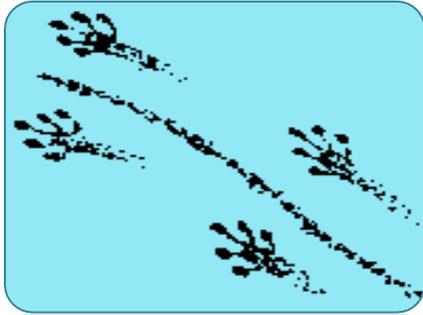


Prehistoric Trackways National Monument

**PROPOSED RESOURCE MANAGEMENT PLAN AND
FINAL ENVIRONMENTAL IMPACT STATEMENT**

DECEMBER 2014





BLM MISSION...

To sustain the health, diversity, and productivity of the public land for the use and enjoyment of present and future generations.

NLCS MISSION...

The PTNM is a unit of the BLM National Landscape Conservation System (NLCS). The mission of the NLCS is to conserve, protect, and restore Nationally-significant landscapes that are recognized for their outstanding cultural, ecological, and scientific values. The PTNM was designated in order to conserve, protect, and enhance the unique and Nationally-important paleontological, scientific, educational, scenic, and recreational resources and values of the public land.

OUR VISION...

The Prehistoric Trackways National Monument preserves a moment in time when the world was poised on the brink of cataclysmic change that would usher in the era of the dinosaurs. Our vision is to tell this story to the Nation through education and interpretation, and through scientific research. The BLM will maintain the rugged and scenic setting while providing opportunities for recreationists to enjoy these lands now, and for future generations, while ensuring the sustainability and protection of the paleontological resources. We will work collaboratively with partners to optimize Monument management which will enhance our ability to serve the public and meet the needs of the Monument resources, objects, and values.



**NATIONAL
CONSERVATION
LANDS**



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Las Cruces District Office
1800 Marquess Street
Las Cruces, NM 88005



In reply refer to:
1610-5.G.1.4 (L00000)

December 2014

Dear Reader:

Enclosed are the Proposed Resource Management Plan (RMP) and Final Environmental Impact Statement (EIS) for the Prehistoric Trackways National Monument. The Bureau of Land Management (BLM) prepared the Proposed RMP/Final EIS in consultation with cooperating agencies, taking into account public comments received during this planning effort. The Proposed RMP provides a framework for the future management direction and appropriate use of the Prehistoric Trackways National Monument, located in Doña Ana County, New Mexico. The document contains both land use planning decisions and implementation decisions to guide the BLM's management of the Prehistoric Trackways National Monument.

This Proposed RMP and Final EIS have been developed in accordance with the National Environmental Policy Act of 1969, as amended, and the Federal Land Policy and Management Act of 1976, as amended. The Proposed RMP is largely based on Alternative C, the preferred alternative in the Draft RMP/EIS, which was released on July 20, 2012. The Proposed RMP/Final EIS contains the Proposed Plan, a summary of changes made between the Draft RMP/EIS and Proposed RMP/Final EIS, impacts of the Proposed Plan, documentation of the all the comments received during the public review period for the Draft RMP/EIS, and responses to the substantive comments.

Pursuant to BLM's planning regulations at 43 CFR 1610.5-2, any person who participated in the planning process for this Proposed RMP and has an interest which is or may be adversely affected by the planning decisions may protest approval of the planning decisions within 30 days from date the Environmental Protection Agency (EPA) publishes the Notice of Availability in the Federal Register. For further information on filing a protest, please see the accompanying protest regulations in the pages that follow (labeled as Attachment # 1). The regulations specify the required elements of your protest. Take care to document all relevant facts. As much as possible, reference or cite the planning documents or available planning records (e.g., meeting minutes or summaries, correspondence, etc.).

Emailed protests will not be accepted as valid protests unless the protesting party also provides the original letter by either regular mail or overnight delivery postmarked by the close of the protest period. Under these conditions, the BLM will consider the emailed protest as an advance copy and will afford it full consideration. If you wish to provide the BLM with such advance notification, please direct emailed protests to: protest@blm.gov.

All protests must be in writing and mailed to one of the following addresses:

Regular Mail:

Director (210)
Attn: Protest Coordinator
P.O. Box 71383
Washington, D.C. 20024-1383

Overnight Delivery:

Director (210)
Attn: Protest Coordinator
20 M Street SE, Room 2134LM
Washington, D.C. 20003

Before including your address, phone number, email address, or other personal identifying information in your protest, be advised that your entire protest – including your personal identifying information – may be made publicly available at any time. While you can ask us in your protest to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so.

The BLM Director will make every attempt to promptly render a decision on each protest. The decision will be in writing and will be sent to the protesting party by certified mail, return receipt requested. The decision of the BLM Director shall be the final decision of the Department of the Interior on each protest. Responses to protest issues will be compiled and formalized in a Director's Protest Resolution Report made available following issuance of the decisions.

Upon resolution of all land use plan protests, the BLM will issue an Approved RMP and Record of Decision (ROD). The Approved RMP and ROD will be mailed or made available electronically to all who participated in the planning process and will be available on the BLM website at www.blm.gov/nm/lascruces.

Unlike land use planning decisions, implementation decisions included in this Proposed RMP/Final EIS are not subject to protest under the BLM planning regulations, but are subject to an administrative review process, through appeals to the Office of Hearings and Appeals, Interior Board of Land Appeals pursuant to 43 CFR, Part 4 Subpart E. Implementation decisions generally constitute the BLM's final approval allowing on-the-ground actions to proceed. Where implementation decisions are made as part of the land use planning process, they are still subject to the appeals process or other administrative review as prescribed by specific resource program regulations once the BLM resolves the protests to land use planning decisions and issues an Approved RMP and ROD. The Approved RMP and ROD will therefore identify the implementation decisions made in the plan that may be appealed to the Office of Hearing and Appeals.

Sincerely,



Bill Childress
District Manager

1 Enclosure

Attachment 1

Protest Regulations

[CITE: 43CFR1610.5-2]

TITLE 43--PUBLIC LANDS: INTERIOR
CHAPTER II--BUREAU OF LAND MANAGEMENT, DEPARTMENT OF THE INTERIOR
PART 1600--PLANNING, PROGRAMMING, BUDGETING--Table of Contents
Subpart 1610--Resource Management Planning
Sec. 1610.5-2 Protest procedures.

- (a) Any person who participated in the planning process and has an interest which is or may be adversely affected by the approval or amendment of a resource management plan may protest such approval or amendment. A protest may raise only those issues which were submitted for the record during the planning process.
- (1) The protest shall be in writing and shall be filed with the Director. The protest shall be filed within 30 days of the date the Environmental Protection Agency published the notice of receipt of the final environmental impact statement containing the plan or amendment in the Federal Register. For an amendment not requiring the preparation of an environmental impact statement, the protest shall be filed within 30 days of the publication of the notice of its effective date.
- (2) The protest shall contain:
- (i) The name, mailing address, telephone number and interest of the person filing the protest;
 - (ii) A statement of the issue or issues being protested;
 - (iii) A statement of the part or parts of the plan or amendment being protested;
 - (iv) A copy of all documents addressing the issue or issues that were submitted during the planning process by the protesting party or an indication of the date the issue or issues were discussed for the record; and
 - (v) A concise statement explaining why the State Director's decision is believed to be wrong.
- (3) The Director shall promptly render a decision on the protest.
- (b) The decision shall be in writing and shall set forth the reasons for the decision. The decision shall be sent to the protesting party by certified mail, return receipt requested. The decision of the Director shall be the final decision of the Department of the Interior.

Prehistoric Trackways National Monument Proposed Resource Management Plan and Final Environmental Impact Statement

ABSTRACT

The Prehistoric Trackways National Monument Proposed Resource Management Plan (RMP) and Final Environmental Impact Statement (EIS) considers and evaluates alternative management strategies and their potential effects on lands and resources administered by the Bureau of Land Management's Las Cruces District Office in south-central New Mexico. The *Planning Area* is located within Doña Ana County and includes approximately 5,280 surface acres and 4,812 acres of Federal minerals administered by the Las Cruces District Office. BLM management decisions considered in the Plan must be consistent with the *Omnibus Public Lands Management Act of 2009*.

This EIS analyzes four alternatives in detail. Alternative A, the No Action Alternative, is defined by the *Mimbres RMP* (1993) and the *Omnibus Public Land Management Act of 2009*, which is the legislation designating the Monument. This Alternative provides for a baseline of comparison against the other alternatives. Alternative B is the most restrictive in human interventions; use of the Monument's resources would be minimal, designed towards more resource preservation, and natural processes would continue at the current rate. Alternative C, the BLM's preferred alternative, strives to balance the protection and enhancement of natural and paleontological values with resource uses and development. Alternative D emphasizes resource uses and provides for the greatest opportunities for resource uses, development, and recreation while still following the constraints of the designating Legislation. Upon completion, the RMP will provide direction for the long-term management of all public land and resources within the Prehistoric Trackways National Monument.

Pursuant to BLM's planning regulations at 43 CFR 1610.5-2, any person who participated in the planning process for this Proposed RMP and has an interest which is or may be adversely affected by the planning decisions may protest approval of the planning decisions within 30 days from date the Environmental Protection Agency publishes the Notice of Availability in the Federal Register.

RECOMMENDED:

APPROVED:



Bill Childress
District Manager, BLM Las Cruces District Office



Jesse J. Juen
State Director, BLM New Mexico

PTNM READER'S GUIDE

The following is a brief overview of the organization and content of the Prehistoric Trackways National Monument Proposed Resource Management Plan (RMP) and Final Environmental Impact Statement (EIS) to aid in your review and understanding of the proposed decisions and actions. All the chapters are arranged in the same order or arrangement within the various sections.



The document begins with a **Dear Reader Letter** explaining what BLM is doing, why, a brief overview of the Proposed RMP/Final EIS and relevant protest information. This is followed by a **Table of Contents**. The Table of Contents is comprehensive and most helpful to locate discussions of particular resource programs such as special designations, recreation and visitor services, livestock grazing, wildlife habitat management and so forth. Next is an **Executive Summary** of the document which gives the reader an overview of what is covered in this Proposed RMP/Final EIS. The Executive Summary goes over the main topics of the Proposed RMP/Final EIS, highlights the key issues brought forth in the planning process, and summarizes the impacts from the proposed management alternatives.

CHAPTER 1

Chapter 1 identifies the purpose and need for the plan, defines the *Planning* and *Analysis Areas*, and explains public participation in the planning process. This chapter identifies the planning criteria used as guidelines influencing all aspects of the process. These guidelines are based on law, regulation, policy, and the designating Legislation. The issues developed through public participation and the planning processes are described therein.

CHAPTER 2

Chapter 2 presents the various management alternatives for achieving the purpose and need. The Proposed RMP/Final EIS includes a detailed description of the goals, objectives, and management actions for each resource or program that could impact the Monument resources, objects, and values. The actions in this Proposed RMP/Final EIS are designed to provide general management guidance in most cases. The resources and uses are organized with the first four topics as Paleontological Resources, Education and Interpretation, Recreation and Visitor Services, and Trails and Travel Management. Subsequent to these four topics, resources or uses are in alphabetical order for ease to the reader. It is organized in this manner to highlight the major issues within the Monument.

Specific implementation plans for certain resources/uses, such as a Trails and Travel Management, were also developed as part of this interdisciplinary plan. These plans and processes address more precisely how a resource or use is to be managed.

There are two different types of decisions within Chapter 2; planning (broad overarching) decisions or implementation (on-the-ground) decisions. The implementation decisions are denoted with an asterisk (*).

A *Summary Comparison Impacts Table* is included at the end of Chapter 2. This table provides the reader a comparison summary of the main impacts that would result from implementing each of four alternatives that were developed for the Prehistoric Trackways National Monument RMP.

CHAPTER 3

Chapter 3 (Affected Environment) provides an overview of the *Planning Area* and describes the existing condition for each of the resources and resource programs. It describes the various components that may be affected by the proposed management alternatives. The resources and uses are organized similar to Chapter 2 with the first four topics as Paleontological Resources, Education and Interpretation, Recreation and Visitor Services, and Trails and Travel Management. Subsequent to these four topics, resources or uses are in alphabetical order for ease of the reader.

CHAPTER 4

Chapter 4 (Environmental Consequences) analyzes the beneficial and adverse effects of each alternative. Assumptions used in the analysis are specified at the beginning of the Chapter and under certain resource discussions to help guide the reader through the assessment process. At the end of the analysis of all the resources, a discussion of the cumulative effects is provided. The resources and uses are organized in the same order as Chapter 2 and 3.

CHAPTER 5

Chapter 5 summarizes key events in the consultation and coordination process prior to and during preparation of the Prehistoric Trackways National Monument Proposed RMP/Final EIS. It lists those agencies and organizations that were contacted or provided input into the planning process. Also listed are the BLM team members who prepared or contributed to this RMP/EIS.

GLOSSARY

The Glossary contains the definitions of the terms and technical language used in the text.

REFERENCES

The section contains the bibliography of the references cited in the document to assist the reader in the review process.

APPENDICES

The appendices include additional supporting or background material referenced in the Proposed RMP/Final EIS.

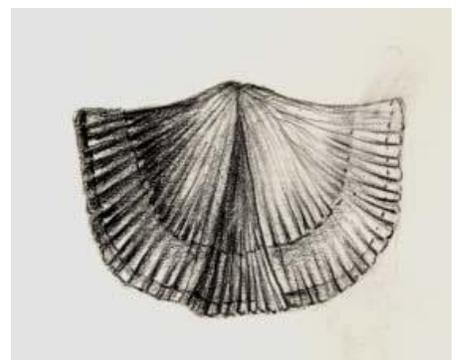


TABLE OF CONTENTS

	<u>Page</u>
EXECUTIVE SUMMARY	ES-1
CHAPTER 1 PURPOSE AND NEED	
1.1 Introduction.....	1-1
1.2 Description of the Monument and Analysis Area.....	1-2
1.3 Purpose and Need for the Action	1-4
1.4 Scoping and Planning Issues.....	1-4
1.4.1 Issues Addressed.....	1-6
1.4.2 Issues Considered but not Further Analyzed	1-8
1.5 Planning Criteria/Legislative Constraints	1-8
1.6 Planning Process	1-10
1.7 Collaboration.....	1-14
1.8 Relationship to Other Plans	1-14
1.9 Monument Resources, Objects, and Values	1-15
1.10 Mission Statement and Overall Vision	1-16
1.11 Changes from the Draft RMP/EIS	1-17
CHAPTER 2 ALTERNATIVES	
2.1 Introduction.....	2-1
2.2 Alternative Development	2-1
2.2.1 Alternative Themes.....	2-2
2.2.2 Alternatives Considered but Not Analyzed in Detail	2-4
2.3 PTNM Legislative Directives	2-4
2.4 Management Alternatives	2-6
2.4.1 Paleontological Resources	2-6
2.4.2 Education and Interpretation.....	2-9
2.4.3 Recreation and Visitor Services.....	2-11
2.4.4 Trails and Travel Management	2-15
2.4.5 Air Resources.....	2-22
2.4.6 Cultural Resources	2-23
2.4.7 Lands and Realty.....	2-24
2.4.8 Lands with Wilderness Characteristics	2-27
2.4.9 Livestock Grazing.....	2-30
2.4.10 Soils.....	2-32
2.4.11 Special Designation-Robledo Mountains ACEC.....	2-34
2.4.12 Special Designation-Robledo Mountains WSA.....	2-34
2.4.13 Special Designation-Paleozoic Trackways Research Natural Area (RNA)	2-35
2.4.14 Special Status Species.....	2-36
2.4.15 Vegetation	2-37
2.4.16 Visual and Scenic Resources	2-39
2.4.17 Water Resources	2-44
2.4.18 Wildland Fire Management	2-45

	<u>Page</u>
2.4.19 Wildlife	2-46
2.5 Summary Comparison of Impacts	2-47
CHAPTER 3 AFFECTED ENVIRONMENT	
3.1 Introduction.....	3-1
3.2 Resources and Uses.....	3-1
3.2.1 Paleontological Resources	3-1
3.2.2 Education and Interpretation.....	3-7
3.2.3 Recreation and Visitor Services.....	3-8
3.2.4 Trails and Travel Management	3-9
3.2.5 Air Resources.....	3-9
3.2.6 Cultural Resources	3-12
3.2.7 Geology/Minerals	3-14
3.2.8 Lands and Realty.....	3-16
3.2.9 Lands with Wilderness Characteristics.....	3-16
3.2.10 Livestock Grazing.....	3-16
3.2.11 Science and Research Management.....	3-21
3.2.12 Socio-Economic Conditions	3-21
3.2.13 Soils.....	3-32
3.2.14 Special Designations.....	3-34
3.2.15 Special Status Species.....	3-39
3.2.16 Vegetation	3-41
3.2.17 Visual and Scenic Resources	3-49
3.2.18 Water Resources	3-52
3.2.19 Wildland Fire Management	3-54
3.2.20 Wildlife	3-58
CHAPTER 4 ENVIRONMENTAL CONSEQUENCES	
4.1 Introduction.....	4-1
4.2 Analytical Methodology	4-1
4.3 Chapter Organization	4-3
4.4 Resource or Resource Use	4-4
4.4.1 Paleontological Resources	4-4
4.4.2 Education and Interpretation.....	4-9
4.4.3 Recreation and Visitor Services.....	4-15
4.4.4 Trails and Travel Management	4-26
4.4.5 Air Resources.....	4-29
4.4.6 Cultural Resources	4-33
4.4.7 Lands and Realty.....	4-36
4.4.8 Lands with Wilderness Characteristics.....	4-39
4.4.9 Livestock Grazing.....	4-41
4.4.10 Socio-Economic Conditions	4-45
4.4.11 Soils.....	4-52
4.4.12 Special Designations.....	4-56

	<u>Page</u>
4.4.13 Special Status Species.....	4-57
4.4.14 Vegetation.....	4-61
4.4.15 Visual and Scenic Resources.....	4-67
4.4.16 Water Resources.....	4-73
4.4.17 Wildland Fire Management.....	4-74
4.4.18 Wildlife.....	4-76
4.5 Cumulative Impacts.....	4-79
4.5.1 Methodology.....	4-79
4.5.2 Cumulative Impacts.....	4-81
4.6 Irreversible and Irrecoverable Commitment of Resources.....	4-84
4.7 Unavoidable Adverse Impacts.....	4-85

CHAPTER 5 CONSULTATION AND COORDINATION

5.1 Introduction.....	5-1
5.2 Public Scoping.....	5-1
5.3 Consultation and Coordination Efforts.....	5-2
5.4 Additional Collaboration.....	5-3
5.5 Comments on the Draft RMP/EIS.....	5-5
5.6 Proposed RMP/Final EIS Distribution List.....	5-5
5.7 List of Preparers and Reviewers.....	5-7

GLOSSARY.....	GL-1
Acronyms.....	GL-17

REFERENCES.....	R-1
-----------------	-----

APPENDICES

Appendix A The Omnibus Public Lands Management Act 2009.....	A-1
Appendix B Acts of Authority and Mandates for the BLM.....	B-1
Appendix C Prehistoric Trackways National Monument Comprehensive Trails and Travel Management Plan.....	C-1
Appendix D Paleontology.....	D-1
Appendix E Best Management Practices.....	E-1
Appendix F Public Scoping Report.....	F-1
Appendix G Safety Zones for Recreational Target Shooting Analysis.....	G-1
Appendix H Public Comments on Draft RMP/EIS and Responses.....	H-1

MAPS

Map 1-1 Regional Map.....	1-3
Map 1-2 Prehistoric Trackways National Monument.....	1-5

	<u>Page</u>
Map 2-1 Trails and Travel Management, Alternative A.....	2-18
Map 2-2 Trails and Travel Management, Alternative B.....	2-19
Map 2-3 Recreation, Trails and Travel Management, Alternative C	2-20
Map 2-4 Recreation Trails and Travel Management, Alternative D	2-21
Map 2-5 Minerals Acquisition, Alternatives B, C, & D.....	2-26
Map 2-6 Lands Managed to Maintain Wilderness Characteristics, Alt B	2-28
Map 2-7 Lands Managed to Maintain Wilderness Characteristics, Alt C	2-29
Map 2-8 Visual Resource Management, Alt A.....	2-40
Map 2-9 Visual Resource Management, Alt B.....	2-41
Map 2-10 Visual Resource Management, Alt C.....	2-42
Map 2-11 Visual Resource Management, Alt D.....	2-43
Map 3-1 Potential Fossil Yield Classification System	3-3
Map 3-2 Lands with Wilderness Characteristics	3-17
Map 3-3 Livestock Grazing Allotments	3-19
Map 3-4 Soils.....	3-33
Map 3-5 Robledo Mountains ACEC.....	3-36
Map 3-6 Paleozoic Trackways Research Natural Area	3-37
Map 3-7 Robledo Mountains WSA	3-38
Map 3-8 Vegetation	3-42
Map 3-9 Ecological Sites	3-44
Map 3-10 Visual Resource Management	3-51
Map 3-11 Watersheds	3-53
Map 3-12 Fire Regime Condition Classes.....	3-55
Map 3-13 Fire Management Unit Categories	3-57
Map 3-14 Standard Habitat Sites	3-59
Map 4-1 Recreation and Visitor Services Paleontological Resources with ½-Mile Safety Zone	4-18
Map 4-2 Recreation and Visitor Services Routes and Trails with ½-Mile Safety Zone	4-19
Map 4-3 Recreation and Visitor Services Combined Criteria ½-Mile Safety Zones	4-20

FIGURES

Figure 1-1 Planning Process	1-11
Figure 3-1 Amphibian Trace.....	3-1
Figure 3-2 Horseshoe Crab Trace.....	3-1
Figure 3-3 Permian Tidal Flat.....	3-2
Figure 3-4 Leaf Fossils	3-4
Figure 3-5 Petrified Wood	3-4
Figure 3-6 Walchia Fossils	3-5
Figure 3-7 Dromopus.....	3-6
Figure 3-8 Marine Fossils.....	3-6
Figure 3-9 The Trackways Display at the Las Cruces Museum of Nature and Science	3-7

Figure 3-10 The “red beds” of the Abo Formation found in the Prehistoric Trackways National Monument.....	3-15
Figure 3-11 Race and Ethnicity	3-26
Figure 3-12 Employment by Industry in the Study Area.....	3-28
Figure 3-13 Annual Unemployment Rate, 2001-2010	3-29

TABLES

S-1 Summary of Impacts by Resource by Alternative.....	ES-6
2-1 Summary of Impacts by Resource by Alternative.....	2-48
3-1 2010-2012 Design Values for Las Cruces, NM	3-10
3-2 Average Temperature and Precipitation for Las Cruces, 1981-2010	3-11
3-3 Land Status of Grazing Allotments within the PTNM.....	3-18
3-4 Range Improvements within the Prehistoric Trackways National Monument.....	3-20
3-5 Populations 1990, 2000, 2010	3-22
3-6 Population Density	3-23
3-7 Median Age	3-23
3-8 Educational Attainment, Percent of Persons Age 25+	3-24
3-9 Percent of Persons Living in Poverty	3-25
3-10 Trends in Per Capita Income and Average Earnings Per Job.....	3-27
3-11 Contribution of Labor and Non-Labor Income to Total Personal Income.....	3-27
3-12 Median Value of Owner-Occupied Homes	3-30
3-13 Payments In Lieu of Taxes, Fiscal Year 2011	3-31
3-14 Special Status Species	3-39
3-15 Visual Resource Management Acreages within the PTNM.....	3-50
3-16 Fire Regime Condition Classes	3-56
3-17 Fire Management Units within the PTNM.....	3-58
4-1 Definition of Impact Terms	4-1
4-2 VRM Objectives Compared to Visual Resource Inventory Class Ratings, Alternative A.....	4-68
4-3 VRM Objectives Compared to Visual Resource Inventory Class Ratings, Alternative B.....	4-69
4-4 VRM Objectives Compared to Visual Resource Inventory Class Ratings, Alternative C.....	4-70
4-5 VRM Objectives Compared to Visual Resource Inventory Class Ratings, Alternative D.....	4-71
4-6 Reasonably Foreseeable Future Actions in Doña Ana County (2010 to 2030).....	4-80
5-1 List of Preparers and Reviewers	5-8



EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

INTRODUCTION

Located in the Robledo Mountains of southern New Mexico lies a major deposit of Paleozoic Era fossilized footprints, plants, and wood dating back approximately 280 million years ago. Approximately 5,255 acres of these fossils located 10 miles northwest of Las Cruces, New Mexico are designated as the Prehistoric Trackways National Monument (PTNM) by the *Omnibus Public Land Management Act of 2009*.

The Bureau of Land Management (BLM) has prepared this Resource Management Plan (RMP) and Environmental Impact Statement (EIS) to provide management guidance for the Federal land within the PTNM. These 5,255 acres are considered the **Planning Area**, while Doña Ana County, where the PTNM resides, is considered the **Analysis Area**.

BACKGROUND

In 1987, a major deposit of Paleozoic Era fossilized footprint megatracks was discovered in the Robledo Mountains by a local Las Cruces, Jerry MacDonald. The area is located in the BLM New Mexico Las Cruces District Office and covered by management outlined in the *Mimbres RMP* (1993). In 1990, Senator Jeff Bingaman and Congressman Joe Skeen introduced the **Prehistoric Trackways Study Legislation (S. 2684 and H.R. 4945)**. In 1993, the legislation was passed which allowed the BLM to contract with the Smithsonian Institution and the New Mexico Museum of Natural History and Science to conduct a study and prepare a report on the significance of the trackways discovery. The report states:

“ . . . evaluation indicates the Robledo Mountains tracksites are the most scientifically significant Early Permian tracksites known. The diversity, abundance and quality of the tracks in the Robledo Mountains is far greater than at any other known tracksites or aggregation of tracksites. Because of this, the Robledo tracks allow a wide range of scientific problems regarding late Paleozoic tracks to be solved that could not be solved before.” (Lucas, Hunt, and Hotton III 1994)

Senator Bingaman introduced legislation in 2008 to designate the trackways area as a National Monument *“ . . . in order to conserve, protect, and enhance the unique and nationally important paleontological, scientific, educational, scenic, and recreational resources and values of the public land. . . .”* The Legislation was passed as part of the Omnibus Public Land Management Act of 2009 (the Act or Legislation) and designated 5,280 acres as the Prehistoric Trackways National Monument (PTNM or Monument) administered by the Bureau of Land Management.

PURPOSE AND NEED

The need for the PTNM Draft RMP/EIS is established by the enabling Legislation which requires that:

“Not later than 3 years after the date of enactment of this Act, the Secretary shall develop a comprehensive management plan for the long-term protection and management of the Monument... The management plan shall describe the appropriate uses and management of the Monument, consistent with the provisions of the legislation”

The existing *Mimbres RMP* (1993) covering the Monument is inadequate to address the mandates of the enabling legislation. The purpose of the Monument RMP is to address resource management and public uses within the Monument as prescribed by Congressional legislation. The EIS will disclose to the public and BLM managers any impacts to the environment that would likely result from implementing the agency's Proposed Action or possible alternatives.

Proposed within Chapter 2 are two different types of decisions. Those decisions are either planning (broad overarching) decisions or implementation (on-the-ground) decisions. The *BLM Land Use Planning Handbook H-1601-1* separates Planning (land use) Decisions for public land into two categories: desired outcomes (goals and objectives) and allowable (including restricted or prohibited) uses and actions anticipated to achieve desired outcomes. Implementation decisions are the BLM's final approval, allowing on-the-ground actions to proceed. Implementation decisions will always be denoted with an asterisk (*).

Legislative Provisions (see Appendix A for the full text of Prehistoric Trackways National Monument section of the *Omnibus Public Lands Management Act of 2009*)

- Conserve, protect, and enhance the following resources and values: Paleontological, Scientific, Educational, Scenic, and Recreational.
- Shall only allow uses of the Monument that the Secretary determines would further the purposes for which the Monument has been established.
- Provide for public interpretation of, and education and scientific research on, the paleontological resources of the Monument, with priority given to exhibiting and curating the resources in Doña Ana County, New Mexico.
- Enter into cooperative management agreements or other instruments with interested parties or agencies, as appropriate, to coordinate and collaborate management of the Monument.
- Continue to manage that portion of the Robledo Mountains Area of Critical Environmental Concern (ACEC) within the Monument.
- Except as needed for administrative purposes or to respond to an emergency, the use of motorized vehicles in the Monument shall be allowed only on roads and trails designated in this management plan for use by motorized vehicles.
- Subject to valid existing rights, any Federal land within the Monument and any land or interest in land that is acquired by the United States for inclusion in the Monument after the date of enactment of this Act are withdrawn from - (1) entry, appropriation, or disposal under the public land laws; (2) location, entry, and patent under the 1872 mining law as amended; and (3) operation of the mineral leasing laws, geothermal leasing laws, and mineral material disposal laws.
- Manage any land or interest in land that is acquired by the United States for inclusion in the Monument after the date of enactment of this Act in the same manner and degree as herein described for the rest of the Monument.

- The Secretary may allow grazing to continue in any area of the Monument in which grazing is allowed before the date of enactment of this Act, subject to applicable laws (including regulations).

ISSUES

The process for developing an RMP begins with identification of planning issues. Issues are areas of conflict or controversy between uses and management activities for a given area of public land that must be resolved in the RMP. The agency also addresses other basic environmental and management concerns to provide comprehensive management guidance for all resources within the Monument and to satisfy legal requirements.

The following are issues or areas of concern for the Monument. These were identified through internal scoping by resource specialists and/or raised by the public during scoping.

Issues Addressed

Paleontological Research and Protection

1. How will management actions address the legislative mandate of providing for resource protection and research of paleontological resources?
2. How will the management prescriptions address site protection and resource mitigation?

Education and Interpretation

1. How will the management actions address the legislative mandate of providing for public interpretation of, and education and scientific research on, the paleontological resources of the Monument, with priority given to exhibiting and curating the resources in Doña Ana County?
2. What types of education and interpretation are best suited to protection of the fossils? Onsite? Off-site?

Travel and Access

1. How can the BLM manage access to the Monument while protecting the resources?

Recreation

1. How will the BLM manage conflicts between motorized use and protection of Monument objects?
2. How will the BLM manage requests for special recreation permits?
3. How will the management actions address other various recreation opportunities such as camping, shooting, and fossil hunting while protecting Monument objects?
4. What opportunities will be available for visitor services and facilities?

Management Concerns

Wildlife, Livestock, and Vegetation

1. What management actions will protect wildlife and wildlife habitat?
2. How will livestock grazing be addressed within the Monument?
3. How will management of vegetative communities be addressed in the Monument?

Visual Resources

1. How will the BLM manage threats to scenic quality within the boundaries of the Monument?

Socio-economics

1. How will management actions impact economic and social opportunities in the community?

SUMMARY OF MANAGEMENT ALTERNATIVES

Alternative A

Alternative A or the “*No Action Alternative*” represents the continuation of existing management, which is defined by the *Mimbres RMP* (1993) and the legislation designating the Monument, the *Omnibus Public Land Management Act of 2009*.

Alternative B

Alternative B represents a more restrictive public use approach of the Monument. This approach is more passive; human interventions with the resources are minimal and natural processes would continue at the current rate.

- All paleontological resources would be conserved for scientific research.
- Casual collecting of common invertebrate and plant paleontological resources would not be allowed.
- Trails and roads would be restricted to those already developed, and the Monument would be closed to all mechanized or motorized vehicles except those permitted for authorized use.
- A majority of the education and interpretation program would be off-site.
- The PTNM would be CLOSED to Special Recreation Permits (SRPs).
- Livestock grazing would not be allowed within the Monument.

Alternative C

Alternative C represents a moderate public use and resource management method of the Monument. This alternative allows for protection of the resources while allowing compatible public uses.

- Fossil localities deemed suitable for scientific research may be reserved for scientific research only. Localities appropriate for interpretation, educational, and recreational use may be developed.
- Closed to casual collecting of common invertebrate and plant paleontological resources.
- Collecting of common invertebrate fossils would only be allowed while in conjunction with BLM authorized interpretive or educational activities or programs.
- Interpretation and education would be enhanced on-site and off-site including a visitor contact station.

- Facilitated tours and self-guided interpretive activities would be developed.
- Motorized and mechanized travel within the Monument would be limited to designated routes and trails with a permit.
- Approximately 5.4 miles of designated routes would be closed.
- New routes or trails may be developed by the BLM to enhance visitor experiences and research opportunities.
- Commercial, competitive, and organized group activities would be managed through the SRP process.
- Grazing would be excluded at specific locations such as exclosures around campsites or in areas to protect paleontological resources if determined necessary.

Alternative D

Alternative D represents a maximum use approach to management of the Monument and the widest range of public uses of the resources while still following the constraints of the designating Legislation.

- Fossil localities deemed suitable for scientific research would be preserved and reserved for scientific research only. Localities appropriate for interpretation, educational, and recreational use would be developed for that use.
- Closed to casual collecting of common invertebrate and plant paleontological resources.
- Collecting of common invertebrate fossils would only be allowed while in conjunction with BLM authorized interpretive or educational activities or programs.
- Interpretation and education would be developed for the Monument both on-site and off-site as would a visitor center.
- Facilitated tours and self-guided interpretive activities would be developed along with an interpretive motor tour route.
- Motorized and mechanized travel within the Monument would be limited to designated routes.
- Approximately 4.0 miles of designated routes would be closed.
- New routes and trails may be developed to enhance visitor experiences and research opportunities.
- Competitive, commercial, and organized group activities would be managed through the SRP process.
- Current livestock management would continue in the Monument.

ENVIRONMENTAL IMPACTS

Table S-1 summarizes the impacts by resource by alternative for the PTNM. These impacts are fully discussed in Chapter 4.

The following resources have been found to have negligible or no impacts from any of the management alternatives proposed:

- American Indian Uses and Traditional Cultural Practices
- Riparian Areas
- Woodland Management
- Floodplains and Wetlands
- Geology
- Minerals
- Hazardous and Solid Wastes
- Prime or Unique Farmlands
- Wild and Scenic Rivers

**TABLE S-1
SUMMARY OF IMPACTS BY RESOURCE BY ALTERNATIVE**

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C (PREFERRED)	ALTERNATIVE D
PALEONTOLOGICAL RESOURCES			
<p>Casual collecting of common invertebrate and plant paleontological resources would lead to depletion of the resources.</p> <p>Off-site interpretation would increase protection through enhancing awareness, and leaving sites conserved in-situ for future research.</p> <p>Vehicles would continue to damage fossils through crushing, fracturing, or staining.</p>	<p>Closing the PTNM to the casual collection of fossils would reduce the loss of scientific-worthy vertebrate fossils, but would also reduce educational and recreational opportunities.</p> <p>Off-site interpretation would protect resources by increasing awareness and leaving paleontological sites conserved in-situ for future research.</p> <p>Closure to motorized and mechanized travel would eliminate damage to fossils from this use.</p>	<p>Restricting the casual collecting of common invertebrate and plant fossils would reduce the loss of scientific-worthy vertebrate fossils.</p> <p>On-site education and interpretation would increase awareness of the resource but could increase the potential for looting.</p> <p>Closing certain routes would protect important exposed fossils from OHV activity.</p> <p>Development of visitor facilities could increase visitation and thereby result in increased stewardship, but vandalism and looting could also increase.</p>	<p>Same as Alternative C except, both the beneficial and adverse impacts from on-site interpretation and facilities would be increased due to more development.</p>
EDUCATION AND INTEPRETATION			
<p>Scientific research would enhance education and interpretation through the discovery of new sites.</p> <p>Casual collecting of common invertebrate and plant paleontological resources would enhance the educational experience in the Monument.</p> <p>Limited facility and trail development would constrain the interpretive experience on-site.</p>	<p>Same as Alternative A.</p> <p>The closure to casual collection of fossils would limit the on-site interpretive experience.</p> <p>Same as Alternative A.</p> <p>Managing for lands with wilderness characteristics may limit new surface disturbing activities such as interpretative trails and signs in those areas (576 acres).</p>	<p>Same as Alternative A.</p> <p>Same as Alternative B.</p> <p>On-site interpretation, trails and facilities would be developed to enhance educational opportunities.</p> <p>Same as Alternative B except surface disturbing activities may be limited to 253 acres. The remaining 323 acres found to have wilderness characteristics, but not managed for those characteristics, may be impacted from potential surface disturbing activities.</p>	<p>Same as Alternative A.</p> <p>Collecting common fossils in conjunction with a BLM activity would enhance the educational experience.</p> <p>The development of a motorized interpretive tour or a visitor center would enhance the experience of many visitors.</p> <p>Lands found to have wilderness characteristics would not be managed for those characteristics, therefore development may occur and may impact the wilderness characteristics in those areas (576 acres).</p>

**TABLE S-1
SUMMARY OF IMPACTS BY RESOURCE BY ALTERNATIVE**

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C (PREFERRED)	ALTERNATIVE D
RECREATION AND VISITOR SERVICES			
<p>Annual visitation to the Monument area is 25,000.</p> <p>Casual collecting of common invertebrate and plant fossils provides a recreational opportunity.</p> <p>The lack of on-site visitor facilities limits the visitor experience and may reduce visitation from some groups.</p> <p>Target shooting could cause conflict between users.</p> <p>No planned improvement or maintenance of trails would limit recreation.</p>	<p>Annual visitation may be reduced by 5,625 visitors.</p> <p>Casual collection of fossils, Special Recreation Permits, and motorized and mechanized vehicle use would not be allowed, thus reducing the number of recreation opportunities.</p> <p>Same as Alternative A.</p> <p>Same as Alternative A.</p>	<p>Annual visitation would increase to 37,500 people.</p> <p>Same as Alternative B.</p> <p>On-site visitor facilities would enhance the visitor experience and may increase visitation.</p> <p>Closure to target shooting would reduce a recreational opportunity.</p> <p>Closure of a portion of the OHV trails would impact the extreme OHV users. Maintaining and developing trails and routes would enhance recreational opportunities.</p>	<p>Annual visitation would increase to 75,000 people.</p> <p>Collecting common fossils while in conjunction with a BLM activity would provide a recreational opportunity.</p> <p>A visitor center and a campground would create recreational opportunities.</p> <p>Same as Alternative C.</p> <p>A 1.4-mile portion of trail route would remain open providing an opportunity to access an extreme route.</p>
TRAILS AND TRAVEL MANAGEMENT			
<p>Continued use of the existing 37.6 miles of designated trails provides an extensive route network with a variety of opportunities for motorized, mechanized, and pedestrian use and travel.</p> <p>Improvement or maintenance of existing routes has not been planned for, reducing the ease of access for educational and some recreational uses.</p>	<p>Closing the Monument to motorized and mechanized travel would reduce access to most visitors.</p> <p>Managing for lands with wilderness characteristics may limit new surface disturbing activities, such as trails and roads and routes in those areas (576 acres).</p> <p>Lack of improvement or maintenance of routes would reduce the ease of access and recreational experience for many visitors.</p>	<p>Limiting motorized and mechanized travel to 32.2 miles of designated routes would provide an extensive route network with a variety of opportunities for use.</p> <p>Lands found to have wilderness characteristics, managed for those characteristics, may limit the new development of facilities, additional roads and routes and maintenance in those areas (253 acres). The 323 acres found to have wilderness characteristics, but not managed for those characteristics, may be impacted from potential surface disturbing activities</p> <p>Improved and maintained routes would enhance the visitor experience.</p>	<p>Same as Alternative C, except 33.6 miles of routes would be designated.</p> <p>Lands found to have wilderness characteristics would not be managed for those characteristics, therefore new trails, roads, and route construction may occur and may impact the wilderness characteristics in those areas (576 acres).</p> <p>Same as Alternative C.</p>

**TABLE S-1
SUMMARY OF IMPACTS BY RESOURCE BY ALTERNATIVE**

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C (PREFERRED)	ALTERNATIVE D
AIR RESOURCES-- AIR QUALITY			
<p>Vehicle travel on designated trails has the potential to emit pollutants and cause dust.</p> <p>Surface disturbance from potential authorized rights-of-way could cause dust emissions.</p> <p>Mineral extraction could cause dust emissions.</p>	<p>Closure to motorized and mechanized use would reduce dust and emissions compared to Alternative A.</p> <p>Rights-of-way would not be allowed. Emissions would be less than Alternative A.</p> <p>No mineral extraction would take place. Emissions would be less than Alternative A.</p> <p>Managing for lands with wilderness characteristics may limit new surface disturbing activities, and potentially reduce dust emissions in those areas (576 acres), compared to Alternative A.</p>	<p>Same as Alternative A.</p> <p>Same as Alternative A.</p> <p>Same as Alternative B.</p> <p>The 323 acres of lands with wilderness characteristics, but not managed for them, may be subject to disturbing activities that increase dust emissions.</p> <p>Construction of facilities could cause emissions.</p>	<p>Same as Alternative A.</p> <p>Same as Alternative A.</p> <p>Same as Alternative B.</p> <p>Lands found to have wilderness characteristics would not be managed for them. Dust emissions may potentially increase due to surface disturbing activities in those areas (576 acres).</p> <p>Same as Alternative C.</p>
AIR RESOURCES -- CLIMATE			
<p>It is not possible to predict with certainty the potential emissions of greenhouse gases (GHG) associated with the four alternatives, their potential impacts on temperature within the <i>Planning Area</i>, or related impacts on resources due to climate change. In general, trails and travel management, livestock grazing, and wildland fire generate GHG emissions that contribute to climate change and, in turn, may impact resources.</p>			
CULTURAL RESOURCES			
<p>The BLM would comply with Section 106 of the National Historic Preservation Act thereby minimizing impacts to cultural resources.</p>	<p>Closure of the Monument to rights-of way, vehicular travel and other surface disturbing activities would greatly reduce the potential impacts to cultural resources.</p>	<p>Same as Alternative A</p>	<p>Same as Alternative A</p>

**TABLE S-1
SUMMARY OF IMPACTS BY RESOURCE BY ALTERNATIVE**

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C (PREFERRED)	ALTERNATIVE D
LANDS AND REALTY			
<p>Surface disturbing land use authorizations could take place.</p> <p>Commercial-scale renewable energy would be excluded.</p> <p>Authorizations would meet Visual Resource Management (VRM) Classes I to IV.</p>	<p>Surface disturbing land use authorizations would be excluded from the PTNM.</p> <p>Same as Alternative A.</p> <p>There would be no VRM impacts.</p> <p>Obtaining non-Federal minerals would eliminate split-estate issues.</p>	<p>Surface disturbing land use authorizations would be considered with the exception of lands managed for their wilderness characteristics.</p> <p>Same as Alternative A.</p> <p>VRM I and II could limit land use authorizations.</p> <p>Same as Alternative B.</p>	<p>Same as Alternative C</p> <p>Same as Alternative A.</p> <p>Same as Alternative C.</p> <p>Same as Alternative B.</p>
LANDS WITH WILDERNESS CHARACTERISTICS			
<p>Lands found to have wilderness characteristics but not managed for those characteristics may be impacted (576 acres).</p>	<p>Managing for lands with wilderness characteristics would protect the wilderness characteristics in those areas (576 acres).</p>	<p>Lands found to have wilderness characteristics and managed for them may limit disturbance activities (253 acres). The remaining 323 acres found to have wilderness characteristics, but not managed for them, may be impacted from potential surface disturbing activities.</p> <p>Designation of the Monument as VRM I and II would help retain wilderness characteristics.</p>	<p>Same as Alternative A.</p> <p>VRM I and II designations may help to retain some of the wilderness characteristics found in the PTNM.</p>
LIVESTOCK GRAZING			
<p>Increased visitation could cause increased conflicts with livestock and recreational users.</p> <p>Vegetation treatments could improve forage and reduce competition.</p>	<p>There would be no direct impacts from livestock grazing in the Monument.</p> <p>Exclusion from grazing would require fencing and management adjustments in the Picacho Peak and Altamira allotments.</p> <p>Animal unit months (AUMs) would be reduced by a minimum of 456 for the two allotments.</p>	<p>Same as Alternative A.</p> <p>Fences would be constructed to protect significant fossils as needed. Forage reductions would be based on the specific acres excluded.</p> <p>Same as Alternative A but using more effective techniques.</p> <p>Excluding improvements from 253 acres managed for wilderness characteristics may reduce the use of forage.</p>	<p>Same as Alternatives C with more anticipated interactions between visitors and livestock as visitor facilities and routes increase.</p> <p>Same as Alternatives A and C, but with more forage possibly improved.</p>

**TABLE S-1
SUMMARY OF IMPACTS BY RESOURCE BY ALTERNATIVE**

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C (PREFERRED)	ALTERNATIVE D
SOCIO-ECONOMIC CONDITIONS			
<p>Visitation to the PTNM would support 16 jobs and \$417,000 in labor income annually.</p> <p>Visitor facilities would not be constructed.</p> <p>Alternative A has the lowest levels of non-market economic values and the least support for social values related to preservation of ecological health and wilderness.</p> <p>Similar levels of employment and income would be supported.</p> <p>None of the decisions are expected to disproportionately or adversely affect environmental justice communities.</p> <p>Designation of 37.6 miles of roads and trails open to motorized and mechanized uses supports social values related to public land access and OHV recreation.</p>	<p>Visitation to the PTNM would support 4 jobs and \$94,000 in labor income annually.</p> <p>Economic benefits from facility construction would not be realized.</p> <p>Alternative B would support the highest levels of non-market economic values and social values related to protection of natural and cultural resources.</p> <p>Elimination of grazing would reduce labor income to ranchers.</p> <p>Same as Alternative A</p> <p>Closure to motorized and mechanized uses would reduce the quality of life for those who primarily value OHV recreation, but would make PTNM more of an attraction for others.</p>	<p>Visitation to the PTNM would support 24 jobs and \$626,000 in labor income annually.</p> <p>Development of visitor facilities would temporarily increase local employment and labor income during construction.</p> <p>Alternative C balances social values of access and motorized recreation with values related to ecological health and wilderness.</p> <p>Social and economic consequences of grazing are the same under Alternatives A.</p> <p>Same as Alternative A.</p> <p>Same as Alternative A but with a reduction in available routes for extreme OHV opportunities.</p>	<p>Visitation to the PTNM would support 47 jobs and annual labor income of \$1,251,000.</p> <p>Same as Alternative C.</p> <p>Alternative D would support lower levels of non-market economic values and social values related to protection of natural and cultural resources.</p> <p>Same as Alternatives A.</p> <p>Same as Alternative A.</p> <p>Same as Alternative C.</p>
SOILS			
<p>Excavations could cause highly disturbed areas. Casual collecting of fossils would have a minor disturbance.</p> <p>Soil disturbance would be caused by recreation, research, interpretation tours, camping, Special Recreation Permits, vehicular travel, right-of-way development, and range improvements.</p> <p>Spills of petroleum products could contaminate soils.</p>	<p>Surface disturbance would be reduced because casual collecting would be prohibited.</p> <p>Closure to vehicular travel and camping, no issuance of Special Recreation Permits, removal of grazing, and exclusion of surface disturbing land use authorizations would all benefit soils.</p>	<p>Same as Alternative B.</p> <p>Visitor facilities would displace and compact soils, increasing runoff and erosion rates.</p>	<p>Same as Alternative A.</p> <p>Same as Alternative C.</p>

**TABLE S-1
SUMMARY OF IMPACTS BY RESOURCE BY ALTERNATIVE**

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C (PREFERRED)	ALTERNATIVE D
SPECIAL DESIGNATION -- AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)			
Manage as the Robledo Mountains ACEC.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
SPECIAL DESIGNATION-- RESEARCH NATURAL AREA (RNA)			
Management prescriptions of the RNA would be duplicated by the PTNM Legislation.	The RNA designation would be removed and replaced by the PTNM RMP decisions.	Same as Alternative B.	Same as Alternative B.
SPECIAL DESIGNATION -- WILDERNESS STUDY AREA (WSA)			
The Robledo Mountains WSA would be managed to meet the non-impairment standard.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
SPECIAL STATUS SPECIES			
Vehicle travel and dispersed recreation has the potential to temporarily displace special status species or injure slow moving species.	Closure to motorized and mechanized travel would reduce potential for injury of some species such as Texas horned lizard.	Same as Alternative A except development could increase temporary displacement of special status species or injure slow moving species.	Same as Alternative C.
Livestock watering sources would benefit special status species such as bats.	Elimination of livestock grazing could reduce forage competition and improve habitat for species such as burrowing owl and northern shrike.	Same as Alternative A.	Same as Alternative A.
Vegetation management would improve habitat for species associated with grasslands.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
VEGETATION			
Special designations would protect 789 acres from surface disturbing activities.	Same as Alternative A, but with an additional 576 acres managed as lands with wilderness characteristics.	Same as Alternative A except an additional 253 acres would be managed as lands with wilderness characteristics.	Same as Alternative A.
Use of trails and routes has the potential to remove or damage vegetation and spread noxious weeds.	Surface disturbing activities, e.g., Special Recreation Permits, OHV use, and rights-of-way, would be restricted to reduce the potential for damage to vegetation.	Development of new trails, routes, or facilities could remove vegetative cover in other areas.	Same as Alternative C except additional surface disturbance and vegetation removal is possible from facilities development.
Livestock grazing may remove 30 to 50 percent of key forage species and has the potential to introduce or spread weeds.	Elimination of livestock grazing decreases utilization of forage species favored by cattle.	Same as Alternative A	Same as Alternative A.
Vegetation treatments have the potential to shift species dominance and control weeds.	Treatment options would be limited for noxious weed control.	Same as Alternative A.	Same as Alternative A.

**TABLE S-1
SUMMARY OF IMPACTS BY RESOURCE BY ALTERNATIVE**

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C (PREFERRED)	ALTERNATIVE D
VISUAL RESOURCES			
VRM Class I designation would preserve the character of the landscape on 789 acres of the most scenic, natural appearing, and visually sensitive areas.	1,365 acres would be designated as VRM Class I as described in Alternative A.	1,042 acres would be designated VRM Class I as described in Alternative A.	789 acres would be designated VRM Class I as described in Alternative A.
VRM Class II would retain the existing character of the landscape on 907 acres.	3,912 acres would be designated VRM Class II as described in Alternative A.	4,213 acres would be designated VRM Class II as described in Alternative A.	4,465 acres would be VRM Class II as described in Alternative A.
The remaining lands would be designated as VRM Class III and IV, which allow more change in the visual character of the land.	Exclusion of livestock from the Monument could cause short-term visual impacts from fence construction.	Same as Alternative A.	Same as Alternative A.
Development of 368 acres of non-Federal minerals may impact the existing character of the landscape.			
WATER RESOURCES			
Surface disturbing activities may create nonpoint source pollutants that could transport to the Rio Grande, decrease infiltration, increase runoff, and alter water flow patterns.	Restrictions in surface disturbing activities would help soil stability and productivity, hinder erosion, and reduce nonpoint source pollution.	Same as Alternative A.	Same as Alternative A.
WILDLAND FIRE MANAGEMENT			
Visitation and associated recreation activities could increase potential for human-caused wildfires.	Same as Alternative A except the reduction of some recreation activities would reduce the potential of human-caused wildfires.	Same as Alternative A.	Same as Alternative A.
Vegetation treatments could cause an increase in fuel loading resulting in unwanted fire behavior.	Reduction in livestock grazing would increase fuels and the likelihood that a wildfire would carry.		
WILDLIFE			
Increase in visitation and recreation activities could temporarily displace wildlife.	Closure to travel would decrease potential injury and displacement of wildlife.	Same as Alternative A except increased displacement could occur around developed interpretation sites and facilities	Same as Alternative C, except prescribed fire could displace, kill or render habitat unsuitable but would have long-term benefits to habitat.
Vehicular travel has the potential to injure slow moving wildlife.	Removal of livestock would increase forage and cover for wildlife.		

CHAPTER 1

PURPOSE AND NEED

CHAPTER 1 PURPOSE AND NEED

1.1 INTRODUCTION

In 1987, a major deposit of Paleozoic Era fossil footprints and trace fossils trackways were discovered in the Robledo Mountains in southern New Mexico. The deposit contains imprints of tracks, tail drags, burrows, and body impressions of numerous amphibians, reptiles, and insects (including previously unknown species), as well as impressions of plants and petrified wood that date to approximately 280 million years ago. Together, these types of fossils are known as ichnofossils. Ichnofossils are fossilized traces of actions and behaviors; they may include footprints, burrow casts, and body impressions. These paleontological resources collectively provide new opportunities to understand animal behaviors and environments from a time predating the dinosaurs. The area is located in the Bureau of Land Management (BLM) New Mexico Las Cruces District Office and covered by management outlined in the Mimbres Resource Management Plan (RMP) (BLM 1993). In 1990, Senator Jeff Bingaman and Congressman Joe Skeen introduced the Prehistoric Trackways Study Legislation (S. 2684 and H.R. 4945). In 1993, the legislation passed which led the BLM to contract with the Smithsonian Institution and the New Mexico Museum of Natural History and Science to conduct a study and prepare a report on the significance of the trackways discovery. The report states:

...evaluation indicates the Robledo Mountains tracksites are the most scientifically significant Early Permian tracksites known. The diversity, abundance and quality of the tracks in the Robledo Mountains is far greater than at any other known tracksites or aggregation of tracksites. Because of this, the Robledo tracks allow a wide range of scientific problems regarding late Paleozoic tracks to be solved that could not be solved before. (Lucas, Hunt, and Hotton III 1994)

In 2008, Senator Bingaman introduced legislation to designate an area of public land in the southern Robledo Mountains as a National Monument . . . “*in order to conserve, protect, and enhance the unique and nationally important paleontological, scientific, educational, scenic, and recreational resources and values of the public land....*” The legislation was passed as part of the Omnibus Public Land Management Act of 2009 (the Act or Legislation) and designated 5,280 acres as the Prehistoric Trackways National Monument (PTNM or Monument) administered by the BLM. The Act as it pertains to PTNM is reprinted in Appendix A. This Legislation directs the BLM to develop a comprehensive management plan specifically for the Monument.

This land use plan provides direction for the Prehistoric Trackways National Monument consistent with the designating legislation and manages its resources using scientific principles and expertise. The BLM developed a Draft Resource Management Plan and Environmental Impact statement (RMP/EIS) to analyze and consider measures to ensure that resources, objects and values are conserved, protected, and restored. This *Proposed RMP/Final EIS* will become the basis for every on-the-ground action the BLM undertakes in the Monument.

This *Proposed RMP/Final EIS* describes four alternative management strategies, identifies the potential impacts of implementation of the alternatives, and outlines the appropriate measures to mitigate those impacts. The EIS analyzes and documents the direct, indirect, and cumulative impacts of the reasonably foreseeable future actions resulting from the BLM’s management decisions. These impacts must be analyzed before BLM allocates public land resources and the RMP/EIS satisfies the requirements of the National Environmental Policy Act of 1969 (NEPA), Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR 1500-1508), Federal Land Policy and Management Act (FLPMA), the Paleontological Resources Preservation Act (PRPA) and other associated regulations.

1.2 DESCRIPTION OF THE MONUMENT AND ANALYSIS AREA

The Monument is located in the southern third of the Robledo Mountains and is approximately 10 miles northwest of the City of Las Cruces in Doña Ana County, New Mexico (see Map 1-1). The Robledo Mountains are a north-south trending fault-block located northwest of Las Cruces. Elevation varies from 5,876 feet on Robledo Mountain to about 4,100 feet at the southern end. The area is characterized by an arid, continental climate with mild winters and warm-to-hot summers. Summer daytime temperatures often exceed 100° F. Average annual precipitation is slightly less than 9 inches; however wide variations in both temperature and precipitation are not uncommon.

Vegetation in the Monument is sparse, dominated by grasses and Chihuahuan Desert shrub species. A few juniper trees are scattered, primarily along north slopes and arroyos. Shrubs include mesquite, yucca, whitethorn acacia, creosote, and mimosa, with scattered agaves and various cacti.

Wildlife of the Monument is typical of the Chihuahuan Desert, but also includes species that may be found along the Rio Grande and the nearby farming areas in the Mesilla Valley. Species that may be found within the Monument include side-blotched lizards and marbled whiptail lizards, mule deer, black-tailed jackrabbits, desert cottontails, and spotted ground squirrels. Common birds include mourning dove, Northern Harrier, Swainson's hawk, red-tailed hawk, Chihuahuan raven, greater roadrunner, mockingbird, scaled quail, and Gambel's quail.

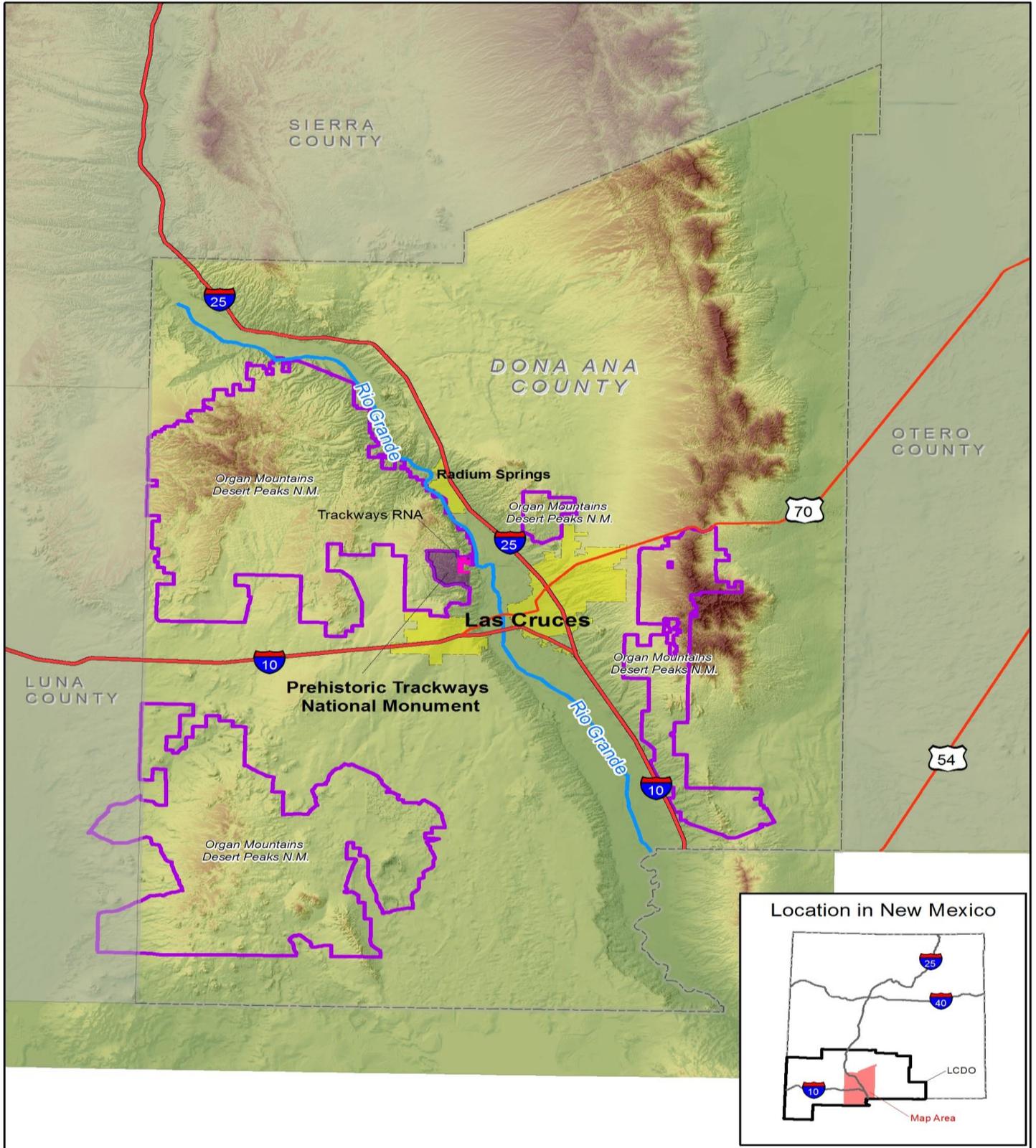
Prior to designation, a portion of the Monument was managed by the BLM as the Paleozoic Trackways Research Natural Area (RNA), as designated by the *Mimbres RMP* (BLM 1993). The management goals of the Paleozoic Trackways RNA were to protect, research, and interpret paleontological resources (Map 1-2). The Robledo Mountains Area of Critical Environmental Concern (ACEC) was designated to protect paleontological and scenic resources in the *Mimbres RMP* as well. A portion of the ACEC (789 acres) is within the Monument. The ACEC boundary and the Robledo Mountains Wilderness Study Area (WSA) boundary overlap (Map 1-2). The Robledo Mountains WSA was recommended in 1980 and since that time, the BLM has managed the area to preserve its wilderness character (BLM 1980).

The Robledo Mountains are used for many types of recreation, including hiking, mountain biking, fossil and rock collecting, hunting, horseback riding, camping, target shooting and off-highway vehicle (OHV) use. A system of designated OHV trails was authorized in 1997. The Robledo Mountains Off-Highway Vehicle Trails are used almost daily by casual OHV enthusiasts. The annual Chile Challenge OHV event has been permitted through the BLM Special Recreation Program for the past 16 years. This is a Nationally-recognized “*rock-crawling*” activity that attracts both regional and international participants.

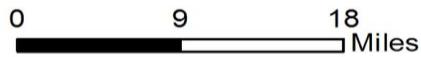
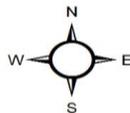
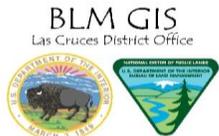
In the Omnibus Lands Act, the acreage of the Monument is stated as 5,280. However, the acreage calculated using the BLM's Geographic Information System (GIS), which allows production of maps and analysis based on digitized satellite imagery shows a smaller acreage area of 5,255 acres. Because the acreage difference is relatively insignificant in comparison to the level of effort required to reconcile the data precisely, the BLM Planning Team has elected to use the GIS figures throughout the analysis. These differences are not large enough to change the outcome of the analysis.

The designating Legislation states: “*If additional paleontological resources are discovered on public land adjacent to the Monument after the date of enactment of this Act, the Secretary may make minor boundary adjustments to the Monument to include the resources in the Monument.*” If public land is added to the Monument, it will be administered following the same management decisions resulting from this document.

Map 1-1 - Regional Map



No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.



Projection: UTM, Zone 13
Datum: NAD 1983

The **Planning Area** is the area for which decisions made in this RMP will apply. The Planning Area consists of 5,255 acres of Federal surface estate and 4,886 acres of Federal subsurface estate, designated as the PTNM (see Map 1-2).

The term **Analysis Area** is used for some resources and resource use discussions outside the Planning Area. The Analysis Area, Doña Ana County, includes public, private, and other government lands, and consists of 2,436,595 acres.

1.3 PURPOSE AND NEED FOR THE ACTION

The enabling Legislation established the need for the PTNM RMP/EIS, which requires that “*Not later than 3 years after the date of enactment of this Act, the Secretary shall develop a comprehensive management plan for the long-term protection and management of the Monument... The management plan shall describe the appropriate uses and management of the Monument, consistent with the provisions of the legislation.*” The purpose of the Monument RMP is to address resource management and public uses within the Monument as prescribed by the Legislation, including:

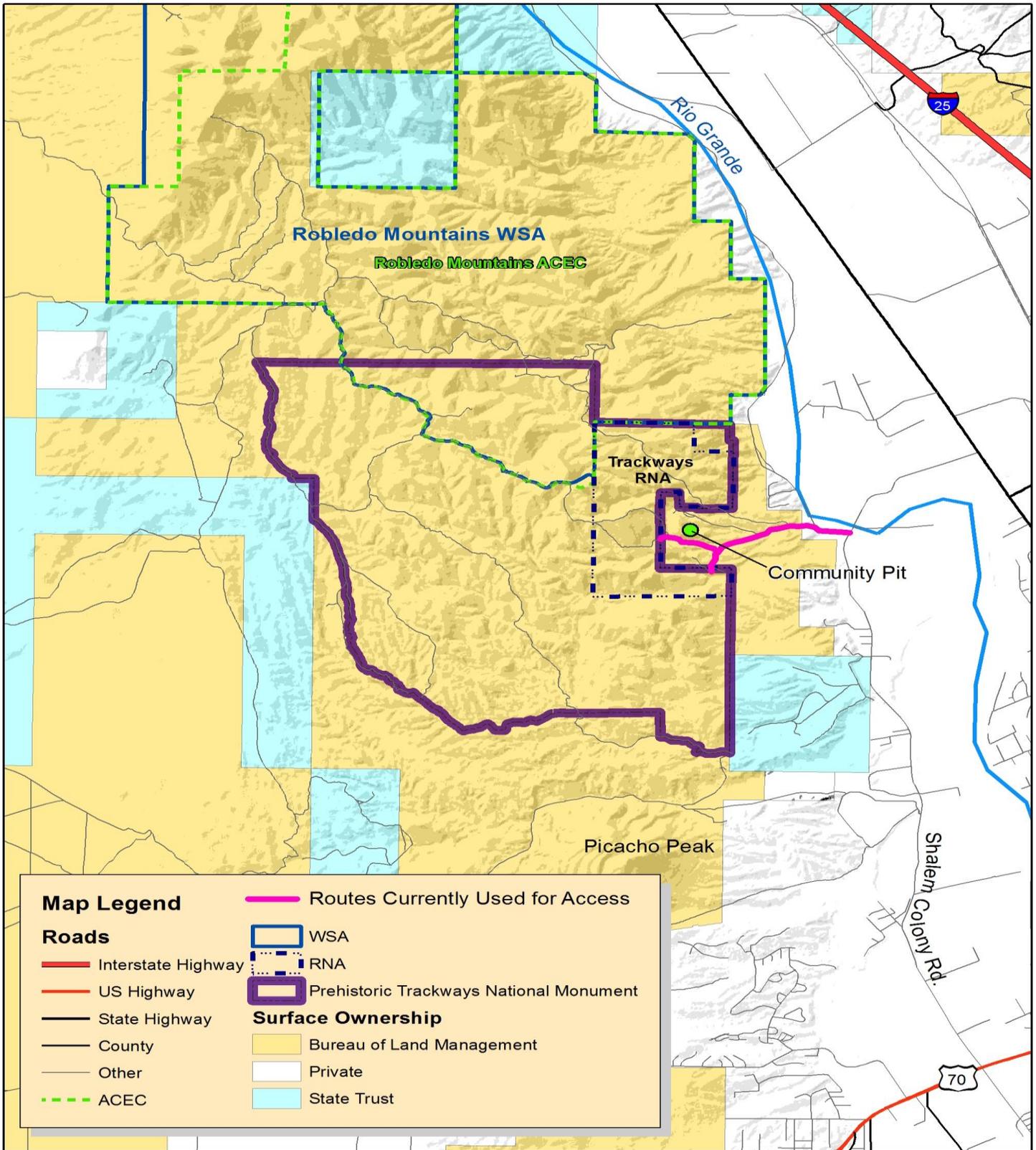
- Manage the Monument in a manner that conserves, protects, and enhances the paleontological, scientific, educational, scenic, and recreational resources and values of the Monument.
- The Secretary shall provide for public interpretation of, and education and scientific research on, the paleontological resources of the Monument, (with priority given to exhibiting and curating the resources in Doña Ana County, New Mexico).
- The use of motorized vehicles in the Monument shall be allowed only on roads and trails designated for use by motorized vehicles under the RMP.
- The Secretary may issue permits for special recreation events involving motorized vehicles within the boundaries of the Monument to the extent the events do not harm paleontological resources, and subject to any terms and conditions that the Secretary determines to be necessary.

1.4 SCOPING AND PLANNING ISSUES

The process for developing an RMP begins with the identification of planning issues (40 CFR 1502.7 and 43 CFR 1610.4-1). Issues are areas of conflict or controversy between uses and management activities for a given area of public land that must be resolved in the RMP. The agency also addresses environmental and management concerns in order to provide comprehensive management guidance for all resources within the Monument and to satisfy legal requirements.

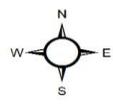
BLM specialists and the public identified planning issues during internal and public scoping. The BLM then refined the preliminary planning issues and determined which issues would be carried forward.

Map 1-2 - Prehistoric Trackways National Monument



Map Legend		Routes Currently Used for Access
Roads		
Interstate Highway	WSA	
US Highway	RNA	
State Highway	Prehistoric Trackways National Monument	
County	Surface Ownership	
Other	Bureau of Land Management	
ACEC	Private	
	State Trust	

No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.



Projection: UTM Zone 13
Datum: NAD 1983

1.4.1 Issues Addressed

Paleontological Research and Protection

How will management actions address the legislative mandate of providing for resource protection and research of paleontological resources?

How will the management prescriptions address site protection and resource mitigation?

The paleontological resources of the Monument provide information and insight into the Permian Era. Research of the paleontological resources has increased the knowledge of the Permian Era environment and life forms that existed during this interval of geologic history. This research has also provided the BLM with information for public educational and interpretive materials.

The BLM has entered into a partnership with the New Mexico Museum of Natural History & Science (NMMNHS) to collect, record locality data, curate, research, publish, and provide educational materials relating to the paleontological resources discovered in what is now the PTNM. The NMMNHS continues to publish scientific information regarding the fossils of the Robledo Mountains through scientific journals. The NMMNHS is in the process of finalizing a report for the BLM that provides recommendations for the management of paleontological resources within the PTNM. The NMMNHS has also provided several trackways specimens through a long-term loan that are currently on exhibit at the Las Cruces Museum of Nature and Science.

Interpretation and Education

How will the management actions address the legislative mandate of providing for public interpretation of, and education and scientific research on, the paleontological resources of the Monument, with priority given to exhibiting and curating the resources in Doña Ana County?

What types of education and interpretation are best suited to protection of fossils? Onsite? Off-site?

Since the designation of the Monument in 2009, the BLM has initiated education and interpretation activities. Park rangers regularly give programs for community groups and partnering agencies, host an annual K-5 paleontology day camp, visit classrooms, host field trips, and give guided hikes to the public. The PTNM is a BLM Hands on the Land Site – a National network of outdoor classrooms on public land. The Monument has a K-8 curriculum and school kit for in-classroom and field trip activities. There are two traveling trunk exhibits that are stationed in visitor centers around Las Cruces. In 2009, the BLM partnered with the NMMNHS, the Smithsonian’s National Museum of Natural History and New Mexico State University’s Creative Media Institute to make 10 podcasts in which scientists explain the scientific significance of the Trackways. As the on-site educational and interpretive programs expand, facilities such as trails with wayside interpretive exhibits may be needed.

The BLM has entered into a partnership with the City of Las Cruces Museums and assisted in developing the trackways exhibits for their new Museum of Nature and Science. The theme of the new museum is “*Trackways to Space*” and the centerpiece exhibit is a large sandstone trackway segment that includes ichnofossils from a number of Permian species. There are several other exhibits that also interpret various aspects of the trackways and the Monument. This museum now serves as the primary gateway to educating the public on the resources of the Monument; future plans may include educational presentations and guided tours of the Monument.

Travel and Access

How can the BLM manage access to the Monument while protecting the resources?

Within the Monument are 37.6 miles of primitive roads. Most of these primitive roads were created in conjunction with the Robledo Off-Highway Vehicle Trails, and they usually follow drainage bottoms. There are portions of some primitive roads that follow along prominent ridge lines. As primitive roads, these are not maintained and do not adhere to any BLM prescription for construction. Although these routes function as the primary vehicle access to the majority of the Monument, travel is limited to high clearance, 4-wheel drive vehicles. Technically, there are a variety of access points to the Monument. Many of these “casual use” access routes cross private or State trust lands.

Appendix C includes a Comprehensive Trails and Travel Management Plan that identified public land within the Monument as Open, Limited, or Closed to Off-Highway Vehicle Use. The Comprehensive Trails and Travel Management Plan also includes implementation decisions of designating routes and allowable uses in areas identified as limited to designated routes.

Recreation

How will the BLM manage conflicts between motorized use and protection of Monument resources, objects, and values?

How will the BLM manage requests for special recreation permits?

How will the management actions address other various recreation opportunities such as camping, shooting, and fossil hunting while protecting Monument resources, objects, and values?

What opportunities will be available for visitor services and facilities?

The Monument is currently used for a wide variety of recreation. Mountain biking, hiking, OHV (including all-terrain vehicles, motorcycles, and full size 4-wheel drive vehicles), hunters, and visitors in search of a rugged, scenic experience, and naturalists hoping to glimpse evidence of a prehistoric environment all find a destination in the Monument. Some activities are no longer compatible with the legislative mandate for Monument management. Casual collection of fossilized material may disturb geologic formations that host significant Permian Age ichnofossil, and motorized activities may adversely affect fossils that are exposed within the vehicle footprint. These types of recreational opportunities may need to be monitored, restricted, or prohibited in order to adequately ensure the integrity of the fossil resources.

Wildlife, Livestock, and Vegetation

What management actions will protect wildlife and wildlife habitat?

How will livestock grazing be addressed within the Monument?

How will management of vegetative communities be addressed in the Monument?

Management must consider the potential impacts to wildlife and vegetation. Livestock grazing may continue (see Appendix A, page A-4), but the BLM must consider its potential impacts on the important paleontological resources.

Visual Resources

How will the BLM manage threats to scenic quality within the boundaries of the Monument?

The visual resources within the Monument must be considered while making management decisions.

Socio-economics

How will management actions impact economic and social opportunities in the community?

The Monument designation and management can impact economic and social opportunities for the local community through tourism, recreational opportunities, and livestock grazing. These impacts must be considered when analyzing the management alternatives.

1.4.2 Issues Considered but Not Further Analyzed

During public scoping, the BLM received comments that referred to implementation decisions made through administrative or resource program guidance and do not require land use planning decisions in order to be resolved:

- Comments urging the BLM to organize or support a volunteer or advisory group for the Monument are documented in the Scoping Report, but will not be addressed in the RMP/EIS. Such actions can be resolved through administration or policy action. The BLM is committed to coordinating and collaborating with local groups, clubs, educational institutions, and agencies to protect and promote the resources of the Monument.
- A management concern for the BLM is the possibility of new legislation that would change the Monument boundary. The existing Legislation allows the Secretary of the Interior to make minor boundary adjustments to the Monument if additional paleontological resources are discovered on public land adjacent to the Monument. The Secretary of the Interior has the authority to make these adjustments independent of the RMP/EIS process. If additional lands are added to the Monument at a later date, these lands will be managed in accordance with the management decisions made in this RMP/EIS.
- Actions regarding the adjacent Community Pit #1 are beyond the scope of the RMP because the Community Pit #1 is outside the RMP Planning Area (Map 1-2). However, cumulative impacts from the actions taken in Community Pit #1 will be addressed in the RMP/EIS.

1.5 PLANNING CRITERIA/LEGISLATIVE CONSTRAINTS

The BLM's land use planning guidance (Handbook H-1601-1) states that planning criteria are the constraints or ground rules that guide and direct the development of the RMP. The RMP planning criteria tailor the document to the identified issues and ensure that unnecessary data collection and analyses are avoided. Planning criteria for the PTNM RMP/EIS are as follows:

- The RMP will be consistent with the FLPMA, NEPA, *New Mexico Standards and Guidelines for Livestock Grazing Management* (2001), the *Omnibus Public Land Management Act of 2009-Paleontological Resources Preservation* (16 USC 470aaa et seq.), and all other applicable laws, regulations, and policies (Appendix B).

- The RMP will be consistent with *the Omnibus Public Land Management Act of 2009* (Appendix A), FLPMA, NEPA, and all other applicable laws, regulations, and policies.
- The RMP will be in compliance with the BLM *National Monuments, National Conservation Areas, and Similar Designations Manual 6220*.
- The RMP will comply with the BLM *Management of Paleontological Resources 8270 Manual and Handbook* and all applicable Instruction Memorandums (IMs):
 - 2012-140 Collecting Paleontological Resources Under the Paleontological Resources Preservation Act of 2009
 - 2012-141 Confidentiality of Paleontological Locality Information Under the Omnibus Public Lands Act of 2009, Title VI, Subtitle D on Paleontological Resources Preservation
 - 2009-011 Assessment and Mitigation of Potential Impacts to Paleontological Resources
 - 2009-113 Casual Collecting of Common Invertebrate and Plant Paleontological Resources under the Paleontological Resources Preservation Act of 2009
 - 2009-138 Confidentiality of Paleontological Locality Information under the Omnibus Public Lands Act of 2009
 - 2008-009 Potential Fossil Yield Classification System for Paleontological Resources on Public Lands
- Land use decisions will apply to the surface and subsurface estate managed by the BLM.
- For program-specific guidance for decisions at the land use planning level, the process will follow the BLM's policies in the *Land Use Planning Handbook, H-1601*.
- BLM staff will strive to make decisions in the RMP compatible with the existing plans and policies of adjacent local, state, and Federal agencies and local American Indian tribes, as long as the decisions are consistent with the Legislation.
- BLM staff will work cooperatively and collaboratively with cooperating agencies and all other interested groups, agencies, local governments, tribes, and individuals.
- The planning process will provide for ongoing consultation with American Indian tribal governments and the public regarding strategies for protecting recognized traditional uses and heritage resources if such are subsequently identified within the Monument.
- Broad-based public participation and collaboration will be an integral part of the RMP process.
- In the RMP, the BLM will recognize the State's responsibility and authority to manage wildlife. The BLM will coordinate with the New Mexico Department of Game and Fish.
- The RMP will recognize valid existing rights.
- The RMP will incorporate, where applicable, management decisions brought forward from existing planning documents.
- The BLM will consider public welfare and safety when addressing recreational target shooting, hazardous materials, and fire management.

- The Wilderness Study Area (WSA) will continue to be managed pursuant to FLPMA Section 603(c) and the BLM *Management of Wilderness Study Areas, Manual 6330*, until Congress either designates all or portions of the WSA as wilderness or releases the lands from further wilderness consideration.
- Where practical and timely for the planning effort, the best available scientific information, research, and new technologies will be used.
- Geographic Information System and metadata information will meet Federal Geographic Data Committee standards, as required by Executive Order 12906. All other applicable BLM data standards will also be followed.
- Local Fire Management Plan(s) will provide specific implementation strategies, evaluation criteria and accomplishment reporting as referenced in the fire management portion of the RMP.
- Planning and management direction will focus on the relative values of resources and not the combination of uses that will give the greatest economic return or economic output.
- Actions must comply with all applicable laws and regulations and must be reasonable, achievable, and allow for flexibility while supporting adaptive management principles.
- The RMP will identify specific goals, objectives, and actions for the use, conservation, protection, interpretation and possible restoration of the Monument's resources.
- The RMP will identify Best Management Practices (BMPs) or mitigation measures to be applied to existing uses and planned uses to ensure protection of the Monument's resources, objects, and values.

As stated in the BLM Instruction Memorandum No. 2009-215:

... "according to Section 302(a) of FLPMA, the National System of Public Lands is to be managed under the principles of multiple use and sustained yield except that where a tract of such public land has been dedicated to specific uses according to any other provisions of law it shall be managed in accordance with such law."

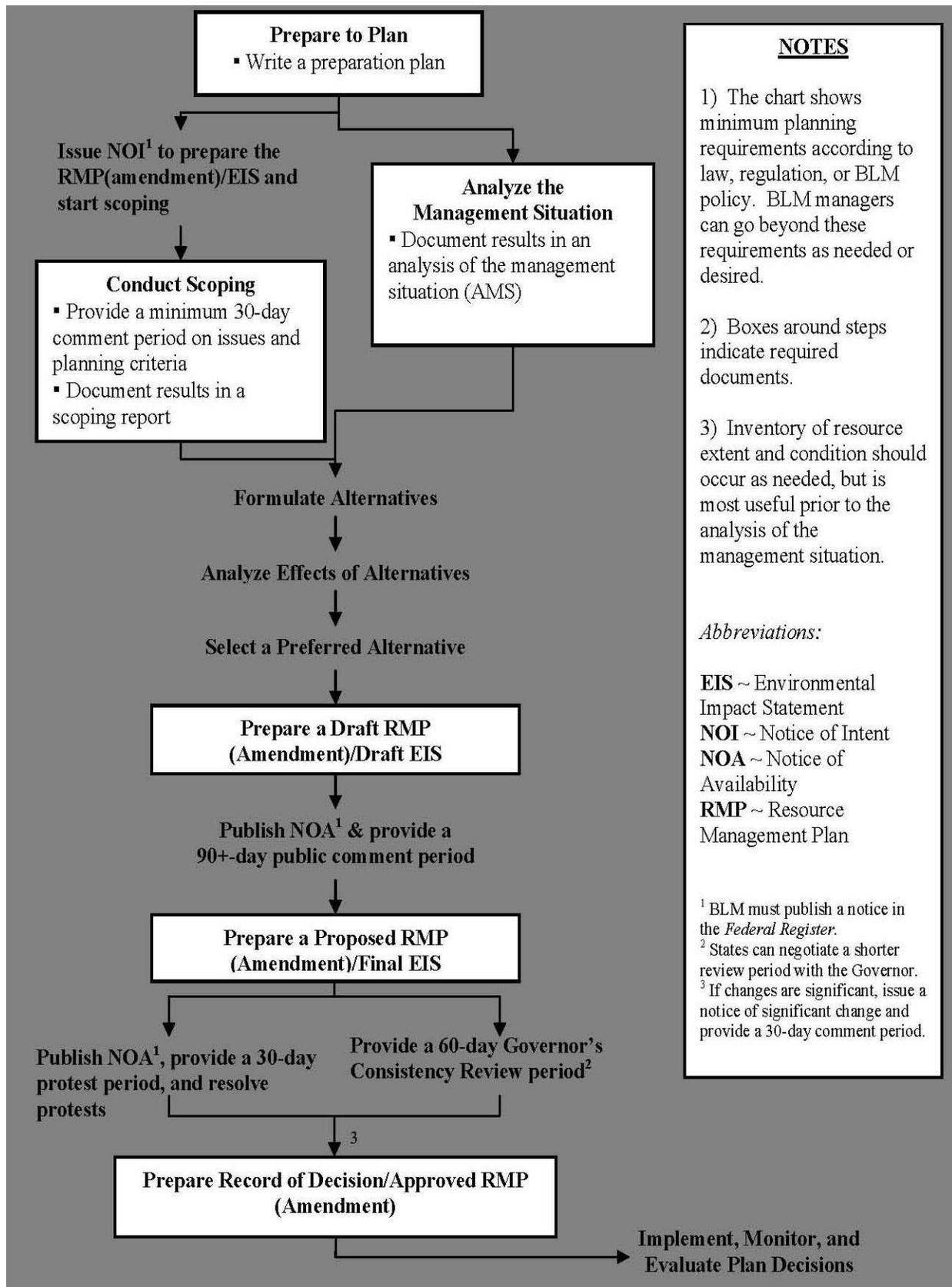
When an area of public land is set aside by an Act of Congress, the designating language is the controlling law. Therefore, as a general rule, if the management direction of the designating Legislation conflicts with FLPMA's multiple-use mandate, the designating Legislation supersedes that portion of FLPMA.

1.6 PLANNING PROCESS

The RMP process follows ten steps according to the BLM *Land Use Planning Handbook, H-1601* (see Figure 1-1). These steps allow the BLM to act in accordance with NEPA and FLPMA.

NEPA requires that those actions whose effects are expected to be significant and are not fully covered by an existing EIS be analyzed in a new EIS. Approval of an RMP is considered a Federal action that normally requires the preparation of an EIS. The public is encouraged to participate throughout the RMP

Figure 1-1 Planning Process



process, and the BLM is mandated to support and allow for public participation and review. This process also requires the expertise of an interdisciplinary team of resource specialists to complete each step.

FLPMA mandates the BLM to prepare and maintain a current inventory of public land and its resources and values. It also mandates the BLM to develop, maintain, and where appropriate revise land use plans for the public land. Section 202 of FLPMA states that land use plans must observe and use the principles of multiple-use and sustained yield, use a systematic interdisciplinary approach, give priority to Areas of Critical Environmental Concern (ACECs), rely on the available inventory of public land, consider present and potential uses, consider the scarcity of the values involved, weigh the long- and short-term benefits, comply with applicable laws and regulations, and coordinate with state and local governments.

The designating Legislation also states that a comprehensive management plan for the long-term protection and management of the Monument shall be developed.

Development of the PTNM RMP followed the BLM land use planning process as outlined in the BLM *Land Use Planning Handbook (H-1601-1)*. Below is a description of the steps of the process and how those steps were taken with respect to the PTNM RMP.

Step 1: Prepare to Plan

In January 2010, the BLM finalized the PTNM Preparation Plan. This Preparation Plan was developed to identify the preliminary planning issues and management concerns, identify data needs, identify potential cooperating agencies and public scoping opportunities, and create a schedule and budget.

Step 2: Issue Notice of Intent

On January 5, 2010, a Notice of Intent (NOI) was published in the *Federal Register* (Volume 75, Number 2, Pages 431-432), which notified the public of the BLM's intent to prepare the RMP/EIS and to begin public scoping.

Step 3: Scoping

The BLM held one formal scoping meeting in Las Cruces on January 26, 2010 to share information about the Monument, preliminary issues, and the planning process. The BLM asked the public for comments and suggestions regarding the management and interpretation of the natural, cultural, recreational, and scientific resources within the Monument. The initial formal scoping period closed on February 10, 2010. The results of the public scoping are found in the Scoping Report, Appendix F.

Step 4: Analysis of Management Situation

The BLM analyzed available inventory data, portrayed the existing management situation, and identified management opportunities to respond to identified issues, which are presented in the *Analysis of Management Situation (AMS)*. The AMS is the basis for formulating reasonable alternatives, and identifying the resources suitable for development or protection. This analysis also results in identification of the "No Action Alternative" - the baseline (current) management condition, which includes the Monument Legislation.

Step 5: Formulate Alternatives

The BLM planning regulations (43 CFR 1610.4-2) require development of planning criteria to guide preparation of an RMP. Planning criteria are the standards, rules, and other guidelines developed by

managers and interdisciplinary teams, with public input, for use in forming judgments about plan-level decision making, analysis and data collection. These criteria are used to establish the parameters or ground rules for making planning decisions and simplifying RMP actions. The criteria may be adjusted during RMP development based on management concerns and the results of public scoping.

Four alternatives are presented and analyzed in the RMP/EIS. These alternatives address planning issues identified by the Legislation and during both internal and external scoping and they meet the goals and objectives developed by the interdisciplinary team. In compliance with NEPA, CEQ regulations, and BLM planning policy and guidance, the alternatives are reasonable and can be implemented. These alternatives are described in detail in Chapter 2.

Step 6: Analyze Effects of Alternatives and Select a Preferred Alternative

The resulting physical, biological, economic, and social impacts from implementation of each of the alternatives have been predicted and assessed in Chapter 4. The District Manager evaluated the alternatives and estimated impacts. The District Manager then identified Alternative C as the preferred alternative and made this recommendation to the State Director.

