

1997

## Issues and Conflicts in the Management of the Public Domain of the Saddle Mountains in Eastern Washington: A Case Study

James Jack Sharpe

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ISSUES AND CONFLICTS IN THE MANAGEMENT OF THE PUBLIC DOMAIN OF THE  
SADDLE MOUNTAINS IN EASTERN WASHINGTON: A CASE STUDY

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A Thesis  
Presented to  
the Graduate Faculty  
Central Washington University

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Science  
Resource Management

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by  
James Jack Sharpe  
February, 1997



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## ABSTRACT

### ISSUES AND CONFLICTS IN THE MANAGEMENT OF THE PUBLIC DOMAIN OF THE SADDLE MOUNTAINS IN EASTERN WASHINGTON: A CASE STUDY

by

Jim J. Sharpe

February 1997

This thesis examines the prehistoric, historic, and contemporary patterns of land use and their effects in the Saddle Mountains of eastern Washington. Federal laws and Indian treaties require that federal lands be managed to preserve natural and cultural resources while meeting the demands of private interests for economic development and of the general public for recreational access. Land management conflicts created by these diverse interests are reviewed in the context of the history of the study area, the legal framework that directs its management, and the management process as it actually works. It concludes with recommendations to resolve land use conflicts.

## **Acknowledgments**

I would like to thank all the people who provided assistance for this thesis: committee chair Morris Uebelacker, committee member Ann Root, committee member Barbara Bicchieri, personnal from the Bureau of Land Management at the Wenatchee and Spokane Offices, rock collectors and rock clubs, four wheel drive clubs, parasailers, land owners/lessees on Saddle Mountain, and editor Gladys Para. Your assistance has been greatly appreciated in this undertaking. Thank you all.

## TABLE OF CONTENTS

Title Page.....	i
Approval Page.....	ii
Abstract.....	iii
Acknowledgments.....	iv
Table of Contents.....	v
List of Figures.....	viii
List of Acronyms and Abbreviations.....	ix
 <b>Chapter 1 - Introduction.....</b>	<b>1</b>
Purpose of the Research.....	1
Overview.....	2
 <b>Chapter 2 - The Natural Setting and the Geographic Region             of the Study Area.....</b>	<b>4</b>
Geology.....	4
Climate.....	6
Soils.....	7
Vegetation.....	8
Wildlife.....	9
Geographic Locations.....	10
Columbia Plateau.....	10
Grant County.....	12
The Saddle Mountains.....	13
The Study Area.....	14
Adjacent Land Areas.....	14
Crab Creek.....	15
Wahluke Slope.....	15
 <b>Chapter 3 - The Cultural Setting.....</b>	<b>18</b>
Prehistoric Period.....	18
Historic Native Period.....	20
Wanapum Indians.....	22
Non-Native Period.....	24

## **Chapter 4 - Case Study Area: The Saddle Mountains and BLM**

<b>Holdings.....</b>	<b>30</b>
The Bureau of Land Management.....	30
BLM Considerations For The Saddle Mountains.....	32
Cultural Resources.....	32
Natural Gas.....	35
Roads.....	36
Private Land Owners.....	36
Rangeland.....	37
Land Exchange.....	38
Communication Sites.....	38
Recreation.....	38
Off Road Vehicles.....	39
Parasailers.....	40
Rock Hounds.....	40
Noxious Weed Board.....	43
Fire Protection.....	43
Law Enforcement.....	44

## **Chapter 5 - Review and Analysis of the BLM Management Process for the Saddle Mountains.....**

<b>the Saddle Mountains.....</b>	<b>46</b>
The 1985 Management Plan.....	46
The 1987 Management Plan.....	47
The 1992 Management Plan.....	48
1994 Draft Proposal, The Saddle Mountains Recreation Management Plan and Environmental Assessment.....	48
Step 1: Identification of Issues, Concerns, and Opportunities.....	49
Step 2: Development of Planning Criteria.....	49
Step 3: Inventory Data and Information Collection.....	50
Step 4: Analysis of the Management Situation.....	51
Step 5: Formulation of Alternatives.....	51
Step 6: Estimate Effects of Alternative.....	53
Step 7: Selection of Preferred Alternative in Draft Environmental Impact Statement.....	53
Public Comments.....	53
Step 8: Select Final Resource Management Plan.....	54
Step 9: Monitoring and Evaluation.....	55
Analysis of the Proposed Plan.....	56

<b>Chapter 6 - Conclusion and Recommendations</b> .....	60
Conclusion.....	60
Recommendations.....	61
<b>Works Cited</b> .....	63
 <b>Appendix A</b> .....	71
Legislation Relating to Natural Resources.....	71
Multiple Use-Sustained Yield Act of 1960.....	71
National Environmental Policy Act of 1969 (NEPA).....	71
Endangered Species Act of 1973 (ESA).....	72
Federal Lands Policy and Management Act of 1976 (FLPMA).....	72
Legislation Relating to Cultural Resources.....	73
The National Historic Preservation Act of 1966 as amended 1976, 1980, and 1994 (NHPA).....	73
Executive Order 11593, Protection and Enhancement of the Cultural Environment, 1971.....	74
Native American Indian Religious Freedom Act of 1978 (AIRFA).....	75
Archaeological Resources Protection Act of 1979 (ARPA).....	75
 <b>Appendix B</b> .....	76
The Yakama Indian Nation's Ceded Land Rights.....	76
 <b>Appendix C</b> .....	77
Summary of Impacts by Alternative.....	77
Soils.....	77
Vegetation.....	77
Cultural Resources.....	77
Recreation.....	78
Wildlife .....	78

## **LIST OF FIGURES**

<b>Figures</b>	<b>Page</b>
1. Location and Transportation Systems of the Saddle Mountains.....	11
2. Land Ownership on the Saddle Mountains.....	31

## **Acronyms and Abbreviations**

<b>AIRFA</b>	<b>American Indian Religious Freedom Act</b>
<b>ARPA</b>	<b>Archaeological Resources Protection Act</b>
<b>AUM</b>	<b>Animal-Unit Month</b>
<b>BLM</b>	<b>Bureau of Land Management</b>
<b>CFR</b>	<b>Code of Federal Regulations</b>
<b>EA</b>	<b>Environmental Assessment</b>
<b>EIA</b>	<b>Environmental Impact Assessment</b>
<b>ESA</b>	<b>Endangered Species Act</b>
<b>FLPMA</b>	<b>Federal Land and Policy Management Act</b>
<b>FONSI</b>	<b>Finding of No Significant Impact</b>
<b>NEPA</b>	<b>National Environmental Policy Act</b>
<b>NHPA</b>	<b>National Historic Preservation Act</b>
<b>ORV</b>	<b>Off-Road Vehicle</b>
<b>RMP</b>	<b>Resource Management Plan</b>



## **CHAPTER 1 - INTRODUCTION**

From the moment humans first entered the Columbia Plateau region, perhaps following the retreat of the last glacier, they have relied on natural resources to sustain them. The procurement and processing of natural resources have taken a variety of forms over time, from prehistoric hunting and gathering through agricultural and recreational uses in the modern period. The issue arises: how to meet the needs of a growing population that places increasing demands on finite amounts of land and natural resources?

This thesis explores the history of land use from the known past to the present in a single area of federally managed land located in the Saddle Mountains of the mid-Columbia region. It is a case study that analyzes management decisions and current human demands with respect to legislative obligations and processes within the small portion of public domain.

### **Purpose of the Research**

I chose to focus on the Saddle Mountains as my study area because of the recreation, cultural resources, and trespassing issues involved in its management. The inspiration for this choice was threefold. First, was my desire to better understand the sequence of events that have taken place in the mid-Columbia Plateau regarding both the natural and cultural resources of the area. This curiosity has intensified over three field seasons of archaeological work along the middle Columbia River. Second, in 1994, I had the opportunity to tour the Saddle Mountains with one of the landowners and was surprised to see the extent of damage to both public and private land by visitors to the area. Prior to the tour I had been unaware of the significance this remote area has to so many people. Third, I grew up in the semi-arid environment of eastern Washington. As a third generation grain producer, I can relate to the aggravation felt by private landowners on the Saddle Mountains. Yet, at the same time, I also realize that public land is a public resource. Thus, I wanted to inquire more deeply into how public land managers make

land use decisions.

This thesis will examine land use in the Saddle Mountains area of eastern Washington. Specifically, I will:

1. Review the geographic, natural and cultural settings of the Saddle Mountains area.
2. Describe the Bureau of Land Management holdings in the Saddle Mountains, the human uses of the study area and the protective services which include fire, noxious weed control, and police protection.
3. Provide a review of the legislative guidelines the Bureau of Land Management must follow in decision making relating to public lands in the appendix of the thesis.
4. Analyze the decision making process the BLM has used in reaching management decisions.
5. Provide recommendations to assist future management of public lands in the Saddle Mountains and possibly elsewhere.

## **Overview**

The case study area focuses on 23,000 acres in the Saddle Mountains of eastern Washington, managed by the Bureau of Land Management (BLM). Originally, federally managed public lands were designated for single purpose uses such as mining, logging, or grazing. But today, public lands are managed for multiple uses to maximize diverse public benefits. Currently, the BLM attempts to manage federal land to provide the greatest good for the greatest number of people. This strategy, however, has resulted in conflicts among its users. Recreation is the primary activity occurring on BLM lands on the Saddle Mountains. This case study examines the issues and conflicts surrounding recreational use on the Saddle Mountains.

The Saddle Mountains are located in Grant County of eastern Washington. With recreational use by people primarily from outside the region increasing, increased trespassing and vandalism have occurred. In addition, recreational activities have accelerated erosion, encouraged the spread of noxious weeds, damaged both natural and

cultural resources, and increased the need for fire and police protection.

The BLM was approached by both private landowners, lessees, and recreationists to resolve the problems. The agency initiated a nine-step approach, under the guidance of the National Environmental Policy Act, to guide the decision making process for multiple use and sustained yield. The plan was created and developed by collecting data, selecting one of five alternatives, reviewing public comments, and creating a draft proposal. The result was a compromise between land owner/lessees and recreationists. This compromise was to be designed for multiple use and sustained yield as prescribed by law; however, I discovered in the course of the research, the proposed plan is contrary to the principles of multiple use and sustained yield.

In June 1994, the BLM completed its draft proposal for the management of its Saddle Mountain holdings, *The Saddle Mountains Recreation Management Plan and Environmental Assessment*. This plan attempts to reduce trespassing and vandalism on both BLM managed lands and private lands by creating a staging area and a 25 mile off road vehicle (ORV) trail on the southern boundary of BLM managed land. This proposed trail would attempt to limit ORV damage to remaining public domain lands. The final draft statement has not yet been completed at the time of this thesis.

## CHAPTER 2 - THE NATURAL SETTING AND THE GEOGRAPHIC REGION OF THE STUDY AREA

The mountainous landscape of the study area was created through time by natural events. These natural events produced the physical template for the natural resource patterns in the region.

### Geology

The topography of the Columbia Plateau was created primarily by lava flows, tectonic movements, and glacial meltwater floods. Successive Columbia River Basalt flows covered much of the landscape during the Miocene only to be folded and faulted in the Pliocene and scoured by Ice Age floods of the Pleistocene. These geologic events shaped the natural environment providing resources for human land use in both the prehistoric and historic periods.

The Columbia Plateau is primarily a flat plain, formed by deeply stratified Miocene lava flows that erupted out of fissures near what is now the Washington-Idaho border. These flows cooled to form the Columbia River Basalts which cover approximately 200,000 square kilometers centered in southeast Washington (Alt and Hyndman, *Northwest* 245; Hooper 1463).

Thousands of years passed between lava flows. These intervals allowed enough time for the formation of soil, followed by a growth of vegetation. If enough time elapsed between lava flows, different stages of vegetation occurred. In some instances, as many as three distinct stages of vegetation associations occurred between lava flows. The first stage was an early swamp cypress, followed by deciduous hardwoods, and finally a semi-arid forest of white oak (Orr and Orr 302). Successive sedimentary flows covered this organic material and other sediments. These later and smaller sedimentary flows are commonly known as the Ellensburg Formation. The trapped organic material within the confines of the flow contain the largest quantities of preserved organic material.

Because of the swamp like conditions in some areas of the Columbia Plateau, the sediment covered waterlogged organic material in mud and petrified the material (Alt and Hyndman, *Roadside* 179). Silica hydraulically transported through sedimentary formations replaced organic materials creating microcrystalline and cryptocrystalline silicates recognized as petrified wood, chert, chalcedony, agate, jasper and opal (Sinkankas 214). The silica is believed to originated from volcanic ash present in the swamp water which also produces and releases clays, iron oxides, and manganese oxides, giving petrified wood its colors (Leudtke 35).

As the result of this process, chert has been exposed in the Ellensburg Formation where streams have down cut through the basalt (Grolier 27). Several varieties of petrified wood have been identified in the Saddle Mountains area including walnut, elm, red gum, maples, willow, birch, beech, cyprus, pine, hemlock, and spruce.

The Miocene eruptions created additional changes in the form of natural gas pockets. Natural gas formed through bacterial action, burial, compaction, and geothermal heating of the buried plant material in sedimentary layers (Riva 2). Gas produced from the organic material migrated through the permeable basalts into traps created by anticlines (Hyne 142). Once in the traps, the gas rises to the top and water settles to the bottom. If oil is present in the trap, it will be located between the gas and water.

During the following Pliocene Period, the landscape began to change due to folding and faulting. Compression force from the south slowly broke the basalt along thrust faults shoving it north creating anticlines with steep facing north slopes, a process which continues at the present. Following the lava eruptions, the surface of the Columbia Plateau began to rise and fall creating anticlines and synclines with an eastward trend (Alt and Hyndman, *Northwest* 283-287).

About two million years ago, during the Pleistocene, glaciers began to increase in size in the northern hemisphere. About 100,000 years ago, the Cordilleran Ice Sheet began to move southward from British Columbia following south trending valleys into Washington, Idaho, and Montana. Glacial lobes in the Okanogan, Pudget Sound, Columbia Valley, Purcell Trench, and the Rocky Mountain Trench areas extended south

from the main glacial field, located north of the United States and Canadian Boundary. In eastern Washington, the Okanogan lobe dammed the Columbia River creating Lake Columbia, causing water to back up into the Spokane Valley, forming Lake Spokane (Waite and Thorson 67). The glacial lobe of the Purcell Trench dammed Lake Missoula on the Clark Fork River. The dams on the Clark Fork River are believed to have burst at least 40 times, resulting in catastrophic floods. The flooding followed two main pathways. One went through Pend Oreille Lake and into the Little Spokane River; the other flowed into the Spokane River Valley and spread over much of eastern Washington, creating the channeled scablands of eastern Washington (Orr and Orr 304).

Portions of the flood flowed through Lower Crab Creek, on the north side of the Saddle Mountains, joining other floodwaters flowing through the Othello Channels at the east end of the mountain. The floodwaters merged at this point and continued down the Columbia River. Erosional channels and deposits of gravel left behind indicate the floodwaters were as deep as 450 feet in the Priest Rapids area (Harza Engineering Co. III-A-3).

Throughout the Pleistocene, windblown loess began accumulating in the eastern portion of the Columbia Plateau. Loess deposits produced most of the present day soils in the region, with the largest accumulation in the eastern portion of the Columbia Plateau (Orr and Orr 307).

