Determination:

SIGNATURE: _____

DATE: _____

TITLE: _____

Field Manager

Larb Creek Watershed Report

Introduction

This report assesses the public lands in the Larb Creek watershed area, and the effect of livestock grazing on current rangeland health. Current conformance with the grazing management decisions set forth in the Judith – Valley- Phillips Resource Management Plan (Land Use Plan) and the Lewistown District Standard for Rangeland Health is documented.

Cultural resources and recreation management are also addressed. These resource programs were included to determine if there are conflicts or significant resource issues that need to be considered during the development of the recommended actions.

The watershed area includes all of the public lands within the Larb Creek watershed. The watershed area boundary (see Map 1) follows allotment boundaries, including grazing allotments that are partially within the watershed. There are 88,044 acres of public lands in the grazing allotments. This report addresses only BLM administered public lands within the watershed. There are 14,461 animal-unit months (AUMs) of livestock forage allocated on public lands.

BLM has worked cooperatively with these individual permittees in the watershed for many years to develop Allotment Management Plans (AMPs) to improve range condition and grazing management. The Land Use Plan

established that decisions be implemented on a watershed basis, a broader ecosystem is considered, and more consistent management is applied. It is BLM's intent to implement watershed management cooperatively. Our policy is to grant grazing permittees who agree to monitor riparian and other objectives more autonomy in management.

This report documents conditions and contains recommendations and objectives that will guide future management decisions in the watershed. The focus of the recommendations is grazing management. Once this report is final there will be changes made, where warranted, in grazing management according to the decisions made in the Judith – Valley – Phillips Resource Management Plan and the Lewistown District Standards for Rangeland Health. After consultation and coordination with the permittees and other interested parties, the site specific decisions concerning terms and conditions for each allotment will be provided prior to issuance of new grazing permits. As with all similar BLM decisions, affected parties will have an opportunity to appeal these decisions. Environmental analysis will be completed prior to any surface disturbing activity, in accordance with the National Environmental Policy Act.

This document will address four steps;

1) Issues and Key Questions, this section lists the relevant decisions from the RMP and the applicable Standard, and key questions that relate to the issue,

2) Characterization/Current Conditions, this section describes the current conditions at the time of the assessment,

3) Reference Conditions, this section describes the condition that existed when the land was surveyed in the late 1800s and early 1900s,

4) Analysis and Recommendations, this section will explain the Standard, describe the procedure to determine the Standard, list the findings and give recommendations. Each step will be addressed in these four Standards, upland health, riparian/wetland, water quality and wildlife habitat/biodiversity. Standards are statements of physical and biological conditions or degree of function required for healthy sustainable rangelands.

Healthy rangeland standard # 4, (Air Quality), meets the Montana State standard and is not addressed in this document.

UPLANDS

Step One: Issues and Key Questions

Upland Health

RMP Decisions:

- a) “The overall vegetative objective is to improve or maintain the ecological status of BLM land to achieve a plant community of good or excellent ecological condition on 80% of BLM land within 15 years of implementation of activity plans.” Objectives must be biologically and economically feasible and can be lower than good or excellent condition if needed for specific wildlife habitat.
- b) “The BLM will maintain and/or improve soil productivity by increasing vegetation cover and reducing erosion.”

Lewistown Standard #1:

“Uplands are in proper functioning condition”

Key Questions:

1. Are the uplands in the Larb Creek Watershed meeting the Standards for Rangeland Health and the decision made in the JVP-RMP that requires 80% of the uplands be in good or excellent condition?

Upland Photographs

Picture 1: Proper Functioning Short/mid Grass Vegetation Type



Picture 2: Proper Functioning Big Sage Upland Type



Step Two: Characterization/ Current Conditions

Upland Health

Soils

A detailed soil survey has been published by the Natural Resources Conservation Service (NRCS) for Valley County, Montana (USDA-NRCS, 1975). This soil survey was performed by the NRCS according to National Cooperative Soil Survey standards. Pertinent information for review and analysis is from the published Soil Survey and the National Soils Information System (NASIS) database for the watershed. For each soil map unit, interpretative ratings and soil characteristics are provided that can be used for general land-use planning and watershed management.

Soil genesis is a result of the five soil forming factors (i.e. climate, parent material, topography, living organisms and time). Soil is composed of mineral matter mixed with varying amount of organic matter derived mostly from vegetation. The minerals were a part of the parent material that have been weathered and broken down by the combined effect of climate, living organisms, and topography over long periods of time (USDA-NRCS, 1975). Soils in the watershed area are mainly a function of climate, topography and parent material (based on geology).

Soils in the watershed developed in a climate with long, cold winters; moist springs; and warm summers. The mean annual precipitation is 10 to 14 inches, which is mostly received in the spring.

Soils within the watershed developed in residuum derived from clayey and acid shale and sandstone from the Upper Cretaceous Bearpaw and Clagget Shale Formations and Upper Cretaceous Judith River Formation; glacial till; and, mixed and slope alluvium. Lithologies of these units consist of medium-gray fissile shale and yellowish gray to yellowish brown fine-grained sandstone and siltstone.

Predominate Ecological Sites

Shallow Clay: These ecological sites are on shallow (10 to 20 inches deep) clayey soils on undulating hilly uplands that formed in materials weathered from clayey and acid shale and associated with the Lisam and Dilts series. Shale outcrop is present in some places. These shallow clay ecological sites are concentrated in the southwest extent of the watershed. Soils are highly susceptible to erosion due to rapid runoff and slow to very slow permeability. Vegetation on these sites includes western wheatgrass, green needlegrass, prairie sandreed, and big sagebrush.

Shallow: These ecological sites are on shallow sandy soils on gently to moderately steep uplands that formed in material weathered from sandstone and associated with the Cabbart series. These sites are concentrated in the northern extend of the watershed. Vegetation on these shallow ecological sites includes western wheatgrass, green needlegrass, bluebunch wheatgrass, needle-and-thread grass, and winterfat.

Silty: These ecological sites are on very deep (>60 inches) silty soils on glacial till uplands and are associated with the Scobey and Phillips series. Vegetation on these silty ecological sites includes

western wheatgrass, needle-and-thread grass, blue gramma, prairie junegrass, green needlegrass, sandberg bluegrass and silver sagebrush. Without mechanical treatment the potential for advance in succession is limited on these sites.

Thin Clayey: These ecological sites are on very deep clayey soils on moderately steep to steep hillslopes and are associated with the Sunburst series. These sites, in the watershed, are mostly late seral. Vegetation on these sites includes western wheatgrass, green needlegrass, bluebunch wheatgrass, little bluestem and plains muhly.

Dense Clay: These ecological sites are on very slowly permeable clayey alluvial soils on terraces and fans and are associated with the Vaeda and Absher series. These sites, in the watershed, are mostly mid seral and have limited potential for advance in succession due to soil chemistry. Soils tend to be saline and sodic within the top 30 inches. Vegetation on these sites includes western wheatgrass, sandberg bluegrass, inland saltgrass, Nuttall's saltbush, and cactus.

Dense Clay: These ecological sites are on glacial till uplands and are associated with the Elloam series. These dense clay ecological sites are mostly mid seral and have limited potential for advance in succession because of soil chemistry. Vegetation on these sites includes western wheatgrass, sandberg bluegrass, green needlegrass, and big sagebrush.

Clayey: These ecological sites are on alluvial soils on low terraces, fans and floodplains along drainages and are associated with the Harlem, Havre, Marias and Thebo series. Vegetation on

these sites includes western wheatgrass, green needlegrass, sandberg bluegrass, prairie junegrass and big sagebrush.

Overflow: These ecological sites are on soils that formed in recent deposits of alluvium on nearly level to gently sloping low terraces, bottom lands and floodplains and are classified as Ustic Torrfluvents. Vegetation on these overflow ecological sites includes sedges, reeds, western wheatgrass, and various obligate and facultative forbs. These sites respond readily to grazing management.

References

United States Department of Agriculture, Natural Resources Conservation Service, 1975. *Soil Survey of Valley County, Montana.*

Vegetation

The vegetation data shows that 99 % of the surveyed area is dominated by native vegetation; 65 % grass and 34% shrubs. About 1% of the area is crested wheatgrass.

Vegetation type and seral status of the Larb Creek Watershed are located on Maps 3 and 5 located at the end of this report.

Clubmoss

Clubmoss covers some of the soils in this area and severely limits vegetative productivity and potential to advance in seral status. Fire or mechanical treatment of clubmoss significantly increases productivity and enhances upward succession.

Noxious Weeds

Noxious weeds are not a significant problem in this watershed. However, they are occasionally found. Leafy Spurge and Spotted Knapweed have been found in the past. When they are found the patches are reported to the county weed supervisor and they are eradicated.

Livestock Grazing

There are 16 individual ranches that have grazing permits in the watershed. BLM lands provide over 90% of the summer forage in the allotments.

About 88% of the federal land in the watershed is managed under eight allotment management plans (AMPs) which use rest rotation or deferred rotation grazing systems as shown in Table 1. Five allotments (6% of the BLM acres) are identified in the Land Use Plan as potential AMPs. The remaining allotments (6% of the BLM acres) are in small allotments that are identified as non-AMPs in the Land Use Plan.

Step Three: Reference Conditions

Uplands

The original land survey notes, from surveys that were done between 1891 and 1920 were reviewed to try to determine the range conditions during the open range and early homestead days. In the 1890s surveyors would often note riparian vegetation where survey lines crossed creeks and for each township a short narrative describing topography, soil, vegetation, water, and human settlement was included. The

1911-1920 notes are less descriptive but do have summary narratives as well.