Step 7: Preparation of the Draft RMP/EIS

The resulting *Draft RMP/EIS* was distributed for a 90-day public review and comment period. In addition to the public comment period, a public meeting was held by the Las Cruces District Office in Las Cruces, New Mexico on August 7, 2012.

Step 8: Preparation of the Proposed RMP/Final EIS

After the comment period, the BLM evaluated comments and updated the RMP/EIS. The District Manager has recommended a proposal to the State Director, who has selected an alternative or a mixture of alternatives, which is published in this *Proposed RMP/Final EIS*. Publication of this *Proposed RMP/Final EIS* will start a 60-day Governor's Consistency Review and a 30-day protest period.

Step 9: Approval of the Record of Decision and Approved RMP

Following resolution of any protests on the *Proposed RMP/Final EIS*, the BLM New Mexico State Director will make a final decision regarding the selection of an alternative. The Approved RMP and Record of Decision (ROD) will be published.

Unlike land use planning decisions, implementation decisions included in this *Proposed RMP/Final EIS* are not subject to protest under the BLM planning regulations, but are subject to an administrative review process, through appeals to the Office of Hearings and Appeals, Interior Board of Land Appeals pursuant to 43 CFR, Part 4 Subpart E. Implementation decisions generally constitute the BLM's final approval allowing on-the-ground actions to proceed. Where implementation decisions are made as part of the land use planning process, they are still subject to the appeals process or other administrative review as prescribed by specific resource program regulations once the BLM resolves the protests to land use planning decisions and issues an Approved RMP and ROD. The Approved RMP and ROD will therefore identify the implementation decisions made in the plan that may be appealed to the Office of Hearing and Appeals.

Step 10: Implementation and Monitoring of Planning Decisions

The BLM will formulate an implementation and monitoring plan after the RMP is finalized. This will provide for periodic evaluations (minimum every 5 years) to determine if management and mitigation measures are satisfactory for the resources. This will allow the BLM to detect any issues early on or to ensure that management goals are being met.

1.7 COLLABORATION

Tribal Consultation

American Indian tribes have a long history of collaboration with BLM in planning and managing cultural resources. Letters inviting participation in the planning process as cooperating agencies were sent in February 2010 to the following seven tribes: Fort Sill Apache Tribe of Oklahoma, Comanche Indian Tribe, White Mountain Apache, Pueblo of Ysleta del Sur, Pueblo of Isleta, Mescalero Apache Tribe, and Navajo Nation. In September 2011, three additional tribes were invited to participate as cooperating agencies: Pueblo of Acoma, the Pueblo of Laguna and the Pueblo of Tesuque. No tribe has accepted the invitation to be a cooperating agency.

Cooperating Agencies

By definition, a cooperating agency is any Federal, state, or local government agency or Indian tribe that has either jurisdiction by law or special expertise regarding environmental impacts of a proposal. A Cooperating Agency Agreement is a formal framework for governmental units to engage in active collaboration with the lead Federal agency during the NEPA process. In January and February 2010 and September 2011, letters were sent to the following agencies inviting recipients to become a cooperating agency for this project: City of Las Cruces, Doña Ana County, New Mexico State Parks, New Mexico Museum of Natural History and Science, and the New Mexico Department of Game and Fish. Formal status for cooperating agency was not been requested by any invited party. The State Historic Preservation Office was notified of the planning process, as required by section 106 of the National Historic Preservation Act.

Other Stakeholder Relationships

Various groups not defined as cooperating agencies have worked with the BLM and provided valuable information: Las Cruces Museum of Nature and Science, Las Cruces Four-Wheel Drive Club, New Mexico State University, Paleozoic Trackways Foundation, Smithsonian Institution, and New Mexico Museum of Natural History & Science

1.8 RELATIONSHIP TO OTHER PLANS

The BLM must ensure that land use plans are as consistent as possible with existing officially adopted related plans, policies or programs of other Federal and state agencies, Indian tribes, and local governments that may be affected (43 CFR 1610.3-1(d)(1)). These plans were reviewed as required to determine whether they were relevant to the development of the Monument RMP. A summary of those plans that affect the same land as the Monument are as follows:

Federal

The *Mimbres RMP*, as amended, approved in April 1993, currently provides general guidance on a landscape level for management in Doña Ana, Grant, Hidalgo, and Luna Counties. The *PTNM RMP* will supersede the *Mimbres RMP* for the Monument and provide the framework and prescriptions to implement Legislative directives. The document identifies the current management situation, the desired future conditions to maintain or achieve, and the management actions needed to achieve these objectives. Following completion of the *PTNM RMP*, the BLM Las Cruces District Office staff will develop an implementation plan. The *Mimbres RMP* for Doña Ana County is currently under revision and will be known as the *TriCounty RMP*. The *TriCounty RMP* does not analyze the PTNM nor will it modify decisions made in the *PTNM RMP*.

The Las Cruces District Fire Management Plan provides specific implementation strategies as referenced in the fire management portion of the RMP. *Standards for Public Land Health and Guidelines for Livestock Grazing Management* (BLM 2001) amends the *Mimbres RMP* and is the underlying guidance for livestock grazing decisions on BLM land in the Monument and throughout BLM land in New Mexico. Decisions from these plans are specifically addressed in the existing management guidance and alternatives.

State and Local Government Plans

This RMP is consistent with the following resource related plans of State and local governments:

- *Doña Ana County, New Mexico Natural Events Action Plan Reevaluation 2005*
- *Statewide Comprehensive Outdoor Recreation Plan (SCORP)*
- *New Mexico Historic Preservation Plan*
- *The 2006 Comprehensive Wildlife Conservation Strategy*
- *2000 City of Las Cruces Extraterritorial Zoning Comprehensive Plan 2000-2020*
- *2005 Las Cruces Metropolitan Planning Organization Transportation Plan*
- *2004 Rio Grande Riparian Ecological Corridor Project Report*
- *Vision 2040 Regional Planning Project- City of Las Cruces and Doña Ana County*

A summary description of the relevancy and consistency of these plans is found in Chapter 5.

1.9 MONUMENT RESOURCES, OBJECTS, AND VALUES

The BLM refers to the values described in the PTNM designating Legislation as Monument Resources, Objects, and Values (ROVs). The BLM's management approach must reflect the direction from Congress to conserve, protect, and enhance the Monument ROVs in accordance with FLPMA and other appropriate laws as a component of the National Landscape Conservation System. The PTNM was designated to “*protect the unique fossil resources for present and future generations*” and Congress directed the BLM to “*conserve, protect, and enhance the unique and nationally important paleontological, scientific, educational, scenic, and recreational resources and values.*” Where ROVs are described in the designating legislation in broad categories, BLM identifies the specific resources that fall into those categories. The BLM has interpreted the Prehistoric Trackways National Monument ROVs to be the following:

Paleontological: Fossil resources are predominantly Permian Age fossil material, but may be expanded to encompass subsequent discoveries.

Scientific: Science-based research conducted on paleontological and geologic resources, especially Permian Age fossils and their geologic context.

Educational: Educational and interpretive opportunities on the Permian fossils.

Recreation: Recreational uses related to the enjoyment, appreciation, and protection of the fossil resources and their geologic context.

Scenic: The distinct geologic exposures of the Robledo Mountains in the context of the Permian fossils.

Alternatives and management decisions proposed in the *PTNM RMP/EIS* reflect direction from Congress in the Prehistoric Trackways National Monument designation within the *Omnibus Public Lands Management Act of 2009*. The BLM RMP process is influenced by administrative directives found in the Act (Sec. 2104) (See Appendix A). The directives provide important parameters for selecting and framing Alternatives in Chapter 2.

Prehistoric Trackways National Monument Directives

- Provide for public interpretation of, and education and scientific research on, the paleontological resources of the Monument.
- Enter into cooperative management agreements or other instruments with interested parties or agencies, as appropriate, to coordinate and collaborate management of the Monument.
- Continue to manage that portion of the Robledo Mountains WSA within the Monument.
- Continue to manage that portion of the Robledo Mountains ACEC within the Monument.
- The use of motorized vehicles in the Monument shall be allowed only on roads and trails designated in this plan for use by motorized vehicles.
- Subject to valid existing rights, close the Monument to entry, appropriation, or disposal under the public land laws.
- Subject to valid existing rights, close the Monument to location, entry, and patent under the mining laws; and the operation of the mineral leasing laws, geothermal leasing laws, and mineral materials laws.

1.10 MISSION STATEMENT AND OVERALL VISION

The PTNM is a unit of the BLM National Landscape Conservation System (NLCS). The mission of the NLCS is to conserve, protect, and restore Nationally-significant landscapes that are recognized for their outstanding cultural, ecological, and scientific values. The PTNM was designated in order to conserve, protect, and enhance the unique and Nationally-important paleontological, scientific, educational, scenic, and recreational resources and values of the public land.

The Prehistoric Trackways National Monument preserves a moment in time when the world was poised on the brink of cataclysmic change that would usher in the era of the dinosaurs. Our vision is to tell this story to the Nation through education and interpretation, and through scientific research. The BLM will maintain the rugged and scenic setting while providing opportunities for recreationists to enjoy these lands now, and for future generations, while ensuring the sustainability and protection of the paleontological resources. We will work collaboratively with partners to optimize Monument management which will enhance our ability to serve the public and meet the needs of the Monument resources, objects, and values.

1.11 CHANGES FROM THE DRAFT RMP/EIS

Changes in the *Proposed RMP/Final EIS* were prompted primarily by public comment. Public comments are reproduced in Appendix H. In Appendix H, the response to substantive comments will direct the reader to changes throughout the document. Extensive internal reviews of the *Final EIS* have also led to corrections, revisions, updates, and other improvements to the document. Acreage figures and associated quantifications have also been revised throughout the document to reflect public input and staff review.

The BLM also considered whether the *Draft RMP/EIS* warranted supplementation (see BLM *National Environmental Policy Act Handbook 1790-1* Section 5.3 for details on supplementing an EIS). The Prehistoric Trackways National Monument *Draft RMP/EIS* does not require the issuance of a supplemental EIS because no substantial changes were made to the proposed action, no new alternatives outside the spectrum of alternatives already analyzed were proposed, no significant new circumstances arose, and no new significant information was provided.

Since the *Draft PTNM RMP/EIS* was published, the BLM has issued new guidance for land use planning in National Monuments -- *Manual 6220-National Monuments, National Conservation Areas, and Similar Designations* (USDOI BLM 2012). This guidance directs the BLM to identify management actions, allowable uses, restrictions, management actions regarding any valid existing rights, and mitigation measures to ensure that the resources, objects, and values are protected. This *Proposed Final RMP/EIS* adopts the new guidance. The BLM has refined the list of Monument Objects, re-phrased goals and objectives to better match the new guidance, and re-analyzed impacts to resources and resource uses under the new framework.

- The Alternatives were not changed from the *Draft RMP* to the *Proposed Final RMP*. In many cases, wording may be slightly different but the concepts were left intact.
- Research Management did not vary through the Alternatives. It was decided by BLM staff that the Goals, Objectives, and Management Common to All Alternatives would better describe and support Paleontological Resources. These sections of Research Management are now found under Paleontological Resources in Chapter 2.
- After the *Draft RMP* was published, the BLM obtained legal access to PTNM. Most references to obtain legal access have been removed, but the BLM will continue to seek other means of access if needed.

CHAPTER 2

ALTERNATIVES

CHAPTER 2 ALTERNATIVES

2.1 INTRODUCTION

This chapter identifies a range of goals and objectives for the Prehistoric Trackways National Monument (PTNM). Since the *Draft PTNM RMP/EIS* was published, the BLM has issued new guidance for land use planning in National Monuments (*Manual 6220-National Monuments, National Conservation Areas, and Similar Designations* (USDI BLM 2012)). This guidance directs the BLM to identify management actions, allowable uses, restrictions, management actions regarding any valid existing rights, and mitigation measures to ensure that the Monument resources, objects and values are protected. This *Proposed Final RMP/EIS* adopts the new guidance.

The National Environmental Policy Act (NEPA) requires Federal agencies to consider a reasonable range of alternative approaches when proposing and analyzing Federal actions. The different alternatives within this Chapter are developed with guidance from professional resource specialists, Monument Legislation-Public Law 111-11 (located in Appendix A), NEPA, the Federal Land Policy and Management Act (FLPMA), BLM regulations and policies (Appendix B), and public input.

Three management alternatives have been developed and analyzed for the PTNM along with the No Action Alternative. The No Action Alternative is a description of the current management, which is a combination of management decisions, goals, and objectives from the *Mimbres RMP* (1993), Monument Legislation, and current policies and regulations. The No Action Alternative allows for a point of reference for the other three developed management alternatives.

Proposed within this Chapter are two different types of decisions. Those decisions are either planning (broad overarching) decisions or implementation (on-the-ground) decisions. The implementation decisions are denoted with an asterisk (*). Planning decisions may be protested, while implementation decisions can be appealed at the time of their implementation, and this is described in the Dear Reader letter at the front of this document.

Chapter 2 Sections

- Section 2.2 describes the alternative development process for the *PTNM RMP/EIS* and provides an overview of the focus of each of the three action alternatives considered.
- Section 2.3 lists directives from the *Omnibus Public Lands Management Act of 2009, Subtitle B-The Prehistoric Trackways National Monument*.
- Section 2.4 describes the management alternatives in detail. Goals, Objectives, Management Common to All Alternatives, and the Proposed Management Actions are described in this section. Management Common to All Alternatives lists management guidance that will follow through all of the proposed alternatives.
- Section 2.5 is a summary of the impact analyses from Chapter 4, depicted in a table.

2.2 ALTERNATIVE DEVELOPMENT

RMPs are broad-scale land management plans that establish desired outcomes (goals and objectives) for management of the public land and identify the management actions and allowable public uses that will

reach those outcomes. An Approved RMP and Record of Decision (ROD) provide the framework for future site-specific management decisions and actions.

Implementation-level decisions are typically made after the RMP is adopted, but in this RMP some implementation-level decisions are identified and incorporated into the alternatives. An example of an implementation-level decision within this RMP is the Trails and Travel Management Plan, which includes decisions designating routes as motorized or non-motorized (Appendix C).

Goals and objectives were developed through the planning process for every applicable resource. Goals describe broad direction and desired conditions for each resource or resource use, as interpreted through the Monument resources, objects, and values identified in Chapter 1, BLM policy guidance, and public scoping input.

Objectives describe more detailed outcomes or desired future conditions for different components of the resource or resource use that meet the overall goals. Objectives are usually quantifiable and measurable and may have established timeframes for achievement (as appropriate). Some objectives are common to all alternatives while others vary by alternative. Alternatives must:

- Meet the purpose and need for the RMP (see Chapter 1).
- Be reasonable.
- Be responsive to issues identified in scoping.
- Meet the established planning criteria (see Chapter 1), Federal laws and regulations, and BLM planning policy.

2.2.1 ALTERNATIVE THEMES

Alternative A or the “*No Action Alternative*” represents the continuation of existing management, which is defined by the *Mimbres RMP* (1993) and the legislation designating the Monument, the *Omnibus Public Land Management Act of 2009*. Two RMP amendments also affect management of the *Planning Area: New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management* (2001) (NM Standards and Guidelines) and the *Resource Management Plan Amendment for Fire and Fuels Management on Public Land in New Mexico and Texas* (2004).

Alternative B represents a more restrictive approach to use of the Monument that emphasizes resource protection; BLM would invest less in the Monument and would limit changes and involvement as compared to Alternatives C and D.

- All paleontological resources would be conserved for future scientific research.
- The Monument would be closed to casual collection of common invertebrate fossils.
- The Monument would be closed to livestock grazing.
- The Monument would be closed to all mechanized and motorized vehicles - exceptions may be authorized for any military, fire, emergency, or law enforcement vehicles or any vehicle in official use or expressly authorized in writing by the authorized officer.
- There would be no prohibitions on recreational target shooting.
- Special Recreation Permits (SRPs) would not be issued.
- The education and interpretation program would be primarily off-site.

Alternative C (Preferred Alternative) protects resources while allowing compatible public uses. The BLM has determined that this is the best combination of management approaches to protect the resources, objects and values in the Monument.

- Paleontological resources deemed suitable for scientific research would be conserved and used for scientific research only. Paleontological resources appropriate for interpretation, educational and recreational use would be developed for that use.
- The Monument would be closed to casual collecting of petrified wood, common invertebrate and plant paleontological resources.
- Allotment management plans would be adjusted to exclude grazing at specific locations such as campsites or fossil sites based on the Monument Monitoring Plan results.
- Motorized and mechanized travel within the Monument would be limited to designated routes and require a no-fee day-use permit.
- Approximately 5.4 miles of previously designated routes would be closed to motorized and mechanized travel.
- Recreational target shooting would be prohibited.
- New routes or trails may be developed by the BLM to enhance visitor experiences and research opportunities.
- Commercial, competitive, and organized group activities would be managed through the SRP process.
- Education and interpretation would be enhanced on-site and off-site including an on-site visitor contact station.
- Organized tours and self-guided interpretive activities would be developed.

Alternative D represents a maximum use approach to management of the Monument and the widest range of public uses of the resources while still following the constraints of the Monument Legislation.

- Localities deemed suitable for scientific research would be preserved and used for scientific research only.
- Localities appropriate for interpretation, educational and recreational use would be developed.
- The Monument would be closed to casual collecting of common invertebrate and plant paleontological resources.
- Limited collecting of common invertebrates would be allowed when in conjunction with a BLM-authorized educational or interpretive activity.
- Current livestock management would continue in the Monument.
- Approximately 4.0 miles of designated routes would be closed to motorized and mechanized use.
- New motorized and non-motorized routes may be developed by the BLM to enhance visitor experiences and research opportunities.
- Competitive, commercial, and organized group activities would be managed through the SRP process.
- Recreational target shooting would be prohibited.
- Education and interpretation would be developed for the Monument both on-site and off-site, including an on-site visitor center.
- Organized tours and self-guided interpretive activities would be developed along with an interpretive motorized tour route.

Slight changes, wording, acreages, and format were made to the *Proposed RMP*. These are described in more detail in Section 1.11, and in Appendix H.

2.2.2 ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

2.2.2.1 Community Pit #1

During scoping, the BLM received a comment to consider including the adjacent Community Pit #1 into the Monument. Community Pit #1 is not within the Monument boundary and is therefore outside the *Planning Area* for this RMP, and this RMP cannot make decisions for land outside the *Planning Area*. Only the Secretary of the Interior or President may alter the Monument boundary. This action cannot be accomplished through the RMP process.

2.2.2.2 Target Shooting Allowed Within a Designated Area of Monument

In Alternatives C and D, the BLM proposes to close the Monument to recreational target shooting. No restrictions are proposed in Alternatives A and B. A proposal to allow target shooting within a designated area was evaluated in a map-based exercise in GIS using a ½-mile safety buffer (described further in Appendix G) overlain on documented paleontological localities in the Monument (areas where researchers and visitors were likely to congregate). This GIS analysis determined that only 356 acres, or 7 percent, of the Monument lies outside the Safety Zone. This area is near the southern boundary. There are no access roads on this side of the Monument and no distinct physical boundaries for the 356 acres. From a management perspective, allowing recreational target shooting within these 356 acres would be difficult since it would be hard to sign the area and enforce the boundary; therefore, it is not feasible to carry this alternative forward for further analysis. Approximately 10 miles southwest of the PTNM is the Butterfield Range, which is a City of Las Cruces facility that is free for public use and open 7 days a week. The shooting range accommodates a full range of target shooting, including pistol, rifle and shotgun, and has multiple shooting bays ranging from 25 yards to 1000 yards.

2.3 PTNM LEGISLATIVE DIRECTIVES

The four alternatives were developed by considering the PTNM legislative directives. Each alternative must incorporate the elements of the Legislation presented below:

- The Secretary shall manage the Monument in a manner that conserves, protects, and enhances the resources and values of the Monument.
- Provide for public interpretation of, and education and scientific research on, the paleontological resources of the Monument, with priority given to exhibiting and curating the resources in Doña Ana County, New Mexico.
- Enter into cooperative management agreements or other instruments with interested parties or agencies, as appropriate, to coordinate and collaborate management of the Monument.
- Continue to manage that portion of the Robledo Mountains Wilderness Study Area (WSA) within the Monument until such time that Congress designates it as a Wilderness Area or releases it from further consideration.
- Continue to manage that portion of the Robledo Mountains Area of Critical Environmental Concern (ACEC) within the Monument as an ACEC.

- Land use authorizations may be permitted to facilitate the management of the Monument and to meet the intent of the enabling Legislation. The Secretary shall only allow uses of the Monument that the Secretary determines would further the purposes for which the Monument has been established.
- Subject to valid existing rights, close the Monument to location, entry, and patent under the mining laws; and the operation of the mineral leasing laws, geothermal leasing laws, and minerals materials laws.
- Manage any land or interest in land that is acquired by the United States for inclusion in the Monument after the date of enactment of this Act in the same manner and degree as herein described for the rest of the Monument.
- Except as needed for administrative purposes or to respond to an emergency, the use of motorized vehicles in the Monument shall be allowed only on roads and trails designated in this plan for use by motorized vehicles.

The broad categories of Monument resources, objects, and values found within the PTNM Legislation can be further defined based on scoping issues and BLM experience with the area.

- *Paleontological*
Fossil resources are predominantly Permian Age fossil material, but may be expanded to encompass subsequent discoveries.
- *Scientific*
Science-based research conducted on paleontological and geologic resources, especially Permian Age fossils and their geologic context.
- *Educational*
Educational and interpretive opportunities on the Permian fossils.
- *Recreation*
Recreational uses related to the enjoyment, appreciation, and protection of the fossil resources and their geologic context.
- *Scenic*
The distinct geologic exposures of the Robledo Mountains in the context of the Permian fossils.

2.4 MANAGEMENT ALTERNATIVES

2.4.1 PALEONTOLOGICAL RESOURCES

GOAL 1: Conserve, protect and enhance unique and important paleontological resources and values in the PTNM.

GOAL 2: Manage the Monument to provide for and allow scientific research while taking into consideration conservation and preservation of the paleontological resources.

OBJECTIVE 1: Protect and enhance paleontological resources by ongoing research and documentation, which establishes the scientific, educational, or recreational merit of the localities.

OBJECTIVE 2: Facilitate research that increases our knowledge and understanding of the paleontological resources.

OBJECTIVE 3: Make all ensuing scientific material/data available to the public except locality data and certain details which are considered restricted for the preservation and protection of the resource. Ensure materials are properly curated.

OBJECTIVE 4: Actively work with organizations, schools, and the scientific community to provide for scientific research on the fossil resources.

MANAGEMENT COMMON TO ALL ALTERNATIVES:

- The BLM would develop a Monument Monitoring Plan within 2 years of the signing of the PTNM RMP Record of Decision that would establish baseline conditions of fossil resources and track changes to those resources based on management, research, and other factors (such as weathering).
- Unauthorized collection of vertebrate fossils is not allowed under 43 CFR 8365.1-5 and PRPA PL 111-01 Section 6034.a.1. Permits are required for the collection of vertebrate fossils, including their trace fossils, such as trackways and coprolites.
- The PTNM legislation withdraws the Monument from operation under the mineral materials laws. The PTNM is closed to free-use or casual collection of petrified wood without a permit (43 CFR, 3622; BLM Manual 8270 .09 B. 1; and PRPA PL 111-01 Section 6304.e.).
- The BLM would continue to use information collected from work performed under existing and new paleontological permits to evaluate the importance of specific sites in the Monument and to allow for focused permitted research or collecting in response to approved research proposals or management needs.
- Paleontological resources collected under a research permit would be stored in Federally-approved repositories as government property for research and used in exhibits. Paleontological collection permits would be issued with consideration of protecting the integrity of the site from which it is being collected, the protection of the resources, and the value of the scientific research or educational aspect for which it would be collected.

PALEONTOLOGICAL RESOURCES (Continued)

(MANAGEMENT COMMON TO ALL ALTERNATIVES, Concluded)

- The BLM would use the criteria for determining which localities are suitable for scientific research or interpretation, education, and recreation in accordance with the *Omnibus Public Land Management Act of 2009-Paleontological Resources Preservation* (16 USC 470aaa et seq.):
 - Furthers paleontological knowledge or public education
 - Provides additional information about the history of life on earth
 - Increases public awareness about the significance of paleontological resources
 - Promotes the scientific and educational use of paleontological resources
 - Will not threaten significant natural or cultural resources
 - Will not create risk of harm to, or theft or destruction of, the paleontological resources or the locality

- All proposed research projects would be evaluated by the BLM staff, including the Regional Paleontologist, for all proposed paleontological research projects. The following items would be considered prior to authorization:
 - An assessment of whether the proposed research is the appropriate current use of the resource
 - An assessment of its priority level if there are multiple proposals
 - An appropriate level of environmental analysis (NEPA)
 - Incorporating project-specific stipulations for resource protection
 - A final written determination, which would be in the form of an authorization

- All contractors, cooperators, partners, volunteers, and permittees conducting or assisting with scientific activities in the Monument must comply with the requirements of the Department of the Interior and the BLM policies on Scientific Integrity, including professional conduct.

- The BLM would identify research priorities and update or revise on an as-needed-basis.

- The BLM would obtain copies of research projects and published research articles based on work conducted in the Monument and establish an in-house reference collection for primary research.

- The BLM would maintain, encourage, and enter into partnerships or cooperative agreements with appropriate entities and individuals to conduct research within the Monument.

- The BLM would provide existing GIS, or other data as available and appropriate, to qualified researchers when requested.

PALEONTOLOGICAL RESOURCES (Concluded)

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
Casual collecting of common invertebrates and plant fossils is allowed throughout the Monument.	<p>Closed to casual collecting of common invertebrate and plant fossils and ichnofossils. A permit would be required for any collecting [16 USC 470aaa-3(e) at 123 Stat. 1174].</p> <p>Collection of petrified wood would be allowed only with a permit (BLM Manual 8270.09 B. 1.).</p>	<p>Closed to casual collecting of common invertebrate and plant fossils and ichnofossils. A permit would be required for any collecting [16 USC 470aaa-3(e) at 123 Stat. 1174].</p> <p>Collection of petrified wood would be allowed only with a permit (BLM Manual 8270.09 B. 1.).</p>	<p>Closed to casual collecting of common invertebrate and plant fossils and ichnofossils. A permit would be required for any collecting [16 USC 470aaa-3(e) at 123 Stat. 1174].</p> <p>Collection of petrified wood would be allowed only with a permit (BLM Manual 8270.09 B. 1.).</p> <p>Limited collecting of common invertebrate fossils without a permit may be allowed only in conjunction with BLM approved interpretive or educational activities at specified locations. Amounts collected would not exceed 5 of any one variety of invertebrate fossil or 2 pounds per person. Use of small hand tools would not be allowed.</p>
Management is directed by FLPMA, other legislative acts and instruction memoranda.	Conserve all paleontological resources localities for on-going and future scientific research.	Localities deemed suitable for scientific research would be preserved and used for scientific research only. Localities appropriate for interpretation, educational and recreational use would be developed for that use.	

2.4.2 EDUCATION AND INTERPRETATION*

GOAL 1: Provide interpretive and educational opportunities supporting and protective of the fossil resources.

OBJECTIVE 1: Partner with organizations (e.g. museums, research and academic institutions) on local and National levels to assist the BLM in providing educational and interpretive opportunities to the public within the Monument.

OBJECTIVE 2: Develop interpretive trails and visitor facilities.

MANAGEMENT COMMON TO ALL ALTERNATIVES:

- Continue BLM and partner-led interpretive tours to the *Discovery Site* and other appropriate sites.
- Develop interpretative materials for programs and events.
- Develop a K-12 paleontological curriculum, in partnership with local school districts, in accordance with State/National standards.
- Develop paleontological and other natural resources interpretive materials for websites.
- Develop and deliver paleontological interpretive and educational programs to school and civic groups.
- Support the development of paleontological exhibits for venues in Doña Ana County and beyond.



EDUCATION AND INTERPRETATION (Concluded)

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
<p>Activities implemented on a case-by-case basis</p>	<p>Develop interpretive materials on paleontological resources such as wayside exhibits, brochures and smart phone applications to support self-guided interpretive activities.*</p>		
	<p>Develop interpretive programs on paleontological resources for ranger or docent-led field tours of the PTNM for school groups and for public and civic groups.*</p>		
	<p>Minimal directional and informational signs would be installed at established routes.*</p>	<p>Develop pedestrian trails with orientation kiosks (with or without brochures) and wayside exhibits interpreting PTNM resources in place, based on an activity level plan in Recreation and Visitor Services.*</p>	
		<p>Develop exhibits for on-site interpretation at a <i>visitor contact station(s)</i> and other destinations. A Visitor Contact Station is a minimal facility that is a point of contact for BLM staff or volunteers to be present and available to interact with the public. It does not necessarily provide a range of amenities such as indoor restrooms, or exhibits. It is a building, or possibly a shade shelter, where public can expect to find information about PTNM.*</p>	<p>Develop interpretive and educational materials and programs for an <i>on-site visitor center</i>, and other destinations. A Visitor Center is a larger facility that provides a location for the visiting public to enjoy the full range of opportunities not possible in a Visitor Contact Station. It would potentially provide the full range of amenities such as indoor restrooms, educational exhibits, and specimen displays.*</p>
<p>No management action planned.</p>	<p>Prepare an activity plan for a motorized tour route with interpretive materials designed for fossil resources. The route would be self-guided or led by partner groups.*</p>		

*All Education and Interpretation Alternatives are Implementation Level Decisions to be carried out in the future after subsequent implementation planning and analysis.

2.4.3 RECREATION AND VISITOR SERVICES

GOAL 1: Plan recreational opportunities that protect unique and Nationally-important paleontological values of the PTNM.

OBJECTIVE 1: Manage approximately 4,480 acres for front-country public visitation. Manage approximately 800 acres of the Robledo Mountains WSA for primitive visitation classification.

OBJECTIVE 2: Manage recreation in a safe and reasonable manner while protecting and enhancing the Monument’s paleontological resources, with emphasis on Leave No Trace principles.

OBJECTIVE 3: Designate the Monument as an Extensive Recreation Management Area (ERMA) to support and sustain paleontological resources.

MANAGEMENT COMMON TO ALL ALTERNATIVES:

The Monument Monitoring Plan would track changes to fossil resources based on Recreation and Visitor Services management actions.

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
Carry forward 5,255 acres as dispersed recreation as managed under the <i>Mimbres RMP</i> (See Map 2-1).	Designate 5,255 acres as ERMA (see Map 2-2). <u>Objective-</u> Self-directed recreation, manage to provide visitor safety and minimize user conflicts. Install minimal directional and informational signs for fossil resources. <u>Activities-</u> Hiking, horseback riding, picnicking, hunting, sightseeing. <u>Experiences-</u> Develop outdoor recreational skills, spend time with one’s self or in small groups, enjoy nature, fossil resources, landscapes, physical rest, escape personal/social pressures.	Designate 5,255 acres as ERMA (see Map 2-3). <u>Objective-</u> More directed. In addition to Alternative B objectives, install basic improvements to reduce impacts from recreation activities and to assist in the visitor experience. <u>Activities-</u> Permitted OHV use, mountain biking, hiking, horseback riding, picnicking, camping, hunting, and sightseeing. <u>Experiences-</u> Same as B.	Designate 5,255 acres as ERMA (see Map 2-4). <u>Objective-</u> Directed recreation. In addition to Alternative C Objectives, guide the visitor experience. <u>Activities-</u> Same as C but OHV use would be allowed without a permit. <u>Experiences-</u> Same as B.

RECREATION AND VISITOR SERVICES (Continued)

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
	<p><i>Benefits-</i></p> <p><u>Personal-</u> Improved physical and mental health, improved skill for outdoor enjoyment, improved awareness of public and private lands, more outdoor oriented.</p> <p><u>Community/Social-</u> Pride in one’s community and heritage, self-renewal leading to healthier relations and sense of community.</p> <p><u>Environmental-</u> Increased awareness and protection of distinctive natural, paleontological and landscape features, reduce negative impacts such as litter, vegetative trampling.</p>	<p><i>Benefits-</i></p> <p><u>Personal-</u> Improved physical and mental health, improved skill for outdoor enjoyment, improved relationships with family and friends, improved awareness of public and private lands, more outdoor oriented.</p> <p><u>Community/Social-</u> Self renewal, pride in one’s community and heritage, greater family bonding.</p> <p><u>Environmental-</u> Same as B.</p>	<p><i>Benefits-</i></p> <p><u>Personal-</u> Same as C.</p> <p><u>Community/Social-</u> Same as C.</p> <p><u>Environmental-</u> Same as B.</p>
<p>Dispersed camping would be allowed.</p>	<p>Camping and campfires would not be allowed.</p>	<p>Dispersed camping would be allowed. If resource damage is demonstrated, primitive campsites would be developed.¹</p>	<p>Primitive camping would be allowed in designated areas.² If resource damage is documented, developed campsites would be made.</p>
<p>No management actions planned.</p>	<p>Minimal directional and informational signs would be installed at established routes.**</p>	<p>BLM would prepare an activity and site development plan to explore opportunities in locating appropriate sites to develop visitor facilities. This plan would include possibilities to install, develop, and maintain toilets, shade shelters, information kiosks, trail markers, and picnic sites.**</p>	

RECREATION AND VISITOR SERVICES (Continued)

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
No management actions planned.		BLM would prepare an activity and site development plan to explore opportunities in locating an appropriate site to install, staff, and maintain a Visitor Contact Station within or adjacent to PTNM to house interpretive exhibits and to use for interpretive programs (multi-purpose use).*	BLM would prepare an activity and site development plan to explore opportunities in locating an appropriate site to build, staff, and maintain a visitor center within or adjacent to PTNM housing specimens and interpretive exhibits.*
No management actions planned.		BLM would prepare an activity plan to identify opportunities for a trail system for recreational opportunities (bike, OHV, hiking, etc.). *	
Except as provided under current law, regulation and policy, there would be no restrictions on the discharge of firearms (see Map 2-1 and 2-2).		Recreational target shooting would be prohibited (see Maps 2-3 and 2-4).	
Commercial, competitive and organized group activities would be authorized per 43 CFR Part 2930, Special Recreation Permits.	The PTNM would be CLOSED to Special Recreation Permits.	<p>The BLM would authorize commercial, competitive, and organized group activities on a discretionary, case-by-case basis per 43 CFR Part 2930, Special Recreation Permits, and in compliance with NEPA.</p> <p>SRPs for OHV events would be limited by the following requirements, or other restrictions that provide for the protection of fossil resources:</p> <ul style="list-style-type: none"> • Would not degrade fossil resources; • No more than 3 permitted OHV events per year (first-come, first-served, no multiple year events permits would be considered); • No permits would be issued for OHV events lasting for more than 4 consecutive days. • No more frequently than 1 every 3 months; • No more than 250 vehicles per event; • No more than 20 vehicles per “run”; • No more than 2 “runs” per trail route would be authorized during each event; • Only Registered Event vehicles (including event support and BLM staff vehicles) would be allowed on the routes, during the event. 	

RECREATION AND VISITOR SERVICES (Concluded)

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
Continue to allow casual collecting of rock and mineral resources throughout the Monument.	Closed to casual collecting of rock and mineral resources.	Closed to casual collecting of rock and mineral resources. Limited collecting of rock and mineral resources would be allowed only in conjunction with BLM authorized education and interpretation activities. Use of small hand tools would not be allowed.	Allow casual collecting of rock and mineral resources throughout the Monument.

NOTES:

¹ To deter resource damage, the BLM would sign sensitive areas as “no camping,” reduce evidence of inappropriate camping and educate visitors to use Leave No Trace principles. However, if the Monument Monitoring Plan demonstrates impacts to Monument resources, objects, and values from dispersed camping, a primitive campground and designated camping areas would be established within, or on lands adjacent to, the Monument. Monitoring criteria that would establish the need for a primitive campground include: campsites and fires near or on sensitive paleontological sites, large campsites damaging vegetation and/or game trails, and camping on routes. If a primitive campground is established, campfires would be limited to designated campsites with campfire rings.

² If the Monument Monitoring Plan demonstrates that Primitive Campsites are impacting Monument resources, objects, and values, a more developed campground would be established, along with designated primitive camping areas that would be established within, or on lands adjacent to, the Monument. Factors monitored to determine the need for a developed campground include: the need to manage human waste and trash, reduce impacts from high use camping areas, or the need to manage and provide for visitor parking. If a campground is established, campfires would be limited to designated campsites with campfire rings.

- * These are Implementation Level Decisions to be carried out in the future after subsequent implementation planning and analysis.
- **These are Implementation Level Decisions that are being made concurrent with this planning effort, and are appealable to the Interior Board of Land Appeals.

2.4.4 TRAILS AND TRAVEL MANAGEMENT

GOAL 1: Designate and manage areas in the Monument to the appropriate level of motorized and mechanized vehicle use so that fossils are protected. Areas must be classified as *open, limited, or closed* for motorized travel activities.

OBJECTIVE 1: Develop a Comprehensive Trails and Travel Management (CTTM) Plan to identify and designate routes within the Monument according to type and condition of use (Appendix C).

OBJECTIVE 2: Determine appropriate level of maintenance for mechanized or motorized access to the Monument.

MANAGEMENT COMMON TO ALL ALTERNATIVES:

- The portion of the Robledo Mountains WSA located within the Monument would be CLOSED to motorized and mechanized use.
- Exceptions to OHV travel restrictions or closures may be authorized for any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes, and any vehicle in official use or expressly authorized in writing by the authorized officer.
- Where off-road vehicles are causing or would cause considerable adverse effects upon soil, vegetation, wildlife, wildlife habitat, cultural resources, historical resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the affected areas shall be immediately closed to the type(s) of vehicle causing the adverse effect until they are eliminated and measures implemented to prevent recurrence (43 CFR §8341.2). The Monument Monitoring Plan would track changes to fossil resources based on trails and travel management actions. Based on the findings of the CTTM (Appendix C), implementation-level closures to certain routes are proposed across the various alternatives. Any future closures would be additional implementation-level decisions.**
- Dispersed pedestrian recreation would be allowed.
- The Monument would be open to equestrian use.
- As defined by BLM Manual 1626, OPEN areas are permitted year-long to motorized vehicle travel; LIMITED areas are subject to restrictions and travel is within specified areas or on designated routes, roads, vehicle ways, or trails. CLOSED areas are those where motorized vehicle travel is prohibited.

TRAILS AND TRAVEL MANAGEMENT (Continued)

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
<p>Motorized and mechanized travel is LIMITED (5,255 acres) to those routes designated by the <i>Mimbres RMP</i>, Robledo Mountains Off-Highway Vehicle Trails Plan, and the Doña Ana County Mountain Bike Trails (<i>SST Trail</i>).</p> <p>A total of 37.6 miles of routes would be available for motorized or mechanized use.**</p> <p>Approximately 32.3 miles of OHV recreational opportunity within the PTNM are open year-round for motorized use (see Map 2-1).**</p>	<p>The PTNM would be CLOSED (5,255 acres) to recreational use by motorized and mechanized vehicles. The BLM would issue supplementary rules for enforcement purposes in the future following the requirements in 43 CFR 8365.1-6.</p> <p>A total of 0 miles of routes would be available for motorized or mechanized use.**</p> <p>All routes would be CLOSED to recreational motorized and mechanized use to protect fossil resources from the impacts of motorized or mechanized vehicles (see Map 2-2).**</p>	<p>Motorized and mechanized travel would be LIMITED (5,255 acres) to designated routes (Appendix C). Recreational use by motorized and mechanized vehicles (not associated with a permitted event) would require a no-fee Day Use Pass. These passes, along with maps and resource protection information, would be available online and at the local BLM office.</p> <p>A total of 33.2 miles of current routes would be available for motorized or mechanized use.**</p> <p>A total of 4.9 miles of previously designated OHV routes would be closed to motorized and mechanized vehicle use to protect fossil resources from their impacts (see Map 2-3):**</p> <ul style="list-style-type: none"> • Tabasco Twister OHV Route- 2.7 miles • Patzcuaro's Revenge OHV Route- 1.8 miles • Cayenne Crawler- 0.4 miles 	<p>Motorized and mechanized travel would be LIMITED (5,255 acres) to designated routes (Appendix C).</p> <p>A total of 33.6 miles of current routes would be available for motorized or mechanized use.**</p> <p>A total of 3.5 miles of previously designated routes would be closed to motorized and mechanized vehicle use to protect fossil resources from their impacts (see Map 2-4):**</p> <ul style="list-style-type: none"> • Tabasco Twister OHV Route- 2.7 miles • Patzcuaro's Revenge OHV Route- 0.8 miles

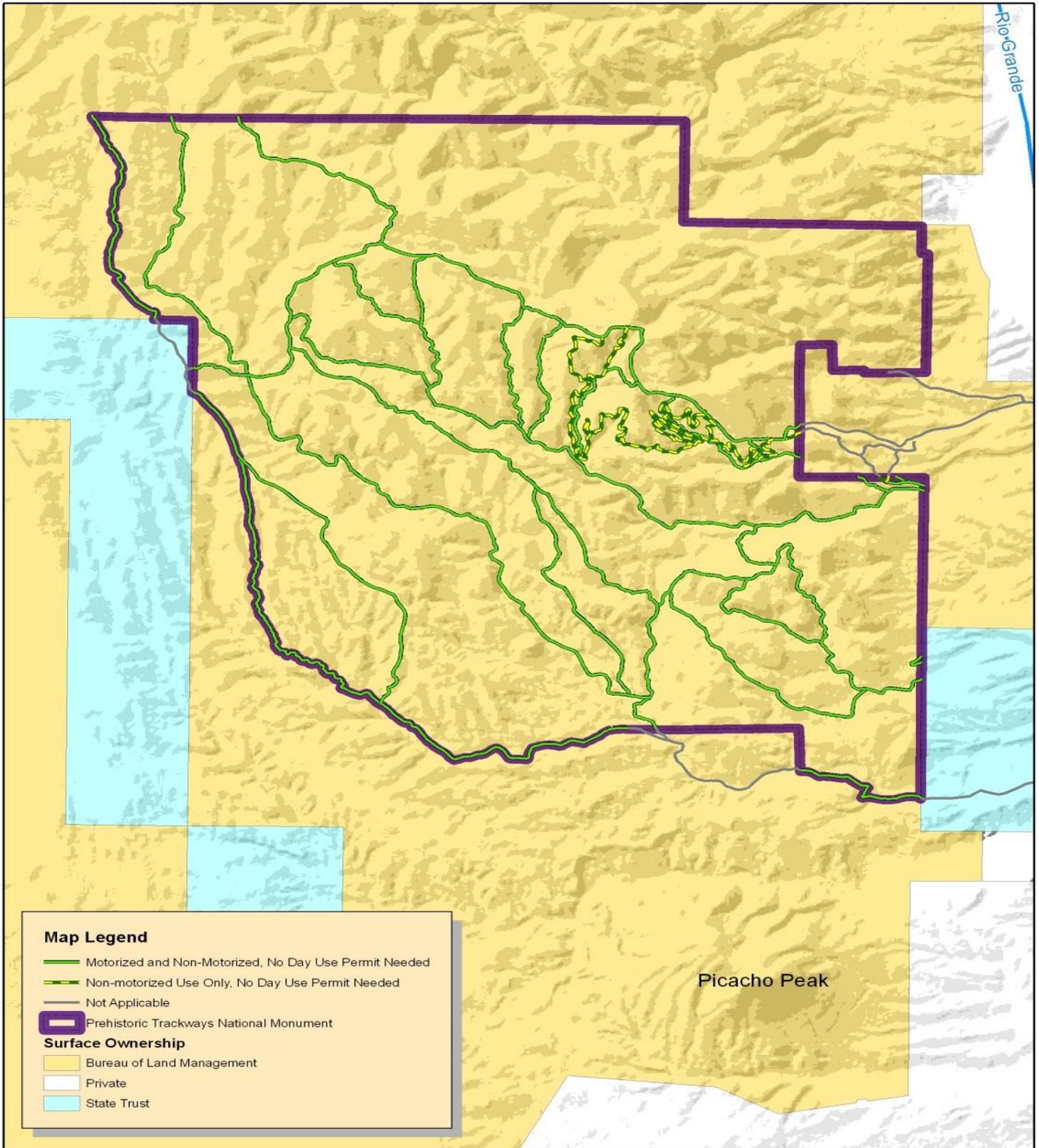
TRAILS AND TRAVEL MANAGEMENT (Continued)

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
		<p>The following route would also be closed to any designated use:</p> <ul style="list-style-type: none"> • Un-named Route- 0.5 miles 	<p>Cayenne Crawler would remain open, but would be modified from an uphill only route to a downhill only route. This would allow OHV use on Cayenne Crawler that leads into the remaining open portion of Patzcuaro’s Revenge OHV Route.</p> <ul style="list-style-type: none"> • Un-named Route Same as Alternative C.
<p>The PTNM would be LIMITED to designated routes for recreational use by mechanized vehicles. The SST Mountain Bike Trail is open for year-round mechanized and non-motorized use (see Map 2-1).</p>	<p>The PTNM would be CLOSED to recreational use by mechanized vehicles (See Map 2-2).</p>	<p>Same as Alternative A (see Map 2-3).</p>	<p>Same as Alternative A (see Map 2-4).</p>
<p>No management action planned.</p>	<p>Routes would not be maintained or improved.**</p>	<p>Designated routes that do not damage sensitive resources could be maintained or improved as necessary to facilitate designated visitor use.*</p>	

* These are Implementation Level Decisions to be carried out in the future after subsequent implementation planning and analysis.

**These are Implementation Level Decisions that are being made concurrent with this planning effort, and are appealable to the Interior Board of Land Appeals.

Map 2-1 - Trails & Travel Management, Alternative A



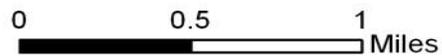
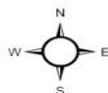
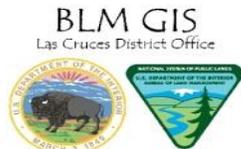
Map Legend

- Motorized and Non-Motorized, No Day Use Permit Needed
- - - Non-motorized Use Only, No Day Use Permit Needed
- Not Applicable
- Prehistoric Trackways National Monument

Surface Ownership

- Bureau of Land Management
- Private
- State Trust

No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.



Projection: UTM Zone 13
Datum: NAD 1983

Map 2-2 - Trails & Travel Management, Alternative B



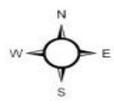
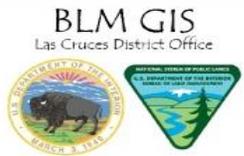
Map Legend

- - - Non-mechanized and Non-motorized Use, No Day Use Permit Needed
- Not Applicable
- Prehistoric Trackways National Monument

Surface Ownership

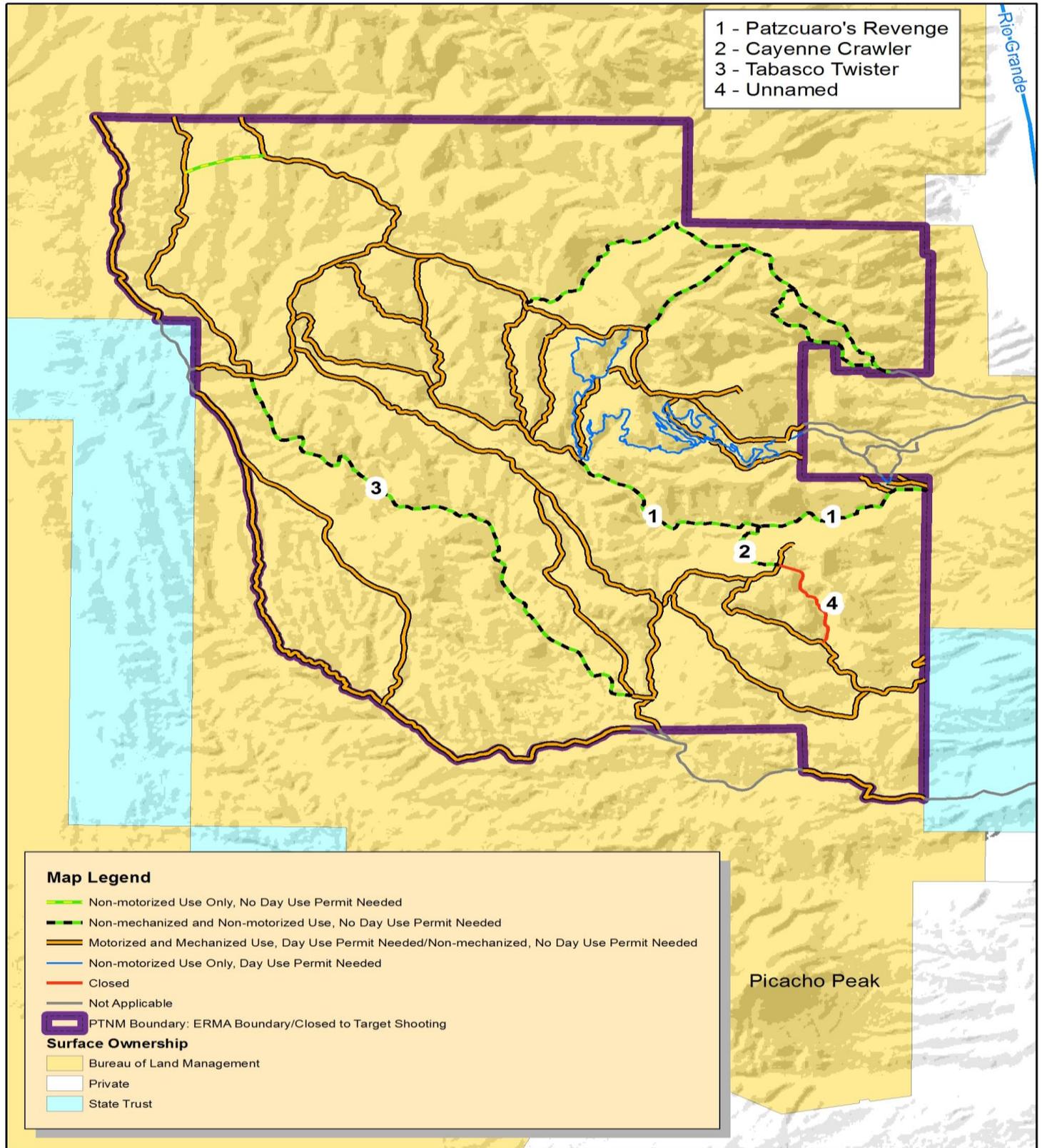
- Bureau of Land Management
- Private
- State Trust

No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.



Projection: UTM Zone 13
Datum: NAD 1983

Map 2-3 - Recreation, Trails & Travel Management, Alternative C



- 1 - Patzcuaro's Revenge
- 2 - Cayenne Crawler
- 3 - Tabasco Twister
- 4 - Unnamed

Map Legend

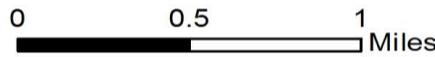
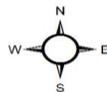
- Non-motorized Use Only, No Day Use Permit Needed
- Non-mechanized and Non-motorized Use, No Day Use Permit Needed
- Motorized and Mechanized Use, Day Use Permit Needed/Non-mechanized, No Day Use Permit Needed
- Non-motorized Use Only, Day Use Permit Needed
- Closed
- Not Applicable
- PTNM Boundary: ERMA Boundary/Closed to Target Shooting

Surface Ownership

- Bureau of Land Management
- Private
- State Trust

No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.

BLM GIS
Las Cruces District Office

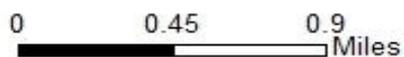
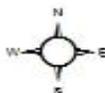


Projection: UTM Zone 13
Datum: NAD 1983

Map 2-4 - Recreation, Trails & Travel Management, Alternative D



No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.



Projection: UTM Zone 13
Datum: NAD 1983

2.4.5 AIR RESOURCES

GOAL 1: Manage uses to maintain Federal, State and local air quality standards.

OBJECTIVE 1: Manage activities on public land to maintain air quality consistent with the Clean Air Act and FLPMA.

MANAGEMENT COMMON TO ALL ALTERNATIVES:

Prevent and reduce air quality impacts from authorized activities on public land by implementing mitigation measures developed on a case-by-case basis, described in Appendix E. These processes would be applicable to all BLM authorized activities.



2.4.6 CULTURAL RESOURCES

GOAL 1: Identify, preserve, and protect significant cultural resources and ensure they are available for use by present and future generations consistent with the BLM cultural resources program and appropriate to the goals of the PTNM.

GOAL 2: Reduce imminent threats and resolve potential conflicts from natural or human caused deterioration, or potential conflict with other resource uses consistent with the BLM cultural resources program and appropriate to the goals of the PTNM.

OBJECTIVE 1: Recognize potential public and scientific uses of cultural resources within the Monument, managing them in such a manner that these values and uses are appropriately protected.

OBJECTIVE 2: Protect and preserve in place representative examples of the full complement of cultural resources that may exist within the Monument.

OBJECTIVE 3: Ensure that proposed land uses avoid inadvertent damage to cultural resources on Federal, State, and non-Federal lands.

MANAGEMENT COMMON TO ALL ALTERNATIVES:

- Cultural resource inventories would be done in response to specific land-use proposals in accordance with Section 106 of the National Historic Preservation Act (NHPA).
- Should at a later time a Native American entity express concern about a specific place or resource, the BLM will consult accordingly.
- The BLM would comply with Section 106 of the NHPA through the National Programmatic Agreement and the Protocol Agreement between New Mexico BLM and the State Historic Preservation Officer.

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
<p>Historic properties, i.e., sites determined eligible for or included on the National Register of Historic Places (NRHP), are allocated to uses subject to management actions. The six use allocations include: (1) scientific use, (2) conservation for future use; (3) traditional use; (4) public use; (5) experimental use; and (6) discharged from management.</p>	<p>Allocate historic properties to either scientific use or discharge from management. The latter are sites that have been determined to be not eligible or no longer eligible for the NRHP; therefore no longer constituting a historic property requiring a management action.</p>		

2.4.7 LANDS AND REALTY

GOAL 1: Manage the acquisition of lands or interests therein to meet the mandates of the Monument Legislation.

GOAL 2: Manage rights-of-way and land use authorizations within the Monument to meet the needs of the BLM and Monument Legislation.

OBJECTIVE 1: Retain all public land within the PTNM in Federal ownership.

OBJECTIVE 2: Acquire the mineral estate within the boundaries of the Monument to further protect the overall purposes of the Monument.

OBJECTIVE 3: Maintain a right-of-way and land use authorization system to meet resource management needs.

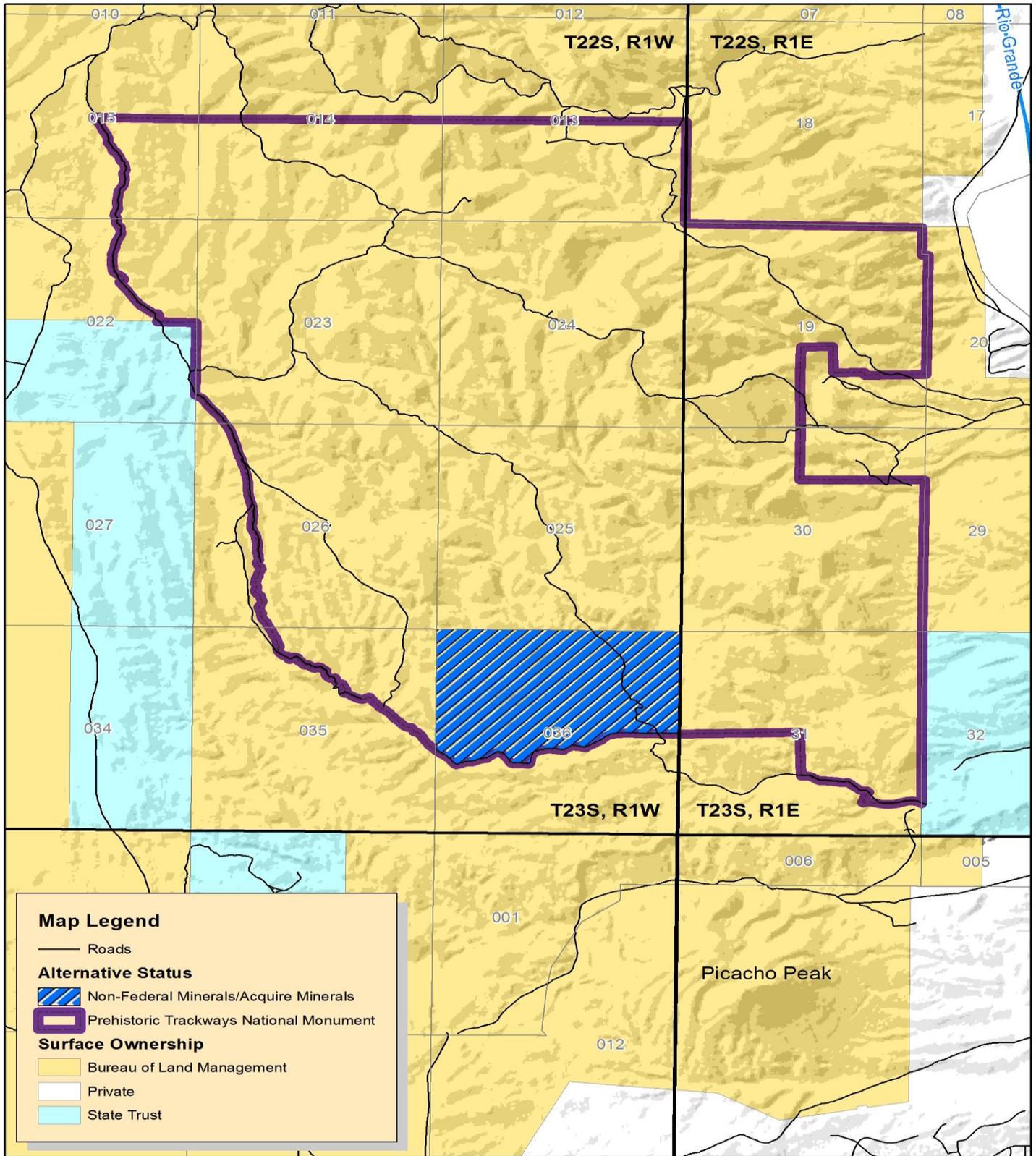
MANAGEMENT COMMON TO ALL ALTERNATIVES:

- Federal land within the PTNM is withdrawn from entry, appropriation, or disposal under the public land laws. Federal land is not open to disposal through land exchange, land sales, State grants, Recreation and Public Purpose Act leases or sales, desert land entries, Indian allotments or commercial or agricultural leases (Appendix A).
- Public land within the PTNM would continue to be classified for retention under Section 7 of the Taylor Grazing Act, as amended (43 U.S.C. 315f).
- If additional lands and minerals are added to the Monument at a later date, these lands would be managed in accordance with the management decisions made in this RMP/EIS.
- The BLM would attempt to acquire access easements for public use from private landowners. Easements would be acquired only from willing sellers and would be in accordance with the provisions of Section 205 of FLPMA.
- Non-Federal mineral estate would be acquired only from a willing seller. Acquisition of the mineral estate would be in accordance with the provisions of Section 205 of FLPMA.
- The PTNM would be excluded from commercial communication site, transmission line, solar, and wind energy rights-of-way (ROWs).
- Realty actions such as rights-of-way or land use authorizations would be allowed within the Monument that are compatible with the values identified in the PTNM, while respecting existing uses. New uses will be in accordance with the provisions of TITLE III and TITLE V of FLPMA.
- Retain all public land.

LANDS AND REALTY (Concluded)

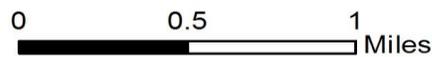
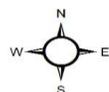
ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
<p>No existing acquisition management decisions. Retain all public land.</p>	<p>Acquire approximately 640 acres of all non-Federal mineral estate within and adjacent to the Monument in sec. 36, T. 23 S., R. 1 W. (See Map 2-5). Retain all public land.</p>		
<p>Exclude authorizations for new ROWs, except when mandated by law.</p> <p>Access routes can be considered on a case-by-case basis.</p> <p>Existing ROWs within exclusion areas are recognized as grandfathered and operation, maintenance, and renewal of these facilities would be allowed to continue within the scope of the ROW grant.</p>	<p>Surface disturbing land use activities would not be authorized except for scientific research.</p> <p>Non-surface disturbing activities (for example- non-surface disturbing film permits) could be authorized on a case-by-case.</p>		<p>Exclude new ROW authorizations, except when uses of the ROWs would further the purposes for which the Monument was established or when mandated by law.</p> <p>Access routes can be considered on a case-by-case basis.</p> <p>Existing ROWs within exclusion areas are recognized as grandfathered and operation, maintenance, and renewal of these facilities would be allowed to continue within the scope of the ROW grant.</p> <p>Surface and non-surface disturbing activities would be authorized on a case-by-case basis.</p>

Map 2-5 - Minerals Acquisition, Alternatives B, C & D



No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.

BLM GIS
Las Cruces District Office



Projection: UTM Zone 13
Datum: NAD 1983

2.4.8 LANDS WITH WILDERNESS CHARACTERISTICS

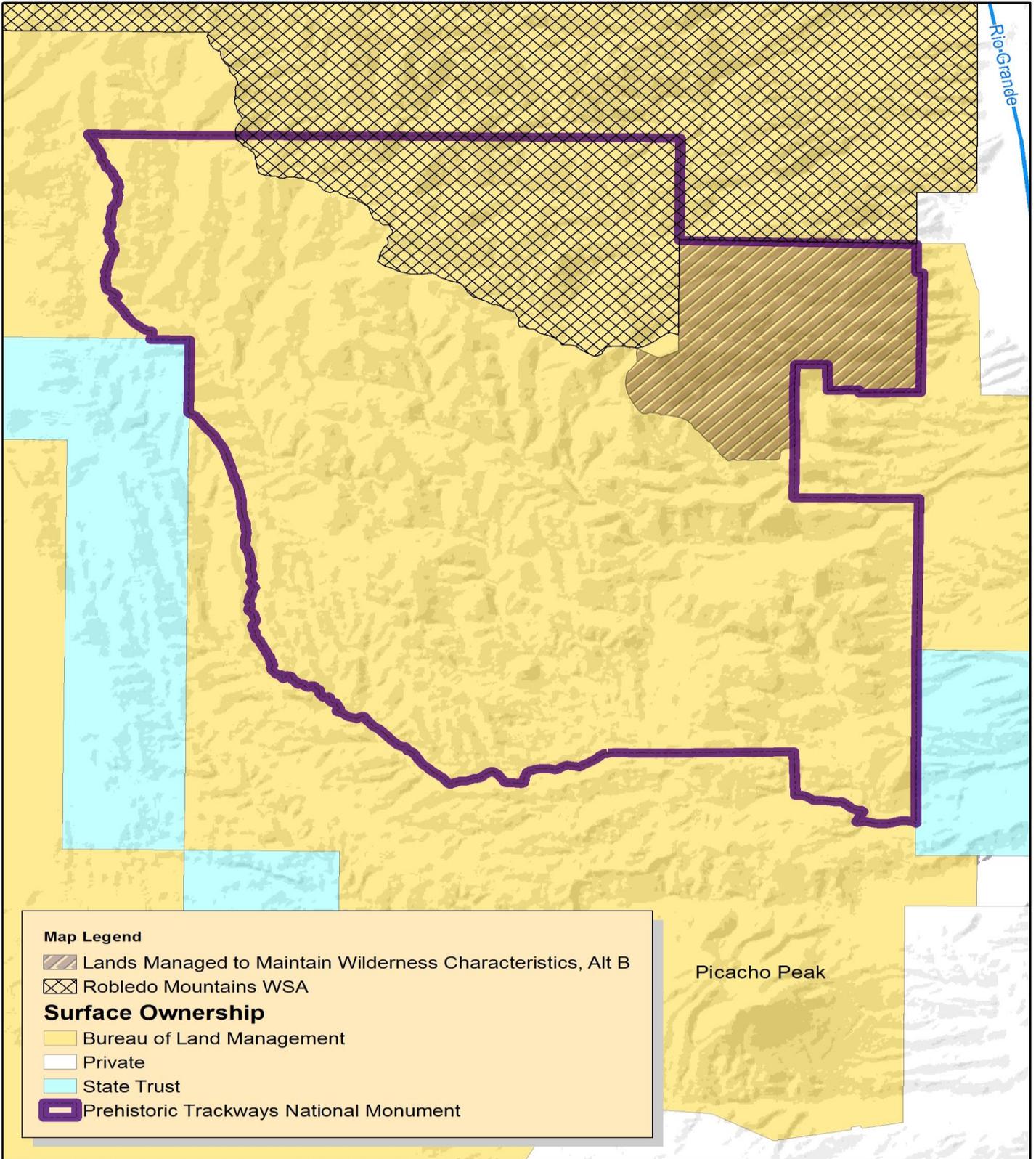
GOAL 1: For lands with wilderness characteristics identified for protection in the RMP, maintain wilderness characteristics by preventing incompatible activities.

GOAL 2: For lands with wilderness characteristics not identified for protection in the RMP, allow for activities that do not conform to the maintenance of wilderness characteristics while minimizing the impacts of the activity to the extent possible.

OBJECTIVE 1: Manage surface disturbing activities such that the natural quality of lands with wilderness characteristics identified for protection is maintained.

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
No similar action.	<p>Manage the 576 acres (located in sec. 19, T. 22 S., R. 1 E. and sec. 24, T. 22 S., R. 1 W, see Map 2-6) that is contiguous with the Robledo Mountains WSA to maintain wilderness characteristics.</p> <p>Management will follow these prescriptions:</p> <ul style="list-style-type: none"> • Prohibit all surface disturbing activities except those associated with permitted scientific exploration and emergencies. • Manage as an exclusion area for rights-of-way. • Manage as a Visual Resource Management (VRM) Class I. • Close to motorized and mechanized vehicles. • No new trails or interpretation signage will be constructed within the area. 	<p>Manage the 253 acres (located in sec. 19, T. 22 S., R. 1 E., see Map 2-7) that is contiguous with the Robledo Mountains WSA to maintain wilderness characteristics.</p> <p>Management prescriptions are the same as Alternative B.</p>	Do not manage for the 576 acres found to have wilderness characteristics (located in sec. 19, T. 22 S., R. 1 E. and sec. 24, T. 22 S., R. 1 W.).

Map 2-6 - Lands Managed to Maintain Wilderness Characteristics



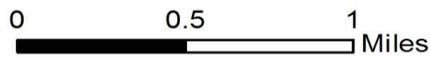
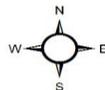
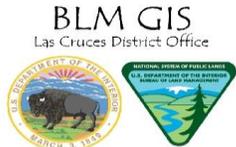
Map Legend

-  Lands Managed to Maintain Wilderness Characteristics, Alt B
-  Robledo Mountains WSA

Surface Ownership

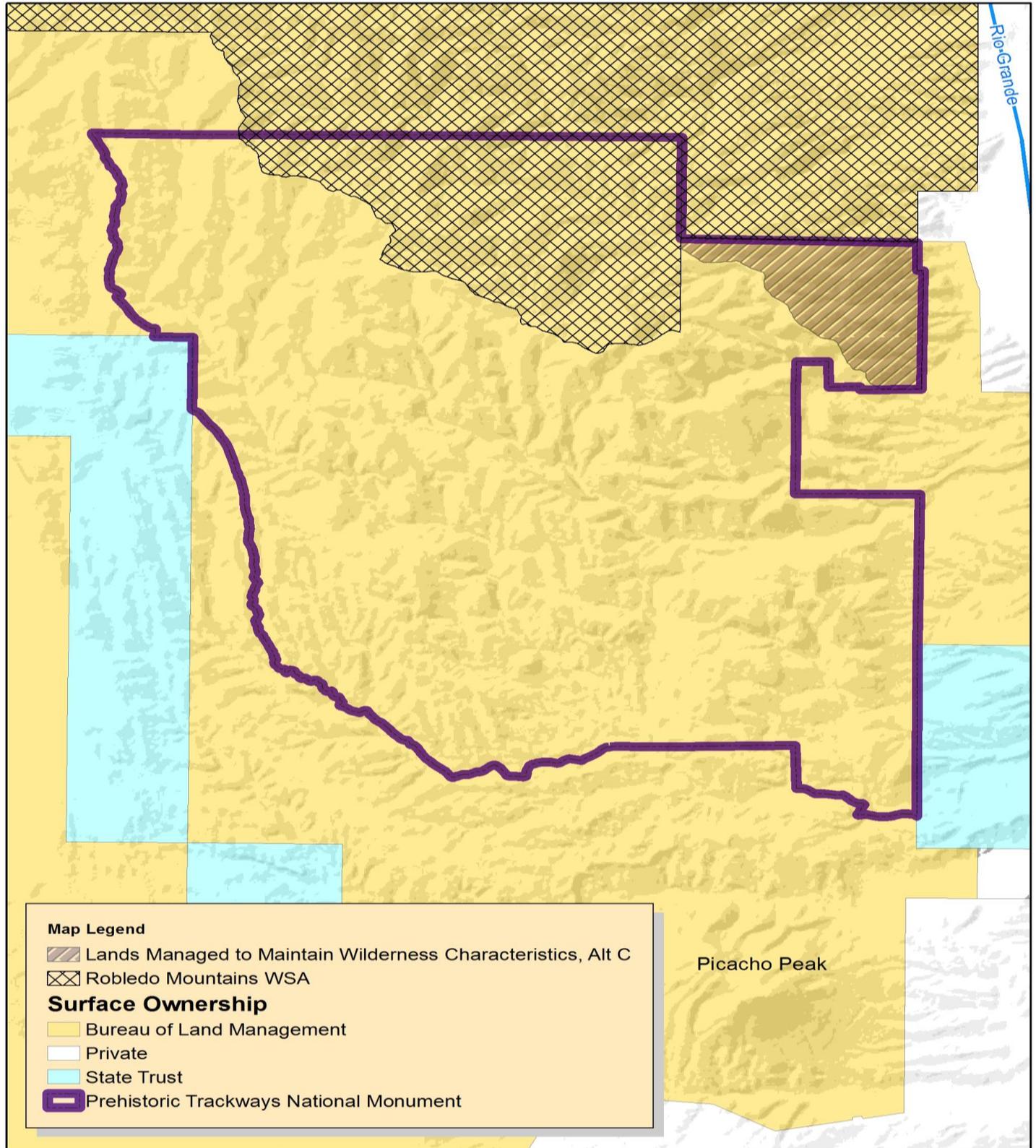
-  Bureau of Land Management
-  Private
-  State Trust
-  Prehistoric Trackways National Monument

No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.

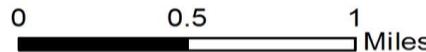
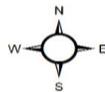
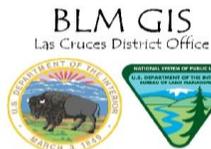


Projection: UTM Zone 13
Datum: NAD 1983

Map 2-7 - Lands Managed to Maintain Wilderness Characteristics



No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.



Projection: UTM Zone 13
Datum: NAD 1983

2.4.9 LIVESTOCK GRAZING

GOAL 1: Manage livestock grazing on public land in a manner that ensures progress toward achieving the *New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management* (BLM 2001). The Standards for Public Land Health are consistent with protecting the resources, objects and values for which the Monument was designated.

OBJECTIVE 1: Maintain quality and quantity of key forage and browse species for use by livestock and wildlife through continued implementation of appropriate grazing systems and management practices.

MANAGEMENT COMMON TO ALL ALTERNATIVES:

- Continue monitoring range health and productivity within the National Monument to ensure standards for public land health are being achieved.
- Existing range improvements would continue to be maintained.
- New range improvements would not be authorized in the Robledo Mountains WSA.

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
<p>Grazing for the Picacho Peak Allotment would continue under a deferred rotation system in accordance with the allotment management plan, as amended May 1997.</p> <p>Grazing use would continue to be authorized on the Altamira Allotment.</p>	<p>Grazing would be excluded from the PTNM.</p>	<p>Livestock grazing would be allowed when consistent with applicable laws and regulations and with protection of the Monument objects.</p> <p>Develop a Monument Monitoring Plan within 2 years of the signing of the PTNM RMP Record of Decision. If monitoring indicates fossil resources or other Monument objects require protection from livestock, adjust the allotment management plan to exclude grazing from specific sites.*</p> <p>Adjustments could be made to the allotment management plan, in consultation with the permittee, to change grazing systems, number of livestock and season of use as needed.*</p>	<p>Same as Alternative A.</p> <p>Develop a Monument Monitoring Plan within 2 years of the signing of the PTNM RMP Record of Decision that would track changes to fossil resources based on livestock management actions.</p>

*These are Implementation Level Decisions.

LIVESTOCK GRAZING (Concluded)

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
<p>Existing rangeland improvements would continue to be maintained by the entity assigned maintenance responsibility for livestock and wildlife use.</p> <p>A benefit-cost analysis would be used to help set improvement priorities on all new rangeland improvements.</p> <p>Rangeland improvements and vegetation treatments would be implemented to improve or maintain forage production and range condition.</p>	<p>Existing rangeland improvements would be maintained by the BLM based on need and would be dependent on water availability.</p> <p>No new rangeland improvements would be authorized on public land within the PTNM.</p>	<p>Existing rangeland improvements would continue to be maintained by the assigned entity for livestock and wildlife use.</p> <p>Implement new rangeland improvements as needed within the Monument to facilitate livestock management and minimize conflicts with other uses and management objectives.</p>	
<p>Grazing treatments would be incorporated into activity plans to meet management objectives and goals established for each individual allotment.</p>	<p>Forage increases as a result of grassland restoration treatments would be reserved for watershed function.</p>	<p>Forage increases as a result of grassland restoration treatments would first be reserved to meet the needs for watershed function. Forage in excess of those needs would be allocated to wildlife and livestock with wildlife receiving priority over livestock.</p>	<p>All forage increases as a result of grassland restoration treatments would be allocated to wildlife and livestock, with neither having priority over the other.</p>

* These are Implementation Level Decisions to be carried out in the future after subsequent implementation planning and analysis.

2.4.10 SOILS

GOAL 1: Meet or move toward upland health standards consistent with the *New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management* (BLM 2001) to protect and restore natural ecosystems and the fossil resources.

OBJECTIVE 1: Maintain and restore watersheds through enhanced soil stability and productivity, increased soil moisture, decreased erosion, and thriving desired vegetation communities.

OBJECTIVE 2: Stabilize soils and hydrologic processes by maintaining appropriate amounts of standing live vegetation and protective litter or rock cover, and minimize surface disturbances.

MANAGEMENT COMMON TO ALL ALTERNATIVES:

- Soils would be managed to meet the *New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management* (BLM 2001).
- Develop a Monument Monitoring Plan within 2 years of the signing of the PTNM RMP Record of Decision that would track changes to fossil resources based on soil management actions.

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
<p>Control soil erosion, sediment movement, and salt contamination as a priority management goal. Minimize surface disturbance from construction projects. Close and rehabilitate unneeded roads. Control off-road vehicle use in critical areas.</p> <p>Nonpoint source pollutants in watersheds and areas with critical to severe erosion would be a major focus.</p> <p>Project level planning would consider the sensitivity of watershed resources in the affected area on a site-specific basis.</p>	<p>Manage soil resources and areas needing restoration using only passive methods to meet the soil and hydrologic functions of the potential natural community or capability of the ecological site.</p> <p>Passive methods would focus on prohibiting surface disturbing activities that would result in unnatural degradation of soil resources and allow soil recovery and production to occur through natural processes. Passive methods could include, but not be limited to, removing grazing, closing roads and trails, and prohibiting actions requiring heavy machinery.</p>	<p>Manage soil resources and areas needing restoration using both passive and active methods, with an emphasis on non-structural approaches whenever possible, to increase the site stability and the hydrologic function to the capability of the ecological site.</p> <p>Passive methods identified in Alternative B would be the same under this alternative. Active methods would include maintenance and rehabilitation of soil resources through actions such as construction of water-bars, dikes, drop-structures, re-contouring, and seeding.</p>	<p>Manage soil resources and areas needing restoration using any acceptable management practices to meet the ecological site capability for soil and site stability and the hydrologic function to the capability of the ecological site.</p>

SOILS (Concluded)

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
Critical soils on 0-10 percent slopes would be the priority for treatments and grazing management to reduce erosion and improve water quality	No management action planned.	Stabilize and rehabilitate areas where accelerated erosion, runoff, and physical or chemical degradation have resulted in unacceptable soil conditions through the use of non-structural approaches whenever possible.	Stabilize and rehabilitate areas where accelerated erosion, runoff, and physical or chemical degradation have resulted in unacceptable soil conditions through the use of any acceptable practice.
No management action planned.	Prohibit surface disturbing activities and uses in areas containing high potential for soil erosion and storm water runoff.	Prohibit new surface disturbing activities for areas that contain a high potential for soil erosion and storm water runoff, except for activities required to meet resource goals and objectives, provided impacts could be fully mitigated.	Allow surface disturbing activities and uses with proper mitigation in areas containing high potential for soil erosion and storm water runoff.

2.4.11 SPECIAL DESIGNATION- ROBLEDO MOUNTAINS ACEC

GOAL 1: Designate and manage areas that have special values, meet the relevance and importance criteria, and require special management to prevent risk of loss of or damage to those values.

OBJECTIVE 1: Manage ACECs where relevance and importance criteria are met and special management is required to protect the identified values.

MANAGEMENT COMMON TO ALL ALTERNATIVES:

- Carry forward the Robledo Mountains ACEC designation in order to protect biological, cultural, and scenic values and to protect, research, and interpret paleontological values, consistent with Section 2014(d)(1)(B) of the *Omnibus Public Land Management Act of 2009*, which states that “[t]he establishment of the Monument shall not change the management status of any area within the boundary of the Monument that is...managed as an area of critical environmental concern.”

Management will follow these prescriptions:

- Retain all public land.
- Limit vehicle use to designated roads and trails.
- Exclude authorizations for new rights-of-way.
- Withdraw from location, entry, and patent under the mining laws.
- Withdraw from the mineral leasing laws, geothermal leasing laws, and mineral materials laws.
- Acquire legal public access.
- Maintain current livestock grazing practices.
- Allow natural fires to burn under prescribed conditions.
- Manage for primitive and semi-primitive recreation opportunities (no developed facilities).
- Manage as VRM Class I.

2.4.12 SPECIAL DESIGNATION- ROBLEDO MOUNTAINS WSA

GOAL 1: Manage areas that have special values to prevent risk of loss or damage to those characteristics and values.

OBJECTIVE 1: Protect naturalness; outstanding opportunities for primitive, unconfined recreation; and outstanding opportunities for solitude.

MANAGEMENT COMMON TO ALL ALTERNATIVES:

- Recreation opportunities within the Robledo Mountains WSA portion of the Monument would remain primitive with no motorized or mechanized vehicle traffic in order to preserve the wilderness characteristics. The WSA would be managed in accordance with the *Management of Wilderness Study Areas Manual 6330 and Guidelines for Lands under Wilderness Review*.

2.4.13 SPECIAL DESIGNATION-PALEOZOIC TRACKWAYS
RESEARCH NATURAL AREA (RNA)

GOAL 1: Manage the fossil resources within the Paleozoic Trackways RNA to prevent loss or damage.

OBJECTIVE 1: Manage the resources according to the Legislation designating the Monument, *The Omnibus Public Land Management Act of 2009*, which is to protect, research, and interpret paleontological resources.

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
<p>Manage the Paleozoic Trackways RNA to protect and allow research and interpretation of the fossils (see Map 3-6):</p> <ul style="list-style-type: none"> • Retain public land; acquire State land inholdings through exchange or purchase. • Limit vehicle use to designated roads and trails. • Exclude new rights-of-way. • Access routes will be limited and considered on a case-by-case basis. • Withdraw from location, entry, and patent under the mining laws. • Withdraw from operation of the mineral leasing laws, geothermal leasing laws, and mineral materials laws. • Manage and interpret in accordance with Trackways study legislation. • Manage as VRM Class II 	<p>The Paleozoic Trackways RNA designation would be discontinued for all land within the Monument boundary. The resources would be managed according to the Legislation and the management actions determined in the <i>Prehistoric Trackways RMP</i>.</p>		

2.4.14 SPECIAL STATUS SPECIES

GOAL 1: Manage public land to maintain, restore, improve or enhance habitats that lead to the recovery of Federally-listed species populations and preclude the need for listing proposed, candidate, State protected or sensitive species.

OBJECTIVE 1: Over the life of this RMP, achieve “*no net loss*” of special status species habitats by maintaining, restoring, and improving special status species habitat.

MANAGEMENT COMMON TO ALL ALTERNATIVES:

The BLM would ensure that appropriate management, protections, and mitigations would be developed and applied by continuing to monitor and inventory special status species and their habitats throughout the Monument. Any future proposed surface disturbing activities would require surveys for special status species and appropriate mitigation.



Texas Horned Lizard

2.4.15 VEGETATION

GOAL 1: Manage vegetation resources to produce healthy and vigorous native plant communities with an abundance and distribution of vegetative density and diversity within the PTNM.

OBJECTIVE 1: Provide a mosaic of vegetative communities through protection and restoration of vegetation resources to protect soils, watersheds, air quality, wildlife and scenic views.

OBJECTIVE 2: Monitor for the potential introduction and spread of noxious weeds within the Monument and manage any noxious weeds and native invasive species.

MANAGEMENT COMMON TO ALL ALTERNATIVES:

- The Monument would be closed to commercial and recreational plant collecting. The BLM would retain plant/seed collecting authority for administrative purposes (e.g., Seeds of Success).
- Vegetation treatments would be in compliance with the 2007 Record of Decision for the *Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement*.
- The BLM would develop a Monument Monitoring Plan that would track changes to fossil resources based on vegetation management actions.
- Where restoration, rehabilitation, or reclamation efforts require reseeding activities, or use of other plant materials (such as potted plants, poles, etc.), non-native plant species would be used only if native species are not readily available in sufficient quantities. Care would be taken in selecting non-native species that are not likely to become invasive. If non-native plant species are used or identified for use in restoration, rehabilitation, or reclamation projects, the BLM would identify and develop native replacements for the non-native species. Additionally, seed mixes used in these actions would use the closest locally adapted selections, varieties, or cultivars of native species available to improve success of the seeding effort (Executive Order 13112, BLM Manual 1745, and subject to future revisions to Bureau policy and guidance).

VEGETATION (Concluded)

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
Creosotebush, mesquite, and other desert shrubs (<10% slope) would be treated almost entirely by the use of herbicides. Areas over 10% slope, within ½-mile of a perennial stream, or within a ¼-mile of a dwelling and vegetation containing vacant or occupied raptor nests would not be treated with herbicide.	<p>Manage vegetation communities and areas needing restoration using passive methods to meet the ecological site potential, natural community, or capability (degree to-which the kind, proportions, and amounts of plants in the ecological community resemble the potential natural community based on the area’s disturbance history).</p> <p>Passive methods allow the vegetation resource to naturally regenerate over time without taking direct action.</p>	<p>Manage vegetation communities and areas needing restoration using passive and active treatments to increase native vegetation to the capability of the site. Active methods include activities designed to enhance or improve the vegetation resource, including mechanical, cultural, biological or chemical restoration practices.</p>	<p>Manage vegetation communities and areas needing restoration using passive and active restoration to meet the ecological site capability.</p>
No management action planned.	<p>Manage transitioning areas and other stable-state areas for a desired state and condition to meet ecological site potential.</p> <p>An emphasis would be on enhancing habitat for special status species.</p>	<p>Same as Alternative B.</p> <p>Manage for multiple-use values while maintaining or enhancing habitat for special status species.</p>	<p>Same as Alternative B.</p> <p>Emphasize commodity uses while maintaining or enhancing habitat for special status species.</p>
Chemical herbicides would be used to control noxious weeds.	<p>Use integrated management techniques including passive, manual, and biological treatment methods to manage noxious weeds and non-native invasive species.</p>	<p>Same as Alternative B but with the additional use of chemical and mechanical treatments.</p>	<p>Same as Alternative C but with the additional use of fire.</p>

2.4.16 VISUAL AND SCENIC RESOURCES

GOAL 1: To manage Federal land in a manner that maintains the scenic values.

OBJECTIVE 1: Ensure that activities and land uses are consistent with, and meet, VRM Class objectives.

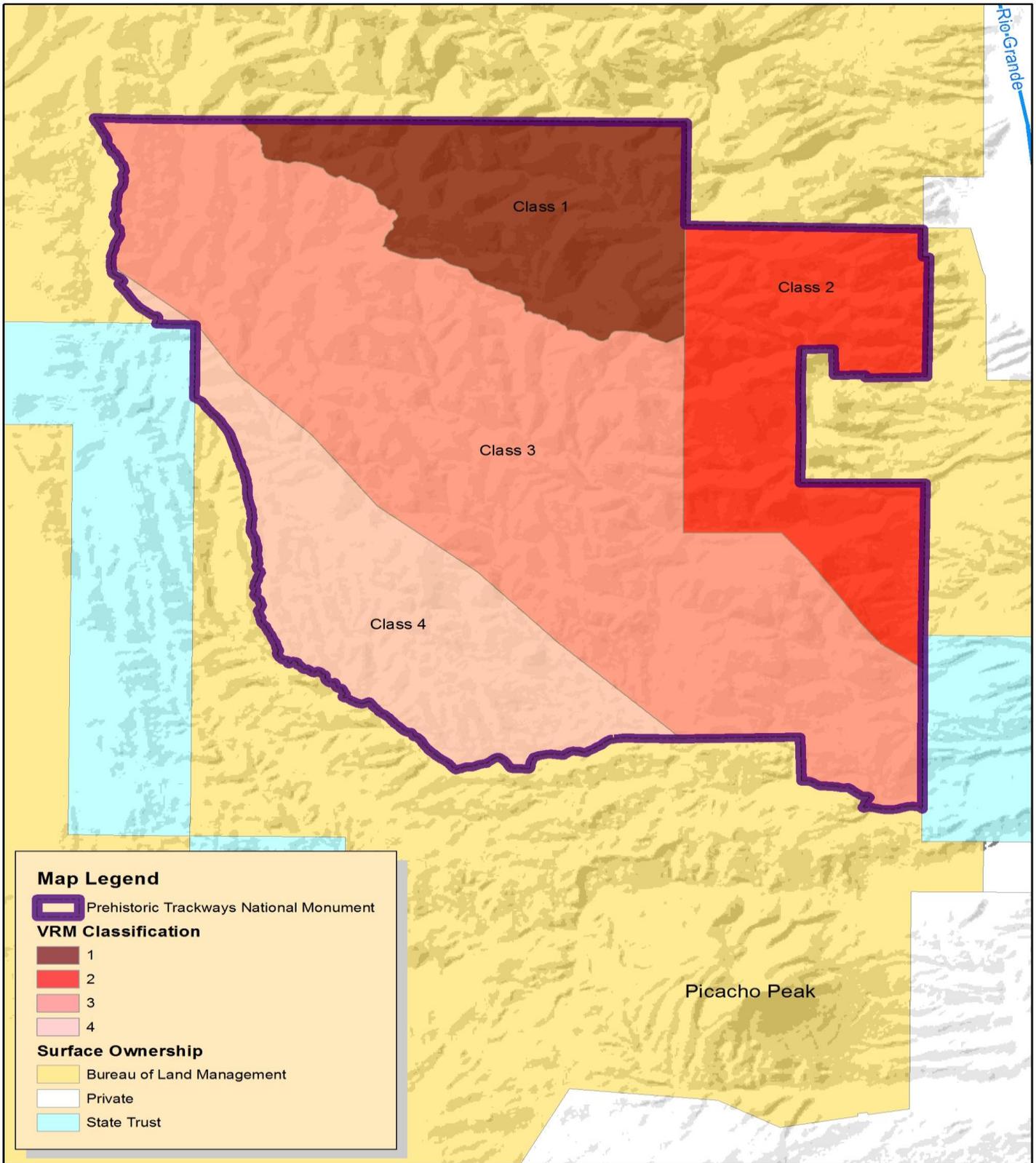
MANAGEMENT COMMON TO ALL ALTERNATIVES:

WSAs, until such time as these areas are designated as wilderness or released for other uses by Congress, will be managed as VRM Class I (*BLM IM 2000-096*).