## **Climate**

The semi-arid desert climate of the Saddle Mountains area is influenced by the Cascade Mountains to the west and the Rocky Mountains to the east. The Cascade Range forms a barrier for the eastward movement of moist air from the Pacific Ocean and the Rocky Mountains protect the Columbia Plateau from severe winter storms moving southward from Canada. The rainshadow effect of the Cascade Mountains has made Grant County one of the driest counties in eastern Washington, receiving from five to nine inches of moisture annually. More than 70 percent of the annual precipitation for the study area occurs between October and March, with about one half falling as snow

(Folsom 33).

Temperatures range from an average 20 degrees in January to an average of 91 degrees in July (USDI Bureau of Land Management, *Saddle 2*). The average growing season is 150 days, with the first frost in early October and the last frost occurring in late April. Summer thunderstorms occur on about seven days each year (Gentry 2). The entire Columbia Basin is located in a belt of prevailing westerly winds which blow from the west in the winter months and from west northwest in the summer months.

## Soils

The soils in Grant County are derived primarily from loess, alluvial sand, and gravel deposits rather than basalt bedrock. These alluvial and gravel deposits originated from the Missoula floods, Columbia River, and tributary streams.

The general soils map of the Saddle Mountains area indicates that a variety of soil types exist. On the hills and ridge tops, the soils are well-drained and vary from shallow to deep. Downslope, soils range from well drained to excessively well drained, moderately deep to very shallow. Soil depth ranges from four to 60 inches with deeper soils less common. Good drainage and low precipitation limits forage production in these soils. The soils of the Saddle Mountains are also highly erodible by wind and water, with water erosion occurring most often on non-irrigated slopes of more than 5 percent (Gentry 117). General soil types for the public domain lands on the Saddle Mountains include the following:

Taunton-Scoon-formed in loess and alluvium.

Ekrub-Koehler-formed in eolian sand.

Schawana-formed in eolian deposits and in material weathered from basalt.

Shanoo-Kiona-Starbuck-formed in deep loess, colluvium derived from loess and basalt, and material weathered from basalt (USDI Department of Agriculture Soil Conservation Service ).

## Vegetation

The Saddle Mountains fall into the shrub-steppe vegetation zone (Franklin and Dryness 219). A shrub-steppe environment is defined as an environment where bunch grass and perennial grasses along with sagebrush dominate the vegetative varieties and the zonal soils are too dry for trees (Daubenmire 187). The vegetation of the Saddle Mountains is dominated by a few drought-resistant species. Trees in the Saddle Mountains are restricted to riparian areas around springs or seeps. The dominant plant species in the area include sagebrush (*Artemisia tridentata*), bluebunch wheatgrass (*Agropyron spicatum*), and non-native cheatgrass (*Bromus*). The grasses in this region die back to the ground each year.

It has been estimated that at least 10.4 million acres of shrub-steppe habitat existed in the area before Euro-American settlers came into the Columbia Plateau. Currently, only about 40 percent of this habitat remains, due to agricultural development (USDI National Park Service 97). The vegetation in the region has long been sought after by livestock producers. In the latter part of the 19th century, cattlemen were drawn to the area by the good bunchgrass available for grazing. Bunchgrass up to three feet high was reported to have grown in the bottom lands with only sparse sagebrush (Lewis 9). Reduced in quantity by overgrazing, the bunchgrass had largely disappeared by the 1880s.

Over the last 10,000 years vegetation in the Columbia Plateau has changed with fluctuations of climate. Vegetation advanced and retreated, depending on climatic conditions. With the exception of minor climatic changes, vegetation of the Saddle Mountains area at the present time remains similar to that of the last 3,500 years (Benson, Jermann, and Lewarch 2-9).

Plant biologists have identified 116 different plant varieties in the Saddle Mountains (Barrett and Barrett 1-5). Currently, three plant species, bristly cryptantha (*Cryptantha interrupta*), hoary chaenactis (*Chaenactis douglasii*), and desert parsley (*Lomatium tuberosum*) have been identified by the BLM as sensitive species. A sensitive species is any species with low population numbers not listed under the Endangered Species Act as threatened or endangered, but could be listed if population numbers continue to decrease.



In areas of excessive overgrazing, vehicle use, and rock hounding, cheat grass and diffuse knapweed have migrated into the Saddle Mountains area, replacing native vegetation in some locations. Ground disturbances create ideal locations for exotic plant species such as cheatgrass, tumble mustard (*Sisymbrium altissimum*) and more recently diffuse knapweed (*Centaurea diffusa*) and skeletonweed (*Chondrilla juncea*) into the region. Knapweed is considered one of the worst weeds in the shrub-steppe because although it provides an excellent source of nectar for bees and other insects in mid to late summer, it is unpalatable for livestock (Taylor 164).

Vegetation densities on the slopes of the Saddle Mountains are determined by the amount of evapotranspiration taking place. Higher evapotranspiration rates occur on south and southwest facing slopes resulting in lower plant densities than on north facing slopes increasing the potential for water erosion. The north and east facing slopes of the mountain range receive less solar radiation, resulting in less moisture evaporation, heavier vegetation growth and less erosion.

## Wildlife

The wildlife of the Columbia Plateau today has undergone major changes. Overtime, fossil remains from the Pleistocene and early Holocene indicate that bighorn sheep (*Ovis canadensis*), wolverine (*Gulo gulo*), red fox (*Vulpes vulpes*), canadian lynx (*Lynx canadensis*), arctic fox (*Alopex lagopus*), martin (*Martes americana*), musk oxen (*Bootherium*), mountain goat (*Oreamnos americanus*), elk (*Cervus elaphus*), Bison (*Bison antiquia*), and possibly caribou (*Rangifer*) once inhabited the region (Lyman and Livingston 361-371). Small numbers of pronghorn antelope (*Antilocapra americana*) lived in the Columbia Plateau and were hunted by Native Americans until shortly after Euro-American contact (Hunn 138). However, as climate and vegetation changed, many animals either became extinct or migrated to different, more suitable regions. Additional changes to wildlife were brought about by the historical rangeland and agricultural development of the region that reduced the native vegetation and displaced wildlife in the affected areas.

Nevertheless, a large variety of animals currently inhabit the Saddle Mountains area including mule deer (*Odocoileus hemionus*); coyote (*Canis latrans*); skunks (*Mephitis mephitis*); badgers (*Taxidea*); jackrabbits (*Lepus sp.*); several types of rodents; and several varieties of birds, including chuckars (*Alectoris chukar*), pheasants (*Phasianus colchicus*), doves (*Zenaidura macroura*), curlews (*Numenius americanus*), ravens (*Corvus corax*), and raptors such as owls, hawks, falcons, and eagles. Chuckars and pheasants are introduced species. The ferruginous hawk (*Buteo borealis*), and the bald eagle (*Haliaeetus leucocephalus*), both threatened species under the Endangered Species Act, nest on the north and west cliffs of the Saddle Mountains.

### **Geographic Locations**

The study area is located in central Washington State (Figure 1). It lies within the physiographic province of the Columbia Plateau, and the political unit of Grant County. Arbitrary boundaries for the study area were established to narrow the spatial focus.

### **Columbia Plateau**

The physiographic region of the Columbia Plateau is the central province between the Cascade Mountains and the Rocky Mountains. It is located within the larger physiographic region of the Columbia River Basin. The Columbia Plateau occupies an area of more than 100,000 square miles. It is bordered on the north by the Okanogan Highlands, on the east by the Rocky Mountains, on the west by the Cascade Mountains, and on the south by portions of southern Idaho and northeast Oregon (Meinig 4). Although referred to as the Columbia Plateau, "a large region of moderate elevation with mostly low relief," the region is not a plateau at all (Folsom 2-3). It lacks the uniform topography of a plateau, but rather is an intermountain region with a varied surface of level and tilted plateaus, eroded slopes, hills, broad valleys, flat plains, and anticlinal ridges (Freeman 59).

The highest points of the Plateau, nearly 4,000 feet, are located in central Washington and in Oregon near the Blue Mountains. The lowest elevation is about 350

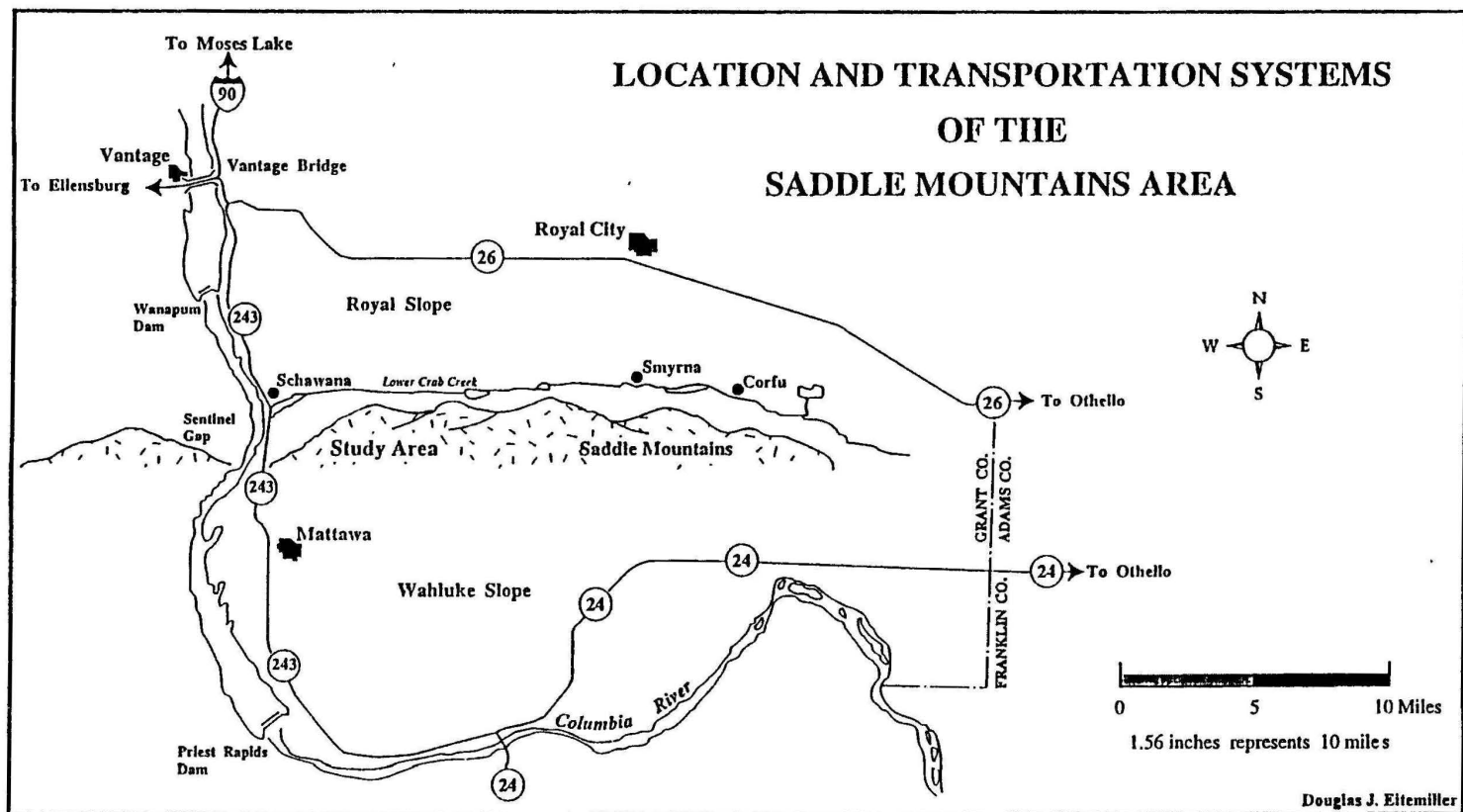


Fig. 1. Location and Transportation Systems of the Saddle Mountains (Alexander and Kirk 115; Amara and Neff 28).

feet, along the gorges of the Columbia and Snake Rivers. Essentially treeless, the Columbia Plateau is dominated by a semi-arid climate, with the Columbia River flowing around its north and northwestern peripheries. The Snake River drains the southeastern portions of the Columbia Plateau.

Author William Dietrich described the Columbia Plateau as:

...scarred by coulees, gouged out by Ice Age floods greater than any others known to have occurred on earth. Rumpled by rolling hills and cut by coulees, it is like a vast plate tilted from northwest to southwest... (36-37).

Through time, different names have been applied to the Columbia Plateau. Early Euro-American travelers to the area called it "The Great Plain of the Columbia." Later more specialized names were applied including, "The Columbia Basin" and "The Inland Empire" (Meinig 3-4). The Inland Empire acquired its name from missionary Dr. George Atkinson in 1848 (Name Indland Empire 1). The name "mid-Columbia" has been assigned to the area containing the Saddle Mountains and the surrounding land regions within the Columbia Plateau.

## **Grant County**

Grant County is the political unit in which the study area is located. It was created from the southwestern portion of Douglas County by the State Legislature in 1909. The county ranks fourth in size in the state covering 2,680 square miles (1,702, 259 million acres) and has a population of about 51,000 people (Clements 93). It is bordered on the north west by the Columbia River, on the south by Yakima and Benton Counties, and on the east by Lincoln and Adams counties.

Grant County can be divided into five physiographic regions. The Channeled Scablands is the largest region, and includes the north and eastern portions of the county. The Quincy Flats is the second largest physiographic region, located to the west of the Channeled Scablands. The third region is the Sand Dune area located west of Moses Lake and south of Quincy Flats. The Waterville Plateau is the fourth region located in the northwestern portion of the county. Finally, the Folded Ridges is the fifth region

containing the Saddle Mountains and Frenchman Hills and located south of the Sand Dune region (Oberg 11-12).

Irrigated agriculture is the economic mainstay of the county with approximately 65 percent of the land considered farmland. Prior to the Columbia Basin Project which brought large scale irrigation to the area in 1943, Grant County was primarily dry land wheat farms and natural sagebrush range lands. By 1987, the county ranked second in the state in the market value of agricultural crops sold (USDI National Park Service 125).

### **The Saddle Mountains**

The Saddle Mountains range is a prominent, high anticlinal ridge oriented east to west. It is bisected by the Columbia River, traveling north to south, at Sentinel Gap. The entire Saddle Mountains range is an east-west trending anticlinal ridge (deformation of stratified basalt) about 68 miles long (Reidel 1). West of the Columbia River, the Saddle Mountains extend 12 miles across the southeast corner of Kittitas County, to within 10 miles of the Yakima River (Hitchman 259).

The study area is in the eastern portion of the Saddle Mountains. The eastern portion extends from the Columbia River east about 40 miles and includes approximately 88,000 acres (Chatters 129). The Saddle Mountains rise abruptly from 470 feet at the Columbia River to about 2,000 feet at the top of Sentinel Gap. By down-cutting, the Columbia River has divided the Saddle Mountains at Sentinel Gap. Explorer Alexander Ross described Sentinel Gap in the following manner:

... we left the Priest's Rapid and proceeded against a strong, ripply current and some small rapids for ten miles, when we reached two lofty and conspicuous bluffs, situated directly opposite to each other, like the piers of a gigantic gate, between which the river flowed smoothly (Quaife 146).

To the east of Sentinel Gap, the elevation of the Saddle Mountains continues to rise to 2,696 feet at Wahatis Peak. Wahatis Peak is more than half way across the eastern portion of the Saddle Mountains.

Portions of the north face of the Saddle Mountains are as steep as 70 percent.

Vertical cliffs and exposed bedrock are also evident, with talus extending up-slope 500 feet from Crab Creek in some locations.