Livestock grazing had replaced buffalo grazing beginning in 1886. The winter of 1906-07 ended the large cattle outfits and ushered in the era of the homesteader and smaller ranches. (Glasgow Jubilee Committee, 1962). Open range continued until 1934 with the passage of the Taylor Grazing Act. Grazing pressure peaked in the 1920s and 30s with ranchers and homesteaders competing for grass.

The descriptions of upland grass conditions ranged from “sparse” to “good” in 1892 and less favorable by the early 1900s. Another repeated bit of information is “*there is no timber.*”

The following excerpts illustrate these findings.

Township 29 N, Range 34 E; “This township is principally composed of rolling prairie and the level bottom lands along Larb Creek, there are also some small districts of mountainous and broken ridge lands. The whole of the township is covered with a sparse growth of native grasses..” (Abram Jayqueth, US Deputy Surveyor 1892)

Township 29N Range 35 E; This township is composed of rolling prairie, level bench and bottom, and broken mountainous lands. There is a good growth of native grasses, with some meadows in the bottom lands. The soil is sandy gravelly and rocky, from 1st to 4th rate. There is no timber in the township. There is one settler each in secs. 14,18” Abram Jaqueth 1892)

The 1911 resurvey included the following statements that indicated deterioration had occurred on the range by 1911.

T 30 N R 34 E “*The hills are subject to wash, and the soil is greatly denuded*”

T. 28N, R 35 E “*The township is covered with a scattering of sage brush and a fair growth of grass, which affords fair grazing for cattle and stock.*”

T 30N R 35 E “*the southern exposures on hillsides are very rocky and denuded of soil*”.

One oft repeated statement throughout the 1911 survey was the phrase “*Undergrowth, scattering sagebrush and grass.*” This phrase agrees with today’s scattered pattern of sagebrush cover.

Step Four: Analysis and Recommendations

Uplands Standard

The Upland Standard reads: “Uplands are in proper functioning condition.” This means that soils are stable and provide safe release of water appropriate to the soil type, climate, and landform. The amount and distribution of ground cover (i.e. litter, live and standing dead vegetation, microbiotic crusts, and rock/gravel) for identified ecological sites or soil-plant associations are appropriate for soil stability.

The upland standard Proper Functioning Condition (PFC) is not the same as the objectives in the JVP-RMP, (i.e. 80% of the watershed in good or excellent

ecological condition, or less if not feasible or for specific wildlife habitat).

Procedure to determine conformance with standard

Review of early historical records indicates very similar vegetation conditions today.

The uplands were assessed on an allotment basis using a form developed by the Glasgow Field Office assessment team. The 26 allotments were divided into high and low priority based on acres of public land, resource values and previous planning. Each allotment was visited in the field. The high priority allotments were visited at least once by the team to assess the standards, while an individual usually assessed the low priority allotments and a call was made on whether the standard was being met.

If there was a question on the Standards call the team would assess the allotment. The team used field write-ups and existing long term upland studies to determine if the entire watershed was meeting the Upland Standard when evaluating the watershed as a whole.

Existing trend studies on AMP allotments were conducted and evaluated to help determine trend and overall health. The information gathered during the AMP evaluation process, especially the long-term trend data was also considered when assessing whether the Upland Standard had been met.

The entire watershed, on an allotment basis, was mapped for ecological range condition in 1978 and 1979. Individual allotments were re-evaluated for ecological condition during field assessments in 2005 (See Table 2).

As the team conducted the allotment assessments, they evaluated the potential and necessity of meeting the JVP-RMP objective of having 80% of the

watershed in good or excellent ecological status, focusing on the habitat of grassland birds.

Findings

The assessment team has found that currently the uplands in the Larb Creek Watershed meet the Lewistown Standard #1.

The following table gives an overview of the allotments in the watershed:

The uplands are in proper functioning condition. This does not mean that all the individual allotment objectives that were designated in the RMP and individual plans have been met for the uplands.

Specific ecological sites within an allotment may not meet the upland standard. However, the range of seral stages (ecological conditions) within the watershed is within the range of natural variation for the short grass prairie ecosystem.

The site studies indicated the sites were in stable ecological condition. The erosion present was expected for that ecological site. The long-term trend data gathered during previous evaluation processes indicated an upward or static trend on the allotments with AMPs.

With about 71 % of the acres classified in potential natural community (PNC) or late seral stage, the watershed does not yet meet the JVP-RMP objective of having 80% in good or excellent ecological condition. The watershed is making good strides towards eventually meeting the JVP objective. Since the uplands were first assessed for condition in 1978-79, the percentage of acres in good or excellent condition has increased from about 55 percent to about 71 percent today (see figure 1).

Table 1. Livestock Grazing Allocation and Management						
Allotment Number	Allotment Name	Operator Name	Public Aums	Public Acres	Other Acres	Grazing Method
4500		Albus, Loren and Sandra	7	40		S
4501	Miles Crossing Coulee	Sunford, John and Barb	72	360		S
4502	Lower Miles Crossing	Hinsdale Livestock Company	24	120		S
4504		Boucher Ranch, Inc.	15	160		S
4508	Little Horn Coulee	Johnson, Duwayne	64	601		S
4509	Tank Coulee	Christensen, Donald Estate	231	1564		S
4510	Big Coulee	Mix, Et. Al.	107	800		S
4513	Rattlesnake Coulee	Melby-Gaustad Partnership	199	976	11	S
4514	Upper McNab Coulee	Boucher, Roberta	463	2255	650	S
4519	Larb Creek	Yeska, John	1712	7181		DR
4526	Lower Square Coulee	Linn LTD Partnership	181	839		S
4527	Sandstone	Albus, Loren and Sandra	358	1953	370	RR
4528		Boucher Ranch, Inc.	35	120		S
4529	Square Coulee	Boucher Ranch, Inc.	116	755	280	S
4530	Lower Coon Coulee	Pippin, Larry	60	240		S
4531	Upper Square Coulee	Boucher Ranch, Inc.	20	80		S
4546	Lost Coulee	Yeska, John	1865	11186	599	DR
4547		Korman, Ronnie and Terry	144	560	720	DR
4548	Boxelder Coulee	Fisher, Thomas J.	2034	13312	35	RR
4549		Fisher, Thomas J.	28	160		S
4550	South Shed Coulee	Pippin, Larry	2289	14166	1593	S
4569		Korman, Earl Et. Al.	118	528		S
4570		Palm, Corby and Lorie	5	80		S
4571	Grant Coulee	Palm, Corby and Lorie Korman, Earl Estate Korman, Earl Et. Al.	3093	19600	808	DR
4572	Corral Coulee	Orahood, James and Kelly	750	8494	640	DR
4578	Grandpa Coulee	Orahood, James and Kelly	396	1914		RR

RR = Rest Rotation DR = Deferred Rotation S = Season Long

Analysis

The Upland Standard is being met on all the allotments when evaluated on a watershed basis (see Executive Summary).

Livestock grazing systems and current levels of use are maintaining healthy rangelands that are in similar or improved condition compared to the 1890 – 1911 descriptions.

Fire control, overgrazing and lack of buffalo herd disturbance probably resulted in an increase in clubmoss density following settlement from the 1890s to the 1930s. Ecological sites dominated by clubmoss are in a stable ecological state unless there is a disturbance. The reintroduction of fire or applying mechanical treatments would reduce clubmoss and advance the ecological seral stage.

The Larb Creek Watershed is not yet meeting the RMP objective of having 80% of the watershed in late seral or PNC.

The crested wheatgrass fields in this watershed provide early spring livestock grazing. This benefits the vegetation and nesting birds, such

as sage grouse, in the native grass areas of these allotments.

Recommendations

Continue existing allotment management plans (AMPs) as most trend data shows an upward trend even with the satisfactory conditions we now have on the allotments. Allotments identified as potential AMPs will be considered for future needs.

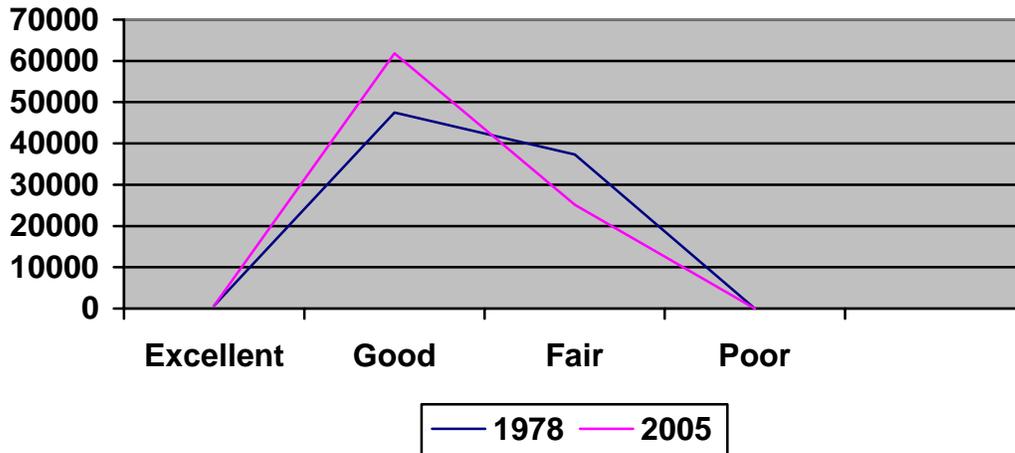
Encourage mechanical treatment and fire in combination with the grazing systems to increase the total production, cover and height of grasses on the clubmoss infested sites on native range where this does not conflict with habitat needs for sensitive wildlife species.