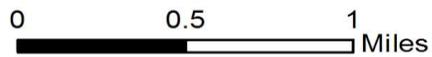
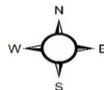
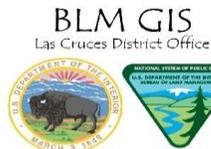
ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
PTNM has four VRM Classes: VRM Class I: 789 acres VRM Class II: 907 acres VRM Class III: 2,627 acres VRM Class IV: 932 acres See Map 2-8.	PTNM would be classified in the following VRM Classes: Class I: 1,365 acres Class II: 3,912 acres See Map 2-9.	PTNM would be classified in the following VRM Classes: Class I: 1,042 acres Class II: 4,213 acres See Map 2-10.	PTNM would be classified in the following VRM Classes: Class I: 789 acres Class II: 4,465 acres See Map 2-11.



Map 2-8 - Visual Resource Management, Alt A

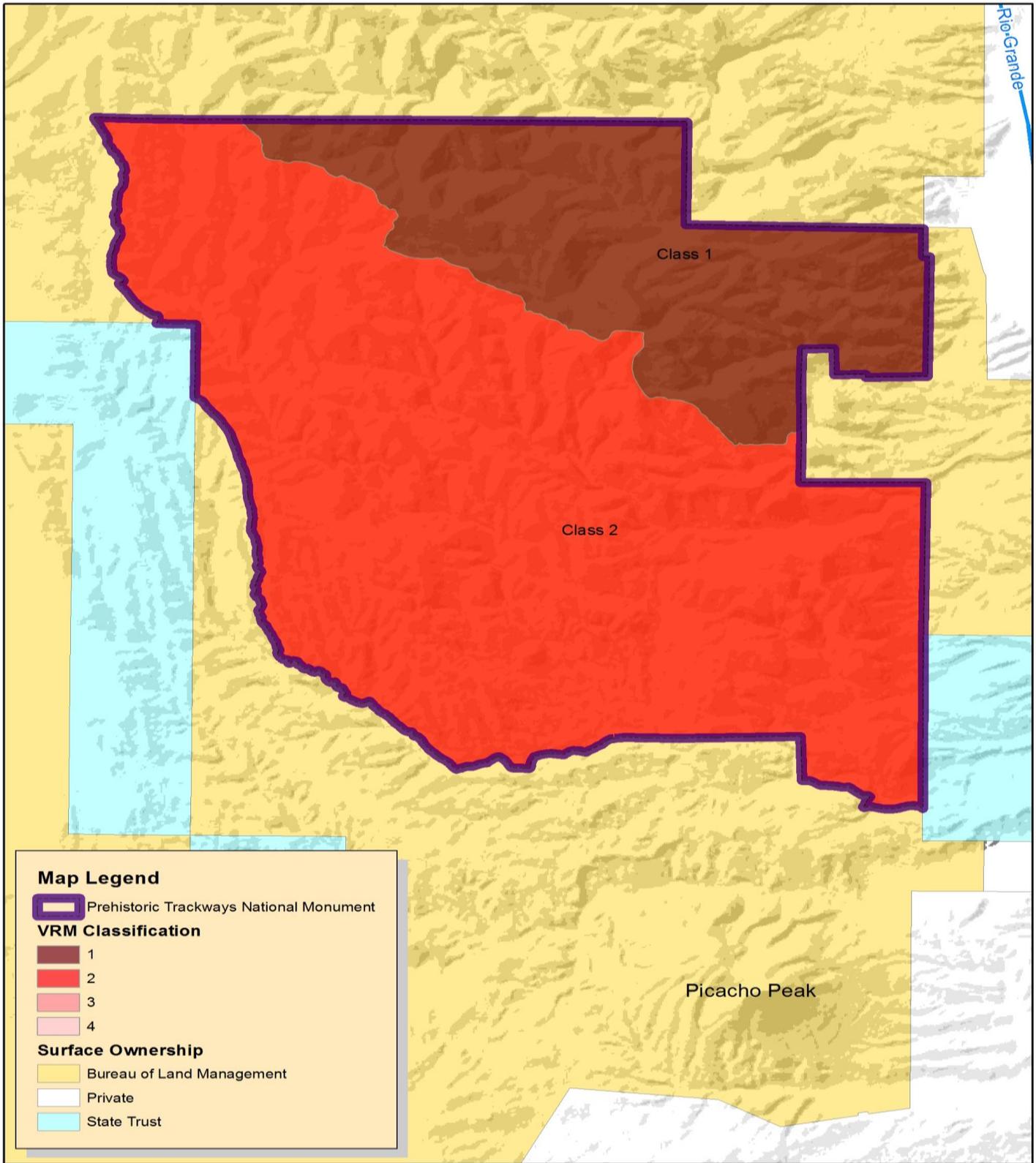


No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.

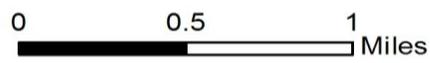
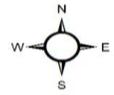
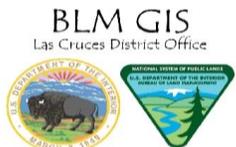


Projection: UTM Zone 13
Datum: NAD 1983

Map 2-9 - Visual Resource Management, Alt B

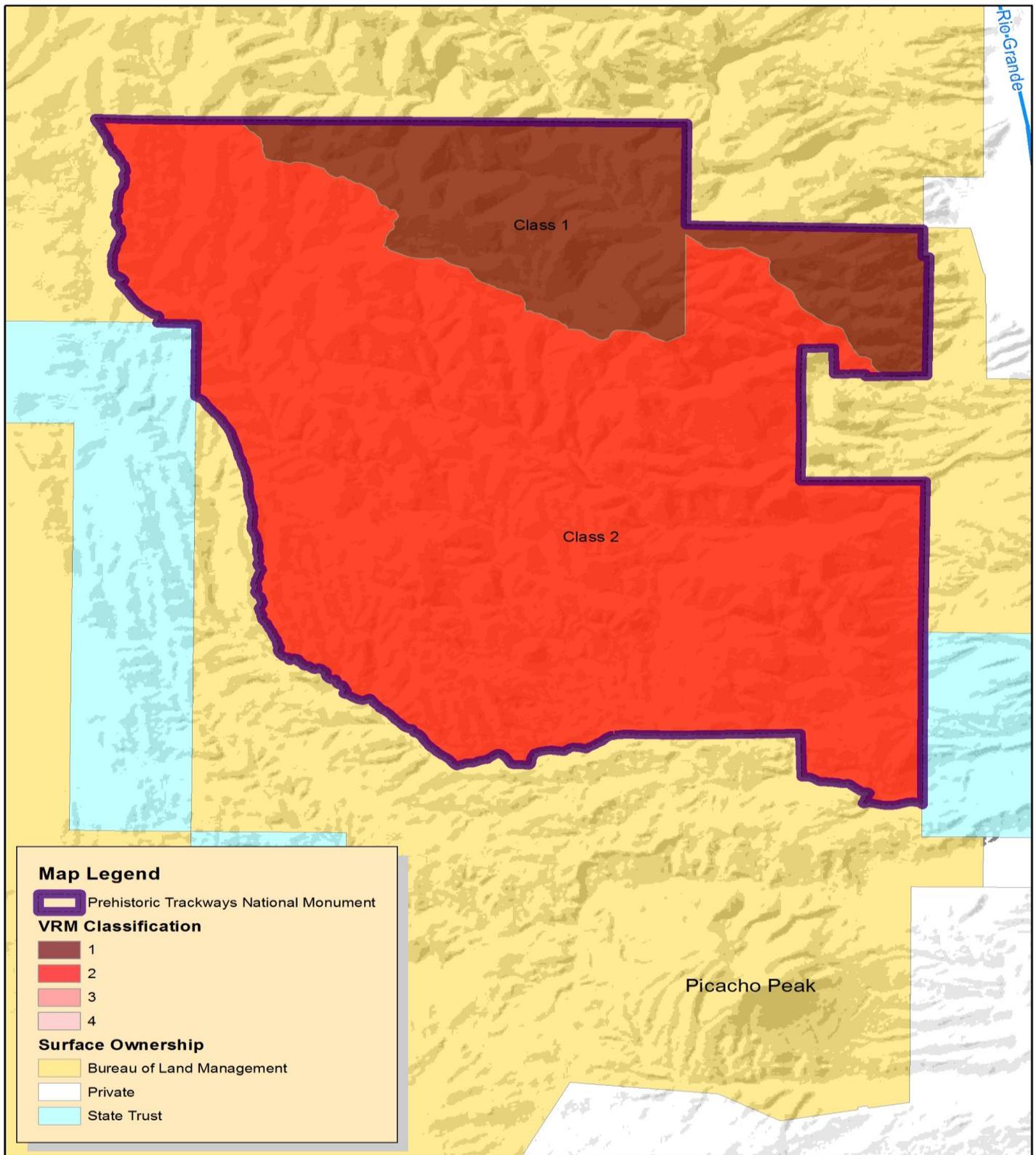


No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.



Projection: UTM Zone 13
Datum: NAD 1983

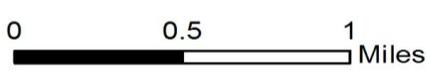
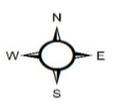
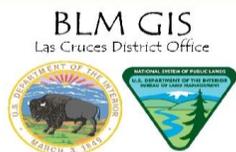
Map 2-10 - Visual Resource Management, Alt C



Map Legend

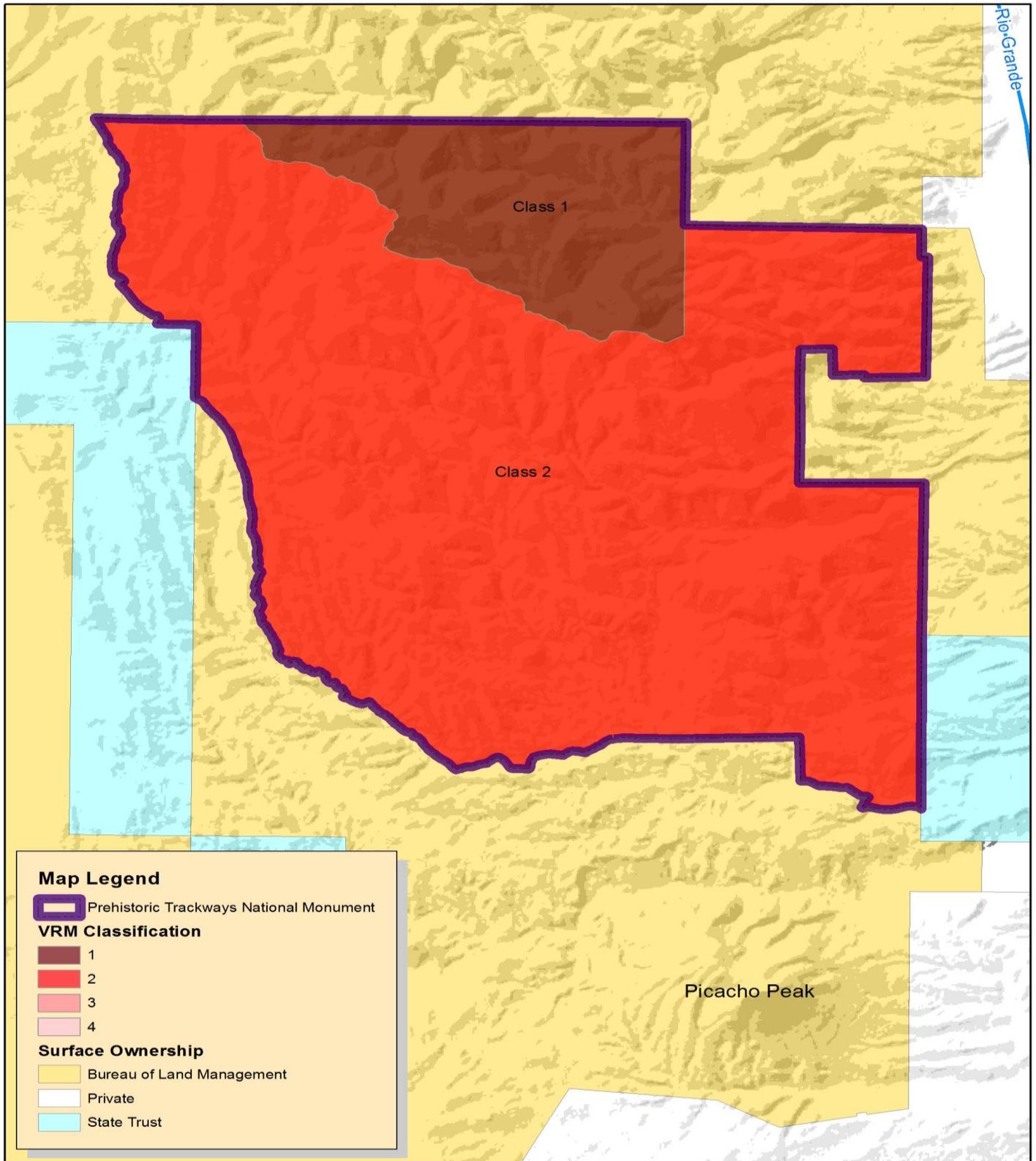
- Prehistoric Trackways National Monument
- VRM Classification**
- 1
- 2
- 3
- 4
- Surface Ownership**
- Bureau of Land Management
- Private
- State Trust

No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.



Projection: UTM Zone 13
Datum: NAD 1983

Map 2-11 - Visual Resource Management, Alt D



Map Legend

Prehistoric Trackways National Monument

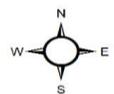
VRM Classification

- 1
- 2
- 3
- 4

Surface Ownership

- Bureau of Land Management
- Private
- State Trust

No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.



Projection: UTM Zone 13
Datum: NAD 1983

2.4.17 WATER RESOURCES

GOAL 1: Ensure surface and ground water influenced by BLM activities comply with or are making significant progress toward achieving New Mexico water quality standards consistent with the New Mexico Environment Department and the U.S. Environmental Protection Agency.

OBJECTIVE 1: Fully mitigate any action which may contribute nonpoint source pollutants into the Rio Grande and to protect the State’s water resources.

MANAGEMENT COMMON TO ALL ALTERNATIVES:

- Enter into cooperative management agreements or other instruments with interested parties or agencies, as appropriate, to coordinate and collaborate watershed management of the Monument.
- Consult and coordinate with other Federal, State, and local agencies, as directed by the Watershed Protection and Flood Prevention Act (16 U.S.C. 1001-1009), and the Clean Water Act (33 U.S.C. 1251).

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
Erosion control would continue to be incorporated into all surface disturbing actions.	Prohibit surface disturbing activities on public land within the Rio Grande watershed and areas susceptible to high amounts of erosion, except activities specifically designed for enhancing water quality.	Fully mitigate surface disturbing activities on public land within the Rio Grande watershed and use non-structural approaches whenever possible.	All surface disturbing activities would be allowed provided they do not contribute to the Rio Grande becoming impaired from nonpoint source pollutants. Site-specific mitigation would apply to activities near 303d streams.

2.4.18 WILDLAND FIRE MANAGEMENT

GOAL 1: Reduce the risk to human life and property from wildland fire; reduce the risk and cost of fire suppression in areas of hazardous fuels buildup; and improve landscape health through returning fire to its natural role in the ecosystem.

OBJECTIVE 1: Reduce the potential for escaped fire or loss of life or property in surrounding areas.

OBJECTIVE 2: Improve landscape health through treating lands in Fire Regime Condition Classes 2 and 3 to achieve the desired future condition of the landscape of Fire Regime Condition Class 1. Maintain Condition Class 1 where it occurs (see Map 3-11).

MANAGEMENT COMMON TO ALL ALTERNATIVES:

- Incorporate current management as outlined in the *Resource Management Plan Amendment for Fire and Fuels Management on Public Lands in New Mexico and Texas* (BLM 2004a).
- Fires would be suppressed and hazardous fuels would be treated in wildland urban interface areas.
- A cultural and paleontological resource advisor would be consulted during a pre-fire season meeting. Aerial drops of fire retardant would avoid Monument resources, objects and values, and water would be the preferred method of suppression.
- Any improvements would be protected from all fire by preplanned defensible space and fire suppression tactics as needed.
- Resources and fire management would be integrated as potential new issues arise or objectives change.
- In Fire Management Units categorized as C or D, natural ignitions (lightning started fires) could be managed for resource benefit (see Map 3-12).
- The BLM would develop a Monument Monitoring Plan within 2 years of the signing of the PTNM RMP Record of Decision that would track changes to fossil resources based on fire management.

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
Management tools such as prescribed fire and mechanical thinning would not be considered for use in the Monument.			The use of prescribed fire and mechanical thinning as management tools based on future needs and future vegetation analysis would be considered for the Monument.

2.4.19 WILDLIFE

GOAL 1: In cooperation with the New Mexico Department of Game and Fish (NMDGF), manage the PTNM to provide sufficient quantity and quality of wildlife habitat and to maintain or enhance wildlife populations and biological diversity.

OBJECTIVE 1: Protect, enhance, and restore native wildlife and wildlife habitats by the following:

- Manage public land to attain the biotic and other standards for public land health in conjunction with the *Standards for Public Land Health and Guidelines for Livestock Grazing Management* (BLM 2001).
- Manage for Species of Greatest Conservation Need and Key Habitats identified in the NMDGF's *Comprehensive Wildlife Conservation Strategy* (CWCS).
- Implement BLM activity plans or other Federal, or State plans and wildlife habitat projects consistent with habitat management goals and objectives.
- Manage public land to allow for reintroductions, transplants, and augmentations of native wildlife populations in coordination with the NMDGF or the U.S. Fish and Wildlife Service and consistent with applicable agency policies and habitat and population management plan goals.
- Maintain and restore habitat connectivity in and between public land including breeding, foraging, dispersal, and seasonal use habitats.

MANAGEMENT COMMON TO ALL ALTERNATIVES:

- Implement the Robledo Mountains Habitat Management Plan for deer, antelope, and upland game species, which includes the installation of water developments as needed.
- Animal Damage Control actions would be conducted in accordance with their annual plans.

2.5. SUMMARY COMPARISON OF IMPACTS

Table 2-1 summarizes the impacts by resource by alternative for the PTNM. These impacts are fully discussed in Chapter 4. The dark gray shaded boxes list the resource or use, and the boxes with no shading are the estimated impacts per alternative.

The following resources have been found to have negligible or no impacts from any of the management alternatives proposed:

- Riparian Areas
- Woodland Management
- Floodplains and Wetlands
- Geology
- Minerals
- Hazardous and Solid Wastes
- Prime or Unique Farmlands
- Wild and Scenic Rivers

The BLM reached out to American Indian tribes but were not made aware of any tribal concerns from the management alternatives.

**TABLE 2-1
SUMMARY OF IMPACTS BY RESOURCE BY ALTERNATIVE**

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C (PREFERRED)	ALTERNATIVE D
PALEONTOLOGICAL RESOURCES			
<p>Casual collecting of common invertebrate and plant paleontological resources would lead to depletion of the resources.</p> <p>Off-site interpretation would increase protection through enhancing awareness, and leaving sites conserved in-situ for future research.</p> <p>Vehicles would continue to damage fossils through crushing, fracturing, or staining.</p>	<p>Closing the PTNM to the casual collection of fossils would reduce the loss of scientific-worthy vertebrate fossils, but would also reduce educational and recreational opportunities.</p> <p>Off-site interpretation would protect resources by increasing awareness and leaving paleontological sites conserved in-situ for future research.</p> <p>Closure to motorized and mechanized travel would eliminate damage to fossils from this use.</p>	<p>Restricting the casual collecting of common invertebrate and plant fossils would reduce the loss of scientific-worthy vertebrate fossils.</p> <p>On-site education and interpretation would increase awareness of the resource but could increase the potential for looting.</p> <p>Closing certain routes would protect important exposed fossils from OHV activity.</p> <p>Development of visitor facilities could increase visitation and thereby result in increased stewardship, but vandalism and looting could also increase.</p>	<p>Same as Alternative C except, both the beneficial and adverse impacts from on-site interpretation and facilities would be increased due to more development.</p>
EDUCATION AND INTEPRETATION			
<p>Scientific research would enhance education and interpretation through the discovery of new sites.</p> <p>Casual collecting of common invertebrate and plant paleontological resources would enhance the educational experience in the Monument.</p> <p>Limited facility and trail development would constrain the interpretive experience on-site.</p>	<p>Same as Alternative A.</p> <p>The closure to casual collection of fossils would limit the on-site interpretive experience.</p> <p>Same as Alternative A.</p> <p>Managing for lands with wilderness characteristics may limit new surface disturbing activities such as interpretative trails and signs in those areas (576 acres).</p>	<p>Same as Alternative A.</p> <p>Same as Alternative B.</p> <p>On-site interpretation, trails and facilities would be developed to enhance educational opportunities.</p> <p>Same as Alternative B except surface disturbing activities may be limited to 253 acres. The remaining 323 acres found to have wilderness characteristics, but not managed for those characteristics, may be impacted from potential surface disturbing activities.</p>	<p>Same as Alternative A.</p> <p>Collecting common fossils in conjunction with a BLM activity would enhance the educational experience.</p> <p>The development of a motorized interpretive tour or a visitor center would enhance the experience of many visitors.</p> <p>Lands found to have wilderness characteristics would not be managed for those characteristics, therefore development may occur and may impact the wilderness characteristics in those areas (576 acres).</p>

**TABLE 2-1
SUMMARY OF IMPACTS BY RESOURCE BY ALTERNATIVE**

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C (PREFERRED)	ALTERNATIVE D
RECREATION AND VISITOR SERVICES			
<p>Annual visitation to the Monument area is 25,000.</p> <p>Casual collecting of common invertebrate and plant fossils provides a recreational opportunity.</p> <p>The lack of on-site visitor facilities limits the visitor experience and may reduce visitation from some groups.</p> <p>Target shooting could cause conflict between users.</p> <p>No planned improvement or maintenance of trails would limit recreation.</p>	<p>Annual visitation may be reduced by 5,625 visitors.</p> <p>Casual collection of fossils, Special Recreation Permits, and motorized and mechanized vehicle use would not be allowed, thus reducing the number of recreation opportunities.</p> <p>Same as Alternative A.</p> <p>Same as Alternative A.</p>	<p>Annual visitation would increase to 37,500 people.</p> <p>Same as Alternative B.</p> <p>On-site visitor facilities would enhance the visitor experience and may increase visitation.</p> <p>Closure to target shooting would reduce a recreational opportunity.</p> <p>Closure of a portion of the OHV trails would impact the extreme OHV users. Maintaining and developing trails and routes would enhance recreational opportunities.</p>	<p>Annual visitation would increase to 75,000 people.</p> <p>Collecting common fossils while in conjunction with a BLM activity would provide a recreational opportunity.</p> <p>A visitor center and a campground would create recreational opportunities.</p> <p>Same as Alternative C.</p> <p>A 1.4-mile portion of trail route would remain open providing an opportunity to access an extreme route.</p>
TRAILS AND TRAVEL MANAGEMENT			
<p>Continued use of the existing 37.6 miles of designated trails provides an extensive route network with a variety of opportunities for motorized, mechanized, and pedestrian use and travel.</p> <p>Improvement or maintenance of existing routes has not been planned for, reducing the ease of access for educational and some recreational uses.</p>	<p>Closing the Monument to motorized and mechanized travel would reduce access to most visitors.</p> <p>Managing for lands with wilderness characteristics may limit new surface disturbing activities, such as trails and roads and routes in those areas (576 acres).</p> <p>Lack of improvement or maintenance of routes would reduce the ease of access and recreational experience for many visitors.</p>	<p>Limiting motorized and mechanized travel to 32.2 miles of designated routes would provide an extensive route network with a variety of opportunities for use.</p> <p>Lands found to have wilderness characteristics, managed for those characteristics, may limit the new development of facilities, additional roads and routes and maintenance in those areas (253 acres). The 323 acres found to have wilderness characteristics, but not managed for those characteristics, may be impacted from potential surface disturbing activities</p> <p>Improved and maintained routes would enhance the visitor experience.</p>	<p>Same as Alternative C, except 33.6 miles of routes would be designated.</p> <p>Lands found to have wilderness characteristics would not be managed for those characteristics, therefore new trails, roads, and route construction may occur and may impact the wilderness characteristics in those areas (576 acres).</p> <p>Same as Alternative C.</p>

**TABLE 2-1
SUMMARY OF IMPACTS BY RESOURCE BY ALTERNATIVE**

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C (PREFERRED)	ALTERNATIVE D
AIR RESOURCES-- AIR QUALITY			
Vehicle travel on designated trails has the potential to emit pollutants and cause dust.	Closure to motorized and mechanized use would reduce dust and emissions compared to Alternative A.	Same as Alternative A.	Same as Alternative A.
Surface disturbance from potential authorized rights-of-way could cause dust emissions.	Rights-of-way would not be allowed. Emissions would be less than Alternative A.	Same as Alternative A.	Same as Alternative A.
Mineral extraction could cause dust emissions.	No mineral extraction would take place. Emissions would be less than Alternative A.	Same as Alternative B.	Same as Alternative B.
	Managing for lands with wilderness characteristics may limit new surface disturbing activities, and potentially reduce dust emissions in those areas (576 acres), compared to Alternative A.	The 323 acres of lands with wilderness characteristics, but not managed for them, may be subject to disturbing activities that increase dust emissions.	Lands found to have wilderness characteristics would not be managed for them. Dust emissions may potentially increase due to surface disturbing activities in those areas (576 acres).
		Construction of facilities could cause emissions.	Same as Alternative C.
AIR RESOURCES -- CLIMATE			
It is not possible to predict with certainty the potential emissions of greenhouse gases (GHG) associated with the four alternatives, their potential impacts on temperature within the <i>Planning Area</i> , or related impacts on resources due to climate change. In general, trails and travel management, livestock grazing, and wildland fire generate GHG emissions that contribute to climate change and, in turn, may impact resources.			
CULTURAL RESOURCES			
The BLM would comply with Section 106 of the National Historic Preservation Act thereby minimizing impacts to cultural resources.	Closure of the Monument to rights-of way, vehicular travel and other surface disturbing activities would greatly reduce the potential impacts to cultural resources.	Same as Alternative A	Same as Alternative A

**TABLE 2-1
SUMMARY OF IMPACTS BY RESOURCE BY ALTERNATIVE**

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C (PREFERRED)	ALTERNATIVE D
LANDS AND REALTY			
<p>Surface disturbing land use authorizations could take place.</p> <p>Commercial-scale renewable energy would be excluded.</p> <p>Authorizations would meet Visual Resource Management (VRM) Classes I to IV.</p>	<p>Surface disturbing land use authorizations would be excluded from the PTNM.</p> <p>Same as Alternative A.</p> <p>There would be no VRM impacts.</p> <p>Obtaining non-Federal minerals would eliminate split-estate issues.</p>	<p>Surface disturbing land use authorizations would be considered with the exception of lands managed for their wilderness characteristics.</p> <p>Same as Alternative A.</p> <p>VRM I and II could limit land use authorizations.</p> <p>Same as Alternative B.</p>	<p>Same as Alternative C</p> <p>Same as Alternative A.</p> <p>Same as Alternative C.</p> <p>Same as Alternative B.</p>
LANDS WITH WILDERNESS CHARACTERISTICS			
<p>Lands found to have wilderness characteristics but not managed for those characteristics may be impacted (576 acres).</p>	<p>Managing for lands with wilderness characteristics would protect the wilderness characteristics in those areas (576 acres).</p>	<p>Lands found to have wilderness characteristics and managed for them may limit disturbance activities (253 acres). The remaining 323 acres found to have wilderness characteristics, but not managed for them, may be impacted from potential surface disturbing activities.</p> <p>Designation of the Monument as VRM I and II would help retain wilderness characteristics.</p>	<p>Same as Alternative A.</p> <p>VRM I and II designations may help to retain some of the wilderness characteristics found in the PTNM.</p>
LIVESTOCK GRAZING			
<p>Increased visitation could cause increased conflicts with livestock and recreational users.</p> <p>Vegetation treatments could improve forage and reduce competition.</p>	<p>There would be no direct impacts from livestock grazing in the Monument.</p> <p>Exclusion from grazing would require fencing and management adjustments in the Picacho Peak and Altamira allotments.</p> <p>Animal unit months (AUMs) would be reduced by a minimum of 456 for the two allotments.</p>	<p>Same as Alternative A.</p> <p>Fences would be constructed to protect significant fossils as needed. Forage reductions would be based on the specific acres excluded.</p> <p>Same as Alternative A but using more effective techniques.</p> <p>Excluding improvements from 253 acres managed for wilderness characteristics may reduce the use of forage.</p>	<p>Same as Alternatives C with more anticipated interactions between visitors and livestock as visitor facilities and routes increase.</p> <p>Same as Alternatives A and C, but with more forage possibly improved.</p>

**TABLE 2-1
SUMMARY OF IMPACTS BY RESOURCE BY ALTERNATIVE**

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C (PREFERRED)	ALTERNATIVE D
SOCIO-ECONOMIC CONDITIONS			
<p>Visitation to the PTNM would support 16 jobs and \$417,000 in labor income annually.</p> <p>Visitor facilities would not be constructed.</p> <p>Alternative A has the lowest levels of non-market economic values and the least support for social values related to preservation of ecological health and wilderness.</p> <p>Similar levels of employment and income would be supported.</p> <p>None of the decisions are expected to disproportionately or adversely affect environmental justice communities.</p> <p>Designation of 37.6 miles of roads and trails open to motorized and mechanized uses supports social values related to public land access and OHV recreation.</p>	<p>Visitation to the PTNM would support 4 jobs and \$94,000 in labor income annually.</p> <p>Economic benefits from facility construction would not be realized.</p> <p>Alternative B would support the highest levels of non-market economic values and social values related to protection of natural and cultural resources.</p> <p>Elimination of grazing would reduce labor income to ranchers.</p> <p>Same as Alternative A</p> <p>Closure to motorized and mechanized uses would reduce the quality of life for those who primarily value OHV recreation, but would make PTNM more of an attraction for others.</p>	<p>Visitation to the PTNM would support 24 jobs and \$626,000 in labor income annually.</p> <p>Development of visitor facilities would temporarily increase local employment and labor income during construction.</p> <p>Alternative C balances social values of access and motorized recreation with values related to ecological health and wilderness.</p> <p>Social and economic consequences of grazing are the same under Alternatives A.</p> <p>Same as Alternative A.</p> <p>Same as Alternative A but with a reduction in available routes for extreme OHV opportunities.</p>	<p>Visitation to the PTNM would support 47 jobs and annual labor income of \$1,251,000.</p> <p>Same as Alternative C.</p> <p>Alternative D would support lower levels of non-market economic values and social values related to protection of natural and cultural resources.</p> <p>Same as Alternatives A.</p> <p>Same as Alternative A.</p> <p>Same as Alternative C.</p>
SOILS			
<p>Excavations could cause highly disturbed areas. Casual collecting of fossils would have a minor disturbance.</p> <p>Soil disturbance would be caused by recreation, research, interpretation tours, camping, Special Recreation Permits, vehicular travel, right-of-way development, and range improvements.</p> <p>Spills of petroleum products could contaminate soils.</p>	<p>Surface disturbance would be reduced because casual collecting would be prohibited.</p> <p>Closure to vehicular travel and camping, no issuance of Special Recreation Permits, removal of grazing, and exclusion of surface disturbing land use authorizations would all benefit soils.</p>	<p>Same as Alternative B.</p> <p>Visitor facilities would displace and compact soils, increasing runoff and erosion rates.</p>	<p>Same as Alternative A.</p> <p>Same as Alternative C.</p>

**TABLE 2-1
SUMMARY OF IMPACTS BY RESOURCE BY ALTERNATIVE**

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C (PREFERRED)	ALTERNATIVE D
SPECIAL DESIGNATION -- AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)			
Manage as the Robledo Mountains ACEC.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
SPECIAL DESIGNATION-- RESEARCH NATURAL AREA (RNA)			
Management prescriptions of the RNA would be duplicated by the PTNM Legislation.	The RNA designation would be removed and replaced by the PTNM RMP decisions.	Same as Alternative B.	Same as Alternative B.
SPECIAL DESIGNATION -- WILDERNESS STUDY AREA (WSA)			
The Robledo Mountains WSA would be managed to meet the non-impairment standard.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
SPECIAL STATUS SPECIES			
Vehicle travel and dispersed recreation has the potential to temporarily displace special status species or injure slow moving species.	Closure to motorized and mechanized travel would reduce potential for injury of some species such as Texas horned lizard.	Same as Alternative A except development could increase temporary displacement of special status species or injure slow moving species.	Same as Alternative C.
Livestock watering sources would benefit special status species such as bats.	Elimination of livestock grazing could reduce forage competition and improve habitat for species such as burrowing owl and northern shrike.	Same as Alternative A.	Same as Alternative A.
Vegetation management would improve habitat for species associated with grasslands.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
VEGETATION			
Special designations would protect 789 acres from surface disturbing activities.	Same as Alternative A, but with an additional 576 acres managed as lands with wilderness characteristics.	Same as Alternative A except an additional 253 acres would be managed as lands with wilderness characteristics.	Same as Alternative A.
Use of trails and routes has the potential to remove or damage vegetation and spread noxious weeds.	Surface disturbing activities, e.g., Special Recreation Permits, OHV use, and rights-of-way, would be restricted to reduce the potential for damage to vegetation.	Development of new trails, routes, or facilities could remove vegetative cover in other areas.	Same as Alternative C except additional surface disturbance and vegetation removal is possible from facilities development.
Livestock grazing may remove 30 to 50 percent of key forage species and has the potential to introduce or spread weeds.	Elimination of livestock grazing decreases utilization of forage species favored by cattle.	Same as Alternative A	Same as Alternative A.
Vegetation treatments have the potential to shift species dominance and control weeds.	Treatment options would be limited for noxious weed control.	Same as Alternative A.	Same as Alternative A.

**TABLE 2-1
SUMMARY OF IMPACTS BY RESOURCE BY ALTERNATIVE**

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C (PREFERRED)	ALTERNATIVE D
VISUAL RESOURCES			
<p>VRM Class I designation would preserve the character of the landscape on 789 acres of the most scenic, natural appearing, and visually sensitive areas.</p> <p>VRM Class II would retain the existing character of the landscape on 907 acres.</p> <p>The remaining lands would be designated as VRM Class III and IV, which allow more change in the visual character of the land.</p> <p>Development of 368 acres of non-Federal minerals may impact the existing character of the landscape.</p>	<p>1,365 acres would be designated as VRM Class I as described in Alternative A.</p> <p>3,912 acres would be designated VRM Class II as described in Alternative A.</p> <p>Exclusion of livestock from the Monument could cause short-term visual impacts from fence construction.</p>	<p>1,042 acres would be designated VRM Class I as described in Alternative A.</p> <p>4,213 acres would be designated VRM Class II as described in Alternative A.</p> <p>Same as Alternative A.</p>	<p>789 acres would be designated VRM Class I as described in Alternative A.</p> <p>4,465 acres would be VRM Class II as described in Alternative A.</p> <p>Same as Alternative A.</p>
WATER RESOURCES			
<p>Surface disturbing activities may create nonpoint source pollutants that could transport to the Rio Grande, decrease infiltration, increase runoff, and alter water flow patterns.</p>	<p>Restrictions in surface disturbing activities would help soil stability and productivity, hinder erosion, and reduce nonpoint source pollution.</p>	<p>Same as Alternative A.</p>	<p>Same as Alternative A.</p>
WILDLAND FIRE MANAGEMENT			
<p>Visitation and associated recreation activities could increase potential for human-caused wildfires.</p> <p>Vegetation treatments could cause an increase in fuel loading resulting in unwanted fire behavior.</p>	<p>Same as Alternative A except the reduction of some recreation activities would reduce the potential of human-caused wildfires.</p> <p>Reduction in livestock grazing would increase fuels and the likelihood that a wildfire would carry.</p>	<p>Same as Alternative A.</p>	<p>Same as Alternative A.</p>
WILDLIFE			
<p>Increase in visitation and recreation activities could temporarily displace wildlife.</p> <p>Vehicular travel has the potential to injure slow moving wildlife.</p>	<p>Closure to travel would decrease potential injury and displacement of wildlife.</p> <p>Removal of livestock would increase forage and cover for wildlife.</p>	<p>Same as Alternative A except increased displacement could occur around developed interpretation sites and facilities</p>	<p>Same as Alternative C, except prescribed fire could displace, kill or render habitat unsuitable but would have long-term benefits to habitat.</p>

CHAPTER 3

AFFECTED ENVIRONMENT

CHAPTER 3 AFFECTED ENVIRONMENT

3.1 INTRODUCTION

This Chapter describes the current environment within the Prehistoric Trackways National Monument (PTNM). Many, though not all, of the sections within this Chapter correlate with programs for which the Bureau of Land Management (BLM) intends to make management decisions through the planning process. These resources and uses may be affected by the implementation of any of the management alternatives, but the current environment gives a baseline to which to compare the impacts from the different alternatives.

3.2 RESOURCES AND USES

3.2.1 Paleontological Resources

Within the Monument, evidence of life that once existed along an ancient tidal flat is contained in red stained layers of sandstone, siltstone, and mudstone that are referred to as the Robledo Mountain Formation (some call this the Abo Formation). These red layers are interbedded with grayish-yellow limestone layers that were laid near shore and in deeper waters of a regressive-transgressive Permian-aged sea. Together, these rocks comprise what is known as the Hueco Group. The limestones of the Hueco Group contain a number of marine invertebrate fossils that include brachiopods, snails, and crinoids.

Paleontological resources may also be found in sedimentary rocks that were deposited during the Oligocene Epoch through the Pleistocene Epoch. These sediments constitute the filling of the Rio Grande Rift and are collectively known as the Santa Fe Group. Fossils found in the Santa Fe Group are typified by terrestrial vertebrates.

In the sedimentary rocks, the movements of animals have been preserved in the sands, silts, and mud of the tidal flat for almost 300 million years. Jumping trails of wingless insects have been preserved. Activities of amphibians (see Figure 3-1), reptiles, a variety of arthropods including horse shoe crabs (see Figure 3-2), and insects are recorded in the red beds. Even impressions of the animals themselves have been documented by recent discoveries of sea anemones and jelly fish.

These impressions in rock are called trace fossils (*ichnofossils*) and they can be used to develop a picture of what life was like on the coast of an inland Permian sea 280 million years ago (see Figures 3-2 and 3-3), before the age of dinosaurs. Leaf impressions and petrified wood (see Figures 3-4, 3-5, and 3-6,) tell what was growing on the landscape. When the sea level rose, the tidal flats were inundated by marine waters, and the limestone was deposited. This marine limestone contains a variety of invertebrate body fossils such as shells of brachiopods, clams, and gastropods (see Figure 3-8).

Sedimentary structures such as ripple laminations and mud cracks, along with various trace fossils, can be used to define life zones on the tidal flat, shallow water zones, and tidal



Figure 3-1
Amphibian Trace.
Illustration by
Matt Celeskey, NM
Museum of
Natural History &
Science



Figure 3-2. Horseshoe Crab Trace.
Illustration by Mary Sundstrom.



Figure 3-3. Permian Tidal Flat. Illustration by Mary Sundstrom.

channels, allowing paleontologists and sedimentologists to refine models of Permian ecosystems. Animal tracks reveal how an animal lived and what its life was like and, perhaps, who was food for whom.

The BLM is directed by Section 2103 of Public Law 111-11 to conserve, protect, and enhance the resources and values of the Monument. Paleontological resources collected under a research permit would be stored in a Federally-approved repository for research and use in exhibits in order to meet the law's requirement to conserve these resources. This allows research on specimens stored away from forces of nature. These specimens can be, and are, exhibited to a wide range of people across the U.S.

The BLM policy for identifying paleontological sensitive geological formations is based on the Potential Fossil Yield Classification System (PFYC). Under the PFYC System, geologic units are classified based on the potential abundance of vertebrate fossils or uncommon invertebrate or plant fossils. It is not intended to be an assessment of whether important fossils are known to occur in these units, nor is it intended to be applied to specific sites or areas. In many situations, the classification should be an intermediate step in the analysis, and should be used to assess additional mitigation needs. Current BLM policy provides for a specific course of action depending on the paleontological resource potential ranked 1 through 5 (see Appendix D). The PFYC classes are depicted on Map 3-1 and defined as follows:

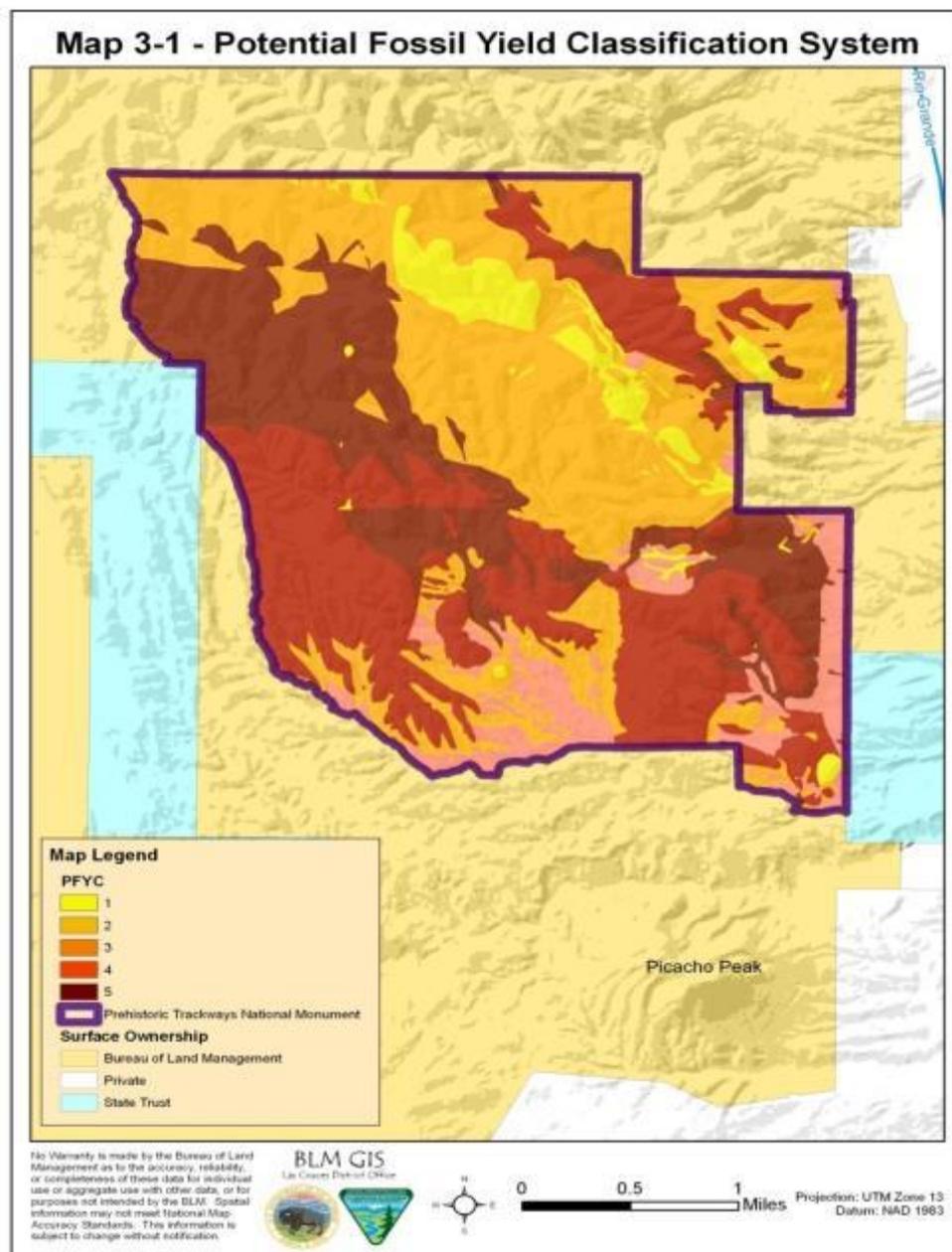
Class 1: Is composed of geologic units unlikely to contain recognizable fossil remains. This includes units that are igneous or metamorphic in origin (but excludes tuffs), as well as units that are Precambrian in age or older. Management concern for paleontological resources in Class 1 units is negligible or not applicable. No assessment or mitigation is needed except in very rare circumstances. The occurrence of significant fossils in Class 1 units is non-existent or extremely rare.

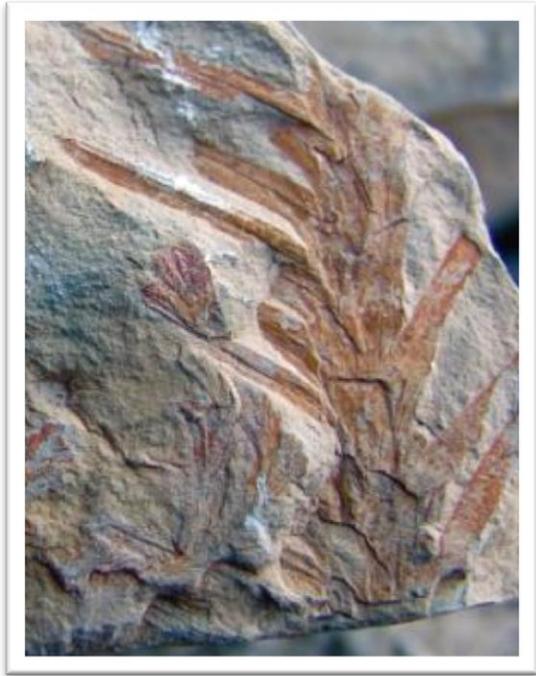
Class 2: Is composed of sedimentary geologic units that are not likely to contain vertebrate fossils or scientifically significant invertebrate fossils. This includes units in which vertebrate or significant invertebrate fossils are unknown or very rare, units that are younger than 10,000 years before present, units that are aeolian in origin and units which exhibit significant physical changes in rock (i.e., compaction, cementation, mineral replacement). The potential for affecting vertebrate fossils or uncommon invertebrate or plant fossils is low. Management concern for paleontological resources is low, and management actions are not likely to be needed. Localities containing important resources may exist, but would be rare and would not influence the classification.

Class 3: Is composed of fossiliferous sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence; or sedimentary units of unknown fossil potential. These units are often marine in origin with sporadic known occurrences of vertebrate fossils. Vertebrate fossils and uncommon invertebrate fossils are known to occur inconsistently, and predictability is known to be low. Surface-disturbing activities will require sufficient assessment to determine whether significant fossil resources occur in the area of a proposed action, and whether the action could affect the paleontological resources.

Class 4: These are Class 5 geologic units (see below) that have lowered risks of human-caused adverse impacts or lowered risk of natural degradation. They include bedrock units with extensive soil or vegetative cover, bedrock exposures that are limited or not expected to be impacted, units with areas of exposed outcrop that are smaller than two contiguous acres, units in which outcrops form cliffs of sufficient height and slope so that impacts are minimized by topographic effects, and units where other characteristics are present that lower the vulnerability of both known and unidentified fossil localities.

Class 5: Highly fossiliferous geologic units that regularly and predictably produce vertebrate fossils or uncommon invertebrate or plant fossils, and that are at risk of human-caused adverse impacts or natural degradation. These include units in which vertebrate fossils or uncommon invertebrate or plant fossils are known and documented to occur consistently, predictably, or abundantly. Class 5 pertains to highly sensitive units that are well exposed with little or no soil or vegetative cover, units in which outcrop areas are extensive, and exposed bedrock areas that are larger than two contiguous acres.





*PHOTOS COURTESY OF:
JERRY MACDONALD*

Figure 3-4 Leaf Fossils

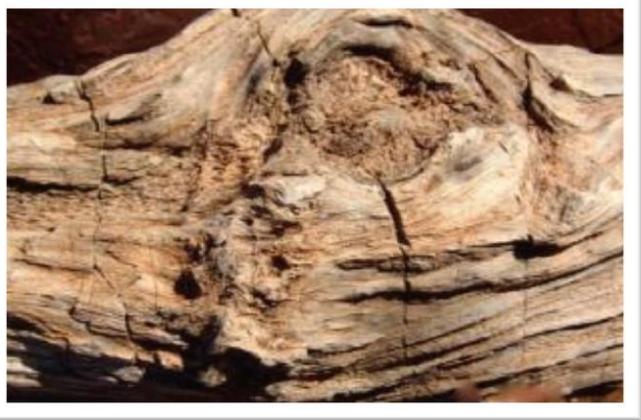


Figure 3-5 Petrified Wood

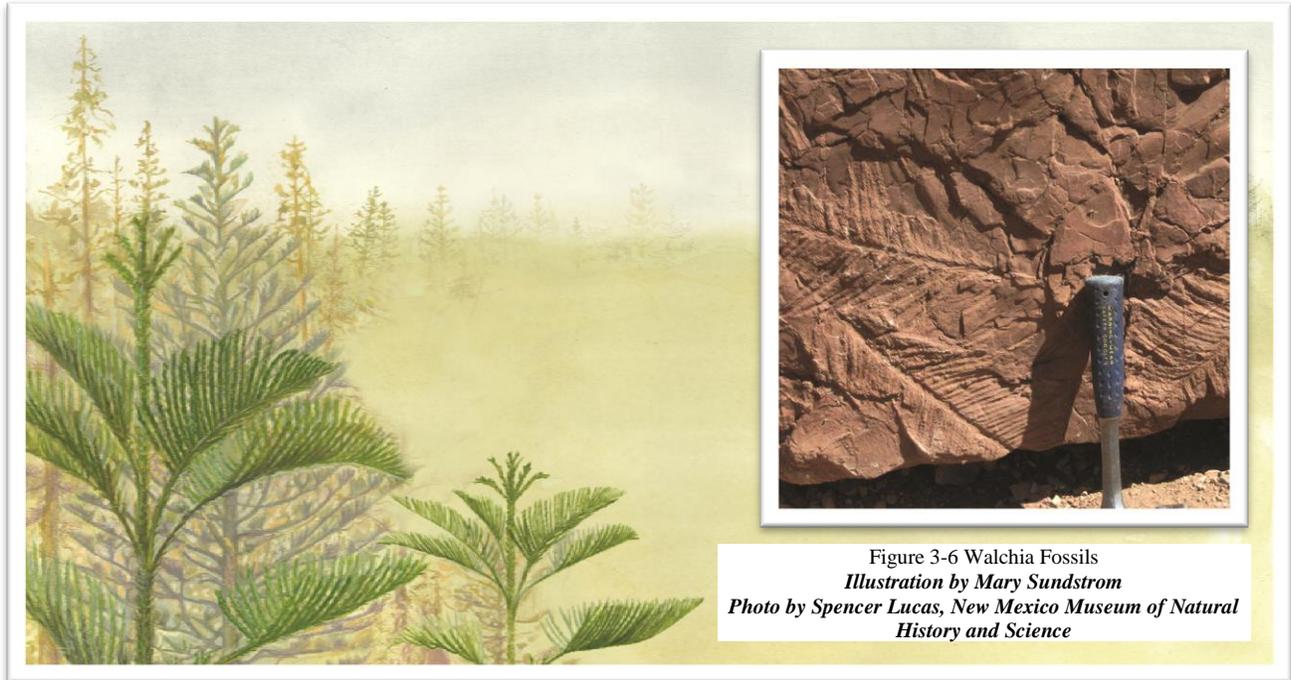


Figure 3-6 Walchia Fossils
Illustration by Mary Sundstrom
Photo by Spencer Lucas, New Mexico Museum of Natural History and Science

3.2.1.1 Non-Marine Fossils

3.2.1.1.1 *Plant Fossils*

The Robledo Mountains contain several important Lower Permian plant localities.

“Plants from the Robledo Mountains are primarily representatives of groups that we believe to have grown in seasonally dry habitats - commonly including conifers and an extinct group known as peltasperms, as well as other less abundant forms. Most of the plants grew along the margins of stream channels or in swampy lowlands, which is what permitted their leaves and branches to be buried quickly and in environments where they were removed from the effects of decay.”

Bill DiMichele, PhD., Curator of Fossil Plants, Smithsonian Institution

3.2.1.1.2 *Vertebrate Tracks*

The most common ichnotaxon in the Robledo samples is the amphibian track type *Anthichnium salamdroide*. A large amphibian, ichnogenus *Limnopus* is represented and the diminutive amphibian ichnogenus *Erpetopus* is present. A few specimens suggest the presence of a larger amphibian track maker such as *Parabarpus*.

The most common small reptilian track type is *Dromopus lacertoides*, which occurs in large numbers on some layers at New Mexico Museum of Natural History (NMMNH) locality 846 (also termed the *Discovery Site* in the Jerry MacDonald Collection, see Figure 3-7).

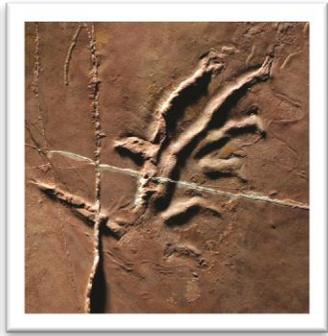
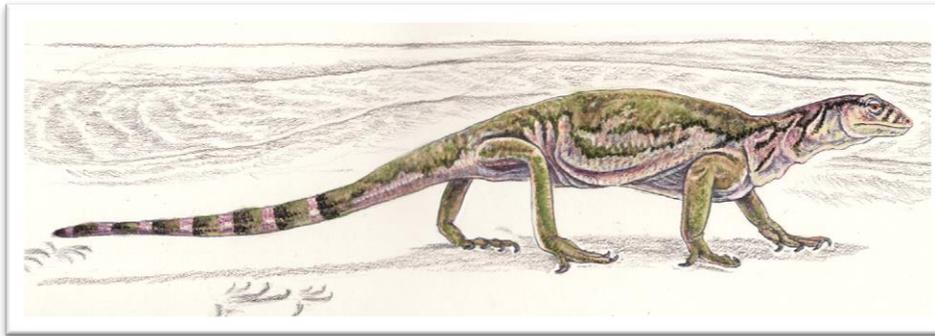


Figure 3-7. *Dromopus*. Photo by Sebastian Voigt.
Illustration by Matt Celeskey, New Mexico Museum of Natural History and Science

3.2.1.1.3 *Invertebrate Trackways*

The invertebrate ichnofauna is particularly diverse and evidently includes many more than the 17 ichnotaxa described by Demathieu *et al.* (1992) from the Lower Permian of Southern France. Several described genera are present, whereas other morphologies probably represent new taxa. Minter and Braddy (2009) describe 18 types of invertebrate trace fossils from the Jerry MacDonald Collection.

3.2.1.2 Marine Fossils

Kues and Giles (2004) described and illustrated examples of the marine fauna represented in the Hueco Group in the Monument. More than 70 of the characteristic taxa are illustrated in the article and include brachiopods, bivalves and gastropods (see Figure 3-8) which are the most diverse elements of the fauna.



Figure 3-8. Marine Fossils. Photo by Scott Elrick.

Additionally, remains of sponges, corals, bryozoans, scaphopods, nautiloids, ammonoids, echinoids, crinoids, trilobites and sharks were found by Kues in the marine sequences. Ostracods are the most common microfossils in the Hueco Group in the Robledo Mountains. Some replacement of original minerals in the fossil shells has occurred and can obscure the original structure in some of the marine fauna.

3.2.2 Education and Interpretation

Currently, there are no formal on-site interpretive facilities such as exhibits, kiosks or signs within the PTNM. There are no signed trails to lead visitors to any location within the PTNM. There is an informal trail to the *Discovery Site* which is marked with a sign that offers little in the way of interpretation. An information kiosk was installed on BLM land adjacent to the Monument in the winter of 2011 that offers orientation and interpretation of the Trackways. Within the Monument, guided hikes, tours, and school programs have been held for the past few years by the BLM and other educational entities from Las Cruces, such as the Museum of Nature and Science. Self-guided activities are taking place as well, but it is unknown how informative such excursions are for visitors.

Off-site programs have been on-going at various venues since the initial discovery of the Trackways. Originally, these programs were conducted by Jerry MacDonald. Since the designation of the Monument, the BLM and additional partners have carried on this practice. One of the local partners for interpretive and educational programs is the Las Cruces Museum of Nature and Science (MoNas). The Museum has been active in public education since the 1980's, and recently moved to a new and larger facility where they have expanded areas for the display of fossil specimens.

In 2011, the BLM formalized this partnership by entering into an Assistance Agreement with the City of Las Cruces to assist in the development of trackway exhibits for the new Museum which was in the planning stages. Today, the Museum displays a 30-foot long continuous Trackway specimen containing hundreds of tracks from several different animals from the Permian Era (Figure 3-9). This specimen is the centerpiece of the Museum whose theme is "*Trackways to Space*." In addition, there are several other displays interpreting the resources of the Monument including interactive videos of Jerry MacDonald discussing various aspects of his discoveries at the PTNM.

The MoNas is the in-town visitor center for the PTNM, offering formal educational and interpretive programs at the Museum. To continue and expand this partnership and in the interest of providing a link to the Monument itself, the BLM entered into a second Assistance Agreement with the City. The purpose of this Agreement is to continue supporting the MoNas in developing interpretive opportunities and providing information for informal (self-guided) and formal (Ranger or docent-led) touring opportunities.



Figure 3-9 The Trackways display at the Las Cruces Museum of Nature and Science.

Another partner that has been instrumental in providing educational and interpretive services and products is the New Mexico Museum of Natural History and Science (NMMNHS) in Albuquerque. This museum is currently the main curatorial facility housing most of the PTNM Trackway slabs. In 2012, an interpretive booklet was published by the NMMNHS through an Assistance Agreement with the BLM. The booklet, *Traces of a Permian Seacoast*, has been very popular with the public and is provided by the

BLM at no cost upon request. Through the same Agreement, the NMMNHS produced educational “*travelling trunks*” which have been located at several off-site venues since 2011. School kits are being developed in partnership with the BLM, NMMNHS and New Mexico State University. These items have enhanced the off-site programs that are supported by the BLM.

Another key partner for the PTNM is the Paleozoic Trackways Foundation of Las Cruces. This group has assisted in raising funds in support of educational programs concerning the PTNM including funding for school buses for field trips to the Monument for Ranger-led tours. They provide outreach and information at many local public venues. Also, the PTNM is a BLM Hands-on-the-Land site which is a National network of outdoor classrooms on public land. These classrooms provide field-based opportunities that address the Science, Technology, Engineering and Mathematics (STEM) programs and curriculum.

3.2.3 Recreation and Visitor Services

The Monument is near Las Cruces, New Mexico. It has been recognized for decades as an easily accessible area to enjoy a variety of outdoor activities. Visitors use the area to hike, mountain bike, drive on OHV trails, horseback ride and more. Since Jerry MacDonald began excavating in the late 1980s, his “*Discovery Site*” has been a popular attraction for people to hike to and view fossil tracks. New Mexico State University has been taking geology classes out to the Robledo Mountains for decades to explore the unique geological features. There are currently no facilities within the Monument to support these uses. As the Monument becomes more widely known, it is reasonable to anticipate an increasing demand for on-site facilities.

Visitation numbers to the Monument and its immediate environs are estimated at 25,000. From August 2011 to August 2012, TRAFx vehicle counters were placed at three strategic locations to estimate the number of visitors entering the Monument. One counter was placed at the cattle guard on Permian Tracks Road (see Map 2-1) and over 10,000 vehicles were counted. This cattle guard is outside the Monument at a juncture where cars may continue into the Monument or park outside the Monument and enter it by foot, bike, OHV, or horse. This spot is also a popular area for target shooting during the day, and parties during the night. It is certain that many of the vehicles that crossed over the vehicle counter on Permian Tracks Road were not destined for the Monument proper.

Placement of the two other counters allows the BLM to estimate that from 40 to 60 percent of vehicles that crossed the cattle guard entered the Monument on OHV routes. The standard conversion for recreational visits per vehicle is 2.5 meaning that perhaps 25,000 visitors crossed the vehicle counter and anywhere from 10,000 to 15,000 people came into the Monument. Various other unimproved routes access the Monument so there may be an even higher number of visits into the Monument that are unaccounted.

The Monument offers a variety of informal hiking trails, paths, and canyon bottoms that appeal to outdoor enthusiasts. Hikers, horse riders, recreational firearms users, OHV enthusiasts, amateur fossil and rock collectors, geologists, paleontologists, photographers, cyclists, and dirt bike riders are all attracted to the rustic, yet convenient foothills of the southern Robledo Mountains. Hikers and bicyclists usually follow the arroyos and ridgelines and often use the same trails as the OHV drivers.

Recreational target shooting and hunting is allowed in the Monument. Target shooting is popular adjacent to the Monument, in the vicinity of the cattle guard on Permian Tracks Road (see Map 2-1). Visitors, educational groups, and staff members have reported safety risks from target shooters. Hunting occurs during deer hunting season and year-round for non-game species such as jackrabbits, squirrels, and coyotes.

Campfire remains and large amounts of debris associated with partying around the Monument are frequently noted and cleaned up by BLM staff and concerned public.

3.2.4 Trails and Travel Management

In 1997, in order to reduce motorized vehicle incursions into the Robledo Mountains Wilderness Study Area (WSA) and to provide a convenient venue for OHV enthusiasts, the BLM prepared the Robledo Mountains Off-Highway Vehicle Implementation Plan (NM-036-97-083). This trail system is open year-around and has been popularized by the annual Chile Challenge Extreme Off-Road Event. About 32 miles of the Robledo Mountains OHV trails are within the boundaries of the Monument. The variety of extreme “*rock crawling*” trails coupled with a network of unmaintained two-track routes has made the Robledo Mountains a favorite destination for OHV use.

The Monument is characterized by rugged, challenging terrain that incorporates approximately 32 miles of OHV trails. All of the routes within the Monument require high clearance, four-wheel drive vehicles. Nearly half of these trails are rated as extreme or difficult, and require modified vehicles, knowledge, and skills. The rest of the trails are rated as easy or moderate but still require a certain degree of skill and four-wheel drive vehicles. Low clearance, two-wheel drive vehicles cannot safely negotiate these trails.

In 1998, the BLM completed an environmental assessment (NM-036-98-29) to identify and authorize mountain bike trails in Doña Ana County. Among the trails that were approved for development through this analysis was the 4-mile (round trip) route in the southern Robledo Mountains that is popularly known as the *SST* Trail. Since 1998, the *SST* has evolved to incorporate a portion of a designated OHV trail bringing the total round trip distance to 6.5 miles, of which 5.5 miles are within the Monument.

The PTNM is currently open for casual equestrian use and hiking, although no formal trails are designated for those uses.

3.2.5 Air Resources

3.2.5.1 Air Quality

The Clean Air Act, as amended, requires the Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) for six “*criteria*” pollutants including Carbon Monoxide, Lead, Nitrogen Dioxide, Sulfur Dioxide, Ozone, and Particulate Matter (PM). Of these six, only one – PM – is substantially affected by natural resource management activities proposed in the *Analysis Area*. PM is a complex mixture of extremely small particles and liquid droplets. Particle pollution is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. Vehicle exhaust emissions, such as NO_x, CO, Volatile Organic Compounds and Hazardous Air Pollutants, may result from natural resource management activities proposed in the *Analysis Area* as well. NO_x and VOC emissions may combine in the presence of sunlight to form ozone.

The size of particles is directly linked to their potential for causing health problems. EPA is concerned about particles that are 10 micrometers in diameter or smaller (PM₁₀) because those are the particles that generally pass through the throat and nose and enter the lungs. A separate standard has been set for PM_{2.5}, those particles with diameter of 2.5 micrometers or less, because they have been found to cause the most serious health impacts. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Units of measure for the PM are micrograms per cubic meter of air (µg/m³). (<http://www.epa.gov/air/criteria.html>)

Air quality monitoring stations measure concentrations of PM throughout the country; Doña Ana County currently has several. Two monitoring stations for PM₁₀ can be considered representative of the *Analysis Area*. The West Mesa site is located approximately 6 miles south of the *Planning Area* and the Holman Road Site is approximately 12 miles to the east-northeast. In addition, PM_{2.5} is monitored in Las Cruces approximately 7 miles to the southeast. A review of 2010-2012 data indicates that the PM_{2.5} levels have remained well within the standards set by the New Mexico Environment Department, as shown in Table 3.1. There are no CO and NO₂ monitors in the Las Cruces area.

Table 3-1 2010-2012 Design Values for Las Cruces, NM

TABLE 3-1 2010-2012 DESIGN VALUES FOR LAS CRUCES, NM				
POLLUTANT	DESIGN VALUE	AVERAGING PERIOD	NAAQS	NMAAQS
PM _{2.5}	5.7 µg/m ³	Annual	12.0 µg/m ^{3,1}	
PM _{2.5}	12.0 µg/m ³	24-hour	35 µg/m ^{3,2}	
O ₃	0.065 ppm	8-hour	0.075 ppm ³	
Source: http://www.epa.gov/airtrends/values.html				
Notes: ¹ 3-year average of the annual mean				
² 3-year average of the 98 th percentile				
³ 3-year average of the 4 th highest daily maximum 8-hour ozone concentration				

A review of PM₁₀ monitoring data for Dona Ana County (<http://www.epa.gov/airtrends/values.html>) shows that several monitoring sites in the county recorded exceedances of the 24-hour NAAQS. The New Mexico Environment Department recently published a study showing that 2008 exceedances of the PM₁₀ standards were associated with regional dust storms and not human activities in Doña Ana County (NMED 2011). Southern Doña Ana County is also impacted by industrial sources in Mexico and Texas as well as in the Sunland Park and Anthony areas south of Las Cruces. A small area around the community of Anthony, approximately 30 miles southeast of the *Planning Area*, is designated as nonattainment for the PM₁₀ standard. In addition, an area in the corridor from Anthony south to Sunland Park is currently considered a maintenance area for ozone.

According to the 2011 National Emissions Inventory, the emissions of criteria pollutants, Volatile Organic Compounds (VOCs) and Hazardous Air Pollutants (HAPs) in Doña Ana County are primarily from biogenic sources, fire, mobile sources and dust. Annual emissions of criteria pollutants and HAPs for 2011 in Doña Ana County are:

- 51,899.4 tons CO;
- 10,541.94 tons NO₂;
- 66,038.36 tons PM₁₀;
- 8,340.40 tons PM_{2.5},
- 209.4 tons So₂
- 65,772.4 tons VOC

Data were taken from the following website: <http://www.epa.gov/ttn/chief/net/2011inventory.html>. The state of New Mexico is in the midst of a multi-year drought, which means soils in the State are particularly dry. This condition may lead to more wind-blown dust events where PM concentrations are elevated because dry soils are more susceptible to becoming airborne. It is not possible to predict when the current drought will end.

The EPA conducts a periodic National Air Toxics Assessment (NATA) that quantifies HAP emissions by county in the U.S. The purpose of the NATA is to identify areas where HAP emissions result in high health risks and further emissions reduction strategies are necessary. According to the 2005 NATA (http://www.epa.gov/ttn/atw/nata2005/05pdf/sum_results.pdf), Doña Ana County has a cancer risk of 25-50 in a million and 0-1 respiratory hazard index. These levels are considerably lower than metropolitan areas in the region.

The closest Class I area, as defined by the Clean Air Act, is the Gila Wilderness Area, which is 75 air miles distant from the Monument.

3.2.5.2 Climate

The PTNM has an arid continental climate with hot summers and mild winters. Summers are known for hot weather, with extended periods of over 100°F (38°C) and the latter half of the summer seeing increased humidity and frequent afternoon thunderstorms. Autumn brings cooler temperatures, although still warm and with decreased precipitation. Winter conditions fluctuate between warm and sunny to cool and windy. Average winter temperatures range from minimums in the upper 20s to maximums in the mid- to upper 50s. Spring is known for its high winds in the afternoons and warmer weather. Average annual precipitation ranges from 8 to 14 inches. Precipitation mainly comes in the form of thunderstorms associated with the Southwest monsoon in the summer, with showers throughout the year as Pacific weather systems dip south. An average freeze-free period from 200 to 240 days occurs in most of the area. Light snowfall occurs most winters but is usually short-lived. Table 3-2 shows average monthly temperature and precipitation for 1981-2010 measured at New Mexico State University in Las Cruces.

Table 3-2 Average Temperature and Precipitation for Las Cruces 1981-2010

TABLE 3-2 AVERAGE TEMPERATURE AND PRECIPITATION FOR LAS CRUCES 1981-2010												
LAS CRUCES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Average Temperature (°F)	43.8	48.1	54.1	61.4	70.2	78.6	81.4	79.4	73.8	63.0	51.5	43.5
Average Max Temperature (°F)	58.6	63.5	70.1	77.8	86.8	94.8	94.9	92.1	87.7	78.6	67.3	57.8
Average Min Temperature (°F)	29.1	32.7	38.2	44.9	53.7	62.4	68.0	66.8	59.9	47.4	35.7	29.1
Precipitation (inches)	0.51	0.41	0.22	0.29	0.40	0.66	1.53	2.22	1.33	0.94	0.46	0.77

Source: NOAA, 2011.

In addition to the air quality information cited above, new information about greenhouse gases (GHGs) and their effects on national and global climate conditions has emerged. Global mean surface temperatures increased nearly 1.0°C (1.8°F) from 1890 to 2006 (Goddard Institute for Space Studies, 2007). However, observations and predictive models indicate that average temperature changes are likely to be greater in the Northern Hemisphere. Without additional meteorological monitoring and modeling systems, it is difficult to determine the spatial and temporal variability and change of climatic conditions; what is known is that increasing concentrations of GHGs are likely to accelerate the rate of climate change.

Greenhouse gases that are included in the US Greenhouse Gas Inventory are: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). CO₂ and methane (CH₄) are typically emitted from combustion activities or are directly emitted into the atmosphere. On-going scientific research has identified the potential impacts of

greenhouse gas emissions (including CO₂; CH₄; nitrous oxide (N₂O), and several trace gasses) on global climate. Through complex interactions on regional and global scales, these greenhouse gas emissions cause a net warming effect of the atmosphere (which makes surface temperatures suitable for life on Earth), primarily by decreasing the amount of heat energy radiated by the Earth back into space. Although greenhouse gas levels have varied for millennia (along with corresponding variations in climatic conditions), recent industrialization and burning of fossil carbon sources have caused CO₂ concentrations to increase dramatically, and are likely to contribute to overall climatic changes. Increasing CO₂ concentrations may also lead to preferential fertilization and growth of specific plant species.

In 2007, the Intergovernmental Panel on Climate Change (IPCC) predicted that by the year 2100, global average surface temperatures would increase 1.4 to 5.8°C (2.5 to 10.4°F) above 1990 levels. The National Academy of Sciences (2006) supports these predictions, but has acknowledged that there are uncertainties regarding how climate change may affect different regions. Computer model predictions indicate that increases in temperature will not be equally distributed, but are likely to be accentuated at higher latitudes. Warming during the winter months is expected to be greater than during the summer, and increases in daily minimum temperatures are more likely than increases in daily maximum temperatures. It is not, however, possible at this time to predict with any certainty the causal connection of site specific emissions from sources to impacts on the global/regional climate relative to the proposed lease parcels and subsequent actions of oil and gas development.

Mean annual temperatures have risen across New Mexico and the southwestern U.S. since the early 20th century. When compared to baseline information, periods between 1991 and 2005 show temperature increases in over 95 percent of the geographical area of New Mexico. Warming is greatest in the northwestern, central, and southwestern parts of the State. Recurrent research has indicated that predicting the future effects of climate change and subsequent challenges of managing resources in the Southwest is not feasible at this time (IPCC, 2007; CCSP, 2008). However, it has been noted that forests at higher elevations in New Mexico, for example, have been exposed to warmer and drier conditions over a ten year period. Should the trend continue, the habitats and identified drought sensitive species in these forested areas and higher elevations may also be affected by climate change (Enquist and Gori, 2008).

A number of activities contribute to the phenomenon of climate change, including emissions of GHGs (especially carbon dioxide and methane) from fossil fuel development, large wildfires, activities using combustion engines, changes to the natural carbon cycle, and changes to radiative forces and reflectivity (albedo). It is important to note that GHGs will have a sustained climatic impact over different temporal scales due to their differences in global warming potential (described above) and lifespans in the atmosphere.

Climate change is expected to result in increasingly frequent and intense extreme heat events, which will worsen drought and increase wildfire risks in New Mexico. As well, increasing and more intense heat events are projected to increase ozone concentrations by 1-10 ppb this century according to the draft Third National Climate Assessment and Development Advisory Committee report (<http://ncadac.globalchange.gov/>). Increased drought and areas where wildfire has resulted in a loss of vegetation will be further susceptible to wind events where soils easily become airborne and measured PM concentrations are elevated.

3.2.6 Cultural Resources

The cultural resources of the Monument are not well known; less than one percent of the Monument has been inventoried. Four linear inventories have been conducted for a bike trail and for grazing improvements. Only one archaeological site was identified during these inventories. This site, LA 53790, is described as a lithic scatter of less than 10 artifacts with an unknown time period.

Socio-cultural properties, also known as traditional cultural use areas, are those places of traditional cultural significance to American Indians and others. Such properties may exist within the boundaries of the PTNM, but no specific place or resource has yet to be identified during formal consultation.

Cultural resources include archaeological, historic, and socio-cultural properties. Archaeological resources generally refer to prehistoric sites while historic resources refer to those for which some form of written record exists. Socio-cultural properties refer to areas of concern to Americans Indians, and other cultural groups, that are significant to heritage or spiritual and cultural practices.

There are several distinct periods or traditions that are discernible in the archaeological records for the *Analysis Area* generally. The earliest occupation occurred from about 9,500 BC to approximately 6,000 BC. This period is known as the Paleo-Indian period. The period is divided into three traditions: Clovis, Folsom, and Plano. Each tradition is associated with distinctive projectile points and lithic tool kits. Isolated project points from these traditions have been found within the larger region. Paleo-Indian people are thought to have been mobile hunters and gatherers who focused on migratory big game.

The second prehistoric period is referred to as the Archaic or Desert Archaic. The Archaic cultures are believed to have occupied the larger area from around 6,000 BC to about 100 AD. Archaic cultures are believed to have been non-sedentary, pre-pottery hunters and gatherers with a growing emphasis on territoriality and home bases and plant gathering leading to plant cultivation. The origins of agriculture in the Southwest United States begin during this period. The Archaic cultures are known for a suite of projectile points that define sites as well as other lithic tools and organic remains in the form of basketry, sandals, and other textiles that have survived owing to the dry conditions of this area.

The third period or tradition has been identified as the Mogollon. The Mogollon cultural region has been divided into the Western Mogollon and eastern or Jornada Branch of the Mogollon. This period is also known as the Formative Period. This tradition begins at approximately 200 AD and extends to approximately 1450 AD. Within this time period, several distinct changes begin to occur in the archaeological record:

1. Agriculture becomes the basic element of the economy although supplemented by hunting and gathering in varying degrees;
2. Pottery is introduced and soon divides into technological and distinctive artistic/stylistic traditions;
3. Pithouse hamlets aggregate into sedentary pithouse villages;
4. These communities in turn begin to construct above ground residences known as pueblos of either masonry or adobe; and
5. Interregional contact and trade are more evident, at least in the archaeological record, than heretofore.

The Mogollon Period ends at 1450 to 1500 AD. There appears to be a complete break in occupation although this may be more apparent than real. This period is succeeded by the Protohistoric Period or that period just before and phasing into the Historic Period. The Protohistoric occurs between 1540 and 1680 AD for this area. Several named Protohistoric groups are recorded for the area and appear to have practiced a hunting and gathering economy. During this period, various peoples that would become the historic Apaches move into the *Analysis Area* from the west and northwest displacing or absorbing the peoples in their path. The Chiricahua Apache occupation of the area continued into the Historic Period until 1890. The Apache were mobile hunters and gatherers and, increasingly during the Historic Period, depended on raiding to supplement their economy.

Following its initial population by Native Americans, the Mesilla Valley was inhabited by the Spanish party of Friar Agustín Rodríguez in 1581. After the 1848 Treaty of Guadalupe Hidalgo, which signaled the end of the Mexican War, a colony of individuals not desiring American citizenship moved across the Rio Grande and established the town of Mesilla.

The Mesilla Valley has experienced the broad trends of the Historic Period but permanent settlement and development only occurred in the 1850s. Fierce Apache resistance to European encroachment inhibited any permanent settlement. However, all broad historic trends are represented in the historical record and include the establishment and use of El Camino Real de Tierra Adentro, the founding of towns and agriculture, military forts and the Apache wars, the Civil War, and mining and ranching, into the events of the 20th century. The primary historic use of the PTNM was grazing.

The Mesilla area was seen as an ideal location for a railroad route to the Pacific, which would connect the rest of the United States to California. The Gadsden Treaty was signed on December 30, 1853, resulting in the addition of Mesilla to Doña Ana County. The railroad was routed through Las Cruces instead, and that city eventually replaced Mesilla as the County seat. This has brought settlement and human influence and use to Doña Ana County, which includes the Robledo Mountains.

One historic feature within the Monument is Apache Dam. Apache Dam was constructed by the Civilian Conservation Corps from Camp BR-39, Las Cruces, New Mexico, in 1936 and was constructed to control arroyo flooding that threatened the Picacho Canal and farmland in the Mesilla Valley. Two other unnamed dams in support of Apache Dam were constructed as well.

3.2.7 Geology/Minerals

This section discusses the physiography, rock units, geologic structure and tectonic history of the region.

The Monument is situated within the North American Basin and Range Province and the dominant tectonic feature is the Rio Grande Rift. The Rio Grande Rift is a geographically extensive extensional basin associated with the most recent phase (spanning ~ 30 million years ago to present) of crustal thinning in the Southwest Basin and Range Province. The closely-spaced normal faulting and domino-style block tilting along the north-south rift axis is caused by extension of the upper crust, which is being driven by the plastic flow of hotter rocks at depth (New Mexico Bureau of Geology and Mineral Resources 2003). The rift system is superimposed on a weakened crustal region of faults that were active during Pennsylvanian-age Tectonism (318 to 299 million years ago). Block-faulted, uplifted mountains including the Robledo Mountains are located on both sides of the Rio Grande Rift.

The Trackways Discovery Site and other tracksite locations in the Robledo Mountains are red-colored sandstones referred to as the Abo Formation of the Hueco Group (see Figure 3-10). In the Robledo Mountains, the Hueco Group consists primarily of limestone and fine-grained clastics (sandstones and shales) deposited in a shallow marine environment. Rocks of the Abo Formation contain both fossiliferous marine limestone and shale and red silty-sandstone deposited in a tidal flat environment.

It is this sandstone which hosts the fossil trackways (Kues and Giles 2004). These strata along with an overlying upper member of the Hueco Group represent a regional transition zone between marine limestone of the Hueco Group to the south and non-marine red beds of the Abo Formation to the north (Lucas *et al.* 1994).



Figure 3-10 The “red beds” of the Abo Formation found in the Prehistoric Trackways National Monument.

The Abo Formation and Hueco Group were deposited during the early Permian Period at the end of the Paleozoic Era, over 250 million years ago. Younger rocks are also found in the Robledo Mountains. In the southern part of the Range, conglomerates, gypsiferous sandstones and mudstones occur in association with the Love Ranch Formation and the Palm Park Formation. These rocks were probably deposited during the Eocene Period between 55 and 51 million years ago. Volcanic rocks were emplaced in the northern part of the Robledo Mountains during at least two episodes around 35 million years ago and 7 million

years ago. The youngest rocks in the Monument consist of landslide deposits, valley-fill deposits and stream-channel gravels in boulders generally deposited less than 5 million years ago (Seager *et al.* 2008).

The historical record of earthquakes in the Rio Grande Rift system from 1962 through 1998 lists only four earthquakes of magnitude 3.0 or greater. Those earthquakes were located north and east of Las Cruces (Sanford *et al.* 2002). Although New Mexico is in a seismically active area, the average earthquake intensity is a moderate 4.5 on the Richter scale. As such, a strong, damaging earthquake is not likely to occur in the Monument. In parts of the Monument, steep slopes and the presence of the friable, easily weathered Abo Formation may create local concerns with slope stability and landslide potential.

Sedimentary-hosted iron deposits were discovered in the southwestern Robledo Mountains (Iron Hill District) in the early 1930s (McLemore 1998; McLemore *et al.* 2005). Iron deposits consist predominately of iron-oxide minerals and occur in Hueco Formation Group limestone. Inferred ore reserves are estimated at approximately 15,000 short tons, but future development of these deposits is unlikely due to small tonnages, low grade and inaccessibility. Travertine was also mined sporadically from the southwest Robledo Mountains, and gypsum deposits have been found but have not been exploited (McLemore 1998).

Chemical analysis suggests that the Hueco Formation in Apache Canyon may have potential as a source of high-calcium limestone (McLemore 1998). Historically, the most important mineral resource in the Robledo Mountains has been building stone from the south central portions of the Range. A rock quarry outside the eastern boundary of the Monument, known as Community Pit #1, was the source for sandstone and siltstone used in retaining walls, decorative walls, and in general landscaping.

Community Pit #1 was in production for approximately 40 years (beginning in 1969) and, according to the quarry operators, most of the rock produced (probably less than 1 million tons) was used locally. Past mining practices at the quarry have left it with unsafe vertical high walls, which pose a safety concern. Significant fossil trackways have been found in siltstone and sandstone at and near the quarry. Although excavation at the quarry has led to additional findings, there are concerns in the academic community that continued mining could harm undiscovered specimens. The Community Pit #1 is now closed to public

access due to safety concerns. An environmental assessment analyzing reclamation of the Community Pit was completed in 2010.

Small volumes of landscape rock have also been mined in Apache Canyon, just south of the Monument. The BLM authorized extraction of building stone material at the quarry, known as Apache Canyon, prior to 2000. This quarry was active until the BLM did not renew the permit in February 2011. The proximity to the Monument and regular discovery of fossils at the quarry's edge was the logic for its closure. The excavations and use of this area has exposed fossils and created parking areas that in the future may potentially be an interpretation and educational resource, even though this area is outside of the Monument boundary.

Other than for building stone, there has not been much interest in the minerals of the Robledo Mountains. There are no existing mining claims within the Monument boundary. The designating Legislation withdrew all Federal minerals within the Monument from mineral entry, which means that mineral exploration or removal is not allowed. In the southern portion of the Monument, there are 368 acres of non-Federal minerals to which the mineral withdrawal does not apply unless acquired by the Federal government and included into the Monument.

3.2.8 Lands and Realty

Public land within the National Monument is withdrawn from entry, appropriation, or disposal under the public land laws as directed by the Legislation. There are no rights-of-way (ROWs) within PTNM.

BLM establishes right-of-way exclusion and avoidance areas to guide decisions about where ROWs may be granted. In exclusion areas, no ROWs are allowed unless mandated by law; in avoidance areas, ROWs may be granted only when no feasible alternative route (or designated ROW corridor) is available (BLM 1993). ROW exclusion areas within the Monument include the Robledo Mountains ACEC and Paleozoic Trackways RNA. ROW avoidance areas include Visual Resource Management Class II areas.

Acquisition of an easement across private land for access to public land leading into the Robledo Mountains (PTNM) is a specific management decision (*Mimbres RMP*, p.2-20).

3.2.9 Lands with Wilderness Characteristics

FLPMA requires the BLM to maintain a current inventory of land under its jurisdiction and identify within that inventory lands with wilderness characteristics outside of areas designated WSAs. Through the land use planning process, the BLM can make a decision to protect lands with wilderness characteristics or to allocate those lands for other uses.

Within the Monument, there are no areas outside of the Robledo Mountains WSA being managed for wilderness characteristics; however, the values of naturalness, opportunities for outstanding solitude, or opportunities for primitive and unconfined recreation, as defined by *BLM Instruction Memorandum 2011-154*, are present. The BLM conducted a wilderness inventory of the Monument in January 2011, which identified 576 acres that are contiguous to the Robledo Mountains WSA as having wilderness characteristics (Map 3-2). The rest of the Monument was determined not to be of sufficient size to meet the criteria for wilderness characteristics (4,311 acres).

3.2.10 Livestock Grazing

Ranching and livestock grazing have been predominant in the area since the 1880s, when railroads arrived in the territory. Grazing on public land has been authorized and numerous range improvements such as fencing and watering sources have been developed. Most of the land administered by the BLM in the *Analysis Area* is grazed by livestock. The Monument is permitted to two different livestock operators in two separate allotments. Portions of the Picacho Peak Allotment (03008) and the Altamira Ranch (03040) are within the National Monument (see Map 3-3). Both grazing allotments are administered under Section 3 of the Taylor Grazing Act, as they are within the boundaries of the established grazing district. Land status of the allotments is shown in Table 3-3.

Approximately 748 acres of public land in the National Monument are within the Altamira Ranch Allotment and 4,505 acres of public land in the Monument are within the Picacho Peak Allotment. Range improvements such as water developments and fences are associated with the allotments (Table 3-4).