To the south, from the crest of the Saddle Mountains, the topography is less severe. This treeless landscape was shaped by stream erosion which created deeply incised drainage courses. Sloping ridges and knolls extend down-slope onto the toe of the Saddle Mountains. This region is known as the Wahluke Slope.

The Wanapum Indians call Saddle Mountains, *Wastos* (Spirit-power Place), one of only three primary locations where young men and women were sent overnight on vision quests (Relander 311). Vision quests were attempts to make contact and gain the help of supernatural guardian spirits who would provide a powerful ally throughout the person's life. The present name was derived from the saddle like appearance of a specific location in the low mountain range.

### **The Study Area**

The study area is located entirely in an upland area above the Wahluke Slope on the south side of the crest of the Saddle Mountains (Figure 1). The topography of the study area is that of talus slopes, bluffs, interfluvial ridges, saddles, upland flats, benches, and dry washes.

The boundaries chosen for the study area are arbitrarily set with Crab Creek on the north, the Columbia River on the west, Wahluke Slope on the south, and the Adams County line on the east. This area includes 23,000 acres of federally managed public land. The Saddle Mountains form a natural barrier to transportation in the area, requiring main transportation routes to meander around it. To the north, State Route 26 follows the contour of the mountain east from State Route 243 to Othello. From Othello, State Route 24 follows the south face of Wahluke Slope west to State Route 243 and parallels the Columbia River on the west end of the Saddle Mountains at Sentinel Gap (Figure 1).

## Adjacent Land Areas

### Crab Creek

Immediately north of the Saddle Mountains and the study area is Crab Creek. It is the only major drainage system along the east bank of the Columbia River for the 317 miles between the Spokane and Snake Rivers. It is the longest stream in the state (USDI Bureau of Reclamation, *Columbia River* 211). The headwaters of Crab Creek are near Reardan, Washington, from where the stream flows southwest, joining the waters of today's Moses Lake and the Potholes Reservoir along the north slope of the Saddle Mountains, then empties into the Columbia River near Schawana, Washington.

South of Crab Creek, at the base of the Saddle Mountains near the small town of Smyrna, is an ice cave known to have been used for meat and fruit storage by homesteaders and railroad workers. It is not known if the cave was used in prehistoric times. Currently, the entrance of the ice cave is partially blocked by an advancing talus slope. Also, there were early reports of steam vents along the base of the north side of the Saddle Mountains. In 1909, when the Chicago Milwaukee Railroad was blasting the grade for the transcontinental railroad, steam was released from the crevices in the rocks on the north side of the Saddle Mountains. Some of the railroad workers refused to work on the railroad bed in the vicinity of the steam vents, fearing a volcanic eruption. Steam and warm water were also reported to have been observed on the south side of the Saddle Mountains (Phenomena at Crab Creek 1).

### Wahluke Slope

To the south of the Saddle Mountains crest is the more gently inclined Wahluke Slope. The name Wahluke was derived from a 15,000-acre irrigation project planned by the Columbia River Orchards Company in 1909. The town of Wahluke was platted on the banks of the Columbia River across from the Hanford irrigation project (New Town Called Wahluke 1).

Wahluke Slope is crescent shaped and about 35 miles long (east to west) and, depending on the meander of the Columbia River, from five to 10 miles in width (north to

south) (WSU Cooperative Extension Service 1). The Wanapum Indian term for Wahluke Slope is “going on foot up hill.” Early settlers in the area called it Columbia Flats. Thomas Symons traveled across the Wahluke Slope in 1881 and described the landscape in the following way:

... to the south of these Sentinel Bluffs the country becomes flat, sandy, and uninteresting, elevated but a little above the river. Saddle Mountain is a range of grass-covered hills, extending nearly due east, and terminating in the desert plains a few miles to the northeast of White Bluffs. Between it and the curve of the Columbia which swings around by Priest Rapids and White Bluffs the country is largely composed of sandy, gravelly, worthless soil. Some grass exists and some large areas of sage-brush, but what soil there is seems to be more alkaline and powdery than in other sections of the Columbia Basin (46).

Circumstances have changed considerably since Thomas Symons traveled through the region. Today, Wahluke Slope is part of the South Irrigation District of the Columbia Basin Project, with small portions in the East District. Net irrigable acreage on the Wahluke Slope is approximately 164,000 acres (Parker 1).

In 1950, large portions of the Wahluke Slope were condemned by the Atomic Energy Commission for the Manhattan Project, creating the Hanford Reservation. The Hanford Reservation was used for the manufacture of atomic weapons during World War II. The condemned land, also known as the Control and Secondary Zones by the Atomic Energy Commission, encompassed 118,000, acres which is approximately 12 percent of the net irrigable acres in the Columbia Basin Project (Parker 4). The Control Zone extends to the crest of the Saddle Mountains north of the White Bluffs area and is a permanent part of the Hanford Reservation with no access allowed to the public. The Secondary Zone, located on both the east and west side of the Control Zone also extends to the crest of the Saddle Mountains and was established for safety and security reasons because of the Hanford reactor area and is open to day use only.

In 1953, the Atomic Energy Commission released 87,000 acres of the restricted area of the Wahluke Slope at the extreme east and west ends. Development of the eastern



portion of released ground for irrigated agriculture was undertaken by the U. S. Bureau of Reclamation. At the present time, it is unlikely that any additional irrigation water will be made available by the Bureau for croplands.

## **CHAPTER 3 - THE CULTURAL SETTING**

This chapter summarizes the last 12,000 years of human land use in the Columbia Plateau. The history of the study area remains incomplete. Therefore, additional information from outlying areas is presented to support the historical narrative for the Saddle Mountains.

### **Prehistoric Period**

Archaeological data indicate humans have inhabited the Columbia Plateau for at least the last 12,000 years. Over this time they have used the natural resources of the Columbia Plateau and have left behind portions of their story in the form of cultural resources. These remains allow us to recognize past land use practices.

Information about prehistoric use of the Saddle Mountains is derived from archaeological investigations in the mid-Columbia region in general. Only limited archaeological work has been accomplished in the study area.

Archaeologists have established a chronology for the mid-Columbia region that structures my discussions of Columbia Plateau prehistory. Work from Campbell, Chatters, DePuydt, Greengo, Kreiger, Nelson, and Swanson provided the following chronology.

The earliest indisputable evidence of people on the Columbia Plateau dates to the retreat of glacial ice at the end of the Pleistocene. At the present time, this Paleoindian, "Clovis culture," is argued by some to represent the first people in North America. Paleoindians were highly mobile hunter-gatherers who are believed to have focused on hunting large game. They apparently lived in small groups, moving from place to place, relying on opportunistic encounters (Chatters 7). These early inhabitants on the Columbia Plateau used resources as they were available rather than processing and storing food supplies for later use. Known sites are located away from river valleys. Paleoindian lifestyles disappear from the archaeological record by about 10,000 B.P. (before present).

Following the Paleoindian Phase is the Windust Phase. Archaeological evidence for Windust comes from several sites in the mid-Columbia and Snake River regions including Windust Caves and Marmes Rockshelter on the Palouse River, Granite Point on the Snake River, and Lind Coulee in the Columbia Basin near Warden. All of these sites date from 11,000 to 8,000 B.P. (DePuydt 15). Similar to the Paleoindian peoples, the people of this phase appear not to have built permanent structures. Survival strategies included the taking of elk, bison, deer, rabbits, beaver, and birds. Plant collecting is evidenced by the presence of grinding implements. In addition, the tool assemblage included chipped stone lanceolate and oval knives, stemmed-shouldered points, and large scraper planes; edge ground cobbles; bone awls, needles, and atlatl spurs; and antler and shell artifacts (DePuydt 15).

Following the Windust Phase is the Vantage Phase (8,000–4,500 B.P.). During this Phase, indigenous people continued to live as mobile foragers, using opportunistic strategies for resource procurement. Artifact classes and styles changed in this Phase from the previous Windust Phase. The bi-pointed Cascade point was used in addition to edge ground cobbles (hammer type tools) and plant food processing tools. Hunting and plant collecting appear to have been primary subsistence activities. It was during this period that the first reliable evidence of rock art is found in the Columbia Plateau (Keyser 26).

The Frenchman Springs Phase (4,500–2,500 B.P.) follows the Vantage Phase. This Phase is characterized by projectile points, primarily triangular shaped with notches and stems; hopper mortar bases and pestles, net sinkers; and the use of the atlatl. During this Phase seasonal rounds were established for resource acquisition. Fishing and plant processing became more important and storage systems were developed. Winter habitation was in semi-subterranean house pits. House pits were located primarily along waterways close to water supplies and the driftwood used for building materials and fire wood.

The people of this Phase were organized primarily as collectors in that at least for part of the year, resources were collected and brought back to the settled community. Food was stored in dry caves and rockshelters, storage pits, and possibly, talus pits.

These storage areas provided cool dry conditions suitable for food preservation.

The Cayuse Phase (2,500-250 B.P.) followed the Frenchman Springs Phase. This Phase is characterized by changes in projectile point styles which became smaller over time, but retained the same basic styles until about 500 years ago. It was during this time that several new styles of projectile points appear on the Columbia Plateau (Nelson 61). About midway through this phase the bow and arrow was introduced. The acquisition of the horse in about 1730, by trade and/or by raiding, had a significant cultural impact on the Columbia Plateau people. The introduction of the horse increased mobility and hunting efficiency, expanding the economic base, trading contacts, and warfare (Meinig 24). Equestrian hunters pursued resources beyond traditional hunting areas, suggesting that the local wildlife population may have been reduced in numbers by over-hunting and/or loss of grassland habitats to large herds of horses. Wealth and prestige based on horse ownership became important with the animal's introduction.

### **Historic Native Period**

The Historic Period followed the Cayuse Phase. It was during this time that the first white people entered the Columbia Plateau. Native American production of traditional material culture decreased as Euro-American manufactured goods increased through trade. The Historic Period was a time of significant change with population declines of Native Americans from disease introduced by Euro-Americans and with the loss of aboriginal lands to Euro-American settlers. The Historic Period has been separated into the Historic Native Period and the Non-Native Period to provide a better understanding of the events that occurred during this time.

During the Historic Native Period, territorial boundaries of the interior northwest Indians were in transition. Indian groups of the Columbia Plateau were being displaced, absorbed, or replaced by other groups, possibly due to disease (Stevens and Galm 22). Disease, introduced from outside the region, reduced the numbers of Indians residing in the Columbia Plateau during this period. Elijah White, the first federal Indian agent in the Northwest, estimated that from 1800 to 1845 the Indian population in the Columbia

Plateau had been reduced by 94 percent, due to disease (Miller 35).

Ethnographic evidence indicates the dominate native American language families in the Columbia Plateau during the Historic Period were the Sahaptin and the Interior Salish. The Saddle Mountains were important as a natural geographic boundary between the Sahaptin and Interior Salish Indian groups. To the south were Sahaptin speakers: the Wanapum, Palus, Yakama, Walula, Umatilla, Kittitas, Klikitat, Wayampan, the Cayuse, and the Nez Perce. North of the Saddle Mountains were the Interior Salish groups of the Kalispel, Lakes, Coeur d'Alene, Spokane, Chewelah, Sanpoil, Nespelem, Okanogan, Southern Okanogan, Methow, Chelan, Wenatche, and Colville (Ray 107). The territory of the Interior Salish extends from the northern slopes of the Saddle Mountains to British Columbia.

The territory of the Sahaptin language family extends from the Saddle Mountains to the Great Basin to the south. The boundary extends west to the crest of the Cascade Mountains, and to the east, the boundary is the area of the Coeur d'Alene Interior Salish following the Snake River.

Interior Salish is related to a Coast Salish with northern affinities. The Sahaptin languages are related to Numic languages of the Great Basin, with southern affinities including the Nahuatl language spoken by the Azetecs of Mexico (Hunn 66). Some accounts have argued that Columbia Salish occupied the Columbia Valley south to just below Priest Rapids in recent history (Teit 93). More recent work by linguists suggests, however, that the Sahaptin-speaking tribes had been slowly moving northward for at least a millennium, and by the first white contact the Sahaptin language was well established from the Dalles to Sentinel Gap (Hunn 66).

Historically, a variety of plants and animals were used for food by Indian people of the Columbia Plateau, including bitterroot (*Lewisia redeviva*), balsamroot (*Balsamorhiza*), camas (*Canassia quamash*), yarrow (*Achillea lanulosa*), wild onion (*Allium acuminatum*), sego lilies (*Calochortus nuttalli*), elderberries (*Sambucus spp.*), hawthorne berries (*Crataegus sp*), huckleberries (*Vaccinium spp*), serviceberries (*Amelancchier allnifolia*), chokecherry (*Prunuss virginiana*), and currants (*Ribes*

*cereum*). Animals used included deer (*Odocoileus hemionus* and *Odocoileus virginianus*), elk (*Cervus elaphus*), antelope (*Antilocapra americanum*), bear (*Ursus americanus*), mountain sheep (*Ovis canadensis*), muskrat (*Ondatra zibethicus*), coyote (*Canis latrans*), wolf (*Canis lupus*), beaver (*Castor canadensis*), jackrabbits (*Leppus sp.*), squirrels (*Sciurus carolinensis*), doves (*Zenaidamacroua*), geese (*Branta spp.*), and ducks (*Anas spp.*). Several types of fish were also harvested, including sturgeon (*Acipenser transmontanus*), chinook salmon (*Oncorhynchus*), coho salmon (*Oncorhynchus kisutch*), sockeye salmon (*Oncorhynchus nerka*), chum salmon (*Oncorhynchus keta*), pink salmon (*Oncorhynchus gorbuscha*), steelhead (*Salmo gairdneri*), and trout (*Salvelinus aytmn*). About one half of the food supply is believed to have come from roots and bulbs, one third from fish, and the remainder from hunting and fruits and berries (Schuster 68).

During the historic period, Indian use of firearms became widespread, and some animal species may have been hunted to extinction in the Columbia Plateau region. Deer, elk, and bear had been reduced in numbers and were now found only in the mountains (Schuster 74).

### **Wanapum Indians**

The study area is located in the traditional territory of the Sahaptin speaking Wanapum people, who refer to themselves as "River People." Their territory extended from Priest Rapids to The Dalles, Oregon (Sharkey 5). By the 1850s, they were confined to an area from the Saddle Mountains to just above the mouth of the Yakima River including the Wahluke Slope and high flats east of the Columbia River and along the western foothills from Priest Rapids (Ray 103).

The Wanapum year was divided into six seasons based on the migration of animals and the maturation of plants. During the winter months, the Wanapums resided in permanent villages located along major tributaries at lower elevations. In the spring, portions of the population traveled to collect early spring plants. These trips went north toward Soap Lake and Badger Mountain and northeast toward Moses Lake (Galm, Hartmen, Masten, and Stephenson 18). Following early spring plant collecting, intensive

root digging and processing occurred. Plants were collected on the sandy slopes near Beverly and between the Saddle Mountains and the Priest Rapids Dam (Galm, Hartmen, Masten, and Stephenson 22). In late spring, fishing became the primary food collecting activity. Indigenous populations traveled to favorite fishing locations, the Priest Rapids area being one of the largest and most important fishing locations for the people of the Columbia Plateau. It is believed that both Sahaptin and Salish groups shared the fishing location several weeks each year (Galm, Hartmen, Masten, and Stephenson 24).

Following the fish runs, the Wanapums moved to the upland areas west of the Columbia River in search of camas (*Camassia quamash*) and cous (*Lomatium cous*). Midsummer was spent in the foothills hunting animals and gathering huckleberries, and fall was spent fishing along the Columbia River, concluding the seasonal rounds.