Table 2. Ecological Status of Uplands

NUMBER	ALLOTMENT NAME	EXCELLENT (PNC)	GOOD (LATE)	FAIR (MID)	POOR (EARLY)	UNSUITABLE (SHALE OUTCROP)
4500		20	20			
4501	Miles Crossing Coulee		360			
4502	Lower Miles Crossing		120			
4504			160			
4508	Little Horn Coulee	5	253	311		32
4509	Tank Coulee		1052	407		14
4510	Big Coulee		291	478		31

4513	Rattlesnake Coulee		976			
4514	Upper McNab Coulee		2180	75		
4519	Larb Creek		6086	1054		6
4526	Lower Square Coulee		627	205		7
4527	Sandstone		1541	412		
4528					120	
4529	Square Coulee		489	264		2
4530	Lower Coon Coulee		240			
4531	Upper Square Coulee				80	
4546	Lost Coulee		9022	2157		7
4547			512	48		
4548	Boxelder Coulee		8615	4697		
4549			160			
4550	South Shed Coulee		13258	1008		
4569			59	439		12
4570				80		
4571	Grant Coulee		8969	10631		
4572	Corral Coulee		5097	2460		
4578	Grandpa Coulee		1704	210		

Figure 1. 1978 and 2005 Condition Acres



In addition there are 144 acres of non-native species in the watershed that were not evaluated.

RIPARIAN AND WETLAND AREAS

Step One: Issues and Key Questions

Riparian/Wetland Health

RMP Decisions:

- a) "...Improve or maintain riparian and wetland areas to proper functioning condition"
- b) "...Achieve or maintain the desired plant community...provide sufficient plant residue to protect streambanks."

Lewistown Standard # 2

"Riparian and wetland areas are in proper functioning condition"

Key questions:

- 1) Many of the streams within the watershed are classified as ephemeral and non-riparian. Should these streams be monitored as riparian areas or should they be dropped from the study?

Step Two: Characterization/Current Conditions

Riparian and Wetland Areas

Hydrology/ Stream Channel

Larb Creek is the only perennial stream in the watershed. The remaining streams are either intermittent or ephemeral. There are large seasonal variations in flows with the largest flows generally occurring during spring or early summer as a result of snowmelt and rainstorms.

Stream Riparian Vegetation and Functional Status

Montana riparian vegetation is classified into habitat types and community types. Habitat types (HTs) are stable, climax plant communities, representing the potential natural vegetation for the site. The objectives for such sites are to maintain the current habitat type. Community types (CTs) represent lower seral types that are stable for time frames relevant to land management decisions (Hanson et al 1995). In theory these communities could advance in succession to a habitat type. Although most of the riparian areas inventoried were shrub/grass community and habitat types, trees, such as Cottonwood, Box Elder, and Peach Leaf Willow, were found along some of the inventoried streams, see Table 3.

Wetland Areas

Both natural potholes and constructed reservoirs are classified as wetlands in this watershed. Because we have a water limited climate, the riparian vegetation within and around the potholes ranges from marginal riparian to upland species. The vegetation around the reservoirs provides good forage and cover for wildlife and waterfowl. For this reason all of the wetlands have been classified as PFC.

Table 3. Riparian Objectives, Riparian Standard Status

Allot #	Stream	Vegetation type	Function	Stream Miles	Polygon #
4512	McNabb Coulee	Western wheat -ht	PFC	3.2	R-247
4513	Ashford	Western wheat -ht	FR	1.7	R-246
4519	Packrat Coulee	Beaked sedge – ht	PFC	3.4	R-241
4519	Lost Coulee	Kentucky bluegrass -ct	PFC	1	R-242
4519	Larb Creek	Western wheat -ht	FR	1.9	R-243
4519	Coon Coulee	Western wheat -ht	PFC	2.6	R-245
4546	Lost Coulee	Western wheat -ht	PFC	5.4	R-243
4546	Blanche Coulee	Woods rose -ct	FR	4.2	R-275
4548	Road Coulee	Western wheat -ht	PFC	4.7	R-254
4548	South Coulee		PFC	1.8	R-256
4548	Coal Bank Coulee	Western wheat -ht	PFC	3.1	R-243(A)
4548	Larb Creek	Western wheat -ht	PFC	3.5	R-255
4548	Flat Coulee	Western wheat -ht	PFC	4.5	R-245
4550	Coon Coulee	Western wheat -ht	PFC	2.8	R-240
4550	Home	Western wheat -ht	PFC	4.4	R-249
4550	South Shed	Beaked sedge – ht	PFC	7.1	R-251
4550	Whites Coulee	Western wheat -ht	PFC	5.6	R-252
4571	Hammond	Western wheat -ht	NF	6.3	R-255
4571	Larb Creek	Beaked sedge – ht	PFC	5.2	R-306
4572	Larb Creek	Western wheat -ht	PFC	0.3	R-272
4572	Craig Coulee	Beaked sedge – ht	PFC	5.9	R-271

* Abbreviations: CT= Community Type, HT= Habitat Type, PFC = Proper Functioning Condition, FR = Functioning–At-Risk, NF=Non-Functioning.

Stream Riparian Function/Health and Vegetation Communities

The condition of the streams listed in Table Three was determined during the 2004 field season.

Good examples of habitat types in this watershed include Beaked sedge and Western wheatgrass. These riparian areas are at their potential so the objective for these sites is to maintain the current habitat type.

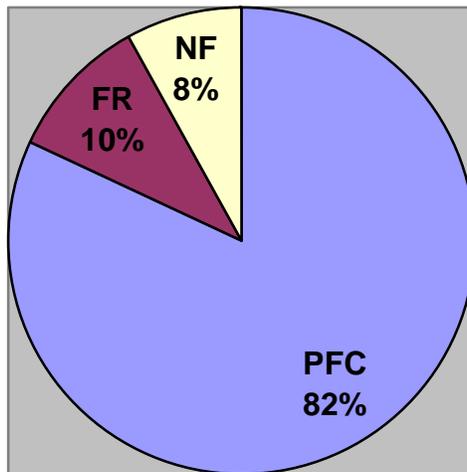
Some community types in the watershed include Woods rose and/or Western snowberry and Kentucky bluegrass. In theory, these communities are a lower seral

community that could advance in succession to a habitat type.

One of the functions of this watershed assessment is to establish realistic objectives for the vegetation. Objectives for community types need to reflect site potential as nearly as can be determined. Site potential should be based, not just on the "book" characteristics but, on careful evaluation and observation. Table four shows the results of the function and health assessment.

Table 4. Larb Creek Watershed Riparian Condition 2005 (See Map 5).			
PFC	FR	NF	Total miles
64.5	7.8	6.3	78.6

Figure 2. Riparian Status in Percentage



Riparian Photographs

Picture 3: Proper Functioning Condition Riparian Area



Picture 4: Functioning At Risk Riparian Area



Wetland Areas

Nearly all wetlands in the watershed are constructed reservoirs.

Step Three: Reference Conditions

No historical observations are available.

Step Four: Analysis and Recommendations

Riparian and Wetland Areas

Standard

“Riparian and Wetland Areas are in proper functioning condition.”

Procedure to determine conformance with standard

Previously established and previously monitored riparian polygons were reevaluated by a BLM interdisciplinary team. Photos were taken at the same locations as previous years and Montana Riparian/Wetland Association (MRWA) inventory forms were used to assess site conditions. New riparian study sites were established in other allotments, within the watershed, where there were no previous sites.

Natural potholes and constructed reservoirs were assessed as lentic wetlands. Pits constructed for the sole purpose of livestock watering were not inventoried. Still water wetland forms were used to record vegetation types, soil types and water source (e.g. stream, overland flow, seeps, etc.) for each wetland. The perimeter of each

pothole and reservoir was mapped using a Trimble GPS unit. The maximum depth of the reservoirs was also measured, for use in determining reservoir capacity.

Findings

Seventy-eight stream miles were inventoried for riparian function/health status. Of those miles, 8 (10%) were found to be functional-at-risk, 64 (82%) were in proper functioning condition, and 6 (8%) were non-functioning (See Figure. 1).

Recommendations

Of the 21 riparian sites monitored, only 3 were found to be functioning-at-risk, and one was found to be non-functioning. Livestock was the determining factor in all cases. The amount of bare ground caused by livestock trailing lowered the overall condition of the riparian area.

There has been a management change in the Larb Creek allotment #4519. A change in season of use will most likely alleviate the problem and since the trend is up the only recommendation at this time is continued monitoring.

The Rattlesnake Allotment #4513 has a high percentage of private land so continued monitoring and evaluation of a change in management and/or additional fencing will continue.

The riparian trend is up in the Lost Coulee allotment #4546 so as long as the riparian area continues to improve there shouldn't be a need for any other changes within the allotment.

The Box Elder allotment #4548 has all ready had a riparian fence installed which has resulted in an upward trend.

WATER QUALITY

Step One: Issues and Key Questions

RMP Decisions

"Surface and groundwater quality will be maintained to meet or exceed state and federal water quality standards"

Lewistown Standard #3

"Water quality meets Montana State standards."

Key Question:

- 1) Are the Montana water quality standards being met in this watershed?
- 2) What effect will water right restrictions have on new construction?
- 3) Could the water rights from reservoirs that have silted in be transferred to build new reservoirs?