The current grazing permit for the Picacho Peak Allotment allows 89 cattle to graze the allotment yearlong for a total of 822 active animal unit months (AUMs) at 77 percent public land use. An additional 152 AUMs have previously been put into suspended use as a result of changes to allotment boundaries from land exchanges and other land use changes on private land. The Altamira Ranch Allotment is permitted to run 54 cattle yearlong for a total of 635 active AUMs at 98 percent public land use.

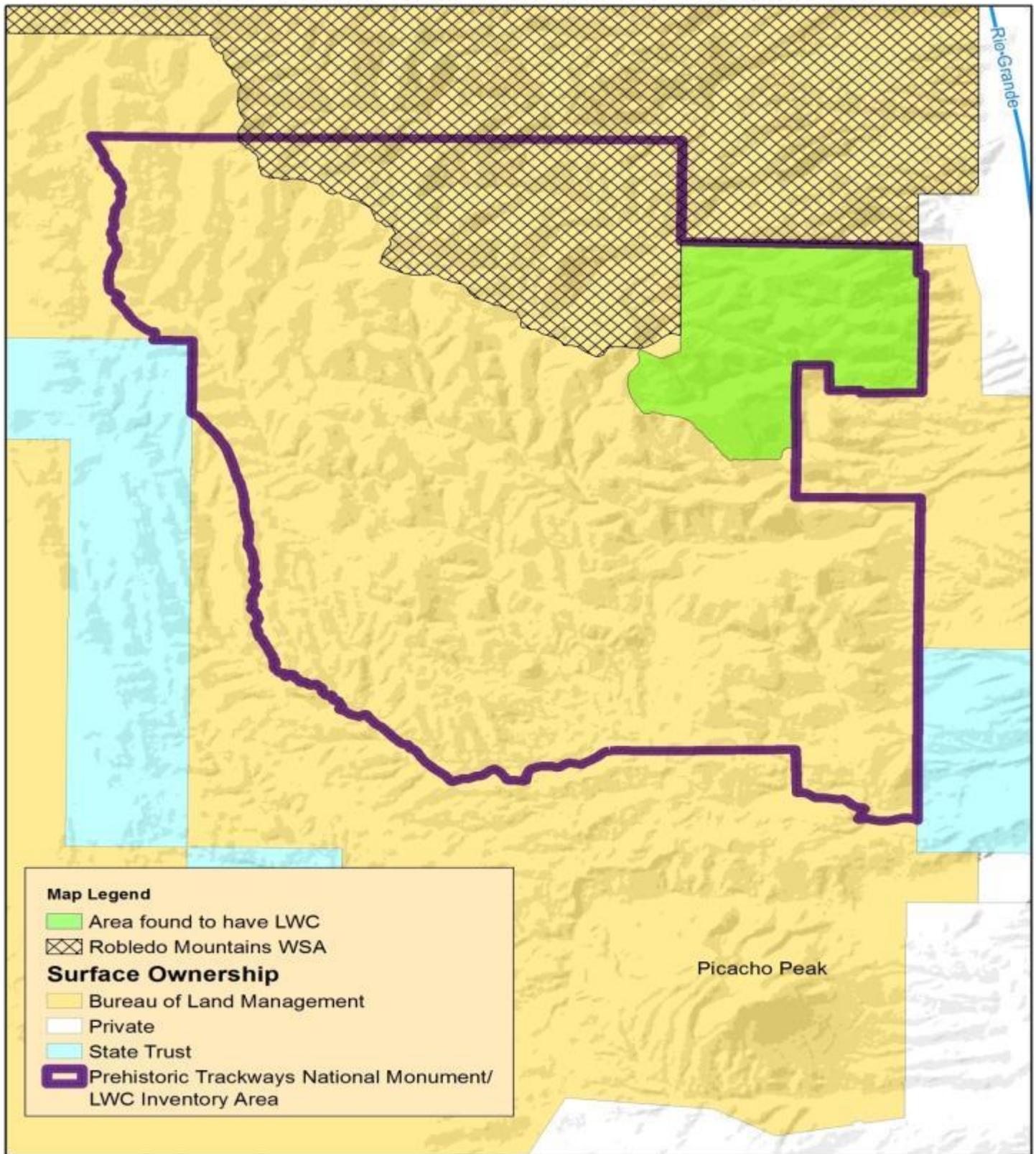
Table 3-3 Land Status of Grazing Allotments within the PTNM

TABLE 3-3 LAND STATUS OF GRAZING ALLOTMENTS WITHIN THE PTNM		
Land Status	Picacho Peak (acres)	Altamira (acres)
Federal Range	11,235	8,988
Deeded Private Land	55	74
State Trust Lands Leased by Permittee	1,047	-
State Trust Land Not Leased by Permittee	180	1,028
Private Land Not Leased by Permittee	1,492	375
Total Surface Acres	14,009	10,090
Federal range inside PTNM	4,505	748

At current carrying capacity, a total of 143 cattle are authorized to graze on the two allotments. A total of 456 AUMs of forage are available for livestock grazing on an annual basis on public land within the Monument. Approximately 395 AUMs within the Monument boundary are associated with acreage on the Picacho Peak Allotment, and the remaining 61 AUMs are allotted to Altamira. However, actual use on the Monument is much less than what is authorized under the current grazing permits. Since the revision of the allotment management plan in 1997, the Picacho Peak Allotment has been conservatively stocked up to approximately 58 percent of the authorized carrying capacity on a voluntary basis.

Under the current rotation system, cattle typically graze the Monument from the beginning of April to the beginning of November annually. Quantification of livestock use on the Monument from the Altamira Ranch Allotment is difficult due to the lack of actual use data for the allotment; however, conversations with the grazing permittee have confirmed that cattle spend most of the year on the northern part of the allotment, and the southern part where the Monument is located is seldom used. The main reasons that cattle do not typically use this part of the allotment are the lack of water developments and reliable water sources and the rugged terrain.

Map 3-2 - Lands with Wilderness Characteristics



Map Legend

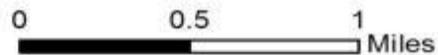
- Area found to have LWC
- Robledo Mountains WSA

Surface Ownership

- Bureau of Land Management
- Private
- State Trust
- Prehistoric Trackways National Monument/
LWC Inventory Area

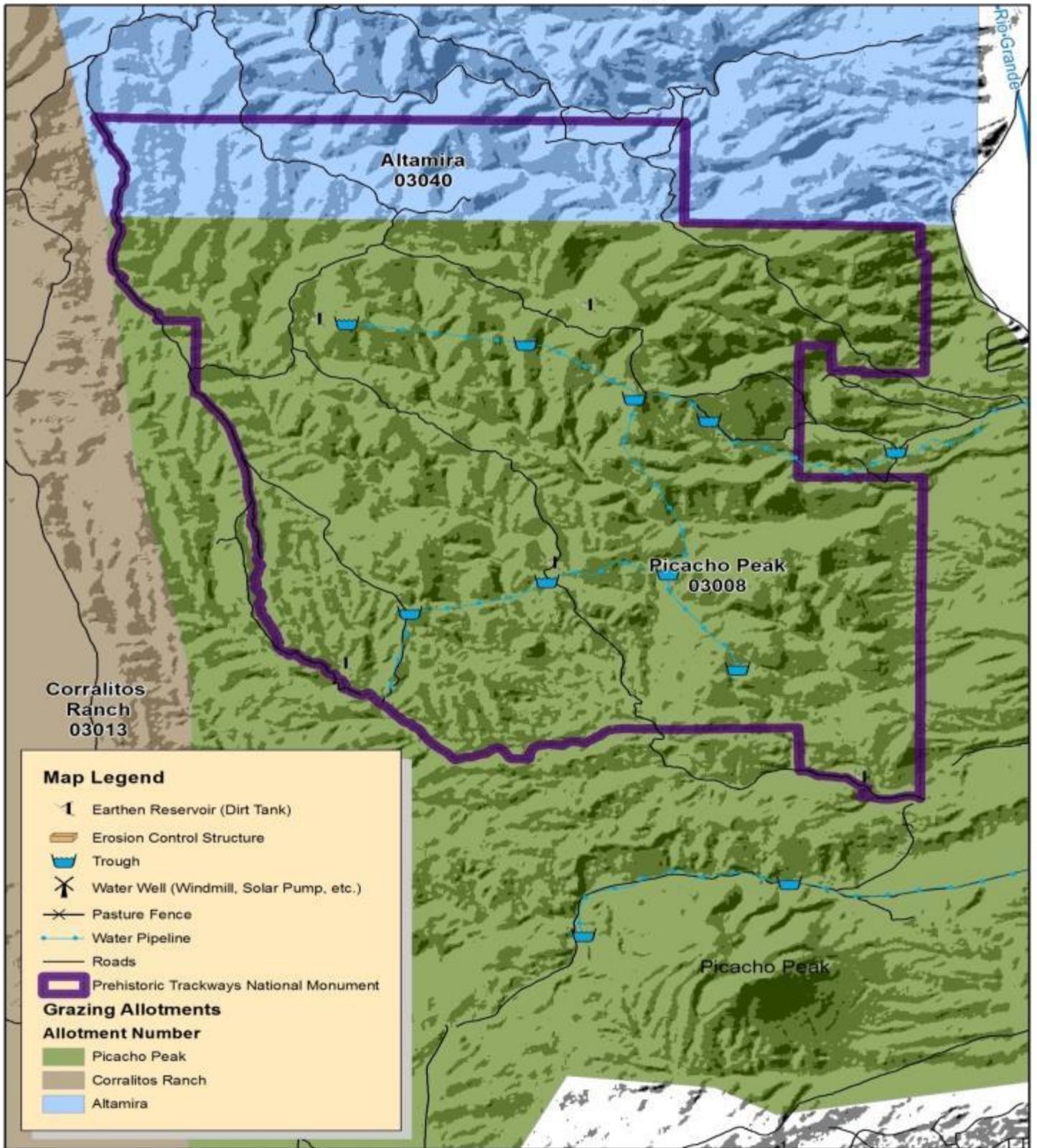
No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.

BLM GIS
Las Cruces District Office

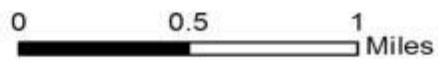
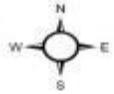


Projection: UTM Zone 13
Datum: NAD 1983

Map 3-3 - Livestock Grazing Allotments



No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.



Projection: UTM Zone 13
Datum: NAD 1983

Table 3-4 Range Improvements within the Prehistoric Trackways National Monument

TABLE 3-4 RANGE IMPROVEMENTS WITHIN THE PREHISTORIC TRACKWAYS NATIONAL MONUMENT						
ALLOTMENT	PROJECT	UNITS	LOCATION	AUTHORIZATION	DATE	CONDITION
PICACHO PEAK	Baker Reservoir 1	1 each	T. 22 S., R. 1 W., Sec. 25	Range Improvement Permit	1943	Good
	Robledo Interior Fence	3 miles	T. 22 S., R. 1 E., Sec. 31 T. 22 S., R. 1 W., Secs. 35, 36	Cooperative Agreement	1987	Good
	Burke Tanks	2 each	T. 22 S., R. 1 W., Secs. 23 and 24	Range Improvement Permit	1972	Good
	Robledo Pipeline	2.3 miles 1 storage 3 troughs	T. 22 S., R. 1 E., Secs. 19, 20, 29, 30 T 22 S, R 1, Sec. 24	Range Improvement Permit	1984	Good
	Robledo Pipeline Extension 2	0.25 mile 2 troughs	T. 22 S., R. 1 W., Secs. 23, 24	Range Improvement Permit	1991	Trough Maintenance Needed
	Robledo Pipeline Extension 1	4.5 miles 5 Troughs	T. 22 S., R. 1 W., Secs. 24, 25, 26, 35, 36 T. 22 S., R. 1 E., Secs. 30, 31	Cooperative Agreement	1989	Good
ALTAMIRA RANCH	NO PROJECTS					

The northern portion of the Picacho Peak Allotment contains a network of pipelines, a water storage tank, and troughs constructed in order to improve cattle distribution to attain proper forage utilization. The water source for these improvements is a well on private land outside of the Monument. Watering facilities have not been developed in the southern end of Altamira Ranch Allotment.

The Picacho Peak Allotment is divided into two main pastures, with the pasture division fence running in an east/west direction close to the southern Monument boundary. The majority of the Monument is located in the northern pasture of the Picacho Peak Allotment, with two small areas to the south separated by the main pasture fence. The allotments have some boundary fencing which lies close to the Monument; however, the majority of the allotment boundary between the Picacho Peak and Altamira Ranch Allotments is not fenced. In addition, the terrain in this location is typically too rough for cattle to move freely between the allotments.

Based on the most recent monitoring data and confirmed by subsequent allotment inspections, the majority of this northern pasture of the Picacho Peak Allotment is lightly utilized. The southern part of the Altamira Allotment is not routinely utilized by cattle due to the rough terrain and lack of water, and may only see slight use from occasional cattle that could drift into the area. Therefore, livestock use of the Monument is light; grazing intensity may occur at a more moderate level near watering points, but most places see slight to light use by livestock due to terrain. This is based on both historic utilization data and more recent observations during range health assessments and allotment inspections.

3.2.11 Science and Research Management

Research proposals are approved by the BLM Regional Paleontologist and are authorized on a case-by-case basis. Several research projects within the Monument have increased the scientific information about Permian Age animal and plant life. Approximately 140 paleontological sites have been documented within the Monument and over 3,000 acres of the Monument have been surveyed for paleontological resources as of Fall 2010. The BLM has partnerships with natural history museums and institutions to increase research and to educate the public about the scientific findings. Currently, partnerships have been established with the New Mexico Museum of Natural History and Science (NMMNHS), the Smithsonian Institution, the Carnegie Museum of Natural History, the Los Angeles County Museum, and the City of Las Cruces Museum of Nature and Science. The NMMNHS is the approved repository where the majority of the PTNM specimens are currently stored.

There are three types of paleontological resource use permits issued by the BLM: (1) the Survey and Limited Collection, (2) Excavation, or (3) Consulting. The BLM issues these permits under the authority of 16 USC 470aaa et seq. (*Omnibus Public Land Management Act-Paleontological Resources Preservation Act* [OPLMA-PRPA]). Prior to authorization, a research proposal must be submitted to the BLM Regional Paleontologist by a qualified paleontologist. The proposal must detail the project and describe any collection strategies. A Survey and Limited Collection permit (Reconnaissance and Survey permit) allows for limited surface collection with ground disturbance of up to 1 meter square. An Excavation permit is required for surface disturbances of over 1 meter square. An environmental evaluation under NEPA is required for all Excavation permits due to surface disturbance. A Consulting permit is normally issued to consulting paleontologists for projects that are proposed by outside proponent such as pipelines, gravel pits, or road construction. Consulting paleontologists perform pre-ground disturbing surveys for fossil resources and can monitor ground moving activities as they are happening to ensure fossil resources are protected to the greatest extent possible. The BLM can also contract with consulting paleontologists as needed.

In order to receive a paleontological resource use permit, applicants must be able to demonstrate the following (BLM Handbook 8270- *Paleontological Resource Management*):

- (a) *Professional instruction in a field of paleontology relevant to the work proposed (vertebrate, invertebrate, trace, paleobotany, etc.), obtained through:*
 - (1) *Formal education resulting in a graduate degree from an accredited institution in paleontology, or in geology, biology, botany, zoology or anthropology if the major emphasis is in paleontology; OR*
 - (2) *Equivalent paleontological training and experience including at least 24 months under the guidance of a professional paleontologist who meets qualification (1), that provided increased responsibility leading to professional duties similar to those in qualification (1) above; and*
- (b) *Demonstrated experience in collecting, analyzing, and reporting paleontological data*

For excavation and limited collection permits, the permittee must also identify and verify that they have an approved repository willing to curate the paleontological resources that are collected.

3.2.12 Socio-Economic Conditions

Existing social and economic conditions are necessary to establish the baseline from which to estimate potential consequences of management actions. The proceeding section analyzes the current conditions

and trends related to the social and economic environment of the *Analysis Area*, including population and demographic changes, potential environmental justice populations, and local economic conditions.

3.2.12.1 Population and Demographics

This section highlights population and demographic trends in the *Analysis Area*. Population is an important consideration in managing natural resources. In particular, population structure (size, composition, density, etc.) and population dynamics (how the structure changes over time) are essential to describing the consequences of land management and planning on a social environment (Seesholtz *et al.* 2004). Population increases may lead to conflicts over land use, travel management, recreation activities, and values. These are conflicts that BLM managers attempt to balance when making management decisions.

3.2.12.1.1 Population Growth

The *Analysis Area* is home to 209,233 people (U.S. Census Bureau 2010). Table 3-5 displays U.S. Census Bureau population data for the county, state, and nation in 1990, 2000, and 2010.

Since 1990, population growth in Doña Ana County has occurred at more than double the pace of National population growth. Rapid population growth may signal expanding economic opportunities or desirable amenities. Much of southern New Mexico is occupied Federal land. Department of the Interior (DOI) and National Forest System (NFS) lands provide natural amenities, which may attract new residents to the region.

Table 3-5 Populations 1990, 2000, 2010

TABLE 3-5 POPULATIONS 1990, 2000, 2010					
LOCATIONS	POPULATIONS			PERCENTAGE (%) GROWTH	
	1990	2000	2010	1990-2000	2000-2010
Doña Ana County	135,510	174,682	209,233	29	20
New Mexico	1,515,069	1,819,046	2,059,179	20	13
United States	248,709,873	281,421,906	308,745,538	13	10

SOURCE: U.S. Census Bureau, 1990, 2000, and 2010

3.2.12.1.2 Population Density

Population density can serve as an indicator of a number of socioeconomic factors of interest – urbanization, availability of open space, socioeconomic diversity, and civic infrastructure (Horne and Hayes 1999). More densely populated areas are generally urban and diverse, and offer better access to infrastructure. In contrast, less densely populated areas provide open space offering more natural amenity values to residents and visitors. Table 3-6 displays the number of people per square mile in the *Analysis Area*.

Despite substantial gains in population since 1990, both Doña Ana County and New Mexico continue to have low population density relative to the nation. However, Doña Ana County is several times more densely populated than the State – largely due to the presence of Las Cruces, the second-largest city in the

State, with a 2009 population of 93,680 people. Outside of Las Cruces, most of Doña Ana County is quite rural. Only 16 percent of Doña Ana County is private land. Department of Defense, Department of the Interior, Department of Agriculture, and New Mexico State lands account for over 80 percent of land ownership, which accounts for the low population density.

Table 3-6 Population Density

TABLE 3-6 POPULATION DENSITY	
AREA	PEOPLE/SQ. MILE
Doña Ana County	55
New Mexico	17
United States	87
SOURCE: U.S. Census Bureau 2010	

3.2.12.1.3 *Median Age*

Table 3-7 lists the median age in the *Analysis Area*. A high median age generally indicates that a relatively large number of retirees reside in the area. An area with a large percentage of retirees will earn income primarily from investments and transfer payments (e.g., dividends and Social Security), rather than salaries and wages. In contrast, a low median age suggests a large number of families with young children or a concentration of industries that employ large numbers of young workers.

The median age in Doña Ana County is below the State and National medians. The presence of New Mexico State University, with an enrollment of more than 20,000 students, contributes to the relatively low median age in the county (NMSU 2010).

Table 3-7 Median Age

TABLE 3-7 MEDIAN AGE	
Area	MEDIAN AGE
Doña Ana County	32.4
New Mexico	36.7
United States	37.2
SOURCE: U.S. Census Bureau, 2010.	

Age data may be relevant for land management decisions. A population's age may affect community values and uses associated with public land. For example, older populations may have a greater need for easily accessible recreation opportunities.

3.2.12.1.4 *Educational Attainment*

Educational attainment, the measure of people with at least a high school diploma or bachelor's degree, is an indicator of an area's social and economic opportunities and its ability to adapt to change. Table 3-8 lists the percentage of the adult population with at least a high school diploma and a bachelor's degree.

Table 3-8 Educational Attainment, Percent of Persons Age 25+

TABLE 3-8 EDUCATIONAL ATTAINMENT, PERCENT OF PERSONS AGE 25+		
	HIGH SCHOOL GRADUATES (%)	BACHELOR'S DEGREE OR HIGHER (%)
Doña Ana County	74.4	25.0
New Mexico	82.1	25.1
United States	84.6	27.5
Source: U.S. Census Bureau, 2009.		

Approximately three-quarters of adult residents in the *Analysis Area* are high school graduates. A quarter of study area residents have a bachelor's degree or higher. Although Doña Ana County has a lower percentage of high school graduates than either the State or Nation, the County has a similar percentage of residents with a bachelor's degree or higher. These findings suggest that the *Analysis Area* is split in terms of educational attainment – it has a relatively high proportion of individuals with low educational attainment as well as a relatively high proportion of individuals with high educational attainment (and relatively fewer individuals with moderate educational attainment). Opportunities exist for working-age adults with high levels of education. The three largest employers in Doña Ana County – Las Cruces Public Schools, New Mexico State University, and White Sands Missile Range – employ large numbers of highly skilled individuals (Peter J. Smith and Company 2009). The presence of highly educated adults may be self-reinforcing: a highly educated population is a signal that an area provides economic and cultural opportunities, which attracts additional college educated adults to the area. This process leads to further economic development and job creation. In contrast, areas with low levels of educational attainment have lower levels of human capital, which reduces an area's ability to capitalize on economic change (Florida 2002).

The presence of New Mexico State University in Las Cruces may improve the County's ability to retain and attract young residents. In areas without higher educational opportunities, young people who wish to continue their education migrate out of the area – a process known as the “*brain drain*.”

3.2.12.2 Environmental Justice

Executive Order 12898 mandates that all Federal agencies analyze the potential for their actions to affect minority and low-income populations disproportionately. The Council on Environmental Quality (CEQ) suggests the following criteria for identifying potential Environmental Justice populations (CEQ 1997):

- “*Minority population: Minority populations should be identified where either: (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis...*”
- “*Low-income population: Low-income populations in an affected area should be identified with the annual statistical poverty thresholds from the Bureau of the Census' Current Population Reports, Series P-60 on Income and Poverty. In identifying low-income populations, agencies may consider as a community either a group of individuals living in geographic proximity to one another, or a set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect.*”

The emphasis of environmental justice is on health effects. The CEQ has interpreted health effects with a broad definition: “Such effects may include ecological, cultural, human health, economic or social impacts on minority communities, low-income communities or Indian Tribes when those impacts are interrelated to impacts on the natural or physical environment” (CEQ 1997).

Doña Ana County has a higher concentration of Hispanic and Latino residents than either the State or Nation. Approximately two-thirds of Doña Ana County residents self-identify as Hispanic or Latino. This finding highlights the need to analyze potential environmental justice issues in the *Analysis Area*. U.S. Census Bureau data (2010) on race and ethnicity is reported in Figure 3-11. Table 3-9 reports the percentage of residents living in poverty. Nearly one-quarter of Doña Ana County residents live in poverty.

Table 3-9 Percent of Persons Living in Poverty

TABLE 3-9 PERCENT OF PERSONS LIVING IN POVERTY	
AREA	POVERTY RATE (%)
Doña Ana County	24.6
New Mexico	18.1
United States	13.5
Source: U.S. Census Bureau, 2009	

The incidence of poverty in Doña Ana County is not evenly distributed among racial and ethnic groups. Approximately one-third of Hispanic residents in Doña Ana County live in poverty (U.S. Census Bureau 2000). Based on the minority status and poverty data presented above, Doña Ana County appears at risk for environmental justice issues. The largest minority group in the County – Hispanic and Latino residents – also experiences a very high poverty rate.

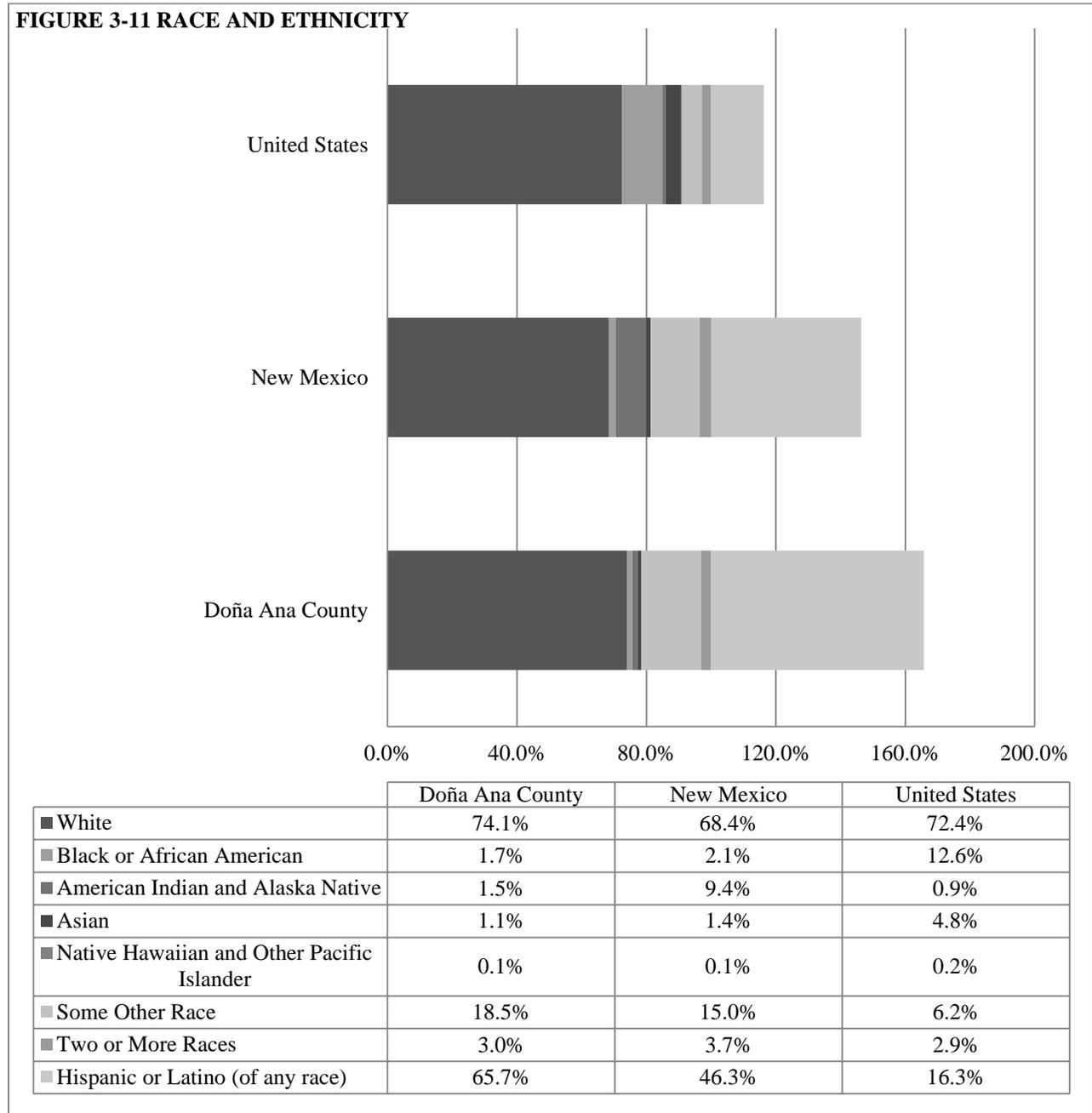
3.2.12.3 Employment and Income

The previous section assessed demographic trends in the *Analysis Area* relative to State and National trends. This section will focus on economic conditions and trends. This discussion provides additional information on the social and economic environment in the *Analysis Area*.

3.2.12.3.1 Income and Earnings

Per capita income is a key indicator of the economic well-being of a county. High per capita income may be a signal of greater job opportunities, highly skilled residents, greater economic resiliency, and well-developed infrastructure. However, per capita income offers an incomplete picture of the economic well-being of an area. Average earnings per job provide insight into local labor market conditions. Whereas per capita income considers all sources of income (wage and salary payments, transfer payments, investment earnings, dividends, and rents), median earnings considers only wage and salary earnings. Table 3-10 provides data on per capita income and average earnings per job in 2000 and 2008 for the *Analysis Area*, State, and Nation.

Figure 3-11 Race and Ethnicity



SOURCE: U.S. Census Bureau 2010

NOTE: Totals sum to greater than 100 percent because Hispanic and Latino individuals may be of any race.

Table 3-10 Trends in Per Capita Income and Average Earning Per Job

TABLE 3-10 TRENDS IN PER CAPITA INCOME AND AVERAGE EARNINGS PER JOB						
AREA	PER CAPITA INCOME			AVERAGE EARNINGS PER JOB		
	2000	2008	PERCENT CHANGE	2000	2008	PERCENT CHANGE
			2000-2008			2000-2008
Doña Ana County	\$22,633	\$27,848	+23	\$29,614	\$33,242	+13
New Mexico	\$28,446	\$33,609	+18	\$35,122	\$38,680	+10
United States	\$37,907	\$40,674	+7	\$43,828	\$45,807	+5

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis 2010 (<http://www.bea.gov/regional/reis/action.cfm>)
 NOTE: Figures are inflation-adjusted to 2008 US Dollars using the Bureau of Labor Statistics CPI Inflation Calculator (http://www.bls.gov/data/inflation_calculator.htm)

Doña Ana County residents have lower per capita income and average earnings per job than other residents of the State and Nation. However, the County experienced more rapid income and earnings growth between 2000 and 2008 than either the State or Nation.

Several factors may be contributing to the relatively lower average earnings per job in the *Analysis Area*. Most job growth in Doña Ana County has occurred in retail and services employment since 1970 (U.S. Department of Commerce, Bureau of Economic Analysis 2002). Current figures indicate that health care, retail trade, and accommodation and food services are among the largest sectors (see Figure 3-12), and these jobs typically pay less than other service jobs, such as those in finance and insurance.

3.2.12.3.2 *Non-Labor Income*

Table 3-11 displays the role of labor and non-labor income in total personal income for 2000 and 2009. Non-labor income is any income derived from investments, dividends, rents, or transfer payments. In contrast, labor income is salary and wage disbursements from employment. During the past decade, the percentage of total income derived from non-labor sources increased in all considered areas.

Table 3-11 Contribution of Labor and Non-Labor Income to Total Personal Income

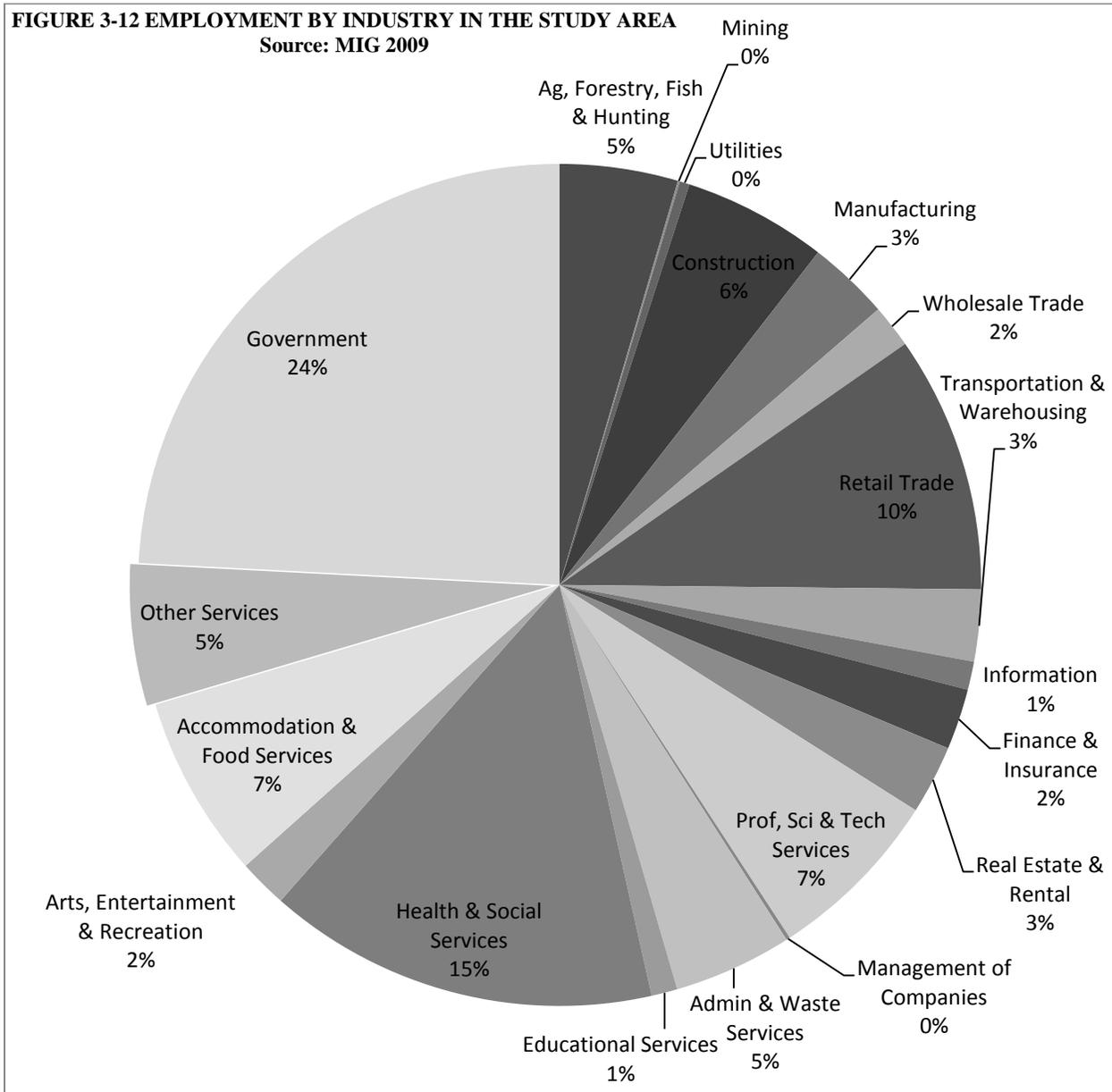
TABLE 3-11 CONTRIBUTION OF LABOR AND NON-LABOR INCOME TO TOTAL PERSONAL INCOME				
AREA	2000		2009	
	LABOR	NON-LABOR	LABOR	NON-LABOR
Doña Ana County	64%	36%	61%	39%
New Mexico	66%	34%	62%	38%
United States	69%	31%	65%	35%

SOURCE: U.S. Bureau of Economic Analysis, 2011.

Non-labor income is not directly tied to employment; therefore, it can be more resistant to economic downturns. However, as the most recent recession demonstrated, asset markets can be quite volatile, and non-labor income that depends on investment returns may be unstable.

An increase in non-labor income may reflect changing demographic characteristics. Older populations rely largely on non-labor income, including rents, dividends, and transfer payments (e.g., Social Security). High percentages of non-labor income likely indicate higher concentrations of retirees.

Figure 3-12 Employment by Industry in the Study Area



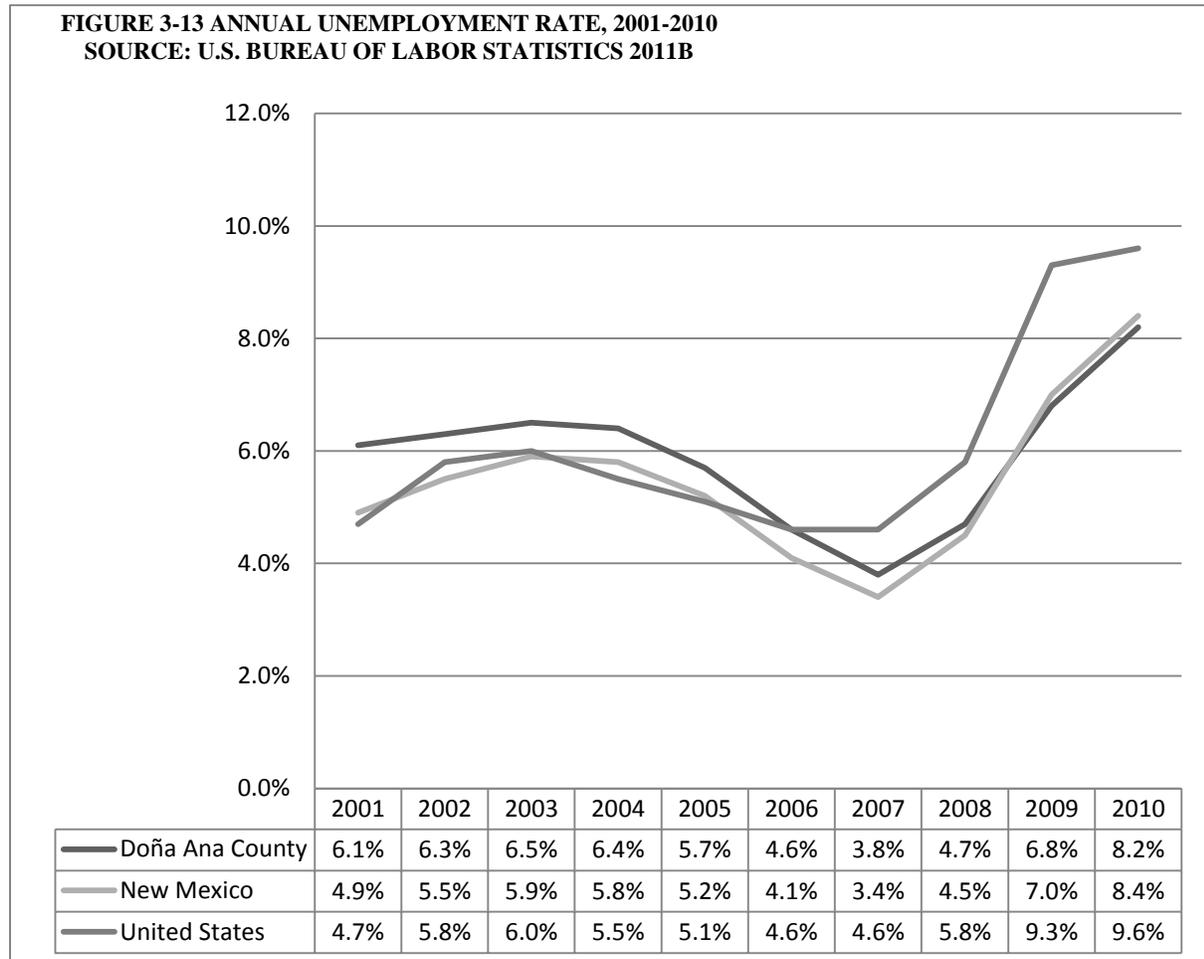
A slightly higher proportion of total personal income in Doña Ana County derives from non-labor sources compared to the State and Nation. This suggests that Doña Ana County has a somewhat higher concentration of retirees than the State and Nation.

3.2.12.3.3 Unemployment

The unemployment rate provides insight into the correspondence between residents’ skills and employment opportunities. The “*natural*” rate of unemployment is said to be around 5 percent. This is the so-called “*natural*” rate because this is a level that allows for movement between jobs and industries, but does not signal broad economic distress. Recently, the National unemployment rate has hovered between 9 percent and 10 percent. Figure 3-13 provides the annual unemployment rates for counties, the State, and the Nation from 2001 to 2010.

In recent years, the unemployment rates in both Doña Ana County and New Mexico have been consistently below the National unemployment rate. This suggests that labor market conditions in the *Analysis Area* are more stable than National labor market conditions.

Figure 3-13 Annual Unemployment Rate, 2001-2010



3.2.12.4 Housing

The above comparisons of per capita income and average earnings per job between the *Analysis Area*, the State, and the Nation are incomplete. Data on local cost of living offer additional context. Of the contributions to cost of living, housing costs are among the most substantial. Table 3-12 presents median home values in 2009.

Table 3-12 Median Value of Owner-Occupied Homes

TABLE 3-12 MEDIAN VALUE OF OWNER-OCCUPIED HOMES	
AREA	<i>MEDIAN HOME VALUE</i>
Doña Ana County	\$128,500
New Mexico	\$150,500
United States	\$185,400
SOURCE: U.S. Census Bureau 2009	

Doña Ana County has lower per capita income and average earnings per job than the State and the Nation (Table 3-10); however, the home values in the County are correspondingly lower than the State and the Nation. This finding suggests that *Analysis Area* residents spend a comparable share of their income on housing.

3.2.12.5 Economic Diversity

Economic diversity generally promotes stability and greater employment opportunities. Highly specialized economies (i.e., those that depend on very few industries for the bulk of employment and income) are prone to cyclical fluctuations and offer more limited job opportunities. Determining the degree of specialization in an economy is important for decision makers, particularly when the dominant industry can be affected by changes in policy. For the BLM, this is likely to be the case where natural resource-related industries or the tourism and recreation industries, for instance, are reliant on public land.

Figure 3-12 provides a breakdown of employment by industry in the study area. The study area economy is somewhat diverse, with a wide range of employing sectors in the local economy. Nevertheless, government employment accounts for approximately one-quarter of *Analysis Area* employment. Government, retail trade, and the health and social services sectors are the largest employment sectors in the local economy. These industries are consistent with findings discussed in the demographic section – namely a substantial government presence due to public education institutions and the White Sands Missile Range, a large retiree population that consumes health and social services, and amenities that attract tourists who contribute to the retail trade sector.

3.2.12.5.1 Payments to States and Counties

The BLM makes payments to states and counties that contain public land. Federal agencies do not pay property taxes; therefore, payments-in-lieu-of-taxes (PILT) are distributed to counties to compensate for the local services that support activities on Federal land. These services include law enforcement, road maintenance, and fire departments.

Table 3-13 lists the PILT from the PTNM and the payments attributable to all BLM-administered public land in New Mexico.

Table 3-13 Payments in Lieu of Taxes, Fiscal Year 2011

TABLE 3-13 PAYMENTS IN LIEU OF TAXES, FISCAL YEAR 2011	
	PILT
Prehistoric Trackways National Monument	\$12,712
BLM New Mexico	\$21,596,643
Source: DOI 2011	

3.2.12.6 Key Industries Related to BLM Management in the Analysis Area

3.2.12.6.1 Energy and Mineral Development

Mining provides 73 jobs in Doña Ana County – approximately 0.08 percent of total County employment (MIG 2009). Mining-related employment and income, therefore, play a minor role in the *Analysis Area* economy. The Monument designation withdrew the PTNM from mineral entry, which means that minerals exploration and removal are not allowed. Therefore, energy and mineral development is not discussed further as it relates to the social and economic environment.

3.2.12.6.2 Agriculture and Grazing

Agriculture, forestry, fishing, and hunting sector jobs account for approximately 5 percent total employment in the *Analysis Area*. About 258 of the 4,128 jobs in the agriculture sector relate to cattle ranching.

In 2011, Doña Ana County was home to approximately 7.5 percent of all cattle and calves in New Mexico – placing the County behind only Chaves, Curry, and Roosevelt Counties in terms of the total cattle and calf count (USDA NASS 2011).

The PTNM provides opportunities for grazing at the Picacho Peak Allotment and Altamira Ranch Allotment. The current stocking rate provides 272 AUMs to grazing permittees, although 456 AUMs are authorized. The Las Cruces District Office had 388,143 authorized AUMs in Fiscal Year 2011 (BLM 2011). Grazing on the PTNM, therefore, accounts for less than one percent of total public land grazing in the District. Public land ranchers pay a \$1.35 grazing fee per AUM. Given the small amount of grazing that occurs on the PTNM, total annual grazing fees amount to approximately \$615.

3.2.12.6.3 Recreation

Recreation opportunities provided on BLM-administered land provide an attraction for visitors to the *Planning Area*. Visitation to PTNM and its immediate environs is estimated at 25,000 people (10,000 party trips) annually, including use related to Special Recreation Permits (SRPs). Across BLM-administered land in New Mexico, visitation is estimated to be approximately 2.4 million people annually (BLM 2010). Recreational visitors to the *Planning Area* support employment and income in local economies. Recreation expenditures include outfitting, retail, food, and lodging services that support local economies. Visitor expenditure data specific to the PTNM are unavailable.

Recreation-related employment may be seasonal, and can be irregular. Since employment is distributed across a number of economic sectors, the precise number of recreation-related jobs in Doña Ana County is unknown, however; jobs in recreation-related sectors - retail trade, arts, entertainment and recreation, and food services and accommodation - are growing.

3.2.12.7 Non-Market Values

Public land has both market and non-market values. Market values include commodity uses of public land resources, such as timber or minerals. Market values are relatively easy to measure. The economic impact of marketed goods and services are captured in the economic input-output analysis. Non-market values, however, are more difficult to assess. Non-market values may arise from direct use of the resources (e.g., hunting for personal use and subsistence gathering) or from passive use (sometimes called non-use). Passive use captures the value of knowing that the resource(s) exist, whether or not future direct use is intended. Public land provides numerous values that are often of direct use to humans, even if they are not recognized. Clean water, climate regulation, and the research and educational opportunities that unique ecosystems afford are a few of the many ecosystem goods and services whose values are not addressed in traditional economic impact analysis.

3.2.13 Soils

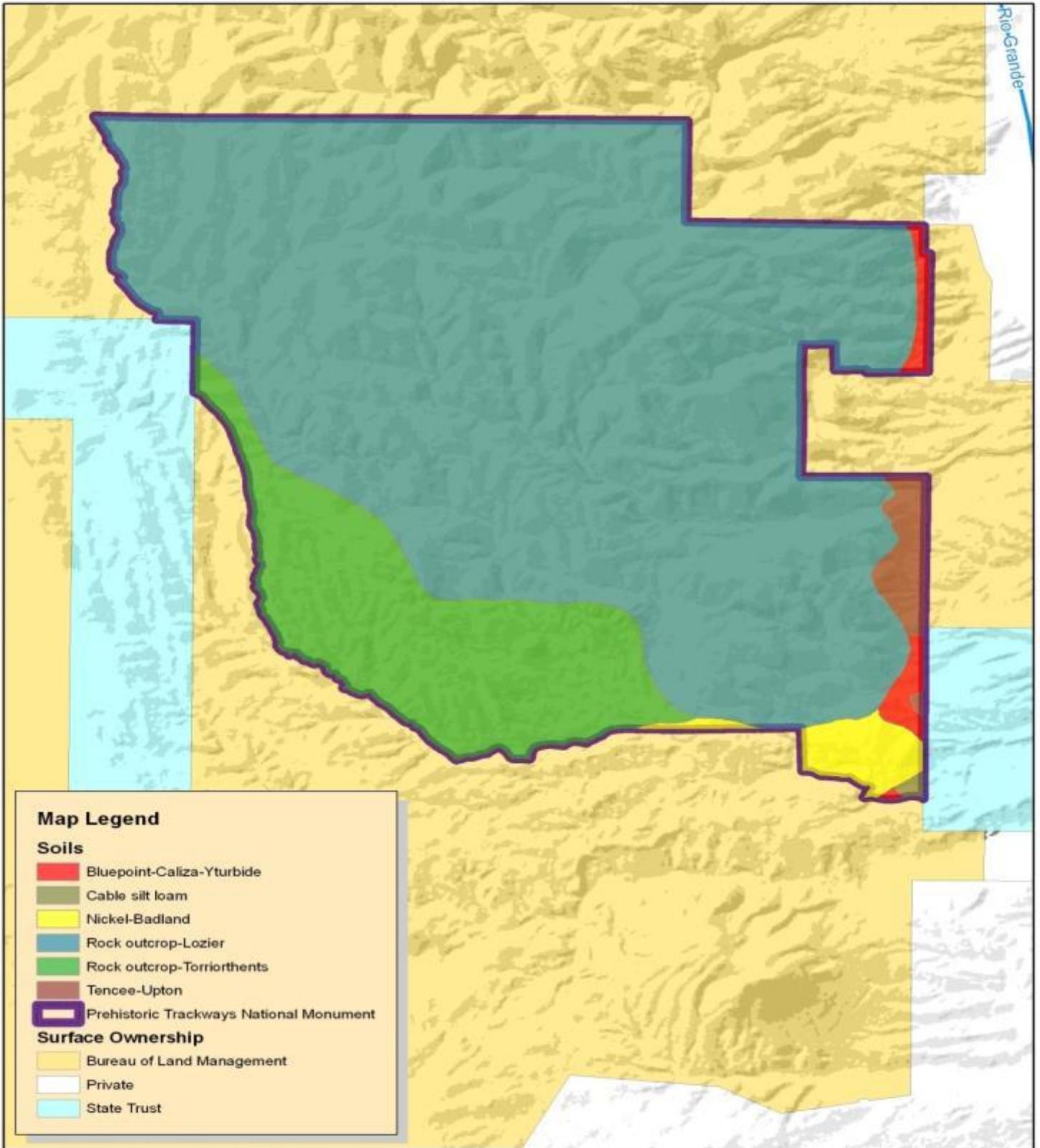
The soil resources of the Monument are categorized according to soil associations or in the recent terminology of the Natural Resource Conservation Service (NRCS) surveys, general soil map units. Soils in the Monument are primarily the product of climate, geologic parent material, landscape, and time.

Soils in the Monument are semiarid, young, and poorly developed. Physical, chemical, and biological soil development processes, such as rock weathering, decomposition of plant materials, accumulation of organic matter, and nutrient cycling proceed slowly in this environment. Likewise, soil recovery processes from soil disturbances are slow and can lead to long-term changes in ecology and productivity. The most extensive soil degradation and erosion occurs in the very southern portion of the Monument where erosion of gypsiferous sandstones and mudstones on steeper slopes form a “*badlands*” type of topography. While localized anthropogenic caused erosion is present, the erosional features present are typical when these rock and soil types are exposed to weathering.

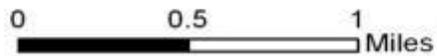
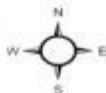
Five separate soil classifications exist within the Monument boundaries (see Map 3-4). The most dominant soil type is the Rock outcrop-Lozier association. These soils extend the entire length of the Monument from north to south and cover 4,180 acres (79 percent) primarily in the central and northern portions of the Monument. These soils are typically very shallow stony loam with high rock fragment content up to cobble size, overlying bedrock on steep slopes and tops of ridges. Soils on steeper slopes have a higher potential for water erosion. Where rock content and vegetation is locally decreased, some soil movement is apparent by occasional soil lines on rock fragments and pedestalled plant bases usually less than 2 inches in height. However, the large percentage of bedrock outcrops (approximately 45 percent) and high rock fragment content is adequate at slowing water flow velocities, hindering wind erosion, and stabilizing the shallow soils over most of the area. Drainage bottoms are generally composed of large cobbles, boulders, and bedrock with very little soil, soil accumulation, and soil production potential due to channelized high water flows.

The Rock outcrop-Torriorthents association is located in the southwestern portion of the Monument and covers approximately 860 acres (16 percent) within the Monument. These soils are shallow to moderately deep gravelly loam and gravelly sandy loam, found on hills and hill slopes with moderate to steep gradient and contain approximately 40 percent rock outcrop. Where rock content is locally decreased, these soils can be susceptible to moderate amounts of soil loss from water erosion and surface disturbance and to a lesser amount wind erosion. The Torriorthents soils in the Monument may occasionally have short discontinuous rills, soil lines on rock fragments, localized weak gravel lag, and a few short pedestalled plant bases. Where large percentages of bedrock outcrops and high rock fragment are present, the rock content in these soils is generally adequate at slowing water flow velocities, hindering wind erosion, and stabilizing the soils over most of the area.

Map 3-4 - Soils



No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.



Projection: UTM Zone 13
Datum: NAD 1983

Nickel-Badland complex soils forming on alluvial fans and escarpments are present in the southeastern portion of the Monument and cover approximately 100 acres (2 percent). Typically, very gravelly sandy loam, interbeds of fine silt and clay may be present in the soil profile. High surface gravel content often forms a weak gravel lag, which hinders soil movement. Soil surface erosion rates are generally low for these soils, but may vary with changes in particle size, gravel abundance, and slope gradient. However, underlying stratigraphic beds of poorly cemented gypsiferous sandstones and mudstones tend to weather more easily, creating a “*badlands*” type of topography.

Comprising approximately 3 percent of the Monument is the Bluepoint-Caliza-Yturbide complex (60 acres) and Tencee-Upton association (80 acres) soils formed on alluvial fans along the eastern flank of the Robledo Mountains. Slope gradients range from 5-15 percent in the loamy sand of the Bluepoint, 15-40 percent in the Caliza gravelly sandy loam, and 1-8 percent for the gravelly loamy sand in the Yturbide soils. Slopes for the Tencee-Upton association range from 3-15 percent in gravelly sandy loam and a petrocalcic layer may be present between 7-20 inches in the subsurface. Wind and water erosion is approximated from moderate to high in the Bluepoint soils and low to moderate for the Tencee-Upton soils, respectively.

Areas in which the topography is primarily controlled by underlying rock and relatively resistant to erosion such as the Rock outcrop-Lozier and Rock outcrop-Torriorthents association soils, soil loss could result from decreased vegetation and water infiltration as well as increased surface water runoff. However, with resistant bedrock shallow in the profile, dramatic changes in topography and channel form, as well as excessive erosion such as rills and gullies, would not be expected. For deeper soils, finer grained soils, and soils that have formed on poorly consolidated and poorly cemented sedimentary layers, such as the remaining four soil types in the Monument, the effects of soil loss is greater. Soils with these characteristics are more susceptible to erosion and impacts from surface disturbances and experience higher erosion rates, accelerated down-cutting, changes in topography, increased sedimentation downstream, and drainage degradation and alteration.

3.2.14 Special Designations

3.2.14.1 Area of Critical Environmental Concern

The Robledo Mountains ACEC consists of 8,695 acres, which includes much of the Robledo Mountains WSA and part of the Monument. The Robledo Mountains ACEC was evaluated for Relevance and Importance in the *Mimbres RMP* and meets the relevance criteria of having significant paleontological, cultural, and scenic values and endangered plant species. It meets the importance criteria of more than locally significant resources in terms of scenic quality, which is enjoyed by hundreds of thousands of travelers on I-25 annually, and for preservation of biodiversity, which is distinctive (*Mimbres RMP*, page 5-43). The Robledo Mountains support a high diversity of cacti including Scheer’s pincushion cactus and night-blooming cereus. They also provide important habitat for uncommon reptiles such as the Madrean alligator lizard and Trans-Pecos rat snake. The Monument encompasses 789 acres of the ACEC (same area as the WSA in the Monument). See Map 3-5. Planned management actions in the *Mimbres RMP* (BLM 1993) for the ACEC that apply to the land within the Monument are:

- Retain all public land
- Limit vehicle use to designated roads and trails
- Exclude authorization for new rights-of-way
- Close to mineral material sales and to fluid mineral leasing
- Acquire legal public access
- Maintain current livestock grazing practices

- Allow natural fires to burn under prescribed conditions
- Manage for primitive and semi-primitive recreation opportunities (no developed facilities)
- Manage as VRM Class I
- Manage for recreation opportunity spectrum (ROS) primitive and semi-primitive non-motorized and semi-primitive motorized classes

3.2.14.2 Research Natural Area

The Paleozoic Trackways Research Natural Area (RNA) designation was established in the *Mimbres RMP* (BLM 1993). It establishes 720 acres on the southeast portion of the Robledo Mountains as the RNA (see Map 3-6). It was designated in order to protect, research, and interpret paleontological values. Within the 720 acres, footprints and trackways of vertebrate and invertebrate animals from Permian Age are preserved in the rock. The potential for this site to produce scientific information and specimens is considered high. Planned management actions are as follows:

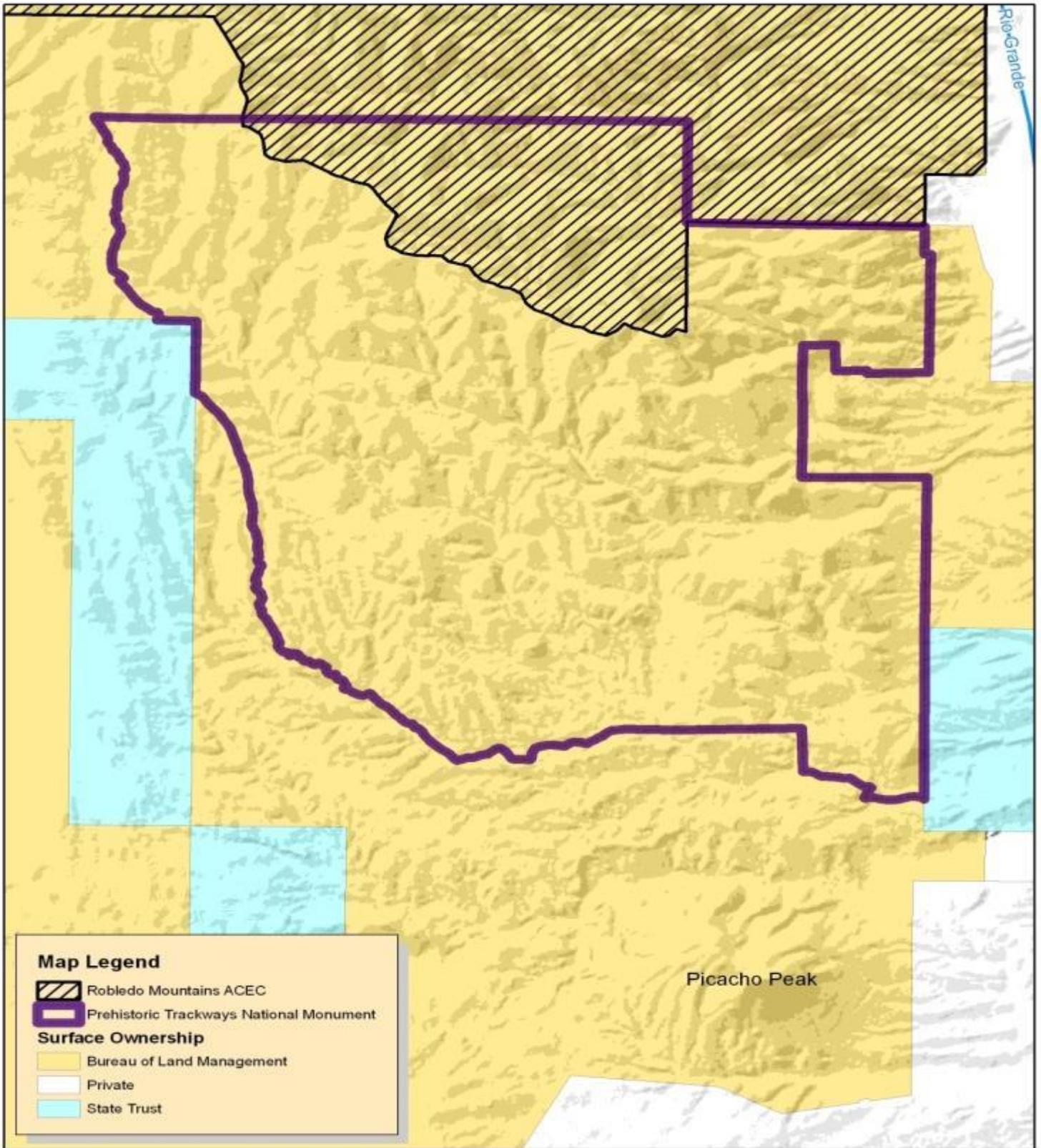
- Retain all public land
- Limit vehicle use to designated routes
- Exclude new ROWs
- Withdraw from locatable mineral entry
- Close to mineral material sales
- Close to fluid mineral leasing
- Acquire legal public access
- Manage according to recommendations in the Trackways Study Legislation (Lucas et al. 1994)
- Manage as VRM Class II
- Manage for ROS semi-primitive, non-motorized class

3.2.14.3 Wilderness Study Area

Designated in 1980, the Robledo Mountains WSA consists of 13,033 acres. The southern tip of the WSA, approximately 789 acres, extends into the Monument (see Map 3-7). This area has been managed according to *BLM Handbook 8550-01: Interim Management Policy and Guidelines for Lands under Wilderness Review* so the suitability of such an area for preservation as wilderness would not be impaired until designated wilderness or released by Congress.

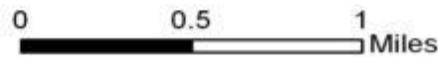
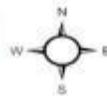
In the mid-90s, the BLM discovered that unauthorized OHV use was occurring which was degrading the values of the fossil resources. This use was curtailed and directed south, outside of the WSA. As a result, the scars created by the use are slowly healing.

Map 3-5 - Robledo Mountains ACEC



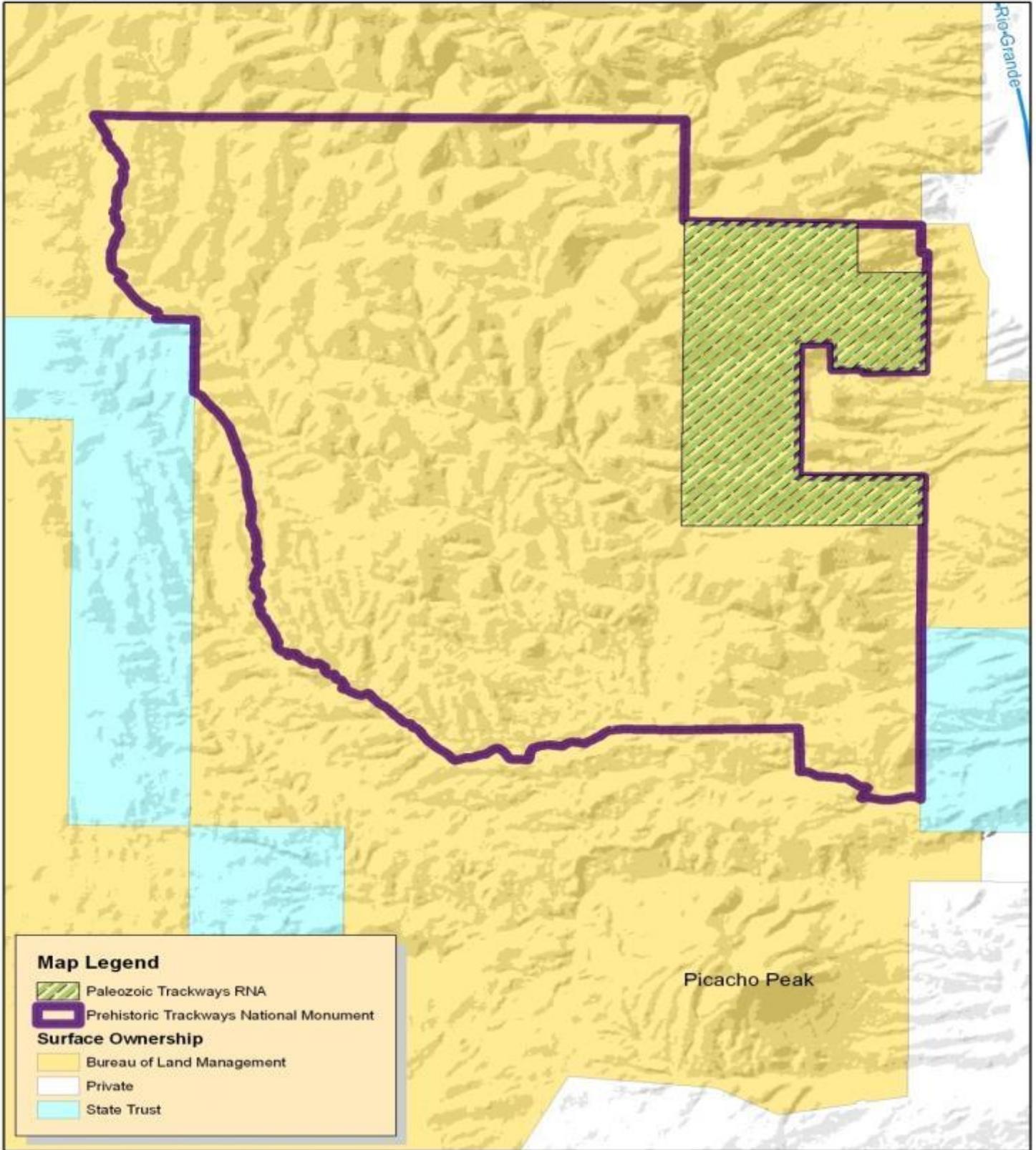
No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.

BLM GIS
Lipí Cruces District Office



Projection: UTM Zone 13
Datum: NAD 1983

Map 3-6 - Paleozoic Trackways Research Natural Area

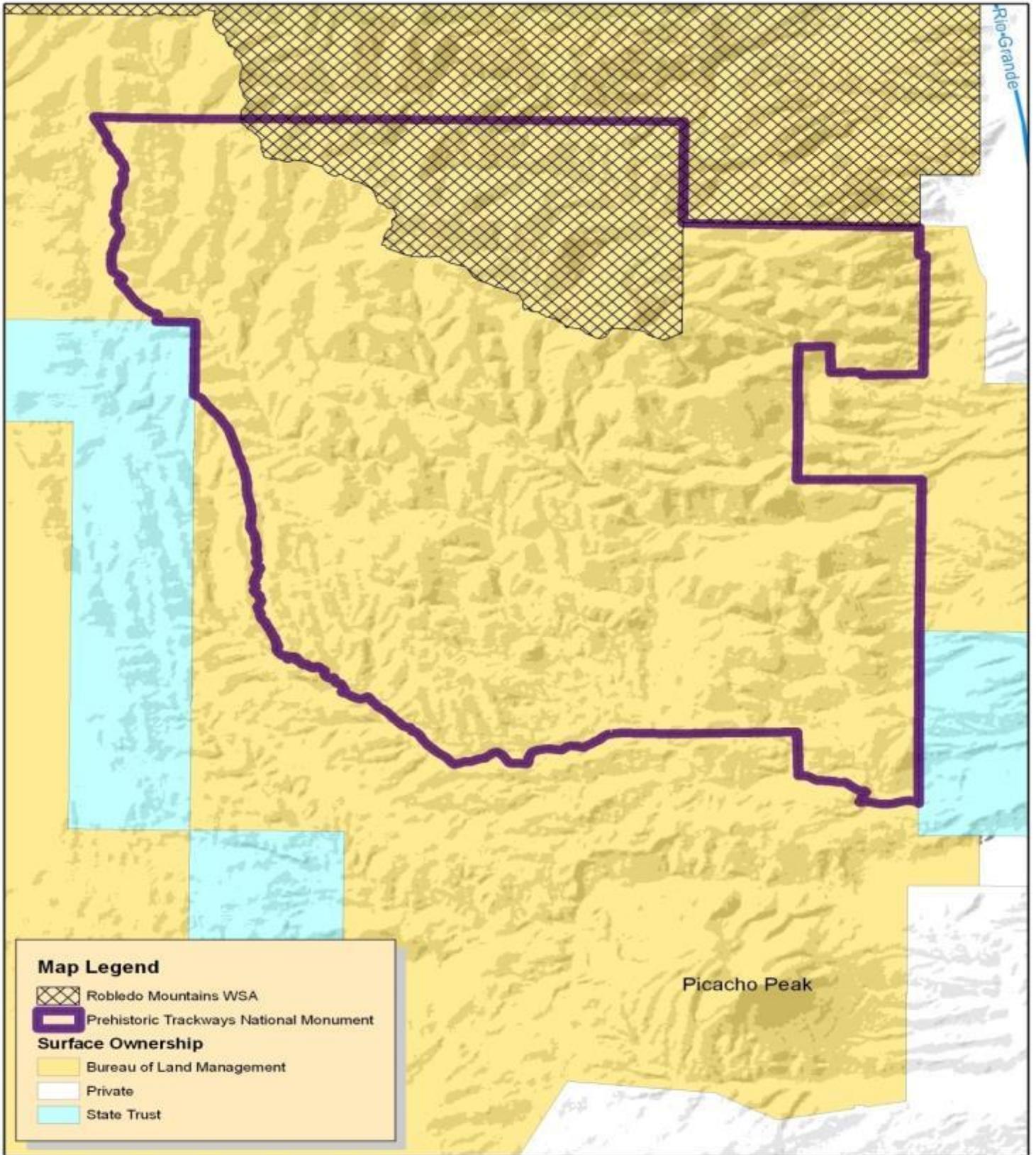


No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.



Projection: UTM Zone 13
Datum: NAD 1983

Map 3-7 - Robledo Mountains WSA



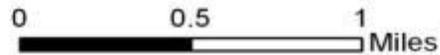
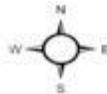
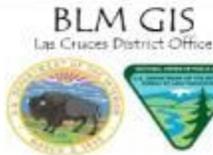
Map Legend

-  Robledo Mountains WSA
-  Prehistoric Trackways National Monument

Surface Ownership

-  Bureau of Land Management
-  Private
-  State Trust

No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.



Projection: UTM Zone 13
Datum: NAD 1983

3.2.15 Special Status Species

BLM special status species are: (1) species listed or proposed for listing under the Endangered Species Act (ESA), and (2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA, which are designated as BLM sensitive by the BLM State Director. The Robledo Mountains contain habitat that is associated with several species of animals and one plant species that are considered special status. These species have been identified in accordance with procedures set forth in *BLM Manual 6840: Special Status Species Management*. All Federal candidate species, proposed species, and delisted species in the 5 years following delisting will be conserved as BLM sensitive species. The presence of special status plant species and their habitats in the *Planning Area* were considered using Las Cruces District species occurrence/habitat records and New Mexico Natural Heritage Program species records. Species descriptions and distributions were derived from Las Cruces District office records and New Mexico Rare Plant Technical Council [NMRPTC 1999: New Mexico Rare Plants. Albuquerque, NM: New Mexico Rare Plants Home Page. <http://nmrareplants.unm.edu> (Latest update: 11 July 2011)]. Table 3-14 lists the special status species that may potentially be associated with habitat located in the Robledo Mountains.

Although BLM does not have a record of specific occurrences and locations of any special status species within PTNM, suitable habitat does occur throughout the Monument for each special status species.

Table 3-14 Special Status Species

TABLE 3-14 SPECIAL STATUS SPECIES		
COMMON NAME	SCIENTIFIC NAME	STATUS*
Texas horned lizard	<i>Phrynosoma cornutum</i>	BLMS
Burrowing owl	<i>Athene cunicularia hypugaea</i>	BLMS, FWSS
Loggerhead shrike	<i>Lanius ludovicianus</i>	BLMS
Cave myotis bat	<i>Myotis velifer</i>	BLMS
Long-legged myotis bat	<i>Myotis volans interior</i>	BLMS
Fringed myotis bat	<i>Myotis thysanodes thysanodes</i>	BLMS
Spotted bat	<i>Euderma maculatum</i>	BLMS
Pale Townsend's big-eared bat	<i>Corynorhinus townsendii pallescens</i>	BLMS, FWSS
Night-blooming cereus	<i>Peniocereus greggii var greggii</i>	BLMS, FWSS
NOTE: * CONSERVATION STATUS: FWSS=USFWS Species of Concern, BLMS=BLM SENSITIVE		

Habitat descriptions for the special status species that have habitat in the Robledo Mountains are as follows:

Texas horned lizard (*Phrynosoma cornutum*). This species is ubiquitous over southern New Mexico, occurring in a variety of open desert grassland and shrubland habitats. They are common in a range of seral communities. There is insufficient population trends data on this species in the Robledo Mountains.

Burrowing owl (*Athene cunicularia hypugaea*). Burrowing owls are year-round residents of southern New Mexico. Preferred habitat includes open shrubland and grassland. These owls occur in a variety of seral communities ranging from disturbed areas to climax grassland and are tolerant of human activity. They occur in desert scrub dominated by mesquite, yucca and cactus. They use abandoned prairie dog, ground squirrel, fox, badger and similar burrows as well as ground holes in road cuts for nesting. Population trends for the Robledo Mountains are not known.

Loggerhead shrike (*Lanius ludovicianus*). Loggerhead shrikes are a year-round resident of southern New Mexico in open shrub and grasslands. Riparian habitat is an essential environmental component. Nest habitat includes small trees and shrubs. Population trends for the Robledo Mountains are not known.

Cave myotis (*Myotis velifer*). Both subspecies occur in southern New Mexico. These bats are migratory over much of their range, but occur in southern New Mexico year-round. They occur in arid habitats, preferring desert floodplains and rocky canyon lands. Dense arroyo and riparian vegetation may be important foraging habitat. This species hibernates in caves and roosts primarily in caves and mines forming large colonies. Population trends for the Robledo Mountains are not known.

Long-legged myotis (*Myotis volans*). The subspecies for New Mexico is *M. v. interior*. This species is most common in coniferous forest, but is known from high grassland and woodland habitats. They use mines and caves as hibernacula and night roosts. Cracks and crevices in rocks, buildings, tunnels, hollow trees and loose tree bark are utilized for day roosts. Summer nursery colonies form in tree hollows, rock crevices, and buildings. Population trends for the Robledo Mountains are not known.

Fringed myotis (*Myotis thysanodes*). The subspecies in New Mexico is *M. t. thysanodes*. This summer resident myotis occurs over most of the western two-thirds of New Mexico, most commonly in grasslands and oak-piñon woodlands. It is also known to occur from desert scrub to coniferous forest. They forage close to the vegetation canopy for moths and beetles primarily, but do take other insects. Maternity and day roost habitat includes rock crevices, caves, mines, snags and buildings. Population trends for the Robledo Mountains are not known.

Spotted bat (*Euderma maculatum*). Spotted bats are year-round residents, ranging widely in New Mexico, but are very rare in occurrence. They are found in a variety of habitats from low desert to conifer forest. Spotted bats forage in habitats such as forests, woodlands, riparian/riverine, as well as, old fields. The most important habitat component is rock and cliff features. They are strongly associated with broken canyon terrain and cliff habitat where day roosts are normally located, most in association with or near open water. Spotted bats are thought to be a non-colony forming species. Population trends for the Robledo Mountains are not known.

Big free-tailed bat (*Nyctinomops macrotis*). This uncommon yet wide-ranging bat occurs in arid, rocky habitats of New Mexico. They have been known to occur in desert shrub, woodlands and as high as evergreen forests near 2.5 km in elevation. They are believed to be seasonal migrants, though it is thought that some may hibernate in southern New Mexico. These bats roost and form maternity colonies in cracks and crevices of rock outcrops and cliff faces. There is insufficient data to determine population trends of this species in the Robledo Mountains.

Pale Townsend's big-eared bat (*Corynorhinus townsendii pallescens*). The Pale or western Townsend's big-eared bat occurs year-round in most areas of New Mexico. They inhabit a variety of vegetation habitats with proximity to rocky, broken expanses as a likely prerequisite. Caves and mines are crucial habitat components and may contain high concentrations of bats during hibernation and while rearing young. This species is highly intolerant of roost site disturbance, which can result in roost abandonment and substantial mortality. Population trends for the Robledo Mountains are not known.

There are no known special status species that are specific to the Robledo Mountains nor are the standard habitat sites which occur in the Robledo Mountains habitat obligates for any special status species.

Night-blooming cereus (*Peniocereus greggii* var. *greggii*), which is considered a species of concern by the U.S. Fish and Wildlife Service, a sensitive species by the BLM, and endangered by the State of New

Mexico, may also occur here, but it is widespread in southern New Mexico though not abundant at any location. Night-blooming cereus is usually associated with creosotebush and honey mesquite both that occur in and around the Robledo Mountains. Night-blooming cereus occurs mostly in sandy to silty gravelly soils in the Chihuahuan Desert, shrubland and desert grassland. Night-blooming cereus grows up through and is supported by shrubs like creosotebush and honey mesquite.

3.2.16 Vegetation

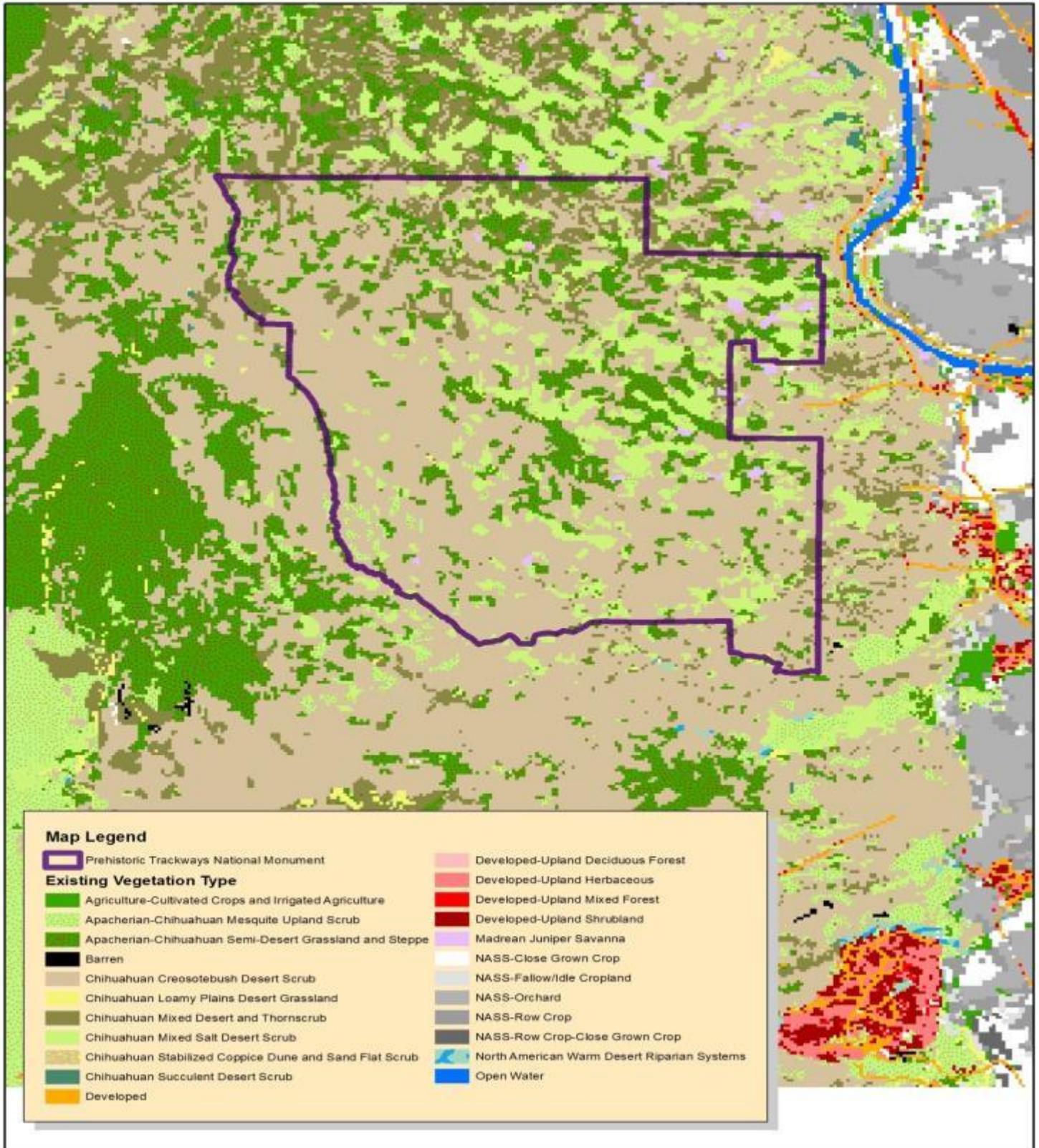
The National Vegetation Classification (NVC) was developed to standardize information about vegetation in the United States. This classification helps align vegetation data collection across different agencies and vegetation management programs, helping provide a greater understanding of vegetation communities.

The dominant vegetation type found within the Monument is Apacherian-Chihuahuan Semi-Desert Grassland and Steppe. Within this vegetation type, five ecological systems are present within the Monument. The dominant system in the PTNM is Chihuahuan Creosotebush, Mixed Desert and Thorn Scrub. The other main ecological systems are Chihuahuan Mixed Salt Desert Scrub, Chihuahuan Mixed Desert and Thorn Scrub, Apacherian-Chihuahuan Semi-Desert Grassland and Steppe, and Apacherian-Chihuahuan Mesquite Upland Scrubland (See Map 3-8).

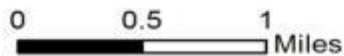
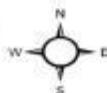
The plant species found in the Monument are characteristic of these vegetation types, and plant communities found within the Chihuahuan Desert in general. Common grass species within the Monument include: black grama (*Bouteloua eriopoda*), blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), bush muhly (*Muhlenbergia porteri*), threeawn grasses (*Aristida spp.*), tobosa (*Pluraphis mutica*), Arizona cotton top (*Digitaria californica*), cane bluestem (*Bothriochloa barbinodis*), slim tridens (*Tridens muticus*), mesa dropseed (*Sporobolus flexuosus*), sand dropseed (*Sporobolus cryptandrus*), fluffgrass (*Dasyochloa pulchella*), plains bristlegrass (*Setaria leucopila*), six-weeks grama (*Bouteloua barbata*), and burrograss (*Scleropogon brevifolius*). Common shrubs and trees include agave (*Agave spp.*), sotol (*Dasyilirion spp.*), ocotillo (*Fouquieria splendens*), feather peabush (*Dalea formosa*), broom snakeweed (*Gutierrezia sarothrae*), yucca (*Yucca spp.*), creosotebush (*Larrea tridentata*), longleaf ephedra (*Ephedra trifurca*), mariola (*Parthenium incanum*), Apacheplume (*Fallugia paradoxa*), range ratany (*Krameria parvifolia*), broom dalea (*Psoralea scoparius*), tarbush (*Flourensia cernua*), littleleaf sumac (*Rhus microphylla*), white thorn (*Acacia constricta*), prickly pear (*Opuntia spp.*), barrel cactus (*Ferocactus wislizenii*), hedgehog cactus (*Echinocereus spp.*), mesquite (*Prosopis glandulosa*), juniper (*Juniperus monosperma*), skunkbush (*Rhus aromatica*), and shrub live-oak (*Quercus turbinella*). Forbs found in the area commonly are woolly plantain (*Plantago patagonica*), globemallow (*Sphaeralcea spp.*), wild buckwheat (*Eriogonum spp.*), California bristlebush (*Brickellia californica*), tansey mustard (*Descurainia pinnata*), Russian thistle (*Salsola kali*), desert holly (*Perezia nana*), woolly paperflower (*Psilostrophe tagetina*), croton (*Croton spp.*), scorpion weed (*Phacelia spp.*), blanket flower (*Gallardia pinnatifida*), bladder pod (*Lesquerella spp.*), filaree (*Erodium cicutarium*), and spectacle pod (*Dimorphocarpa wislizenii*). Vegetation along the ephemeral drainages includes desert willow (*Chilopsis linearis*), littleleaf sumac, and cutleaf bristlebush (*Brickellia laciniata*).

Determinations of rangeland health and condition, and vegetation management decisions utilize information found in ecological site descriptions that have been developed and are maintained by the Natural Resources Conservation Service (NRCS). The NRCS identifies large geographically associated land resource units called major land resource areas (MLRAs), which delineate areas with common topography, geology, climate, water resources, soils, biological resources including plant, fish, and wildlife species, and common land uses. The *Planning Area* is within the Southern Desert Basins, Plains and Mountains MLRA number 42, land resource unit SD-2. Elevations within MLRA-42 range from 2,600 to 5,000 feet in basins and valleys, and more than 7,800 feet in the tallest mountains. Broad desert

Map 3-8 - Vegetation



No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.



Projection: UTM Zone 13
Datum: NAD 1983

basins and valleys are bordered by gently sloping to strongly sloping fans and terraces. Steep north-south trending mountain ranges and many small mesas occur in the MLRA. Average annual precipitation ranges from 8-14 inches. Most precipitation occurs from mid-spring to mid-autumn. Average annual temperature is between 55-65° F. An average freeze-free period from 200 to 240 days occurs in most of the area.

MLRAs are divided into distinct ecological sites, which more specifically describe climate, soils, and expected vegetation on a more localized scale. More information on MLRAs and ecological site descriptions can be found at <http://efotg.sc.egov.usda.gov/treemenuFS.aspx>. Ecological site descriptions describe in detail the historic climax vegetation that is expected on a particular site, and contain state and transition models which discuss different plant community phases and the mechanisms by which plant communities can shift from one state to another through disturbances or restoration activities.

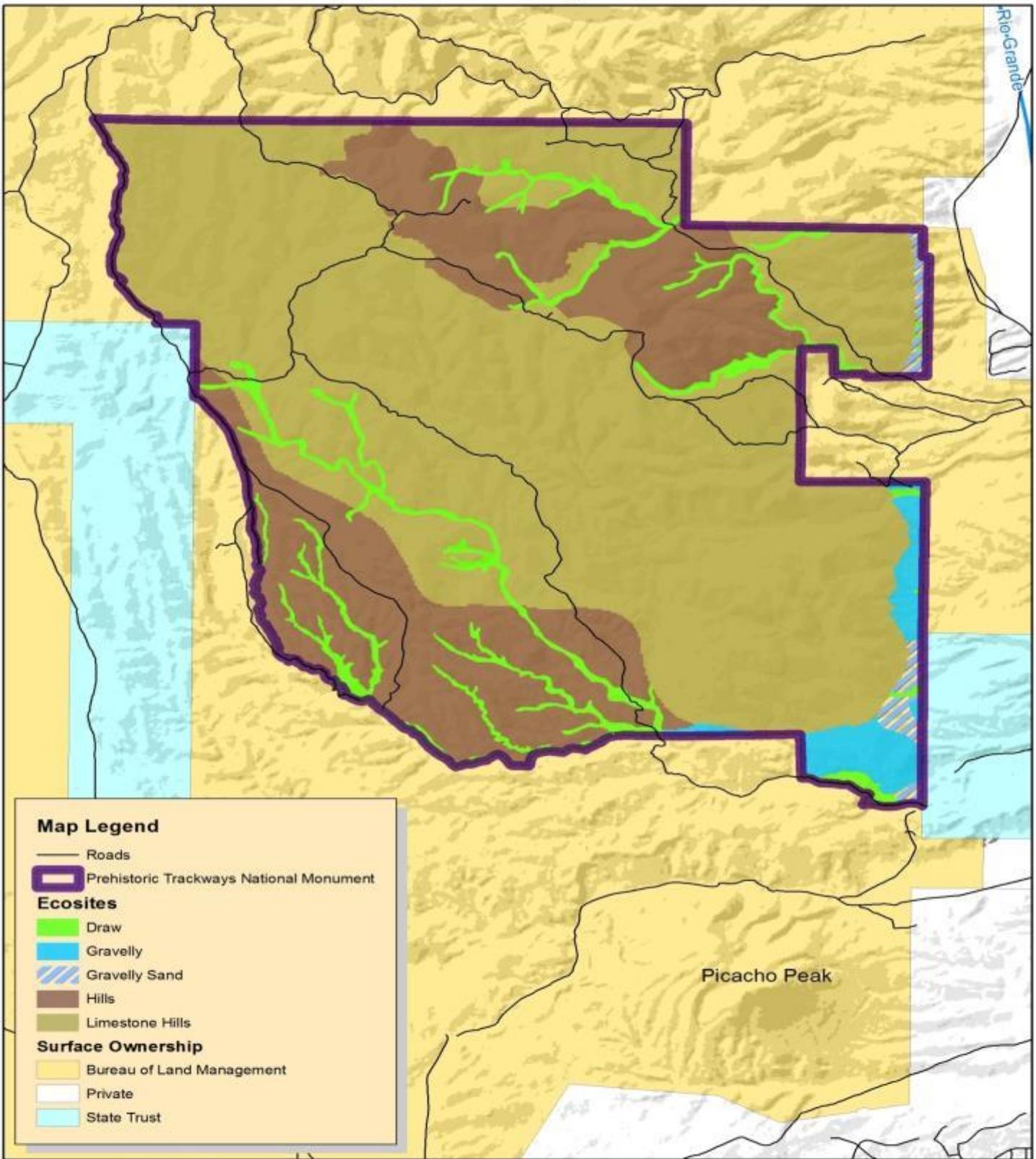
Generally speaking, vegetation communities within the Monument exist in a stable state. Minor shifts within the current state are generally attributable to precipitation patterns. Based on recent observations, ongoing drought conditions have limited plant vigor and productivity throughout much of the Monument during dry years; however, adequate monsoonal rains help plant communities rebound during wetter years. The majority of the Robledo Mountains consists of limestone hills, while the gravelly sites occur mainly on the southern and the eastern edge of the mountain range. Public land in the PTNM are primarily within the hills and limestone hills ecological sites with only a small portion of the area (south and east part of the PTNM) located in gravelly and gravelly sand ecological sites. See Map 3-9. Ephemeral drainages cross through portions of the Monument, and were classified as belonging to the draw ecological site based on recent mapping of ecological sites; however these drainages do not resemble the typical draw ecological site. These drainages are predominately seasonal arroyos dominated by upland vegetation, which occasionally run large amounts of water for brief durations during intense thunderstorms characteristic of the monsoon in the desert Southwest. The limestone hills ecological sites within the Monument are in a grassland/succulent state. The hills ecological sites within the Monument also generally occur in a grassland/succulent state with a fair amount of invasion by creosotebush evident. The gravelly and gravelly sand ecological sites within the Monument occur in a shrub-dominated state where creosotebush is dominant on the landscape with an understory present consisting of grama grasses, bush muhly, and fluff grass.