At the time of the early explorers, the Wanapum leader was Smohalla. He was not considered a chief or shaman, but rather “one who trains or disciplines” (Hunn 253). Smohalla was the leader of *Washani*, the Dreamer religion; he was a prophet who influenced many of the Indians in the area in the last half of the 1800s. Smohalla urged his people to reject non-traditional lifestyles. The main theme of this religion was that the earth belonged to everyone and must not be cultivated. The indigenous people of the Columbia Plateau believed the earth was the point of origin of all life and that harvestable resources had the same origin as the people (Miller 18).

The Wanapum Band refused to recognize the 1855 Yakama Indian Treaty which required those who signed it to move to reservations. They contend the treaty was made without their consent and chose to remain on their land next to the Columbia River near Priest Rapids. With the creation of the Hanford Reservation in 1942 a portion of their traditional homeland near White Bluffs was condemned by the federal government. Currently, some members of the Wanapum Band live on 40 acres of land at Priest Rapids, the result of an agreement with the Grant County Public Utility District. The Wanapums remain a separate cultural entity within the ceded lands of the Yakama Indian Nation at the present time.

## **Non-Native Period**

The first Euro-Americans in the Columbia Plateau were Meriwether Lewis and William Clark in 1805. Their travels led them along the Snake and Columbia Rivers, as far north as the area near the mouth of the Yakima River. However, their travels did not lead them upriver to the Saddle Mountains area. David Thompson, a fur trader with the Northwest Company, was the first documented non-Indian traveler into the Saddle Mountains region in 1811.

The early explorers and fur traders were soon followed by missionaries, miners, military units, and finally settlers. By 1848, the Columbia Plateau was part of the Oregon Territory and in 1853 this territory was divided to create the Oregon and Washington Territories.

In 1855, Issac Stevens, Washington Territory's first governor, instigated the Yakama Indian Treaty, one of many treaties initiated by the United States to acquire title to Indian land and make it available to white settlement (Hunn 45). Another reason for the Yakama Indian Treaty was to acquire land for the railroads. Indian lands were offered as incentives to companies interested in building rail lines through the Columbia Plateau (Miller 110). Fourteen tribes and bands signed the treaty and were confederated into the Yakama Indian Nation. The Yakama Indian Treaty recognized the Indians who signed the treaty as dependent nations. Reservations were established for the Yakamas, Umatillas, and Nez Perce; and fishing rights were reserved at all usual and accustomed places, along with rights to hunt game and to gather roots and berries (Hunn Appendix 5). These things were granted in exchange for title to the vast majority of Indian lands, about 10,800,000 acres, about one third of Washington state.

The Columbia Plateau was not officially open to white settlement until 1858 and even then the region was considered generally too arid and inhospitable for settlement (Ray 100). The discovery of gold to the north and east of the Columbia Plateau was among the events that triggered an increase in permanent settlements into the region. Gold had been discovered in the Fraser River Valley in 1858 and in the Clearwater Valley in the early 1860s. The Columbia River was a major transportation route to the gold



fields. Stern wheelers successfully navigated the upper portions of the river by 1860 carrying miners and supplies to ports. White Bluffs was the preferred drop-off point, because Priest Rapids could be navigated only during periods of high water. The increased population of miners and support industries created a demand for cattle, and the grasslands of the Columbia Plateau attracted cattle ranchers.

During the 1860s and 1870s cattle, horses, and sheep were free to graze on open rangeland. Three hundred twenty-eight thousand cattle and almost as many sheep are estimated to have existed in the region in 1860 (Stratton 36). Cattle favored the riparian areas and the sheep grazed the steep slopes and mountain areas, favoring the forage that was undesirable to cattle. Ben Snipes, a prominent cattleman raised cattle in the Columbia Plateau and moved them through Sentinel Gap on the east bank of the Columbia River at the base of the Saddle Mountains en route to the Fraser River Valley.

Also during this period, Lieutenant Richard Arnold of the United States Army noted when making a rail survey of the Crab Creek area, "cattlemen did not encroach upon the grassy meadows along the river bottom in the Priest Rapids area along lower Crab Creek, nor push into the area from the east on upper Crab Creek until the late 1860s" (Ruby 1).

The Columbia Plateau was a stockman's paradise with natural resources free for the taking. It provided abundant food, water, and shelter during winter months without rent, or taxes (Hawley 2). However, by the 1880s the grasslands were showing signs of overgrazing (Freeman 29). Overgrazing combined with some unusually harsh winters and an increase of settlers into the area, brought an early demise to the cattle industry. Homesteaders soon turned the once sought after rangeland into farmland, marking the end of an era for the stock producers. Following the decline of the stock raising era, wild horses continued to roam throughout the Columbia Plateau. By the turn of the century, the numbers of wild horses had increased to the point that they threatened range and farmland. Occasional roundups were held to capture the wild horses. The final roundup of wild horses occurred in Crab Creek in 1906 (Ruby 2).

Farming began in the eastern portion of the Columbia Plateau and gradually moved

west into the drier regions. Early farms consisted primarily of dryland wheat and orchards. Early homesteaders on the Saddle Mountains farmed small portions of land for a very short period, trying to raise dryland grains in the deeper soils, but most attempts failed in the absence of irrigation. Domestic water in the Saddle Mountains was sparse and had to be hauled and stored for later use. Homesteads were few and far between. Today, the scattered remains of abandoned homesteads with large cisterns for water storage are scattered randomly throughout the area. Fields from this era are overgrown by tall sagebrush and cheatgrass.

In an attempt to increase the population of the West, Congress granted 44,000,000 acres of public land to the railroad companies under the Northern Pacific Act in 1864 (Winther 257). The railroad land grants gave the railroads alternate sections, 20 miles on either side of the rail lines. The land grants in the western territories created a checkerboard pattern of land ownership in some areas up to 40 miles wide. Three transcontinental railroads followed routes from the east coast through eastern Washington. The Northern Pacific, the only railroad to receive land grants, the Great Northern, and the Chicago Milwaukee St. Paul railroads all sought access to control the transportation of farm commodities from eastern Washington. Portions of the Chicago Milwaukee St. Paul, the last of the transcontinental railroads built in eastern Washington, followed a route from Spokane to Ellensburg through lower Crab Creek (Schwantes 155). The Northern Pacific rail line followed a route to the south of the Chicago Milwaukee St. Paul near the Tri-Cities, and the Great Northern followed a route to the north near Wenatchee. Competition was fierce between all three railroads attempting to establish a dominant shipping market for agricultural products from eastern Washington. The railroads were responsible for bringing increasing numbers of settlers into the Columbia Plateau. All three transcontinental railroads advertised the agricultural productivity of the region and ran special low rates for would be settlers. With the introduction of the railroad in 1883, traditional transportation routes relying on the Columbia River system declined. Stern wheelers were soon replaced by the railroads, which became the major transporter of agricultural products on which the economic progress of the state depended (Kingston

221).

Changes in the use of natural resources accelerated as new forms of transportation, technology, and industrial expansion affected life in the Columbia Plateau. By 1905, wheat was the leading crop and the Columbia Plateau was the largest wheat producing region west of the Continental Divide. In the "Inland Empire" of the Columbia Plateau, large scale farming with efficient machinery proved to be the deciding factor for successful dryland farming (Johansen 318).

In the early 1900s, irrigation systems began to be introduced into the Columbia Plateau through private enterprise. An attempt to irrigate land was made near Corfu on the north side of the Saddle Mountains from 1905 to 1907. To conserve spring runoff, a gravity canal was built from a dam and gate system at Goose Lake up Crab Creek. Problems with breaks in the canal forced the project to be abandoned. In 1908 near Beverly, an attempt to irrigate 500 acres by means of a coal fired pumping plant lasted only one year because of high operating costs. A proposal to irrigate land near the town of Wahluke was made in 1909, when a private company proposed to pump water from the Columbia River into a canal which would then provide water for portions of Wahluke Slope. Like many other such proposals in the area, the project was abandoned because of insufficient funding (USDI Bureau of Reclamation, *Story* 42).

Following World War I, the Columbia Plateau region suffered from drought and depressed commodity prices, forcing many farmers to abandon their farms. Abandoned homes and fields and blowing soil dominated the agricultural landscape until the mid-1930s (Hawley 3). Many of the deserted homes were in perfect condition and still contained furniture. Farm equipment was also left abandoned at many of the vacated farms (Melons From Here For Congressmen 1).

In the 1920s, efforts were made to acquire federal money to construct water projects in eastern Washington. Because of its central location to the Columbia Basin Project, the Saddle Mountains were a part of these efforts in 1927. In support of the Columbia Basin Project, Nicholas Longworth of the U. S. House of Representatives traveled to the top of the Saddle Mountains to look at the country on both sides of the

mountain. He reported to the Seattle Chamber of Commerce what he saw:

Yesterday I stood on a mountain and I could see a sea of arid land that would be fertile if it had water on it. I saw, too, laid off like squares on a checkerboard, areas that had been abandoned by the men farming them. It seems to me that Congress can well afford to provide credit that will enable that land to be flooded with water (Boost Columbia Basin 1).

A short time later, the Saddle Mountains were the scene of a gathering in support of the Columbia Basin Project. The Chicago Milwaukee St. Paul Railroad transported 175 senators, congressmen, members of the Columbia Basin League, and anyone interested in the project, from Spokane to Corfu. From the railroad drop off point at Corfu, people traveled to the top of the mountain by cars. Interested local residents were also invited. Five hundred people gathered on the summit of the Saddle Mountains on that day in August in support of the project. Under a large tent, lunch was served to the crowd with music provided by members of the White Bluffs and Pasco bands. After lunch, the scope of the project was explained followed by speeches from Senators Jones and Dill and Congressman Summers from Washington State all in support of the project (Saddle Mountain Meet Attracts Many 1).

Later, federal support became available to construct large scale irrigation projects on the Columbia Plateau with the major social programs of the 1930s. In 1933, under the direction of the Bureau of Reclamation, the Columbia Basin Irrigation Project began. The purpose of the project was to provide irrigation water to 1,095,000 acres in eastern Washington along with hydroelectric power, flood control, and recreation along the Columbia River (Warne 172). Three irrigation districts were created to disperse water from the project: the Quincy Basin District in Grant County, the East District in the Moses Lake/Othello areas, and the South District in Franklin County (Ober 9). These districts required landowners to pledge their lands to pay for part of the project over a 40-year period. The districts are chartered by the state to deliver water under contract with the United States government and to operate and maintain facilities (USDI National Park Service 65).

Currently, irrigation water for Wahluke Slope is provided by the South and East Districts. The water comes from the Wahluke Branch Canal which is diverted from the Potholes Canal six miles south of Othello (USDI Bureau of Reclamation, *Story* 8-9).

Federal involvement continued in the Columbia Plateau with the introduction of the Hanford Project. The project was created for plutonium production in World War II, began in 1943 under the War Powers Act. The Hanford Reservation condemned 193,833 acres and leased an additional 260,000 acres (Roe 139). At that time, the 637-square mile area contained 1,500 people who were required to move from the area (Van Arsdol 12). The Hanford location was selected for plutonium production because of the available water supplied by the Columbia River needed to cool the reactors, the natural security created by the river and the desert, adequate gravel supplies, and low population density. Currently, the main focus of the Hanford Reservation has shifted from defense and energy research to environmental restoration.

Federal land management continued in the region with the management of public domain on the Saddle Mountains by the Bureau of Land Management. The federal government retained ownership of the unclaimed lands and the BLM began managing the study area in 1946. Currently, The BLM manages 23,000 acres of land intermingled with private and state lands on the mountain.

## **CHAPTER 4 - CASE STUDY AREA: THE SADDLE MOUNTAINS AND BLM HOLDINGS**

### **The Bureau of Land Management**

The United States Department of Interior Bureau of Land Management (BLM) manages 45 parcels of land totaling 23,000 acres in the case study area (Figure 2). Land ownership in the area remains influenced by the checkerboard patterns created by Congress with the railroad land grants. The BLM managed lands are intermingled with state and private lands, adding to the difficulty of their management.

The BLM was created in 1946, by combining the United States Grazing Service and the General Land Office. It was during this period that the BLM began managing the public domain of the Saddle Mountains. The goal of the BLM was to manage federal grazing lands, but mineral resources and many large wilderness areas were gradually added to its jurisdiction (Rosenbaum 302). Funding and legislation for the BLM is governed by Congress. Most of the land the BLM manages is unsuitable for crop production. It is usually arid to semi-arid, located in mountainous or rough terrain and covered by thin highly erodible soils. In Washington, the BLM manages 320,000 acres, mostly through offices in Wenatchee and Spokane.

Currently, “ecosystem management” guides BLM management policy. The ecosystem approach to land management promotes biological diversity and sustainable development through the integration of ecological, economic, and social principles (Slocombe 619). Ecosystem management is an attempt to reverse previous public land degradation and improve economic opportunities for local communities. In addition to ecosystem management, the BLM has established specific management objectives on public lands under its management on the Saddle Mountains. The creation of these objectives involved other public agencies, private individuals and entities, and Native American Tribes. At the present time, the six major resource management objectives for the Saddle Mountains are:

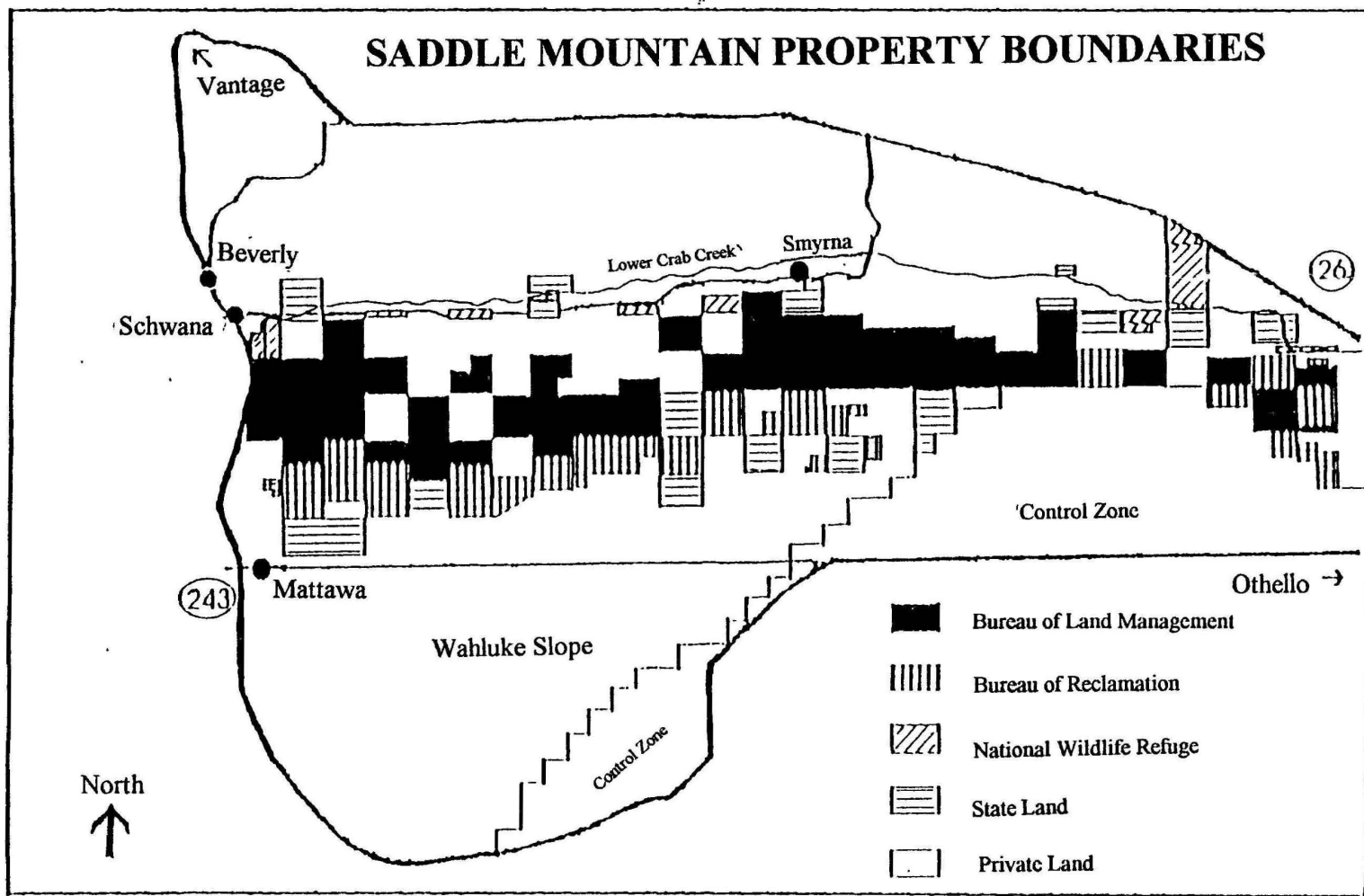


Fig. 2. Land Ownership on the Saddle Mountains (USDI Bureau of Land Management, *Saddle 2-1 to 2-4*).