Step Two: Characterization/Current Conditions

Surface Water

The water quality standard listed in the Standards and Guidelines states that surface and groundwater on public lands must fully support the designated beneficial uses described in the Montana Water Quality

Standards. The Montana Department of Environmental Quality (DEQ) has classified all streams within this watershed as B-3. Designated beneficial uses for B-3 streams are bathing, swimming and recreation, growth and propagation of non-salmonid fishes and associated aquatic life, waterfowl and furbearers. The quality of these waters is naturally marginal for drinking, culinary and food processing purposes, agriculture and industrial water supply.

As a result of the Clean Water Act (CWA) passed in 1972, states were directed to develop Total Maximum Daily Loads (TMDLs) that set limits on point and nonpoint source pollution loading to water quality-limited water bodies. These water bodies are listed in the CWA 303 (d) list of impaired streams. The CWA section 303(d) and the U.S. Environmental Protection Agency (EPA) Water Quality Planning and Management Regulations require each state to:

- 1) Identify water bodies that are water quality-limited
- 2) Prioritize and target water bodies for TMDLs
- 3) Develop TMDL plans to attain and maintain water quality standards for all water quality-limited waters.

All streams within the study area are considered to be meeting water quality standards as long as the channel is stable and the riparian area is in proper functioning condition.

Ground Water

Because of naturally high TDS levels groundwater is marginal to unsuitable for domestic use but suitable for livestock (*Milk River Investigation Report, 1960*).

Step Three: Reference Conditions

No historical observations are available.

Step Four: Analysis and Recommendations

Water quality meets Montana state standards.”

Surface and groundwater on public lands fully support designated beneficial uses described in the Montana Water Quality standards. Water quality is indicated by dissolved oxygen (DO) concentration, pH, turbidity, temperature, fecal coliform, sediment, toxins, and others such as

WILDLIFE HABITAT/ BIODIVERSITY

Step One: Issues and Key Questions

RMP Decisions:

The BLM will maintain and enhance suitable habitat for all wildlife species. The emphasis for habitat maintenance and development will be on present and potential habitat for sensitive, threatened and/or endangered species, nesting waterfowl, crucial wildlife winter ranges, non-game habitat, and fisheries. The BLM will maintain or manage prairie dog towns on BLM lands based on the values or problems encountered.”

chlorides, cyanide, nitrates, phenols, sodium, sulfates, etc. For a complete definition of the standard contact the Glasgow Field Station office.

Procedure to determine conformance with standard

To determine conformance with standard the BLM refers to Montana’s 303(d) list of impaired streams.

Recommendations

Water quality in this watershed is directly affected by the condition of the riparian areas. Because of this the recommendations listed in Table 3 for meeting riparian standards would be the same as those for meeting water quality standards.

Lewistown Standard #5:

The regional standard for rangeland health that applies is the Central Montana Standard #5:

"Habitats are provided to maintain healthy, productive and diverse populations of native plant and animal species, including special status species (federally threatened, endangered, candidate or Montana species of special concern as defined in BLM

Manual 6840. Special Status Species Management)."

Key Questions:

1) Greater sage-grouse: What is the current status and distribution of greater sage-grouse in the watershed? How do habitat conditions around active leks in the watershed compare to the national standard for breeding habitat?

2) Fisheries: What is the status of native fish assemblages in Larb Creek?

3) Grassland birds: How do we meet habitat requirements for a number of species (especially special status species) that require a range of habitats from very short vegetation to dense, tall cover? What is the effect of crested wheatgrass on bird distribution and reproductive success? Is the goal of 80% good to excellent ecological status appropriate for the full range of grassland bird species?

4) Raptors: What is the current status and trends of raptors nesting within this watershed, especially special status species such as the ferruginous hawk, golden eagle and burrowing owl?

Step Two: Characterization/Current Conditions

Wildlife Habitat / Biodiversity

This watershed contains a variety of wildlife habitats and most of the species expected in these habitats exist within this watershed. The principal types of wildlife habitats are: sagebrush steppe, woody draw, and riparian habitat. Less common habitats include reservoir wetlands, rocky outcrops, and sparsely vegetated hardpan. Sage steppe, consisting of Wyoming big sagebrush (*Artemisia tridentata*) and a number of grass

species, is the predominate habitat in the watershed. Most of the wildlife species found in the rest of the south Valley County can also be found in the Larb Creek Watershed.

The sagebrush steppe habitat provides habitat for pronghorn antelope and greater sage-grouse as well as a number of other species associated with sagebrush habitats. There are six known greater sage-grouse (*Centrocercus urophasianus*) leks on BLM land within the watershed. An additional two leks are located on private land within the watershed. Five of the leks are currently active, two are inactive and one is unknown. Counts of these breeding grounds in the last six years averaged 16 males/lek. Not every lek was counted every year during the past six years.

The combinations of woody draws, wetlands, and grasslands provide habitat for a range of wildlife species such as mule deer (*Odocoileus hemionus*), coyotes (*Canis latrans*), sharp-tailed grouse (*Tympanuchus phasianellus*) and a variety of migratory birds. There are 11 known sharp-tailed grouse leks on BLM land within the watershed. Sixteen additional leks are located on private land within the watershed.

There is limited crucial winter habitat for antelope (*Antilocapra americana*), but the watershed contains important spring, summer, and fall habitat for antelope. The watershed does have crucial mule deer winter range. Small mammals commonly found in the watershed are mountain cottontail (*Sylvilagus audubonii*), white-tailed jackrabbit (*Lepus townsendii*), badger (*Taxidea taxus*), and long-tailed weasel (*Mustela frenata*).

Amphibians and reptiles found in the watershed are: boreal chorus frogs, tiger salamanders, plains garter snakes, racers, bull snakes, western rattlesnakes, and painted turtles. Raptors that breed in the area

are golden eagles (*Aquila chrysaetos*), prairie falcons (*Falco mexicanus*), northern harriers (*Circus cyaneus*), Swainson's hawks (*Buteo swainsoni*), ferruginous hawks (*Buteo regalis*), and red-tailed hawks (*Buteo jamaicensis*). Additionally, rough-legged hawks (*Buteo lagopus*) and gyrfalcons (*Falco rusticolus*) winter within the watershed. Natural and artificial wetland sites throughout the watershed provide habitat for a wide variety of waterfowl and shorebirds.

Special Status Species –

There are no threatened or endangered animal species breeding in the Larb Creek Watershed. Bald eagles (*Haliaeetus leucocephalus*), currently a threatened species, may be found migrating through the watershed in both spring and fall.

Northern leopard frogs (*Rana pipiens*) are the only Montana and BLM amphibian species of concern found within the watershed. The plains spadefoot toad (*Spea bombifrons*) and Great Plains toad (*Bufo cognatus*) may occur in the watershed but have not been documented. Greater short-

horned lizards (*Phrynosoma hernandesi*) and western hognose snakes (*Heterodon nasicus*) are reptile species of concern that have been found in the watershed and the milk snake (*Lampropeltis triangulum*) is a reptile species of concern that may be found in the watershed. Pearl Dace (*Margariscus margarita*) is a BLM and Montana fish species of concern found in Larb Creek. In addition, a number of U.S. Fish and Wildlife Service bird species of conservation concern, and Partners in Flight birds species of concern breed within the watershed (Table 5). The presence, abundance and distribution of these species across the watershed reflect the relatively intact habitats in the watershed and the range of disturbance factors still operating within the watershed.

Fisheries

Only Helen Reservoir is currently stocked for fishing opportunities. Largemouth bass are stocked infrequently by Montana Fish Wildlife and Parks (B. Wiedenheft pers. comm.). Larb Creek contains a number of native and non-native fish species (Table 6).