The changes made to grazing management on the Picacho Peak Allotment over time have resulted in improvement to rangeland condition from mid-poor to low-fair on limestone hills sites and from mid-fair to low-good on gravelly sites according to data obtained during the revision of the allotment management plan in 1997.

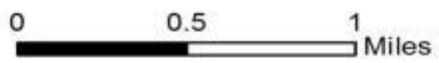
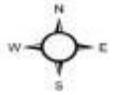
3.2.16.1 Noxious Weeds or Invasive Species

A noxious weed is defined as *a plant species designated by federal or state law as generally possessing one or more of the following characteristics: aggressive, and difficult to manage; parasitic; a carrier or host of serious insects or diseases, or non-native, new, or not common in the United States (USDI 2007)*. Invasive plants include not only noxious weeds, but also other plants that are not native to the ecosystem into which they have been introduced, and exhibit characteristics that give them a competitive advantage over the desirable native species, often causing economic or environmental harm. As a result, they usually have no natural enemies to limit their reproduction and spread (Masters and Sheley 2001; Westbrooks 1998). The establishment and spread of invasive species can directly affect vegetation by

Map 3-9 - Ecological Sites



No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.



Projection: UTM Zone 13
Datum: NAD 1983

increasing the overall competition with native species for limited resources including water and nutrients. Over time, invasive species also can alter the structural and functional components of an ecosystem, i.e., soil structure/function, hydrologic function, fire return intervals, and energy flow (DiTomaso 2000) severely enough that reestablishment of native or desirable species is not feasible (Masters and Sheley 2001). Common locations for noxious or invasive weed infestations include roadsides, recreation areas frequented by hikers, mountain bikers, ATVs/UTVs, and four-wheel drive vehicles, livestock concentration areas, recreational dumping spots and areas that are highly disturbed or degraded from miscellaneous land uses.

Noxious weeds in New Mexico have been classified based on their relative distribution within the State and the management strategies by which these weeds should be managed. New Mexico State University has published a guide book containing additional information on New Mexico's noxious weed species of concern, their distribution, identification and strategies for management (Jamshid et. al. 2010). Classes of New Mexico's listed noxious weeds are described below:

- **Class A weeds** - Weeds that are not native to an ecosystem and have a limited distribution within the State are placed in this class. Preventing new infestations and eliminating infestations have the highest priorities in the management plan. Species not presently found in the State but threatening to invade are placed in this class.
- **Class B weeds** - Weeds that are not native to the ecosystem and are presently limited to a particular area of the State are listed within this class. The management priority is to contain them within their current areas. Preventing infestations in new areas also has a high priority.
- **Class C weeds** - Weeds that are not native to the ecosystem yet are widespread throughout the State. Long-term programs of management and suppression are encouraged.

There are no known populations of Class A or Class B noxious weeds that have been identified within the Monument as a result of weed surveys. Class C weeds present within and nearby the Monument are individual plants and isolated populations of saltcedar (*Tamarix ramosissima*). Saltcedar is a deciduous or evergreen shrub or small tree that typically grows from 5 to 20 feet tall. "Saltcedar was introduced from Eurasia and is now widespread in the United States" Whitson (*et al.* 2006). The Tamarisk family, which includes saltcedar, has been used as ornamentals and has also been cultivated for use in erosion control and windbreaks (Vallentine 1989), but this plant has proliferated and has "become naturalized along streams, canals, and reservoirs in much of the west" (Whitson *et al.* 2006). Stands form monocultures, which limit native plant and wildlife biodiversity. Large plants of saltcedar can transpire at least 200 gallons of water per plant each day (Whitson *et al.* 2006). Saltcedar has been found to have low water use efficiencies and exhibit salt tolerance (Glenn *et al.* 1998), and actually tends to increase soil salinity through salts excreted from the leaves (Smith *et al.* 1998; Ladenburger *et al.* 2006), which would give them a competitive advantage over less tolerant native plants. Saltcedar within the Monument is primarily located within Apache Canyon. This noxious weed tends to grow where water troughs may be leaking onto the ground, where manmade earthen reservoirs or flood control dams have been constructed, or where moist soils may exist at some point in the year just long enough to support individual plants. No other riparian obligate plant species persist near this saltcedar, and no other habitat that is conducive to a riparian area exists at these sites. The areas where saltcedar may be found on the Monument are not considered riparian areas and would not be managed as such. Isolated individuals and smaller populations can also be found in smaller ephemeral side drainages on Federal, State trust and private lands adjacent to the Monument.

Common weed species occur within and around the PTNM. Some of the more common weeds encountered include Russian thistle, silverleaf nightshade (*Solanum elaeagnifolium* Cav.), various

pigweeds species (*Amaranthus* spp.), puncturevine (*Tribulus terrestris* L.), spotted and prostrate spurge (*Chamaesyce maculate* L.), and common cocklebur (*Xanthium strumarium* L.). These common weeds are typically found in disturbed areas and near livestock watering points. Cocklebur tends to occur mainly along drainages and in earthen reservoirs.

3.2.16.2 Rangeland Health and Standards for Livestock Grazing

The grazing regulations (43 CFR 4180.1) require that the authorized officer ensure that the following four conditions for rangeland health exist on the grazing allotments:

- Ecological processes are to be maintained, or there is to be significant progress toward attainment of these processes, that would support a healthy biotic community.
- Habitats are, or are to be making significant progress toward, being maintained or restored for Federal threatened and endangered, proposed threatened, Federal candidate, Federal species of concern or other species with special status.
- Water quality complies with the water quality standards of the State, and is to achieve, or to make significant progress toward achieving, any management objectives established by the BLM.
- Watersheds are to be in, or to be making significant progress toward achieving a properly functioning condition.

In January 2001, the BLM completed a Statewide Resource Management Plan Amendment and Environmental Impact Statement in which three Public Land Health Standards were adopted to address uplands, biotic communities, and riparian areas. The authorized officer would make a determination for each public land health standard as follows:

- Is the standard being met?
- If the standard is not being met, is livestock a causal factor?
- Does existing management conform to the Guidelines for Livestock Grazing Management?

Historic monitoring studies on the Picacho Peak Allotment were completed between 1983 and 1995. During that time period, gravelly ecological sites improved from fair to good condition, and the limestone hills ecological site improved from poor to fair condition as a result of changes in grazing management. The Picacho Peak Allotment is managed under an allotment management plan, which was updated and amended in 1997. Monitoring data collected in 1982 indicated that the Altamira Ranch Allotment was also in fair to good condition.

In 2010, Range Health Assessments were conducted on the public land within the Prehistoric Trackways National Monument by an interdisciplinary team of specialists with expertise in rangeland, soils, hydrology, and wildlife resources. Assessments were conducted at two sites within the limestone hills ecological site, and one site was evaluated in the hills ecological site within the Monument. One gravelly ecological site was evaluated outside of the Monument boundary; however, this site was within a quarter of a mile from the Monument, and was considered to be representative of gravelly sites in the *Planning Area*.

Twenty-one public land health indicators were used to assess soil and site stability, hydrologic function, and biotic integrity in accordance with methodology described in *Interpreting Indicators of Rangeland Health, Version 4, Technical Reference 1734-6* (Pellant *et al.*, 2005). The indicators were evaluated according to departure from the reference conditions based on expected historical climax communities and on ecological site descriptions maintained by the Natural Resources Conservation Service. Rangeland health assessment worksheets are on file at the Las Cruces District Office.

Determination/Rationale

1. Standard 1 (Upland Sites)

Upland ecological sites are in productive and sustainable condition within the capability of their sites. Upland soils are stabilized and exhibit infiltration and permeability rates that are appropriate for the soil type, climate, and landform. The kind, amount, and/or pattern of vegetation provide protection on a given site to minimize erosion and assist in meeting state water quality standards.

Determination: It has been determined that Standard 1 (Upland Sites) is not currently being met, but current livestock management practices are not significant factors. Grazing management on the allotments within the Monument conforms to the Guidelines for Livestock Grazing Management.

Rationale: Standard 1 (Upland Sites) was analyzed using 10 indicators relating to soil stability. These indicators include rills, water flow patterns, pedestals and/or terracettes, bare ground, gullies, wind-scoured, blowouts, and/or deposition areas, litter movement, soil surface resistance to erosion, soil surface loss or degradation, and compaction layer.

Overall, soils matched the reference condition across all sites for several of the indicators, including water flow patterns, gullies, wind-scoured blowouts and/or deposition areas, litter movement, and compaction layer. The hills ecological site had the greatest degree of departure from reference condition, and as such, influenced the determination for not meeting the Upland Site standard. The hills site had a moderate degree of departure for rills, pedestals, and soil surface loss or degradation. The hills site had a slight to moderate departure from reference condition with regard to bare ground and soil surface resistance to erosion. While the preponderance of evidence indicates that, overall, the hills site is only slightly to moderately departed from the reference, the indicators show that soil erosion has occurred and soils could continue to be susceptible to losses in the future.

Generally speaking, the gravelly ecological site closely matched reference; however, the soil surface loss or degradation indicator showed a moderate degree of departure from the reference condition expected for the site. Thus, it is likely that there has been some historic soil loss that has occurred on this site, but the remaining indicators suggest that soils are currently stable due to a high degree of rock cover that helps protect the soil.

The limestone hills ecological sites were in the best condition overall, with all soil stability indicators matching reference at one site. The other limestone hills site had a few pedestals present, mainly on individual tarbush shrubs and there was some soil loss evident.

In consideration of the data obtained from rangeland health assessments, there has been some soil erosion that has occurred on the Monument. While many areas are not experiencing active erosion, susceptibility to erosion varies throughout the Monument. One of the main contributing factors to not meeting the standard for upland sites is directly related to vegetation communities present on the Monument. Some areas have good vegetation cover and diversity or high amounts of rock that help protect the soil from erosion. Other areas, especially where shrub encroachment by creosotebush is more pronounced, continue to be susceptible to accelerated soil erosion.

2. Standard 2 (Biotic Communities) Including Native, Threatened, Endangered, and Special Status Species

Ecological processes such as the hydrologic cycle, nutrient cycle, and energy flow support productive and diverse native biotic communities, including special status, threatened, and endangered species appropriate to the site.

Determination: It has been determined that Standard 2 (Biotic Communities) is not currently being met, but current livestock management practices are not significant factors. Grazing management on the allotments within the Monument conforms to the Guidelines for Livestock Grazing Management.

Rationale: Standard 2 was analyzed using 11 indicators relating to hydrology and 13 indicators that describe biotic integrity. These indicators include rills, water flow patterns, pedestals and/or terracettes, bare ground, gullies, soil surface resistance to erosion, soil surface loss or degradation, plant community composition and distribution relative to infiltration and runoff, compaction layer, functional structural groups, plant mortality and decadence, litter amount, annual production, invasive plants, reproductive capability of perennial plants, wildlife habitat, wildlife populations, special status species habitat, and special status species populations.

Hydrologic function indicators matched the reference across all sites for water flow patterns, gullies, and compaction layer. As with soils, the hills site had the greatest degree of departure from reference, and was rated as having a moderate change overall. Indicators rated as moderately departed from reference were rills, pedestals and/or terracettes, soil surface loss or degradation, plant community composition and distribution relative to infiltration, and the amount of litter present. There was a slight to moderate departure for bare ground and soil surface resistance to erosion. For the gravelly site, most of the indicators closely matched reference, except for litter amount, soil surface loss or degradation, and plant community composition and distribution relative to infiltration. The hydrologic function at one of the limestone hills sites very closely matched the reference condition, while the other site showed a slight departure from reference with regard to pedestals, soil surface loss, plant community composition and litter.

Biotic integrity indicators closely matched the reference across all sites for compaction layer, wildlife habitat, wildlife populations, special status species habitat, and special status species populations. Biotic integrity was rated as moderately departed from the reference on both the hills and gravelly sites. The indicators that were most influential in causing this shift were soil surface loss or degradation, functional structural groups, annual production and invasive plants. For the hills site, there was also a moderate departure from reference conditions with regard to litter amount, but only a slight departure was observed for soil surface resistance to erosion. For the gravelly site, the indicators for litter and reproductive capability of perennial plants were slightly departed from the reference. Consistent with the other indicator groupings, biotic integrity within the limestone hills ecological site closely matched reference at one site, while the other site was rated as having a slight to moderate departure from the reference condition. The main factors contributing to the shifts on limestone hills sites were changes to functional structural groups and litter amount, and to a lesser degree soil surface loss, plant mortality and decadence, annual production, and invasive plants at one of the sites.

When considering these groupings of rangeland health indicators, the major factor contributing to not meeting the standard for biotic communities is directly related to the plant community present across much of the Monument. The main cause for any departure from the standards was the increase of creosotebush density, which was observed at high enough levels to consider this to be

an invader of hills and limestone hills ecological sites within the Monument. While creosotebush is native to the hot desert regions of the southwest, including the Chihuahuan desert, this shrub can increase to the point where it becomes out of balance with the desired plant community composition. Increasing densities of creosotebush often lead to increased competition with grasses and forbs for limiting water and nutrients. Currently, plant communities within the Monument are in a stable state, which would require active vegetation treatments in order to shift communities back toward a more productive grassland state. Some areas have the potential to respond favorably to treatment with the presence of a good perennial grass understory, but the area is characterized by rugged topography, which would preclude herbicide treatments in many areas due to concerns of herbicide drift on slopes steeper than 10 percent.

3. Standard 3 (Riparian Sites)

Riparian areas are in a productive, properly functioning, and sustainable condition, within the capability of that site.

There are no riparian sites within the PTNM, thus this standard is not applicable to the *Planning Area*. Several ephemeral drainages and canyons cut through the Monument; however they do not support riparian obligate vegetation thus they are not considered to be riparian areas.

3.2.17 Visual and Scenic Resources

The PTNM is a very expressive example of the Chihuahuan Desert with its variety of native plant and animal species along with the rugged terrain captured in the Robledo Mountains. A high diversity of cacti provide habitat for many reptiles within the Monument. During the spring and monsoon seasons, flowers abound on the desert plants and cacti. Thousands of residents and travelers on Interstate 25 and Interstate 10 view the Robledo Mountains every day. The adjacent closed Community Pit #1 is a major visual impact and landscape modification. Areas showing major impacts to the line, form, color and texture are clearly evident even from several miles away. These impacts in Community Pit #1 include areas of vegetation removal, roads, rock piles and landings for stockpiling and loading the excavated rock.

Visual resources include natural and manmade physical features that give landscapes scenic quality and provide scenic views. Visual resources are interrelated with social and economic values, beliefs, and attitudes, lifestyle, quality of life, well-being, and place-based values, which all influence a viewer's perception of the scenic quality and importance of scenic resources.

The BLM uses a systematic approach of visual resource inventory (VRI) to measure visual resource values. The results of this inventory provide the basis for considering visual values in the RMP process and assigning visual resource management objectives.

There are three components of a VRI Classification process:

1. **Scenic Quality Evaluation** – This is a measurement of the visual appeal of a landscape and is based on seven key factors: landform, vegetation, water, color, influence of adjacent scenery, scarcity, and cultural modification. The Scenic Quality Rating of the Robledo Mountains is “Class B”, which indicates a *Medium* rating based on observed characteristics such as highly eroded features with good color and mountain views, sparse vegetation, and cultural modification (the Community Pit quarry site).

2. **The Sensitivity Level Analysis** – This is a measure of public concern for scenic quality. The Robledo Mountains overall rating of *High* is based on a combination of public sensitivity for the WSA, the ACEC, and the PTNM. The Monument is rated *High* for its level of public interest and amount of recreational use.
3. **Delineation of Distance Zones** - Viewsheds across public land are divided into three distance zones based on relative visibility from various travel routes or observation points, they are: (1) the foreground-middleground zone which occurs at 3-5 miles, (2) the background zone which occurs 5 miles and beyond, and (3) the seldom seen zone which occurs in those areas not otherwise visible from commonly travel routes or observation points. The entire PTNM was inventoried within the Foreground/Middleground Distance Zone.

As indicated in the *Mimbres RMP* (1993), the Monument is designated into all four VRM Classes (See Map 3-10). Table 3-15 displays the total acreage of public land within the Monument per VRM Class.

Table 3-15 Visual Resource Management Acreages within the PTNM

TABLE 3-15 VISUAL RESOURCE MANAGEMENT ACREAGES WITHIN THE PTNM	
VRM CLASS	ACRES
Class I	789
Class II	907
Class III	2,627
Class IV	932
TOTAL	5,255

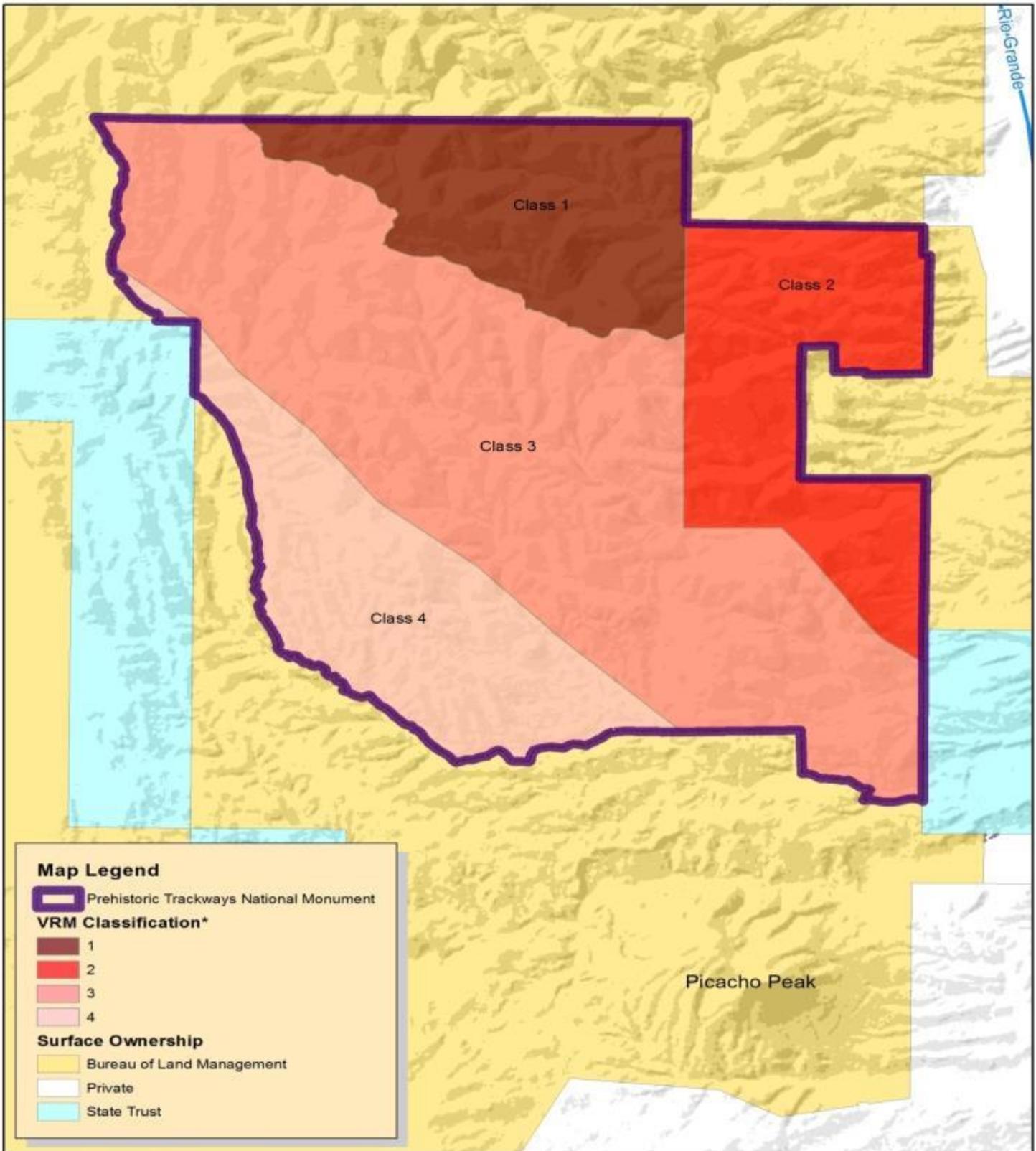
SOURCE: *Mimbres RMP*, 1993.

With the VRI (defined above) serving as a baseline to quantify visual values, the BLM then considers other RMP decisions and resource allocations that may affect these values to arrive at appropriate visual resource management objectives. These objectives, or classes, are divided into four categories:

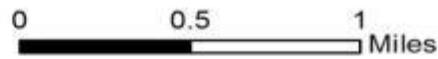
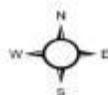
1. **Class I Objective** - to preserve the existing character of the landscape. This class provides for natural ecological changes but does not preclude very limited management activity.
2. **Class II Objective** - to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer.
3. **Class III Objective** - to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer.
4. **Class IV Objective** - to provide for management activities, which require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high.

Based on the components of VRI identified above and management considerations for other land uses, public land is placed into one of four VRI classes. These inventory classes represent the relative value of the visual resources. Classes I and II being the most valued, Class III representing a moderate value, and Class IV being of least value. Based upon the most recent VRI of the *Planning Area* that was undertaken in 2009, the entire PTNM *Planning Area* was rated as a VRI Class II.

Map 3-10 - Visual Resource Management



No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.



Projection: UTM Zone 13
Datum: NAD 1983

*Mimbres RMP, 1993

3.2.18 Water Resources

3.2.18.1 Groundwater

All water rights in New Mexico are acquired in accordance with the State's substantive and procedural law, except where Congress or the Executive Branch has created a Federal reservation with a reserved water right.

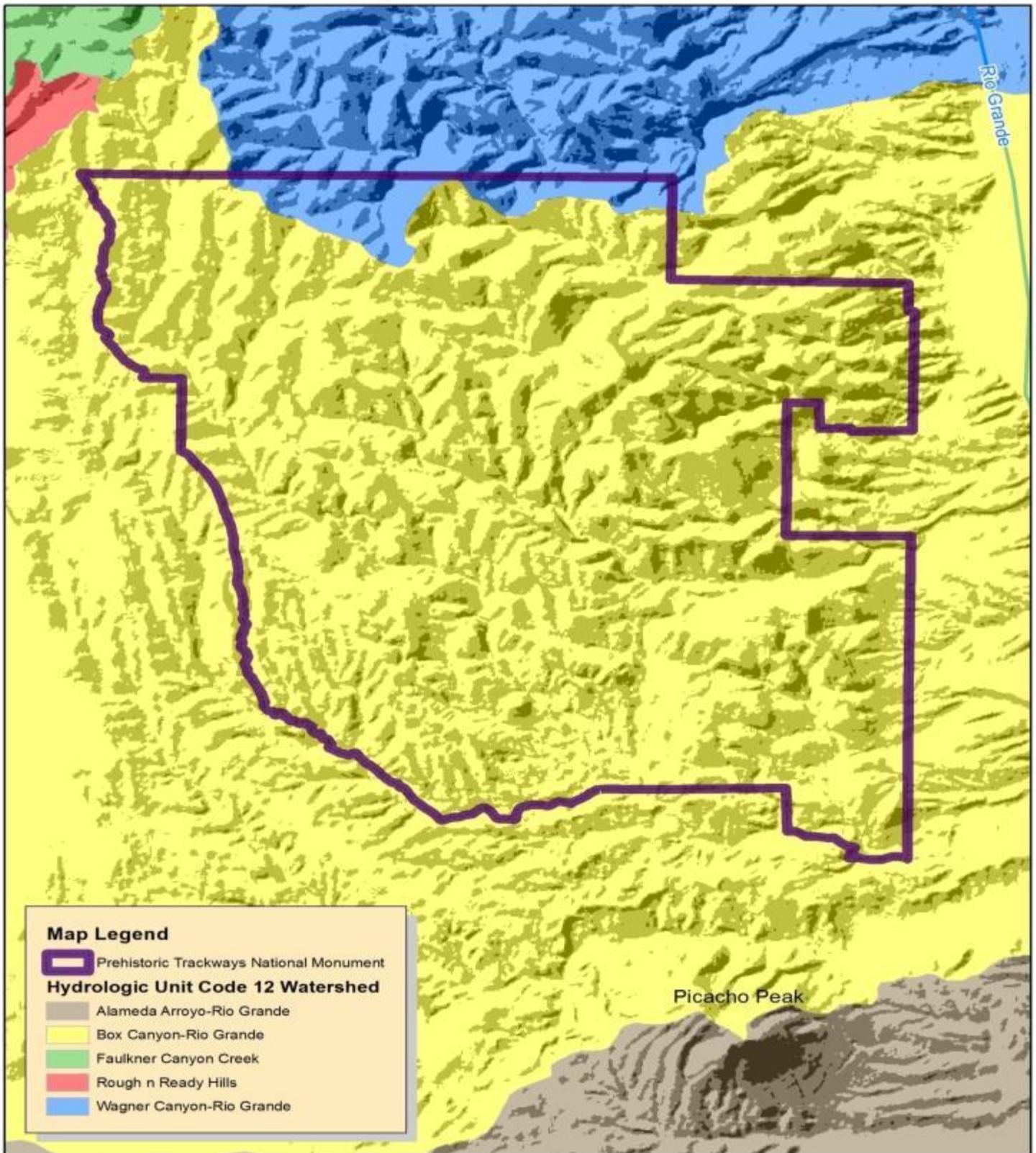
The New Mexico Office of the State Engineer (NMOSE), as designated by statute and judicial decision, has divided the State into declared groundwater basins to assess and adjudicate water resources. The Monument and surrounding area lie within the Mesilla Basin, which is a sub-basin of the Lower Rio Grande Basin. According to NMOSE records, depths to the water table can vary widely throughout the Mesilla Basin. Variations can be from a few tens of feet along the Rio Grande to over 1,000 feet at various locations within the Valley. There are no records of wells or groundwater monitoring sites known to be present within the Monument boundaries.

The Santa Fe Group (Oligocene-Pleistocene) forms the major aquifer in this region and consists of a thick sequences of alluvial, fluvial, aeolian, and lacustrine sediments deposited in the intermountain basins of the Rio Grande Rift valley. Although the Santa Fe Group is present along the eastern boundary of the Monument, it comprises a very small percentage of the geologic formations located within the Monument. This equates to a very small percentage of the Monument containing prime aquifer characteristics. Some beds such as sandstones, conglomerates, or dissolved limestone beds within the Hueco Group, may contain water storage capabilities; however, these beds are relatively thin and can be laterally discontinuous. Additionally, tectonic uplift, volcanism, and intrusive events related to continental rifting have resulted in a structurally complex mountain range. Given the geologic history from deposition, deformation, and alteration of the Hueco Group in the Robledo Mountains, it is unlikely that any significant groundwater or potential aquifers exist in the Hueco Group within the Monument. Should small quantities of groundwater be present in selective beds of the Hueco Group, it would not be expected to have a significant nexus to groundwater in the Mesilla Basin aquifer. Given the history of the Robledo Mountains, the inferred lack of aquifer potential, and the absence of groundwater data within the Monument, there is a high degree of uncertainty regarding groundwater throughout the Monument.

3.2.18.2 Surface Water

There are no perennial surface waters located within the Monument. Surface water is limited to ephemeral and intermittent overland and in-channel flows during rainfall events. Water flows within arroyos primarily flow southeast and east and terminate at the Rio Grande (See Map 3-11). This water is both seasonally common and an essential component of the public land. Desert washes primarily function as areas of overland flow collection and recharge areas for the surrounding watershed. Ephemeral pools, either in-channel or in the uplands, are watering sites for wildlife and livestock.

Map 3-11 Watersheds



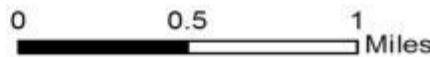
Map Legend

-  Prehistoric Trackways National Monument

Hydrologic Unit Code 12 Watershed

-  Alameda Arroyo-Rio Grande
-  Box Canyon-Rio Grande
-  Faulkner Canyon Creek
-  Rough n Ready Hills
-  Wagner Canyon-Rio Grande

No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.



Projection: UTM Zone 13
Datum: NAD 1983

Water quality analysis in New Mexico is designed to satisfy the statutory requirements of Section 303(d), the reporting requirements of Sections 305(b) and 314 of the Federal Water Pollution Control Act [33 U.S.C. 1251 *et seq.*], commonly known as the Clean Water Act. The New Mexico Environment Department (NMED) Surface Water Quality Bureau's 2010-2012 *State of New Mexico Clean Water Act 303(d)/305(b) Integrated List and Report* found that the Rio Grande, from the International Mexico Boundary to 1 mile below Percha Dam, exceeds the allowable concentrations of *Escherichia coli* (*E. coli*). Additionally, the report lists probable sources for *E. coli* as avian sources (e.g., waterfowl), concentrated animal feeding operations, impervious surfaces/parking lot runoff, municipal point source discharges, on-site treatment systems (e.g., septic systems), rangeland grazing, wastes from pets, and wildlife. Even though the Rio Grande is located adjacent to and not within the Monument boundary, watersheds within the Monument drain into the Rio Grande. This provides the BLM with the responsibility to mitigate any action that may contribute contaminants into the Rio Grande and to protect the State's water resources. Contaminants not only include *E. coli* that may further degrade water quality, but rather any contaminants that may lead to an additional impairment(s) of water quality.

Ongoing studies to identify *E. coli* concentrations and its sources are being conducted along the Rio Grande within the Lower Rio Grande Watershed. Key partners for these studies include the NMED Surface Water Quality Bureau, Elephant Butte Irrigation District, and Dr. Phil King and Dr. Geoff Smith with New Mexico State University. Results of *E. coli* studies revealed high levels in the Rio Grande during fall rainstorms and high levels in the lower portion of the watershed. Birds were the most abundant source identified followed by livestock, wildlife, pets and sewage, and *E. coli* concentrations were higher downstream of Picacho Bridge (Smith 2012). The Lower Rio Grande Watershed encompasses the Rio Grande Basin from Percha Dam (south of Caballo Reservoir, approximately 70 miles north of Las Cruces, New Mexico), downstream to the Texas-Mexico boundary adjacent to the cities of El Paso, Texas and Ciudad Juarez, Mexico, (approximately 30 miles south of Las Cruces) and comprises approximately 1.5 million acres. This stretch is in the U.S. Geologic Survey (USGS) Hydrologic Unit Code (HUC 13030102) located in Sierra and Doña Ana counties. The Monument comprises approximately 0.3 percent of the Lower Rio Grande Watershed. While it is likely that non-point source pollutants such as *E. coli* are transported to the Rio Grande from the Monument during large storm events, it is inferred that the small size of the Monument watershed does not contribute a significant quantity of pollutants when compared to other sources located outside of the Monument.

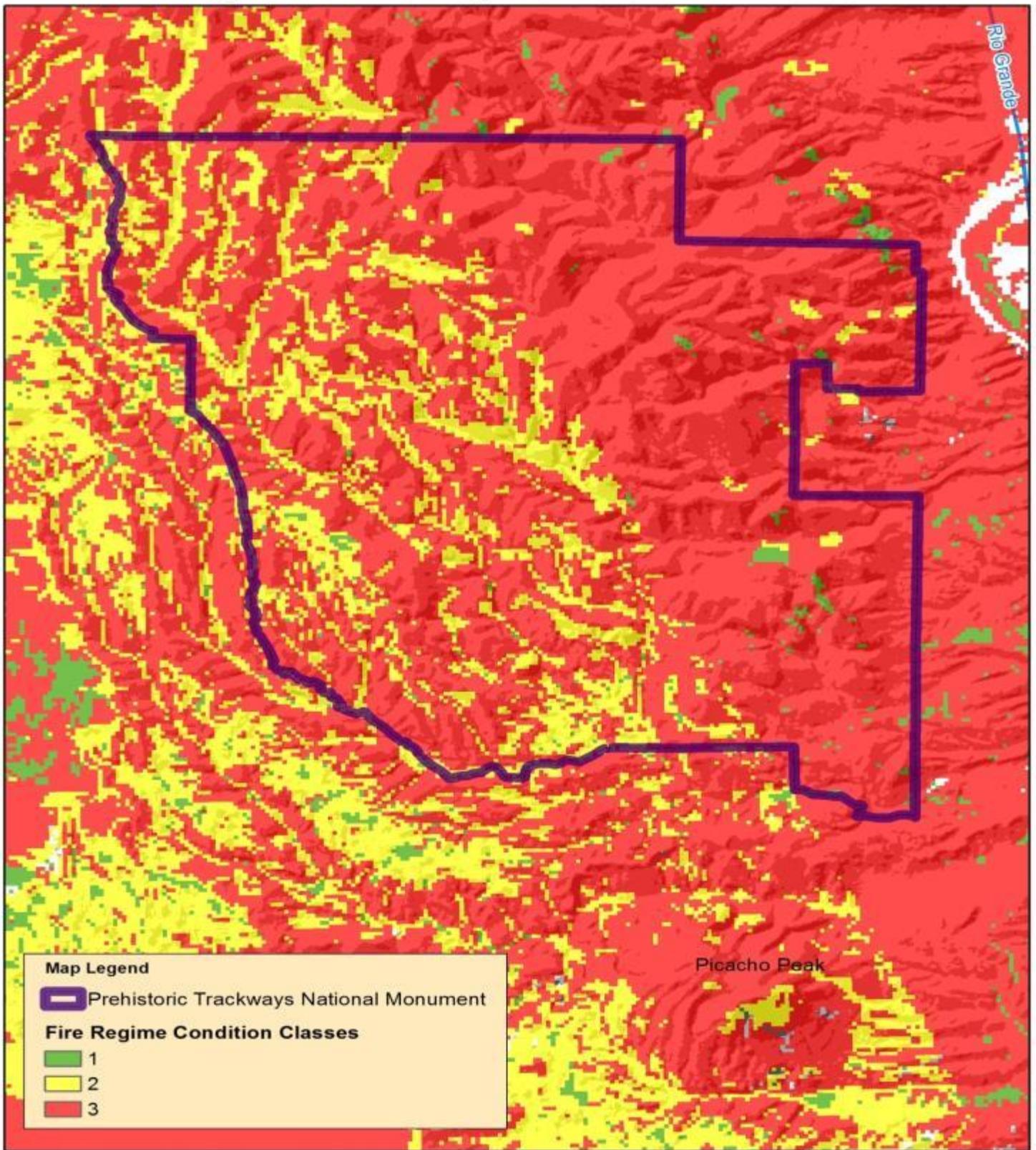
The *Planning Area* receives approximately 9 inches of rainfall annually. Most of this occurs in July and August in the form of thunderstorms. Localized heavy rainfall often results in flash flooding in the arroyos carrying large quantities of sediment and debris.

3.2.19 Wildland Fire Management

The existing vegetation within the Monument is not conducive to carrying a fire. As stated earlier in the Vegetation section, the combination of the existing soils and climate lead to a desert grass-shrub vegetation community. The sparse understory does not lend itself to large wildland fires. Historically, there has not been any known wildland fire event within the *Planning Area*.

A natural fire regime is the pattern, frequency, and intensity of the wildfires that prevails across a landscape without the intervention of humans. A fire regime condition class (FRCC) is a classification of the amount of departure from the natural fire regime (see Table 3-16). Historical fire regimes provide a baseline against the current condition of an area and the effects of the change to the ecosystem. Fire is a natural part of a healthy ecosystem and the FRCC helps land managers plan the response to wildfires across the landscape (see Map 3-12). Fire Management Plans (FMPs) develop management responses to wildfire for all Fire Management Units (FMU).

Map 3-12 - Fire Regime Condition Classes



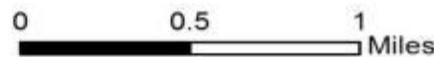
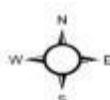
Map Legend

 Prehistoric Trackways National Monument

Fire Regime Condition Classes

-  1
-  2
-  3

No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.



Projection: UTM Zone 13
Datum: NAD 1983

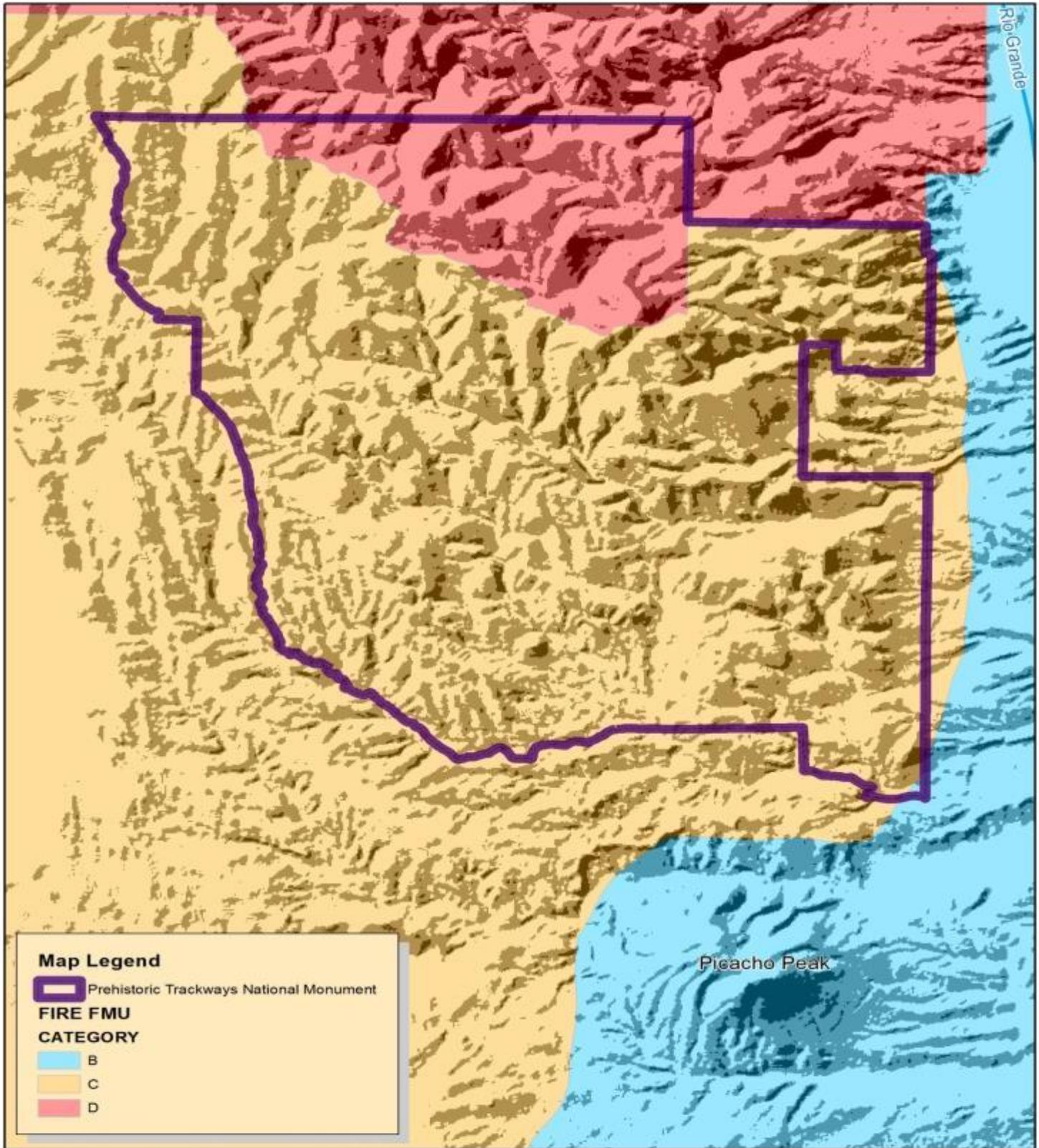
Table 3-16 Fire Regime Condition Classes

TABLE 3-16 FIRE REGIME CONDITION CLASSES		
CONDITION CLASS	ATTRIBUTES	EXAMPLE MANAGEMENT OPTIONS
Condition Class 1	<p>Fire regimes are within or near a historical range.</p> <p>The risk of losing ecosystem components is low.</p> <p>Fire frequencies have departed from historical frequencies by no more than one return interval.</p> <p>Vegetation attributes (species composition and structure) are intact and functioning within a historical range.</p>	<p>Where appropriate, these areas can be maintained within the historical fire regime by treatments such as prescribed fire and allowing lightning fires to burn.</p>
Condition Class 2	<p>Fire regimes have been moderately altered from their historical range.</p> <p>The risk of losing key ecosystem components has increased to moderate.</p> <p>Fire frequencies have departed (either increased or decreased) from historical frequencies by more than one return interval. Results are moderate changes to one or more of the following: fire size, frequency, and intensity, severity, or landscape patterns.</p> <p>Vegetation attributes have been moderately altered from their historical range.</p>	<p>Where appropriate, these areas may need moderate levels of restoration treatments, such as prescribed fire and hand or mechanical treatments.</p>
Condition Class 3	<p>Fire regimes have been significantly altered from their historical range.</p> <p>The risk of losing ecosystem components is high.</p> <p>Fire frequencies have departed from historical frequencies by multiple return intervals and results in dramatic changes to one or more of the following: fire size, frequency, intensity, or severity, and landscape patterns.</p> <p>Vegetation attributes have been significantly altered from their historical range.</p>	<p>Where appropriate, these areas may need high levels of restoration treatments, such as hand or mechanical treatments. These treatments may be necessary before prescriptive fire treatments are used to restore the historical fire regime.</p>
SOURCE: Bureau of Land Management, 2004a.		

These wildfire management strategies take into account: safety, cost, and resource objectives, in that order of prioritization. FMUs are created based on geographic, social, and political characteristics. The FMUs are assigned a fire management category(s) that dictate a management approach for each unit. Public land is assigned to one of the following fire management categories (See Map 3-13):

- Category A: Areas where fire is not desired at all.
- Category B: Areas where unplanned wildfire is not desired because of current conditions.
- Category C: Areas where fire is desired, but there are significant constraints on its use.
- Category D: Areas where wildland fire is desired, and there are few or no constraints on its use.

Map 3-13 - Fire Management Unit Categories



Map Legend

Prehistoric Trackways National Monument

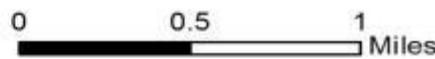
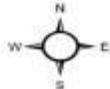
FIRE FMU CATEGORY

B

C

D

No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.



Projection: UTM Zone 13
Datum: NAD 1983

Three FMUs are found within the Monument (see Table 3-17). The FMU categories are shown on Map 3-13. These categories allow management to prioritize resources if there are multiple wildfires occurring at the same time.

Table 3-17 Fire Management Units within the PTNM

TABLE 3-17 FIRE MANAGEMENT UNITS WITHIN THE PTNM		
FIRE MANAGEMENT UNIT	ACRES	FIRE MANAGEMENT CATEGORY
Rio Grande Valley Uplands	4,469	C
Robledo Mountains WSA/ACEC	782	D
Rio Grande Corridor	4	B

Where necessary, emergency stabilization treatments would be implemented and completed within one calendar year from the date of the control of wildland fire. Rehabilitation of non-emergency actions due to wildland fires must be completed within 3 years of the date of the control of fire with funding for rehabilitation prioritized using common criteria (BLM 2005). Wildland and prescribed fires are monitored according to variables described in the *Resource Management Plan Amendment for Fire and Fuels Management on Public Lands in New Mexico and Texas* (BLM 2004a). Fuel treatment and fire suppression activities would be consistent with the *New Mexico Standards and Guidelines for Livestock Grazing Management* (2001).

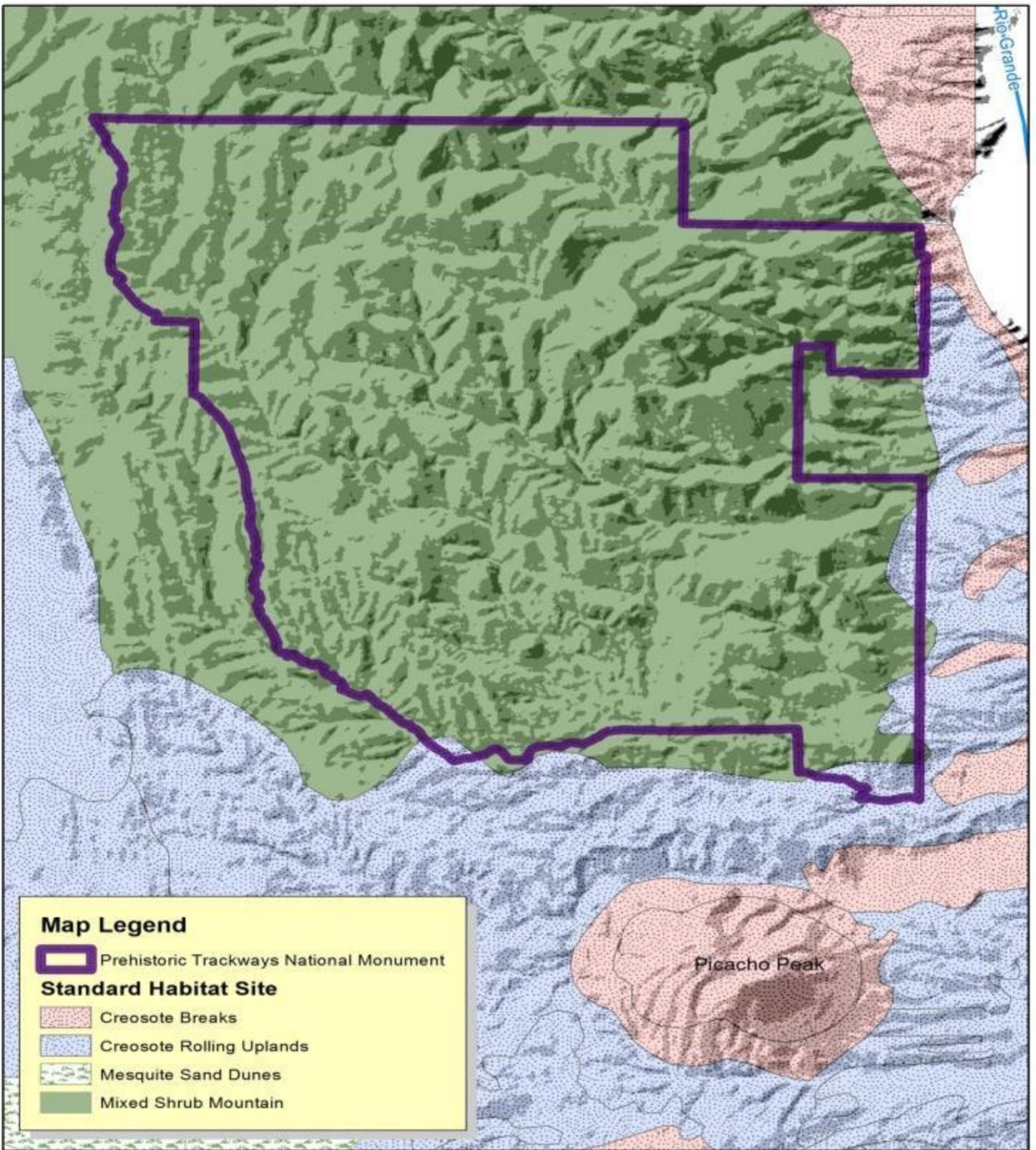
3.2.20 Wildlife

In terms of habitat quality for wildlife, the PTNM has steep slopes dominated by rocky soils, with sparse vegetative cover dominated by creosote. Arroyos dissecting the hillsides have sandy bottoms and support a slightly more diverse overstory, such as Apache plume and little-leaf sumac. Compared to other habitats in the Chihuahuan Desert, the site has low productivity and diversity. The BLM has classified wildlife habitat referred to as Standard Habitat Sites (SHSs). SHSs are the primary indicators for wildlife and habitat to assess habitat quality. This also allows for identification of and monitoring of specific issues at the landscape level in the *Planning Area*. The BLM-based SHSs are used as indicators because they provide the best available data on current condition, trends, and forecasts of wildlife and habitat. The SHSs were designed at a large scale and do not break the habitats down by vegetative communities that may occur on different soil types. To gain an understanding of which habitat types occur in an SHS, the ecological site descriptions discussed in the Vegetation section of this document are utilized (limestone hills, hills, draws, gravelly, and gravelly sand). The *Planning Area* is comprised primarily of the Mixed Shrub Mountain SHS with a small area of Creosote Breaks SHS along the eastern edge (See Map 3-14).

3.2.20.1 Mixed Shrub Mountain

Shrub species dominate the vegetation composition of this SHS along with an understory of grama grasses (*Bouteloua* spp.), bush muhly (*Muhlenbergia poteri*), slim tridens (*Tridens muticus*), and three-awn (*Aristida* spp.). Characteristic shrubs are broom snakeweed (*Gutierrezia sarothrae*), whitethorn acacia (*Acacia constricta*), catclaw mimosa (*Mimosa aculeaticarpa*), Apacheplume (*Fallugia paradoxa*), skunkbush sumac (*Rhus trilobata*), and mountain mahogany (*Cercocarpus montanus*). This SHS is located between surrounding uplands and below the piñon-juniper vegetative community. Species diversity is high for mammals, moderate for herptiles, and low for birds (BLM 1983).

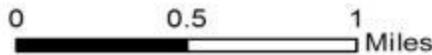
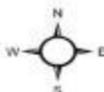
Map 3-14 - Standard Habitat Sites



Map Legend

-  Prehistoric Trackways National Monument
- Standard Habitat Site**
-  Creosote Breaks
-  Creosote Rolling Uplands
-  Mesquite Sand Dunes
-  Mixed Shrub Mountain

No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.



Projection: UTM Zone 13
Datum: NAD 1983

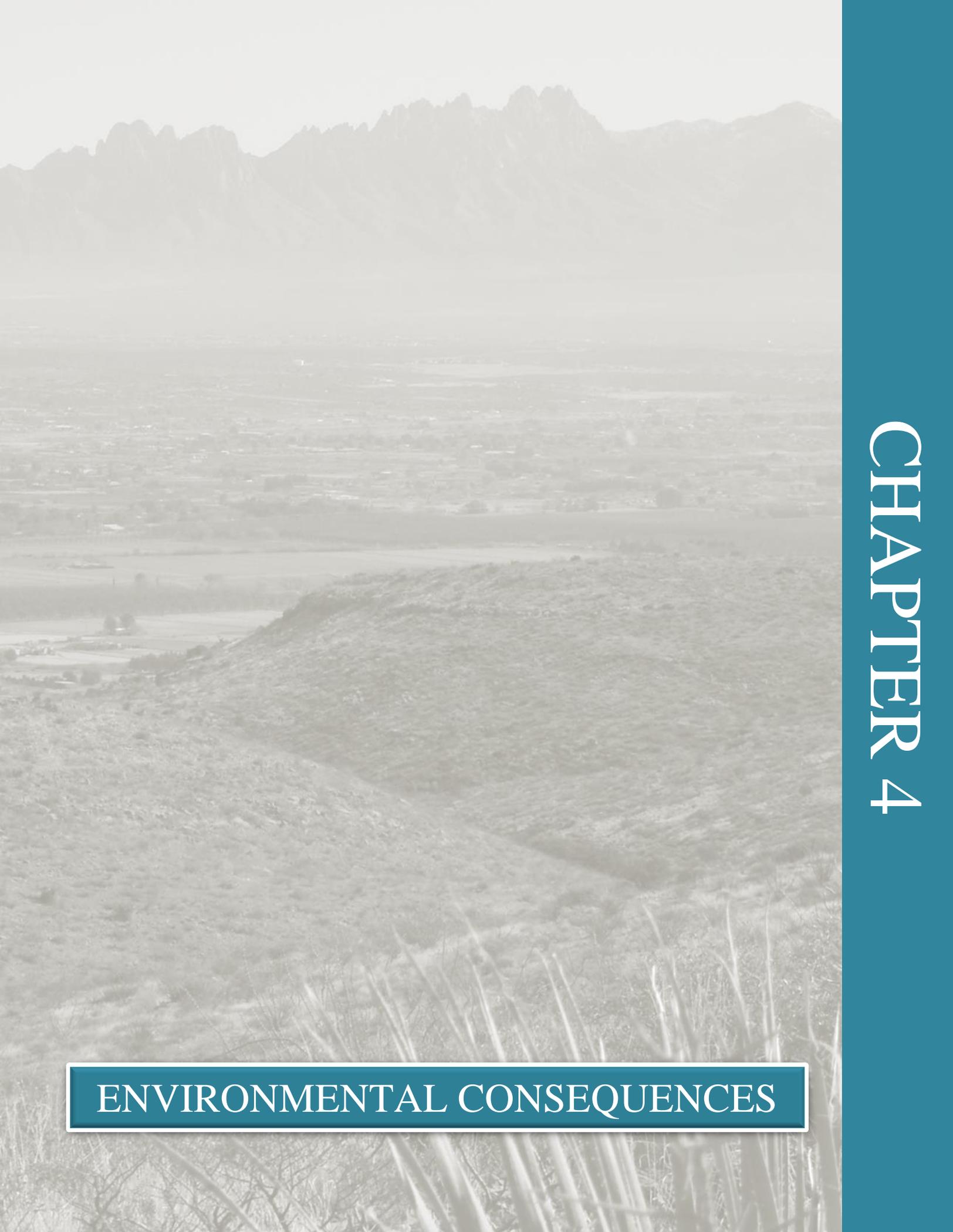
Typical wildlife species of the mixed shrub mountain habitat type include tree lizards, Chihuahuan whiptails, Great Plains skinks, rock rattlesnakes, canyon wrens, white-throated swifts, rock squirrels, javelina, and mule deer.

On the Monument, the mixed shrub mountain SHS is primarily made up of the limestone hills and hills ecological sites with several drainages throughout (See Map 3-9). Over time, the vegetative composition of the Monument has become shrub dominated (See Section: 3.2.16-Vegetation). Overall, the wildlife habitat on the Monument more closely resembles the Creosote Breaks SHS and does not have great species diversity.

3.2.20.3 Creosote Breaks

Vegetation in this SHS is dominated by creosotebush (*Larrea tridentata*) found on steep slopes and gravel ridges. This SHS experiences a high degree of soil erosion. Ecological condition and species diversity has not been identified for this SHS.

Typical wildlife species of creosote breaks include Couch's spadefoots, western whiptails, side-blotched lizards, western diamondback rattlesnakes, cactus wrens, Merriam's kangaroo rats, and black-tailed jackrabbits. Because of proximity to the Rio Grande, this is an important wildlife habitat.



CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

CHAPTER 4 ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

Chapter 4 analyzes the potential environmental impacts or effects of the proposed management actions explained in the four alternatives described in Chapter 2-Alternatives. The four alternatives describe different ways to manage the Federal land and resources within the Monument to achieve the goals and objectives and to meet the purpose and need for overall management of the Monument. The baseline used for the analysis is the current environment is described in Chapter 3-Affected Environment. Impacts are defined as changes that may occur to the existing environment as a result of the actions described in the alternatives. The impacts can be beneficial or adverse and can be projected for short-term or long-term. Short-term impacts are defined as impacts that may range from 0-5 years and long-term impacts may be permanent and may remain for the life of this planning document and beyond. Direct and indirect effects will be discussed together in the following sections followed by a cumulative effects section.

Table 4-1 Definition of Impact Terms

TABLE 4-1 DEFINITION OF IMPACT TERMS	
Direct	effects "... which are caused by the action and occur at the same time and place" (40CFR 1508.8(a)).
Indirect	effects "... which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth, and related effects on water and air and other natural systems, including ecosystems" (40 CFR 1508.8 (b)).
Cumulative	"...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions" (40CFR 1508.7).
Reasonable Foreseeable Development	Consist of actions that can be projected, with a reasonable degree of confidence, within a range of time that will impact a resource.

The BLM’s decisions about resource use and allocation within the Monument will be formed by the impact analysis in this Chapter. A comparison of these impacts is shown at the end of Chapter 2.

4.2 ANALYTICAL METHODOLOGY

The BLM interdisciplinary team members used their professional judgment, existing and current data, and current models and methodology for the analysis.

4.2.1 Analytical Assumptions

Several general assumptions were made to help guide the analysis by the resource specialists and also to inform the public. The assumptions listed below are Common to All Alternatives. Specific assumptions to individual resources or uses are detailed in the discussion of that resource.

- Management actions proposed in the alternatives apply to public land within the Monument. However, cumulative effects analyses consider potential actions by individuals, entities other than the BLM, the BLM, and actions in Doña Ana County or as further defined.

- Generally speaking, proposed actions that would increase visitor use, public access, and information regarding the Monument’s paleontological resources would result in an increase in the opportunity to locate, loot, and vandalize these resources. On the other hand, actions that would increase BLM presence at the Monument and inform and educate the public about the value of the Monument’s unique resources would serve to deter looting and vandalism.
- The alternatives would be implemented in accordance with all laws, regulations, and best management practices (BMPs). BMPs are located in Appendix E.
- Funding and staff will be available to implement any of the alternatives proposed in this Plan.
- Acreages were calculated using GIS technology; there may be slight variations in total acres between disciplines. These variations are negligible and will not affect analysis.
- All PTNM legislative directives are analyzed such as:
 - Continue to manage that portion of the Robledo Mountains Wilderness Study Area (WSA) within the Monument pursuant to FLPMA Section 603(c) and the BLM *Management of Wilderness Study Areas Manual 6330* until such time that Congress designates it as a Wilderness Area or releases it from further consideration.
 - Continue to manage that portion of the Robledo Mountains Area of Critical Environmental Concern (ACEC) within the Monument as an ACEC.
 - Subject to valid existing rights, any Federal land within the Monument and any land or interest in land that is acquired by the United States for inclusion in the Monument are withdrawn from, entry, appropriation, or disposal under the public land laws, location, entry and patent under the mining laws and operation of the mineral leasing laws, geothermal leasing laws and minerals materials laws.
- The RMP decisions would remain in effect throughout the life of the Plan. A plan amendment “shall be initiated by the need to consider monitoring and evaluation findings, new data, new or revised policy, a change in circumstances or a proposed action that may result in a change in the scope of resources uses or a change in the terms, conditions, and decisions of the approved plan” (43 CFR 1610.5).
- Current visitation to the Monument is estimated to be 10,000 to 15,000 people. Methodology for this is described in Recreation and Visitor Services in section 4.4.3 below.

4.2.2 Incomplete Information

Where possible, site-specific data are used, but not all resources or uses have complete data to the extent needed for this plan. The best available data is used in developing this RMP. For resources with incomplete information, the impacts are estimated to the best of our knowledge. The data available was considered adequate to make reasoned choices among alternatives.

4.2.3 Resources or Programs Where No or Negligible Impacts Would Occur

Resources and uses that are either not present or not likely to be impacted within the *Analysis Area*: American Indian Uses and Traditional Cultural Practices, Riparian Areas, Woodlands, Floodplains and Wetlands, Geology, Minerals, Hazardous Wastes, Prime or Unique Farmlands, Wild and Scenic Rivers.

Actions that are often associated with ongoing management are not addressed in this Chapter and include but are not limited to: Identification of fossil locations, research management actions, and maintaining and updating baseline data. These actions would be analyzed under the appropriate level of NEPA.

4.3 CHAPTER ORGANIZATION

Effects from different management alternatives that could be implemented under this RMP are considered on all resources/uses that are affected by that management action. Where applicable, the analysis addresses the Planning Issues that were brought forward from internal discussions and public scoping. These issues are: Paleontological Research, Recreation, Trails and Travel Management, Wildlife, Vegetation, Livestock Grazing, and Education and Interpretation.

The following impact discussions are organized alphabetically after the first four resources/uses, which are Paleontological Resources, Education and Interpretation, Recreation and Visitor Services, and Trails and Travel Management. Impact discussions are arranged as follows:

RESOURCE OR RESOURCE USE

Assumptions and Incomplete Information: In this section criteria used to consider the impacts are described, as are limitations or incomplete information.

Management Decisions with No Impacts to Resource: Here we describe the resource decisions that do no impact the analyzed resource.

Effects Common to All Alternatives: These sections address impacts from actions to be carried out, for that resource, under all alternatives (the impact is common to Alternatives A, B, C, and D).

IMPACTS OF THE ALTERNATIVES

ALTERNATIVE A Alternative A is the No Action Alternative. Impacts of implementing current management decisions, including those in the Omnibus Public Lands Bill and the existing *Mimbres RMP*, are analyzed here.

ALTERNATIVE B

ALTERNATIVE C

ALTERNATIVE D

Alternatives B, C, and D are the action alternatives and the impacts of implementing the actions under these alternatives are discussed here.

Chapter 4 concludes with a discussion of cumulative impacts. Cumulative impacts analyze the direct and indirect effects of the proposed action and alternatives together with the effects of the other actions that have a cumulative effect. The section considers other BLM actions, other Federal actions, and non-Federal (including private) actions (40 CFR 1508.7).

4.4 RESOURCE OR RESOURCE USE

4.4.1 PALEONTOLOGICAL RESOURCES

Assumptions and Incomplete Information: Since 1997, the BLM has issued Special Recreation Permits (SRPs) for commercial off-highway vehicle (OHV) related events in the Robledo Mountains. On average, the OHV events have 150 to 300 participants that utilize approximately 150 miles of routes within Doña Ana County. Beginning in 2008, the BLM established special stipulations to mitigate damage to exposed fossils and to monitor permitted events for comprehensive resource impacts.

Fossils have been collected from the Robledo Mountains for decades. This includes everything from trackway slabs for decorative construction to invertebrate fossils collected by school children on field trips. What effect this has had on the integrity of the paleontological resources or the information that may have been lost can never be known. Impacts on this resource can only be determined based on what is currently known and the proposed management actions for the future.

Paleontological Resources are identified as one of the resources, objects, and values for which the Monument was established and are defined as fossil resources that are predominantly Permian Age fossil material, but may be expanded to encompass subsequent discoveries. The scientific values are science-based research conducted on paleontological and geologic resources, especially Permian Age fossils and their geologic context.

Management Decisions with No Impacts to Paleontological Resources: Under all Alternatives, the following programs would have little or no impact to Paleontological Resources: Air Resources, Cultural Resources, Socio-Economic Conditions, Soils, Special Status Species, Vegetation, Visual Resources, Wildland Fire Management, and Wildlife.

Effects Common to All Alternatives:

Impacts from Paleontological Resources – Increased protection for fossil resources may lead to collectors searching for these specimens elsewhere. Stricter controls on science and research may discourage some paleontologists from studying the PTNM.

Research permits for collecting paleontological resources would continue to be evaluated and issued to qualified researchers. Continuing the research program could increase the amount of data and specimens available to researchers and our understanding of the geologic past, and this knowledge could change our way of thinking about the Permian Era. Specimens found by researchers may be exhibited and interpreted for the public allowing more people to see and understand these resources.

Impacts from Education and Interpretation – There would be opportunities to learn from the educational material on websites, educational talks, and at the local museum. Guided interpretive tours to the *Discovery Site* and other sites within the Monument would continue. This would allow for the public to experience and learn about the paleontological resources, which serves not only the objectives of education. It also serves to involve the community, which tends to increase support for the Monument.

IMPACTS OF THE ALTERNATIVES

4.4.1.1 ALTERNATIVE A

Impacts from Paleontological Resources – Casual collecting of common invertebrates occurs throughout the Monument. Since this activity is not monitored through a permit system or confined within a designated area, it is unknown to what extent these activities are impacting the paleontological resources, but paleontologists familiar with the Monument have expressed the opinion that casual collecting of common invertebrate fossils would not be detrimental to that paleontological resource. Casual and illegal collecting of scientifically significant ichnofossils or vertebrate fossils may be occurring as well, and this activity would impact research. Permitted scientific research and collecting would continue, so additional specimens would leave the Monument to be curated and/or exhibited in a repository or museum. Additional scientific information would be collected as scientists research the resources within the PTNM.

Impacts from Education and Interpretation – The lack of interpretation on-site in Alternative A limits what visitors can learn and view on their own at the Monument without a guided tour or interpretive talk.

Impacts from Recreation and Visitor Services – Under Alternative A, both non-permitted OHV use and special recreation permitted OHV events would occur within the Monument. Petroleum-based fluids (e.g., transmission fluid, power steering fluid, differential oil, etc.) sometimes leak during the course of a trail tour. Even though stipulations for OHV SRPs require mitigation to reduce the impacts from such fluid spills, there are no provisions to address similar fluid releases during non-permitted use. Petroleum-based fluid stains alter the appearance of trace fossils and plant carbon impressions contained in the red beds along the routes.

Impacts from Trails and Travel Management – Non-permitted and permitted use of motorized and mechanized vehicles would continue on 37.6 miles of trails and routes previously designated. Fossil resources are exposed on portions of the Tabasco Twister (Apache Canyon) and Patzcuaro's Revenge Trail (Branson Canyon) and documented in a 1994 monitoring report (Spencer L.; Hunt, A.; and Hotton II, N. 1994). These localities were confirmed again in an updated inventory during 2010.

The paleontological resources exposed on parts of the Tabasco Twister and Patzcuaro's Revenge Trails would continue to be subjected to the impacts of motorized vehicle use. Monitoring of these impacts has taken place yearly since 2007. Field reports, observations by BLM specialists, and data points document a gradual degradation of significant fossils and fossil beds. Fossils have been destroyed, marred, and displaced by the heavy weights of vehicles; forces exerted by tires; undercarriages scraping along fossil beds when crawling from one level to another; and dislodging equipment with crowbars. Other results are crushing, fracturing, tire scuff marks, and petroleum product staining of the red beds. The Robledo Member (Abo Tongue) sandstones hosting fossil specimens are usually fine-bedded and friable. The impact from the weight of an OHV is often sufficient to fracture or exacerbate the natural exfoliation of these thin compositional layers. Degradation of the exposed surface destroys visible fossil specimens, and compromises the integrity of the entire formation segment.

In addition to the direct impacts of OHV use on the exposed fossil beds, the indirect impacts of vehicles by-passing difficult features such as outcrops leads to disturbance of areas not previously driven on and subsequent damage to vegetation and the loosening of soils. This increases erosion and also can cause large rock slides that have been known to displace fossil layers. These landslides remove the fossils from their original context and reduce their value to scientific research.

Although the limestone block layers are generally more resistant to natural erosion, their natural bedding planes make them susceptible to fracturing along exposed seams from excessive pressure or weight. These are exactly the kind of forces imparted by OHV activity during climbing maneuvers. The results of these impact fractures are evident at the vertical obstacles located in the arroyos.

Impacts from Livestock Grazing – Under Alternative A, livestock grazing would continue. There is potential for livestock to trample paleontological resources, although unlikely, due to the location of the paleontological resources. A majority of the paleontological resources are located on the sides of steep hills or arroyos. Those resources on level ground would have the potential to be stepped on and possibly cracked or scuffed by livestock.

Impacts from Special Designations – Under Alternative A, 720 acres of the Monument were previously designated as the Paleozoic Trackways RNA. The RNA was designated for protection, research, and interpretation of paleontological values. The impact from continuing the designation of the Paleozoic Trackways RNA is a duplication of most management prescriptions from the Monument Legislation. Management prescriptions such as retain all public land, limit vehicle use to designated roads and trails, and withdrawal from mineral entry are also stated in the designating Legislation. These duplicated management prescriptions protect fossil resources by limiting actions that would have physical impacts on them.

The PTNM boundary also overlaps 789 acres of the Robledo Mountains ACEC. The ACEC is 9,190 acres and extends from its southern boundary within the PTNM north into the Robledo Mountains. The ACEC meets the relevance criteria of having significant paleontological values. Management prescriptions to protect and conserve fossils are similar to those in the RNA. The ACEC designation reinforces the need to protect and maintain the paleontological resources.

4.4.1.2 ALTERNATIVE B

Impacts from Paleontological Resources – Under Alternative B, casual collecting of common invertebrate and plant paleontological resources would not be allowed. Only BLM permitted collecting in association with scientific research would be allowed. This reduces the likelihood of scientifically significant fossils being removed illegally from the Monument and scientific information from those fossils being lost to the public and to science.

Impacts from Education and Interpretation – Under Alternative B, education and interpretation of paleontological resources would occur mostly offsite except for some self-guided interpretive activities and on-site interpretive programs. The fossils resources would remain in-situ for ongoing and future scientific research and would not be available for on-site public education and interpretation.

Impacts from Recreation and Visitor Services – Under Alternative B, SRPs would not be authorized within the Monument. This would eliminate any organized group activities other than those sponsored by the BLM. This would eliminate the impacts on the fossils from SRPs as described in Alternative A.

Impacts from Trails and Travel Management – Under Alternative B, the Monument would be closed to all motorized and mechanized use except administrative and emergency motorized use. Closing the PTNM to motorized and mechanized recreational activity would eliminate damage to fossils, as described in Alternative A, and would conserve the paleontological resources in-situ. This would contribute to the stabilization of both the fossils and their associated geological contexts. Closure of the PTNM to motorized and mechanized recreational use would remove access to PTNM resources by these recreational user groups, reduce public access, and would reduce, but not eliminate the possibility for unauthorized collecting of paleontological resources. Closure of trails to vehicle use would eliminate a

convenient, but not unique, source of recreational opportunities for the OHV and mountain bike user groups. Similar recreational venues may be found in the local Doña Ana Mountains, the Caballo Mountains, and the Las Uvas Mountains. Currently, there are no designated trail systems for either OHV or mountain bikes in these other ranges, but it is conceivable that challenging rock crawling opportunities for both motorized and mechanized vehicles could be authorized in these adjacent areas.

Trail use on foot or horseback would still allow the public to access paleontological resources.

Impacts from Livestock Grazing – Under Alternative B, livestock grazing would not be allowed; therefore, the risk of paleontological resources being damaged by livestock would be eliminated.

Impacts from Special Designations- Research Natural Area – The designation of the Paleozoic Trackways RNA would be removed, and the land would be managed under the prescriptions from the PTNM RMP. Conservation of the fossil resources would be achieved and a redundant management designation would be eliminated.

4.4.1.3 ALTERNATIVE C

Impacts from Paleontological Resources – Under Alternative C, fossil localities would be assessed to determine the best management of those sites. Such assessments would consider the importance, value, and quality of documented localities and would be used to determine the most suitable use for these localities. Some localities would be developed for interpretation and education while others would be preserved for research.

Impacts from Education and Interpretation – Under Alternative C, in addition to the off-site programs mentioned under Alternative A, pedestrian trails with kiosks and wayside exhibits and a visitor contact station would be developed, which would provide an education focusing on the paleontological resources in an outdoor setting. These developments would increase the public's understanding and appreciation of these resources. Interpretation provides the public with information that could raise their awareness of the sensitivity and importance of the resource, thereby increasing stewardship and appreciation. While this enhanced appreciation should deter theft and vandalism of the resources, increased visitor use could also increase the opportunity and occurrence of such activities. However, directing the public to appropriate locations for interpretation which are not as scientifically sensitive may keep them from seeking out scientifically-sensitive locations because their curiosity is fulfilled by the experience of being in the actual location of the resource and having the extra benefit of interpretation.

Impacts from Recreation and Visitor Services – Under Alternative C, on-site visitor facilities such as a visitor contact station, toilets, shade shelters, information kiosks, trail markers, and picnic sites would be developed. This would probably attract more visitors to the Monument. With increased visitation, more people would be able to experience the resources in a natural setting within the Monument. Increased visitation would increase the risk of theft and vandalism of the paleontological specimens by exposing fossil-bearing locations to the visiting public. The impacts from allowing SRPs would be the same as mentioned under Alternative A.

Impacts from Trails and Travel Management – Under Alternative C, within the Monument boundaries, 100 percent of the Tabasco Twister Trail (2.7 miles), and 100 percent (1.8 miles) of Patzcuaro's Revenge Trail would be closed to motorized and mechanized vehicle use (see Map 2-3). In addition, 100 percent (0.4 miles) of the Cayenne Crawler Trail would be closed to motorized and mechanized use to eliminate access from the south to Patzcuaro's Revenge Trail. Fossils located within these arroyos would be protected from these types of impacts as described in Alternative A.

For activities which do not require an SRP, a non-fee day-pass system would be established for motorized and mechanized use of designated routes. These passes would include educational information about the paleontological resources and maps of routes that are open or closed to motorized and mechanized travel.

Routes would be maintained or improved as long as sensitive resources are not impacted. Route improvement and maintenance would allow greater numbers of visitors to enjoy the interior portions of the Monument. This enhanced access would, presumably, lead to a commensurate heightened sense of public ownership and responsibility for the resources. Conversely, the easier access could lead to increases in inappropriate behavior such as littering, vandalism, and theft of fossil resources.

Impacts from Livestock Grazing – Under Alternative C, livestock grazing would continue within the Monument. If, through the Monument Monitoring Plan, it is determined that livestock are impacting the fossil resources, those areas would be fenced off from livestock to remove the direct impact. Grazing in areas not enclosed by a fence would have the same impacts on the resources as Alternative A.

Impacts from Special Designations – Impacts are the same as described under Alternative B.

4.4.1.4 ALTERNATIVE D

Impacts from Paleontological Resources – Impacts would be the same as described in Alternative C, except that limiting collection of common invertebrate fossils to BLM authorized programs would allow opportunities for discovery of fossils in an educational and recreational setting.

Impacts from Education and Interpretation – Under Alternative D, the impacts from all off-site activities would be the same as described in Alternative C except that an on-site visitor center would replace the visitor contact station and a motorized interpretive tour would be created. The visitor center and the motorized interpretive tour may appeal to a larger audience, so more people would learn about the resources located within the Monument. Education programs would lead to improved stewardship of the site through an increased appreciation of the resources. An on-site visitor center would present a greater agency presence which could help to deter vandalism and theft of fossils.

Impacts from Recreation and Visitor Services – Under Alternative D, development of recreational facilities such as a campground, primitive camping areas, toilets, shade shelters, information kiosks, trail markers, picnic sites, trails, and a visitor center would probably increase the number of visitors to the PTNM. This increase in facilities and visitors may increase the potential for looting and destruction of paleontological resources. The impacts from allowing SRPs would be the same as those discussed for Alternative A except that under Alternative D, locations allowed for OHV SRPs would be limited. The routes that are known currently to have exposed fossils would not be available for motorized or mechanized use under a SRP, eliminating damage to the exposed fossils.

Impacts from Trails and Travel Management – Impacts would be the same as under Alternative C except that the Cayenne Crawler Trail would be open for motorized and mechanized use and modified to allow access to the western portion of Patzcuaro's Revenge Trail (Map 2-4). This additional mileage would not impact the fossils in the closed portion of Patzcuaro's Revenge Trail. The absence of a pass system could result in reduced public awareness of the rules and regulations.

Impacts from Livestock Grazing – Impacts would be the same as under Alternative A.

Impacts from Special Designations – Impacts would be the same as under Alternative B.

4.4.2 EDUCATION AND INTERPRETATION

Assumptions and Incomplete Information: Off-site interpretation and educational opportunities already exist and would be expected to continue under all Alternatives. These include classroom and civic group talks and programs given by BLM staff and partners, the exhibits and programs offered at the City of Las Cruces Museum of Nature and Science (MoNaS), which opened in November 2012. The BLM has partnered with the City of Las Cruces in the development of the museum exhibits concerning the Trackways through an Assistance Agreement. Another Assistance Agreement with the City involves the development of additional exhibits and facilities at the MoNaS to encourage and facilitate visitation to the PTNM and other public land. Programs and educational materials will be coordinated between the BLM and the MoNaS, and a shared docent program will be developed.

It is assumed that in all Alternatives, except Alternative B in which access is limited to pedestrian traffic, visitation to the Monument would increase annually (USDI BLM 2013).

Two travelling trunk exhibits have been developed by the New Mexico Museum of Natural History and Science. They are available for use by other museums and educational facilities around the State. Both are currently in use at local venues. Travelling suitcase/school kits and curricula have been developed for outreach to the public schools and will be used for training staff and volunteers in conducting tours.

Education is identified as one of the resources, objects, and values for which the Monument was established and is defined as educational and interpretive opportunities on the Permian fossils.

Management Decisions with No Impacts to Education and Interpretation: Under all Alternatives, the following programs would have little or no impact to Education and Interpretation: Air Resources including Air Quality and Climate Change, Cultural Resources, Livestock Grazing, Socio-Economic Conditions, Soils, Special Designations, Special Status Species, Vegetation Management, Visual Resources, Water Resources, Wildland Fire Management, and Wildlife.

Effects Common to All Alternatives:

Impacts from Education and Interpretation – The off-site interpretation and education management actions are the same for all Alternatives. Interpretive material would be created via multiple media and so education could occur off-site. The public can learn about the Monument's resources at presentations, talks, museum exhibits, websites, and videos but this type of interpretation would not have the backdrop of the Monument to support educational messages. The number of visitors to the Monument, the MoNaS, and to presentations on the Monument may increase over time.

Guided tours to specific sites would offer an excellent interpretive opportunity to participants. Interaction with an interpretive tour guide usually enriches the experience because a wealth of detail can be conveyed verbally while the resources are visually available. Participants can ask questions to further their knowledge and awareness of the subject matter against a natural background that provides further subject matter for interpretation. The personal interaction provided by a live tour is probably more effective in promoting stewardship from participants. Self-guided touring and exploring is also available under all Alternatives, but under Alternatives A and B, it would be very limited in terms of interpretation and education because the experience would be unassisted by directional signs and interpretive exhibits.

Impacts from Lands and Realty – Under all Alternatives, acquisition of public access easements from willing sellers would be beneficial to Education and Interpretation. Easements would provide the agency and the public legal access, which would facilitate activities such as walking and motor tours.

IMPACTS OF THE ALTERNATIVES

4.4.2.1 ALTERNATIVE A

Impacts from Paleontological Resources – Under Alternative A, the Paleontology program would continue to permit and support research. Scientific research provides baseline information which is used to develop meaningful interpretive and educational products and programs. The continuation of paleontological research would enhance and benefit the interpretive materials already available and could lead to the discovery of new specimens that could be used for exhibits (either authentic or cast replica), and the resulting information obtained from the study of such fossils would enhance existing programs. In interpreting the fossil resources of the Monument, great care would be taken to interpret and educate without causing any loss of scientific information or undue degradation of the resource. Interpreters would work closely with the paleontologists to choose appropriate specimens for off-site museum exhibits, to possibly develop exhibits located adjacent to the PTNM, and to choose appropriate interpretive destinations within the Monument. Other sites would be protected from visitation due to concerns over theft and vandalism.

Casual collecting of common invertebrates and plant paleontological resources in the PTNM has been occurring for years and is still occurring today. This is a legal activity, unlike collecting archaeological artifacts. Families and school groups have enjoyed finding and collecting small fossils and, at least in the case of the school groups, this activity is educational. Even in an unstructured context, children's imaginations are sparked by the remains of life from long ago and many of them pursue this interest on their own. However, a more structured approach (signing, making information readily available) to casual collecting would be preferable and would possibly result in fewer impacts to resources.

Impacts from Education and Interpretation – Under Alternative A, the plans for Education and Interpretation are primarily off-site. It is assumed that off-site venues within the local community would include museums, the BLM and other agency facilities, and public schools. These off-site venues would accommodate information and interpretive talks/presentations, and classroom presentations. For people not capable of accessing the resources in an outdoor setting, interpretive and educational programs in a museum or classroom setting could increase appreciation and understanding. Museum and educational experiences could lead to an enhanced visit for those people capable of visiting the PTNM. BLM-led tours to the *Discovery Site* and other sites would continue. Currently, there are no on-site interpretive facilities or opportunities within the PTNM such as exhibits or kiosks, except for a sign at the *Discovery Site*. There are no formal trails with signs to lead visitors to any location within the PTNM that has interpretable resources. This situation does not allow for any interpretation or education to occur in the Monument unless one is on a guided hike. This limits the opportunities for the public to learn on their own about the resources available in the Monument.

Impacts from Recreation and Visitor Services – Under Alternative A, there are no plans to build visitor facilities, and SRPs are allowed. On-site, self-guided interpretation and education would be limited to the *Discovery Site* which only offers an informal trail with minimal signage. Guided pedestrian tours would require hiking overland (not on a trail) to bring visitors to potential interpretive destinations.

Impacts from Trails and Travel Management – The existing routes (approximately 37.6 miles) are available for use, but no management actions are planned to improve the existing routes or add new trails and routes under Alternative A. Therefore, public education and interpretation would have to be accomplished off-site at museums, on areas adjacent to the PTNM or on-site through guided tours using informal trails and designated routes for access. Opportunities for expanding the MoNaS experience to the Monument itself, via organized tours (motorized or pedestrian), would be limited by the lack of trails

and interpretive exhibits. This would limit the on-site interpretation and educational use of the Monument.

Impacts from Lands and Realty – If non-Federal minerals were extracted, the BLM would lose the opportunity to interpret the resources located on that Federal surface.

Impacts from Lands with Wilderness Characteristics – Under this Alternative, 576 acres are identified as having wilderness characteristics. This does not impact Education and Interpretation because Alternative A does not include plans for construction of new trails or interpretive exhibits within the Monument. Guided tours in this area would still be possible under this Alternative.

4.4.2.2 ALTERNATIVE B

Impacts from Paleontological Resources – Under Alternative B, all paleontological resources would be conserved for scientific research which would have the same impacts as Alternative A. Casual collecting of common invertebrates and plant fossils would not be allowed. This would be a minor impact to Education and Interpretation because although collecting invertebrates may enhance interpretation, it is not essential for a meaningful experience.

Impacts from Education and Interpretation – Under Alternative B, the BLM would develop interpretive materials for self-guided activities and programs for guided tours. This could increase the number of visitors to the Monument and could increase stewardship towards the Monument and would increase visitor's knowledge about the PTNM.

Impacts from Recreation and Visitor Services – Impacts would be very similar to those described under Alternative A, however; there would be no on-site interpretive facilities or opportunities within the PTNM such as exhibits, kiosks or signs. Without formal trails and visitor facilities, public education and interpretation would have to be accomplished off-site at museums, on areas adjacent to the PTNM, or on-site through guided tours using informal non-motorized routes and self-guided activities. Self-guided interpretive activities would lead visitors to locations within the PTNM that have fossil resources. Improving access to the *Discovery Site* would not be possible under Alternative B thus visitors would not receive enhanced interpretation and education. Restricting casual collecting would lessen opportunities for the public to gain knowledge and hands-on opportunities with paleontological resources.

Impacts from Trails and Travel Management – Under Alternative B, the current system of routes would be closed to motorized and mechanized vehicle use. As a consequence, those routes would be unavailable for motorized interpretive tours, which could reduce both educational and interpretive opportunities. Opportunities for expanding MoNaS led tours, would be limited to pedestrian tours only and would be further limited by the lack of trails and interpretive exhibits. Hiking tours could be conducted along the existing routes; however, most of those routes do not lead to sites suitable for interpretation. Hikes across rugged terrain could reduce visitor participation in educational and interpretive activities.

Impacts from Lands and Realty – Under Alternative B, acquiring the non-Federal mineral estate would further protect the Monument from incompatible uses, thus protecting the values which the Education and Interpretation program would be founded upon.

Impacts from Lands with Wilderness Characteristics – Under this alternative, the 576 acres identified as Lands with Wilderness Characteristics would not be available for new trail construction or

exhibit installation; however, in Alternative B, there would be no plans for trails or exhibits. Guided and self-guided tours would still be possible.

4.4.2.3 ALTERNATIVE C

Impacts from Paleontological Resources – Under Alternative C, identified paleontological localities would be assessed for their educational, scientific, or interpretive values. This would facilitate the appropriate selection of sites for interpretive development and public viewing, and designate areas more appropriate for scientific research. Through assessment and data recovery processes, sites which have been determined to be non-sensitive or low-sensitive by a professional paleontologist, but having interpretive value, would be chosen for public interpretation. These sites may contain resources which are redundant, damaged or otherwise do not offer scientifically important data, or data that has already been recovered.

Impacts from Education and Interpretation – Under Alternative C, pedestrian trails with kiosks and exhibits would be developed. Increased amounts of interpretive material and opportunities would bring complicated, complex, and often obscure aspects of life on this planet to the public in a way that is easily understood. Effective interpretation enhances understanding and imparts the wonder and joy that the natural and cultural worlds contain, but is firmly based on the details of life that are often discovered only by careful scientific research and analysis. These programs are usually beneficial because they can help foster the public's appreciation and understanding, which leads them to want to protect and conserve these valuable resources. Children especially begin to develop deeper understandings of biology, geology, and other sciences and carry this into adulthood which leads to enhanced feelings of responsibility as a citizen and member of society.