1. Manage public lands and keep access routes open for a variety of recreational opportunities and experiences, including both motorized and non-motorized activities.
2. Keep public lands open for public purposes such as the exploration/development of mineral resources, rights-of-way, or access.
3. Enhance resource management efficiency through land tenure adjustments. Identify opportunities for jurisdictional transfers, and cooperative management agreements with other agencies or private individuals.
4. Protect and/or enhance sensitive, threatened or endangered species habitat.
5. Provide for safe use of the Saddle Mountains.
6. Protect and/or minimize impacts to important values such as archaeological resources, traditional and cultural properties, Native American sacred sites, special status species, or adjacent private lands (USDI Bureau of Land Management, *Saddle* 13).

### **BLM Considerations For The Saddle Mountains**

Portions of the following information in this chapter were considered by the BLM for the creation and selection of the upcoming Alternatives presented in Chapter 5.

#### **Cultural Resources**

The Saddle Mountains have been used by people for thousands of years. The cultural resources created by this use are protected under federal legislation and Executive Order. This legislation and Executive Order includes the National Historic Preservation Act, National Environmental Policy Act, Native American Indian Religious Freedom Act, Archaeological Resources Protection Act, and Executive Order 11593 Protection and Enhancement of the Cultural Environment (Appendix A). This legal framework requires the BLM to inventory and evaluate cultural resources under its management.

The Saddle Mountains and the study area contains a wide variety and large quantity of petrified wood. Petrified wood in various forms is found throughout the Columbia Plateau, but is particularly abundant in the Saddle Mountains. It was used by indigenous



people of the area for chipped stone tools such as drills, weapon points, scrapers, knives, perforators, and stone ornaments.

Archaeological data from surveys on the Saddle Mountains, the Columbia River, the Yakima Training Center, and Lower Crab Creek provide evidence that indigenous people relied on the natural resources of the Saddle Mountains throughout much, if not all, of the prehistoric period. Evidence of petrified wood use has been found at several sites in the Columbia Plateau including nearby-sites at Wahluke (Krieger); along lower Crab Creek (Greene and Irwin); and in the Saddle Mountains (Galm and Hartman; Chatters; Masten and Galm; and Flenniken and Ozbun).

Greene and Irwin recorded 21 prehistoric sites in lower Crab Creek. Seventeen sites contained petrified wood chipping debris in quantities ranging from one half percent to as high as 46 percent of the areas tested. The sites with the highest petrified wood artifact densities were located near the town of Smyrna along Crab Creek. In addition, Greene and Irwin examined several private collections and the artifacts in these collections suggest that the Crab Creek area was used by indigenous people at least 4,500 years ago. These data strongly suggest that the indigenous people of the area used petrified wood supplies from the Saddle Mountains for the production of artifacts. The sites appear to represent logistical field camps organized for the procurement of upland resources such as petrified wood and possibly other resources such as roots, or large game animals.

Cultural resource surveys in the Saddle Mountains have been limited in the study area due to insufficient funding (Rich Bailey, BLM archaeologist, personal communication, 1995), but surveys have located tool stone quarry sites, lithic scatter sites, rock cairns, and isolated artifacts. The quarry sites were described by archaeologists as highly disturbed by modern rock hounding activities. Archaeological evidence from one small project (Flenniken and Ozbun) indicated prehistoric use consisted of the excavation of circular pits less than ten meters in diameter and less than two meters deep, from which petrified wood, was apparently removed.

Additional archaeological work in the Saddle Mountains area includes work done

by Chatters in 1980 and 1982. His survey recorded 13 sites primarily associated with lithic processing. Chatters concluded the area was used for the acquisition of lithic materials.

Further archaeological work was undertaken by Galm and Hartman on the northern and western slopes of the Saddle Mountains including portions of BLM managed lands in the study area. Galm and Hartman recorded 15 sites and concluded the area was used in part for the purpose of gathering tool stone material for use at sites along Crab Creek, the Columbia River, and other localities (Galm and Hartman 27).

Additional archaeological work on BLM managed lands includes work by Masten and Galm. Four sites were recorded on BLM lands on the west and south slopes of the Saddle Mountains and the Wahluke Slope areas. The sites consisted of lithic reduction and lithic quarry areas. The authors concluded that prehistoric land use on the Saddle Mountains was primarily for the procurement of petrified wood for tool stone and that the area was used during the Frenchman Springs Phase and even more heavily used during the Cayuse Phase (4,500 BP-250 BP).

The Saddle Mountains have other types of archaeological sites as well, which include large numbers of rock cairn sites recorded along the crest and upland elevations. This area is reported to have more cairn sites than other similar areas in the region. These Native American rock features are believed to represent vision quest locations or boundary markers.

In summary, archaeological data from the Saddle Mountains and the study area suggest indigenous people used the area for short periods of time, possibly due to the shortage of available water supplies (Galm, Hartman, Masten, and Stephenson 79). The primary use of the area was for the procurement of petrified wood for tool stone. Lithic scatters represent the largest numbers of sites, followed by quarries, prehistoric and historic rock cairns, and multiple use sites (Masten and Galm 20-24).

Traditional cultural resources also exist in the Saddle Mountains and are of interest to both the Salish and Sahaptin tribes, but represent the greatest significance to the Wanapums. Traditional cultural properties represent objects or places significant to the

living community. Adequate documentation does not exist for the traditional cultural properties in the study area. Not only do these traditional cultural resources represent previous and current use of the Saddle Mountains, but future use as well.

The study area is located in the ceded lands of the Yakama Indian Nation (Appendix B). As part of the NHPA process, the BLM notified the Yakamas, Colvilles, and the Wanapums by letter of the upcoming plan for the Saddle Mountains. The letters requested information from the tribes on the cultural resources in the proposed project area, but the letters drew no responses from the tribes. Follow up phone conversations from the BLM with the Tribes and Band indicated no known cultural or traditional cultural resources could be identified in the project area (Rich Bailey, BLM archaeologist, personnel communication, 1996).

Following the release of the BLM's draft proposal for the study area, the Wanapum Band raised concerns regarding the management of traditional cultural resources in the Saddle Mountains. Wanapum representative Richard Buck, in a letter to the BLM stated that "traditional cultural resources on the Saddle Mountains have been used by Indian people of the area since time immemorial" (1994). Use of the Saddle Mountains by Native Americans continues at the present time as a traditional cultural use. Members from the Colville and Yakama Tribes, and the Wanapum Band use the area for gathering traditional roots for medicines and food supplies, and to honor sites of religious and spiritual significance.

At the present time, less than five percent of the BLM lands on the Saddle Mountains have been surveyed for cultural resources. Every previous cultural resource survey has located archaeological sites in the area. Therefore, there is no doubt that many more undocumented sites exist in the study area.

## Natural Gas

The presence of natural gas has generated interest in the Saddle Mountains area in recent years. Shell Oil Company drilled a well on the Saddle Mountains in the early 1980's that yielded 5.5 million cubic feet of natural gas per day (USDI Bureau of Land

Management, *Proposed* 31). Additional wells in the Columbia Plateau indicate the potential for commercial development exists within and below the Columbia River Basalts. Natural gas is located in traps ranging in size from 3,000 to 25,000 acres and contain 40 billion to one trillion cubic feet. The estimated value of the natural gas is \$3.6 billion in 1992 dollars (USDI Bureau of Land Management, *Proposed* 31). Development of the natural gas in the study area is not economically viable at this time.

### Roads

Currently, there are about 80 miles of existing roads and trails in the Saddle Mountains. The BLM has 49 miles, the Bureau of Reclamation has 10.5 miles, the State Department of Natural Resources has .75 miles, and private ownership has 20 miles (USDI Bureau of Land Management, *Saddle* 11). The majority of the roads in the Saddle Mountains are located on the west half of the eastern range, with a large portion located in the study area. Access to BLM managed land is guaranteed through access rights established with neighboring property owners. The BLM roads provide access to the public domain and are open for public use unless restrictions are in place. The use includes access for recreational users, cattlemen, maintenance of communication sites, law enforcement, and the BLM.

### Private Land Owners

About one third of the land on the Saddle Mountains is privately owned (Figure 2). Private landowners in the Saddle Mountains have suffered trespassing, illegal petrified wood mining and collection (excavations leave holes that threatens livestock, wildlife, and humans) vandalized livestock equipment, open gates, cut fences, eroded soil, litter, and an increased spread of knapweed. The damage to private land and equipment by recreationists is an unwelcome expense incurred by the landowners (Gary Maughan, landowner, personal communication, 1995). Furthermore, landowners under some conditions, can be held liable for injuries to recreationists, which creates additional expenses. Trespassing has been a particular problem in the area due in part to the

randomly situated units of private land and the inadequate posting of public and private lands. It is difficult to recognize private and public land boundaries in some locations.

### Rangeland

BLM rangelands in the Saddle Mountains are currently managed for multiple use and sustained yield under the Federal Land Policy and Management Act (FLPMA) (Appendix A). Under FLPMA, rangeland is to be managed for recreation, wildlife, and domestic livestock. The rangeland in the region produces between 100 to 400 pounds of forage per acre per year, only about one half of this can be grazed by animals without damage to the vegetation in any one year (Daubenmire 188). In the more favorable locations, forage production can be as high as 500 to 800 pounds per acre (Gentry 120). As a general rule, the BLM requests livestock producers who pasture public domain rangeland, to "take half and leave half" of the vegetation in the study area. Currently, leased rangeland remains open to the public unless restrictions are imposed.

The public rangeland of the study area is leased to cattle producers. In 1985, four grazing leases were in effect on 22,281 acres for 2,670 animal unit months (AUMs). Currently, three grazing leases on 17,600 acres for 1,975 AUMS are allowed by the BLM. Leases for rangeland are usually awarded to neighboring cattle producers for a 10 year period. No other considerations are made to lease the public lands to other cattle producers.

Congress determines the rate to be charged for grazing on BLM lands. In 1995, the rate was \$1.61/AUM for BLM rangeland (Gary Maughan, BLM lessee, personal communication, 1996). In contrast, the Bureau of Reclamation also leases rangeland in the area and in 1995 charged \$7.50/AUM. Ironically, the BLM manages the Bureau of Reclamation rangeland above the irrigation canal on Wahluke Slope (Jim Fisher, BLM, personal communication, 1996).

## Land Exchange

In 1987, 16,000 acres of Burlington Northern land on the Saddle Mountains changed ownership. Seven sections were bought by a local landowner and the remaining nine sections were traded between Burlington Northern and the BLM. The BLM traded land near the Tri-Cities for the Burlington Northern land on the Saddle Mountains. The 1987 exchange consolidated land on the Saddle Mountains reducing, but not eliminating, the intermingled land ownership of the area which has created management problems.

## Communication Sites

Located on the crest of the Saddle Mountains at the west end near Sentinel Peak and to the east on Wahatis Peak, are at least 14 communication sites. Only two of these sites are on BLM managed lands. The height of the crest on the mountain provides good reception and transmission for communication systems. Annual fees are charged by the BLM for sites located on public lands. Private property owners also charge rental fees for the site locations. The roads in the study area provide access to the communication sites.

## Recreation

Several factors have increased the number of recreationists in the region. Increased mobility provided by automobiles and expanded road networks make access easier for recreation activities. Additionally, lengthened periods of paid vacation and earlier retirement in recent years have created more free time for large numbers of people. Many of these people live in urban areas with limited recreational opportunities and rely on the use of rural areas for their outdoor activities. Public lands receive the brunt of the impact, but as numbers of recreationists increase, the frequency of conflict with land owners/lessees has also grown and many areas both public and private suffer over-use. Unfortunately, these problems are expected to increase in the future simply from population growth. Grant County, for example is expected to realize a seven percent rise in population from 1989-2000, and some western portions of the state are expected to increase as much as 19 percent (Interagency Committee for Outdoor Recreation,

*Outdoors* 25-29). Recreational opportunities on the Saddle Mountains have increased the use of the shrub-steppe environment primarily through off road vehicles, rock collecting, and parasailing.

### *Off Road Vehicles (ORV)*

Off road vehicles use can result in erosion and create conditions conducive to the spread of unwanted noxious vegetation. Organized ORV groups do not condone resource destruction, but proclaim an ethical approach to resource use, preferring to use preexisting roads and trails. The Saddle Mountains area is not actively used by four wheel drive organizations, who prefer the sand dune areas near Beverly managed by the Department of Natural Resources (Arlene Brooks, President of the Pacific Northwest 4 Wheel Drive Association, personal communication, 1995). Most of the ORV damage in the Saddle Mountains comes from *ad hoc* groups of individuals or single individuals testing the performance potentials of their off road vehicles.

State laws apply to off road vehicles, requiring ORVs to be trail or street legal. If ORVs are used on public or private trails and land, they must have an adequate and operating muffler that limits exhaust noise to 105 decibels at 20 inches from the exhaust, a USDA Forest Service approved spark arrester, a lighted headlight and taillight at night or during poor visibility, and an ORV permit tab if not currently licensed for highway use (Interagency Committee for Outdoor Recreation, *Off-Road* 3).

In the study area, prior to 1985, 24,000 acres of public land were open to off road vehicles. During the early 1980s motocross races were held in the Saddle Mountains drawing as many as 3,000 people to the area. By the later part of the 1980s these races were no longer held. Complaints from local residents and land degradation forced its closure.

Management decisions by the BLM in 1985 restricted total acres open to ORV use to 4,310 acres on the west end designated to casual ORV use. "Casual use" is defined by the BLM as driving a short distance off the main road, parking the vehicle, and walking to one's destination. Restrictions were implemented on the remaining 19,990 acres, allowing

ORV use only on designated roads and trails (USDI Bureau of Land Management, *Spokane* 18).

Casual use is not being followed by some of the ORV users in the study area. Off-road trails by both four wheel drive and motorcycles are causing land degradation. The land degradation creates potential problems for erosion and habitats for unwanted non-native plant varieties.