Table 5: Bird Species Present in Larb Creek Watershed

Species	Preferred Habitat	Approximate Grazing method / intensity
Greater Sage-grouse	Greater sage-grouse can be found in or near sagebrush habitats year round. They also require moist wetland and wet meadows to aid in brood rearing.	The previous year's regrowth of grass is important to provide nesting cover in combination with taller sagebrush plants growing in dense stands. Light grazing on sagebrush in combination with moderate to heavy grazing of grass and forbs with regrowth during early summer is preferable.
Sharp-tailed grouse	Grasslands interspersed with some brushy cover.	Any grazing that allows grass regrowth. Hens select from residual cover remaining from the previous year's growth and cover removal factors (grazing, mowing, burning, snow flattening). The largest breeding grounds have been located in areas surrounded by extensive, heavy stands of residual herbage.
Long billed curlew	Expansive, open, level to gently sloping or rolling grasslands with short vegetation such as shortgrass or recently grazed mixed-grass prairie.	Grazing can be beneficial if it provides suitably short vegetation, particularly during the pre-laying period. In Idaho, neither cattle nor sheep could graze dense stands of perennial wheatgrasses, such as crested wheatgrass, to a height that was usable by curlews. Long-billed curlews preferred recently grazed areas and did not use areas that had not been grazed for over 1 yr.
Loggerhead Shrike	Open habitat characterized by grasses and forbs of low stature interspersed with bare ground and shrubs or low trees. Scattered shrubs or trees, particularly thick or thorny species, serve as nesting substrates and hunting perches. Thorny shrubs or trees also serve as impaling stations.	Grazing can provide preferred habitat by shortening vegetation in taller grassland areas. Trees and shrubs used for nesting and perches should be protected from cattle grazing and rubbing. In shortgrass habitat, Loggerhead Shrikes preferred to forage in ungrazed areas, which provided taller (>20 cm) grass, as they serve as food reserves for small mammals, which are potential Loggerhead Shrike prey.
Burrowing Owl	Well-drained, level to gently sloping areas characterized by sparse vegetation and bare ground such as moderately or heavily grazed pasture, with populations of prey species and of burrowing mammals to ensure availability of burrows as nest sites. In particular, the conservation of black-tailed prairie dog and Richardson's ground squirrel colonies appears to be vital to the preservation of Burrowing Owls.	Because owls forage over tall grass and nest and roost in short grass, a mosaic of habitats may be important in conserving habitat. Allow heavy grazing on saline, gravelly, stony, or sandy areas. Allow moderate to intense grazing on good soils that otherwise would support tall vegetation. Protect colonies and increase populations of burrowing mammals. Maintain abandoned prairie dog colonies at an early successional stage, with short (<8 cm) vegetation. Implement rotational grazing in heavily grazed areas to increase prey populations.
Swainson's Hawk	Open grasslands that contain patches of trees for nesting and perching and that are near cultivated areas. Swainson's Hawks prefer open grassland areas with scattered trees or with small clumps of trees or shrubs. They use shortgrass, mixed-grass, tallgrass, and sandhill prairies; aspen parklands; riparian areas; isolated trees; shelterbelts; woodlots; black-tailed prairie dog colonies; pastures; hayland; and cropland	In the absence of large tracts of native prairie, Swainson's Hawks will breed in small patches of natural or semi-natural cover containing trees near cultivated areas. Plant trees and, if necessary, build livestock enclosures around existing stands of trees to provide and protect nesting sites.
McCown's longspur	Short, sparsely vegetated native grasslands with little litter and low forb cover. McCown's Longspurs often breed on barren hillsides with southern exposures.	Mixed-grass areas can be made suitable for breeding McCown's Longspurs by implementing moderate to heavy, or season-long grazing, and preferred heavily grazed pastures over lightly or moderately grazed pastures. McCown's Longspurs preferred continuously grazed (season-long) native pastures, and were fairly common in native pastures grazed in early summer and they avoided deferred-grazed (grazed after 15 July) native pastures.

Species	Preferred Habitat	Approximate Grazing method / intensity
Lark bunting	Grasslands of low to moderate height with high vegetative cover and some bare ground, often with a superstorey component such as shrubs. Sagebrush and greasewood are important shrubs.	In shortgrass prairie, heavy grazing is often detrimental to Lark buntings because it increases bare ground cover, reduces vegetation height, and removes protective cover. Lightly to moderately grazed areas were preferred over heavily grazed areas in shortgrass and shrubsteppe habitats. Pasture that was heavily grazed in the winter was preferred over pasture that was heavily grazed in the summer in northcentral Colorado.
Western meadowlark	A variety of grassland types and heights, sparse woody cover, and high forb and grass cover. In the Great Plains, Western Meadowlarks use a wide range of vegetation heights and densities, although they avoid extremely sparse or tall cover. They prefer high forb and grass cover, low to moderate litter cover, and little or no woody cover.	Western Meadowlarks usually respond positively to light to moderate grazing and negatively to heavy grazing, although they also may exhibit no response to grazing. In North Dakota, Western Meadowlarks preferred grazed fields over DNC, but showed no response to grazing intensities or to short-duration (involved a system of pastures rotated through a grazing schedule of about 1 wk grazed and 1 mo ungrazed, repeated throughout the season), twice-over rotation (involved grazing a number of pastures twice per season, with about a 2-mo rest in between grazing), or season-long (involved leaving cattle on the same pasture all season) grazing systems.
Brewer's sparrow	Sagesteppe habitats dominated by sagebrush with > 10% average shrub cover and an average shrub height of 0.5 to 1.5 m.	Loss of sagebrush cover is detrimental to the presence of Brewer's sparrows. The affects of grazing are ambiguous but residual cover of grasses appears to be beneficial to Brewer's sparrows and grazing systems that allow retention of grass cover are preferred.
Horned Lark	Short, sparse herbaceous vegetation with little or no woody vegetation or litter. Occupied areas are characterized by moderate coverage (10-37%) of bare ground.	Burning, mowing, or grazing can be used interchangeably to create short, sparse vegetation. Horned Larks preferred heavily grazed over lightly or moderately grazed pastures and preferred heavily winter-grazed sites over heavily summer-grazed sites for breeding.
Vesper Sparrow	Dry, open areas with short, sparse and patchy vegetation. However, they may be found in a variety of habitats, including shortgrass, mixed-grass, and tallgrass prairie; semidesert grasslands; sagebrush; pastures; hayland; cropland; shrubby grasslands; and woodland edge. The availability of sagebrush for nest cover and song perches is important.	Densities of Vesper Sparrows were highest on moderately grazed and lightly grazed shrubsteppe/grassland habitat. Areas with highest densities of Vesper Sparrows also had above-average abundance of wheatgrasses, Junegrass, fringed sagewort, and big sagebrush.
Lark Sparrow	Open grasslands with sparse to moderate herbaceous and sparse litter cover, and a shrub component, and allowing moderate grazing or occasional burning.	Lark Sparrows nested in moderately to heavily grazed pastures, but also nested in idle fields.

Table 5. Habitat affinities for selected grassland bird species. Accounts of species of concern are in bold. Information is derived from: Johnson, Douglas H., Lawrence D. Igl, and Jill A. Dechant Shaffer (Series Coordinators). 2004. Effects of management practices on grassland birds. Northern Prairie Wildlife Research Center, Jamestown, ND. Jamestown, ND: Northern Prairie Wildlife Research Center Online. <http://www.npwrc.usgs.gov/resource/literatr/grasbird/grasbird.htm> (Version 12AUG2004).

Table 6. Fish species found in Larb Creek (MFISH database 2005).

<u>Introduced Fish Species</u>	<u>Native Fish Species</u>
Black Bullhead	Brook Stickleback
Common Carp	Channel Catfish
Northern Pike	Fathead Minnow
Spottail Shiner	Iowa Darter
White Crappie	Lake Chub
Yellow Perch	Longnose Dace
	Northern Redbelly Dace
	Pearl Dace
	Plains Minnow
	River Carpsucker
	White Sucker



Picture 5: Hognose Snake

Step Three: Reference Conditions

Wildlife Habitat / Biodiversity

It is difficult to quantify changes in composition and abundance of most wildlife species in this watershed over the past 200 years because the complex interplay of disturbance factors occurring over the landscape to produce wildlife habitat no longer operate over large areas and at the intervals they formerly did. In addition, other human induced disturbances, such as

roads and homesteads, have changed the context of the surrounding landscapes as well as portions of this watershed. Historical disturbance factors that modified plant and animal habitats were fire, bison (*Bison bison*), and precipitation levels. Fire is no longer a major disturbance factor in this landscape and bison grazing has been replaced with managed domestic livestock grazing. Probably the last bison in the area were killed in 1885 along Cherry Creek,

northeast of this watershed. Precipitation patterns and drought cycles still presumably function the same as they did in the past, but recent climate change scenarios suggest drought may become more frequent. The intensity of recent human disturbance in this area varies; some of the land was tilled and was left fallow and has returned to grass and forbs while other areas have never been cultivated and have experienced changes in grazing and predator regimes from those associated with free range bison herds to relatively predator free managed domestic livestock. A number of wildlife species historically found in this area are no longer extant. These include the grizzly bear (*Ursus arctos horribilis*), gray wolf (*Canis lupus*), swift fox (*Vulpes velox*) and bison. The extent or presence of historic black-tailed prairie dog (*Cynomys ludovicianus*) towns in the watershed is unknown, and consequently the historic presence of black-footed ferrets (*Mustela nigripes*), which are dependent on prairie dog towns, is difficult to determine.

Wildlife species that have been introduced or are more extensive include ring-necked pheasants (*Phasianus colchicus*), gray partridge (*Perdix perdix*), raccoons (*Procyon lotor*), striped skunk (*Mephitis mephitis*) and red fox (*Vulpes vulpes*). Waterfowl production within the watershed has probably increased due to the construction of reservoirs for waterfowl production. There are non-native plants throughout the area; primarily sweet clover and crested wheatgrass.

Greater sage-grouse (*Centrocercus urophasianus*) were common historically. Although Lewis and Clark did not note this species until much further up the Missouri River, they did note that sage brush (*Artemisia spp.*), which greater sage-grouse depend on, was much more abundant along the Missouri River immediately south of this watershed than further downstream.

Additionally, Thorne (1895), Mearns (1904) and Cameron (1907) describe greater sage-grouse as common or abundant in similar habitats along the Yellowstone River. The greater sage-grouse was the leading upland game bird in nine western states during settlement times. Populations of greater sage-grouse have fluctuated greatly during the past 100 years and in the late 1920s populations throughout the state dropped dramatically and hunting was closed. Seasons remained short for the next 10 years, usually only 3 days in length. In 1936 and 1937 and from 1945 to 1951 the greater sage-grouse season was again closed because of concerns for the population. Since then populations have generally recovered.

Populations of greater sage-grouse in this and other watershed in south Valley County are now considered to be some of the best within the range of this species. The number of grassland and shrubsteppe bird species currently breeding in the watershed is probably quite similar to prehistoric times but their relative abundance may be quite different. The relative abundance for these species is determined by the frequency and extent of disturbance factors such as grazing, fire, and weather events. Prehistoric patterns for these disturbances are not known and therefore the relative abundance of these species on the landscape is unknown. Grazing intensity and fire frequency were probably greater and the abundance of species that respond to shorter vegetation structure may have been greater in prehistoric times.