Under Alternative C, exhibits for a visitor contact station and other sites would be developed to provide the opportunity for greater understanding of the paleontological resources through on-site venues. With on-site development of interpretive sites, visitors to the area would experience the resources in an outdoor setting, which provides context and could possibly increase the understanding of the resources. Through increased understanding, a greater appreciation for the tracks and trace fossils in the Monument might be developed by those visiting the PTNM. Increased understanding of the resources could lead to less trash dumping, vandalism and theft of paleontological resources.

Impacts from Recreation and Visitor Services – Under Alternative C, on-site facilities such as shade shelters, information kiosks, a trail systems with trail markers and interpretive exhibits, and a visitor contact station would be developed. Interpretive exhibits would inform the visitor about a variety of interpretive themes including the Permian environment, the existence and behavior of extinct animals, how the trackways inform scientists and the evolutionary development of reptiles and amphibians, to name only a few. Interpretive facilities would draw more visitors to the Monument, which increases the interpretive audience. A visitor contact station would serve the public by offering a sheltered location in which to hold interpretive and educational programs, possibly replica specimens, interpretive exhibits, printed materials, and possibly a sign-in kiosk. This would be very beneficial to interpretation and education because such a facility would greatly enhance the visitor's experience by offering exhibits and printed material that inform about the resources of the Monument, furthering the BLM's educational and interpretive goals. Kiosks and signing establish a management presence and this serves both the agency and the members of the public in various ways. Visitors feel more secure about an area when trails are marked and safety information is readily available. Visitors may better appreciate the public land when they are provided information. Establishing a sense of ownership in the visiting public serves to protect the public land from vandalism and theft. The agency presence also is a deterrent to these destructive

activities especially when incidences of vandalism are quickly addressed, showing that an area is not being ignored or neglected.

Impacts from Trails and Travel Management – Under Alternative C, designated trails could be developed to guide the visitor to geological and paleontological localities that illustrate interpretive concepts. Eighty-nine percent of the existing routes in which motorized or mechanized vehicle use is allowed would remain open to this use. Educational material could be included in the no-fee day-use pass that would be required for motorized and mechanized vehicle use. Formal trails and an effective interpretive/education program would assist in protecting sensitive resources by offering suitable locations that are fairly easy to access. This would satisfy the visitor's interest in viewing and experiencing exciting resources, and may also keep those visitors from seeking out locations that merit protection from the possible abuses associated with public visitation. The routes that are open under Alternative C could be used for motorized or non-motorized self-guided and guided tours by the BLM, docents, or BLM's partners.

Impacts from Lands and Realty – Public access easements would be acquired from willing sellers which would provide additional legal access points for portals to interpretive trails leading to exhibits or destinations. Acquiring the non-Federal mineral estate on lands within and adjacent to the Monument would be advantageous since the acquisition would further protect the Monument from incompatible uses, thus protecting the values which the Education and Interpretation Program would be founded upon.

Impacts from Lands with Wilderness Characteristics – Under Alternative C, 253 acres would be managed as Lands with Wilderness Characteristics (see Map 2-7). These lands would be limited from development as described under Alternative B. However, the lands outside of those managed for wilderness characteristics, such as the *Discovery Site*, would be available for the development of interpretive trails and exhibits, which would greatly increase the interpretive opportunities. Guided tours in this area would also be possible.

4.4.2.4 ALTERNATIVE D

Impacts from Paleontological Resources – Under Alternative D, the effects from the Paleontology management actions would be similar to those described under Alternative C, except that limited collecting of common invertebrate fossils without a permit would be allowed only in conjunction with BLM-approved interpretive or educational programs or activities. This would be an effective teaching tool for school-age children that could have far-reaching impacts for their educational development. Finding a fossil is an exciting event and being able to keep it provides a physical reminder of the experience.

Impacts from Education and Interpretation – The effects from the Education and Interpretation management actions would be similar to those described under Alternative C. Under D, a visitor center (effects described below) and a motorized interpretive tour would be developed. These additions would probably increase the number of visitors to the Monument since a visitor center would be universally accessible and the motorized vehicle tour would not be dependent on one's physical ability or vehicle's ability. A visitor center presents many additional and expanded opportunities and would be very beneficial to interpretation and education. Programs involving both the indoor exhibits and the outdoor exhibits could be crafted to provide a cohesive and consistent interpretive message. Visitors of all capabilities could experience the Monument within the visitor center which would be placed within the Monument and possibly close to outdoor exhibits; this would increase visitation. A motorized tour would bring the backcountry experience to more people and would bring more people to interpretive destinations, significantly increasing the educational value of the tour.

Impacts from Recreation and Visitor Services – The effects are the same as described under Alternative C with the additional actions of enhanced recreational opportunities. A visitor center would offer exhibits and activities devoted entirely to interpreting the resources of the PTNM, which would be a unique museum experience. This facility would offer the opportunity for educational programs to be conducted on-site and would assist in accommodating school and public groups visiting the PTNM. It also would serve as the launching point for many of the front-country activities such as accessing the formal trails that bring the visitor to interpretive destinations, such as in-situ fossil exhibits developed for public visitation. This would increase the number of visitors and possibly increase the stewardship of the Monument.

Impacts from Trails and Travel Management – Under Alternative D, despite the closure of certain roads used for rock-crawling, pedestrian interpretive and educational activities on these routes would still occur. New routes could be developed to enhance the visitor's interpretive and educational opportunities. For instance, if a paleontological location is selected for interpretive development but is inaccessible, this alternative allows the development of a non-motorized or motorized route to facilitate access. This would allow for more visitors to access in-situ interpretive sites.

Impacts from Lands and Realty – The impacts from Lands and Realty would be the same as discussed under Alternative C.

Impacts from Lands with Wilderness Characteristics – Under Alternative D, since no lands outside the WSA would be managed to maintain wilderness characteristics, lands with wilderness characteristics would present no restraints to developing interpretive trails and exhibits.

4.4.3 RECREATION AND VISITOR SERVICES

Assumptions and Incomplete Information: Under Alternatives C and D, a visitor contact station and a visitor center were analyzed; however, there is no one obvious location for these facilities and the analysis is based on the opportunity to explore several locations inside and bordering the Monument. Any future BLM decisions for these facilities would consider legal and physical access, ecological impacts, and proximity to paleontological sites, and recreational trails.

Under Alternative C, a visitor contact station is analyzed. The visitor contact station would be a minimal facility that is ABA (Architectural Barriers Act of 1968) accessible. It could be a large shade structure (approximately 50 feet by 50 feet) with a set of wayside exhibits and panels. A parking area for 15 cars would cover about 20,000 square feet of surface. Pit toilets would be installed. The footprint for the contact station, parking lot, wayside exhibits and toilets would be about 1 to 1½ acres. The estimated range of cost for this type of infrastructure would be approximately \$240,000.

The visitor contact station may or may not be staffed by BLM employees at regular times and could be used to hold interpretive programs. It would be a place where visitors can learn about the Monument, feel like they have had contact with the resources, and learn why it was made into a National Monument.

Under Alternative D, a visitor center is analyzed. A visitor center would be an ABA accessible building that would be staffed with regular hours of operation. It would have paleontological and geological specimen exhibits and interpretive displays. The facility would have indoor bathroom facilities, electricity, and plumbing. The footprint of this building and parking lot would take up about 1½ to 2 acres. Cost estimate for a 2,500 to 3,000 square foot building, a paved park area for 30 cars, and a maintained gravel road, is approximately \$2,000,000.

A visitor center would require a greater number of staff members to maintain the facilities and manage the visitor center with regular hours of operation.

Under the authority of the Federal Lands Recreation Enhancement Act (REA), the BLM uses the Special Recreation Permitting system to satisfy recreational demands within allowable use levels in an equitable, safe, and enjoyable manner while minimizing adverse resource impacts and user conflicts for all public land. All SRP applications will be analyzed with an elevated consideration of protecting the Monument Objects. Environmental Assessments (EAs) have been completed for previous SRPs and events held within the Monument. As a part of the SRP process, BLM monitors SRP events, completes post-event assessments, and evaluates whether the events adhered to the Legislation. Further studies have not been completed to assess the number of OHV SRPs that could be issued annually while still protecting the Monument's fossil resources.

Vehicle counters have been placed at three major access points into the Trackways. One of the counters placed at a major access point to the Monument, near the eastern boundary, counted over 10,000 vehicle crossing it in a year. However, the exact number of visitors then crossing into the Monument is difficult to determine, because there are several other routes for vehicles to enter and leave the Monument. The accepted conversion for visitor trips based on vehicle counts is 2.5 visitors per car. The BLM estimates that somewhere between 40 to 60 percent of the vehicles that crossed the vehicle counter actually entered into the Monument proper, or 10,000 to 15,000 people. Visitors entering the Monument as hikers or on mountain bikes were not counted.

It is assumed that in all Alternatives, except Alternative B in which access is limited to pedestrian traffic, visitation to the Monument would increase annually (USDI BLM 2013). Under Alternative B, with the

elimination of motorized and mechanized use, the number would probably drop to less than current visitation. If under Alternative C a visitor contact station, interpretive facilities, and recreational trails were put in, it is assumed visitation would increase substantially annually. If under Alternative D, a visitor center is put in along with interpretive facilities and recreational trails, it is assumed visitation would increase more than in the other alternatives.

Recreation is identified as one of the resources, objects, and values for which the Monument was established. The specific recreational resources managed under this category are those which relate to the enjoyment, appreciation, and protection of the fossil resources and their geologic context. Other types of recreational uses (for example, OHV use, camping, and mountain biking) are allowed to the extent that they do not conflict with management of Paleontological Resources.

Management Decisions with No Impacts to Recreation and Visitor Services: The following resources or uses have no or little impact on Recreation and Visitor Services: Cultural Resources, Livestock Grazing, Special Designations, Special Status Species, Vegetation Management, Visual Resources, and Wildlife.

Effects Common to All Alternatives:

Impacts from Lands and Realty – Under all Alternatives, the BLM would continue with the current management prescription for acquiring legal public access.

IMPACTS OF THE ALTERNATIVES

4.4.3.1 ALTERNATIVE A

Impacts from Paleontological Resources – Under Alternative A, casual collecting of common invertebrates and plant paleontological resources would be allowed to continue. Paleontologists familiar with the Monument have expressed the opinion that casual collecting of common invertebrates would not be detrimental to the resources. Under the Paleontological Resource Protection Act, this type of collecting is allowed.

Impacts from Education and Interpretation – Under Alternative A, the BLM would continue interpretation partnerships with museums and other entities to develop interpretive materials for programs and events and have tours led to the fossil sites. The Monument's paleontological resources are very subtle and challenging to detect. On-site tours and interpretive programs would facilitate the visitor experience and increase their understanding of the resources within the Monument. The lack of on-site interpretive and educational exhibits and facilities would limit visitors' abilities to intellectually and emotionally connect with the fossil resources of the Monument.

Impacts from Recreation and Visitor Services – Under Alternative A, there are no plans to develop visitor facilities within the Monument. The Monument's desert environment is prone to extreme heat in the late spring, summer and early fall. This environment combined with the lack of comfort facilities in and around the Monument would likely deter or limit family groups, school groups and other visitors who might be in need of bathrooms and shade shelters. Lack of development and facilities would increase the opportunity for visitors seeking a recreation experience in a less crowded and more natural setting. Under this Alternative, visitor use is expected to decrease. Lack of facilities and developed access under this Alternative may deter visitors with certain kinds of disabilities or limit their recreation opportunities. Over time, the absence of toilet facilities may create challenges associated with managing human waste.

Discharge of firearms is allowed under Alternative A. Hunters would continue to use the *Planning Area* in accordance with New Mexico Department of Game and Fish regulations. Target shooters would continue to use the Monument for their activities. However, the BLM acknowledges that there is a safety risk of inviting the public and researchers to the Monument and continuing to allow recreational target shooting throughout the same area within Alternative A. Target shooting is a safety concern for recreationists, tourists, researchers, BLM staff and volunteers. The issue arises when recreational shooters utilize the area for the discharge of firearms concurrent with public visitation to the Monument, as well as BLM-sponsored educational events. The BLM events include guided educational programs for local elementary, middle-school and high schools, as well as other guided hikes by the BLM and other entities. The events may take place adjacent to areas being used for target shooting, and the BLM has documented near misses as well as an unwillingness by target shooters to cease while school busses are unloading or other visitors are beginning their hikes. Students, law enforcement officers, and other visitors have been in close proximity to bullets shooting by.

The BLM evaluated target shooting in certain areas of the PTNM in terms of public safety. The Las Cruces District Office analyzed industry standards for predictable projectile safety areas (Appendix G). From this data, the BLM concluded that a ½-mile safety zone (no target shooting) around areas where people congregate within the Monument is appropriate. Consistent with this analysis, the BLM applied the same ½-mile safety buffer zone around those locations within the Monument where people congregate such as paleontological resources (researchers, BLM staff, and tourists, etc.) and routes.

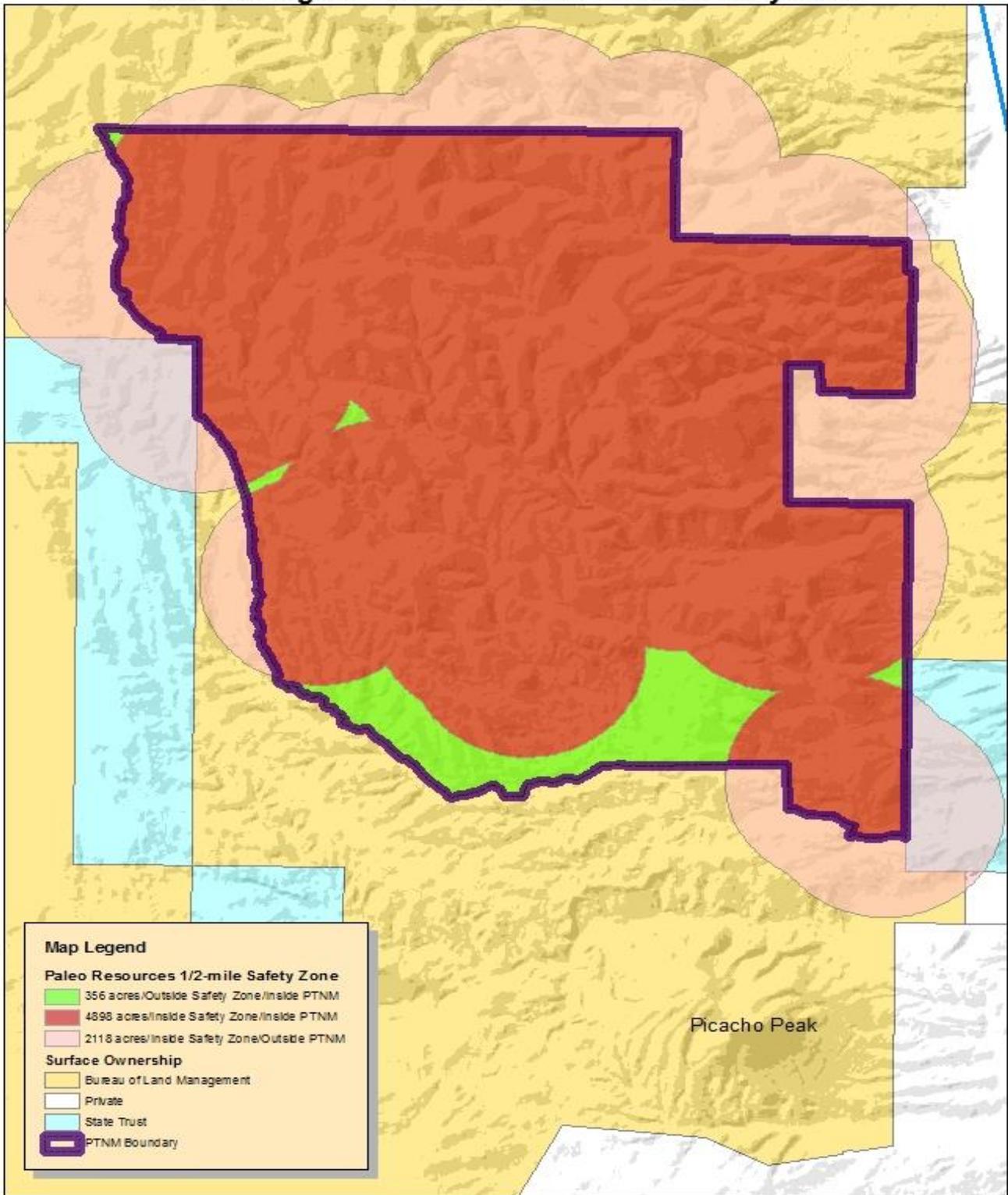
Within the Monument, visitors and researchers often congregate near the paleontological resources. Further, the BLM authorizes scientific exploration and academic research in the PTNM and surrounding areas. The researchers are working throughout the day, often crouched in a low-visibility position at the many paleontological sites located within winding arroyos. This can leave the researchers and other members of the public screened from above, or within, the arroyos. Unintentional bullet ricochets or misfires would present an unnecessary risk to public safety in the area.

This mapping exercise reveals that the safety buffer zones associated with protection of public access to paleontological sites incorporates 93 percent of the Monument. Approximately 356 acres, or 7 percent, of the Monument near the southern boundary lies outside the ½-mile buffer zones associated with paleontological sites. (In conformance with the Paleontological Resources Protection Act, paleontological sites are not displayed on the associated maps.)

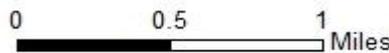
Another set of locations in the Monument where people congregate are designated recreational routes. The area within the Monument includes 32 miles of designated off-highway vehicle (OHV) trails having National recognition as prime and challenging trails for extreme off-roading and rock crawling enthusiasts. These trails are the destination for recreation activity rather than access routes to recreation destinations beyond. The OHVs move slowly over extended periods of time, with people often congregating and walking alongside the vehicles. Recreational target shooting would put these visitors at unnecessary risk. The BLM applied a ½-mile buffer around designated recreational routes in Alternative A. Map 4-2 shows 67 acres, or approximately 1 percent of the Monument lies outside of the ½-mile safety zones associated with designated recreational routes.

The ½-mile buffer zones associated with paleontological resources (Map 4-1) and designated routes (Map 4-2) were merged to determine where recreational shooting could be considered safer in the Monument. However, these two sets of safety zones cover the entire Monument (Map 4-3), indicating that there are no areas in the Monument that are more than ½-mile from areas of high public use where recreational target shooting could take place safely. In addition to areas where the public congregate, the soil surface throughout the Monument has a high rock content (see Soils section in Chapter 3) which would further increase unnecessary risk to visitors from the potentially increased number of ricochets.

**Map 4-1 Recreation and Visitor Services
Paleontological Resources with 1/2-mile Safety Zone**

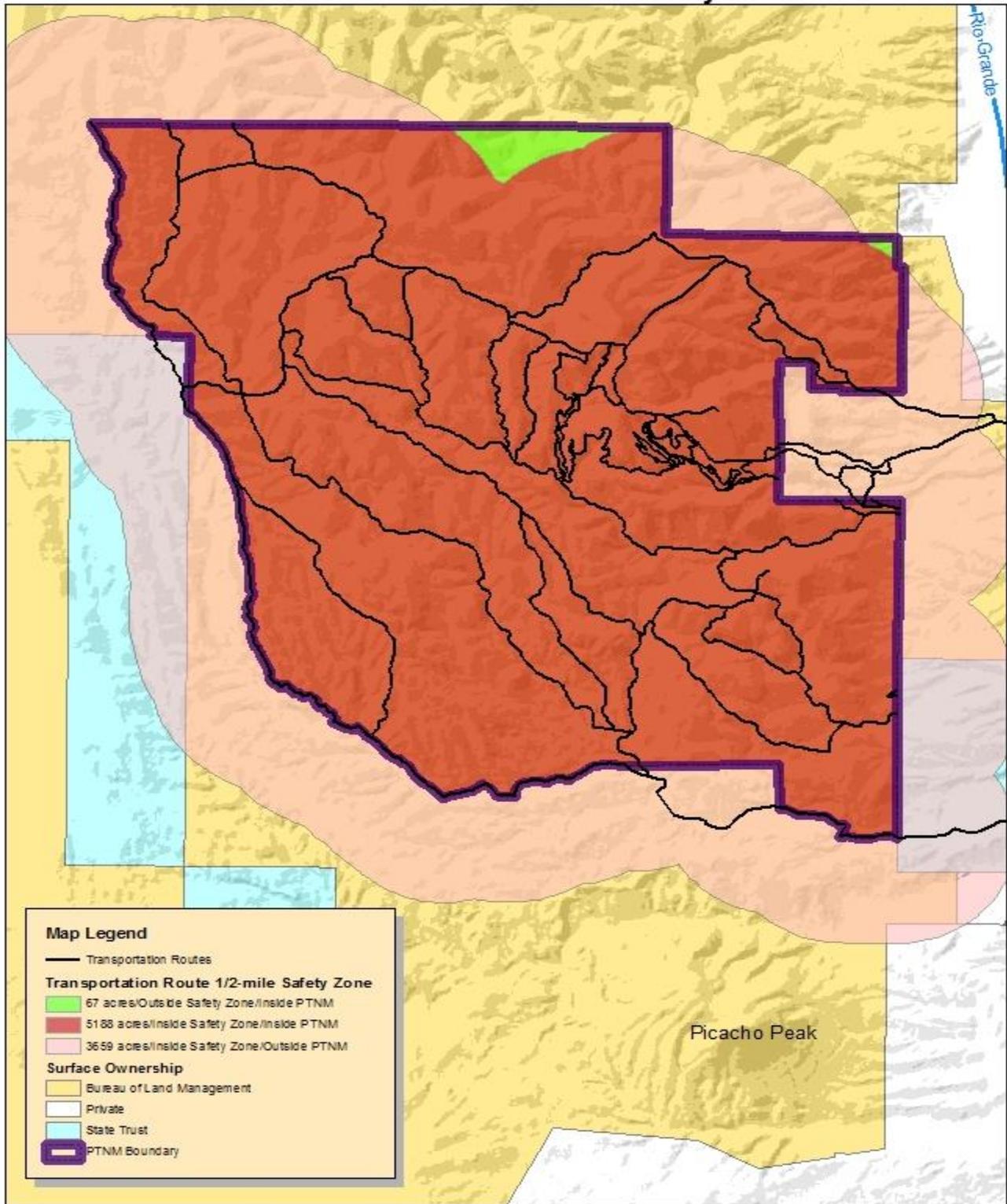


No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.

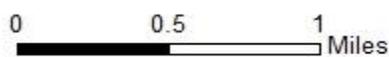


Projection: UTM Zone 13
Datum: NAD 1983

**Map 4-2 Recreation and Visitor Services
Routes and Trails with 1/2-mile Safety Zone**

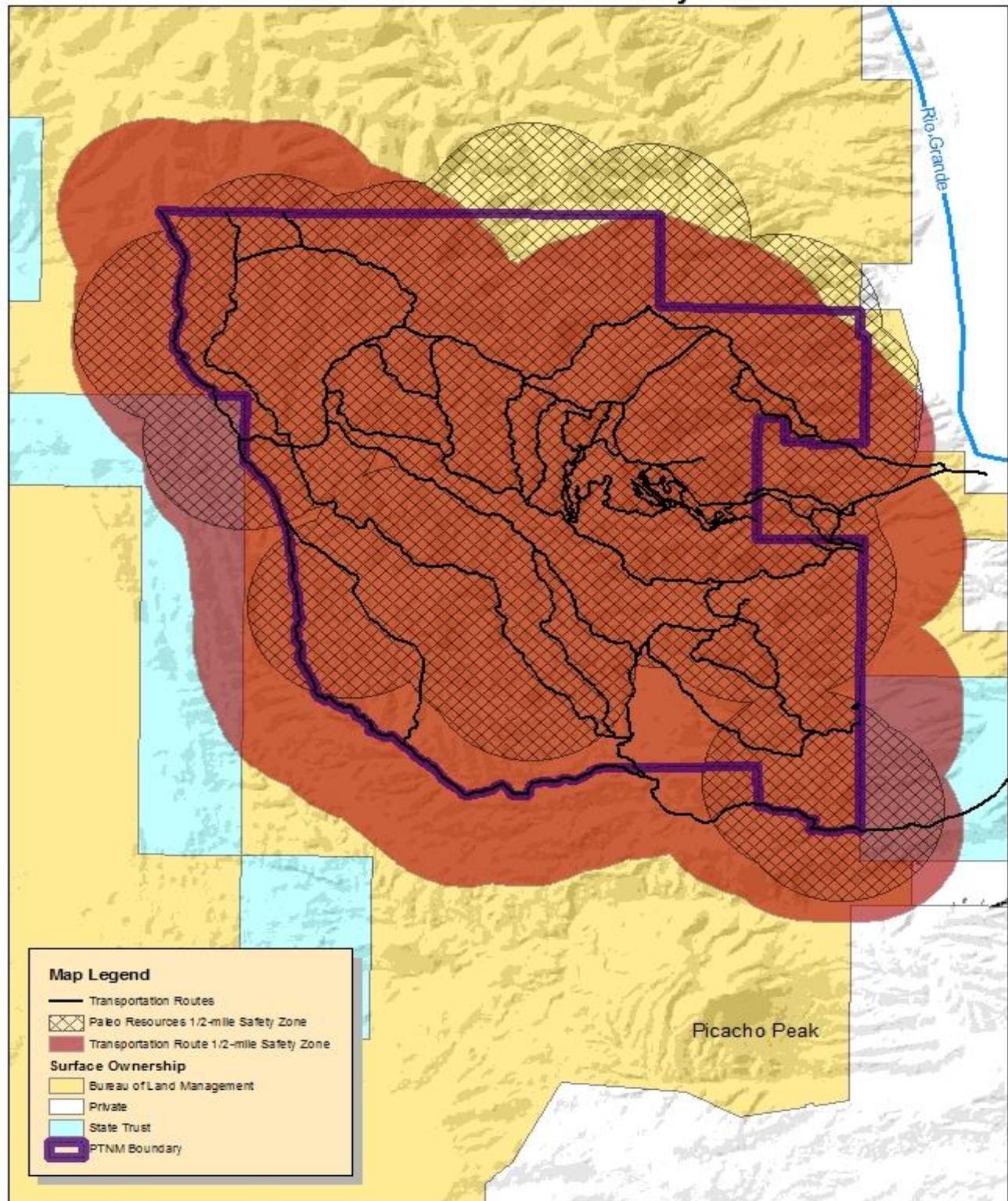


No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.

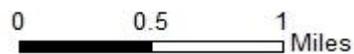


Projection: UTM Zone 13
Datum: NAD 1983

**Map 4-3 Recreation and Visitor Services
Combined Criteria 1/2-mile Safety Zones**



No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.



Projection: UTM Zone 13
Datum: NAD 1983

Under Alternative A, SRPs would continue to be authorized on a discretionary basis. Continuing to authorize SRP events and related activities would provide a means to manage visitor use, enhance the recreation experience, and promote land stewardship. Permitted activities would also result in short-term impacts such as increased noise, crowds, and associated visitor use conflicts.

Impacts from Trails and Travel Management – Alternative A would continue to provide OHV access over approximately 32 miles of the Robledo Mountain OHV Trails (commonly known as the Chile Challenge Trails). These routes primarily benefit specialized, high-clearance off highway vehicles. This Alternative would maximize OHV access and related recreation opportunities.

The 6.2-mile SST Mountain Bike Trail would remain and continue to provide an opportunity for both individual and group biking activities (5.5 miles are within the Monument boundary).

Alternative A does not specifically plan for additional development of separate hiking, pedestrian, and horse trails. However, portions of vehicle routes or most arroyo and canyon bottoms could be used by those who want to explore the Monument on foot or horseback. Dispersed hiking and equestrian activity would continue throughout the Monument and allow visitors the opportunity to discover and explore. Access along the trail to the original *Discovery Site* that hugs the base of the north side Community Pit spoils pile would remain closed due to safety concerns resulting from the proximity of the trail to unstable spoils piles and debris. The absence of well designed, convenient trails impacts visitor interest and ability to reach the desired destination.

Impacts from Lands with Wilderness Characteristics – Under this Alternative, the 576 acres identified as lands with wilderness characteristics would be available for recreational development.

4.4.3.2 ALTERNATIVE B

Impacts from Paleontological Resources – Under Alternative B, casual collecting of common invertebrates and plant paleontological resources would not be allowed. This would disappoint visitors and school students collecting common invertebrate fossils. This may reduce the number of visitors and students that would want to visit the Monument.

Impacts from Education and Interpretation – Under Alternative B, interpretation and education allows for continued partnerships with museums, BLM and partner-led interpretive tours to fossil sites, and development of interpretive materials for programs and events. On-site tours and interpretive programs would help facilitate the visitor experience and help the visitor relate to and understand the resources of the Monument. Only minimal directional and informational signs would be installed. Visitors (not a part of guided tours) would have a challenging time finding paleontological sites and connecting with the resources on self-guided visits to the Monument.

Impacts from Recreation and Visitor Services – Installation of minimal directional and informational signs would facilitate exploration and discovery, and increase visitor safety by reducing the opportunity for visitors to lose their way. The effects of forgoing development of additional recreation and visitor facilities are the same as under Alternative A. Due to the lack of motorized and mechanical recreational use in this Alternative, it is assumed that visitation would drop.

Under Alternative B, hunting would continue in accordance with New Mexico Department of Game and Fish regulations and recreational target shooting would continue. The analysis of recreational target shooting in Alternative A and Map 4-1 applies as well to Alternative B. Because Alternative B would close the PTNM to motorized and mechanized vehicle use, the analyses found in Maps 4-2 and 4-3 do not

apply to Alternative B. In the southern portion of the Monument, approximately 356 acres (or 7 percent of the Monument) lie outside the ½-mile buffer zone around fossil sites. This area does not have access. In addition, because Alternative B does not include increased access to the PTNM, the 356 acres identified outside the buffer zone cannot be reached by vehicle. Reaching this area would be a challenge for both target shooters and BLM rangers. If target shooters reached this area by foot or horseback, researchers, BLM staff, and the visiting public in the same area remain at risk from stray bullets.

The BLM acknowledges that there is a safety risk of inviting the public and researchers to the Monument and continuing to allow recreational target shooting throughout the same area. With no motorized or mechanized access with this Alternative, there would be fewer people within the Monument and probably less risk to public safety than with Alternative A.

The effects from lack of recreation and visitor facilities under this Alternative is the same as under Alternative A.

Impacts from Trails and Travel Management – Under Alternative B, the Monument would be closed to motorized and mechanized vehicle use. This would close the 32 miles of the Robledo Mountains OHV Trails (Chile Challenge Trails) and 5.5 miles of the SST Mountain Bike Trail. Eliminating the use of motorized and mechanized vehicles would essentially close the Monument to a large portion of its recreational user groups. OHV enthusiasts and mountain bikers would likely continue to pursue their recreational interest in other areas.

Closing the Monument to motorized and mechanized use would increase and enhance the recreational opportunity for those seeking a quiet and natural recreation setting (e.g., fewer signs of vehicle activity such as tire tracks, oil spills, broken rocks, etc.)

Under Alternative B, there are no plans to develop hiking or horse trails. With the exception of portions of the existing vehicle trail system, hiking and equestrian opportunities would be limited primarily to cross-country use. Access along the trail to the original *Discovery Site* tracksite that hugs the base of the north side Community Pit spoils pile would remain closed due to safety concerns resulting from the proximity of the trail to unstable spoils piles and debris. As in Alternative A, the absence of developed hiking trails to points of interest in the Monument, discourages casual investigation by the public.

Impacts from Lands and Realty – The BLM would acquire the non-Federal minerals within the Monument. This would eliminate the possibility of disturbance to the surface from extraction of the subsurface minerals and a subsequent reduction in recreational opportunities on those lands.

Impacts from Lands with Wilderness Characteristics – Under this alternative, the 576 acres identified as Lands with Wilderness Characteristics would not be available for recreational development. Instead, recreational development such as trails and recreational facilities would occur in other areas of the Monument, minimally impacting the lands identified as having wilderness characteristics.

4.4.3.3 ALTERNATIVE C

Impacts from Paleontological Resources – Under Alternative C, the effects would be the same as those discussed in Alternative B.

Impacts from Education and Interpretation – As in Alternatives A and B, interpretation and education allows for continued partnerships with museums, BLM and partner-led interpretive tours to fossil sites, and development of interpretive materials for programs and events. This would have the same beneficial effects discussed under the previous alternatives.

Under Alternative C, there would be pedestrian trails developed with orientation kiosks and wayside exhibits, along with developed exhibits for on-site interpretation and a visitor contact station. These would benefit those visitors trying to understand and relate to the resources of the Monument. On the other hand, such facilities might detract from the natural and wild settings of the Monument if these interpretive developments are too frequent or too conspicuous.

Impacts from Recreation and Visitor Services – Alternative C, provides for the possibility to develop, install, and maintain a variety of visitor facilities (i.e., a visitor contact station, toilets, shade shelter, information kiosks, and picnic sites). This level of development would increase visitor comfort, visitor use, and overall opportunities for those seeking a more developed, safe and controlled recreation setting (e.g., school and tour groups). Due to the development of facilities and the opportunities for education and interpretation, visitation would be expected to increase dramatically (BLM 2013). This level of development would also reduce the opportunity for those seeking a less crowded and more natural recreation setting.

Under Alternative C, motorized and mechanized vehicle users would be required to obtain a no-fee day-use permit. Registering online or driving to the BLM office for a permit would result in an inconvenience and require additional planning. In the short-term, vehicle users who are unaware of the permit requirement would either have to cancel their trip or return to the Las Cruces BLM office to obtain a permit. When obtaining the permit, maps and safety information would direct visitors to trails and the location of interpretive and educational sites. A permit system would also provide the BLM accurate visitor use data to better plan and manage future vehicle-use.

Under Alternative C, recreational target shooting would be prohibited. The Las Cruces District Office analyzed industry standards for predictable projectile safety areas and these results are found in Alternative A and in Appendix G. The analysis demonstrates that there are no areas in the Monument that are more than ½-mile from areas of high public use where recreational target shooting could take place safely.

Closing the Monument to recreational target shooting would slightly decrease the number of opportunities for this activity in the *Analysis Area*. However, the public land in Doña Ana County outside of the Monument is available for recreational target shooting (unless closed under Supplemental Rules at developed recreation areas). There are approximately 1,069,757 acres, or 44 percent, of Doña Ana County that are available for recreational target shooting. In addition, there is a public shooting range 12 miles to the west of the PTNM on BLM land that is operated by the City of Las Cruces, which is free to the public for target shooting. The BLM currently permits this shooting range, the Butterfield Range, to the City of Las Cruces under a Recreation and Public Purposes Act lease. This is an excellent shooting facility and readily accommodates a wide variety of safe shooting venues for the public.

Prohibiting target shooting would increase visitor and BLM staff safety by reducing risks associated with stray bullets. It would also eliminate the litter left by target shooters, and reduce the opportunity for user conflicts. As Monument visitation increases over time, the conflict between target shooters and other visitors would increase if the Monument was not closed to recreational target shooting. Closing the Monument to target practice shooting would create a safer environment for researchers, visitors and BLM staff and volunteers.

Impacts from Trails and Travel Management – Under Alternative C, approximately 26.9 miles of the Robledo Mountains OHV Trail routes would remain open to motorized and mechanized vehicle use and 5.4 miles would be closed. Open vehicle routes would provide recreational opportunities for those who are unable to hike cross-country and through rugged terrain, taking visitors closer to various fossils and interpretive sites. The closure of 5.4 miles of trail used by OHV rock crawling enthusiasts would

inconvenience and disappoint this user group. While other challenging routes would remain open with a day-use pass, these segments are highly valued because of their level of extreme difficulty. Closure of the 5.4 miles might discourage some OHV owners from using the Monument and overall rock crawling would decrease. Closing the segments of trail would increase and enhance the recreational opportunity for non-motorized users seeking a quieter and more natural recreation setting.

Under Alternative C, the 5.5 miles of SST Mountain Bike Trail would remain open for mountain biking with a no-fee day permit. This Trail would continue to provide a quality recreation opportunity.

Alternative C provides an opportunity to identify, construct and maintain new routes for biking, hiking, and equestrian and OHV activity. An expanded trail system would increase access and associated recreational opportunities for both motorized and non-motorized travelers. Additional trails would enhance the recreation experience by increasing access to fossil sites, scenic views, geological formations, and other values for which the Monument was designated. An expanded trail system and related activity may deter those seeking a recreation experience in a less crowded and more natural setting.

Impacts from Lands and Realty – Under Alternative C, the BLM also would acquire access easements for public use. The increase of legal access points would allow multiple entry points and open the Monument up to more people. This could lead to several impacts such as increased vandalism and trash throughout the Monument and increased recreational destinations and opportunities.

Impacts from Lands with Wilderness Characteristics – Under Alternative C, 253 acres would be managed as Lands with Wilderness Characteristics. Management of these lands would limit man-made intrusions as described under Alternative B. However, the remaining lands would be available for the development of recreational facilities which could greatly increase the recreational opportunities within the Monument. The *Discovery Site* is within those remaining lands (not to be managed as Lands with Wilderness Characteristics); therefore it would allow greater interpretation of that site and the ability to build trails for better access to it.

4.4.3.4 ALTERNATIVE D

Impacts from Paleontological Resources – Under Alternative D, collecting of common invertebrate fossils would only be allowed in conjunction with BLM authorized interpretive or educational activities and programs in areas of the Monument identified by BLM Paleontologists for this use. Designating areas for collection of common invertebrates would significantly reduce the likelihood of the removal of a fossil important for scientific research.

Impacts from Education and Interpretation – Interpretation and education allows for continued partnerships with museums, BLM and partner-led interpretive tours to fossil sites, and development of interpretive materials for programs and events. This would have the same effects as discussed under Alternatives A and B.

Under Alternative D, there would be pedestrian trails developed with orientation kiosks and wayside exhibits, along with developed exhibits for on-site interpretation. These would have the same impacts as discussed under Alternative C.

Under Alternative D, BLM may create an on-site visitor center. This would provide an avenue for strong interpretation and BLM presence in the Monument. However, a visitor center requires regular staff hours, maintenance, and a significant financial obligation. It would also detract from the experience of those seeking a wilder, more natural setting. The impact to the natural setting from any facilities proposed

(kiosks, exhibits, visitor center) would be minor considering how few acres these facilities would take up compared to the number of acres that would be without facilities.

Impacts from Recreation and Visitor Services – Impacts under Alternative D are the same as under Alternative C. Installation of a campground and visitor center would increase visitor use and significantly increase BLM’s financial obligation with regard to capital investments, staffing, and facility maintenance.

Installation of a visitor center would provide the BLM an on-site opportunity to offer exhibits and activities devoted entirely to interpreting the unique paleontological resources of the PTNM. A visitor center would also provide a venue to conduct on-site educational programs that would better accommodate larger groups (e.g., schools, tours, family, etc.). Overall, this level of development would benefit those seeking a more comfortable, social, and controlled recreation setting. This level of development would also reduce the opportunity for those seeking a recreation experience in a less crowded and more natural setting.

Under Alternative D, recreational target shooting would not be allowed. This would have the same impacts as described under Alternative C.

Impacts from Trails and Travel Management – Under Alternative D, approximately 28.3 miles of the Robledo Mountains OHV Trails would remain open to motorized and mechanized use and 4.0 miles would be closed. This closure would affect the extreme OHV recreationists as these routes are considered to be some of the most challenging for rock crawling. Under this Alternative, 0.9 miles of Branson Canyon would remain open for rock crawling by re-configuring Cayenne Crawler from an “*up only*” to a “*down only*” direction, thus allowing OHV access to the upper portion of Branson Canyon (Patzcuaro’s Revenge Trail) which would allow a desirable rock crawling opportunity not offered in Alternative C. The rest of the impacts would be the same as described under Alternative C.

Under Alternative D, the 5.5 miles of SST Mountain Bike Trail would remain open for mountain biking, and impacts would be the same as those described in Alternative A.

Alternative D provides an opportunity to identify, construct, and maintain new trails for biking, hiking, and equestrian and OHV activity. An expanded trail system could lead recreationists and visitors to fossil sites, scenic views, geological formations and other qualities and values for which the Monument was designated. This would provide greater opportunities for a quality recreation experience for hikers, horseback riders, OHV users, bicyclists, and sightseers.

Impacts from Lands and Realty – Under Alternative D, the impacts are the same as discussed under Alternative C.

Impacts from Lands with Wilderness Characteristics – Under Alternative D, no land outside the WSA would be managed to maintain wilderness characteristics; therefore, recreational facilities may impact those characteristics.

4.4.4 TRAILS AND TRAVEL MANAGEMENT

Assumptions and Incomplete Information: Public interest in both recreational and scientific/educational access to the Monument is assumed to increase with advertisements of its unique and significant characteristics.

Management Decisions with No Impacts to Trails and Travel Management: The following resources or uses have little or no impact on Trails and Travel Management: Air Resources, Cultural Resources, Livestock Grazing, Socio-Economic Conditions, Special Status Species, Vegetation Management, Visual Resource Management, Wildland Fire Management, and Wildlife.

Effects Common to All Alternatives:

Impacts from Paleontological Resource – Under all Alternatives, if the PTNM Authorizing Officer determines that OHV use would cause or have the potential to cause adverse impacts to specific paleontological resource sites, then an area could be closed to travel or travel restrictions may be imposed.

Impacts from Trails and Travel Management – Under all Alternatives, casual, dispersed pedestrian and equestrian use are allowed. This allows for hikers and equestrian users to traverse the Monument as they please. They are not bound to any route.

Impacts from Lands and Realty – Under all Alternatives, the BLM would attempt to acquire public access easements for public use from willing sellers. This would allow for legal access for the public and administrative use into the Monument.

Impacts from Special Designations-Area of Critical Environmental Concern (ACEC) – The Robledo Mountains ACEC limits all vehicle use to designated roads and trails. For the portion of the ACEC within the Monument, there are no roads or trails; therefore there would be no vehicle use within the ACEC portion of the Monument. All travel within the ACEC would have to be on foot or on horseback, which reduces the number of people who would visit this part of the monument.

IMPACTS OF THE ALTERNATIVES

4.4.4.1 ALTERNATIVE A

Impacts from Paleontological Resources – Under Alternative A, casual collecting of common invertebrates and plant paleontological resources would be allowed to continue. This may encourage the public to drive on undesignated roads to get to invertebrate fossils, thus creating illegal routes within the Monument. Due to rough routes, the traffic to find invertebrate fossils would be primarily pedestrian.

Impacts from Education and Interpretation – Under Alternative A, off-site interpretation and education would continue as would BLM-led tours to the *Discovery Site* and other sites. The off-site education program does not cause an impact on travel management, but there are requests for tours within the Monument. Construction of new routes and maintenance of existing routes would not be planned. This Alternative allows for tours on the existing routes or arroyos, but they are not the most accessible or easy to hike. As interpretive tour requests increase, the need for maintained trails would increase. Lack of scheduled route or trail maintenance or construction would hinder access to the Monument for those interested in learning about the resources and enjoying an easy stroll.

Impacts from Recreation and Visitor Services – SRPs would continue to be authorized. This would allow commercial, competitive, and organized groups to continue to conduct various events. Most of the SRPs are for OHV events on the designated routes. This Alternative continues to allow for OHV SRPs, which provides a highly sought after OHV experience.

Impacts from Trails and Travel Management – Under Alternative A, motorized and mechanized use is limited to approximately 37.6 miles of designated routes. These routes provide excellent opportunities to experience the Monument on a daily basis with minimal restrictions. Those that have high clearance vehicles capable of negotiating the challenges of these routes can experience a first class OHV or mountain bike experience. However, the lack of scheduled improvement or maintenance of routes and trails reduces the ease of access for educational and some recreational uses. There is little or no opportunity for low-clearance vehicles to access the Monument.

Impacts from Lands and Realty – Under Alternative A, the impacts are the same as those stated in *Effects Common to All Alternatives*.

Impacts from Lands with Wilderness Characteristics – Under Alternative A, there would be no impacts to trails and travel management from Lands with Wilderness Characteristics.

Impacts from Special Designations-Research Natural Area (RNA) – Under Alternative A, the RNA designation would remain, which has the following prescriptions that impact trails and travel management: limit vehicle use to designated roads and trails and manage for Recreation Opportunity Spectrum (ROS) semi-primitive non-motorized class. This designation allows motorized recreation on designated routes and non-motorized use in the RNA. These management prescriptions still allow access to the Monument for recreation, research, and administrative use.

4.4.4.2 ALTERNATIVE B

Under Alternative B, motorized and mechanized use of the routes would not be allowed within the Monument, except for administrative, permitted, and emergency use. There would be no impacts from other resources to trails and travel management.

4.4.4.3 ALTERNATIVE C

Impacts from Paleontological Resources – Under Alternative C, route use may decrease from some members of the public that use the area for casual collection of fossils. The use of routes for permitted collection would increase.

Impacts from Education and Interpretation – Under Alternative C, a hiking trail system with kiosks would be developed. A visitor contact station could be developed, thus access to the station would be necessary. These may add routes to the Comprehensive Trails and Travel Management (CTTM) Plan (Appendix C) and workload to a maintenance schedule. Through the interpretive hiking trails, the public could access and understand the fossils more easily.

Impacts from Recreation and Visitor Services – Under Alternative C, the BLM could prepare an activity plan to identify, construct and maintain new trails for biking, hiking, equestrian, and OHV activity. An expanded trail system would increase access for both motorized and non-motorized travelers. An activity plan would locate sites to develop visitor facilities. Routes changes would be incorporated into the CTTM Plan for the Monument (see Appendix C). All developments would be done in compliance to the NEPA process.

Impacts from Lands and Realty – Under Alternative C, acquisition of access easements would trigger a revision of the CTTM Plan (Appendix C). More access points into the Monument would improve the visitor experience. The CTTM Plan would have to balance the need for access and the need for resource protection. As access opportunities increase, the BLM would undertake more administrative responsibility for maintaining and managing the use of these easements.

Impacts from Lands with Wilderness Characteristics – Under Alternative C, approximately 253 acres within the Monument would be managed for protection of the wilderness characteristics. Since there are no trails, roads or interpretive exhibits planned within this area, there would be no impacts to trails and travel management. The area would remain open for dispersed non-motorized, non-mechanized travel, so hiking and horseback use would continue.

Impacts from Visual Resources – Under Alternative C, VRM Class objectives I and II would influence the location and degree of any proposed trail construction. Construction of new trails would have to meet the objective to either preserve (VRM Class I) or retain (VRM Class II) the existing character of the landscape. Any newly created visual contrasts would have to be low (Class II) or very low (Class I). These constraints would require careful trail design and location and may prohibit trail construction altogether in some locations.

4.4.4.4 ALTERNATIVE D

Impacts from Paleontological Resources – Under Alternative D, casual collection of common invertebrates and plant fossils would not be allowed. Collecting of common invertebrate fossils would only be allowed in conjunction with BLM authorized interpretive or educational activities and programs. This would direct groups to specific locations, which may result in the need for improved access, and may cause additional wear on the routes.

Impacts from Education and Interpretation – Under Alternative D, in addition to the actions and impacts stated in Alternative C, an on-site visitor center (instead of a visitor contact station) and a motorized interpretive tour route may be developed. These actions create a more developed Monument triggering a revision to the CTTM Plan to include more or improved travel facilities. Alternative D would allow easier access to portions of the Monument, benefitting those that have low-clearance vehicles. Those that enjoy the more challenging OHV routes would not see the improvements as an enhancement.

Impacts from Recreation and Visitor Services – Impacts are the same as under Alternative C.

Impacts from Lands and Realty – Impacts are the same as under Alternative C.

Impacts from Lands with Wilderness Characteristics – Impacts are the same as under Alternative A.

Impacts from Visual Resources – Impacts are the same as under Alternative C.

4.4.5 AIR RESOURCES

4.4.5.1 AIR QUALITY

Assumptions and Incomplete Information: Air quality data is limited within the *Analysis Area* and even more limited within the *Planning Area*. The New Mexico Environment Department has several air quality monitoring stations within Doña Ana County. Specific air quality data for specific events within the Monument are not available.

Management Decisions with No Impacts to Air Quality: The following resources or uses have no or little impact on Air Quality: Paleontological Resources, Education and Interpretation, Soils, Cultural Resources, Lands with Wilderness Characteristics, Socio-Economic Conditions, Soils, Special Status Species, Special Designations, Visual Resources, Water Resources, and Wildlife.

Effects Common to All Alternatives:

Impacts from Vegetation – Managing and restoring the vegetation within the Monument could reduce soil erosion and thus reduce dust. However, using only passive means of vegetation restoration, as Alternative B states, would in most cases, take a much longer time to achieve the same or similar results as would active restoration projects.

IMPACTS OF THE ALTERNATIVES

4.4.5.1.1 ALTERNATIVE A

Impacts from Recreation and Visitor Services and Trails and Travel Management – Under Alternative A, motorized and mechanized vehicle use along approximately 37.6 miles of existing routes would result in localized dust and vehicle emissions. Most vehicle use would occur at low speeds in rough terrain along scoured canyon bottoms or across bedrock outcrops, which would not create measurable dust. Overall, air quality impacts from vehicle use would be minimal and short-term.

Impacts from Lands and Realty – Under Alternative A, land use authorizations that benefit the Monument would be considered, which may create ground disturbance and temporary impacts to air quality. Actions such as surface disturbing right-of-way construction could potentially impact air quality with short-term, localized degradation. Best management practices such as controlling erosion, minimizing surface disturbance, and using dust control measures would be implemented to reduce impacts to air quality. Under Alternative A, it is not proposed to acquire the 640 acres of subsurface acres that are not Federally-owned. This could potentially lead to development of the private minerals within the Monument, thus creating the possibility of air quality degradation from these mineral activities.

Impacts from Livestock Grazing – Under Alternative A, movement of the livestock across the 5,255 acres and use of the two-track routes by the livestock permittees may create dust when traversed, however the high rock content of the soil diminishes the opportunities for dust creation and this activity would have an adverse, but likely negligible impact on air quality.

Impacts from Wildland Fire Management – Although there are no fire management actions planned under Alternative A, in the case of an unplanned fire there would be short-term and temporary degradation to air quality during the fire. The extent of the emissions would depend on the fuel source and amount of area burning.

4.4.5.1.2 ALTERNATIVE B

Impacts from Recreation and Visitor Services – Under Alternative B, little or no measureable impacts to air quality are anticipated resulting from recreational visitor use. Prohibiting campfires would eliminate campfire smoke.

Impacts from Trails and Travel Management – Alternative B closes the Monument to all vehicle use and eliminates the opportunity for impacts on air quality resulting from vehicle emissions and localized dust.

Impacts from Lands and Realty – Under Alternative B, ground disturbing land use authorizations would not be permitted. Proposed in Alternative B is acquisition of the non-Federal, subsurface minerals totaling approximately 640 acres. By acquiring the subsurface minerals, it would remove the possibility of development of the private minerals within the Monument, thus eliminating the possibility of air quality degradation from these mineral activities.

Impacts from Livestock Grazing – Livestock use under Alternative B would not be allowed. This would reduce air quality impacts as compared to Alternative A. Cattle would not be disturbing the soil surface and vegetation quantities would be expected to increase; this would reduce dust emissions over the other alternatives.

Impacts from Wildland Fire Management – Under Alternative B, air quality impacts from possible wildland fire are the same as under Alternative A.

4.4.5.1.3 ALTERNATIVE C

Impacts from Recreation and Visitor Services – Under Alternative C, campfires would contribute to air pollutant emissions in the region. Dust would occur during construction of a visitor center or visitor facilities; however, the impacts would be temporary and limited to the time of construction.

Impacts from Trails and Travel Management – Under Alternative C, permitted motorized vehicle use along approximately 26.9 miles of existing routes would result in localized dust and vehicle emissions. Most vehicle use would occur at low speeds in rough terrain and along arroyos. Overall, air quality impacts from vehicle use would be minimal and short-term.

Impacts from Lands and Realty – Under Alternative C, limited land use authorizations that benefit the Monument would be considered, which may create ground disturbance and temporary impacts to air quality. This would be comparable to the air quality impacts discussed in Alternative A. Impacts from acquisition of the non-Federal minerals are the same as for Alternative B.

Impacts from Livestock Grazing – Livestock use under Alternative C is similar to Alternative A except that grazing is excluded from specific locations such as proposed campsites and certain areas to protect paleontological resources. This would likely move the minimal air quality impacts to other areas within the Monument, which would create the same impacts as Alternative A.

Impacts from Wildland Fire Management – Under Alternative C, air quality impacts from possible wildland fire are the same as Alternative A.

4.4.5.1.4 ALTERNATIVE D

Impacts from Recreation and Visitor Services – Under Alternative D, impacts from recreation and visitor services would be similar to Alternative C. Visitors to a visitor center would create more daily motorized traffic within the Monument. Emissions and dust from motorized traffic would increase with this Alternative as compared to Alternative A.

Impacts from Trails and Travel Management – Under Alternative D, impacts from trails and travel management would be similar to Alternative C. Motorized tour routes would create more daily motorized traffic within the Monument. Emissions and dust from motorized traffic would increase with this Alternative as compared to Alternative A.

Impacts from Lands and Realty – Under Alternative D, land use authorizations that benefit the Monument would be considered, which may create ground disturbance and temporary impacts to air quality. This would be comparable to the air quality impacts discussed under Alternatives A and C. Impacts from acquisition of the non-Federal minerals are the same as for Alternatives B and C.

Impacts from Livestock Grazing – Under Alternative D, impacts from livestock grazing on air quality would be similar to Alternative A.

Impacts from Wildland Fire Management – Under Alternative D, prescribed fire can be used as a management tool. Prescribed fire would impact air quality during the prescribed fire and after the prescribed fire until re-vegetation occurs that reduces windblown dust. The extent of the emissions would depend on the type and amount of fuel and size of fire. Air quality impacts would be minimized by using smoke management techniques.

4.4.5.2 CLIMATE

Assumptions and Incomplete Information: The assessment of greenhouse gas (GHG) emissions, their relationship to global climatic patterns, and the resulting impacts is an ongoing scientific process. The inconsistency in results of scientific models used to predict climate change at the global scale and the lack of scientific models capable of predicting climate change on regional or local scales, limit the ability to quantify potential future impacts of decisions made at this level. Determining the significance of any discrete amount of GHG emissions is beyond the limits of existing science. However, scientists are increasingly able to isolate likely scenarios for climate change and its impacts on a regional scale. The U.S. Global Change Research Program Report on Impacts of Climate Change in the United States (2009) focuses on broad areas of the country and greatest points of vulnerability as well as looking at Climate Change Impacts in different sectors of the economy. In the Southwest, a particular concern is the uncertainty around precipitation and the potential for extended periods of drought stressing already uncertain water supplies.

When further information on the impacts to climate change is known, such information would be incorporated into the BLM's planning and NEPA documents as appropriate.

Management Decisions with No Impacts to Climate: The following resources or uses have no or little impact on Climate: Paleontological Resources, Education and Interpretation, Cultural Resources, Lands and Realty, Lands with Wilderness Characteristics, Soils, Special Status Species, Special Designations, Visual Resources, Water Resources, and Wildlife.

Effects Common to All Alternatives:

The impacts of each of the alternatives would be the same as related to climate.

Impacts from Trails and Travel Management and Livestock Grazing – Livestock, humans, and vehicle emissions may contribute to climate change through the increase or decrease of greenhouse gas emissions, but it is uncertain as to what degree these activities can make a discernible impact on climate change within the 5,255 acres.

Impacts from Wildland Fire Management – If a wildfire or prescribed fire occurred, it would result in greenhouse gas emissions, but the subsequent new vegetation may make up for this in carbon sequestration over time.

4.4.6 CULTURAL RESOURCES

Assumptions and Incomplete Information: The BLM cultural resource management program has been developed to comply with Federal law, implementing regulations, and other policies which address cultural resources and historic preservation. Impact analysis assumes that the program would be implemented in accordance with BLM policy. The program consists of four elements: (1) inventory and evaluation, (2) protection and preservation, (3) cultural resource use allocation, and (4) planning.

The analysis assumes that BLM will continue the compliance aspect of the program by reviewing specific projects in accordance with Section 106 of the National Historic Preservation Act (NHPA). The BLM takes into account the potential effects on cultural resources that are eligible for the National Register of Historic Places (NRHP) and modifies proposed activities to avoid adverse effects to significant cultural resources, or reduces or mitigates adverse effects should avoidance not be possible.

Information about cultural resources within the PTNM is incomplete. No systematic, block inventory has been undertaken to identify and evaluate cultural resources. Class III inventory will be conducted in compliance with Section 106 of the NHPA as projects with the potential to adversely affect significant cultural resources are proposed.

Management Decisions with No Impacts to Cultural Resources: The following resources or uses have no or little impact on Cultural Resources: Education and Interpretation, Air Resources-Air Quality and Climate, Geology/Minerals, Lands with Wilderness Characteristics, Socio-Economic Conditions, Soils, Special Designations-Area of Critical Environmental Concern, Wilderness Study Area, Research Natural Area, Special Status Species, Visual Resources, and Wildlife.

Effects Common to All Alternatives: Where new ground disturbance is proposed, the BLM will comply with Section 106 of the NHPA to inventory and evaluate cultural resources, and either modify the project to avoid adverse effects to significant cultural resources eligible for the NRHP or reduce or mitigate adverse effects where avoidance is not possible.

IMPACTS OF THE ALTERNATIVES

4.4.6.1 ALTERNATIVE A

Impacts from Paleontological Resources – Casual collecting of fossils is allowed. While collecting fossils, there is potential for cultural resources to be inadvertently or intentionally vandalized or stolen.

Impacts from Recreation and Visitor Services – Under Alternative A, dispersed camping is allowed. The location of any dispersed camping site with the Monument could impact cultural resources when the surface is disturbed to create a camp, which could displace artifacts. Dispersed camp sites could be subject to compliance with Section 106 of the NHPA if these sites become popular and heavily used. Casual collecting of rock and mineral resources is allowed which may lead to cultural resources being inadvertently or intentionally vandalized or stolen.

Impacts from Trails and Travel Management – Under Alternative A, the location of any existing or new routes that could be maintained, improved, or developed would be subject to compliance under Section 106 of the NHPA in order to avoid adverse effects to cultural resources.

Impacts from Lands and Realty – Under Alternative A, any proposed land use authorizations that allow surface disturbing activities would be subject to compliance with Section 106 of the NHPA. Projects proposed where cultural properties are found would be adjusted by means of mitigating the effects such as redesigning the project or changing the location.

Impacts from Livestock Grazing – The location for any proposed range improvements with the potential for ground disturbance would be subject to compliance with Section 106 of the NHPA. Building, maintaining, or removing fences, water systems, or other range improvements would potentially impact cultural resources. However, projects proposed where cultural properties are found would be adjusted by means of mitigating the effects such as redesigning the project or changing the location.

4.4.6.2 ALTERNATIVE B

Impacts from Paleontological Resources – No collecting of common invertebrate fossils would be allowed, which would nearly eliminate inadvertent collection of artifacts.

Impacts from Recreation and Visitor Services – Visitation to the Monument would probably decrease under this Alternative. The opportunity to encounter cultural resources would be limited and impacts to cultural resources would probably be minor.

Impacts from Trails and Travel Management – Closing the Monument to motorized and mechanized travel would reduce the number of visitors to the Monument so opportunities for encountering cultural resources would be limited. Vandalism and theft of cultural resources would be reduced substantially compared to the other Alternatives.

Impacts from Lands and Realty – Under Alternative C, surface-disturbing land use authorizations would be approved, therefore minimizing impacts to cultural resources from these activities.

Impacts from Livestock Grazing – The Monument would be closed to livestock grazing in Alternative B, therefore there would be no impacts to cultural resources expected from this activity.

Impacts from Vegetation – The passive methods of vegetation management proposed in Alternative B would not disturb soils and are not expected to impact cultural resources.

4.4.6.3 ALTERNATIVE C

Impacts from Paleontological Resources – Impacts of Alternative C would be the same as those described in Alternative B.

Impacts from Recreation and Visitor Services – Under Alternative C, designated camping areas, a visitor contact station, and visitor facilities are proposed. In conjunction with BLM authorized interpretive or educational activities and programs, limited collecting of rock and mineral resources would be allowed, which would limit the potential for vandalism or looting of cultural resources. These activities would be conducted under the supervision of staff or trained docents and volunteers who can discern rocks and minerals from artifacts. The location of any proposed primitive campground, designated camping area, visitor contact station, or visitor facilities would be subject to compliance with Section 106 of the NHPA. The surface disturbance created by these proposed actions could potentially impact cultural resources. However, proposed projects where cultural properties are found would be adjusted by means of mitigating the effects such as redesigning the project or the changing the location.

Impacts from Trails and Travel Management – The location of any existing or new routes that could be maintained, improved, or developed would be subject to compliance under Section 106 of the NHPA in order to avoid adverse effects to cultural resources. Proposed projects where cultural properties are found would be adjusted to mitigate the effects such as redesigning the project or changing the location.

Impacts from Lands and Realty – Under Alternative C, impacts to cultural resources would be similar to those described under Alternative A and impacts stated in *Effects Common to All Alternatives*.

Impacts from Livestock Grazing – Impacts would be similar to those in Alternative A.

Impacts from Vegetation – Under Alternative C, manual removal of noxious weeds would be allowed, if necessary. The location for any proposed manual removal of noxious weeds and invasive species would be subject to compliance with Section 106 of the NHPA. The action that would allow the manual removal of noxious weeds and invasive species would be adjusted by means of mitigating the effects such as redesigning the project, so as to not create surface disturbance if cultural resources are found at the project site.

4.4.6.4 ALTERNATIVE D

Impacts from Paleontological Resources – Under Alternative D, collecting of common invertebrates in conjunction with a BLM authorized activity or program would be allowed but there is potential for cultural resources to be inadvertently or intentionally vandalized or stolen during this activity. This risk is less than Alternative A due to the activity being authorized and the collecting directed in a specific location supervised by individuals trained to discern fossils and minerals from artifacts.

Impacts from Recreation and Visitor Services – Pedestrian trails, kiosks and wayside exhibits, campgrounds, and a full service visitor center are proposed. Casual collecting of rock and mineral resources is allowed also. While collecting these resources, there is potential for cultural resources to be inadvertently or intentionally vandalized or stolen from the Monument. The location of any proposed visitor facility would be subject to compliance under Section 106 of the NHPA. The actions that would allow new pedestrian trails, kiosks, wayside exhibits, campgrounds, and a full visitor center could potentially impact cultural resources. However, the project proposed where cultural properties are found would be adjusted by means of mitigating the effects such as redesigning the project or changing location.

Impacts from Trails and Travel Management – Impacts to cultural resources would be the same as those described in Alternative C.

Impacts from Land and Realty – Under Alternative D, impacts to cultural resources would be similar to those described under Alternative A and impacts stated in *Effects Common to All Alternatives*.

Impacts from Livestock Grazing – Impacts to cultural resources would be the same to those described in Alternative A and Alternative C.

Impacts from Vegetation – Impacts would be the same to those in Alternative C.

Impacts from Wildland Fire Management – The location of any proposed prescribed fire and mechanical thinning would be subject to compliance under Section 106 of the NHPA. The action that would allow prescribed fire and mechanical thinning could potentially impact cultural resources. However, the proposed projects where cultural properties are found would be adjusted by means of mitigating the effects such as redesigning the project or changing the location.

4.4.7 LANDS AND REALTY

Assumptions and Incomplete Information: Any and all land use authorizations would include stipulations to avoid introducing noxious weeds into the Monument.

Management Decisions with No Impacts to Lands and Realty: The following resources or uses have no or little impact on Lands and Realty: Education and Interpretation, Trails and Travel Management, Air Resources, Cultural Resources, Livestock Grazing, Special Designations- Research Natural Area, Special Status Species, Vegetation Management, Wildland Fire Management, Wildlife.

Effects Common to All Alternatives:

Impacts from Lands and Realty – Under all Alternatives, BLM would continue to acquire legal public access easements for the PTNM. This would allow the BLM and public to have legal access into the PTNM.

Impacts from Special Designations -Area of Critical Environmental Concern – Under all Alternatives, rights-of-way are not authorized in the ACEC. These limitations on rights-of-way would reduce the number of acres available for rights-of-way in the Monument by about 789 acres.

IMPACTS OF THE ALTERNATIVES

4.4.7.1 ALTERNATIVE A

Impacts from Lands and Realty – Under Alternative A, the Monument legislation states that only those uses that benefit the Monument would be allowed. The private mineral estate located in the southern portion of the Monument would not be acquired, which could result in split-estate issues. This would be incompatible with management of the public land within the PTNM. Land use authorizations (both surface disturbing and non-surface disturbing) would be authorized on a case-by-case basis following NEPA analysis consistent with Monument goals and objectives.

4.4.7.2 ALTERNATIVE B

Impacts from Recreation and Visitor Services – Under Alternative B, there would be no management actions that would impact lands and realty.

Impacts from Lands and Realty – Under Alternative B, surface disturbing authorizations would not be authorized. Non-surface disturbing activities could be authorized. This would allow authorizations such as film permits in the Monument, which could be a benefit to the promotion of the resources and scientific research.

The BLM would attempt to acquire non-Federal minerals located in section 36, T. 23 S., R. 1 W., to reduce possible surface disturbance associated with mineral development which would be incompatible with management of the PTNM. As a result of acquiring the non-Federal minerals, the BLM would have jurisdiction over both the surface and subsurface.

Impacts from Lands with Wilderness Characteristics – Under Alternative B, approximately 576 acres of land within the Monument would be managed for wilderness characteristics. One of the management prescriptions is to manage this area as an exclusion area for rights-of-ways. This would eliminate those

576 acres from being available for rights-of-ways, but does not eliminate them from all land use authorizations. For example, film permits proposing no surface disturbance could be permitted under Alternative B. Although this limits the type of land use authorizations permitted within these 576 acres, it allows management of the area to be consistent with the goals and objectives of lands with wilderness characteristics.

Impacts from Soils – Under Alternative B, surface disturbing activities would not be authorized. Soil resources would not be altered or impaired.

Impacts from Visual Resources – Under Alternative B, the portion of the Monument outside of the special designation areas would be managed as VRM Class I (1,365 acres). The rest of the Monument would be managed as VRM Class II. In Alternative B, surface disturbing land use authorizations are not allowed, so there would be no impacts from visual resources on the Lands and Realty program.

4.4.7.3 ALTERNATIVE C

Impacts from Recreation and Visitor Services – Under Alternative C, impacts from the Recreation and Visitor Services program could include the need for authorizing rights-of-way (electricity, water, roads) to service the proposed visitor facilities.

Impacts from Lands and Realty – Under Alternative C, land use authorizations (both surface disturbing and non-surface disturbing) would be considered if consistent with Monument goals and objectives. Acquisition of access easements for public use would facilitate public and administrative access.

Impacts from acquiring the 640 acres of non-Federal mineral estate within and adjacent to the Monument in section 36, T. 23 S., R. 1 W., are the same as Alternative B.

Impacts from Lands with Wilderness Characteristics – Under Alternative C, approximately 253 acres of land within the Monument would be managed for wilderness characteristics and rights-of-way would be excluded. Film permits proposing no surface disturbance would be considered as would other non-surface disturbing activities. Although this limits the types of land use authorizations permitted within these 253 acres, it allows management of the area to be consistent with the goals and objectives of lands with wilderness characteristics.

Impacts from Visual Resources – Under Alternative C, the area designated as the Robledo Mountains WSA and ACEC, and the lands with wilderness characteristics would be managed as VRM Class I (1,042 acres) by preserving the existing character of the landscape and allowing impacts to the landscape to have little or no change to the visual environment. The rest of the Monument would be managed as VRM Class II by retaining the existing character of the landscape and allowing the level of change to the landscape to be low and not attract attention of the casual observer. Prior to construction of any visitor facilities, an activity and site development would be completed, which would explore opportunities of appropriate locations for facilities and would follow the Visual Resource Management Objectives. Therefore, authorizations would be designed as to not impair these visual qualities.

Impacts from Soils – Under Alternative C, realty actions such as right-of-way or land use authorization would be allowed. Rights-of-way could cause adverse impacts to soils from surface disturbances. Each lands and realty action would require mitigation on a case-by-case basis due to varying impacts associated with action type, size, and location.

4.4.7.4 ALTERNATIVE D

Impacts from Recreation and Visitor Services – The impacts are the same as under Alternative C.

Impacts from Lands and Realty – The impacts are the same as under Alternative C.

Impacts from Lands with Wilderness Characteristics – Under Alternative D, lands found to have wilderness characteristics would not be managed for their wilderness characteristics. Rights-of-way, access, and other land use authorizations would not be constrained by managing for wilderness characteristics.

Impacts from Visual Resources – Under Alternative D, the area designated as the Robledo Mountains WSA and ACEC would be managed as VRM Class I (789 acres). The rest of the Monument would be managed as VRM Class II. These impacts are the same as for Alternative C.

Impacts from Soils – Under Alternative D, the impacts are the same as those stated in Alternatives A and C.

4.4.8 LANDS WITH WILDERNESS CHARACTERISTICS

Assumptions and Incomplete Information: Wilderness characteristic values include the area's size, its naturalness, and outstanding opportunities for solitude or a primitive and unconfined recreation. They may also include supplemental values. Lands with wilderness characteristics are those lands that have been inventoried and determined by the BLM to contain wilderness characteristics as defined in section 2(c) of the Wilderness Act (Public Law 88-577). In 2011, the wilderness inventory was updated for the Monument. This inventory identified 576 acres of land contiguous to the Robledo Mountains WSA within the Monument as having wilderness characteristics.

Management Decisions with No Impacts to Lands with Wilderness Characteristics: The following resources or uses have little or no impact on those Lands with Wilderness Characteristics: Air Resources, Cultural Resources, Grazing, Special Status Species, Visual Resources, Vegetation, Water Resources, and Wildlife.

IMPACTS OF THE ALTERNATIVES

4.4.8.1 ALTERNATIVE A

Under Alternative A, 576 acres are identified as having wilderness characteristics, but are not protected from actions that would diminish those characteristics. However, there are no activities planned under Alternative A for those 576 acres that would impact the wilderness characteristics of these lands.

4.4.8.2 ALTERNATIVE B

Under Alternative B, approximately 576 acres would be protected for wilderness characteristics. There are no resource management actions that would cause impacts that would detract from the wilderness characteristics of these 576 acres. All resource management actions stated under Alternative B would be complementary to protecting wilderness characteristics.

4.4.8.3 ALTERNATIVE C

Under Alternative C, approximately 253 acres would be identified and protected as lands with wilderness characteristics. Approximately 323 acres of land identified during the 2011 inventory would not be managed to protect wilderness characteristics. There are no planned resource management actions that would cause impacts that would detract from the wilderness characteristics of the 253 acres.

Impacts from Paleontological Resources - Under Alternative C, approximately 323 acres of lands with wilderness characteristics would not be managed for wilderness characteristics and could be utilized for paleontology studies and excavations.

Impacts from Education and Interpretation – Under Alternative C, development of a hiking trail system with kiosks would occur. In order to interpret the *Discovery Site* properly, a trail and signage would be necessary on the land not protected for its wilderness characteristics. The human impacts on the 323 acres may be noticeable.

Impacts from Recreation and Visitor Services – Under Alternative C, designated camping areas, hiking trails, visitor contact station, and visitor facilities are proposed. These recreational trails and

facilities could be placed on the 323 acres outside of the protected lands with wilderness characteristics. However, doing so may potentially impact wilderness characteristics in those areas.

Impacts from Trails and Travel Management – Under Alternative C, new routes and trails could be constructed and existing routes could be maintained or improved. This alternative would allow for a trail to be constructed or maintained to the *Discovery Site*, which is the boundary for those acres managed as lands with wilderness characteristics. Alternative C allows for man-made intrusions on the area outside of the protected 253 acres.

Impacts from Lands and Realty – Under Alternative C, surface disturbing land use would be authorized on those lands not protected for wilderness characteristics following NEPA analysis. Surface disturbing land use authorizations may impact the wilderness characteristics

4.4.8.4 ALTERNATIVE D

Under Alternative D, lands with wilderness characteristics would not be managed to protect those wilderness characteristics, and therefore the wilderness characteristics may be impacted.

Impacts from Paleontological Resources – The 576 acres not protected for wilderness characteristics could be utilized as appropriate areas for paleontological research, interpretation and other activities.

Impacts from Education and Interpretation – Under Alternative D, the impacts are the same as Alternative C except the proposed actions may impact 576 acres not protected for wilderness characteristics.

Impacts from Recreation and Visitor Services – Under Alternative D, the impacts are the same as Alternative C except the proposed actions may impact 576 acres not protected for wilderness characteristics.

Impacts from Trails and Travel Management – Under Alternative D, the impacts are the same as Alternative C except the impacts may occur on 576 acres not protected for wilderness characteristics.

Impacts from Lands and Realty – Under Alternative D, the impacts are the same as Alternative C except surface disturbing activities may occur and impact 576 acres not protected for wilderness characteristics.

4.4.9 LIVESTOCK GRAZING

Assumptions and Incomplete Information: It is assumed that visitation to the PTNM would increase over time.

Management Decisions with No Impacts to Livestock Grazing: The following resources or uses have no or little impact on Livestock Grazing: Paleontological Resources, Education and Interpretation, Air Resources, Cultural Resources, Lands and Realty, Soils, Special Designations- Research Natural Area, Special Status Species, Visual Resources, Water Resources, and Wildlife.

Effects Common to All Alternatives:

Impacts from Special Designations-WSA – Under all Alternatives, the continued management of the ACEC designation would limit the construction of new range improvements such as fences, watering facilities, pipelines, and erosion control structures. This could limit the ability to change the management of the area such as creating new pastures for rest-rotation grazing.

Impacts from Wildland Fire Management – Under all Alternatives, improvements would be protected from all fire by preplanned defendable space and fire suppression tactics as needed. Even though, these precautions would be taken, wildfires could damage or destroy range improvements such as watering facilities and fences, and could result in injury or death of livestock. In the event of a wildland fire, grazing deferment would potentially occur, which would impact livestock operations. Livestock would have to be removed from the burned area; the grazing permittees would then have to find another location for the livestock or reduce their number of livestock until the grazing deferment is complete.

IMPACTS OF THE ALTERNATIVES

4.4.9.1 ALTERNATIVE A

Impacts from Recreation and Visitor Services – Under Alternative A, visitor facilities would be minimal. With the designation of the Monument, it is assumed that the number of visitors would increase and increased recreational use by visitors could result in conflicts with livestock and allotment management goals. Visitors congregating around livestock waters would directly conflict with livestock watering needs. Vandalism, carelessness or abuse by visitors could result in damage to range improvements including fences, watering facilities, and pipelines, which would in turn interfere with the proper management of livestock.

Impacts from Trails and Travel Management – The designated routes would continue to exist for motorized, mechanized, and pedestrian travel and their use is expected to increase. This may lead to a potential increase in collisions with vehicles resulting in associated property damage and injury to visitors or livestock. Livestock operators would be permitted to use motorized vehicles on designated routes. This would allow for the operators to maintain range improvements and care for livestock with motorized vehicles, on foot, or horseback.

Impacts from Livestock Grazing – Under Alternative A, grazing would continue on both the Picacho Peak and Altamira Ranch Allotments. Range improvements would continue to exist on the Picacho Peak Allotment, which are authorized under Section 4 range improvement permits and cooperative agreements. Range improvement permits grant title and maintenance responsibility to the grazing permittee, while cooperative agreements provide shared title between the permittee and BLM. The goal of improvements

to the range infrastructure would be to improve distribution of cattle, promote rangeland health, and maintain or enhance forage production. The authorization of future range improvements would be prioritized based on a cost-benefit analysis. The continued maintenance and functionality of these improvements is important to maintain an even distribution of the grazing pressure associated with cattle grazing and provide water sources for wildlife.

Impacts from Lands with Wilderness Characteristics – Under Alternative A, there are no designated lands with wilderness characteristics, so there are no impacts to livestock grazing.

Impacts from Vegetation – Under Alternative A, chemical herbicides could be used to control noxious weeds. Introduced exotic and native weeds would compete with desired native plant species for water and nutrients if not controlled. It is probable that continued shrub encroachment would result in further competition for water and nutrients with perennial forage species. Increased competition for resources could ultimately lead to reductions in grass cover and forage available for livestock use.

4.4.9.2 ALTERNATIVE B

Impacts from Livestock Grazing – Under Alternative B, The BLM would not authorize livestock to graze in the PTNM. This alternative would require that the grazing permittees for the Picacho Peak and Altamira allotments control their cattle so that they do not graze within the Monument. In the absence of fence, this would entail active herding by the permittees in addition to shutting off the water that is piped to the troughs located within the PTNM. If the BLM in conjunction with grazing permittees constructed a Monument boundary fence in lieu of active herding and water control, this would exclude livestock from the Monument and leave the surrounding public lands available to livestock. Management guidelines for the Robledo Mountains WSA would create challenges for fencing the Monument boundary for those areas inside the WSA. If fence construction was selected as the tool to exclude livestock from the Monument, minor fence reroutes of the pasture fence dividing the north and south pastures of the Picacho Peak Allotment would be necessary to fully exclude approximately 150 acres in the southern part of the Monument from the remainder of the allotment. Additional fence might also be needed to define the Monument boundary. The perimeter of the PTNM is approximately 14.5 miles in length. Of this length, approximately 0.75 miles of existing fence parallels the Monument boundary. Approximately 1.3 miles of pasture fence would need removal or need to be rerouted. In total, approximately 13.75 miles of fence would need to be constructed to define the entire Monument boundary, and ensure grazing from the surrounding allotments would be excluded. Assuming an estimate of \$3.20 per foot on construction of a wire fence in rough terrain (from the 2011 practice cost data from the Natural Resources Conservation Service [NRCS 2011]), excluding livestock grazing from the Monument through use of fencing would cost approximately \$232,320 to be incurred by the BLM or the BLM and permittee(s).

Overall, exclusion of grazing in the Monument would result in the need to adjust allotment boundaries of the two allotments within the Monument. Removing livestock grazing from the Monument would eliminate approximately 4,505 acres from the north pasture on the Picacho Peak Allotment; without changes to allotment infrastructure, this would make the north pasture virtually unusable since the remaining parcels would be very small and would be separated by the Monument. Ultimately, since there is only one other pasture that is actively used on the allotment, this would result in decreased flexibility for the grazing permittee, removing the ability to defer areas from grazing without additional changes to the allotment infrastructure. Also, reductions to the number of cattle that could responsibly graze on the allotment would need to be made from the reduced acreage on the allotment, having a direct economic impact on the livestock operations for the grazing permittee. There would be a decrease in carrying capacity of 395 AUMs or 33 cattle yearlong for the Picacho Peak Allotment. In addition, nearly all of the livestock watering points and pipelines in the north pasture of the Picacho Peak Allotment are within the

Monument boundary. The majority of range improvement projects in the Monument are currently authorized under range improvement permits that grant title and maintenance responsibility to the grazing permittee. The Robledo Interior Fence and the Robledo Pipeline are authorized under cooperative agreements, where title is shared between the contributing grazing permittee and the BLM, and maintenance responsibility belongs to the grazing permittee. If grazing were discontinued within the Monument, the United States would be required to compensate the permittee for their share of the value of the range improvements in accordance with the grazing regulations (43 CFR 4120.3-6). The permittee may be allowed to remove the range improvements authorized under a range improvement permit, which would include salvaging materials and performing site rehabilitation where needed as a result of ground disturbance from removing these improvements.

Exclusion of livestock from the Monument would have less impact on current management trends for the Altamira Allotment. There would be a loss of approximately 748 acres available to grazing, which would result in reductions to the allotment carrying capacity. The loss of these acres would equate to a decrease in carrying capacity of approximately 61 AUMs or 5 cattle yearlong on the Altamira Allotment. This would result in direct financial impacts to the grazing permittee from the loss of forage.

No range improvement projects are authorized on the Altamira Allotment within the Monument boundary. Much of the Altamira Allotment lies within the Robledo Mountains WSA, where ground disturbing activities are largely prohibited. Should the permittee decide to plan livestock water to increase the ability of livestock to make use of forage in the southern part of this allotment, the Wilderness Study Area would reduce the amount of land available for construction of new improvements in the Monument approximately by half.

4.4.9.3 ALTERNATIVE C

Impacts from Recreation and Visitor Services – Visitor facilities would expand and grazing may be excluded from these sites resulting in minor decreases in acreage available for forage. Projects that involve reducing the acreage available to grazing would be individually analyzed for site-specific impacts to livestock grazing and if applicable, changes to carrying capacity.

Impacts from Trails and Travel Management – Under Alternative C, improvement of designated routes or construction of new routes could increase motorized use of the Monument, which would result in the increase for potential conflicts between livestock and motorized vehicle users. More interaction between livestock and humans or vehicles increases the chances of livestock and visitors getting hurt or livestock improvements getting damaged. Livestock operators would be permitted to use motorized vehicles on designated routes. This would allow for the operators to maintain range improvements and care for livestock with motorized vehicles, on foot, or horseback.

Impacts from Livestock Grazing – Under Alternative C, adjustments could be made to the allotment management plan in consultation with the grazing permittee to aid in management of the Monument. Adjustments to allotment management would be necessary if exclusion areas were created in order to minimize contact between livestock and recreational areas that would see heavy use by Monument visitors; these adjustments to the allotment management plan would be needed if changes were warranted in season of use, prescribed grazing systems, or livestock numbers as a result of creating exclusion areas that alter grazing patterns. Range improvements would be authorized in a manner consistent with Alternative A in order to promote rangeland health and maintain or enhance forage production. Improvements would be designed to enhance Monument management objectives and minimize potential conflicts with other resources and uses.

Impacts from Lands with Wilderness Characteristics – Under Alternative C, approximately 253 acres would be managed for wilderness characteristics. Within these 253 acres, surface disturbing range improvements and motorized and mechanized vehicle use would not be allowed.

Impacts from Vegetation – Under Alternative C, integrated management techniques including passive, manual, biological, chemical, and mechanical treatment methods to manage noxious weeds and non-native invasive species would be used. This would limit the competition between noxious weeds or non-native invasive species with desired forage thus increasing desired forage for livestock. Particular sites within the Monument would be managed for multiple-use values while maintaining or enhancing habitat for special status species.

4.4.9.4 ALTERNATIVE D

Impacts from Recreation and Visitor Services – Impacts to livestock grazing from Recreation and Visitor Services under this Alternative would be the same as those described under Alternative C.

Impacts from Trails and Travel Management – Impacts to livestock grazing from Trails and Travel Management under this Alternative would be the same as those described under Alternative C.

Impacts from Livestock Grazing – Under Alternative D, effects of livestock management would be the same as those described in Alternative A.

Impacts from Lands with Wilderness Characteristics – Under Alternative D, impacts to livestock grazing from lands with wilderness characteristics are the same as described under Alternative A.

Impacts from Vegetation – Under Alternative D, integrated management techniques including passive, manual, fire, biological, chemical, and mechanical treatment methods to manage noxious weeds and non-native invasive species would be used. This would limit the competition between noxious weeds or non-native invasive species with desired forage thus increasing desired forage for livestock. Particular sites within the Monument would be managed for emphasizing commodity uses while maintaining or enhancing habitat for special status species.

Impacts from Wildland Fire Management – Under Alternative D, fire could be used as a vegetation management tool. Grazing deferments would be necessary to accumulate fine fuels in preparation of a prescribed fire, and also following a fire to help protect vegetation and soil stability afterward. Grazing deferments would impact typical livestock operations on the Picacho Peak Allotment by reducing flexibility in pasture rotation since there are only two active pastures on the Allotment. Any deferments in the north pasture for fire treatments to manage the Monument would either result in rotating livestock into the south pasture or moving them to privately-owned or leased lands elsewhere for the duration of the required deferment period. Any additional livestock use in the south pasture would result in increases to grazing pressure on vegetation, particularly around water sources.

4.4.10 SOCIO-ECONOMIC CONDITIONS

Data Sources:

Economic effects were modeled using IMPLAN Professional Version 3.0 and the Forest Economic Analysis Spreadsheet Tool (FEAST), with 2009 data. Data on use levels under each alternative were collected from the PTNM's resource specialists. In most instances, the precise change is unknown. Therefore, the changes are based on the professional expertise of the resource specialists.

A financial efficiency analysis is conducted for the Livestock Grazing and Recreation and Visitor Services programs. A financial efficiency analysis compares costs (expenditures) and benefits (revenues) over time. Costs and benefits that accrue in future years are adjusted using a 4 percent discount rate. This analysis does not account for all costs and benefits associated with public land management. The public value of recreating at a fee-free site, for instance, is not captured in this analysis. Non-monetary costs and benefits are described qualitatively in the social analysis.

Social effects use the baseline social conditions presented in the Affected Environment Section, visitor information from the Recreation Section of this analysis, and information from the Community Socioeconomic Workshops (Preister 2003) to discern the primary values that the Monument provides to area residents and visitors. Social effects are based on the interaction of the identified values with estimated changes to resource availability and uses. The social analysis addresses effects to non-market values, consistent with IM 2013-131 (BLM 2013).

Assumptions and Incomplete Information:

1. The economic impact of grazing was estimated using authorized levels. However, actual livestock use occurring within the Monument varies annually based on a number of factors, such as current forage and market conditions. The impact of recent management trends are reported.
2. Changes in use levels were estimated using professional judgment. However, precise changes in use are not possible to predict.
3. Some of the value of public land management is not captured in market transactions. Non-market goods and services, such as clean air and scenic vistas, have economic values. However, the monetary values of such goods and services are generally unknown. As a result, it is difficult to analyze potential tradeoffs between market and non-market values.
4. Data on the distribution of visitors among expenditure segment shares (i.e., local and non-local; overnight and day) is unavailable for the Monument. Therefore, segment shares from the Lincoln National Forest are applied to the total Monument visitation estimates. The economic impact analysis uses National data on average visitor spending by segment share on National Forests, since no equivalent data exist for BLM-managed land.
5. Organized OHV events affected by route closures would continue to take place on adjacent or nearby public lands.
6. It is assumed that visitors to the Monument for the purpose of recreation and scientific research would steadily increase over the life of the Plan, regardless of the chosen alternative.
7. The Community Socioeconomic Workshop report (Preister 2003) identifies a number of values related to public land in Doña Ana County, including: (a) public land access, (b) diverse and plentiful recreation opportunities, (c) ecological health, (d) preservation of traditional and cultural uses of public land, (e) community and economic development. These are assumed to be the key social values related to public land management in the *Analysis Area*.