### *Parasailers*

A relative newcomer to recreation in the Saddle Mountains is parasailing. This wind powered activity takes place from March to November, depending on the weather. The months of June, July, and August provide the most favorable wind conditions for long distance travel (Jean Matthews, parasailer, personal communication, 1995). Visits to the area are of short duration usually daily events. Currently, parasailers have leased the right to use private property on the northern summit from a private landowner however, access to the northern cliffs on the Saddle Mountains is through public domain. In the lease arrangement, the parasailers are responsible for upkeep of the area. The numbers of parasailers using the area are not available, however, their impact at the present time is minimal.

### *Rock Hounds*

As noted, petrified wood deposits in the upland areas of the Saddle Mountains have been used by humans through the history of the Columbia Plateau. In more recent times these deposits have attracted amateur and professional collectors. Petrified wood is used for polished lapidary objects, jewelry, gem shows, and conventions nationwide. The petrified wood from the Saddle Mountains is renowned in lapidary circles for its unusual colors and patterns. The area produces what rock collectors call "picture wood," iron staining that gives good patterning when polished.

Organized rockhound events have taken place in the Saddle Mountains at least since the late 1930s or early 1940s. One such organized event in the area was the All



Rockhounds Spring Pow Wow in 1954, near Beverly, Washington. This event drew several hundred rockhounds to the area. The rockhounds from the Pow Wow climbed up the steep north face of the Saddle Mountains in search of petrified wood, which they found near the top of the mountain (Spring Pow Wow 3-4).

Collection of petrified wood continues today. It has been estimated that several hundred petrified wood collectors visit the Saddle Mountains each year (John Spunaugle, President of the American Lands Access Association, personal communication, 1995). Most rock hounding occurs on weekends with use of the area declining during the hot summer and cold winter months.

Petrified wood collecting is regulated by the Code of Federal Regulations (CFR), Part 3622, Free Use of Petrified Wood. Under the CFR, all public lands administered by the BLM are open to free use and removal of petrified wood unless notice is given. Petrified wood is considered a recreational resource. The maximum annual quantity of petrified wood allowed for removal is 25 pounds plus one piece and not to exceed 250 pounds per person. Petrified wood is not to be removed with the use of power tools or by causing unnecessary land degradation and the material collected must be for personal use and not for sale. Permits and certificates are required to remove pieces larger than 250 pounds. Permits allow for the extraction of petrified wood and the certificates stipulate that the material will be displayed in a museum available to the public (US Code of Federal Regulations, 1994: 740-741).

In the 1950s, Senator Henry Jackson, an avid rock hound, designated Section 14 on the west end of the Saddle Mountains for the exclusive use of rock hounds. At that time grazing was discontinued on the section. This designation made by Senator Jackson is not legislation and if someone wanted to graze Section 14, the BLM would have to consider it. Section 14 is difficult to pasture, however, because water would have to be hauled in for livestock. The Washington State Mineral Council constructed and maintains two restrooms at the site (Edward Brandstoettner, President of the Washington State Mineral Council, Spokane, Washington, personal communication, 1995).

Rock hounds insist that educational and scientific information would be lost if their

access is restricted. Samples of petrified wood are put on display in museums and in exhibits for the public to observe. By placing restrictions on rock collecting, they suggest that the government is limiting educational opportunities. Furthermore, rock hounds indicate that if petrified wood is not collected, it will decompose if left exposed on the surface and be of no use to anyone (Lakeside Gem and Mineral Club, Inc. Kennewick, Washington, personal communication, 1995).

Rock hounds point to some of the problems they have encountered in the Saddle Mountains. The BLM has not provided maps of land ownership and has failed to maintain signs indicating where public and private lands are located. The problem of adequate maps was also apparent in the preparation of this thesis. No adequate maps exist for the study area at the present time.

Additional problems facing rock hounds and the BLM are the cultural resources of the area which are often located in favorite rock collecting locations. Under the Archaeological Resources Protection Act, criminal and civil penalties for looting or damaging sites on public lands could be imposed in the case of site destruction (Appendix A).

Research relating to petrified wood collection is very limited. In Gallatin Petrified Forest in Montana, a 13 year study was undertaken to determine if humans had a significant impact on petrified wood in the area. The study indicated that through natural processes of weathering and erosion, new petrified wood specimens and material were continually being exposed. It also found that the greatest loss of petrified wood to collection occurred near trails where access was easiest; that loss to collection was less than that of natural processes, but that collection accelerated loss (Wilbur and Hansen 187-194).

Organized petrified wood groups have been very vocal about their desire to have continued access to the resources in the Saddle Mountains. The large numbers of rock collectors and their organizational ability appear to have had an influence in the management decision for the case study area.

## **Noxious Weed Board**

Noxious weeds are defined by the Revised Code of Washington (RCW) 17.10.110 as “any plant which when established is highly destructive, competitive, or difficult to control by cultural or chemical practices.” Currently, 85 weeds are on the noxious weed list for Grant County (Allan Rosennow, inspector for the Grant County Weed Board, personal communication, 1996). In the study area, diffuse knapweed and skeleton weeds are the primary noxious weeds requiring management. Skeleton weed is a recent arrival to the Saddle Mountains and is beginning to appear in the study area. The BLM is responsible for control of noxious weeds on lands under its management and it works with the Grant County Noxious Weed Board on weed control in the study area. The Grant County Noxious Weed Board, located in Ephrata, is mandated by the State to control noxious weeds in the County. Funding for the weed board comes through assessments on a per acre basis depending on land classification (irrigated, rangeland, dryland, or scabland).

Originated in 1980, the Weed Board works with all public agencies and municipalities and encourages all landowners to control their own noxious weeds. The Weed Board has jurisdiction to enforce the weed laws of the state under the RCW Chapter 17.10.160. This jurisdiction applies to federal lands.

Noxious weed surveys are performed annually. In the event that spraying is needed, the BLM can either do the spraying themselves or contract through the Weed Board to spray. The BLM has done some spraying in the past, but relies primarily on the Weed Board because it is less expensive. Spraying by the Weed Board for noxious weeds is performed mostly along the edges of roads in the study area and is undertaken on federal land only. Control of knapweed on private property is the responsibility of the landowners.

## **Fire Protection**

The BLM is responsible for fire protection of the study area, but relies on the local fire districts to provide the equipment and manpower for fire control. If a fire should take

place on the study area, the local fire districts respond with equipment and manpower. The local Grant County Fire Districts include 8, 10, and 11. The BLM has no local fire control equipment, however, in the event of a fire in the study area it sends a mop up crew from Spokane. The BLM contracts with local fire districts for reimbursement of expenses incurred for fire control on public lands.

Fires occurring in the area are both natural and manmade. Lightning is the main cause of natural fires. Human caused fires ignite mainly along the highway areas. The number of major fires (taking more than one hour to extinguish) averages four to five per year. In the event of large fires, additional equipment may be brought in from other districts to assist. The Saddle Mountains and the study area are susceptible to large rangeland fires because of difficult access and high winds (Don Chumley, District 8 Fire Chief, personal communication, 1995).

### **Law Enforcement**

Law enforcement for the Saddle Mountains and the study area is the responsibility of the Grant County Sheriff's Office and a BLM enforcement officer. In the past, a contract was issued between the BLM and the Grant County Sheriff for law enforcement of the Saddle Mountains. Currently, no contract is in effect. The Grant County Sheriff has no set policy regarding enforcement of the area. Two off road patrol vehicles monitor the area at random intervals that average about five to 10 hours per month. Additional monitoring of the area is combined with emergency calls such as accidents or trespass. Attempts are made by the Sheriff's Office to reach agreements with landowners and land users when problems arise. If problems continue, the patrols are rescheduled to monitor the area during periods of heavy land use. The Sheriff's Office provides "No Trespassing" signs to landowners to mark property boundaries in problem areas. Trespassing is a misdemeanor, punishable by up to 90 days in jail and/or a \$1,000 fine. Peak periods of land use of the area are from February through June. The number of calls to the area has declined slightly from previous years (Alan Keys, Grant County Sheriff's Office, personal communication, 1995). A BLM law enforcement officer also patrols the Saddle

Mountains at random intervals. The monitoring of the area by the enforcement officer is determined by the amount of use the area receives.

These were some of the management considerations the BLM contemplated when creating the 1994 draft proposal for the Saddle Mountains. The following chapter reviews how the BLM used this and additional information to create the draft proposal.

## **CHAPTER 5 - REVIEW AND ANALYSIS OF THE BLM MANAGEMENT PROCESS FOR THE SADDLE MOUNTAINS**

This chapter reviews the management plans the BLM compiled for the Saddle Mountains. Following the review an analysis of the management plans is presented.

### **THE 1985 MANAGEMENT PLAN**

In 1985, the BLM developed a Resource Management Plan and Environmental Impact Statement (RMP/EIS). The RMP/EIS was developed under the Federal Lands Policy and Management Act (FLPMA) which requires long term (10 year) management plans designed to meet public needs while complying with federal legislation (Appendix A). The plan required a nine step approach which was the same format as the one summarized later in the Saddle Mountain Management Plan section of this chapter.

The 1985 RMP/EIS stated the area would be managed for multiple uses including mineral extraction, livestock grazing, recreation, preservation and protection of cultural resources, and protection of wildlife habitats. This plan was designed to be a comprehensive master plan for BLM land management. Later, when more site specific decisions would be needed, this master plan would be used as a source of information. For the Saddle Mountains land managed by the BLM, the plan recommended control of the spillover effects onto private lands from recreation by 1987.

The management plan indicated that only two to four percent of the area was inventoried for cultural resources. Of the 13 areas in the state managed by the BLM, the Saddle Mountains is next to last for the percentage of lands surveyed for cultural resources. The plan also stated it would take appropriate measures to identify and protect cultural sites prior to ground disturbing activities (USDI Bureau of Land Management, *Spokane* 89). Identification of cultural resources is primarily project driven. Under FLPMA, the BLM has the authority to designate areas of critical environmental concern. These areas could have been created to protect cultural resources, but were not.

Cultural resource identification was inadequate at that time and remains so at the present.

In the final RMP/EIS of 1985, the BLM identified one sensitive plant species, Bristly cryptantha and one threatened plant species, Hoover's desert-parsley. The plan designated 200 acres of critical environmental concern for the plants on Sentinel Slope in the Saddle Mountains. The plan also opened 4,300 acres of the study area to ORV use on the western portion and restricted ORV use on the remaining 19,990 acres to designated roads and trails. This plan remains in effect at the present time. Prior to the 1985 RMP/EIS, the entire area on the Saddle Mountains under BLM management was open to ORV use.

The RMP was to provide information in the future for more site specific management decisions. The 1985 plan was inadequate for the management of the Saddle Mountains possibly due to the lack of reliable and up to date data. Recreational problems such as vandalism, theft of petrified wood from private property, trespassing, and land degradation continued, resulting in the need for a new management plan.

## **THE 1987 MANAGEMENT PLAN**

The BLM updated the 1985 management plan in 1987. The updated plan, called the *Spokane Resource Management Plan Record of Decision*, contained the decisions on all land use proposals presented in the 1985 final EIS (USDI Bureau of Land Management, *EIS 2*). The 1987 publication described the implementation, monitoring, and management of each resource, the order in which projects would be managed, and the order in which projects would be carried out. For the Saddle Mountains the plan stated the following:

Restrict ORV use in 19,990 acres to designated roads and trails. Designate 4,310 acres as a casual use ORV area on the west end and limit ORV use in other areas to designated roads and trails. Permit a maximum of three races per calendar year. Acquire access through easement acquisition or land exchange to key parcels for recreational rockhounding (USDI Bureau of Land Management, *Record 18*). These changes were implemented by the BLM; however, the new

management guidelines and subsequent public response created the need for amendments to the plan.

### **THE 1992 MANAGEMENT PLAN**

In 1992, the BLM began work on the *Resource Management Plan Amendment Final Environmental Impact Statement*. The 1992 plan was the result of new guidelines regarding mineral resources and areas of critical concern, changes in management guidance, and the public response to previous plans (USDI Bureau of Land Management, *Proposed* 3). The primary issues of concern were oil and gas leasing, off-road vehicle designations, and areas of critical environmental concern. The 1992 plan amended the 1987 plan by changing procedures for oil and gas leases (USDI Bureau of Land Management, *Proposed* Appendix D) and permanently restricting ORV use to 23,840 acres of designated roads and trails. Problems related to recreation, trespassing, and vandalism continued in the study area and another attempt was made to solve the problems in the 1994 draft proposal.

### **1994 DRAFT PROPOSAL, THE SADDLE MOUNTAINS RECREATION MANAGEMENT PLAN AND ENVIRONMENTAL ASSESSMENT**

Vandalism of livestock equipment, theft of petrified wood, and trespassing on private property continued following the restrictions of ORV users. The vandalism and trespassing problems were due in part to the scattered land ownership of the area. These conflicts had been identified in the 1985 management plan, but had not been controlled by previous efforts. Under the guidelines of the National Environmental Policy Act, the draft proposal management plan process required nine steps. These were the same nine steps used in the 1985 management plan and include: 1) identification of issues, concerns and opportunities; 2) development of planning criteria; 3) inventory of data and collection of information; 4) analysis of the management situation; 5) formulation of alternatives; 6) estimation of effects of alternatives; 7) selection of a preferred alternative in a draft



environmental impact statement; 8) selection of a final resource management plan; and 9) monitoring and evaluation. The following is a summary of the steps taken in the resource management process.

### Step 1: Identification of Issues, Concerns, and Opportunities

The primary focus of the 1994 Saddle Mountain RMP/EA was to minimize resource conflicts between ORV users and private property owners (USDI Bureau of Land Management, *Saddle* 1). Issues of trespassing and vandalism were brought to the attention of the BLM by recreationists, local land owners, and lessees through letters, personal contacts, and phone calls. Many of the vandalism problems such as destruction of property, fence cutting, littering, rockhound holes, and cross country ORV activity experienced by private land owners also occurred on BLM land. Three public meetings were held by the BLM. One meeting each in Othello, Kennewick, and Seattle, to offer information and invite comment for development of a new management plan.

While problems of vandalism and trespass are significant issues recreational use was causing and continues to cause damage to cultural resources in the study area. The National Environmental Policy Act requires consideration of environmental impacts from the plan in the decision making process. Both the natural and cultural resources must be considered and, if needed, mitigation must be completed for the effected resource (Appendix A). In this case the full extent of the damage was and is unknown, but failure to give adequate considerations to cultural resource protections at this initial stage has subsequently hampered the planning process.

### Step 2 : Development of Planning Criteria

A planning guide was developed for the issues brought forward in Step 1 to direct the planning process (Loomis 289). This step helped determine the kinds of information needed to clear up the issues brought forward in Step and to create the alternatives developed in Step 5. In the study area, the following issues were designated as relevant to the planning process:

1. Native American treaty rights and privileges.
2. Three grazing leases totaling approximately 17,600 acres.
3. The Sentinel Slope Area of Critical Environmental Concern.
4. Compilation of land ownership patterns.
5. Multiagency jurisdiction on the Saddle Mountains.
6. Potentially significant historic and prehistoric sites.
7. Existing rights of way (access to communication sites).
8. Threatened, endangered or candidate species or habitat.
9. Existing Resource Management Plan decisions.
10. Noxious weed management and control.
11. Biodiversity commitment (ecosystem management).
12. Fire management (USDI Bureau of Land Management, *Saddle* 13-14).