Step Four: Analysis and Recommendations

Wildlife Habitat / Biodiversity

Standard

Standards are statements of physical and biological conditions or degree of function required for healthy sustainable rangelands.

The regional standard for rangeland health that applies to this watershed is Standard #5: Habitats are provided to maintain healthy, productive and diverse populations of native plant and animal species, including special status species (federally threatened, endangered, candidate or Montana species of special concern as defined in *BLM Manual 6840, Special Status Species Management*).

Procedure to determine conformance with standard

Standard #5 is similar to an overall assessment that includes the previous standards but also adds wildlife habitat standards. The present state of the watershed will be compared to the reference conditions, the functionality of the uplands and riparian areas, new information since the RMP was completed, and the key questions.

The Standards & Guidelines EIS also explains ways to recognize compliance with the wildlife habitat/biodiversity standard. The document says the following are indicators of meeting the standard:

- plants and animals are diverse, vigorous, and reproducing satisfactorily; noxious weeds are absent or insignificant in the overall plant community
- spatial distributions of species is suitable to ensure reproductive capability and recovery
- a variety of age classes are present
- connectivity of habitat or presence of corridors prevents habitat fragmentation

- species richness (including plants, animals, insects and microbes) are represented
- plant communities in a variety of successional stages are represented across the landscape.

The JVP - RMP has additional decisions on priorities for management. They are: The BLM will maintain and enhance suitable habitat for all wildlife species. The emphasis for habitat maintenance and development will be on present and potential habitat for sensitive, threatened and/or endangered species, nesting waterfowl, crucial wildlife winter ranges, non-game habitat, and fisheries. The BLM will maintain or manage prairie dog towns on BLM lands in the Valley RA, based on the values or problems encountered.

The allotments in this watershed are part of the plains-prairie grasslands. We will attempt to replicate the range of natural variation in the conditions of shrubsteppe ecosystems to ensure meeting the standards for wildlife. General wildlife habitats expected within this watershed are: grasslands with a variety of statures from short and sparse to tall and dense, bare ground, streams, wetlands, riparian areas, shrublands, and various mixes of these components. During prehistorical times the shrubsteppe landscape would have been characterized as variable and patchy -- with bare areas, areas of short grass, shrubs, and areas of ungrazed long grass a result of the interplay of unregulated but presumably variable bison grazing, fire, and weather conditions. The riparian areas were also influenced by these same disturbance factors and may have been quite different than they are today.

The key to providing a wide range of habitats in this system is recognizing the range of variability inherent in these systems

and the scale at which these processes have operated.

Findings

Most vegetation classifications are represented by a variety of age classes although some riparian areas could have more younger age classes of woody species to be optimal.

The wildlife habitat/biodiversity standard is being met overall in this watershed however, season long use of a number of pastures needs to be addressed to ensure adequate residual cover is being left across the watershed.

Cultivation of native prairie has caused the greatest loss in grassland/shrubland wildlife habitat in the region; however, this watershed has experienced limited change from the original native prairie and these habitats continue to provide a diverse, mostly complete, and abundant flora and fauna assemblage. Some of the grassland had been cultivated but were abandoned and have reverted to native vegetation. Some of these areas were planted with crested wheatgrass however, and these areas probably do not provide conditions similar to native prairie. Overall, the plant communities that are the basis for wildlife habitats are well represented in a variety of structural conditions. No cultivation will occur on BLM-administered lands.

This watershed continues to have large blocks of land in shrubsteppe cover and is well connected with other shrubsteppe systems in neighboring watersheds. The habitat is not fragmented.

The wildlife species missing from the area that would have been present in prehistoric times are elk, bison, grizzly bear, and gray wolf. These species require extensive, connected habitat to survive and to be

tolerated. There are no recommendations to actively re-establish these species.

The “Key Questions” considered are:

1) *Greater sage-grouse: What is the status of greater sage-grouse and their habitat in the watershed?*

We are currently investigating greater sage-grouse habitat quality throughout Valley Co. utilizing the habitat assessment procedures outlined in the final Management Plan and Conservation Strategies for Sage Grouse in Montana (2005). Vegetation surrounding greater sage-grouse leks in Larb Creek appears to be within the established standards (Table 7). We will continue to evaluate habitat conditions and explore this issue further. There are currently 5 active leks within the watershed. We continue to monitor attendance at these leks in cooperation with Montana Fish, Wildlife and Parks.

2) *Fisheries: What is the status of native fish assemblages in Larb Creek?*

Fisheries in Larb Creek have been monitored by Montana Fish, Wildlife and Parks. Larb Creek is classified as a moderate stream for fisheries. One fish species of concern, the pearl dace has been found in the creek. Other native and introduced species found in the creek are listed in Table 6.

3) *Grassland birds: How do we meet habitat requirements for a number of species (especially special status species) that require a range of habitats from very short vegetation to dense, tall cover? What is the effect of crested wheatgrass on bird distribution and reproductive success? Is the goal of 80% good to excellent ecological status appropriate for the full range of grassland bird species?*

We have not specifically addressed this issue in this watershed. We plan to initiate Breeding Bird surveys in south Valley County this year to begin to assess the distribution and diversity of birds in this area. This watershed has many allotments, the larger ones have had grazing management plans developed for them, while the smaller ones are in custodial management with much variability in the grazing intensity. Results from north Valley County suggest that similar grazing management has maintained a wide range of species in that area, however the Larb Creek watershed is quite different from the areas where these studies occurred and they may not be comparable.

4) *Raptors: What is the current status and trends of raptors nesting in this watershed, especially special status species such as the Ferruginous Hawk and Burrowing Owl?*

The number of burrowing owls in the watershed appears to be high compared to other areas in Montana where burrowing owls have been found independent of prairie dogs. We will continue to monitor known Ferruginous Hawk nests and other raptor species of concern including burrowing owls. We will also continue to survey for burrowing owls in conjunction with statewide efforts. In addition we continue to inventory and catalog sensitive wildlife species as they are encountered during regular work.

Recommendations

Implement a rest-rotation grazing management plan on Tank Coulee Allotment #4509 to enhance the understory component of the vegetation in the drainages of this allotment. Increasing the vigor and density of the understory component will provide wildlife habitat that is currently missing in the drainages of this allotment. Wildlife habitat on allotments with a high proportion of public acres currently under a season-long grazing management plan such as Upper McNab Coulee #4514 and South Shed Coulee #4550 will continue to be monitored and evaluated to determine if a change to the grazing management on these parcels is warranted.

Maintain big sagebrush throughout the watershed for the continued benefit of greater sage-grouse. Also maintain a diverse forb community and nesting cover for greater sage-grouse. Continue to monitor habitat conditions for big game winter range and greater sage-grouse nesting and brood rearing habitat. Also continue to monitor all greater sage-grouse leks in cooperation with Montana Fish, Wildlife and Parks.

Vary grazing pressure by interspersing areas of heavy, light, and non-grazing of livestock to provide habitat for a variety of grassland bird species.

Consider implementing a system of back-to-back rest of a pasture (2 years of rest), where this could be accomplished without over utilizing the remaining pastures.

Work with Montana Fish, Wildlife & Parks and other agencies to survey additional prairie streams for fish species as well as inventories of other sensitive wildlife species.

**Table 7. 2003-04 Preliminary Sage Grouse breeding habitat results
for the Larb Creek Watershed**

Habitat Feature	Indicator	Combined Data	Suitability
Nesting Cover	Big Sagebrush Canopy Cover	27.95%	Marginal
Nesting Cover	Big Sagebrush Height	37.51cm 14.77 in.	Suitable
Nesting Cover	Herbaceous perennial grass & forb height	23.92cm 9.42 in.	Suitable
Nesting Cover & Food	Perennial grass canopy cover	27.83%	Suitable
Nesting Cover & Food	Forb canopy cover	6.79%	Marginal
Food	Forb richness	low	Marginal
Overall Evaluation			Suitable

RECREATION MANAGEMENT

The purpose of this document is to assess the public lands in the Larb Creek watershed for conformance with the current JVP Land Use Plan decisions and the Lewistown District standards for Rangeland Health. The focus is primarily on the effect of livestock grazing on current rangeland health. Generally, recreation activities (hunting, scenic and wildlife viewing, driving for pleasure) within the Larb Creek watershed with their associated low visitation rate have minimal impact on the health and condition of the rangeland.

The grazing management program proposed in this document to meet the standards and guidelines for healthy rangelands coupled with effective weed control should continue to improve the quality of the recreational experience. Improving upland and riparian vegetation, maintaining or exceeding state water quality standards, and managing livestock to create diverse wildlife habitats will improve wildlife populations for the recreating publics' pursuits in hunting, fishing, and wildlife viewing.

RMP Decisions

The BLM will maintain and/or enhance the recreational quality of BLM land and resources to ensure enjoyable recreational experiences.

Recreation emphasis will be to develop and maintain opportunities for dispersed recreational activities such as hunting, scenic and wildlife viewing and driving for pleasure.

The BLM will use signs, maps and brochures to identify recreation resources, for the public. The BLM will ensure that appropriate signs and posters are used to

promote safety and convenience for visitors and users, define boundaries, identify management practices, provide information about geographic and historic features and protect vulnerable land areas and resources from misuse.

Recreation sites for fishing will be developed by the BLM when there is an opportunity to share funding with other agencies such as Montana Department of Fish, Wildlife and Parks.

The BLM will not allocate permits or specific use areas for outfitters and guides. All BLM land is available at the discretion of the Field Manager as long as permittees maintain a special recreation permit and meet the 2930 BLM regulation requirements.