Management Decisions with No Impacts to Social and Economic Conditions: Under all Alternatives, the following programs would have little or no impact to Socio-Economic Conditions: Air Resources, Cultural Resources, Lands and Realty, Soils, Special Status Species, Vegetation Management, Water Resources, and Wildlife.

Effects Common to All Alternatives:

Impacts to Environmental Justice – The majority (65.7 percent) of residents in Doña Ana County identify as Hispanic or Latino (U.S. Census Bureau 2010). The County also has a high incidence of poverty, with approximately one-quarter of residents living in poverty. However, an analysis of the decisions to be made under the Alternatives did not identify environmental justice consequences. None of the decisions are expected to disproportionately or adversely affect environmental justice communities.

Consequences to social values are analyzed within the Alternatives. Although quality of life associated with Monument uses may vary between Alternatives, none of these changes are expected to disproportionately affect Hispanic and Latino residents.

American Indian uses and traditional cultural practices will not be affected by any planning decisions.

IMPACTS OF THE ALTERNATIVES

4.4.10.1 ALTERNATIVE A

Impacts from Paleontological Resources and Scientific Values – The unique paleontological resources of the Monument drive much of the visitation. The economic impact of visitor spending is captured in the impacts from the Recreation and Visitor Services discussion, below. In addition to the contribution of paleontological resources to local economic activity, these resources provide social and non-market values. Degradation of fossils is expected to occur under Alternative A due to motorized use and casual collection. This loss of resources would reduce non-market values related to education and scientific discovery.

Impacts from Education and Interpretation – Under Alternative A, most of the interpretation and education related to the Monument would continue to occur off-site. Minimal signage and on-site interpretive opportunities are less likely to support values related to education. As a result, non-market values related to the preservation and dissemination of scientific knowledge are expected to be lower under Alternative A, relative to the other Alternatives.

Impacts from Recreation and Visitor Services – An estimated 25,000 people (10,000 party-trips) would visit the Monument each year under Alternative A. Visitor spending would support approximately 16 jobs and \$417,000 in labor income in the local economy on an average annual basis. Most of the employment and income would occur in the accommodation and food services sector.

Management of the recreation program in the Monument costs approximately \$135,000 annually. The Monument collects no visitor fees and recreation-related revenue is limited to cost-recovery of approximately \$4,500 associated with one special recreation permit, which is issued annually. Over the 20-year life of the Plan, using a 4 percent discount rate, the present net value of the recreation program on the Monument is -\$1,843,760. This analysis only considers financial costs and benefits accruing to the agency. The employment and income associated with these expenditures is captured in the impacts from the BLM expenditures analysis, below.

Impacts from Trails and Travel Management – Under Alternative A, non-permitted and permitted use by motorized and mechanized vehicles would continue on approximately 37.6 miles of trails and routes previously designated. Alternative A offers the most miles of trails and routes among the considered Alternatives. Residents and visitors who hold social values related to public land access and OHV recreation would benefit from Alternative A. However, a number of comments in the Preister (2003) report expressed concern that motorized and mechanized recreation on public land disturbs ecological health and reduces the quality of the recreation experience for non-motorized users.

More opportunities for motorized and mechanized recreation may make the Monument more attractive to some individuals and less attractive to others. Visitation to the Monument from all types of recreation users contributes to economic activity in the local area. The economic consequences of trail and travel management are captured in the impacts from the Recreation and Visitor Services analysis, above.

Impacts from Livestock Grazing – Alternative A would continue current livestock grazing management, with 456 permitted AUMs within the Monument boundary. However, the current stocking rate is considerably less. With over 1.5 million cattle and calves in New Mexico, the AUMs on the PTNM account for a very small portion of the livestock farming and ranching sector in the State (NASS 2011). As a result, less than one job and between \$6,000 and \$11,000 (depending on stocking rate) in labor income would be supported by grazing on the Monument, annually.

Management of the grazing program in the Monument costs approximately \$18,000 annually. Fees for the grazing that occur on the Monument total approximately \$615 annually. Over the 20-year life of the Plan, using a 4 percent discount rate, the present net value of the grazing program on the Monument is -\$245,180. This analysis only considers financial costs and benefits accruing to the agency. The employment and income associated with these expenditures is captured in the impacts from the BLM expenditures analysis, below.

Impacts from Lands with Wilderness Characteristics – Under Alternative A, no lands with wilderness characteristics are being managed within the Monument. As described in the Trails and Travel Management section above, Alternative A is expected to provide the highest value for individuals who prefer to maximize access to the public land and minimize restrictions on use. However, individuals who value the protection of cultural and paleontological resources, outstanding opportunities for solitude, and the protection of ecological integrity would be less likely to benefit from management under Alternative A.

Impacts from BLM Expenditures – Salary and non-salary (e.g., equipment) expenditures related to Monument management support approximately 5 jobs and \$287,000 in labor income in the local economy, annually.

Payments from the Monument to states and counties (e.g., PILT) total approximately \$13,000. These payments contribute to State and local budgets. Due to the relatively small size of these payments, less than one job and approximately \$8,000 in labor income would be supported in the local economy, annually.

4.4.10.2 ALTERNATIVE B

Impacts from Paleontological Resources and Scientific Values -- Alternative B would only permit the collection of paleontological resources in connection with authorized scientific research on the Monument. As a result, Alternative B is expected to reduce the loss of scientific information associated with fossils. The elimination of motorized and mechanized recreation and grazing on the Monument would also reduce fossil degradation. While these limits would promote non-market values related to

protection of sensitive resources and promotion of scientific inquiry, they may reduce other non-market values. For instance, the elimination of motorized and mechanized access may reduce the number of individuals who are able to observe and enjoy the paleontological resources of the Monument.

Impacts from Education and Interpretation—Similar to Alternative A, most of the education and interpretive activities related to the Monument would occur off-site. The elimination of casual fossil collection may reduce the quality of the experience for some individuals who value a tangible reminder of their experience. However, this decrease in value is expected to be more than offset by the educational and enjoyment value of protecting the Monument's resources for present and future generations.

Impacts from Recreation and Visitor Services—Due to the elimination of motorized and mechanized recreation opportunities under Alternative B, visitation is expected to be reduced to 5,625 annual visitors (2,250 party-trips). Visitor spending would support approximately 4 jobs and \$94,000 in labor income in the local economy on an average annual basis. Most of the employment and income would occur in the accommodation and food services sector.

Recreation-related program expenditures would continue to be approximately \$135,000 annually. The elimination of motorized recreation would eliminate recreation-related revenue. Therefore, over the 20-year life of the Plan, using a 4 percent discount rate, the present net value of the recreation program on the Monument is -\$1,908,080. This analysis only considers financial costs and benefits accruing to the agency. The employment and income associated with these expenditures is captured in the impacts from the BLM expenditures analysis below.

Impacts from Trails and Travel Management – Under Alternative B, the Monument would be closed to all motorized and mechanized use except administrative and emergency motorized use. Alternative B offers the fewest miles of roads and trails open to motorized and mechanized use. The closure of the Monument to all recreational motorized and mechanized uses would reduce quality of life for individuals who primarily value public land access and OHV recreation opportunities. The selection of Alternative B would make the Monument a less attractive recreation destination for motorized and mechanized recreationists. As a result, some individuals would likely choose to recreate elsewhere or stay home. This would reduce the economic impact of recreation on the public land in the local economy. However, since a number of individuals stated that motorized recreation reduced the quality of their experiences of public land (Preister 2003), the elimination of motorized and mechanized recreation on the Monument may make it a more attractive destination for non-motorized uses. The net economic impact of recreation is described in the impacts from recreation and visitor services analysis, above.

Impacts from Livestock Grazing – Alternative B would eliminate livestock grazing on the Monument. No grazing-related employment or labor income would be supported by activities on the Monument. The economic effect of this change would be very minor in the context of the local economy; there would be social consequences. The ranchers who use the Picacho Peak and Altamira Ranch Allotments would need to replace the lost forage. Since private forage is more costly than public land forage, the ranchers' operating costs would increase (NASS 2011). In addition, some individuals associate public land grazing with cultural and heritage values. The loss of grazing opportunities on public land, therefore, would reduce the quality of life for individuals who hold such values. Some individuals prefer the elimination of grazing and other commercial activities on public land. Individuals with these values would prefer Alternative B.

Impacts from Lands with Wilderness Characteristics – Alternative B would manage 576 acres (11 percent) of the Monument for wilderness characteristics. Alternative B would manage the highest proportion of the Monument for wilderness characteristics among the considered Alternatives. Therefore, Alternative B would be most likely to increase non-market economic values. Alternative B would appeal

to individuals who are primarily concerned with protecting wilderness characteristics and having outstanding opportunities for solitude and/or primitive and confined recreation.

Impacts from BLM Expenditures – Salary and non-salary (e.g., equipment) expenditures related to Monument management support approximately 5 jobs and \$287,000 in labor income in the local economy, annually.

Payments from the Monument to states and counties (e.g., PILT) total approximately \$13,000. These payments contribute to State and local budgets. Due to the relatively small size of these payments, less than one job and approximately \$8,000 in labor income would be supported in the local economy, annually.

4.4.10.3 ALTERNATIVE C

Impacts from Paleontological Resources and Scientific Values – The development of a visitor contact station under Alternative C would increase public understanding and appreciation of the paleontological resources of the Monument. This is expected to increase non-market values related to education, as more people are exposed to the Monument's unique resources. However, increased visitation may also increase the risk of theft and vandalism, which would reduce values related to the protection of sensitive resources and opportunities for scientific inquiry.

Impacts from Education and Interpretation – Alternative C would develop more educational and interpretive opportunities on-site, relative to Alternatives A and B. The economic effect of these actions, along with other management actions meant to improve the quality of the visitor experience, is captured in the impacts from Recreation and Visitor Services analysis below. Increased educational opportunities may also promote non-market values related to the dissemination of production of scientific knowledge. Furthermore, more interpretive opportunities may increase appreciation of the resources, and therefore, both increase social values related to the unique resources of the Monument and limit the risk of theft and vandalism, discussed above.

Impacts from Recreation and Visitor Services – A visitor contact station would be developed under Alternative C. Annual visitation is expected to increase to 37,500 people (15,000 party-trips) under Alternative C. Visitor spending would support approximately 24 jobs and \$626,000 in labor income in the local economy on an average annual basis. Most of the employment and income would occur in the accommodation and food services sector.

The expected cost for the station is outlined in the Recreation and Visitor Services Section (Section 4.4.3). During site construction, approximately 2.4 jobs and \$91,750 in labor income would be contributed to the local economy. The visitor contact station would not require additional staffing, therefore, no additional jobs would be supported during the operations and maintenance phase. Periodic road and site maintenance would contribute to the local economy; however, expected expenditures are minimal.

Recreation-related program expenditures would increase during the construction of the visitor contact station. Therefore, over the 20-year life of the Plan, using a 4 percent discount rate, the present net value of the recreation program on the Monument is -\$2,061,260. This analysis only considers financial costs and benefits accruing to the agency. The employment and income associated with these expenditures is captured in the impacts from BLM expenditures analysis, below and the construction impacts, above.

Impacts from Trails and Travel Management – Under Alternative C, Tabasco Twister Trail (2.7 miles) and Patzcuaro’s Revenge Trail (1.8 miles) would be closed to motorized and mechanized vehicle use. One un-named route from the intersection of Cayenne Crawler and Pasado to Sandia Gulch would be closed (0.5 mile). Cayenne Crawler Trail (0.4 mile) would be closed to motorized and mechanized use to eliminate access from the south to Patzcuaro’s Revenge Trail. Alternative C would leave the majority of the designated routes and trails available under Alternative A open to motorized and mechanized uses. The popularity of Tabasco Twister and Patzcuaro’s Revenge trails may discourage some visitation to the Monument from off-highway vehicle users. However, the reduction in visitor spending associated with this change is expected to be more than offset by increased visitation due to the development of a visitor contact station, as described in the impacts from Recreation and Visitor Services analysis. The economic consequences of visitor spending associated with trails and travel management are captured in the impacts from Recreation and Visitor Services portion of this analysis, above.

In social terms, Alternative C would balance some of the conflicting interests related to public land management. Specifically, Alternative C would continue to support public land access and diverse recreation opportunities while also reducing damage to natural and cultural resources. Nevertheless, individuals who use the Monument chiefly for motorized and mechanized use may have their values compromised, relative to current conditions.

Impacts from Livestock Grazing – Alternative C would continue to permit cattle grazing. Although, as with Alternative A, actual use may be expected to be lower depending on forage and market conditions. With over 1.5 million cattle and calves in New Mexico, the AUMs on the PTNM make up a very small portion of the livestock farming and ranching sector in the State (NASS 2011). As a result, less than one job and between \$6,000 and \$11,000 (depending on stocking rate) in labor income would be supported, annually.

The present net value of the grazing program would be the same as described under Alternative A.

Impacts from Lands with Wilderness Characteristics – Alternative C would manage 253 acres (5 percent) of the Monument for wilderness characteristics. Alternative C would manage the second-highest proportion of the Monument for wilderness characteristics among the considered Alternatives. This Alternative would balance the interests of individuals who value ecological preservation of the public land with the interests of individuals who primarily value access and motorized recreation opportunities. Alternative C would increase non-market economic values related to ecological health relative to Alternatives A and D.

Impacts from BLM Expenditures – Salary and non-salary (e.g., equipment) expenditures related to Monument management support approximately 5 jobs and \$287,000 in labor income in the local economy, annually. The construction and maintenance of the visitor contact station is excluded from these estimates, since these effects are captured in the impacts from the Recreation and Visitor Services analysis, above.

Payments from the Monument to states and counties (e.g., PILT) total approximately \$13,000. These payments contribute to State and local budgets. Due to the relatively small size of these payments, less than one job and approximately \$8,000 in labor income would be supported in the local economy, annually.

4.4.10.4 ALTERNATIVE D

Impacts from Paleontological Resources and Scientific Values – The social and economic consequences of paleontological resources are expected to be similar to those described under Alternative

C. The development of a visitor center would drive additional use to the Monument, which is analyzed in the impacts from the Recreation and Visitor Services section, below.

Impacts from Education and Interpretation – The social and economic consequences of interpretation and education are expected to be similar to those described under Alternative C. The development of a visitor center would provide more opportunities for education and interpretation on-site, which may increase social and non-market values as more people are exposed to the unique resources of the Monument.

Impacts from Recreation and Visitor Services – A visitor center would be developed under Alternative D. Annual visitation is expected to increase to 75,000 people (30,000 party-trips) under Alternative D. Visitor spending would support approximately 47 jobs and \$1,251,000 in labor income in the local economy on an average annual basis. Most of the employment and income would occur in the accommodation and food services sector. The expected cost for the center is outlined in the Recreation and Visitor Services Section (Section 4.4.3).

The expected cost for the center is outlined in the Recreation and Visitor Services Section (Section 4.4.3). During the construction phase, approximately 22 jobs and \$830,300 in labor income would be contributed to the local economy. Throughout operations and maintenance of the facility, additional staff would be required to manage the visitor center. Staffing of the visitor center would support slightly more than one job and \$33,000 in labor income in the local economy, annually.

Recreation-related program expenditures would increase due to the construction of the visitor center and the need for staff. Over the 20-year life of the Plan, using a 4 percent discount rate, the present net value of the recreation program on the Monument is -\$4,224,120. This analysis only considers financial costs and benefits accruing to the agency. The employment and income associated with these expenses is captured in the impacts from the BLM expenditures analysis, below, and the construction impacts, above.

Impacts from Trails and Travel Management – Impacts would be the same as under Alternative C except that the Cayenne Crawler Trail (0.4 miles) would be left open for motorized and mechanized use and modified to allow motorized and mechanized use on 0.9 miles of Patzcuaro’s Revenge Trail. The difference between Alternative C and Alternative D is small in terms of the total available routes that the social and economic impacts are not expected to differ measurably between these alternatives. The difference in expected recreation use between Alternatives C and D is driven by the development of a visitor center, as opposed to a contact station, under Alternative D.

Impacts from Livestock Grazing – Impacts would be the same as Alternative A.

Impacts from Lands with Wilderness Characteristics – Alternative D would manage 0 acres (0 percent) of the Monument for wilderness characteristics. Alternative D would manage the same number of acres for wilderness characteristics as Alternative A; therefore, the social and economic impacts discussed under Alternative A also apply to Alternative D.

Impacts from BLM Expenditures – Salary and non-salary (e.g., equipment) expenditures related to PTNM management support approximately 5 jobs and \$287,000 in labor income in the local economy, annually. The construction and maintenance of the visitor center is excluded from these estimates.

Payments from the Monument to states and counties (e.g., PILT) total approximately \$13,000. These payments contribute to State and local budgets. Less than one job and approximately \$8,000 in labor income would be supported in the local economy, annually.

4.4.11 SOILS

Assumptions and Incomplete Information:

Soil resources would be managed to meet *New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management (New Mexico Standards and Guidelines)*.

Soils would be managed to minimize erosion and maintain soil productivity.

Surface disturbance of soil, including compaction of soil or loss of vegetation cover, might increase water runoff and downstream sediment loads and lower soil productivity, which may degrade water quality, alter channel structure, and affect overall watershed health.

The degree of impact attributed to any one disturbance or series of disturbances would be influenced by several factors, including location within the watershed, soil characteristics, time and type and degree of disturbance, existing vegetation type and quantities, and climatic conditions.

The greatest anticipated impacts on soil resources would occur from surface disturbance associated with paleontological resources, trails and travel management, livestock grazing, and recreation and visitor services. Management actions would be designed to minimize impacts by implementing BMPs and other site-specific protection measures. These measures often cause localized, short-term, site-specific impacts on soil resources, but are designed to maintain soil productivity and stability in the long-term. Restricting or prohibiting surface disturbance would often help maintain or improve soil conditions.

Management Decisions with No Impacts to Soils: The following resources or uses have little or no impact on Soil Resources for all Alternatives: Air Resources – Air Quality and Climate Change, Cultural Resources, Geology/Minerals, Lands with Wilderness Characteristics, Special Designations, Special Status Species, Visual Resources, Water Resources, and Wildlife.

Effects Common to All Alternatives:

Impacts from Vegetation Management – Under all Alternatives, the impacts from Vegetation would have very similar effects on soil resources. All of the Alternatives would have positive impacts to the soils by reducing and managing noxious weeds and non-native invasive plant species and promoting healthy native plant communities. This would enhance infiltration, increase soil moisture and organic content, and promote soil productivity and stabilization.

IMPACTS OF THE ALTERNATIVES

4.4.11.1 ALTERNATIVE A

Impacts from Paleontological Resources and Scientific Values – The Paleontology Program would continue to permit and support the on-going research within the PTNM, including excavation of fossils. Excavations may cause localized highly disturbed areas. Many of the past excavations within the PTNM have been on relatively steep slopes where erosion potentials are the highest. Mitigation measures are generally adequate for stabilizing these soils after excavation, but soil loss on steep slopes, void of vegetation, is inevitable. However, these activities are typically small in scale and have had little impact to the watershed as a whole. Casual collecting of paleontological resources would result in minor surface disturbance at infrequent intervals from foot traffic and hand tools.

Impacts from Education and Interpretation – Under Alternative A, minor soil disturbance would occur along designated trails at infrequent intervals associated with BLM or partner-led interpretive tours. Disturbances would primarily be in the form of foot traffic from small groups of people.

Impacts from Recreation and Visitor Services – Under Alternative A, dispersed camping could cause localized removal of vegetation and compaction of the soil leading to increased runoff and erosion. Although impacts from camp sites are generally isolated and small, no restrictions on camping locations could result in multiple camp sites cumulatively adversely impacting a greater area. Commercial, competitive and organized group activities would be administered through the SRP program. Each event permitted through the SRP would require mitigation on a case-by-case basis due to varying impacts associated with event type, size, and location.

Impacts from Trails and Travel Management – Under Alternative A, designated routes would be available for motorized or mechanized use. Many of these routes are in the bottom of arroyos. Colluvial deposits along the slopes of the canyons are easily eroded and could be damaged by impacts from both vehicles and spectators. This degradation is caused by both non-permitted use and permitted events. BLM monitoring of the 2008 and 2009 Chile Challenge Trails Tour confirmed that visitor and spectator use of canyon slopes for event viewing resulted in creation of new trails, dislocation and displacement of soils and large cobbles and damage to vegetation. OHV trails are primarily located along canyon bottoms and ridge tops that are relatively resistant to erosion. These areas have essentially been compacted, devoid of vegetation and soil, and have very low potential for natural recovery. Petroleum product spill would contaminate soils in various locations along OHV routes reducing soil productivity and potentially lower vegetation densities in the long-term. However, the volume of fluid spilled at any given location is typically small (less than 1 gallon). Where “braided” routes (i.e., routes that are used to get around an inoperative vehicle or obstacle) are created, vegetation is crushed and soils are disturbed or compressed. These impacts contribute to increased susceptibility to erosion and sediment load during water runoff. Localized site mitigation measures would be employed to reduce or stop slope and channel erosion and degradation of site-specific important fossil bearing formations from OHV activities. Proper mitigation measures could reduce localized sediment movement from slopes and channels caused by OHV activities.

Impacts from Lands and Realty – Under Alternative A, realty actions such as right-of-way or land use authorization would be allowed. Authorizations of rights-of-way could cause adverse impacts to soils from surface disturbances. Each lands and realty action would require mitigation on a case-by-case basis due to varying impacts associated with action type, size, and location.

Impacts from Livestock Grazing – Under Alternative A, grazing would continue within the Monument. High impact areas around livestock watering facilities would continue to have less vegetation cover, which reduces water infiltration and increases water runoff. Soils would be more compacted around watering points and water infiltration rates would be reduced decreasing soil moisture contents. This would cause localized soil erosion from alluvial and eolian processes. Maintenance of existing structural improvements (e. g., pipeline and troughs) and potential new improvements could result in surface disturbance. These disturbances would likely cause localized short-term soil loss and degradation. Utilization of vegetation from cattle would reduce plant cover; increasing bare ground and decreasing soil moisture. This would increase the likelihood of soil movement. However, the high surface rock content is the primary soil stabilization factor and overall erosion associated with livestock should be slight.

Impacts from Wildland Fire Management – Under Alternative A, management tools such as prescribed fire and mechanical thinning would not be considered for use in the Monument. Fire suppression tactics that cause surface disturbance could cause localized short-term impacts to soil in wildland urban interface areas.

4.4.11.2 ALTERNATIVE B

Impacts from Paleontological Resources and Scientific Values – Under Alternative B, the impacts are similar as described under Alternative A. However, under this Alternative, soil disturbance would be slightly less with the closure of the PTNM to casual collecting of common invertebrates and plant fossil resources. These actions would cause less surface disturbance relative to Alternative A.

Impacts from Education and Interpretation – Under Alternative B, impacts to soils from Education and Interpretation are the same as described under Alternative A.

Impacts from Recreation and Visitor Services – Under Alternative B, camping would not be allowed within the Monument. Current camp sites would be rehabilitated and allowed to recover to the natural surroundings over time, which would reduce impacts to soils such as compaction and erosion. SRPs would not be permitted, so there would be no impacts from such events as previously permitted.

Impacts from Trails and Travel Management – Under Alternative B, closing the PTNM to motorized and mechanized vehicles would have fewer impacts on soil resources than Alternative A. Recreational OHVs would not be traveling on trails, and no new trails would be created. This would decrease soil disturbances. However, these routes, which mostly are in arroyos, have little potential for recovery due to natural flash floods and the overall slow nature of soil formation processes in semi-arid climates. Natural rehabilitation of the trails would be a very long process.

Impacts from Lands and Realty – Under Alternative B, surface disturbing activities would not be authorized. Soil resources would not be altered or impaired.

Impacts from Livestock Grazing – Under Alternative B, removal of grazing from these allotments would provide less impact to soils, such as less compaction around waters and trails. Additionally, removal of grazing from the Monument would decrease the utilization of vegetation; this would result in greater amounts of biomass remaining, potentially resulting in higher infiltration rates and increased soil moisture. The degree to which vegetation maintains or improves infiltration and soil moisture, with respect to potential vegetation increases, would depend on factors such as precipitation, the current location, density and type(s) of vegetation present, future growth rates, potential increases of ground cover, and types of vegetation that become established.

Impacts from Wildland Fire Management – Under Alternative B, impacts to soils from wildland fire management are the same as described under Alternative A.

4.4.11.3 ALTERNATIVE C

Impacts from Paleontological Resources and Scientific Values – Under Alternative C, impacts to soils from paleontological resources are the same as described under Alternative A.

Impacts from Education and Interpretation – Under Alternative C, impacts to soils from interpretation and education are the same as described under Alternative A.

Impacts from Recreation and Visitor Services – Under Alternative C, designated primitive campsites would be established. Impacts from camping would be similar to Alternative A; however, primitive campsites would reduce the impacts to soil compared to dispersed camping. Designating specific campsites would control the locations resulting in better managed and maintained camping facilities. Visitor facilities such as toilets, shade shelters, kiosks, picnic sites, and parking lots would result in

ground clearing and compaction activities. This would remove vegetation, compact soil, alter the natural topography, decrease infiltration and increase surface water runoff and erosion rates. The magnitude of these effects from a specific action would greatly depend upon the size, location, current climatic conditions and soil type for any given surface disturbing activities.

Impacts from activities through the SRP program would be the same as Alternative A.

Impacts from Trails and Travel Management – Under Alternative C, impacts to soil resources would be similar to, but slightly less than Alternative A. The nature of impacts to soils would be the same, but the length of designated trails would be less. In total, 5.4 miles of routes would be closed to motorized and mechanized vehicles and the same long-term impacts would occur to soils as identified in Alternative B. Increased visitation and foot traffic could lead to accelerated erosion and slope destabilization in the areas that are heavily visited. With well-placed, properly engineered and marked trails, impacts would be monitored and stabilizing mitigation measures would be used before damage occurs.

Impacts from Lands and Realty – Under Alternative C, impacts to soils from lands and realty are the same as described under Alternative A.

Impacts from Livestock Grazing – Under Alternative C, impacts to soils from livestock grazing are the same as described under Alternative A.

Impacts from Wildland Fire Management – Under Alternative C, impacts to soils from wildland fire management are the same as described under Alternative A.

4.4.11.4 ALTERNATIVE D

Impacts from Paleontological Resources and Scientific Values – Under Alternative D, impacts to soils from paleontological resources are the same as described under Alternative B.

Impacts from Education and Interpretation – Under Alternative D, impacts to soils from interpretation and education are the same as described under Alternative A.

Impacts from Recreation and Visitor Services – Under Alternative D, developed campgrounds along with designated primitive camping sites would have greater impacts than Alternatives A, B, and C due to larger areas of surface disturbance and compaction. All other impacts from actions initiated by recreation and visitor services would be the same as Alternative C.

Impacts from Trails and Travel Management – Under Alternative D, the nature of the impacts to soils from trails and travel management are the same as described under Alternative A. However, 4.0 miles of existing designated routes would be closed to motorized and mechanized vehicles. Along these closed routes, the same long-term impacts would occur to soils, as those identified in Alternative B.

Impacts from Lands and Realty – Impacts to soils are the same as described under Alternative A.

Impacts from Livestock Grazing – Impacts to soils are the same as described under Alternative A.

Impacts from Wildland Fire Management – Under Alternative D, prescribed fire and mechanical thinning are allowed as management tools if deemed necessary in the future. Fire suppression tactics and mechanical thinning that cause surface disturbance would cause localized short-term impacts to soil.

4.4.12 SPECIAL DESIGNATIONS

4.4.12.1 AREA OF CRITICAL ENVIRONMENTAL CONCERN

Assumptions and Incomplete Information: The PTNM legislation states “*The establishment of the Monument shall not change the management status of any area within the boundary of the Monument that is –(B) managed as an area of critical environment concern.*”

Management Decisions with No Impacts to Special Designations – ACEC: The proposed BLM management decisions in the Alternatives would not result in impacts that would alter the characteristics for which the ACEC was designated (significant paleontological, cultural, and scenic values, and high diversity of cacti species).

4.4.12.2 RESEARCH NATURAL AREA

Management Decisions with No Impacts to Special Designations-RNA: See discussion below in “*Effects Common to All Alternatives.*”

Effects Common to All Alternatives: Management actions for all resources and uses would be similar on the land within the Monument whether it has the Paleozoic Trackways RNA designation (Alternative A) or the RNA designation removed (Alternatives B, C, and D). The Monument designation duplicates the management goals of the RNA; protect, research, and interpret paleontological values to the entire Monument. Therefore, the RNA designation and management actions are redundant and not necessary.

4.4.12.3 WILDERNESS STUDY AREA

Assumptions and Incomplete Information: The PTNM legislation “*The establishment of the Monument shall not change the management status of any area within the boundary of the Monument that is – (A) designated as a wilderness study area and managed in accordance with section 603(c) of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1782(c).*”

The Robledo Mountains WSA would be managed to preserve its wilderness characteristics so as not to impair the area’s suitability for wilderness designation. All proposed actions within the WSA must follow the *Management of Wilderness Study Areas Manual 6330*.

Management Decisions with No Impacts to Special Designations-WSA: The following resources or Monument uses have little or no impact on the Robledo Mountains WSA: Paleontological Resources, Air Resources, Cultural Resources, Special Management Areas- Area of Critical Environmental Concern and Research Natural Area, Special Status Species, Visual Resources, Water Resources, and Wildlife.

Effects Common to All Alternatives: No alternatives considered would result in impairment to the WSA.

4.4.13 SPECIAL STATUS SPECIES

Assumptions and Incomplete Information: There is only one recorded occurrence of a special status plant (night-blooming cereus) near the Monument and a substantial amount of habitat for this plant occurs throughout the Monument. If there were losses, they would be at an individual level rather than the entire population.

Prior to any construction, a field survey would be completed and any special status species found within the construction site would be avoided or mitigated.

If additional special status species are designated or discovered, or critical habitat is designated on the Monument, the BLM would adopt subsequent recovery plans or species specific guidance.

Management Decisions with No Impacts to Special Status Species: The following resources or uses have little or no impact on Special Status Species: Paleontology, Air Quality and Climate Change, Cultural Resources, Lands and Realty, Socio-Economic Conditions, Soils, Special Designations- Area of Critical Environmental Concern and Research Natural Area, Visual Resources, and Water Resources.

IMPACTS OF THE ALTERNATIVES

4.4.13.1 ALTERNATIVE A

Impacts from Education and Interpretation – Under Alternative A, there would be no management actions for interpretation and education that would impact special status species.

Impacts from Trails and Travel Management – Under Alternative A, there are approximately 37.6 miles of motorized and mechanized routes and 5.3 miles of trail for mechanized vehicle use only open year-round. Authorized use of those routes could potentially cause injury or mortality of slow moving special status animals such as Texas horned lizards that may inhabit areas near these routes. Special status bat species would not be impacted as there are no suitable roosting habitat near routes. Burrowing owls and loggerhead shrikes may temporarily vacate areas near routes that are being used. Traffic that may be present on these routes would not occur regularly and would not permanently displace special status species that would potentially inhabit areas adjacent to the routes. No impacts would be expected on night-blooming cereus plants as they do not occur in disturbed areas such as trails and routes that would be open under Alternative A.

Impacts from Livestock Grazing – Under Alternative A, livestock grazing would continue within the Monument and livestock grazing improvements would continue to function. Grazing improvements such as water facilities would benefit special status animals due to continued availability of water in an area in which water would not naturally occur. Trampling of night-blooming cereus may occur, but it is unlikely as livestock do not congregate in creosote shrublands which is primarily where night-blooming cereus is likely to occur. If any mortality of night-blooming cereus takes place, it would be at an individual level and not at a population wide scale. Special status bats that may occur in the Monument would potentially utilize the earthen reservoirs during times when water would be present. Bats would potentially forage for flying insects that may be present around the tanks during the summer months. Troughs would be utilized more throughout the year as they would hold water in times when earthen reservoirs or dirt tanks may be dry. Troughs would be fitted with wildlife escape ramps to prevent drowning of bats that may fall into troughs. Impacts to special status birds and reptiles would be minimal as they currently coexist with livestock and typically avoid areas of high concentrations of livestock such as troughs.

Impacts from Vegetation – Chemical herbicides would be used to control noxious weeds within the Monument, including existing populations and those that may be introduced over time. Herbicides would also be used to treat areas where mesquite or creosotebush have become out of balance with the desired plant community and are competing with desirable native plant species. Any vegetation treatments that may occur would benefit special status animals by increasing forage and improving grassland habitat. Due to its association with creosote and mesquite, night-blooming cereus may be affected by large scale vegetation treatments. Although some individual plants may suffer mortality, the entire local population would not be harmed. Surveys of the treatment areas would also take place and any special status plants identified would be buffered from treatment. Bats would not be impacted by chemical treatments as they do not use the habitats that contain large amounts of shrubs that would be treated. Over time as grasses are expected to move into treatment areas, more insects would be expected to be present during wet periods during the late summer and early fall. These insects would be a valuable food source for burrowing owls, loggerhead shrikes, and Texas horned lizards.

Impacts from Wildland Fire Management – Under Alternative A, there would be no management actions for wildland fire management that would impact special status species.

4.4.13.2 ALTERNATIVE B

Impacts from Education and Interpretation – Under Alternative B, there would be no management actions for interpretation and education that would impact special status species.

Impacts from Recreation and Visitor Services – Under Alternative B, recreational use of the Monument under Alternative B would be limited to hunting, hiking, and sightseeing. This use would temporarily disturb special status species such as burrowing owls, loggerhead shrikes, and Texas horned lizards in general. Increased human presence would also potentially bring about harassment and potential illegal collection of Texas horned lizards. No camping would be allowed; therefore, displacement would be limited to day-use associated with dispersed recreation. This temporarily displaces special status species in areas where the recreation is occurring. There is only one recorded occurrence of a special status plant (night-blooming cereus) near the Monument and a substantial amount of habitat for this plant occurs throughout the Monument that if there were losses, they would be at an individual level rather than the entire population. SRP events would not be allowed, thus the impacts from those events would not occur. Special status bats would not be impacted because they are primarily active at night when recreation impacts would not be occurring.

Impacts from Trails and Travel Management – Motorized and mechanized use would be prohibited thus minimizing the chance of slow moving special status species such as Texas horned lizards to be injured on and near travel routes. No impacts would occur to other special status species.

Impacts from Livestock Grazing – Under Alternative B, livestock grazing would not continue within the Monument. Availability of forage for species such as burrowing owls, loggerhead shrikes, and Texas horned lizards and cover would increase as grasses and forbs would be expected to increase in certain areas. This would be beneficial to these special status species. Artificial water sources and earthen reservoirs would be maintained by the BLM primarily for wildlife use. Should pipelines and troughs be retained for use by wildlife, modifications to the facilities may be needed, or a new water source would need to be found to supply water to these facilities, as the existing source is a well on private land not under the jurisdiction or control of the BLM. These water sources would continue to be available for bats to forage over and drink out of. Troughs would be fitted with wildlife escape ramps to prevent drowning of bats that may fall into these troughs. Night-blooming cereus plants that may occur in areas frequented by livestock would be under no threat of trampling by cattle.

Impacts from Vegetation – Impacts to special status species from vegetation management under this Alternative would be similar to those outlined under Alternative A. Passive treatment methods would allow for finer scaled treatment of target species such as creosote and mesquite, and impacts to night blooming cereus that would occur with chemical treatments would be avoided. If biological methods of controlling the brush were used, impacts to night-blooming cereus would be the same as in Alternative A. No impacts to other special status species would occur.

Impacts from Wildland Fire Management – Under Alternative B, there would be no management actions for wildland fire management that would impact special status species.

4.4.13.3 ALTERNATIVE C

Impacts from Education and Interpretation – Under Alternative C, pedestrian trails and interpretation kiosks would be developed. This would potentially bring an increase in human traffic causing special status animal species such as burrowing owls, loggerhead shrikes, and Texas horned lizards to temporarily vacate the area near the trails and kiosks. No impacts on bats or night-blooming cereus would occur as the interpretive kiosks and pedestrian trails would not be constructed where habitat is present.

Impacts from Recreation and Visitor Services – Visitor facilities such as toilets, shade shelters, information kiosks, trail markers, and picnic sites would be developed and maintained. This could displace special status species such as burrowing owls, loggerhead shrikes, and Texas horned lizards that may inhabit the area where these facilities would be built and used. Dispersed recreation would continue and also continue to temporarily displace these special status species in areas where the recreation is occurring. The establishment of a primitive campground would displace any special status species that inhabits the area where the campground would be built. An increase in human activity would temporarily cause some special status species to vacate areas frequented by humans. Increased human presence would also potentially bring about harassment and potential illegal collection of Texas horned lizards. Special status bats may roost in newly-constructed facilities and may become a nuisance, but as bats are mostly active at night, these impacts would be minimal.

Impacts from Trails and Travel Management – Under Alternative C, there are approximately 26.9 miles of motorized and mechanized routes and 5.3 miles of trails for mechanized vehicles only (such as bikes) open for use. Due to the use allowed on certain routes, there would be potential for slow moving special status species to be injured on and near travel routes. This risk would increase during SRP events where a greater number of vehicles or people would be on the routes. Impacts to special status species would be similar to impacts discussed in Alternative A.

Impacts from Livestock Grazing – Under Alternative C, grazing would continue except where excluded to protect paleontological resources, campsites, or other specified locations where other unresolved resource conflicts arise. Grazing improvements such as water facilities would benefit special status species due to continued availability of water in an area in which water would not naturally occur. Trampling of night-blooming cereus may occur, but it is unlikely as livestock do not congregate in creosote shrublands which is primarily where night-blooming cereus is likely to occur. If any mortality of night-blooming cereus takes place, it would be at an individual level and not at a population wide scale. Impacts would be similar to those discussed in Alternative A, however if areas are excluded from grazing, impacts at those locations would be the same as Alternative B.

Impacts from Vegetation – Impacts to special status species from vegetation management under this Alternative would be similar to those outlined under Alternative A.

Impacts from Wildland Fire Management – Under Alternative C, there would be no management actions for wildland fire management that would impact special status species.

4.4.13.4 ALTERNATIVE D

Impacts from Education and Interpretation – Development of kiosks would bring an increase in human traffic causing special status species to temporarily vacate the area near the trails and kiosks. Impacts would be similar to Alternative C.

Impacts from Recreation and Visitor Services – Under Alternative D, development of pedestrian trails would potentially bring an increase in human traffic causing special status species to temporarily vacate the area near the trails. Impacts would be similar to Alternative C. The establishment of an on-site visitor center would displace special status species from the site chosen for the visitor center. Activities associated with the construction of the visitor center could potentially lead to mortality of slow moving special status species such as Texas horned lizards which are unable to quickly vacate the area. Recreational use of the Monument under Alternative D would lead to a possibility of the establishment of a developed campground which would displace any special status species that inhabits the area where the campground would be built.

Impacts from Trails and Travel Management – Under Alternative D, new routes or trails could be constructed and maintained. There are approximately 28.3 miles of motorized and mechanized routes and 5.3 miles of trails for mechanized use only proposed for use. The establishment of new routes or trails would create a potential for slow moving special status species to be injured or killed on and near travel routes. Vehicular use of the Monument would not be prohibited therefore there would be potential for slow moving special status species to be injured on and near travel routes. This risk would increase during special events where a greater number of vehicles would be utilizing the routes. Impacts would be similar to Alternative A.

Impacts from Livestock Grazing – Under Alternative D, impacts to special status species from livestock grazing are the same as described under Alternative A.

Impacts from Vegetation – Under Alternative D, impacts to special status species from vegetation management would be the same as those outlined under Alternative A.

Impacts from Wildland Fire Management – Under Alternative D, prescribed fire is allowed as a management tool. Prescribed fire could displace, kill, and render habitat unsuitable for special status species for longer durations of time than a one-time event, road construction, or some other short duration disturbing activity. The long-term positive benefits of prescribed fire to the overall ecosystem would be substantial.

4.4.14 VEGETATION

Assumptions and Incomplete Information: It is assumed that under Alternatives A, C, and D, visitation would steadily increase over the life of the Plan.

Management Decisions with No Impacts to Vegetation: The following resources or uses have little or no impact on Vegetation: Paleontological Resources, Education and Interpretation, Air Resources, Cultural Resources, Lands and Realty, Special Designations, Visual Resources, and Water Resources.

Effects Common to All Alternatives

Impacts from Vegetation – Under all Alternatives, plant collecting without a permit is not allowed within the Monument. By not allowing plant collecting, this would help to protect native vegetation diversity and abundance directly benefiting wildlife, and helping protect the soil from erosion.

Impacts from Special Designations – The ACEC and WSA designations limit surface disturbance.

Impacts from Education and Interpretation – Under all Alternatives, impacts to vegetation would be impacted by tours to fossil sites. Inadvertent trampling of vegetation by groups would occur along designated trails and at interpretive sites.

Impacts from Wildland Fire Management – Under all Alternatives, fires would be suppressed and hazardous fuels would be treated in wildland urban interface areas. Under the current fire management direction for the Robledo Mountains, vegetation would be disturbed by wildfires and fire suppression activities.

IMPACTS OF THE ALTERNATIVES

4.4.14.1 ALTERNATIVE A

Impacts from Education and Interpretation– Under Alternative A, interpretive facilities would not be developed so there would be no loss of vegetation that would result from the installation of structures, signs, exhibits and trails. Self-guided interpretive activities could result in the trampling of vegetation since visitor access routes would be limited and more cross-country access could occur.

Impacts from Recreation and Visitor Services – Under Alternative A, increased visitor use would likely result in disturbance to vegetation through hiking cross-country, and could result in the introduction and spread of noxious and invasive weeds through vehicles or clothes contaminated by weed seeds.

Impacts from Trails and Travel Management – Under Alternative A, the existing routes would continue to be used for motorized, mechanized, and pedestrian travel. Designated routes within the Monument are also used by the grazing permittee for managing cattle and maintaining range improvements. Activities associated with the use of these trails and roads would have the potential to remove or damage vegetation within and adjacent to these routes. The potential exists for vehicles and hikers to introduce and contribute to the spread of noxious and invasive weeds. Typically this can occur when people and vehicles travel through weed infested areas, and seeds are picked up and become stuck to vehicles and clothing. Subsequently, seeds can then drop in areas free of weed infestations. Soil disturbance from vehicles traveling off of existing roads can create areas more susceptible to invasion by noxious weeds.

Impacts from Lands and Realty – Under Alternative A, vegetation disturbance including damage or removal would occur within or adjacent to surface disturbing authorizations. Development of non-Federal minerals would result in further vegetation disturbance.

Impact from Lands with Wilderness Characteristics – Under Alternative A, no lands with wilderness characteristics within the Monument would be managed for those characteristics. Surface disturbing activities are allowed and may potentially impact vegetation.

Impacts from Livestock Grazing – Under Alternative A, livestock would continue to graze public land forage. A total of 456 AUMs of forage have been allotted to livestock on the public land within the Monument on an annual basis. Due to the rugged terrain, and the location of water and supplements, cattle distribution and forage utilization would not be uniform across the entire Monument. Areas where livestock congregate, particularly in the vicinity of livestock waters, typically experience a higher impact to vegetation than other areas that are further from these water sources. Research in the Chihuahuan Desert indicates that biomass of perennial grasses can be reduced up to 1,000 meters from water (Fusco *et al.* 1995). As the distance from water increases, these impacts are reduced as livestock become more dispersed throughout the landscape.

Currently, livestock that graze in the majority of the Monument are managed under a deferred-rotation grazing system as prescribed in the Picacho Peak Allotment Management Plan. Under this Plan, forage utilization targets have been established, where use would not exceed 50 percent of the current year's growth for most perennial grass species. For black grama, maximum forage utilization allowed is more restrictive at 40 percent use for the north pasture and 35 percent in the south pasture. Since the revision of the management plan in 1997, the allotment has been stocked at a maximum of 58 percent of the permitted carrying capacity, thus actual forage removed has been substantially lower than the maximum allowed. Reductions in actual numbers of livestock on the allotment have been made voluntarily to allow for conservation of forage resources when possible and to respond to decreased production as a result of periodic drought conditions.

The southern part of the Altamira Allotment is not typically stocked with cattle resulting in very minimal use by livestock due to the terrain and the lack of developed water. Any new water developments in the southern part of the Altamira Allotment would alter grazing use in this area, and would result in increased forage use. In addition to changes in grazing use, vegetation would also be disturbed in order to construct future range improvements, such as watering facilities, fences, erosion control structures and pipelines.

Livestock grazing has the potential to introduce Class A, B, or C noxious weeds into an area through consumption of feed contaminated with weed seed; however, this is unlikely since maintenance feeding of livestock is not authorized. It is more likely that cattle could introduce weed species through the introduction of seeds that are stuck to animal hair, or when seeds are consumed and then later excreted. Subsequently seeds can then be transported and dropped in areas free of weed infestations. This mechanism can also contribute to the spread of noxious weeds by cattle from populations that may become established within or adjacent to the Monument by other means. Introduction of noxious weeds by cattle would most likely occur when replacement animals are brought in from other ranches or auctions and added to the herd on the allotment. Ground disturbances from livestock tend to be more pronounced in areas of livestock concentration, which can increase susceptibility of these areas to invasion by noxious weeds. Livestock grazing is not anticipated to influence the spread or vigor of salt cedar populations.

Impacts from Soils – Under Alternative A, critical soils on slopes over 10 percent would be a priority for altering grazing management to reduce erosion and improve water quality. Loss of soil due to erosion would impact soil fertility, and could result in shifts in the type of vegetation and species that can grow in

a particular area. Research indicates that black grama dominated ecosystems in southern New Mexico are at risk from nutrient imbalances as a result of wind erosion, which can also shift the competitive advantage to shrubs (Li *et al.* 2009). Additionally, soil disturbance and erosion could result in areas favoring colonization by weeds, which would compete with native perennial vegetation.

Soil disturbing activities would be authorized with proper mitigation to protect air and water quality. Soil disturbances would likely lead to loss of vegetative cover, which would typically be temporary and limited to the construction phase of a project. Rehabilitation of vegetation on sites following surface disturbing activities would depend on the specific project, and would be analyzed on a site-specific basis.

Impacts from Vegetation – Noxious weed invasions and increases of shrub species in a manner that is out of balance with desired ecological condition results in increased competition with desired herbaceous plants for water and nutrients. Under Alternative A, the management action to control noxious weeds is to use chemical herbicides. Currently, no known populations of Class A or B noxious weeds have been identified within the Monument. Individual plants and small populations of the Class C noxious weed saltcedar (*Tamarix ramosissima*) have been discovered in an earthen reservoir within the Monument and in ephemeral drainage areas within and adjacent to the Monument. Continued monitoring of the Monument by the BLM would allow for the discovery and rapid treatment of noxious weeds. When future weed surveys are conducted on the Monument, particular emphasis would continue to be placed on areas most susceptible to invasion and spread of noxious weeds, including trails, trailheads, livestock watering points, corrals, roads, and any other developed visitor facilities.

Vegetation management treatments under this Alternative would primarily be carried out using herbicides, and would certainly result in a shift of the species dominating treated areas. In many areas of the Monument, creosotebush dominates the landscape. Recent mapping of vegetation states indicates that there is potential for restoration in shrub-dominated areas in the Limestone Hills ecological site, which makes up approximately 53 percent of the Monument. However, given the rugged terrain and the prescription for using herbicides on areas with slopes less than 10 percent, much of the Monument would not be treatable using chemical control methods. There might be opportunity to treat creosotebush on level or gently sloping areas, while leaving the steeper slopes and draws untreated, resulting in a mosaic of vegetation types.

Existing long-term monitoring transects are established on the Monument. These transects would be revisited periodically to track changes in cover, production, and utilization of vegetation in the Monument. Large-scale shrub treatments would likely have paired plot monitoring transects established to track shrub mortality and the response of herbaceous vegetation.

Impacts from Wildlife – Under all Alternatives, the Robledo Mountains Habitat Management Plan (HMP) (for deer, antelope, upland game species) would be developed and implemented. Mule deer would continue to graze herbaceous plants and browse palatable woody plant species. Areas dominated by shrub cover tend to be at a higher risk of plant seedling predation by rodents in the Chihuahuan Desert (Bestlemeyer *et al.* 2007); as a result, continued shrub invasion by creosotebush and mesquite could potentially result in decreased establishment of perennial forage plants through this mechanism. The potential exists for wildlife to introduce and contribute to the spread of noxious and invasive weeds. Typically this can occur when animals travel through weed infested areas, and seeds are picked up and become stuck to the fur, or when seeds are consumed and then later excreted. Subsequently, seeds can then be transported and dropped in areas free of weed infestations.

4.4.14.2 ALTERNATIVE B

Impacts from Education and Interpretation – Under Alternative B, the impacts to vegetation from Education and Interpretation would be similar to those described under Alternative A.

Impacts from Trails and Travel Management – Under Alternative B, the Monument would be closed to motorized or mechanized recreation and SRPs, and this would reduce the potential for damage to vegetation adjacent to existing roads and trails. The risks associated with introduction and spread of noxious weeds by vehicles would be reduced.

Impacts from Lands and Realty – Under Alternative B, no surface disturbing authorizations would be allowed, therefore, no disturbance to vegetation would occur and there would be no impacts from lands and realty. The subsurface estate would be acquired, and no surface disturbing activities would impact vegetation from any lands and realty actions.

Impacts from Lands with Wilderness Characteristics – Under Alternative B, approximately 576 acres would be managed as lands with wilderness characteristics. Additional protections to vegetation from limiting surface disturbance would be provided to lands with wilderness characteristics. Therefore, impacts to the vegetation would be minimal.

Impacts from Livestock Grazing – Under Alternative B, the Monument would be closed to livestock grazing, and this would reduce the amount of plant biomass utilized. The 456 AUMs of forage allotted to livestock annually would not be harvested from the Monument. Over time, it is expected that cover, plant density, species diversity and plant production would increase, although the magnitude of the increase would vary. Changes to plant community composition are likely to be more noticeable in high impact areas near livestock watering facilities. Given the fact that the vegetation within the majority of the Monument is lightly utilized, widespread changes to the vegetation are not expected from removing livestock grazing pressure. The risks associated with introduction and spread of noxious weeds by livestock would be reduced. In addition, there would be an increase in fine fuels, which would allow fires to burn more readily in the Monument.

Impacts from Soils – Under Alternative B, surface disturbing activities within the Rio Grande watershed and areas with high potential for soil erosion would be prohibited. These limitations on surface disturbing activities would result in maintenance of ground cover and could lead to increased production of vegetation.

Impacts from Vegetation – Under Alternative B, vegetation would be managed according to an integrated approach primarily using passive methods, but also employing manual and biological strategies in order to move toward the potential natural community of ecological sites. Plant community shifts toward the desired condition would occur at a reduced rate compared with the other alternatives, and ultimately goals for plant community composition may not be achieved through passive means alone. Treatment options would be limited for noxious weed control, and strategies would be dependent on the species present and the size of the infestation.

Impacts from Wildland Fire Management – Impacts to vegetation under Alternative B would be the same as those discussed under Alternative A.

Impacts from Wildlife – Under all Alternatives, the Robledo Mountains HMP (for deer, antelope, upland game species) would be developed and implemented. It is anticipated that wildlife populations would increase due to increased forage availability and cover from lack of livestock grazing in

Alternative B. This could result in a shift in use patterns, with increased utilization of plant species favored by wildlife.

4.4.14.3 ALTERNATIVE C

Impacts from Education and Interpretation – Under Alternative C, the development of interpretive facilities such as a visitor contact station and interpretive trails and exhibits would require the removal of vegetation to accommodate these facilities, and the continued removal as maintenance. It is also possible that visitors to these facilities, especially if in large groups, will trample or crush vegetation in areas adjacent to interpretive facilities. Visitors engaging in self-guided interpretive activities may venture into areas not serviced by a constructed trail, and could trample and crush vegetation as a result.

Impacts from Recreation and Visitor Services – Under Alternative C, disturbance to vegetation would occur in order to construct visitor facilities. Disturbance to vegetation would mainly occur during construction activities; however, increased use in high traffic areas may result in continual disturbances that would reduce vegetative cover in some areas. Vegetation would be lost in areas where permanent visitor facilities would be constructed.

Impacts from Trails and Travel Management – Under Alternative C, disturbance to vegetation would occur in order to construct or develop new trails. Increased use on these new trails or routes would result in reduced vegetative cover.

Impacts from Lands and Realty – Impacts to vegetation from lands and realty under Alternative C would result from vegetation disturbance including damage or removal that would occur within or adjacent to new rights-of-way or land use authorizations. The subsurface estate would be acquired and no surface disturbing activities would impact vegetation from any lands and realty actions.

Impacts from Lands with Wilderness Characteristics – Under Alternative C, approximately 253 acres would be managed as lands with wilderness characteristics. Additional protections to vegetation from limiting surface disturbance would be provided to lands with wilderness characteristics. Therefore, impacts to the vegetation would be minimal.

Impacts from Livestock Grazing – Impacts to vegetation from livestock grazing under Alternative C would be the same as those identified under Alternative A.

Impacts from Soils – Under Alternative C, mitigation of soil-disturbing activities would help to protect vegetation from excessive disturbance.

Impacts from Vegetation – Under Alternative C, vegetation management would focus on maintaining vegetative cover and production with regard to the current ecological potential of land within the Monument using passive and active treatments. Particular emphasis would be placed on maintaining and enhancing native plant populations and habitat for special status species.

Impacts from Wildland Fire Management – Impacts to vegetation from wildland fire management under Alternative C would be the same as those discussed under Alternative A.

Impacts from Wildlife – Impacts to vegetation from wildlife under Alternative C would be the same as those described under Alternative A.

4.4.14.4 ALTERNATIVE D

Impacts from Education and Interpretation - Impacts to vegetation would be similar to those described under Alternative C, except that invertebrate fossil collecting is allowed as an organized educational activity. Although this activity would be conducted with agency or partner oversight, and very little vegetation usually grows in these areas of the Monument, it is still possible that trampling of vegetation would occur.

Impacts from Recreation and Visitor Services – Impacts to vegetation would be the same as those described under Alternative C.

Impacts from Trails and Travel Management – Impacts to vegetation would be the same as those described under Alternative C.

Impacts from Lands and Realty – Impacts to vegetation would be similar to those discussed under Alternative C.

Impacts from Lands with Wilderness Characteristics – Impacts to vegetation would be the same as those described under Alternative A.

Impacts from Livestock Grazing – Impacts to vegetation from livestock grazing under Alternative D would be the same as those described under Alternative A.

Impacts from Soils – Impacts to vegetation from soil resources under Alternative D would be the same as those described under Alternative A.

Impacts from Vegetation – Under Alternative D, vegetation management objectives would focus on maintaining cover and production with regard to the current potential of ecological sites found within the Monument using active and passive restorative methods. Emphasis would be placed on maintaining or enhancing habitat for special status species in conjunction with maximizing plant production for use by livestock.

Impacts from Wildland Fire Management – Under Alternative D, fire would have a more prominent role in maintaining the health of the ecosystem by allowing prescribed fire and mechanical thinning. Fire would help to reduce shrub cover, and would favor re-establishment of fire-adapted perennial plant species. Fire has been found to have negative impacts to black grama (Allred and Snyder 2008); however the impact fire has to the survival and health of black grama is dependent on precipitation, fire temperature and grass patch size (Drewa *et al.* 2006).

Impacts from Wildlife – Impacts to vegetation from wildlife under Alternative D would be the same as those described under Alternative A.

4.4.15 VISUAL AND SCENIC RESOURCES

Assumptions and Incomplete Information: The number of visitors to the Monument would probably increase over time.

Per BLM policy, all land within WSAs is managed under a Visual Resource Management (VRM) Class I management objective until such time as the Congress decides to designate the area as wilderness or release it for other uses. This impact analysis assumes under all Alternatives that those lands that fall within the Robledo WSA (789 acres) would be managed to preserve the existing visual character of the landscape – where management activities would be limited, very low, and not attract attention.

Contrast ratings would be required for proposed projects in highly sensitive areas and for projects with the potential for high impact. Visual design considerations such as siting, color selection, and reclamation would be incorporated into all surface disturbing projects regardless of the anticipated size of the impact.

The location(s) of the proposed visitor contact station (Alternative C) and visitor center (Alternative D) are unknown at this time. Should future activity level planning propose locating such facilities within the Monument boundary, a visual contrast rating and impact analysis would be required to determine compliance or the need to amend the VRM class objective.

Scenic Resources are identified as one of the resources, objects, and values for which the Monument was established and are defined as the distinct geologic exposures of the Robledo Mountains in the context of the Permian fossils.

Management Decisions with No Impacts to Visual Resource Management: The following resources and uses would have little or no impact on Visual Resource Management within the Planning Area: Paleontological Resources, Air Resources, Cultural Resources, Special Status Species, Socio-Economic Conditions, Soils, Vegetation Management, Water Resources, Wildland Fire Management, and Wildlife.

IMPACTS OF THE ALTERNATIVES

4.4.15.1 ALTERNATIVE A

Under Alternative A, the potential level of visual resource impacts are as follows:

- 15 percent of the *Planning Area* (789 acres) would be managed under a VRM Class I objective where impacts from management activities should be very low,
- 17 percent of the *Planning Area* (932 acres) would be managed under a Class II objective where impacts from management activities should be low,
- 50 percent of the *Planning Area* would be subject to a moderate degree of visual impacts where 2,627 acres would be managed under a VRM Class III objective, and
- 18 percent of the *Planning Area* would be subject to a high degree of visual impacts where 932 acres would be managed under a VRM Class IV objective.

Table 4-2 provides an overall indication of the level of potential visual impacts with a comparison of the VRM objective to the corresponding visual inventory class rating.

Table 4-2 VRM Objectives Compared to Visual Resource Inventory Class Ratings Alternative A

TABLE 4-2 VRM OBJECTIVES COMPARED TO VISUAL RESOURCE INVENTORY CLASS RATINGS ALTERNATIVE A										
PROPOSED VRM CLASSES (ACRES)	VRI CLASS I (ACRES)		VRI CLASS II (ACRES)		VRI CLASS III (ACRES)		VRI CLASS IV (ACRES)		TOTAL	
	789**	%	4,466	%	0	%	0	%	5,255	
VRM I	789*	789	100%	0	0%	0	0%	0	0%	789
VRM II	907	0	0%	907	20%	0	0%	0	0%	907
VRM III	2,627	0	0%	2,627	59%	0	0%	0	0%	2,627
VRM IV	932	0	0%	932	21%	0	0%	0	0%	932
Totals	5,255	789*	100%	4,466	100%	0	0%	0	0%	5,255

NOTES: * Robledo Mountains WSA
** Default VRI Class I for WSA

Impacts from Education and Interpretation – Under Alternative A, most interpretation and education activities would occur off-site and outside of the *Planning Area*. Overall, the anticipated or potential visual impacts resulting from interpretive activities would be low and meet or exceed all VRM Class objectives.

Impacts from Recreation and Visitor Services – Under Alternative A, visual impacts resulting from dispersed recreational use (e.g., establishment of primitive campsites, fire rings, and pioneered foot trails) would continue and likely increase proportionally with the levels of visitor use. Overall, the anticipated or potential visual impacts resulting from recreational activities would be low and meet or exceed all VRM Class objectives.

Impacts from Trails and Travel Management – Under Alternative A, continued use of the existing road and trail network (37.6 miles) within the Monument would result in low level, site-specific visual impacts such as trail widening and vehicle pullouts. These anticipated impacts would not affect BLM’s ability to manage visual resources to meet the proposed VRM objectives.

Impacts from Lands and Realty – Under Alternative A, the non-Federal minerals are subject to mining and the impacts commonly associated with mineral development (e.g., excavation, road construction, installation of facilities, etc.) would impact visual resources by causing visual disturbances that would not retain the existing visual character of the landscape. If new surface disturbing authorizations are issued, prior to construction, VRM objectives would be incorporated into design features so as to not impair the visual qualities of the landscape.

Impacts from Livestock Grazing – Under Alternative A, visual impacts related to livestock grazing activities and the range improvements would continue. The use of the area for livestock grazing is light; grazing intensity is at a more moderate level near watering points, but most places see slight to light use by livestock due to terrain. This is based on both historic utilization data, and more recent observations during range health assessments and allotment inspections. Construction of range improvements including fences, pipelines, and watering facilities would introduce short-term visual impacts resulting from soil disturbance and removal of vegetation; these impacts would diminish over time as disturbed soils darken, stabilize, and flatten, and natural regeneration of vegetation begins to occur. Long-term

impacts would result from continued visibility of fence posts, wire, and watering facilities. Further NEPA analysis would be required to determine site-specific impacts, appropriate mitigation, and compliance with VRM objectives.

4.4.15.2 ALTERNATIVE B

Under Alternative B, 73 percent of the *Planning Area* (3,915 acres) would be managed as VRM II as to retain the existing character of the landscape and where impacts from management activities should be low. The remaining 27 percent (1,365 acres) would be managed to preserve the existing character of the visual landscape where impacts from management activities should be very low (VRM I).

Table 4-3 provides an overall indication of the level of potential visual impacts with a comparison of the VRM objective to the corresponding visual inventory class rating.

Table 4-3 VRM Objectives Compared to Visual Resource Inventory Class Ratings Alternative B

TABLE 4-3 VRM OBJECTIVES COMPARED TO VISUAL RESOURCE INVENTORY CLASS RATINGS ALTERNATIVE B											
PROPOSED VRM CLASSES (ACRES)	VRI CLASS I (ACRES)			VRI CLASS II (ACRES)			VRI CLASS III (ACRES)		VRI CLASS IV (ACRES)		TOTAL
	789**	%	4,466	%	0	%	0	%	5,255		
VRM I	1,365*	789	100%	576	13%	0	0%	0	0%	1,365	
VRM II	3,915	0	0%	3,915	87%	0	0%	0	0%	3,915	
VRM III	0	0	0%	0	0%	0	0%	0	0%	0	
VRM IV	0	0	0%	0	0%	0	0%	0	0%	0	
Totals	5,255	789	100%	4,466	100%	0	0%	0	0%	5,255	

NOTES: * Includes Robledo Mountains WSA and Lands with Wilderness Characteristics
 ** Default VRI Class I for WSA

Impacts from Education and Interpretation – Most interpretation and education activities would occur off-site. The overall potential for visual impacts resulting from interpretive and educational activities would be low to very low and meet with all proposed VRM Class objectives.

Impacts from Recreation and Visitor Services – Under Alternative B, the Monument would be closed to mechanized and motorized vehicle use and dispersed camping, which would reduce visual impacts resulting from tire tread and the establishment of primitive campsites, fire rings, and other recreation activities that impair the visual impacts to the land. The overall potential for visual impacts resulting from recreational activities would be low to very low and meet with all proposed VRM Class objectives.

Impacts from Trails and Travel Management – Under Alternative B, recreational motorized and mechanized vehicle use would not be allowed, and no new routes would be developed. Therefore, there would be no measureable impacts on visual resources.

Impacts from Lands and Realty – The non-Federal minerals would be acquired, and there would be no impacts from mineral development. Surface disturbing land use authorizations are not allowed, so there would be no impacts from visual resources on the Lands and Realty program.

Impacts from Livestock Grazing – Under Alternative B, the BLM would no longer authorize livestock grazing on the Monument. If a fence is built to facilitate implementation of Alternative B, then fence construction would introduce short-term visual impacts resulting from soil disturbance and removal of vegetation; these impacts would diminish over time as disturbed soils darken, stabilize, and flatten, and natural regeneration of vegetation begins to occur. Long-term impacts would result from posts and wire. An environmental assessment would be required to determine site-specific impacts, appropriate mitigation, and compliance with VRM objectives.

4.4.15.3 ALTERNATIVE C

Under Alternative C, 80 percent of the *Planning Area* (4,213 acres) would be managed as VRM II to retain the existing character of the landscape where impacts from management activities should be low and not attract attention. The remaining 20 percent of the *Planning Area* (1,042 acres) would be managed as VRM I to preserve the existing character of the visual landscape where impacts from management activities should be very low and must not attract attention.

Table 4-4 provides an overall indication of the level of potential visual impacts with a comparison of the VRM objective to the corresponding visual inventory class rating.

Table 4-4 VRM Objectives Compared to Visual Resource Inventory Class Alternative C

TABLE 4-4 VRM OBJECTIVES COMPARED TO VISUAL RESOURCE INVENTORY CLASS RATINGS ALTERNATIVE C										
PROPOSED VRM CLASSES (ACRES)	VRI CLASS I (ACRES)		VRI CLASS II (ACRES)		VRI CLASS III (ACRES)		VRI CLASS IV (ACRES)		TOTAL	
	789*	%	4,466	%	0	%	0	%	5,255	
VRM I	1,042*	789	100%	253	6%	0	0%	0	0%	1,042
VRM II	4,213	0	0%	4213	94%	0	0%	0	0%	4,213
VRM III	0	0	0%	0	0%	0	0%	0	0%	0
VRM IV	0	0	0%	0	0%	0	0%	0	0%	0
Totals	5,255	789*	100%	4,466	100%	0	0%	0	0%	5,255

NOTES: * Includes Robledo Mountains WSA and Lands with Wilderness Characteristics
 ** Default VRI Class I for WSA

Impacts from Education and Interpretation – Under Alternative C, visitor facilities such as wayside exhibits and information kiosks, would be developed. These facilities would introduce varying degrees of visual contrasts. Site-specific impacts, mitigation, and a determination of compliance with VRM objectives would be disclosed through activity level planning, associated NEPA documentation, and visual contrast ratings.

Impacts from Recreation and Visitor Services – Under Alternative C, visitor facilities such as a primitive campsites, toilets, shade shelters, trail markers, and picnic sites would potentially be developed. All of these facilities would introduce varying degrees of visual contrasts to the landscape. Site-specific impacts, mitigation, and a determination of compliance with VRM objectives would be disclosed through activity level planning, associated NEPA documentation, and visual contrast ratings.

Impacts from Trails and Travel Management – Under Alternative C, continued use of approximately 32.2 miles of the existing route and trail network would result in low level, site-specific visual impacts

such as trail widening and vehicle pullouts. These anticipated impacts would not affect BLM’s ability to manage visual resources to meet the proposed VRM objectives. Construction of new routes or foot trails to improve access and meet visitor use demands would introduce varying degrees of visual contrasts (line, color, form, and texture) across the landscape. The location of any new routes or trails would be restricted to those areas outside of VRM Class I. Site-specific impacts, mitigation, and a determination of compliance with VRM objectives would be disclosed through activity level planning, associated NEPA documentation, and visual contrast ratings.

Impacts from Lands and Realty – Under Alternative C, the non-Federal minerals would be acquired and eliminate the opportunity for mineral development(s) and the associated impacts. If new surface disturbing authorizations are issued, prior to construction, VRM objectives would be incorporated into design features as to not impair the visual qualities of the landscape.

Impacts from Livestock Grazing – Impacts would be the same as described in Alternative A.

4.4.15.4 ALTERNATIVE D

Under Alternative D, 85 percent of the *Planning Area* (4,466 acres) would be managed as VRM II to retain the existing character of the landscape where impacts from management activities should be low and not attract attention. The remaining 15 percent (789 acres) would be managed as VRM I to preserve the existing character of the visual landscape where impacts from management activities would be very low. Table 4-5 provides an overall indication of the level of potential visual impacts with a comparison of the visual resource management objective to the corresponding visual inventory class rating.

Table 4-5 VRM Objectives Compared to Visual Resource Inventory Class Alternative D

TABLE 4-5 VRM OBJECTIVES COMPARED TO VISUAL RESOURCE INVENTORY CLASS RATINGS ALTERNATIVE D										
PROPOSED VRM CLASSES (ACRES)		VRI CLASS I (ACRES)		VRI CLASS II (ACRES)		VRI CLASS III (ACRES)		VRI CLASS IV (ACRES)		TOTAL
		789**	%	4,466	%	0	%	0	%	
VRM I	789*	789	100%	0	0%	0	0%	0	0%	789
VRM II	4,466	0	0%	4466	100%	0	0%	0	0%	4,466
VRM III	0	0	0%	0	0%	0	0%	0	0%	0
VRM IV	0	0	0%	0	0%	0	0%	0	0%	0
Totals	5,255	789*	100%	4,466	100%	0	0%	0	0%	5,255

NOTES: * Robledo Mountains WSA
** Default VRI Class I for WSA

Impacts from Education and Interpretation – Impacts to visual resources would be the same as those described under Alternative C.

Impacts from Recreation and Visitor Services – Impacts would be the same as described in Alternative C.

Impacts from Trails and Travel Management – Impacts to visual resources would be the same as those described under Alternative C.

VISUAL AND SCENIC RESOURCES

Impacts from Lands and Realty – Impacts to visual resources would be the same as those described under Alternative C.

Impacts from Livestock Grazing – Impacts to visual resources would be the same as those described under Alternative A.

4.4.16 WATER RESOURCES

Assumptions and Incomplete Information: The analysis of impacts on water resources was based on the following assumptions:

Hydrologic processes would be managed to meet *New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management (New Mexico Standards and Guidelines)*.

Surface disturbance of soil, including compaction of soil or loss of vegetation cover, might increase water runoff and downstream sediment loads and lower soil productivity, which may degrade water quality, alter channel structure, and affect overall watershed health.

The degree of impact attributed to any one disturbance or series of disturbances would be influenced by several factors, including location within the watershed, soil characteristics, time and type and degree of disturbance, existing vegetation type and quantities, and climatic conditions.

Currently, there is incomplete information regarding groundwater associated within the Monument. Given the history of the Robledo Mountains, the inferred lack of aquifer potential, and the absence of groundwater data within the Monument, there is still a high degree of uncertainty regarding groundwater resources. Therefore, impacts to groundwater from management actions cannot be analyzed in detail. Additionally, the absence of perennial and intermittent surface waters in the Monument also limits the ability to analyze impacts to surface water resources from management actions. The analysis below focuses on impacts to the Rio Grande from management actions produced within the Rio Grande watershed.

Management Decisions with No Impacts to Water Resources: The following resources or uses have little or no impact on water resources for all alternatives: Air Resources, Special Status Species, Visual Resources, and Wildlife.

Effects Common to All Alternatives: Impacts to the Rio Grande could occur if nonpoint source pollutants (NPS) are produced from surface disturbing activities and transported to the River. Surface disturbing activities often result in decreased infiltration, increased runoff and erosion, degradation of vegetation, alteration of soil characteristics, changes in water flow patterns, and decreased watershed health. This could cause elevated concentrations of NPS to be transported to the Rio Grande. The degree of impact attributed to any one disturbance or series of disturbances under Alternatives A, C, and D could be highly variable and would be influenced by several factors, including location within the watershed, soil characteristics, time and type and degree of disturbance, existing vegetation type and quantities, and climatic conditions. Each one of these variables would be accounted for when developing mitigation measures for all surface disturbing activities occurring in the Rio Grande watershed. The greatest anticipated impacts on water resources would occur from surface disturbance associated with paleontological resources, trails and travel management, livestock grazing, and recreation and visitor services.

All resource management actions that propose limitations or restrictions on surface disturbing activities would help soil stability and productivity and aid vegetation communities necessary to slow water velocities and hinder erosion. Therefore, the proposed actions under Alternative B would have the greatest capabilities for reducing surface disturbance, resource degradation, and NPS pollutants.

4.4.17 WILDLAND FIRE MANAGEMENT

Assumptions and Incomplete Information: There is no known wildland fire event within the area of the Robledo Mountains. The occurrence of a wildland fire in the Monument would be uncommon. Predicting future wildland fire occurrence is highly speculative. Many factors influence wildland fires such as fuel source availability, ignition sources (human and natural caused), and weather conditions.

Protecting cultural and paleontological resources from prescribed fire would require small site-specific fuels modifications where necessary to reduce the imminent threat of fire. This could include removing vegetation down to mineral soil around known cultural sites for planned fire events.

Management Decisions with No Impacts to Wildland Fire Management: The following resources or uses have no or little impact on Wildland Fire Management: Paleontological Resources, Education and Interpretation, Air Resources, Lands and Realty, Lands with Wilderness Characteristics, Socio-Economic Conditions, Soils, Special Status Species, Visual Resources, Water Resources, and Wildlife.

Effects Common to All Alternatives:

Impacts from Special Designations-Area of Critical Environmental Concern – In the ACEC, natural ignited fires would only be allowed to continue to burn in areas designated as Fire Management Unit Categories C and D. The ACEC within the Monument is Fire Management Unit Category C.

Impacts from Vegetation – Vegetation restoration, through herbicide application could result in recovery of, and increase in herbaceous vegetation and grasses within the Monument. This increase in fine fuels could also increase potential for naturally ignited and man-caused fires.

IMPACTS OF THE ALTERNATIVES

4.4.17.1 ALTERNATIVE A

Impacts from Recreation and Visitor Services – Visitor facilities would be practically non-existent. Dispersed camping along with campfires would be allowed. Recreation activities could increase the potential for human-caused wildfire events. Dispersed camping in areas where designated campfires rings have not been created would be allowed, however; lack of a fuel reduction strategy in these areas represents a high risk for human-caused fire ignitions.

Impacts from Trails and Travel Management – The existing routes would continue to be used for motorized, mechanized, and pedestrian travel. Recreation activities could increase the potential for man-caused wildfire events through OHV use. Motorized vehicle use on existing trails could increase potential for human-caused fires, due to mechanical instances such as overheating.

Impacts from Livestock Grazing – Livestock would continue to graze public land forage. The understory that could carry fire would be eaten, reducing the possibility of a wildfire.

4.4.17.2 ALTERNATIVE B

Impacts from Recreation and Visitor Services – Under Alternative B, the Monument is closed to SRPs, camping and campfires. Closure of the Monument to all permitted recreational events and campfires would reduce the potential for human caused fire. Recreation activities such as hunting and

recreational target shooting would continue and could increase the potential for man-caused wildfire events.

Impacts from Trails and Travel Management – Under Alternative B, the Monument is closed to motorized or mechanized recreation. Closure of the Monument to all motorized and mechanized vehicles would reduce the potential for human caused fire.

Impacts from Livestock Grazing – Livestock grazing would not be permitted within the Monument. Elimination of livestock grazing activities would increase the amount of herbaceous plant materials. Fuel continuities would increase as herbaceous plant material increases. Potential for wildfire, both naturally ignited and human caused would be greatest and potentially larger in size under this Alternative.

4.4.17.3 ALTERNATIVE C

Impacts from Recreation and Visitor Services – Visitor facilities such as toilets, shade shelters, information kiosks, trail markers, and picnic sites would be developed and maintained. Campfires would be limited to designated campfire rings. Visitor use would likely increase as facilities, are developed, which could result in increased fire ignitions. Designated campfire rings would reduce the chance of human-caused fire ignitions as compared to Alternative A. Recreational target shooting would not be allowed, therefore decreasing the chance of a human-caused wildfire from this recreational activity.

Impacts from Trails and Travel Management – Under Alternative C, visitor facilities such as new routes and trails would have the potential to be developed and maintained. Visitor use would likely increase as routes and trails are developed, which could result in increased fire ignitions.

Impacts from Livestock Grazing – Grazing would continue except where excluded to protect paleontological resources, campsites, or other specified locations. Impacts to wildland fire management from livestock grazing under Alternative C would be similar to those described under Alternative A; except that grazing could be eliminated from camping areas with fire rings. This could increase the fire behavior of human-caused fires in that immediate area. Increased fuel loading around campfires could increase the potential for human-caused fires.

4.4.17.4 ALTERNATIVE D

Impacts from Recreation and Visitor Services – Impacts to wildland fire management from recreation and visitor services under Alternative D would be the same as those described under Alternative C.

Impacts from Trails and Travel Management – Impacts to wildland fire management from Trails and Travel Management under Alternative D would be the same as those described under Alternative C.

Impacts from Livestock Grazing – Impacts to wildland fire management from livestock grazing under Alternative D would be similar to those described under Alternative A except prescribed fire is a management alternative under Alternative D.

If fire is used as a management tool, existing uses such as livestock grazing would have to be considered. Designated burn areas may need to be rested from grazing pressure to allow for grass densities to become favorable to carry fire and meet resource objectives. Proper grazing practices through the removal of herbaceous material usually favor less intense wildfire and wildfire potential.

4.4.18 WILDLIFE

Management Decisions with No Impacts to Wildlife: Under all Alternatives, the following resources and uses have no or little impact on Wildlife: Air Resources, Cultural Resources, Lands with Wilderness Characteristics, Socio-Economic Conditions, Soils, Special Designations, Visual Resources, and Water Resources.

Effects Common to All Alternatives:

Impacts from Vegetation – Any vegetation treatment would benefit wildlife by increasing forage and improving grassland habitat.

IMPACTS OF THE ALTERNATIVES

4.4.18.1 ALTERNATIVE A

Impacts from Paleontological Resources – Casual collecting of common invertebrates and plant paleontological resources and scientific research would continue, which would continue to affect wildlife. Continuation of these activities would temporarily displace wildlife in areas that are being used; however, this would be of short duration and would not cause wildlife species to permanently vacate the area.

Impacts from Recreation and Visitor Services – Under Alternative A, visitor facilities would be practically non-existent and dispersed camping along with campfires would be allowed. Wildlife would continue to be affected by casual recreational use of the Monument. Continuation of these activities would temporarily displace wildlife in areas that are being used; however, this would be of short duration and would not cause wildlife species to permanently vacate the area.

Impacts from Trails and Travel Management – Under Alternative A, approximately 32.2 miles of motorized and mechanized vehicle use routes and 5.3 miles of trails for mechanized vehicles only are designated for use. Use of motorized and mechanized vehicles could potentially cause injury or mortality of slow moving wildlife such as reptiles that may inhabit areas near roads.

Impacts from Livestock Grazing – Under Alternative A, livestock grazing and range improvements would continue. Grazing activities such as water facilities would benefit wildlife due to continued availability of water in an area in which water would not naturally occur. Any preexisting fences that do not follow BLM wildlife friendly fence specifications would pose a risk to wildlife through entanglement. If existing fences are to be replaced or rebuilt, they would be required to be built to BLM specifications using proper wire spacing and to mitigate and prevent entanglement by wildlife. Any new fences constructed within the monument would be required to follow the same specifications. There are no large migrating wildlife populations that would be impeded by fences on the Monument.

Providing water can change the composition, sizes, and abundance of wildlife populations. While some species will benefit from the increased availability of water, other species that are not dependent on water availability may see little or no benefit. Research shows that animals such as desert bighorn sheep and pronghorn are not dependent on water being present but will use it if available. Studies found that pronghorn do not rely on wildlife waters whenever the moisture content in plants found in their diet is high, but will heavily rely on wildlife waters when the moisture content is low (Beale *et al.* 1970). Throughout the Desert Southwest, prolonged dry periods with little or no precipitation exist not only outside of the monsoon season, but can occur over several years. In these desert environments, free-standing water is an important habitat component for ungulates (Bleich *et al.* 2006) and other species of

wildlife such as migratory birds. This is especially apparent through the dry spells that often occur. The closest perennial water source is the Rio Grande, but in dry years, the river has become intermittent depending on the amount of water released from upstream dams for irrigation use. There are no naturally occurring springs within the Robledo Mountains. In order for wildlife to access the nearest natural water sources, they would have to cross busy roadways and populated areas.

As stated by Joan Scott (1997), to claim a wildlife benefit, a livestock water must be designed and managed to provide wildlife values. Currently, livestock waters on the Monument are fitted with wildlife escape ramps and are left on year-round to provide an additional source of water for wildlife use.

Impacts from Wildland Fire Management – Under Alternative A, there would be no management actions for Wildland Fire Management that would impact the Wildlife Program.

4.4.18.2 ALTERNATIVE B

Impacts from Paleontological Resources – Casual collecting of common invertebrates and plant paleontological resources would not be allowed, but scientific research would be allowed. Scientific research could be minimally invasive to wildlife, but research could temporarily displace wildlife.

Impacts from Recreation and Visitor Services – Under Alternative B, recreational use would be limited to hunting, hiking, equestrian use, and sightseeing. Aside from the animals being hunted, this use would be minimally disturbing to wildlife in general. No camping would be allowed; therefore, displacement would be limited to day-use associated with dispersed recreation. This temporarily displaces wildlife in areas where the recreation is occurring.

Impacts from Trails and Travel Management – Under Alternative B, motorized and mechanized vehicular use of the Monument would be prohibited thus minimizing the chance of injuries to slow moving wildlife on or near travel routes.

Impacts from Livestock Grazing – Under Alternative B, livestock grazing would not be allowed within the Monument. Prohibiting grazing and its associated activities would both benefit and stress wildlife. Availability of forage and cover would increase as grasses and forbs would be expected to increase in certain areas. This would be beneficial to wildlife. Throughout the Monument, biodiversity is low and populations are not large; as would be expected for a shrub invaded Chihuahuan Desert ecosystem (Baez 2008). Wildlife that inhabit the Monument has become accustomed to utilizing artificial water sources and the removal of these sources would cause wildlife to leave the Monument and find water sources elsewhere. Should pipelines and troughs be retained for use by wildlife, modifications to the facilities may be needed, or a new water source would need to be found to supply water to these facilities, as the existing source is a well on private land not under the jurisdiction or control of the BLM.

Impacts from Wildland Fire Management – Under Alternative B, there would be no management actions for Wildland Fire Management that would impact the Wildlife Program.

4.4.18.3 ALTERNATIVE C

Impacts from Paleontological Resources – The impacts of Alternative C would be the same as described in Alternative B.

Impacts from Education and Interpretation – Under Alternative C, pedestrian trails and interpretation kiosks that are developed would potentially bring an increase in human traffic causing wildlife to temporarily vacate the area near the trails and kiosks.

Impacts from Recreation and Visitor Services – Under Alternative C, visitor facilities such as toilets, shade shelters, information kiosks, trail markers, and picnic sites would be developed and maintained. This could displace wildlife where these facilities would be built and used. Dispersed recreation would continue to temporarily displace wildlife in areas where the recreation is occurring. The establishment of a primitive campground would displace any wildlife that inhabits the area where the campground would be built. An increase in human activity would cause wildlife to vacate areas frequented by humans.

Impacts from Trails and Travel Management – Under Alternative C, vehicular use of the Monument would continue on a portion of the existing routes, and new routes could be developed; therefore, there would be potential for slow moving wildlife to be injured on and near travel routes. This risk would increase during special events where a greater number of vehicles would be utilizing the routes.

Impacts from Livestock Grazing – Impacts to the Wildlife Program from livestock grazing under Alternative C would be the same as those described under Alternative A.

Impacts from Wildland Fire Management – Under Alternative C, there would be no management actions for Wildland Fire Management that would impact the Wildlife Program.

4.4.18.4 ALTERNATIVE D

Impacts from Paleontological Resources – Under Alternative D, casual collecting of common invertebrates and plant paleontological resources would be allowed in conjunction with prior BLM authorized interpretive or educational programs or activities. This would direct fossil collectors to specific locations, which would potentially increase wildlife and human interaction. This may cause certain wildlife to vacate the collection areas.

Impacts from Education and Interpretation – Under Alternative D, pedestrian trails, interpretation kiosks, and a motorized tour route that could be developed would potentially bring an increase in human traffic causing wildlife to temporarily vacate the area near the routes, trails, and kiosks to avoid confrontation. The establishment of an on-site visitor center would displace wildlife from the site chosen for the visitor center. Activities associated with the construction of the visitor center could potentially lead to mortality of slow moving wildlife unable to quickly vacate the area.

Impacts from Recreation and Visitor Services – Under Alternative D, impacts to the Wildlife Program would be similar to those described under Alternative C.

Impacts from Trails and Travel Management – Impacts to the Wildlife Program from Trails and Travel Management under Alternative D would be the same as those described under Alternative C.

Impacts from Livestock Grazing – Impacts to the Wildlife Program from livestock grazing under Alternative D would be the same as those described under Alternative A.

Impacts from Wildland Fire Management – Under Alternative D, prescribed fire is allowed as a management tool. Prescribed fire could displace, kill, and render habitat unsuitable for wildlife for longer durations of time than a one-time event, road construction, or some other short duration disturbing activity. The long-term positive benefits of prescribed fire to the overall ecosystem would be substantial.

4.5 CUMULATIVE IMPACTS

The Council on Environmental Quality regulations state that the cumulative impact analysis should include the anticipated impacts on the environment resulting from “*the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over time*” (40 CFR 1508.7).

Impacts of the Alternatives presented in this RMP/EIS are assessed for cumulative impacts along with other actions conducted in the *Analysis Area*.

4.5.1 Methodology

The cumulative impacts discussion that follows considers the Alternatives in the context of the broader human environment and, specifically, actions that occur outside the scope and geographic area covered by the Planning Area. Because of the programmatic, comprehensive nature of the RMP, this assessment is broad and generalized to address potential effects that could occur from the Alternative management actions when combined with other activities or projects. This assessment is primarily qualitative for many resources because of the lack of detailed information that would result from project-level decisions and other activities or projects.

Cumulative impact analysis is limited to important issues of national, regional, or local significance. Therefore, not all issues identified for direct or indirect impact assessment in this EIS are analyzed for cumulative effects. The spatial boundaries of each resource’s cumulative analysis, known as the cumulative impact analysis area, vary by resource and are larger for resources that are mobile or migrate (i.e., air quality or wildlife species) compared to resources that are stationary (i.e., paleontological resources). The spatial boundaries of resources and resource uses may be contained within the *Planning Area* or may extend beyond the *Planning Area*. Evaluation of potential impacts considers incremental impacts that may result from the proposed project, while also considering impacts from past, present, and reasonably foreseeable future actions. Reasonably foreseeable future actions are those future actions that have been committed to or that are known proposals that could take place within the planning period. These are not actual planning decisions or resource commitments.

The BLM land surrounding the PTNM is undergoing an RMP revision. This RMP is not approved nor funded, so it will not be included in cumulative impacts. Reasonable Foreseeable Future Actions must be approved or funded to be considered.