These issues narrowed the focus of the general objectives presented in Chapter 4, allowing more specific areas to be considered in the management process. Existing information was collected on the criteria when available. In the case of the study area, information on cultural resources was limited. Most of the western portion of the study area had been previously surveyed for plants.

### Step 3 : Inventory Data and Information Collection

Existing information was collected on both the natural and cultural resources, access to public lands, areas of land ownership, grazing management, and recreational uses of the study area. New data collection was minimized to keep costs down. Some money was spent to collect additional data in 1993. The small archaeological survey completed by Flenniken and Ozbun was part of the data collection for which funding was provided. New data was collected by the BLM relating to the cultural resources of the study area in portions of Section 14 and 10 of Township 15. These areas were chosen because of the high potential for petrified wood sites. This small survey was not significant in the overall management decision of the study area because it did not provide information relevant for the entire study area. The purpose of the survey was to locate

prehistoric quarry sites and identify the modern day rockhound disturbances in defined areas. Information on cultural resources remains extremely low and not within federal legislative requirements. Under Section 110 of the National Historic Preservation Act (Appendix A) federal laws require inventory of all cultural resources by federal land managing agencies.

#### Step 4 : Analysis of the Management Situation

Under this step, the existing management situation was summarized as allowing 4,300 acres open to off road vehicles with the remaining 18,700 acres restricted to designated roads and trails and actions limited to maintaining existing fences, cattleguards, and roads (USDI Bureau of Land Management, *Saddle* 19). This plan had been implemented as the result of the 1985 management plan and was not effective in controlling the trespassing and vandalism problems in the study area. As alternative plans were created in the upcoming steps, the current management plan was called the no action plan.

#### Step 5 : Formulation of Alternatives

In this step, alternatives to the “no action” Alternative from Step 4 were created. At least one Alternative must favor resource protection (Loomis 292). Under this step Alternative 2 (preferred), Alternative 3 (minimal improvement), Alternative 4 (limited use), and Alternative 5 (moderate use) were created. These five Alternatives offered different management possibilities for consideration. Usually no more than six alternatives are created in order to keep the planning process from becoming too complicated. Under NEPA, the agency need only evaluate the alternatives that achieve the project purpose or planning objectives (Rogers 960). These alternatives must include one for the current existing alternative, the “no action” Alternative. Alternatives chosen for the study area in the draft RMP/EA were as follows:

Alternative 1: (no action plan) 4,300 acres open to off road vehicles with the remaining 18,700 acres restricted to designated roads and trails and continue

to maintain existing fences, cattleguards, and roads.

Alternative 2: (preferred plan) activities in sensitive resource areas would be limited to non-surface disturbing activities such as hiking. The primary emphasis would be to provide access to the primary blocks of public land on Saddle Mountains through acquisition of easements across other federal and state lands. Open ORV use: 4,300 acres on the west end of the recreation area. ORV use restricted to designated roads and trails: 18,700 acres. Construct parking areas to accommodate 20 vehicles at the west end of the recreation area, including a parking lot, loading ramp, picnic area, tables, and toilets. Surface the parking area and roads. Place antelope passes at all fence crossings and fence pass approaches. Design a 25 mile loop trail system from the west end of the parking/staging area. Build 1.75 miles of new trail and implement a standard trail marking system using Green Dots to indicate open status.

Alternative 3: (minimal improvement plan) would be the same as alternative 2, except the facilities would be limited to signing of the parking area. No support facilities (i.e., toilets and picnic tables). No surfacing of the parking/staging area.

Alternative 4: (limited use) would be the same as alternative 2, except restricted to designated roads and trails on the entire recreation area. Designate 2 petrified wood collection areas and require a permit system for collection on other areas of the mountain.

Alternative 5: (moderate use) would be the same as alternative 2, except all trails would be designed to accommodate 4 wheel drive vehicles; antelope passes would be replaced with one larger, standard cattle guard (USDI Bureau of Land Management, *Saddle* 18).

#### Step 6 : Estimate Effects of Alternatives

Step 6 considered the physical, biological, social, and economic effects of each alternative listed in Step 5. An Environmental Assessment was decided upon rather than an EIS for the study area because an EIS had been completed in 1992 and was considered sufficient. In the RMP/EA for the study area, the five alternatives were compared in a matrix approach. Soils, vegetation, wildlife habitat, cultural resources, and recreation were the primary resources evaluated against all the alternative plans (Appendix C). The evaluation highlighted tradeoffs among each alternative.

#### Step 7 : Selection of Preferred Alternative in Draft Environmental Impact Statement

Following a review of all Alternatives in Step 6, Alternative 2 was selected by the District Manager of the BLM for the draft proposal. This alternative was believed the best alternative to address the issues in the study area. A copy of the draft proposal was then mailed to the State Governor, to local governments, Indian tribes, and interested parties for comments within 90 days.

#### *Public Comments*

Public comments were received by the BLM from the interested public. Below is a summary of some of the comments received from the public on the draft plan for the Saddle Mountains.

Comments from the Wanapum Band expressed concerns for the cultural resources of the study area. Their primary concern was that the BLM was not adequately monitoring petrified wood collection and that damage was being done by rock hounds to possible archaeological sites when removing petrified wood. The Wanapums were also concerned that the Environmental Assessment did not consider traditional cultural resources used by Native Americans for foods and medicines (Buck 1).

The response from the rock hounds to the management plan were positive with some recommendations. The rock hounds suggested more accurate descriptions of fossil references, requested the names of threatened or sensitive plant species, and asked for a

definition of “organized events” in the RMP/EA (Spunaugle 1-2).

The Saddle Mountain Committee of Mattawa, consisting of farmers, ranchers, and concerned citizens, were totally opposed to the management plan. The committee felt that mixing motorcycles, farming, and cattle would never be compatible (Price 1).

The Grant County Board of Commissioners were not in favor of a motorcycle/4 wheel drive park in the Saddle Mountains. They felt that trying to mix farming, cattle and ORVs would only create problems, making it nearly impossible to adequately monitor the area (Grant County Board of Commissioners 1).

The Fish and Wildlife Service was concerned with fire management and enforcement issues. They were concerned that the proposed plan would increase the possibility of fires and add to the difficulties of enforcement issues from increased numbers of recreational users to the study area (USDI Fish and Wildlife Service 1).

The Grant County Sheriff's Office was also opposed to a motorcycle park in the Saddle Mountains. Past experience with trespassing complaints relating to motorcycles led the Sheriff's Office to determine that motorcycles, farming, and cattle would not be compatible (Grant County Sheriff's Office 1).

#### Step 8 : Select Final Resource Management Plan

The public comments were reviewed by the BLM Area Manager and District Manager. The District Manager selected and recommended the proposed plan to the State Director. The State Director reviewed the proposed plan and sent a copy to the Environmental Protection Agency.

The Final Draft Statement of the Saddle Mountains Recreation Management Plan and Environmental Assessment was completed in June 1994; however, it has not been finalized, because the Wanapum People have not accepted the draft proposal. They state that the BLM has not met the cultural significance requirements of the area under federal legislation. The Wanapum Band want traditional cultural properties identified and protected. Their acceptance is not required because the Wanapum People are not recognized by the federal government as a Tribe, however, the study area has traditional

cultural values and is within the Yakama ceded lands (Appendix B). Therefore, the BLM is trying to reach an agreement to satisfy their concerns.

Defining traditional cultural values has been a problem between the Native Americans and the BLM. Much of the information relating to traditional cultural resources has not been documented. Under federal legislation, the BLM is required to collect information relating to the cultural resources of the area in general (Appendix A); and under Section 106 of the National Historic Preservation Act (Appendix A), they would be required to conduct an assessment of the areas that would be affected by the proposed ORV trail system.

As of September 1, 1996, the BLM had not been notified by Native Americans of traditional cultural resources in the area and the BLM went forward with the final draft statement. Local Native American Tribes were notified in the early stages of the proposed project requesting information on possible cultural resources in the area. When the draft proposal is finalized, the BLM will undertake surveys for sensitive areas for the proposed 25-mile trail. These sensitive areas could include both natural or cultural resources. Changes in the proposed plan may be undertaken if sensitive areas are located along the trail route. An agreement will also have to be worked out between the BLM and the Bureau of Reclamation, because portions of the proposed trail cross land under its management.

When the final Environmental Assessment is completed, a copy will be sent to the United States Environmental Protection Agency, who has the final authority over the EA. At that time the public has 30 days to protest the final EA, the final draft plan may be changed reflecting public comments and peer reviews.

#### Step 9 : Monitoring and Evaluation

Once the management plan is implemented, monitoring in the study area would include regular patrols of roads, trails, parking and staging areas, facilities, weeds, and cultural resources. Monitoring at various locations would include assessments as to whether the expected multiple uses and sustained yield are being met. Monitoring is not

continuous and some resources will not be monitored because some areas of the study area receive no public use.

## **ANALYSIS OF THE PROPOSED PLAN**

Restrictions were placed on ORV activities in 1985 and remain in place at the present time. Even though the restrictions have not solved many of the problems, the BLM has remained firm on road and trail restrictions. The 1985 plan failed to take appropriate measures to identify and protect cultural resources in the study area which continues at the present. The plan also failed to control the spillover effects of recreation onto private lands.

The BLM considered six management objectives in the Saddle Mountains (Chapter 4). Four of the six objectives in the draft proposal relate to recreation activities, the other two considered the cultural and natural resources of the study area. The four recreation objectives suggest the BLM is trying to increase the land base for continued consumptive recreational use in the Saddle Mountains. The remaining two objectives are to protect both the natural and cultural resources in the area. Sensitive and threatened plant species have been identified to some extent. However, information on the cultural resources of the area is so limited (less than five percent of the area has been surveyed) it is impossible to make good management decisions with such a limited data base.

In Chapter 5, more specific issues were listed by the BLM as relevant to the Saddle Mountains planning process. For the most part, the planning process relied on existing data even though that data was insufficient. That was particularly true in the area of cultural resources.

Consider the primary focus in the draft proposal, “minimizing resource conflicts and implementing ORV designations” (USDI Bureau of Land Management, *Saddle* 1) which indicates that the problem in the Saddle Mountains is with consumptive users of the resources. The Multiple Use Sustained Yield Act and the Federal Land Policy and Management Act requires no single resource user is to dominate land use. Use of public lands instead, is to be determined by the suitability of the land to support those uses



(Appendix A). Previous BLM management plans and the present draft proposal of the Saddle Mountains have not followed the sustainable use planning requirements. The study area is being managed for continued consumptive recreation, not for sustainable use.

Several problems were not adequately dealt with in the draft plan. One was the collection of petrified wood. Alternative 2, the preferred alternative, was predicted to increase soil disturbance to existing primitive roads and new petrified wood collection areas (Appendix C). Under the Code of Federal Regulations (CFR) 3622, *Free Use of Petrified Wood*, all public lands are open to free use and removal of petrified wood unless a notice is given. A key point ignored in the implementation of the CFR is the statement, “petrified wood is not to be removed with the use of power tools or by causing unnecessary land degradation...” (US Code of Federal Regulations, 1994: 740-741). The issue of land degradation has been overlooked by the BLM. Land degradation from rock collectors is apparent throughout the public lands on the Saddle Mountains. As previously mentioned, this land degradation increases soil erosion, the spread of noxious weeds, and threatens wildlife, livestock, and humans.

The other key issue related to rock collecting, not given adequate consideration in the proposed plan is the damage to cultural resources. Surveys and inventories of the cultural resources for the study area remain mostly unchanged since 1985, with only one small archaeological survey undertaken since that time. Therefore, a lack of data relating to cultural resources seriously affects the ability to make good management decisions. Under the National Historic Preservation Act, the BLM is required to locate, describe, and evaluate all historic properties under its management; Executive Order 11593 and Section 110 of NHPA requires the BLM to locate, inventory, and nominate eligible sites to the National Register of Historic places. The Archaeological Resources Protection Act imposes penalties for damaging archaeological sites (Appendix A).

When the BLM compared the Alternatives in its Impact Summary, the Alternative selected indicated short term impacts; however, the long term recreational impacts increased (Appendix C). The 25 mile trail and parking facilities will increase the number of recreationists using the area. This shrub/steppe region has historically supported only a

low man to land ratio. There is a reason for this. The area cannot support large numbers of people without damage to the ecosystem. The proposed plan will move ORV users to greater distances from private lands however, damage to soils, vegetation, and cultural and natural resources along the southern slope of public lands will increase. In addition, the increased number of recreational users in the area will increase the threat of fire, vandalism, litter, the need for additional law enforcement, and overuse of the ecosystem. Under the current and proposed management plan, consumptive recreation continues to remain a disproportionately large part of multiple use in the study area.

In its present form, Alternative 2 states that "activities in sensitive resource areas would be limited to non-surface disturbing activities such as hiking." However, with the limited data base, especially relating to cultural resource with less than five percent of the area surveyed and no input from Native Americans on traditional cultural properties, the BLM does not know where these sensitive areas are located.

The construction of a paved parking lot to accommodate up to 20 vehicles will no doubt increase the number of recreationists into the Saddle Mountains, further increasing the consumptive use of the resources of the study area. Applying the Montana study data to the Saddle Mountains proposed plan, the proposed 25-mile trail system in the study area would receive increased collections of petrified wood near the trail, with gradually decreasing collection of petrified wood as distance from the trail increases. The same situation would apply to cultural resources or sensitive plant species near the proposed trail.

The proposed plan rewards the destructive behavior of the recreationists who vandalize, trespass, and steal in the study area and surrounding areas with the creation of the trail system and parking lot. Creating additional ORV areas for people who will not follow the present restrictions is not likely to be successful.

The draft proposal for the Saddle Mountains does; however, for the first time, at least consider placing limitations on rock collecting. The BLM appears to be changing its management strategy slightly from the earlier plans. The 1985 and 1987 plans did not consider restrictions on rock collectors. In the Saddle Mountains draft proposal such

restrictions were at least considered in the Alternatives evaluated. Possibly in the future restrictions will be implemented on rock collectors. In previous management decisions, attempts were made to keep the access routes open in support of the recreational activity. If problems continue in the area possibly the next management decision will place restrictions on this destructive recreational use. To be successful, the management of the study area has to consider all aspects of recreation and the damage caused to the ecosystem in its plan, not just specific groups.

## **CHAPTER 6 - CONCLUSION AND RECOMMENDATIONS**

As directed by law, the BLM is to manage the study area for multiple use and sustainable yield specifically for grazing, recreation, and protection of natural and cultural resources. In this thesis recreation has been shown to be the dominant activity taking place on the Saddle Mountains, followed by grazing. This chapter concludes the study of the Saddle Mountains and provides recommendations.

### **Conclusion**

Archaeological and ethnographic data from the Columbia Plateau suggest the study area has been a source for toolstone, food, and sacred sites for indigenous people for thousands of years. For at least 4,500 years, people camped in Crab Creek, quarried toolstone on the Saddle Mountains, reduced the quarried cores to desired quality and returned to Crab Creek to further work on the artifacts. The high densities of petrified wood debris in campsites along Crab Creek indicate the sites were heavily used, possibly over long periods of time.

Ethnographic data indicates that the Saddle Mountains were used by indigenous people for vision quests and plant collecting. Rock cairns were built as part of the vision quest experience.

With the arrival of Euro-Americans in the Columbia Plateau in the 19th century, land uses changed. Food production replaced food collection. By artificial means the environment was altered to produce agricultural products to support populations living outside the region. With socioeconomic changes in the 20th century, people have pursued jobs off farms, primarily in towns and cities, and recreational uses of public lands have increased.