The 88,044 acre Larb Creek watershed is within the 653,400 acre South Valley Special Recreation Management Area (SRMA). This portion of the South Valley SRMA includes one undeveloped recreation site, Helen reservoir, but this site does not have facility development potential. McNab reservoir site has development potential as a new fishing reservoir through a partnership agreement. The facilities at this site could include picnic tables, fire pits, shelter roofs and a toilet.

Off Highway Vehicle Management

Off Highway Vehicle (OHV) travel on BLM public lands is regulated by the June 2003 Record of Decision (ROD) Off Highway Vehicle Environmental Impact Statement and Proposed Plan Amendment for Montana, North Dakota and South Dakota. This Record of Decision designated BLM lands as a limited area for OHV use. Limited area means an area restricted at certain times, in certain areas, and/or to certain vehicular use. Furthermore, the approved preferred alternative in the ROD

states that BLM will restrict motorized wheeled cross-country travel yearlong, which effectively limits motorized wheeled travel to existing roads and trails until site specific travel management plans are developed for high, medium, and low priority geographical areas.

BLM public lands within the Larb Creek Watershed area are within a low priority travel management planning area and there are no specific time requirements for initiation of site specific planning for low priority areas. Therefore, until that travel management planning occurs, all motorized wheeled travel on BLM public lands will be restricted to existing roads and trails within the Larb Creek Watershed area. This decision applies to the general public use on BLM land but allows BLM employees, other government entities, and lessees and permittees motorized wheeled cross-country travel when performing administrative functions in managing the BLM public lands. Examples of grazing permittees administrative functions include, but are not limited to: Checking vegetative conditions, building or maintaining fences, delivering salt and supplements, moving livestock, checking wells or pipelines as part of the implementation of a grazing permit or lease.

Motorized wheeled cross-country travel to a campsite is permissible within 300 feet of roads and trails. Site selection must be completed by non-motorized means and accessed by the most direct route causing the least damage.

Motorized wheeled cross-country travel for big game retrieval is not allowed.

Visual Resource Management

The BLM will manage activities, such as range improvement projects (fences, reservoir construction, etc.), to comply with the Visual Resource Management (VRM)

policy. The BLM land within the Malta Field Office boundary has been assigned a VRM class based on a process that considers scenic quality, sensitivity to changes in the landscape and distance zone. The field office has four classes, numbered I to IV. The lower the class number the more sensitive and scenic the area. Each class has a management objective which prescribes the level of acceptable change in the landscape.

The Larb Creek watershed area is entirely within a visual resource management class IV area. The objective of a class IV area is: To provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance and repeating the basic elements of form, line, color and texture found in the predominant natural features of the characteristic landscape.

CULTURAL RESOURCES

The Larb Creek Watershed area has a very diverse representation of cultural resources. There are both historic and prehistoric resources located in the Larb Creek Watershed area. There seems to be the potential for paleontological resources as well.

The Larb Creek Watershed area is located within the Great Plains region of the United States. This area was once home to various indigenous groups (i.e. Plains Indians) who utilized the landscape effectively, living on large game such as bison, elk, deer and antelope. These groups mostly followed the game herds and thus lived a largely nomadic lifestyle. There were times when they did stay in an area for possibly a season or two. We see large camp-style sites in areas of Larb Creek that have anywhere from one to hundreds of tipi ring sites. Several sites left behind show signs of expediency and they maximized use of “disposable” type tools such as quartzite scrapers. These tools are littered across the landscape. It wasn’t until the historic period with the coming of homesteaders that sites have a “permanent” component.

Examples of prehistoric resources would be tipi rings of stone, cairns of stone, hearths, bison jumps, and areas traditionally used by Native Americans for spiritual and/or religious ceremonial use.

Examples of historic resources are homesteads including cabins, dugouts, outbuildings, farm machinery, and historic debris; old railroad grades, roads and trails; historic schools and churches.

There are several old homesteads located in the Larb Creek Watershed.

Examples of paleontological resources consist of invertebrate (organisms without a spinal column) such as snails and anemones and vertebrate (organisms with a spinal column) such as Triceratops and Tyrannosaurus Rex.

An area was inventoried for cultural resources within Larb Creek Watershed. This area showed a great diversity of both cultural and paleontological material.

The site LBC#1 displayed a rich variety of prehistoric features which are a common site in the Larb Creek drainage area. Arranged on a flat ridge top, there were several tipi rings. Cairns, scatterings of prehistoric lithics and evidence of animal processing such as large concentrations of fire-cracked rock (FCR) were also present. FCR are stones heated to very high temperature and dropped into a mixture of raw meat and water stored in a skin or bladder. The water immediately boils, cooking the meat quickly. The stones fracture due to the rapid temperature loss and the rush of water into the cracks. The stones turn a tell-tale burnished red with angular fractures. Quartzite cobbles picked up from the area, chipped with very little effort to make expedient and disposable tools litter the site. No bone was located.

The site, located on a ridge top, was in an area with predominantly steep ridges. The location would have put the inhabitants at a great advantage for not only scoping wild game but it would have offered great protection against approaching enemies. The area is also home to several big game species. They would have utilized the area

for the very same reasons-to hunker down in the brushed valleys to hide from predators. Both the humans and game would have taken advantage of the buffalo berry growing in the deep valley bottoms. It would have been a good hunting and foraging site as well as camping area.

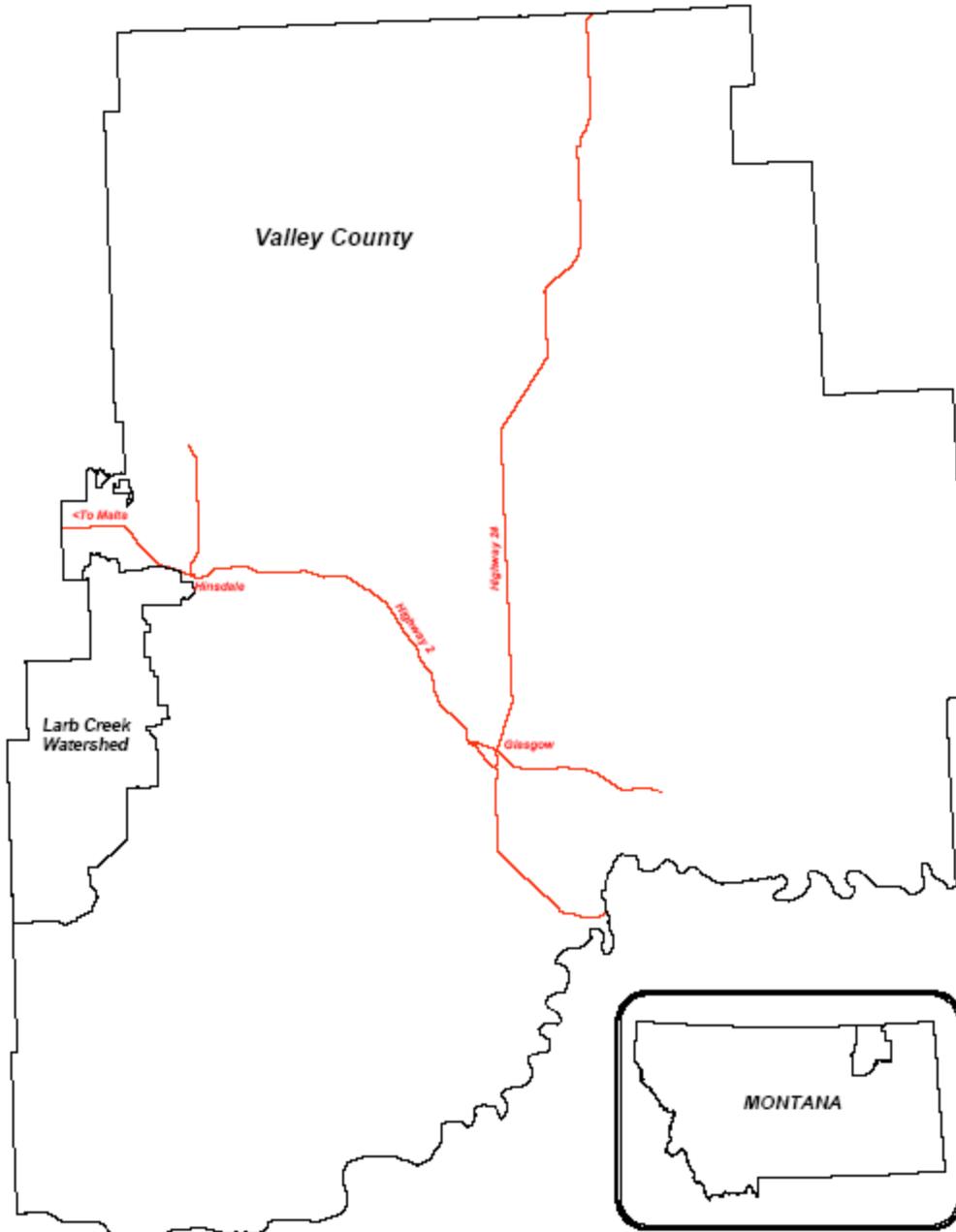
In the summer it would have been more comfortable on the high ridge top than out on the prairie. There is usually a slight breeze which would help keep one cool and the voracious bugs down. In the winter nomadic tribes would most likely follow large bison herds to the major river valleys. The possibility that this camp could have been used over and over year after year contingent on herd population fluctuations would have been good based on its strategic location and access to a variety of food.