By the 1960s and 1970s public awareness of environmental degradation of public lands brought forth the environmental movement. Congressional legislation provided new guidelines for public lands requiring multiple use and sustained yield of natural resources

for future generations. Problems remain, however, with legislative guidelines that are ambiguous and contradictory. Tradeoffs are constantly made to insure that recreation and rangeland uses continue on public lands, but these are not always in the interest of the ecosystem or the cultural resources.

The Saddle Mountain Management Plan drafted by the BLM under federal legislation is a good plan for recreationists, but less so for other interests. From the comments received the local community was against the plan convinced by past experience, that off road vehicles and cattle can not share the same area. Native Americans opposed the plan because of long term threats to cultural resources and traditional natural resources. In the study area, it is clear that recreationists had more of an influence in land use decisions than local residents and Native Americans. The BLM has not upheld its legislative obligations to protect cultural resources such as archaeological sites and traditional cultural properties. In the meantime, archaeological sites remain unidentified and are probably being destroyed and will continue to be destroyed at an increasing rate by recreationists until management takes responsibility .

It is impossible to replace destroyed resources. People use the public lands, not realizing the inability of the land to sustain their actions. The semi-arid region of the Columbia Plateau is a fragile area requiring respect from its users. Without that respect, the area will be destroyed.

### **Recommendations**

After reviewing the natural and cultural information, legislation, and the BLM management strategy, I propose the following recommendations for the study area.

- In order to manage the study area effectively a complete inventory of both natural and cultural resources must be completed. Currently, inadequate information exists for the study area which effects previous and proposed management plans. As part of the inventory process, special resource evaluation zones could be created to determine resource change for both the short and long term. In these zones, designated

resources such as petrified wood sites, sensitive plants or wildlife, or cultural resources would be inventoried, mapped, photographed, and monitored.

- Involve the Native American people to determine traditional cultural properties for the area as part of the management plan. At the present time, the tribes have not taken an active role in the management of the area and improved working relationships between the Native Americans and the BLM needs to be incorporated into the management plan.
- The proposed plan will increase the number of users in the study area, further increasing the damage to both the natural and cultural resources. This semi-arid region will not adequately support increased numbers of people. I recommend the proposed 25 mile ORV trail be abandoned and ORV use be restricted to existing roads and trails on BLM managed lands. This action will reduce the number of recreationists using the area. The study area will benefit from this action in several areas:
  1. Land degradation will be reduced.
  2. The threat of recreational caused fire and the need for additional law enforcement will be reduced.
  3. Vandalism, littering, trespassing, and loss of petrified wood will be reduced.
  4. Damage to natural and cultural resources will be reduced.
- Promote use of the recreational area managed by the Department of Natural Resources (DNR) on the north side of the Saddle Mountains. This will reduce the number of ORV users to the study area.

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## **APPENDIX A**

In the past, public land use had centered on commodity production and commercial gain rather than preservation. Changes in public land policy from development to preservation were formulated by Congress in the 1960s and 1970s. The following legislation has been enacted by Congress and is part of the more than 3,000 laws regulating land use in the United States (Findley and Farver, 1985).

The primary focus on federal legislation for the study area includes the Multiple Use-Sustained Yield Act; The Historic Preservation Act; The National Environmental Policy Act; Executive Order 11593, Protection and Enhancement of the Cultural Environment; The Endangered Species Act; The Federal Land Policy and Management Act; Native American Indian Religious Freedom Act; and The Archaeological Resources Protection Act. This legislation is summarized under related headings for natural and cultural resources.

### **LEGISLATION RELATING TO NATURAL RESOURCES**

#### **Multiple Use-Sustained Yield Act of 1960**

The Multiple Use-Sustained Yield Act was passed by Congress in 1960 to “maximize net public benefits” (Wilkinson 127-128). This Act is significant in that it recognized the recreation value of public lands. Under “Multiple Use” any one resource use is not to dominate land use and use of public lands is to be determined by the suitability of the land to support particular uses. In other words, sustainable use of resources became law.

#### **National Environmental Policy Act of 1969 (NEPA)**

The National Environmental Policy Act requires an impact assessment for any federal agency project that will change the environment. The main purpose of the Act is

to consider the Environmental effects of proposed actions and consider either no action or an alternative action. Both natural and cultural resources must be considered and mitigation of adverse impacts must be conducted. The Act is seen as a way of controlling how agencies go about making decisions (Rogers 57). The NEPA process begins with an Environmental Assessment (EA), an evaluation of the magnitude and significance of the Environmental impacts of all proposed actions. In the event the EA finds no significant impact (FONSI), the process stops at this point and the project continues.

If however, the findings result in a finding of significant impact, an Environmental impact statement (EIS) must be completed. The purpose of an EIS is to ensure that the policies of the National Environmental Policy Act are maintained and that decision makers and the public are informed of proposed actions relating to Environmental issues.

In an EIS, several alternatives must be presented considering the biological and human environments, and a justification for the chosen alternative must be made. Under NEPA, the public has the opportunity to participate in the decision making process.

#### Endangered Species Act of 1973 (ESA)

This Act deals with plant and animal species on private and public lands. Under the Act, federal agencies are required to take actions to protect endangered and threatened species of both plants and animals in land management decisions. One way this is accomplished for example, is to restrict access to sensitive areas. Sensitive areas contain low numbers of natural resources or cultural resources that may be affected by continued animal or human use. Identification of sensitive areas is made by field survey. Using biological information, the U. S. Fish and Wildlife Service makes most of the decisions relating to endangered species.

#### Federal Land Policy and Management Act of 1976 (FLPMA)

The Multiple Use-Sustained Yield Act was modified in 1976 by the Federal Land Policy and Management Act which further expanded federal land planning objectives (Platt 265). This law replaced more than 2,500 land laws, some of which had been passed



for the benefit of special interest groups (Aderhold 12). The Act changed the Multiple Use Act to improve management of BLM lands by consolidating the large number of laws previously passed by Congress. Under FLPMA, multiple uses underlie all management programs of the BLM with the types of activities dependent on the capabilities of the land. The Federal Land Policy Management Act was an organic act for the BLM which provides guidance and limitations of the demands the public places on public lands and their resources (Clawson 53).

## **LEGISLATION RELATED TO CULTURAL RESOURCES**

The following federal legislation is related to the management of cultural resources and has been used in the thesis.

The National Historic Preservation Act of 1966 as amended 1976, 1980, and 1994 (NHPA)

The National Historic Preservation Act increased the federal role in the preservation of cultural resources. This legislation applies to all federal agencies for federal lands, businesses using federal money, or businesses under federal licenses. Several important points are included in the Act. One was the creation of the National Register of Historic Places and the State Historic Preservation offices. Two, it recognizes the importance of preserving historic properties as significant to the Nation's heritage. Three, under Section 110:

federal agencies shall assume responsibility for the preservation of historic properties which are owned or controlled by such agency. It requires federal agencies to locate, describe, and evaluate all historic properties under its management (The Advisory Council on Historic Preservation and The GSA Interagency Training Center III-9).

Later, Section 110 incorporated Executive Order 11593 issued in 1971, into federal legislation. Four, if a project may have an adverse impact on a cultural resource or on an eligible resource, a Section 106 review process is to be implemented (U.S. House Report

No. 96-1457). The Section 106 process is described under *36 CFR Part 800: Protection of Historic Properties* (US Advisory Council on Historic Preservation, 23). Section 106 requires every federal agency to take into account how a proposed project will affect cultural resources. If adverse effects will occur to the cultural resource as the result of the proposed undertaking, the lead agency must consult with the State Historic Preservation Office and with agencies which will be affected by the undertaking, for example, Indian tribes, local governments, property owners, or private citizens. Section 106 does not require preservation; however, it does require consideration of preservation by agencies. It was designed to ensure that the lead agency consider the preservation benefit with the proposed projects benefits and resolve conflicts through mitigation (National Historic Preservation Act of 1966 IV-I-IV-4).

Five steps are involved in the Section 106 process; one, identification and evaluation, two, assessment, three, consultation, four, council comment, five, proceed. These steps are applied when federal undertakings threaten cultural resources. Steps three, four, and five listed above are not necessary unless the undertaking will have an adverse effect on the cultural resources (The Advisory Council on Historic Preservation and the GSA Interagency Training Center III-48).

Executive Order 11593, Protection and Enhancement of the Cultural Environment, 1971

This Executive Order was signed by President Nixon to protect and enhance cultural resources. Specifically, it was designed to locate, inventory, and nominate all sites, buildings, districts, and objects eligible for the National Register of Historic Places by July 1, 1973. It also requires those federal land managers in the meantime to “exercise caution” with respect to sites potentially eligible for nomination to the National Register. Finally, it initiates measures to preserve historic properties through preservation, rehabilitation, or restoration for federally owned sites (US Government, Weekly Compilation of Presidential Documents 1-28).

### Native American Indian Religious Freedom Act of 1978 (AIRFA)

Under the Native American Indian Religious Freedom Act, Native Americans have the freedom to believe, express and exercise traditional religions and are guaranteed access to sites, uses of sacred objects, and the freedom to worship through ceremonial and traditional rites. The Native American Indian Religious Freedom Act requires federal agencies to consult with leaders of traditional Native American religions to determine the appropriate steps to protect and preserve Native American cultural rights and practices on federal lands (USDI National Park Service Vol. I: 25).

### Archaeological Resources Protection Act of 1979 (ARPA)

This Act is one of the strongest federal laws for the protection of cultural resources, the Archaeological Resources Protection Act replaced the Antiquities Act of 1906 which was found to be unconstitutionally vague. The purpose of the law is to protect cultural resources on federal, Indian, and trust lands. The Code of Federal Regulations (CFR) defines an archaeological resource under ARPA as "any material remains of human life or activities which are at least 100 years of age, and which are of archaeological interest." The CFR then specifies what is of archaeological interest with a long list of items such as stone tools, pottery, basketry, works of art, etc. This law established criminal penalties for looting, vandalism, and the destruction of archaeological sites, and prohibited the sale, purchase, exchange, transport, export and receipt of archaeological resources obtained illegally (Elia 428). Fines of up to \$10,000 and up to one year in jail are possible for first time offenders. Fines can double if the archaeological resource or cost of restoration exceeds \$500 (Schneider 2-5).

## **APPENDIX B**

### **The Yakima Indian Nation's Ceded Land Rights**

The Yakama Indian Treaty of 1855 continues to underlie the legal rights of the Yakama Indians to their ceded lands. The treaty signed over to the United States Government 10,828,000 acres of land, extending from the Cascade Mountains east to the junction of the Palouse and Snake Rivers and south from Lake Chelan to the Columbia River (Schuster 221). These ceded lands cover about one third of the state of Washington including the counties of Chelan, Kittitas, Yakima, Grant, Franklin, Klickitat, and portions of Douglas, Adams, and Skamania.

The treaty granted Native Americans the right to hunt, fish, and gather roots and berries on ceded lands and guaranteed the exclusive use of reservation lands to the Indians signing the agreement. The treaty forced indigenous people to abandon their homes and move to reservations where they had no traditional rights or ancestral ties (Hunn 269).

The study area and most of the Saddle Mountains are within the ceded lands of the Yakama Nation, thus federal agencies must notify the Yakama Nation of any proposed land disturbing activities within the ceded lands. This notification is required because of the potential effects of those activities on hunting, fishing, and gathering rights guaranteed to them by the treaty and because of the federal regulations in effect by the National Historic Preservation Act requiring consultation with Indian groups when cultural resources may be effected.

APPENDIX C	
SUMMARY OF IMPACTS BY ALTERNATIVE	
SOILS	
Alternative 1	Reduced soil productivity from soil displacement, compaction, and erosion by vehicular traffic at parking/staging area and rock collecting activities.
Alternative 2	Surfacing parking/staging area would reduce erosion. Maintaining existing OHV designations would increase soil disturbance from increased visitor use, specifically OHVs and rock collecting. Trail development would increase soil disturbance to existing primitive roads and new petrified wood collection areas. The 1.75 miles of new trail construction would disturb approximately 2 acres.
Alternative 3	Similar impacts to Alternative 2, except parking area (not paved under this alternative) would be susceptible to wind erosion, soil compaction and displacement or rutting.
Alternative 4	Similar impacts to Alternative 2, except new trail development and vehicle restriction to designated roads/trails would result in decreased soil disturbance.
Alternative 5	Similar impacts to Alternative 2, except additional soil disturbance due to installation of larger vehicle passes.
VEGETATION	
Alternative 1	Area used as parking/staging area would disturb 3-5.5 acres; deplete vegetation. Riparian vegetation along Columbia River may be affected by fishing, but expected to be negligible. Mineral impact to threatened and endangered sensitive species from OHV use. However, rock-collecting (e.g., digging of petrified wood) may disturb threatened and endangered sensitive plant species habitat. Negligible increase in noxious weed spread from surface-disturbing actions (e.g., OHV activities, rock collecting, and livestock grazing.
Alternative 2	Development/use of parking/staging area and construction of 1.75 miles of new trails would remove 5-7.5 acres of rangeland vegetation. Minimal, negligible impacts from rock-collecting.
Alternative 3	Minimal, negligible impacts from rock-collecting.
Alternative 4	Minimal, negligible impacts from rock-collecting. Less potential for noxious weeds due to limiting of vehicle use to designated roads and trails.
Alternative 5	Minimal, negligible impacts from rock-collecting.
CULTURAL RESOURCES	
Alternative 1	Decreased impacts over short term; in long term, increased recreational use would increase vandalism potential.
Alternative 2	Same as Alternative 1.
Alternative 3	Same as Alternative 1.
Alternative 4	Same as Alternative 1.
Alternative 5	Same as Alternative 1.

RECREATION	
Alternative 1	Continuing existing management without designing trail system and constructing new trails would result in undirected use and continued trespass problems, both of which would cause impact to a broader area. Nondevelopment of the parking/staging area and support facilities would not enhance the recreation opportunities.
Alternative 2	Trespass potential reduced with new trail construction which would direct use. Development of parking/staging area and support facilities would enhance recreational experience and confine affected area to 3-5 acres. Antelope passes at fence crossings would restrict size of OHVs through the fences and subsequently access to the lands east of the fence.
Alternative 3	Trespass potential reduced with new trail construction which would drop use. Limiting development of parking/staging area to signing would not enhance recreational opportunities.
Alternative 4	OHV use restriction to designated roads/trails would not significantly reduce OHV activities. Rock collecting activities would be restricted because individuals would have to hike to collection sites. Development of parking/staging area and support facilities would enhance recreational experience and confine affected area to 3-5 acres. Trespass potential reduced with new trail construction which would direct recreational use.
Alternative 5	Development of parking/staging area and support facilities would enhance recreational experience and contain affected area to 3-5 acres. Trespass potential reduced with new trail construction that would direct use. Diversity of OHVs would increase by accommodating larger vehicles.
WILDLIFE	
Alternative 1	Increased disturbance (e.g., noise and vegetation loss), but on minimal scale, to wildlife habitat and species near trails and parking/staging areas. Avoidance of sensitive habitat areas would minimize impacts to threatened or endangered sensitive species.
Alternative 2	Same as Alternative 1.
Alternative 3	Same as Alternative 1.
Alternative 4	Same as Alternative 1.
Alternative 5	Same as Alternative 1.
Source: USDI Bureau of Land Management, <i>Saddle</i> 24-27.	