The ridge top areas have exposed older formations sloughing downhill. The exposed Judith formation could potentially yield paleontological specimens and have yielded specimens in other parts of Montana. Although none were located in the inventory local farmers and ranchers have discussed finding “dinosaur bones” in the steep hills.

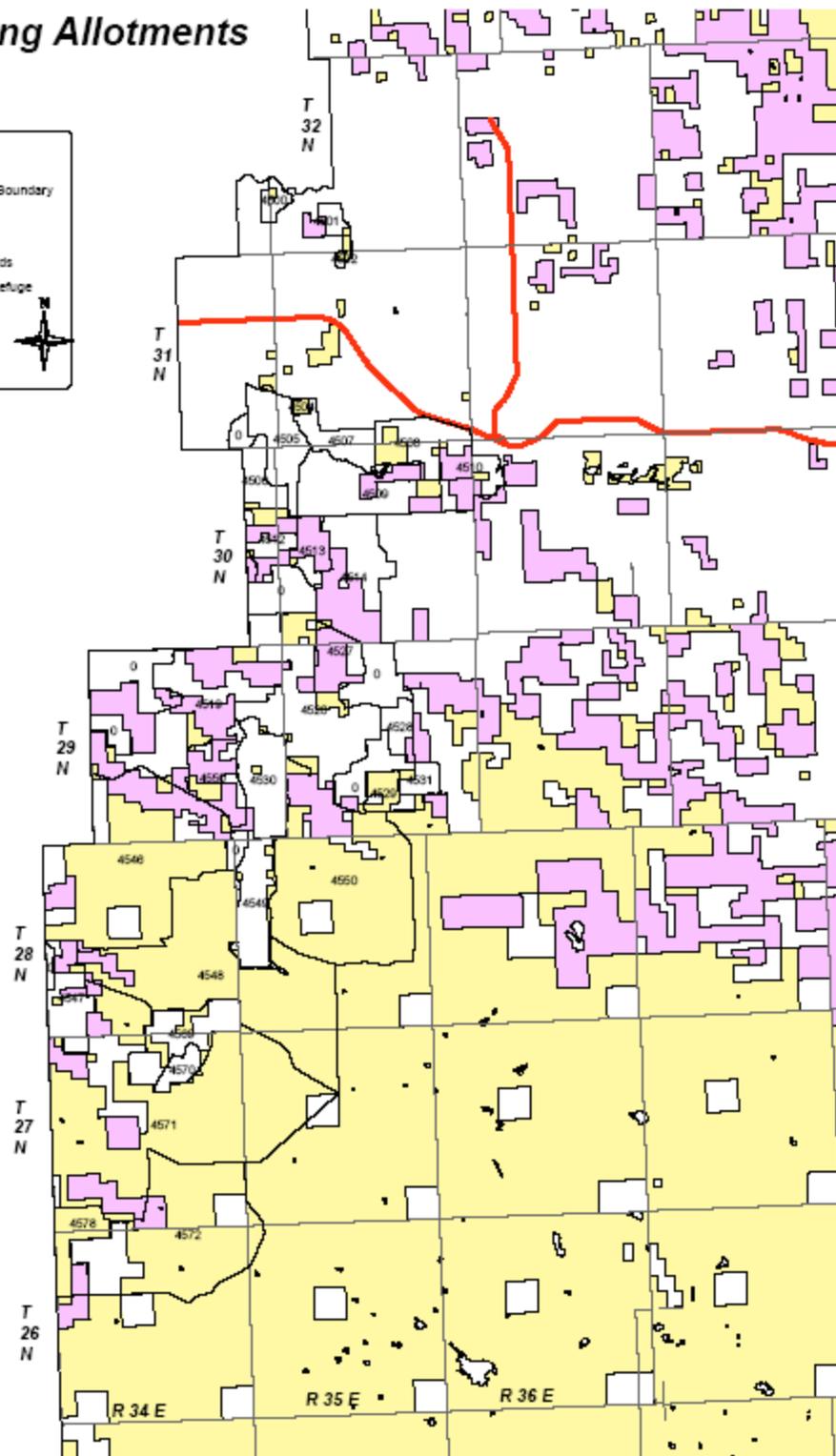
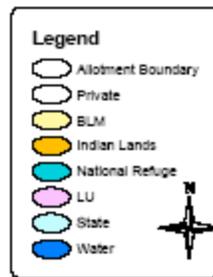
When implementing Standards and Guidelines (ie. Water retention areas, range chiseling, pipelines) to the Larb Creek Watershed, cultural resources can potentially be damaged or destroyed. This damage could lead to loss of valuable information. Direct cooperation between staff specialists in coordination with Section 106 of the National Historic Act would ensure protection for all possible cultural and paleontological resources.



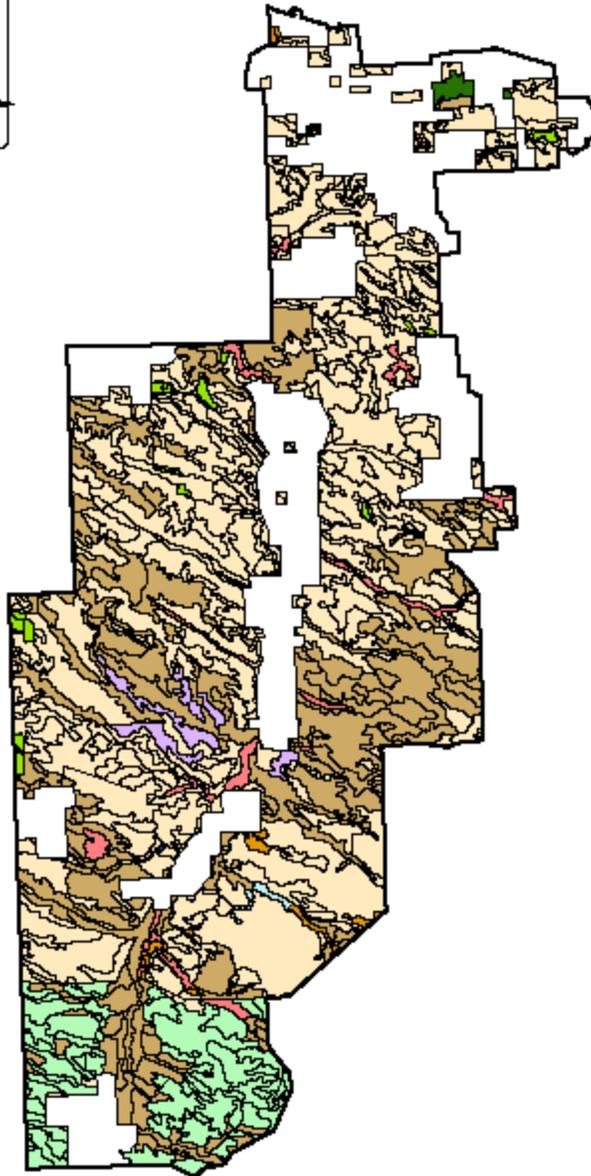
Map 1: Watershed Location Map



Map 2: Grazing Allotments



Map 3: Vegetation Type

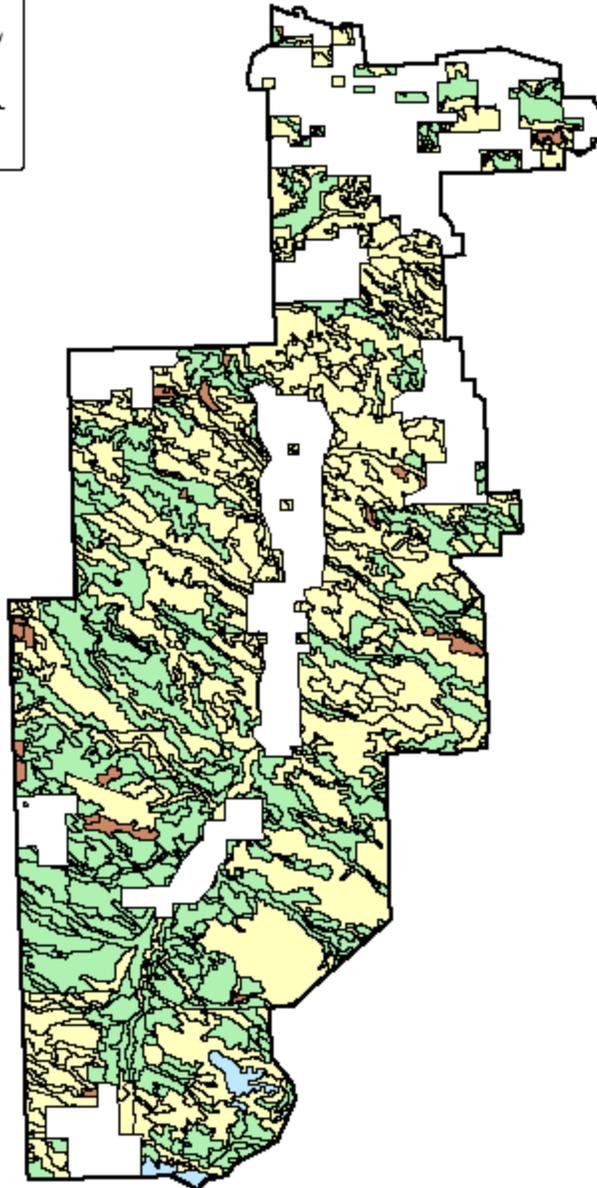




Map 4: Previous Vegetation Condition

Legend

-  Lath Creek Watershed Boundary
-  Excellent
-  Fair
-  Good
-  No Condition
-  Water





Map 5: Current Vegetation Condition