Chapter 3 *Affected Environment* considers the impacts of past and present actions on the current conditions within the Monument. Past events/actions and reasonably foreseeable actions that have or are occurring in the *Analysis Area* are documented in the following table:

Table 4-6 Reasonably Foreseeable Future Actions in Doña Ana County

REASONABLY FORESEEABLE FUTURE ACTIONS IN DOÑA ANA COUNTY (2010 TO 2030)																			
PROJECTED POPULATION GROWTH	<p>The population of Doña Ana County is anticipated to increase through the life of the Plan. Below are population projections for the <i>Analysis Area</i>.</p> <table border="1"> <thead> <tr> <th colspan="6">POPULATION PROJECTIONS BY YEAR</th> </tr> <tr> <th>COUNTY</th> <th>2010</th> <th>2015</th> <th>2020</th> <th>2035</th> <th>2030</th> </tr> </thead> <tbody> <tr> <td>Doña Ana</td> <td>227,009</td> <td>253,548</td> <td>282,152</td> <td>313,073</td> <td>345,458</td> </tr> </tbody> </table> <p>SOURCE: Bureau of Business and Economic Research, University of New Mexico 2004</p>	POPULATION PROJECTIONS BY YEAR						COUNTY	2010	2015	2020	2035	2030	Doña Ana	227,009	253,548	282,152	313,073	345,458
POPULATION PROJECTIONS BY YEAR																			
COUNTY	2010	2015	2020	2035	2030														
Doña Ana	227,009	253,548	282,152	313,073	345,458														
VISION 2040 REGIONAL PLANNING PROJECT	<p>The <i>Vision 2040</i> Comprehensive Regional Plan is the first long-range regional plan to include Doña Ana County and its four municipalities: the City of Las Cruces, Village of Hatch, Town of Mesilla, and City of Sunland Park. The study addresses a wide range of growth-related issues, such as transportation, utilities and water, economic development, affordable housing, environmental protection, hazard mitigation, and intergovernmental cooperation. It includes extensive analysis of the current situation and a range of possible growth scenarios. Recommendations from Vision 2040 will be used for updates to the City of Las Cruces and Doña Ana County comprehensive plans.</p>																		
NEW MEXICO RIO GRANDE TRAIL	<p>New Mexico State Parks is in the process of establishing a trail which would roughly parallel the Rio Grande. The basic infrastructure of the trail already exists in many locations via the levee systems and informal trail networks of the irrigation districts and on some publicly-owned land. The river and its bosque attract and sustain a wide variety of recreation -- from hunting and fishing to river rafting to hiking, biking, and horseback riding. The trail will ultimately link all these sites and tie into the new Mesilla Valley Bosque State Park near Las Cruces. Communities in southern New Mexico, such as in Doña Ana County, have been actively pushing trail planning and development locally.</p>																		
STATE GRAVEL PIT	<p>Approximately 240 acres of New Mexico State trust land are leased to a sand and gravel operator that is directly adjacent to the southeast of the Monument. It is located in T. 22 S., R. 1 E., Section 32. The current operation has been permitted with the State of New Mexico since 2000.</p>																		
BLM COMMUNITY PIT NO. 1	<p>In 2008, an Environmental Assessment (NM-030-2009-0042) was completed by the BLM Las Cruces District Office for the purpose of improving public safety; reducing visual impacts; returning the Community Pit to multiple-use; and reducing erosion and other resource impacts. The proposed action is for the BLM to design and reclaim Community Pit No.1. The exposed fossil bearing strata around the quarry body would be mapped and recorded as a component of the reclamation design.</p>																		
DOÑA ANA COUNTY BLM RECREATION AREAS	<p>Within Doña Ana County, the BLM has several recreation areas: Picacho Peak, Doña Ana Mountains, A-Mountain, Organ-Franklin Mountains, Dripping Springs, Aguirre Spring, and Aden Hills OHV area. Some areas have dispersed recreation while others have maintained trails. Hiking, picnicking, and sightseeing are offered at all of the sites. Doña Ana Mountains are best known for their mountain bike trails. Aden Hill OHV Area is used by motorcycles, and Aguirre Spring offers a campground. Picacho Peak and Dripping Springs offer picnic areas, trails, and beautiful views.</p>																		
NM STATE PARKS AND MONUMENTS	<p>New Mexico State Parks manages three areas within Doña Ana County: Mesilla Valley Bosque State Park; Fort Selden State Monument; and Leasburg Dam State Park. Mesilla Valley Bosque State Park is south of PTNM, encompassing 300 acres of bosque (riverside forest) along the Rio Grande and 600 acres of adjacent Chihuahuan Desert. Leasburg Dam, constructed in 1908, channels water from the Rio Grande for irrigation in the Mesilla Valley. Fort Selden State Monument has a museum and ruins at the site of a 19th century army outpost. The fort was abandoned in 1891 after decommissioning.</p>																		

4.5.2 Cumulative Impacts

Based on the table of Reasonably Foreseeable Future Actions, the primary three categories of issues impacting resources associated with the PTNM are (1) increased urban development and population size, (2) an increased demand for outdoor recreational facilities such as trails, and (3) the closure of two gravel quarries. The assessment area for Cumulative Effects is Doña Ana County.

4.5.2.1 Cumulative Impacts - Paleontological Resources

Alternative A: As the population of the County increases, as well as the demand for OHV routes, an increased use of rock crawling within the Monument may lead to further damage to fossils and seriously degrade the amount and quality of research conducted in the Monument.

All Alternatives: Increases in population and other recreational facilities will bring more people into contact with the Monument and its fossil resources.

The reclamation of Community Pit No. 1 may eliminate an important fossil site for science and research that would benefit research conducted in the Monument itself.

4.5.2.2 Cumulative Impacts - Education and Interpretation

Alternatives A & B: Increases in population and nearby recreational facilities will bring more people into contact with the Monument and its fossil resources; however, a lack of facilities and programs on-site may not meet the demand or need for interpretation and education and may stress partners such as the City of Las Cruces Museum of Nature and Science.

Alternatives C & D: The BLM would be better equipped to handle an increased demand for interpretation and education and the PTNM would perhaps become an important tourist destination.

All Alternatives: Reclamation and closure of the Apache Canyon quarry and Community Pit No. 1 would eliminate an important opportunity for showcasing the fossil resources of the Robledo Mountains and would increase the amount of interpretation within the boundary of the Monument.

4.5.2.3 Cumulative Impacts - Recreation and Visitor Services and Trails and Travel Management

Alternative A: The increased local and regional population may lead to an increase of extreme OHV rock crawling events.

Alternative B: By closing the Monument to OHV recreation and Special Recreation Permits, these activities would shift to other public land areas that would not offer the same types of challenges, and the BLM would not be meeting an important regional recreational demand.

Alternatives C & D: Continued use of most of the Monument for OHV recreation would meet the regional demand for rock crawling activities.

4.5.2.4 Cumulative Impacts - Climate

Emission of GHGs is a cumulative issue with potential long-term effects. Although emission of GHGs from activities in the *Analysis Area* would contribute to the total greenhouse gases in the global pool, the models used by climate scientists are not precise enough to: (1) predict impacts on climate or the natural

environment from increased or decreased emissions occurring from a specific region, or (2) determine the effects in a localized area. It is probable that these impacts would not be from the BLM activities proposed within the Monument.

Global mean surface temperatures have increased nearly 1.0°C (1.8°F) from 1890 to 2006 (Goddard Institute for Space Studies 2007). However, observations and predictive models indicate that average temperature changes are likely to be greater in the Northern Hemisphere. Without additional meteorological monitoring systems, it is difficult to determine the spatial and temporal variability of climatic conditions, but increasing concentrations of greenhouse gases (GHGs) are likely to accelerate the rate of climate change.

In 2007, the Intergovernmental Panel on Climate Change (IPCC) predicted that by the end of the 21st Century, global average surface temperatures would increase 1.1 to 6.4°C (2.0 to 11.5°F) above 1980-1999 levels under a range of potential emissions scenarios (IPCC 2007b). The US Global Change Research Program, in its 2009 Report on *Global Change Impacts in the United States* explains that actual warming levels within this range depend on the future level of emissions and the sensitivity of climate systems to those emissions. The National Academy of Sciences (2006) points out that there are uncertainties regarding how climate change may affect different regions. Computer model predictions indicate that increases in temperature will not be equally distributed, but are likely to be accentuated at higher latitudes and in the middle of continents. The US Global Change Research Program Report indicates the most of the US will experience greater warming in summer than winter although Alaska will experience more warming in winter. It is not, however, possible to predict with any certainty regional or site-specific effects on climate relative to the proposed action.

Potential impacts to natural resources and plant and animal species due to climate change are likely to be varied, including those in the southwestern United States. For example, if global climate change results in a warmer and drier climate, increased particulate matter impacts could occur due to increased windblown dust from drier and less stable soils and decreased vegetative cover. Cool season plant species' spatial ranges are predicted to move north and to higher elevations, and extinction of endemic threatened or endangered plants may be accelerated. Due to loss of habitat or competition from other species whose ranges may shift northward, the population of some animal species may be reduced or increased. Less snow at higher elevations would likely impact the timing and quantity of snowmelt, which, in turn, could impact water resources and species dependent on historic water conditions. When compared to baseline information for 1961-1990, periods between 1991 and 2005 show temperature increases in over 95 percent of the geographical area of New Mexico. Warming is greatest in the northwestern, central, and southwestern parts of the state (Enquist and Gori 2008).

The assessment of GHG emissions, their relationship to global climatic patterns, and the resulting impacts is an ongoing scientific process. The inconsistency in results of scientific models used to predict climate change at the global scale coupled with the lack of scientific models capable of predicting climate change on regional or local scales, limits the ability to quantify potential future impacts of decisions made at this level. Determining the significance of any discrete amount of GHG emissions is beyond the limits of existing science. However, scientists are increasingly able to isolate likely scenarios for climate change and its impacts on a regional scale. The U.S. Global Change Research Program Report on *Impacts of Climate Change in the United States* (2009) focuses on broad areas of the country and greatest points of vulnerability as well as looking at Climate Change Impacts in different sectors of the economy. In the Southwest, a particular concern is the uncertainty around precipitation and the potential for extended periods of drought stressing already uncertain water supplies.

4.5.2.5 Cumulative Impacts - Air Resources

Alternative A: In Alternative A, roads within the Monument that would access visitor facilities would not be improved. Increased visitation to the area would contribute to regional dust concentration levels.

Alternatives B, C and D: Improved road conditions (in Alternatives C and D) and an OHV permit system, or closed routes (Alternative B) would mitigate levels of dust generated in the Monument despite the growing level of public use of the Monument. Airborne dust particles would probably increase in the County, caused by development and construction, but dust associated with the Monument would be a minor component.

4.5.2.6 Cumulative Impacts - Lands and Realty

All Alternatives: It is anticipated that approximately 640 acres of mineral estate could be acquired and transferred into public ownership over the life of this Plan in all Action Alternatives. Cumulative impacts from this acquisition, the withdrawal of the Federal minerals within the Monument and any other acquisitions or withdrawals within Doña Ana County would minimally decrease the mineral land development opportunities.

All Alternatives: Legislation directs the exclusion of land use authorizations that do not benefit the Monument. Project proponents would be required to seek alternate routes or sites outside the Monument. This would be a minor cumulative effect by reducing routing options through the Monument and possibly increasing construction costs for utilities. This would not impact the number of land use authorizations, it would only affect the permitted location, and would possibly increase construction costs.

4.5.2.7 Cumulative Impacts - Lands with Wilderness Characteristics

All Alternatives: Mineral activities and motorized recreational use adjacent to the Monument could impact the outstanding opportunities for solitude and primitive unconfined recreation in the areas found to have wilderness characteristics. In the *Analysis Area*, as population growth continues, conflicting uses or activities are likely to diminish wilderness characteristics in areas that are not being protected for their wilderness characteristics. In Alternatives A, C, and D, those areas not being protected for their wilderness characteristics may potentially be affected by cumulative impacts from such activities as recreational use, development of visitor facilities, interpretation and education development, and scientific research.

4.5.2.8 Cumulative Impacts - Livestock Grazing

Alternatives A, C and D: There are 62 grazing allotments within Doña Ana County. Continued expansion of the City of Las Cruces and other towns, and development of private land in Doña Ana County, has resulted in an urban interface that impacts these allotments. Increased recreational use on public land has resulted in damage to allotment pipelines and fences used in managing cattle. Future population growth would potentially result in continued conflicts with livestock grazing in the Monument.

4.5.2.9 Cumulative Impacts - Socio-Economic Conditions

The assessment area for socio-economic conditions is Doña Ana County.

Since 1990, the population in the *Analysis Area* has increased substantially. Continued population growth is expected. This growth would increase the demand for recreational opportunities in the area. As a

result, recreational use of the Monument would increase. Conflicting values related to public land uses (e.g., motorized recreation and preservation of wilderness characteristics) require managers to make tradeoffs, which may reduce some individuals' quality of life. Population growth would make these pressures more acute.

Increased urbanization would affect the viability of public land grazing. As addressed in Cumulative Impacts to Livestock Grazing, constraints on grazing would affect the economic well-being of permittees.

In Alternative B, motorized vehicle use and SRPs are not allowed within the Monument, which would either push the use outside of the Monument or outside of Doña Ana County. If the use leaves Doña Ana County, the economic stimulus from this use would be lost.

4.5.2.10 Cumulative Impacts - Water Resources, Vegetation, and Soils

All Alternatives: Surface disturbance and loss of vegetation are key contributors to decreased water infiltration, increased soil erosion, and degradation to watershed health. Population growth around Las Cruces could have direct and indirect negative impacts on water resources and watershed health resulting from increases of paved roads, parking lots, buildings, and other impermeable surfaces due to the expansion of residential, commercial, and industrial development. It is inferred that recreational activities, such as camping and OHV use, outside city limits would increase proportionally to population growth. Negative impacts would primarily be derived from surface disturbance such as new roads and trails, in which the magnitude of the impacts would be dependent on the type, intensity and duration of the disturbance. Alternative B has the most potential for positive impacts to water resources and watershed health within the Monument, due to the prohibition of motorized and mechanized vehicle use and livestock grazing. Limiting these two uses could result in decreased surface disturbance and soil erosion within the Monument. However, these impacts would likely be transferred to land outside of the Monument.

4.5.2.12 Cumulative Impacts - Wildlife and Special Status Species

All Alternatives: Wildlife and special status species in the Monument may be affected by offsite use and development regardless of the RMP alternative selected. Development of lands within the County would reduce habitat availability and may reduce special status species populations. The habitat values of the Monument would become more important as similar habitats in the County were utilized for urban and agricultural development.

4.6 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

A discussion of irreversible or irretrievable commitments of resources which would be involved in the proposal should it be implemented is required by Section 102 (2) (C) of NEPA. Irreversible commitment of a resource is a resource commitment that cannot be reversed such as an extinction of a species or destruction of a paleontological resource. An irretrievable commitment of a resource is one that is lost for an amount of time such as a mineral withdrawal.

By allowing collecting of invertebrate paleontological resources this could result in an irreversible commitment of resources. Although this collecting has to result in only negligible disturbance to the Earth's surface or other resources, it could result in loss of vertebrate paleontological resources also. By allowing scientific collecting of significant paleontological resources, this will mitigate the possibility of an irretrievable loss to these resources. Those fossils will be curated in a Federal repository, studied, and

possibly displayed for the public to view. Development of interpretation, educational, and recreational resources and approving land use authorizations and research permits that result in surface disturbance would create irreversible or irretrievable results for soil and vegetation. In order to reduce these impacts, best management practices would be used. During all surface disturbing activities, the laws protecting cultural and paleontological resources would be adhered to in order to reduce or eliminate impacts on these resources. The withdrawal of the Monument from mineral development would preclude the extraction and use of these resources. It is possible, but unlikely the withdrawal would be removed by Congress and therefore this action is considered an irretrievable commitment of resources.

4.7 UNAVOIDABLE ADVERSE IMPACTS

Section 102 (2) (C) of NEPA also requires that any adverse environmental effects which cannot be avoided should this proposal be implemented are disclosed. Unavoidable adverse impacts are those that remain following the implementation of mitigation measures.

Casual collecting of common invertebrates in Alternative D would cause unavoidable loss, but the educational gain from this activity would outweigh the loss. Unavoidable loss for other paleontological resources could occur due to looting, vandalism, erosion, and inadvertent destruction. This impact is expected to be reduced as surveys of the Monument are completed and necessary precautions are put in place. Unavoidable adverse impacts from increased visitation are increased soil compaction and erosion, disturbance to vegetation, wildlife, and livestock, wildfire ignition, and conflicts between users. Vehicle use within the Monument could inadvertently destroy cultural or paleontological resources if the resource was not detected and protected. Travel management restrictions such as route closures have an adverse impact on recreational motorized or mechanized use within the Monument. Should livestock grazing be eliminated within the Monument as proposed in Alternative B, it would have an adverse impact on the livestock grazing permittee.

CHAPTER 5

CONSULTATION AND COORDINATION

CHAPTER 5

CONSULTATION AND COORDINATION

5.1 INTRODUCTION

The focus of this Chapter is the coordination and consultation that has taken place since scoping began in the January 2010, through the development and analysis of alternative planning strategies. This *Proposed RMP/ Final EIS* document has been developed with a broad range of participants.

5.2 PUBLIC SCOPING

The formal scoping process began with the publication of a Notice of Intent (NOI) in the *Federal Register* on January 5, 2010 (Volume 75, Number 2, Pages 431-432). This NOI announced the Las Cruces District Office's intent to prepare an RMP, an associated EIS, and to hold a public scoping meeting. Press releases, flyers, paid advertisements in newspapers, and the BLM New Mexico and Las Cruces District project web sites all announced the public scoping period and public scoping meeting also.

An initial public scoping packet was sent to approximately 337 interested parties describing the BLM's intent to prepare an RMP/EIS for the Monument. Throughout the scoping period, an additional 82 scoping packets were mailed. The mailing list included adjacent landowners, grazing permittees, special recreation permittees, interested public, local agencies, government representatives, tribes, and interested organizations. The letter announced the beginning of the formal scoping period, the public Open House, and it requested comments regarding the Plan. Inserted in this mailing was a preaddressed "*Scoping Comment Form*" that individuals could complete and return to the BLM.

One formal scoping meeting was held on January 26, 2010 to share information about the Monument, preliminary issues, and the planning process. The BLM asked the public for comments and suggestions regarding the management of the natural, cultural, recreation, and scientific resources within the Monument. Approximately 100 people attended the public scoping meeting. The BLM received 17,388 total comment submittals, of which 17,287 were a variety of repeat form letters. The themes expressed in these form letters are summarized as follows:

- Monument Legislation should take precedence over any multiple-use mandate
- Move Off-Highway Vehicle (OHV) routes outside of the Monument in order to protect the Trackways
- Keep OHV trails within the Monument
- Improve non-motorized access and interpretive information
- Encourage public involvement
- Both do and do not incorporate "*Expanded Boundary Possibilities for Adjacent Areas*" within the RMP
- Consider all cumulative impacts such as loss of motorized recreation opportunities and Community Pit No. 1 reclamation

The other 99 comments followed several common themes about the natural resources within the Monument and the management of those resources.

Informal meetings with a number of groups and agencies have been held prior to and since the public meeting. The initial "*formal scoping*" period closed on February 10, 2010. Although the formal

comment period ended, the BLM has continued to accept and consider all comments received throughout the planning process.

The public was again invited to participate in the review of preliminary management alternatives for the PTNM RMP/EIS through a workshop held on September 22, 2010 from 3:00 p.m. to 7:00 p.m. The workshop was conducted as an open forum, with BLM specialists on hand to discuss resource management alternatives. A total of 30 people were in attendance. The comments from the September workshop often reiterated those comments stated at the scoping meeting. This workshop also provided a time for the public to see that the alternatives presented were a wide range of management actions.

5.3 CONSULTATION AND COORDINATION EFFORTS

Consultation and coordination with Federal and intergovernmental agencies, organizations, American Indian Tribes, and interested groups and individuals is important to (1) ensure that the most appropriate data have been gathered and employed for the analyses and (2) ensure that agency and public sentiment and values are considered and incorporated into decision making. During the planning process for this RMP/EIS, formal and informal efforts were made by the BLM to involve tribes, other Federal agencies, State and local governments, and the public. The BLM has met its Section 106 responsibilities for the implementation decisions in this document.

5.3.1 Cooperating Agencies

In January and February 2010, letters were sent to the following agencies inviting recipients to become a cooperating agency for this project: City of Las Cruces, Doña Ana County, New Mexico Museum of Natural History and Science, New Mexico Department of Game and Fish, New Mexico State Parks.

By definition, a cooperating agency is any Federal, state, or local government agency or Indian tribe that has either jurisdiction by law or special expertise regarding environmental impacts of a proposal. As a cooperating agency, it provides the formal framework for governmental units to engage in active collaboration with the lead Federal agency during the NEPA process. Although the request was sent to these agencies, no agency has pursued cooperating agency status.

5.3.2 Tribal Consultation

In January and February 2010 and September 2011, the BLM initiated consultation with the tribes. Included in the consultation letter was a request for the recipients to become a cooperating agency for the Monument RMP/EIS. The invitation will remain open to tribes as planning continues.

Consultation/cooperating agency letters were sent to the following tribes:

- Fort Sill Apache Tribe of Oklahoma
- Comanche Indian Tribe
- White Mountain Apache
- Ysleta del Sur Pueblo
- Isleta Pueblo
- Mescalero Apache Tribe
- Navajo Nation
- Acoma Pueblo
- Laguna Pueblo
- Tesuque Pueblo

Several tribes expressed interest in continued notification of planning activities, but no tribe has requested Cooperating Agency status. The State Historic Preservation Office was also notified of the planning process, as required by Section 106 of the National Historic Preservation Act.

5.4 ADDITIONAL COLLABORATION

Although the following groups are not defined as cooperating agencies, the BLM has been working with these groups in addition to the general public to encourage input for this RMP. Groups that have helped by providing valuable information are:

New Mexico Museum Natural History and Science
Las Cruces Museum of Nature and Science
Las Cruces Four-Wheel Drive Club
New Mexico State University
Paleozoic Trackways Foundation
Smithsonian Institute

During July and August 2013, BLM staff met with numerous individuals and groups regarding a variety of proposals for closure to target shooting and broader discharge of firearms (including hunting). The focus of the meetings was to clarify and distinguish between a proposed Temporary Closure to target shooting in and around PTNM; the specific alternatives in the PTNM Draft RMP/EIS that would make longer term management decisions; and the alternatives presented in the Draft TriCounty RMP, which would encompass additional areas further from the boundary of PTNM.

The groups that were involved in these discussions included: Mesilla Valley Shotgun Sports, Inc., Picacho Gun Club, Doña Ana County Associated Sportsmen, Southwest Consolidated Sportsmen, and the Las Cruces District Office Resource Advisory Council.

Discussions centered on explaining the differences and likely outcomes from the three different actions. There was general understanding of the reasons behind the proposed closures, as well as modest support for the closures. There was also a general concern voiced for how to effectively enforce the closures, how to provide alternative locations that were viable, and how to provide needed education/outreach to improve public awareness and safety.

5.4.1 State and Local Government Plans Summaries

Doña Ana County, New Mexico Natural Events Action Plan (NEAP) Reevaluation 2005

The New Mexico Environment Department's (NMED) Air Quality Bureau has monitored numerous exceedances of the 24-hour National Ambient Air Quality Standard (NAAQS) concentration limit for Particulate Matter 10 microns or less (PM10) in Doña Ana County, New Mexico. Since the number of days with exceedances is more than the number allowed by the standard, the County is in violation of the PM10 NAAQS. The Air Quality Bureau's analysis of wind data and other information regarding conditions during the exceedances indicated that all but a few were caused by high winds, which lift and carry dust from exposed dry soil. In response to these exceedances, the NMED, along with the City of Las Cruces and Doña Ana County, developed and submitted to the U.S. Environmental Protection Agency a Natural Events Action Plan (NEAP) for Doña Ana County in 2000.

Statewide Comprehensive Outdoor Recreation Plan (SCORP)

The intent of this plan is to define how State, Federal, local, and Tribal governmental agencies cooperate to provide for the outdoor recreation needs and demands of the State and justify State and Federal expenditures for outdoor recreation within the State.

New Mexico Historic Preservation Plan- Preserving the Enchantment: 2007-2012

This plan is a compilation of ideas of historic preservation for New Mexico. It is a planning tool for future development of advocacy and preservation of cultural resources.

The 2006 Comprehensive Wildlife Conservation Strategy

This Strategy is dedicated to expressing sensible approaches to conserving biological diversity in New Mexico in context with surrounding areas. It identifies focus points on species and habitats warranting conservation actions. Further, it organizes existing information and recognizes where important information gaps remain. From that foundation, it identifies cooperative and collaborative approaches to addressing the most important wildlife and habitat conservation needs in time and cost effective ways.

2000 City of Las Cruces Extraterritorial Zoning Comprehensive Plan 2000-2020

To prepare for population growth in Las Cruces and Doña Ana County, the managers and overseers of the Extraterritorial Zone (ETZ) seek to identify goals, objectives, and strategies that will preserve open space, protect the environment, and accommodate the most number of people with the least amount of adverse impact on the area's character and culture.

2005 Las Cruces Metropolitan Planning Organization Transportation Plan

This Plan identifies and develops a long-range transportation plan for the Las Cruces area. This document covers a planning horizon of 20 years and focuses on mobility and access, efficient system performance, and quality of life. It includes planning for all aspects of the transportation system, including roads, bicycle and pedestrian facilities, public transit, and the airport.

2004 Rio Grande Riparian Ecological Corridor Project Report

The Rio Grande Corridor Project has three components: a Comprehensive Plan for development along an 11-mile corridor of the Rio Grande and two pilot projects -- construction of a 14-acre wetland, and construction of a 1.1-mile multi-use pathway. The Comprehensive Plan is intended as a blueprint and guide for proposed projects along the Corridor which may impact the environment, economic development and quality of life of the region. These two pilot projects complement the larger objectives of the Comprehensive Plan for sustainable development along the Corridor by creating opportunities for multi-jurisdictional cooperation and public involvement.

Vision 2040 Regional Planning Project - City of Las Cruces and Doña Ana County

The 2040 Regional Plan serves as an advisory document intended to act as a guiding framework for making mindful decisions when planning and implementing future development within Doña Ana County. It covers the broad aspects of how the residents of Doña Ana County would like to see the County develop. This document serves as a platform for use in developing more detailed comprehensive, master, and site plans. It may also serve as guidance on policy, programming, and capital improvement decisions to local elected and administration officials.

5.5 COMMENTS ON THE DRAFT RMP/EIS

On July 20, 2012, concurrent with the distribution of the *Draft PTNM RMP/EIS*, the EPA notice of availability was published in the *Federal Register* announcing the availability of the draft document for a 90-day public review and comment period. During the review period for the *Draft PTNM RMP/EIS*, the BLM held a public meeting on August 7, 2012, for the purpose of assisting the public in their review of the draft document and soliciting comments.

All comments received by the BLM during the 90-day comment period on the *Draft PTNM RMP/EIS* have been compiled, analyzed, and summarized. The BLM received 45 comment letters. Appendix H presents all comments received and provides a response to substantive comments indicating how the document was modified or why the comment did not warrant a change to document.

The following agencies, organizations, and individuals were notified that the *Proposed PTNM RMP/Final EIS* would be available in paper copy, on compact disc (CD), and on the BLM's Web site. Some have requested and will receive a paper copy or CD for review and comment.

5.6 PROPOSED RMP/FINAL EIS DISTRIBUTION LIST

FEDERAL AGENCIES

Department of the Interior

Bureau of Indian Affairs

Albuquerque, New Mexico

Bureau of Land Management

Albuquerque District Office, New Mexico

Pecos District Office, New Mexico

Farmington District Office, New Mexico

New Mexico State Office

Las Cruces District Office

Resource Advisory Council

Bureau of Reclamation

International Boundary and Water Commission Upper Rio Grande Project

Fish and Wildlife Service

Las Cruces, New Mexico

Albuquerque, New Mexico

National Park Service

White Sands National Monument

U.S. Army Corps of Engineers

Albuquerque District

STATE AGENCIES AND ORGANIZATIONS

Governor, State of New Mexico

New Mexico Department of Agriculture

New Mexico Department of Game and Fish

New Mexico Environment Department

New Mexico Energy, Minerals, and Natural Resources Department

Mining and Minerals Division

New Mexico State Historic Preservation Office

New Mexico State Land Office

New Mexico State Parks
New Mexico State University
 Office of the President
 Animal and Range Sciences Department
 Geography Department
 Geology Department
 University Museum
 Fish, Wildlife & Conservation Ecology
 Institute for Energy & the Environment
New Mexico Natural Museum of Natural History
University of Texas at El Paso, Texas
 Center for Environmental Resource Management

LOCAL GOVERNMENTS

City of Las Cruces, New Mexico
 Museum of Nature and Science
Doña Ana County, New Mexico
Town of Mesilla, New Mexico

TRIBAL GOVERNMENTS

Comanche Indian Tribe
Kiowa Tribe of Oklahoma
Mescalero Apache Tribe
Fort Sill Apache Indian Tribe
White Mountain Apache Indian Tribe
Jicarilla Apache Tribe
Hopi Tribal Council
Isleta Pueblo
Navajo Nation
Ysleta del Sur Pueblo
Acoma Pueblo
Laguna Pueblo
Tesuque Pueblo

CONGRESSIONAL/LEGISLATORS

Senator Tom Udall, State of New Mexico
Senator Martin Heinrich, State of New Mexico
Representative Steve Pearce, 2nd Congressional District of New Mexico
Lee S. Cotter, State Senator District 36
Mary Kay Papen, State Senator District 38
Joseph Cervantes, State Senator District 31
William P. Soules, State Senator District 37
Bill McCamley, NM State Representative District 33
Doreen Y. Gallegos, NM State Representative District 52
Jeff Steinborn, NM State Representative District 35
Phillip M. Archuleta, NM State Representative District 36
Terry H McMillan, NM State Representative, District 37
Mary Helen Garcia, NM State Representative District 34
Nate Cote, NM State Representative District 53

OTHER INTERESTED ORGANIZATIONS

Coalition of Arizona/New Mexico Counties
Paleozoic Trackways Foundation
Asombro Institute
New Mexico Wilderness Alliance
Center for Biological Diversity
Continental Divide Trail Alliance
New Mexico Farm Bureau
New Mexico Wilderness Alliance
League of Women Voters
Southwest Consolidated Sportsmen
Doña Ana County Associated Sportsmen's Association
Sierra Club, Rio Grande Chapter
Sierra Club, Southern NM Group
Earth Justice
Southwest Environmental Center
The Wilderness Society
Chihuahuan Desert Nature Park
Las Cruces 4-Wheel Drive Club
Wild Earth Guardians
Rim Rattlers Mountain Bike Club
Shooting Sports Roundtable
Doña Ana Soil and Water Conservation District

5.7 LIST OF PREPARERS AND REVIEWERS

Table 5-1 lists the *PTNM RMP/EIS* preparers and members of the interdisciplinary team.

Table 5-1 List of Preparers and Reviewers

TABLE 5-1 LIST OF PREPARERS AND REVIEWERS		
NAME	TITLE	RMP/EIS RESPONSIBILITY
BUREAU OF LAND MANAGEMENT – LAS CRUCES DISTRICT OFFICE INTERDISCIPLINARY TEAM		
Jennifer Montoya	Planning and Environmental Specialist	Team Leader 2013 to Present
Lori Allen	Planning and Environmental Coordinator	Team Leader 2010 to 1012
Dwayne Sykes	Planning and Environmental Coordinator	Technical Assistance
Michael Bailey	Outdoor Recreation Specialist	Wilderness
Kathryn Lloyd	Wilderness Specialist	Wilderness
Greg Bettmann	Rangeland Management Specialist	Rangeland Resources, Livestock, Vegetation/ Noxious Weeds
McKinney Briske	Park Ranger	Recreation and Visitor Services
Ricky Cox	Fire Management Specialist	Fire Management
Cory Durr	Hydrologist	Soil And Water Resources
Rena Gutierrez	Writer and Editor	Editor/Document Management
Patricia Hester and Sherrie Landon	Paleontologist	Paleontology
Ray Hewitt	GIS Specialist	Geographic Information System
Tom Holcomb	Archeologist	Cultural Resources
Lorraine Salas and Kendrah Penn	Realty Specialists	Lands And Realty
Mike Smith	Geologist	Geology and Minerals
Chris Teske	AML/HazMat/Safety	Abandoned Mine Lands & Hazmat
John Thacker	Outdoor Recreation Planner	Trails And Travel Management, Visual Resource Management
Steven Torrez	Wildlife Biologist	Wildlife and Special Status Species
Jane Childress	NMSO Interpretation and Heritage Education Lead	Interpretation and Education
BUREAU OF LAND MANAGEMENT – LAS CRUCES DISTRICT OFFICE MANAGEMENT OVERSIGHT		
William Childress	District Manager	
Jim McCormick	Assistant District Manager, Renewable Resources	
Dave Wallace	Assistant District Manger, Multi-Resources	
Tom Phillips	Recreation/Cultural Supervisor	
Rusty Stovall	Engineering/Operations/GIS Supervisor	
Ray Lister	Supervisory Natural Resource Specialist	
Leticia Lister	Supervisory Rangeland Resource Specialist	
Edward Seum	Lands & Minerals Supervisor	
Mark Bernal	Fire Management Officer	
BUREAU OF LAND MANAGEMENT – NEW MEXICO STATE OFFICE REVIEWERS		
Megan Stouffer	Planning & Environmental Coordinator	
Melanie Barnes	Planning & Environmental Coordinator	
Dave Goodman	Planning & Environmental Coordinator	
William Auby	Geologist	
Roger Cumpian	Rangeland Management Specialist	
Jeanne Hoadley	Air Resources	
Mary Uhl	Air Resources	
Roger Jagers	Outdoor Recreation Planner	
Powell King	Mining Engineer	
Billy “Link” Lacewell	Soil/Air/Water, Hazmat	
Philip Gensler	Regional Paleontologist	
Sherrie Landon	Paleontologist	
Signa Larralde	Archeologist	
Sheila Herhahn	Archeologist	
Debby Lucero	Lands and Realty Team Leader	
John Selkirk	Fire Management Specialist	
Lisa Bye	Fuels Specialist	
John Sherman	Wildlife Biologist	
Mary Kay Ramsay	T&E Wildlife Biologist	
James Sippel	NLCS Program Lead	
Jay Spielman	Geologist	



GLOSSARY

GLOSSARY

A

Active treatment methods: Actions taken to reestablish vegetation and ecosystem balance.

Administrative Use: Use by any Bureau of Land Management employee.

Agency: Any Federal, State, or county organization with jurisdictional responsibilities.

Allotment (range): A designated area of land available for livestock grazing upon which a specified number and kind of livestock may be grazed under management of an authorized agency. An allotment generally consists of Federal rangeland, but may include intermingled parcels of private, State, or Federal land. The Bureau of Land Management and the U.S. Forest Service stipulate the number of livestock and season of use for each allotment.

Allotment Management Plan (AMP): A written program of livestock grazing management including supportive measures, if required. An allotment management plan is designed to attain specific management goals in a grazing allotment and is prepared cooperatively with the permittee(s) or lessee(s).

All-terrain vehicle (ATV): A small motor vehicle with wheels or tractor treads often used for cross-country travel, including traveling over rough ground, snow, or ice. For the purposes of this document, an all-terrain vehicle is defined as a motor vehicle that: (a) is designed primarily for recreational nonhighway all-terrain travel, (b) is 50 or fewer inches wide, (c) has an unladen weight of 800 pounds or less, (d) travels on three or more low-pressure tires, and (e) has a seat designed to be straddled by the operator, and handlebars for steering control. An all-terrain vehicle is a type of off-highway vehicle (OHV).

American Indian tribe (or tribe): Any American Indian group in the conterminous United States that the Secretary of the Interior recognizes as possessing Tribal status (listed periodically in the *Federal Register*).

Alternative: One of at least two proposed means of meeting planning objectives.

Analysis Area: The term *Analysis Area* is used for some resources and resource use discussions outside the *Planning Area*. The *Analysis Area*, Doña Ana County, includes public, private, and other government lands, and consists of about 2,436,595 acres.

Animal Unit: One mature (1,000-pound) cow or the equivalent based on an average forage consumption of 26 pounds of dry matter per day. For authorization calculation purposes, an animal unit is one cow and her calf, one horse, or five sheep or goats. Depending on the composition and weight of animals in the herd, actual forage use may vary.

Animal unit month (AUM): A standardized unit of measurement of the amount of forage necessary for the complete sustenance of one animal unit for a period of one month; also, a unit of measurement of grazing privileges that represents the privilege of grazing one animal unit for a period of one month..

Archaeology: The scientific study of the life and culture of past, especially ancient, peoples, by excavation of ancient cities, relics, artifacts, etc.

Archaeological site: A discrete location that provides physical evidence of past human use.

Area of critical environmental concern (ACEC): An area of public land designated by the Bureau of Land Management for special management attention to protect and prevent irreparable damage to important historic, cultural, or scenic values; fish and wildlife resources; or other natural systems or processes or to protect life or provide safety from natural hazards. Areas designated as areas of critical environmental concern have met criteria for importance and relevance that are outlined in Title 43 Code of Federal Regulations (CFR) Section 1610.7-2(b).

Artifact: A human-made object.

Arroyo: A dry gully.

Authorized Officer: Any Bureau of Land Management employee who has been delegated the authority to perform defined duties.

Available Forage (or available forage species): Forage that can be grazed and still allow sustained forage production on rangeland. Available forage may or may not be authorized for grazing.

Avoidance area: An area where rights-of-way may be granted only when no feasible alternative route is available.

B

Basin: A depressed area having no surface outlet (topographic basin); a physiographic feature or subsurface structure that is capable of collecting, storing, or discharging water by reason of its shape and the characteristics of its confining material (water basin); a depression in the earth's surface, the lowest part often filled by a lake or pond (lake basin); a part of a river or widened canal (drainage, river, or stream basin).

Best management practices (BMPs): A suite of techniques that guide, or may be applied to, management actions to aid in achieving desired outcomes and help to protect the environmental resources by avoiding or minimizing the impacts of an action. BMPs are often developed in conjunction with land use plans, but they are not considered a land use plan decision unless the land use plan specifies that they are mandatory. They may be updated or modified without a plan amendment if they are not mandatory.

BLM Sensitive Species: Species designated by a state director, usually in cooperation with the state agency responsible for managing the species and state natural heritage programs, as sensitive. They are those species that: (1) could become endangered in or extirpated from a state. Or within a significant portion of or distribution; (2) are under status review by the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service; (3) are undergoing significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution; (4) are undergoing significant current or predicted downward trends in population or density such that federal listed, proposed, candidate, or State listed status may become necessary; (5) typically have small and widely dispersed populations; (6) inhabit ecological refugia or other specialized or unique habitats; or (7) are State listed but which may be better conserved through application of BLM sensitive species status.

Bureau of Land Management (BLM): An agency of the U.S. Department of the Interior responsible for managing most Federal government subsurface minerals. It has surface management responsibility for Federal land designated under the Federal Land Policy and Management Act of 1976.

C

Carrying Capacity: The maximum stocking rate possible without inducing permanent or long-term damage to vegetation or related resources. The rate may vary from year-to-year in the same area as a result of fluctuating forage production.

Casual Collecting: Collecting of a reasonable amount of common invertebrate and plant paleontological resources for non-commercial personal use, either by surface collection or the use of non-powered hand tools resulting in only negligible disturbance to the Earth's surface and other resources. Collection must be consistent with the laws governing the management of those Federal lands.

Casual Use: An activity that does not require authorization and does not ordinarily result in appreciable resource damage.

Closed: Generally denotes that an area is not available for a particular use or uses; refer to specific definitions found in law, regulations, or policy guidance for application to individual programs. For example, 43 CFR 8340.0-5 sets forth the specific meaning of “*closed*” as it relates to off-highway vehicle use, and 43 CFR 8364 defines “*closed*” as it relates to closure and restriction orders.

Code of Federal Regulations (CFR): The official legal compilation of regulations directing Federal Government agencies.

Cooperating Agency: Assists the lead Federal agency in developing an Environmental Assessment or Environmental Impact Statement. The Council on Environmental Quality regulations implementing the National Environmental Policy Act (NEPA) define a cooperating agency as any agency that has jurisdiction by law or special expertise for proposals covered by NEPA (40 CFR 1501.6). Any Federal, State, or local government jurisdiction with such qualifications may become a cooperating agency by agreement with the lead agency.

Cuesta: A ridge with a steep face on one side and a gentle slope on the other, especially in the southwestern United States

Cultural Resource: Any definite location of past human activity, occupation, or use, identifiable through inventory, historical documentation, or oral evidence. Cultural resources include archaeological, historic, or architectural sites, structures, places, objects, and artifacts.

Cultural Site: A physical location of past human activities or events, more commonly referred to as an archaeological site or a historic site. Such sites vary greatly in size and range from the location of a single cultural resource object to a cluster of cultural resource structures with associated objects and features.

Cumulative Effects: “...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions” (40CFR 1508.7).

D

Decision Area: The area for which decisions will be made in the Resource Management Plan (RMP).

Developed Campsite: Amenities **might** include: restroom, showers, electric hook-ups, RV dump stations, tables, shade area, fire grills, reservation system, and campground host. Fees may be associated with such campground

Direct Effects: Those effects "...which are caused by the action and occur at the same time and place" (40 CFR 1508.8(a)).

Dispersed Pedestrian Recreation: Outdoor recreation in which pedestrian visitors are diffused over relatively large areas. Where facilities or developments are provided, they are primarily for access and protection of the environment rather than the comfort or convenience of the user.

Dispersed Recreation: Outdoor recreation diffused over relatively large areas. Where facilities or developments are provided, they are primarily for access and protection of the environment rather than the comfort or convenience of the user.

Discovery Site: "*The Discovery Site*" is where Jerry MacDonald found long, intact trackways in the mid-1980s. Under the supervision of the Smithsonian and Carnegie Museums, MacDonald excavated many layers of trackways and removed thousands of slabs of tracks that now make up the Jerry MacDonald Paleozoic Trackways Collection at New Mexico Museum of Natural History and Science. There are still a variety of tracks and plant impressions visible at the site. It is the most frequently visited best known of the paleontological sites in the Monument.

Docent: A person who is trained to lead tours especially through a museum.

E

Early Seral Condition Class: Stage of development of an ecosystem, usually poor ecological conditions.

Easement: An authorization for a non-possessory, nonexclusive interest in lands that is usually granted for a specific use. This authorization specifies the rights of the holder and the obligation of the Bureau of Land Management to use and manage the lands in a manner consistent with certain terms.

Ecological Site: A kind of land with specific physical characteristics which differs from other kinds of land in its ability to produce distinctive kinds and amounts of vegetation and in its response to management.

Ecoregion: Ecological area. An area defined by environmental conditions and natural features; a region defined by its ecology.

Ecosystem: A dynamic complex of plant, animal, fungal, and microorganism communities and their associated nonliving environment interacting as an ecological unit.

Ecotourism: Tourism that essentially focuses on natural rather than developed attractions with the goal of enhancing the visitor's understanding and appreciation of nature and natural features. Such tourism often attempts to be environmentally sound and to contribute economically to the local community.

Effects and Impacts: Effects and impacts in the regulations are synonymous. An effect on a resource upon the implementation of an action

Endangered Species: A plant or animal that is in danger of extinction throughout all or a significant portion of its range.

Entry: An application to acquire title to public land.

Environmental Impact Statement (EIS): An analytical document that portrays potential impacts on the human environment of a particular course of action and its possible alternatives. Required by the National Environmental Policy Act (NEPA), an EIS is prepared for use by decision makers to assess the environmental consequences of a potential decision.

Environmental Justice: The fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income in developing, implementing, and enforcing environmental laws, regulations, and policies.

Ephemeral: Lasting for only a short period of time and leaving no permanent trace.

Ephemeral Stream: A stream that flows only in direct response to precipitation, and whose channel is at all times above the water table.

Erosion: The wearing away of the land surface or soil by running water, waves, or moving ice and wind, or by such processes as mass wasting and corrosion (solution and other chemical processes). "Accelerated erosion" generally refers to erosion in excess of what is presumed or estimated to be naturally occurring levels, and which is a direct result of human activities.

Exclusion Area: Areas with sensitive resource values where rights-of-way would not be authorized, except where mandated by law.

Exotic: All species of plants and animals not naturally occurring, either presently or historically, in any ecosystem of the United States.

Extensive Recreation Management Area (ERMA): Areas designated and managed to support and sustain the principal recreation activities and the associated qualities and conditions.

F

Fauna: The animal life of a particular region or period, considered as a whole.

Federal Land: Land, or interests in land (such as easements and rights-of-way), owned by the United States.

Federal Land Policy And Management Act (FLPMA): Public Law 94-579, the Act that (1) established, for the Bureau of Land Management, standards for managing the public lands including land use planning, sales, withdrawals, acquisitions, and exchanges; (2) authorized the setting up of local advisory councils representing major citizens groups interested in land use planning and management, (3) established criteria for reviewing proposed wilderness areas, and (4) provided guidelines for other aspects of public land management such as grazing.

Federal Register: The Federal Government's official daily publication for rules, proposed rules, and notices of Federal agencies and organizations, as well as executive orders and other presidential documents.

Fire Management Plan: A strategic plan that defines a program to manage wildland and prescribed fires and documents the fire management program in the approved land use plan. The fire management plan is supplemented by operational procedures such as preparedness plans, preplanned dispatch plans, prescribed fire plans, and prevention plans.

Fire Management Unit: A fire planning unit in which preparedness strategies are designed to meet watershed or resource management objectives, designated by logical fire control or containment criteria such as watershed basins, sub-basins, ridgetops, topographic features, roads, or vegetation changes.

Fire Regime: Periodicity and pattern of naturally occurring fires in a particular area or vegetative type, described in terms of frequency, biological severity, and area of extent.

Fire Regime Condition Class (FRCC): A standardized interagency tool for determining the degree of departure from reference condition vegetation, fuels, and disturbance regimes. Assessing FRCC can help guide management objectives and set priorities for treatments.

Fire Intensity: The effects of fire on the above ground vegetation, generally described in terms of mortality.

Fire Severity: Fire effects at and below the ground surface. It describes the impacts on organic material on the ground surface, changes to soils, and mortality of below ground vegetative buds, roots, rhizomes, and other organisms.

Fire Suppression Tactics: The tactical approaches regarding suppression of a wildland fire. Tactics can control, confine, contain, or monitor fire. Control is the most aggressive tactic, while monitoring is the least.

Fire Use: The combination of wildland fire use and prescribed fire application to meet resource objectives.

Forage: All browse and herbage that is available and acceptable to grazing animals or that may be harvested for feed; the act of consuming forage.

Fossil: Any remains, trace, or imprint of a plant or animal that has been preserved by natural process in the earth's crust since some past geologic time.

Friable: Easily crumbled or crushed into powder.

G

Geographic Information System (GIS): A computer application used to store, view, and analyze geographical information, especially maps.

Grazing Permit or Lease: A contractual agreement between the Bureau of Land Management and another party that permits grazing of a specific number and class of livestock for a specified period on a defined rangeland. The permit allows grazing use of public land, subject to permit stipulations and annual adjustment based on current rangeland condition.

Greenhouse Gases: Are those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere and clouds. This property causes the greenhouse effect. Water vapor (H₂O), carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄) and ozone (O₃) are the primary greenhouse gases in the Earth's atmosphere. Beside CO₂, N₂O and CH₄, the Kyoto Protocol deals with the greenhouse gases sulphur hexafluoride (SF₆), hydro fluorocarbons (HFCs) and perfluorocarbons (PFCs).

Ground Cover: Plants or plant parts, living or dead, on the surface of the ground.

Groundwater: Subsurface water that is in the zone of saturation. The top surface of the ground water is the water table. Groundwater is the source of water for wells, seepage, and springs.

H

Habitat: A specific set of physical conditions that surround a species, group of species, or a large and living space.

Herbaceous: Of, relating to, or having the characteristics of a vascular plant that does not develop woody tissue; non-woody vegetation such as grasses and forbs.

I

Ichnofauna: The animals that made **ichnofossils**.

Ichnofossil: Fossils that document animal behavior by the presence of trackways, footprints, dung and other indicators rather than fossilized bones or body parts.

Ichnogenus: A group of trace fossils that is given a name because the similarity of the traces suggests they were made by closely related species of organisms.

Ichnotaxon Invertebrate: An animal that does not have a backbone, e.g. an insect or worm.

Indirect Effects: Those effects "...which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on water and air and other natural systems, including ecosystems" (40 CFR 1508.8 (b)).

In-situ: In its natural or original place.

Interim Management Policy for Lands under Wilderness Review (IMP) (BLM 1995): The Bureau of Land Management's strategy for managing wilderness study areas following their recommendation for designation but before Congress designates them as wilderness or releases them to multiple-use management.

Invasive Species: An alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.

K

Karst: A limestone landscape, characterized by caves, fissures, and underground streams.

L

Lamination: In geology, lamination is a small scale sequence of fine layers (so called laminae) that occurs in sedimentary rocks. Laminations are normally smaller and less pronounced than bedding layering. Lamination is often regarded as planar structures one centimeter or less in thickness, whereas bedding layers are greater than one centimeter.

Land Use Authorization: An authorization the Bureau of Land Management issues authorizing nonpossessory, non-exclusive right to use Federal lands for a specific use such as right-of-way, lease, temporary use permit, film permit, etc.

Land Use Plan: A set of decisions that establish management direction for land within an administrative area, as prescribed under the planning provisions of the Federal Land Policy and Management Act; an assimilation of land-use-plan-level decisions developed through the planning process outlined in 43 CFR 322 1600, regardless of the scale at which the decisions were developed. Also see Resource Management Plan.

Leasable Minerals: Minerals whose extraction from Federally-managed land requires a lease and the payment of royalties. Leasable minerals include coal, oil and gas, oil shale and tar sands, potash, phosphate, sodium, and geothermal steam.

Lithic Scatter: Pertaining to or composed of stone flakes created by human flint knapping that are dispersed on the ground; a type of archaeological resource.

Lithology: The scientific study of rocks.

Locatable Minerals: Minerals subject to exploration, development, and disposal by staking mining claims as authorized by the Mining Law of 1872 (as amended). Locatable minerals include valuable deposits of gold, silver, and other uncommon minerals not subject to lease or sale.

Location: The act of taking or appropriating a parcel of mineral land, including the posting of notices, the recording thereof when required, and marking the boundaries so they can be readily traced.

Long-Term Impacts: Impacts projected to occur 10-20 years.

M

Mineral Entry: The filing of a claim on public land to obtain the right to any minerals it may contain.

Mineral Estate: The ownership of the minerals at or beneath the land's surface.

Mineral Materials: Materials such as common varieties of sand, stone, gravel, pumice, pumicite, and clay that are not obtainable under the mining or leasing laws but that can be acquired under the Materials Act of 1947, as amended. Also, known as salable minerals.

Mining Claims: Portions of public land claimed for possession of locatable mineral deposits by locating and recording under established rules and pursuant to the Mining Law of 1872.

Mining Law of 1872 (General Mining Law): The Federal act that, with its amendments, formed the framework for the mining of locatable minerals on the public land. This law declared that "valuable" mineral deposits rather than simply "mineral deposits" were to be free and open to exploration and purchase, limited individual claims to 20 acres, required \$100 worth of assessment work yearly, and allowed milling or processing claims of 5 acres or less to be entered on nonmineral lands.

Museum Property: Museum collections come in many forms, all with characteristics that make them worthy of long-term preservation and management. Once an item is added to a museum collection it must be documented and treated in a specific way as property. Paleontological resources collected from public land and added to a museum collection, although still government property, must be treated in a specific way that will preserve and manage them for long-term preservation for the public benefit.

N

National Ambient Air Quality Standards: The allowable concentrations of air pollutants in the ambient (public outdoor) air specified in 40 CFR 50. National ambient air quality standards are based on the air quality criteria and divided into primary standards (allowing an adequate margin of safety to protect the public health including the health of "sensitive" populations such as asthmatics, children, and the elderly) and secondary standards (allowing an adequate margin of safety to protect the public welfare). Welfare is defined as including effects on soils, water, crops, vegetation, human-made materials, animals, wildlife, weather, visibility, climate, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being.

National Environmental Policy Act of 1969 (NEPA): The Federal law, effective January 1, 1970, that established a National policy for the environment and requires Federal agencies: (1) to become aware of the environmental ramifications of their proposed actions, (2) to fully disclose to the public proposed Federal actions and provide a mechanism for public input to Federal decision making, and (3) to prepare environmental impact statements for every major action that would significantly affect the quality of the human environment.

National Historic Preservation Act (NHPA) of 1966, as amended: A Federal statute that established a Federal program to further the efforts of agencies and individuals in preserving the Nation's historic and cultural foundations. The National Historic Preservation Act: (1) authorized the National Register of Historic Places, (2) established the Advisory Council on Historic Preservation and a National Trust Fund to administer grants for historic preservation, and (3) authorized the development of regulations to require Federal agencies to consider the effects of Federally-assisted activities on properties included in or eligible for the National Register of Historic Places. Also see NATIONAL REGISTER OF HISTORIC PLACES.

National Register of Historic Places (NRHP): The official list, established by the National Historic Preservation Act, of the Nation's cultural resources worthy of preservation. The National Register lists archaeological, historic, and architectural properties (i.e., districts, sites, buildings, structures, and objects) nominated for their local, state, or national significance by state and Federal agencies and approved by the National Register Staff. The National Park Service maintains the National Register. National Register eligible property is referred to as an historical, cultural, archaeological, or listed property. Also, see NATIONAL HISTORIC PRESERVATION ACT.

Non-Impairment of Wilderness Values Criteria: A set of criteria regulating land use to protect the wilderness values and characteristics of an area until Congress determines whether to preserve it as a wilderness. The nonimpairment criteria are as follows.

- The use, facility, or activity must be temporary. (This means a temporary use that does not create surface disturbance or involve permanent placement of facilities may be allowed if such use can easily and immediately be terminated upon wilderness designation.
- When the use, activity, or facility is terminated, the wilderness values must not have been degraded so far as to significantly constrain the area's suitability for preservation as wilderness.
- The only permitted exceptions to the nonimpairment criteria are the following:
 - wildfire or search and rescue emergencies,
 - reclamation to minimize impacts of violations and emergencies,
 - uses and facilities that are considered grandfathered or valid existing rights under the Interim Management Policy for Lands under Wilderness Review,
 - uses and facilities that clearly protect or enhance the land's wilderness values or are the least needed for public health and safety, and
 - reclamation of pre-Federal Land Policy and Management Act impacts.

Notice of Intent (NOI): A notice that an environmental impact statement will be prepared and considered. The notice shall briefly: (a) Describe the proposed action and possible alternatives. (b) Describe the agency's proposed scoping process including whether, when, and where any scoping meeting will be held. (c) State the name and address of a person within the agency who can answer questions about the proposed action and the environmental impact statement.

Noxious Plant (Weed): An unwanted plant specified by Federal or state laws as being undesirable and requiring control. Noxious weed refers to any plant that, when established, is highly destructive, competitive, or difficult to control by cultural or chemical practices. Noxious weeds are usually non-natives and highly invasive.

O

Off-Highway Vehicle: Any motorized vehicle capable of or designed for travel on or immediately over land, water, or other natural terrain, excluding (1) any nonamphibious registered motorboat; (2) any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; (3) any vehicle whose use is expressly authorized by the authorized officer, or otherwise officially approved or permitted; (4) vehicles in official use by administering agencies such as the Bureau of Land Management or other agency; and (5) any combat or combat support vehicle when used in times of National defense emergencies. 43 CFR Section 8340.05.

Ostracods: A tiny crustacean that lives inside a hard outer shell made of two hinged halves.

P

Paleontological Resources: The remains of plants and animals preserved in soils and sedimentary rock. Paleontological resources are important for understanding past environments, environmental change, and the evolution of life.

Paleozoic: The era of geologic time, about 542 million to 251 million years ago, during which fish, insects, amphibians, reptiles, and land plants first appeared.

Particulate Matter: Fine liquid (other than water) or solid particles suspended in the air, consisting of dust, smoke, fumes, and compounds containing sulfur, nitrogen, and metals.

Passive Treatment Methods: Allowing resources to naturally regenerate over time without taking direct action.

Payment in Lieu of Taxes (PILT): Federal payments to local governments to offset their inability to collect taxes for federally owned land.

Permian: The period of geologic time, 299 million to 251 million years ago.

Permitted Use: Any use by an entity such as scientist, livestock permittee, or Special Recreation Permittee that is authorized by the local Bureau of Land Management office.

Planning Area: The area for which decisions made in the PTNM RMP will apply. The *Planning Area* consists of 5,255 acres of Federal surface estate and 4,886 acres of Federal subsurface estate designated as the Prehistoric Trackways National Monument.

Planning Criteria: The constraints or ground rules that guide the developing of a resource management plan. The criteria determine how the planning team develops alternatives and ultimately selects a Preferred Alternative.

Preferred Alternative: The alternative in this EIS that BLM has initially selected because it best fulfills BLM's mission and responsibilities and offers the most acceptable resolution of the planning issues and management concerns.

Prescribed Fire: Any fire ignited by management actions to meet specific objectives.

Primitive Recreation: Recreation that occurs in a natural-appearing environment and that allows visitors to achieve solitude and isolation from human civilization. Primitive recreation may include hunting, horseback riding, wildlife viewing, nature study, photography, hiking, and backpacking.

Primitive Campground: No facilities just designated campsites.

Public Land: Any land administered by the Secretary of the Interior through the U.S. Bureau of Land Management or by the Secretary of Agriculture through the U.S. Forest Service.

Q

Quaternary: The current period of geologic time, beginning 1.6 million years ago and characterized by the appearance and dominance of humans.

R

Realty Avoidance Area: An area where rights-of-way may be granted only when no feasible alternative route is available.

Realty Exclusion Area: An area where rights-of-way would be granted only in cases where there is a legal requirement to provide such access.

Reasonably Foreseeable Development (RFD): A projected development scenario for an activity in a defined area and period of time.

Record of Decision: A document signed by a responsible official recording a decision that was preceded by the preparing of an environmental impact statement.

Recreation Management Area (RMA): Designated land units where Recreation and Visitor Services objectives are recognized as a primary resource management consideration and specific management is required to protect the recreation opportunities. RMAs are classified as either special recreation management areas (SRMAs) or extensive recreation management areas (ERMAs).

Recreation Management Zone: In recreation management, an area with four defining characteristics: (1) it serves a different recreation niche within the primary recreation market, (2) it produces a different set of recreation opportunities and facilitates attaining different experiences and benefit outcomes, (3) it has a distinctive recreation setting character, and (4) it requires a different set of recreation provider actions to meet primary recreation market demand.

Recreation Opportunity Spectrum (ROS): A planning process that provides a framework for defining classes of outdoor recreation environments, activities, and experience opportunities. In ROS, the setting, activities, and opportunities for experiences are arranged along a spectrum of six classes: Primitive, Semi-Primitive Non-Motorized, Semi-Primitive Motorized, Roaded Natural, Rural, and Urban. The resulting ROS analysis defines specific geographic areas on the ground. In this Resource Management Plan, the Ecosystem Restoration and Preferred Alternatives also propose a Backcountry class, which is a combination of Semi-Primitive Non-Motorized and Semi-Primitive Motorized.

Resource Advisory Council (RAC): Advisory councils appointed by the Secretary of the Interior and consisting of representatives of major public land interest groups (e.g. commodity industries and recreation, environmental, and local area interests) in a state or smaller area. RACs advise BLM, focusing on a full array of multiple use public land issues. RACs also help develop fundamentals for rangeland health and guidelines for livestock grazing.

Resource Management Plan (RMP): A land use plan as described by the Federal Land Policy and Management Act. The RMP generally establishes in a written document: (1) land areas for limited, restricted or exclusive use; designations, including ACEC designations; and transfer from the Bureau of Land Management administration; (2) allowable resource uses (either singly or in combination) and related levels of production or use to be maintained; (3) resource condition goals and objectives to be attained; (4) program constraints and general management practices needed to achieve the above items; (5) need for an area to be covered by more detailed and specific plans; (6) support actions, including such measures as resource protection, access development, realty action, and cadastral survey., as needed to achieve the above; (7) general implementation sequences, where carrying out a planned action depends on prior accomplishment of another planned action; and (8) intervals and standards for monitoring and evaluating the plan to determine its effectiveness and the need for amendment or revision. It is not a final implementation decision on actions that require further specific plans, process steps, or decisions under specific provisions of law and regulations.

Right-of-Way (ROW): A permit or an easement that authorizes the use of public land for specified purposes, such as pipelines, roads, telephone lines, electric lines, communication sites, reservoirs, and the lands covered by such a permit.

Rills: A little stream or brook or a small channel cut in soil.

S

Saleable Minerals: See **Mineral Materials**.

Santa Fe Group: Basin-fill sediments associated with the Rio Grande Rift deposited from late Oligocene to middle Pleistocene (25 MY to ~1.8 MY).

Scoping: An early and open process for determining the scope of issues to be addressed in an environmental impact statement and the significant issues related to a proposed action.

Section 106 of the National Historic Preservation Act: The section of the National Historic Preservation Act that requires that Federal agencies having direct or indirect jurisdiction over a proposed Federal, Federally-assisted, or Federally-licensed undertaking, before approving the spending of funds or issuing a license, consider the effect of the undertaking on any district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places, and give the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking. Also see NATIONAL HISTORIC PRESERVATION ACT and NATIONAL REGISTER OF HISTORIC PLACES, and SECTION 110 OF THE NATIONAL HISTORIC PRESERVATION ACT.

Section 110 of the National Historic Preservation Act: The section of the National Historic Preservation Act that concerns the managing of Federally-owned historic properties. Among other provisions, Section 110 requires each Federal agency to establish a program to locate, inventory, protect, restore and nominate to the Secretary of the Interior Standards all properties under its control that appear to qualify for the National Register of Historic Places. Also see NATIONAL HISTORIC PRESERVATION ACT, NATIONAL REGISTER OF HISTORIC PLACES, and SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT.

Seral Stages: The development stages of ecological succession.

Short-Term Impacts: Impacts projected to occur from 0-10 years

Sphenacodont Pelycosaur: A large extinct reptile that was common in Europe and North America during the Permian period, 245 to 290 million years ago.

Standards for Rangeland Health: A description of conditions needed to sustain public land health; relates to all uses of the public land. These standards address soils, streams, water quality, riparian-wetlands, and biodiversity.

State Historic Preservation Officer (SHPO): The state official authorized to act as a liaison to the Secretary of the Interior for implementing the National Historic Preservation Act of 1966.

Succession: The progressive replacement of plant communities on an ecological site that leads to the climax community. Early seral stages are normally dominated by perennial grasses and annual as well as perennial forbs with few shrubs. During mid seral the woody species that the site supports such as shrubs and trees begin to make an obvious appearance, and annual forbs are dominated by perennial forbs. During late seral the shrubs normally dominate the cover on the site, but the perennial grasses still provide the most annual production on into the potential natural community.

T

Taylor Grazing Act: An act passed in 1934 that provides for the regulation of grazing on the public lands (excluding Alaska) to improve rangeland conditions and stabilize the western livestock industry.

Tectonism: Faulting or folding or other deformation of the outer layer of a planet. It happens very slowly, on the scale of millions of years.

Threatened Species: Any species defined through the Endangered Species Act (ESA) as likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Also see ENDANGERED SPECIES.

Trackway: This is a trace fossil made by an organism and indicates motion or direction. They include footprints, tail drags, belly drags, and body imprints.

Trace Fossil: Geological records of biological activity. Trace fossils may be impressions made on the substrate by an organism; for example, burrows borings, footprints and feeding marks, and root cavities.

V

Valid Existing Rights: Locatable mineral development rights that existed when the Federal Land Policy and Management Act was enacted on October 21, 1976. Mining claims that existed as of the effective date of the segregation may still be valid if they can meet the test of discovery of a valuable mineral required under the Mining Law. Determining the validity of mining claims located in segregated lands requires BLM to conduct a validity examination and is called a “valid existing rights” determination.

Vertebrate: An animal with a segmented spinal column and a well-developed brain (e.g., a mammal, bird, reptile, amphibian, or fish).

Viewshed: The entire area visible from a viewpoint.

Visitor Contact Station: A facility that is generally a low-impact development often requiring no utilities or personnel to operate it. For the purposes of this Resource Management Plan, a visitor contact station could be as minimal as a kiosk with or without brochures, or an open-air structure such as a ramada or pavilion that contains tables, and possibly all-weather exhibits and printed materials offering maps and interpretive information. In addition to this, educational and interpretive events and opportunities would be offered here on a limited basis depending on the availability of staffing, and probably only for planned events.

Visitor Center: A full-service facility requiring the full array of utilities (electric, water, phone) and staffing to meet the needs of visitors. It would serve as a museum for the resources of the Prehistoric Trackways National Monument and would be a facility where a full-array of educational and interpretive events and opportunities would be available during operating hours.

Vug: A small hole in a rock or vein that often contains a mineral lining that differs from that of the surrounding matrix.

W

Watershed: An area of land from which water drains toward a single stream. The watershed is a hydrologic unit often used as a physical-biological unit and a socioeconomic-political unit for planning and managing natural resources.

Wilderness: An area of undeveloped Federal land retaining its primeval character and influence, without permanent improvement or human habitation, that is protected and managed so as to preserve its natural conditions and that (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man’s work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least 5,000 acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

Wilderness Study Area (WSA): A roadless area that has been inventoried and found to be wilderness in character, has few human developments, and provides outstanding opportunities for solitude and primitive recreation, as described in Section 603 of the Federal Land Policy and Management Act of 1976 and in Section 2(c) of the Wilderness Act of 1964.

Wilderness Values: Values established in the Wilderness Act, such as solitude and naturalness.

Wildfire: An unplanned and unwanted wildland fire including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fires where the objective is to put the fire out.

Wildland Fire Use: The application of the appropriate management response to naturally ignited wildland fires to accomplish specific resource management objectives in predefined designated areas outlined in fire management plans. Operational management is described in the wildland fire implementation plan.

Withdrawal: An action that restricts the use of public land by removing them from the operation of some or all of the public land or mining laws.

ACRONYMS

ACEC	Area of Critical Environmental Concern	NRHP	National Register of Historic Places
ADA	Americans with Disabilities Act	OHV	Off-highway Vehicle
AMP	Allotment Management Plan	PILT	Payments in Lieu of Taxes
ATV	All-Terrain Vehicle	PDM	Predator Damage Management
AUM	Animal Unit Month	PM _{2.5}	Particulate matter less than 2.5 micrometers in diameter
BLM	Bureau of Land Management	PM ₁₀	Particulate matter less than 10 micrometers in diameter
BMP	Best Management Practice	PTNM	Prehistoric Trackways National Monument
CEQ	Council on Environmental Quality	RMA	Recreation Management Area
CFR	Code of Federal Regulations	RMP	Resource Management Plan
CTTM	Comprehensive Trails and Travel Management	RNA	Research Natural Area
EIS	Environmental Impact Statement	ROD	Record of Decision
ERMA	Extensive Recreation Management Area	ROS	Recreation Opportunity Spectrum
ESA	<i>Endangered Species Act</i>	SHPO	State Historic Preservation Officer
FLPMA	<i>Federal Land Policy and Management Act</i>	SHS	Standard Habitat Sites
FMP	Fire Management Plan	SSS	Special Status Species
FMU	Fire Management Unit	T&E	Threatened and Endangered
FRCC	Fire Regime Condition Class	USC	United States Code
GIS	Geographic Information System	USDA	U. S. Department of Agriculture
GHG	Green House Gases	USDI	U. S. Department of the Interior
GPS	Global Positioning System	USGS	U.S. Geological Survey
IMP	BLM's <i>Interim Management Policy for Lands under Wilderness Review</i>	USFWS	U.S. Fish and Wildlife Service
LGMP	Livestock Grazing Management Practices	UTV	Utility Vehicle
LWC	Lands with Wilderness Characteristics	VRM	Visual Resources Management
MLRA	Major Land Resource Area	WSA	Wilderness Study Area
NEPA	<i>National Environmental Policy Act</i>		
NHPA	<i>National Historic Preservation Act</i>		
NLCS	National Landscape Conservation System		
NOI	Notice of Intent		
NRCS	Natural Resources Conservation Service		



REFERENCES

REFERENCES

- Allred, B.W. and Snyder, K. A. 2008. "Ecophysiological Responses of Chihuahuan Desert Grasses to Fire." Arid Environments, 72: 1989-1996.
- Báez S., Collins, S.L. 2008. Shrub Invasion Decreases Diversity and Alters Community Stability in Northern Chihuahuan Desert Plant Communities. *PLoS ONE* 3(6): e2332. doi:10.1371/journal.pone.0002332.
- Beale, Donald M., Arthur D. Smith. 1970. Forage Use, Water Consumption, and Productivity of Pronghorn Antelope in Western Utah. *The Journal of Wildlife Management* 34(3) 570-582.
- Bestelmyer, B.T.; Khalil, N.I.; and Peters, D.P.C. 2007. "Does Shrub Invasion Indirectly Limit Grass Establishment Via Seedling Herbivory? A Test at Grassland-Shrubland Ecotones". Vegetation Science; 18: 363-370.
- Bleich, Vernon C., Andrew, N.G., Martin, M.J., Mulcahy, G.P., Pauli, A.M., and Rosenstock, S.S. 2006. Quality of Water Available to Wildlife in Desert Environments: Comparisons among Anthropogenic and Natural Sources. *Wildlife Society Bulletin* 34(3): 627-632.
- BLM (Bureau of Land Management) See U.S. Department of Interior, Bureau of Land Management
- City of Las Cruces. 2004. Comprehensive Plan for a Rio Grande Riparian Ecological Corridor Project. Las Cruces, New Mexico: City of Las Cruces.
- Congressional Research Service. 2005. Grazing Fees: An Overview and Current Issues. Las Cruces, New Mexico: BLM Las Cruces District Office.
- Council on Environmental Quality (CEQ). (1997). *Environmental Justice: Guidance Under the National Environmental Policy Act*. Washington, DC: Executive Office of the President.
- Demathieu, G.; Gand, G.; and Toutin-Morin, N. 1992. La palichnofaune des bassins Permien Provençaux: Geobios, v. 25, p. 19-54.
- DiTomaso, J. M. 2000. "Invasive weeds in rangelands: Species, Impacts, And Management." Weed Science, 48: 255-265.
- Doña Ana County. 2000. ETZ Comprehensive Plan 2000-2020. Las Cruces, New Mexico.
- Drewa, P.B.; Peters, D.P.C; and Havstad, K.M. 2006. "Population and Clonal Level Responses of Perennial Grass Following Fire in the Northern Chihuahuan Desert." Oecologia, 150: 29-39.
- Enquist C. and D. Gori. 2008. "Implications of Recent Climate Change on Conservation Priorities in New Mexico, The Nature Conservancy in New Mexico, Climate Change, Ecology and Adaptation Program." 79pp. From <http://nmconservation.org/downloads/>.
- Environmental Protection Agency. 2011. National Ambient Air Quality Standards (NAAQS). From the following website: <http://www.epa.gov/air/criteria.html>.

- Fenneman and Johnson. 1946. Physical Divisions of the United States. US Geological Survey. Washington, DC:
- Florida, R. 2002. The Rise of the Creative Class. New York: Basic Books.
- Fusco, M. J.; Holechek, A.; Tembo, A. Daniel; and Cardenas, M. 1995. "Grazing Influences On Watering Point Vegetation In The Chihuahuan Desert." Journal of Range Management, 48(1):32-38.
- Glenn, E.; Tanner, R.; Mendez, S.; Kehret, T.; Moore, D.; Garcia, J.; and Valdes, C. 1998. "Growth Rates, Salt Tolerance and Water Use Characteristics of Native and Invasive Riparian Plants from the Delta of the Colorado River, Mexico." Journal of Arid Environments, 40(3): 281-294.
- Goddard Institute for Space Studies- National Aeronautics and Space Administration. 2007. "GISS Surface Temperature Analysis: Global Temperature Trends: 2007 Summation." <http://data.giss.nasa.gov/gistemp/2007/>.
- Horne, A., & Haynes, R. 1999. *Developing Measures of Socioeconomic Resiliency in the Interior Columbia Basin*. USDA Forest Service General Technical Report, PNW-GTR-453. April 1999.
- Ikelman, J. A. and Theberge, A. E. 1980. Geothermal Resources of New Mexico: New Mexico Energy Institute at New Mexico State University, 1:500,000.
- Intergovernmental Panel on Climate Change (IPCC). 2007. "Climate Change 2000: The Physical Science Basis." From <http://www.ipcc.ch/>.
- Jamshid, A.; Wanstall, J.; and Sholedice, F. 2010. Troublesome Weeds of New Mexico. Las Cruces, New Mexico: New Mexico State University.
- Kues, B. S. and Giles, K. A. 2004. "The late Paleozoic ancestral Rocky Mountains system in New Mexico: in Mack, G. H. and Giles, K. A., eds." The Geology of New Mexico: A Geologic History, New Mexico Geological Society Special Publication 11, p. 95-136.
- Ladenburger, C. G.; Hild, A. L.; Kazmer, D. J.; and Munn, L. C. 2006. "Soil Salintiy Patterns in Tamarix invasions in the Bighorn Basin, Wyoming, USA." Journal of Arid Environments 65: 111-128.
- Laycock, W., and Conrad, P. 1981. "Responses of Vegetation and Cattle to Various Systems of Grazing on Seeded and Native Mountain Rangelands in Eastern Utah." Journal of Range Management, 53:52-59.
- Li, J.; Okin, G. S.; Alvarez, L.J.; and Epstein, H.E. 2009. "Sediment Deposition and Soil Nutrient Heterogeneity in Two Desert Grassland Ecosystems, Southern New Mexico." Plant Soil, 319: 67-84.
- Loomis, J. and Richardson, R. 2001. "Economic Values of the U.S. Wilderness System." International Journal of Wilderness, 7(1); 31-34.
- Lucas, Spencer G.; Hunt, Adrian P.; and Hotton, Nicholas III. 1994. "The Paleozoic Trackways Scientific Study Report." (Unpublished Report) BLM Contract # N651-RFP3-3026. Las Cruces, New Mexico: Bureau of Land Management, Las Cruces District Office.

- Masters, R. A. and R. L. Sheley. 2001. "Principles and practices for managing rangeland invasive plants." Journal of Range Management, 54: 502-517.
- McLemore, V. T. 1998. "A Summary Of The Mineral Resources In Dona Ana County, New Mexico." New Mexico Geological Society Guidebook, 49th Field Conference, Las Cruces II, p. 299-308.
- McLemore, V. T.; Hoffman, G. K.; Mansell, M.; Jones, G. R.; Krueger C. B.; and Wilks, M. 2005. "Mining Districts of New Mexico." New Mexico Bureau of Geology And Mineral Resources Open File Report 494, 19 p.
- Minnesota IMPLAN Group (MIG). 2009. *IMPLAN Professional Version 3.0*. From the following website: www.IMPLAN.com.
- Minter, Nicholas J. and Simon J Braddy. November 2009. "Ichnology of an Early Permian Intertidal Flat: The Robledo Mountain Formation of Southern New Mexico, USA." Special Paper in Palaeontology #82. Palaeontological Association of London.
- National Academy of Sciences- Committee on Estimating and Communicating Uncertainty in Weather and Climate Forecasts, National Research Council. 2006. Completing the Forecast: Characterizing and Communicating Uncertainty for Better Decisions Using Weather and Climate Forecasts. Washington D.C.: The National Academies Press.
- National Agricultural Statistics Service, U.S. Department of Agriculture (NASS). 2011. "QuickStat." Retrieved September 27, 2011 from <http://www.nass.usda.gov/QuickStat>.
- New Mexico Bureau of Geology and Mineral Resources. 2003. Geologic Map of New Mexico. (Scale 1:500,000) From: <http://geoinfo.nmt.edu/publications/maps/geologic/state/home.cfm>.
- New Mexico Environment Department (NMED). 2011. "Exceptional Event Demonstration for Particulate Matter Exceedances in New Mexico January 2008 to December 2008", p. 13.
- New Mexico Department of Game and Fish. 2006. Comprehensive Wildlife Conservation Strategy. Santa Fe, New Mexico: New Mexico Department of Game and Fish.
- New Mexico Rare Plant Technical Council (NMRPTC). 1999. New Mexico Rare Plants. Albuquerque, New Mexico: New Mexico Rare Plants Home Page: <http://nmrareplants.unm.edu>.
- New Mexico State University. 2010. Institutional Research Planning and Outcomes Assessment. Dated: February 1, 2010. Las Cruces, New Mexico: New Mexico State University.
- Pellant M., P. Shaver, D. A. Pyke, and J. E. Herrick. 2005. Interpreting indicators of rangeland health, Version 4. Technical Reference 1734-6. U. S. Department of the Interior, Bureau of Land Management, National Science and Technology Center, Denver, CO. BLM/WO/ST-00/001+1734/REV05. 122 pp.
- Peter J. Smith and Company. 2009. Doña Ana County and City of Las Cruces Inventory. Accessed August 14, 2013 from http://www.las-cruces.org/code/vision_2040/documents/Inventory/Inventory%2009-18-09.pdf

- Preister, K. 2003. Preliminary Assessment of Community Interests and Communication Strategies by Geographic Area: The Las Cruces Field Office Planning Area. Basalt, Colorado: James Kent Associates.
- Sanford, A. R.; Lin, K. W.; Tsai, I.; and Jaksha, L. H. 2002. "Earthquake Catalogs For New Mexico And Bordering Areas: 1869–1998." New Mexico Bureau of Geology and Mineral Resources, Circular 210, 104 pp.
- Scott, Joan E. 1997. Do livestock waters help wildlife? Arizona Game and Fish Department.
- Seagar, W.R.; Kottowski, F. E.; and Hawley, J. W. 2008. "Geologic Map of the Robledo Mountains and Vicinity, Doña Ana County, New Mexico." New Mexico Bureau Of Geology And Mineral Resources Open File Report 509, 12 p.
- Seesholtz, D., Wickwar, D., and Russell, J. 2004. *Social Economic Profile Technical Guide*. U.S. Department of Agriculture, Forest Service, Inventory Monitoring Institute.
- Smith, Geoffrey B. June 2012. Bacteria Source Tracking Results for the Lower Rio Grande, 2010-2011 Draft. New Mexico Department of Agriculture, New Mexico State University. 13 pages.
- Smith, S. D.; Devitt, D. A.; Sala, A.; Cleverly, J. R.; and Busch, D. E. 1998. "Water Relations of Riparian Plants from Warm Desert Regions." Wetlands 19: 687-696.
- Society for Range Management. 1999. A Glossary of Terms Used in Range Management. Denver, Colorado: Society for Range Management. 20p.
- State of New Mexico. 2010. Statewide Comprehensive Outdoor Recreation Plan (SCORP). <http://www.emnrd.state.nm.us/PRD/scorp/index.htm>.
- Stynes, D. and White, E. 2010. Updated Spending Profiles for National Forest Visitors by Activity. Portland, Oregon: Pacific Northwest Research Station.
- Tidwell, W.D. and Ash, S.R. 1994. "A Review of Selected Triassic to Early Cretaceous Ferns." Journal of Plant Research, 107: 417-442.
- U.S. Census Bureau. 2010. American FactFinder2. Retrieved August 22, 2011 from <http://factfinder2.census.gov>.
- U.S. Census Bureau. 2000. American FactFinder. Retrieved August 22, 2011 from <http://factfinder.census.gov>.
- U.S. Congress. 2009. Omnibus Public Land Management Act of 2009. Public Law 111-11, H.R. 146. http://www.blm.gov/pgdata/etc/medialib/blm/wo/Communications_Directorate/legislation.Par.32579.File.dat/HR146enrolledbill.pdf.
- U.S. Department of Agriculture (USDA), Forest Service. 2011. Grazing Statistical Summary FY2009. Santa Fe, New Mexico: U.S. Forest Service Regional Office.
- U.S. Department of Commerce, Bureau of Economic Analysis. 2002. Regional Economic Information System CD-ROM, Tables CA25, CA25N, CA30, CA05N, CA05, CA35, CA45.

- U.S. Department of the Interior. 2011. Payment in Lieu of Taxes. Retrieved August 25, 2011 from www.nbc.gov/PILT.
- U.S. Department of the Interior, Bureau of Land Management (BLM). 2013. Guidance on Estimating Nonmarket Environmental Values (Instruction Memorandum No. 2013-131). Washington, DC: E. Roberson.
- _____. 2013. Market Research on BLM National Monument Visitation. BLM Las Cruces District Office, New Mexico.
- _____. 2012. National Monuments, National Conservation Areas, and Similar Designations Manual 6220.
- _____. 2012. Management of Wilderness Study Areas Manual 6330.
- _____. 2011. Public Land Statistics Table 4-1: Estimated Recreational Use of Public Lands Administered by the BLM, Fiscal Year 2010. Retrieved September 14, 2011 from http://www.blm.gov/public_land_statistics/pls10/pls4-1_10.pdf.
- _____. 2010. Rangeland Administration System. Retrieved September 14, 2011 from <http://www.blm.gov/ras/index.htm>.
- _____. 2009. Las Cruces District Fire Management Plan. Las Cruces, New Mexico: Bureau of Land Management Las Cruces District Office.
- _____. 2009. Instruction Memorandum No. 2009-215: Planning for Special Designations within the National System of Public Lands. Las Cruces, New Mexico: BLM Las Cruces District Office.
- _____. 2008. Special Status Species Management Manual 6840.
- _____. 2007. Vegetative Treatment Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Statement. Reno, Nevada: BLM Nevada State Office.
- _____. 2005. Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States. From the following website: <http://windeis.anl.gov/documents/fpeis/index.cfm>. Accessed December 2005.
- _____. 2005. FY2006 Programmatic Emergency Stabilization and Rehabilitation Plan BLM New Mexico, BLM-NM-SO-EA-06-01, September 30, 2005. Las Cruces, New Mexico.
- _____. 2004. Decision Record and Resource Management Plan Amendment for Fire and Fuels Management on Public Land in New Mexico and Texas (BLM-NM-PL-013-2824). Las Cruces, New Mexico: BLM Las Cruces District Office.
- _____. 2001. New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management. BLM/NM/PL-00-001-1020. Las Cruces, New Mexico: Bureau of Land Management Las Cruces District Office.
- _____. 2000. Instruction Memorandum No. 2000-096: "Use of Visual Resource Management Class I Designation in Wilderness Study Areas." Las Cruces, New Mexico: BLM Las Cruces District Office.

- _____. 1998a. Doña Ana County Mountain Bike Trails Environmental Assessment (NM-036-98-29). Las Cruces, New Mexico: BLM Las Cruces District Office.
- _____. 1998b. Handbook 8270-1 General Procedural Guidance for Paleontological Resource Management. Las Cruces, New Mexico: BLM Las Cruces District Office.
- _____. 1997. Robledo Mountains Off-Highway Vehicle Implementation Plan and Environmental Assessment (NM-036-1997-083). Las Cruces, New Mexico: BLM Las Cruces District Office.
- _____. 1995. Handbook 8550- Interim Management Policy for Lands under Wilderness Review. Las Cruces, New Mexico: BLM Las Cruces District Office.
- _____. 1993. Mimbres Resource Management Plan. Las Cruces, New Mexico: Bureau of Land Management Las Cruces District Office.
- _____. 1992. Introduction, Transplant, Augmentation, and Reestablishment of Fish, Wildlife, and Plants Manual 1745.
- _____. 1986. Handbook 8410-1 Visual Resource Inventory. Washington DC: United States Printing Office.
- _____. 1983. Draft Management Framework Plan Amendment EIS on Energy Minerals Leasing and Rangeland Management in the Las Cruces/ Lordsburg Resource Area, March 1983. Las Cruces, New Mexico: BLM Las Cruces District Office.
- U.S. Department of the Interior and U.S. Department of Agriculture. 1995. The Federal Wildland Fire Management Policy and Program Review. Las Cruces, New Mexico: BLM Las Cruces District.
- U.S. Department of the Interior, Fish and Wildlife Service (USFWS). 2006. National Survey of Fishing, Hunting, and Wildlife-Associated Recreation. Albuquerque, New Mexico:
- U.S. Global Change Research Program. 2009. "Impacts of Climate Change in the United States." Cambridge University Press. 196 pp. <http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts>.
- U.S. Government Printing Office. April 18, 2008. "Emergency Closure to Unpermitted Collection of Petrified Wood and Plant Fossils in the Robledo Mountains on Federal Land, Dona Ana County, NM." Federal Register, Vol. 73, Number 76, page 21151.
- U.S. Government Printing Office. January 10, 2010. "Notice of Intent to Prepare a Resource Management Plan for the Prehistoric Trackways National Monument, Las Cruces District Office, New Mexico and Associated Environmental Impact Statement." Federal Register, Vol. 75, Number 2, pages 431-432.
- Vallentine, J. F. 1989. Range Development and Improvements. San Diego, CA: Academic Press Inc.
- Westbrooks, R. 1998. "Invasive plants, changing the landscape of America: Fact book. Federal Interagency Committee for the Management of Noxious and Exotic Weeds (FICMNEW)." Washington, DC.

Whitson, T. D., L. C. Burrill, S. A. Dewey, D. W. Cudney, B. E. Nelson, R. D. Lee, and R. Parker. 2006. Weeds of the West. 9th ed. Newark, CA : Western Society of Weed Science in cooperation with the Western United States Land Grant Universities Cooperative Extension Services, 628 p.

Witcher, J.C. 1995. Geothermal resource database for New Mexico: Southwest Technology Development Institute.” Las Cruces, New Mexico: New Mexico State University, 38 p.

APPENDIX A
The Omnibus Public Lands Management Act 2009

APPENDIX B
Acts of Authority and Mandates for the BLM

APPENDIX C
**Prehistoric Trackways National Monument Comprehensive Trails
and Travel Management Plan**

APPENDIX D
Paleontology

APPENDIX E
Best Management Practices

APPENDIX F
Public Scoping Report

APPENDIX G
Safety Zones for Recreational Target Shooting Analysis

APPENDIX H
Public Comments on Draft RMP/EIS and Responses

APPENDIX A

THE OMNIBUS PUBLIC LANDS
MANAGEMENT ACT OF 2009

APPENDIX A

THE OMNIBUS PUBLIC LANDS MANAGEMENT ACT

2009

Subtitle B—Prehistoric Trackways National Monument

SEC. 2101. FINDINGS.

Congress finds that—

(1) in 1987, a major deposit of Paleozoic Era fossilized footprint megatrackways was discovered in the Robledo Mountains in southern New Mexico;

(2) the trackways contain footprints of numerous amphibians, reptiles, and insects (including previously unknown species), plants, and petrified wood dating back approximately 280,000,000 years, which collectively provide new opportunities to understand animal behaviors and environments from a time predating the dinosaurs;

(3) title III of Public Law 101–578 (104 Stat. 2860)—

(A) provided interim protection for the site at which the trackways were discovered; and

(B) directed the Secretary of the Interior to—

(i) prepare a study assessing the significance of the site; and

(ii) based on the study, provide recommendations for protection of the paleontological resources at the site;

(4) the Bureau of Land Management completed the Paleozoic Trackways Scientific Study Report in 1994, which characterized the site as containing “the most scientifically significant Early Permian tracksites” in the world;

(5) despite the conclusion of the study and the recommendations for protection, the site remains unprotected and many irreplaceable trackways specimens have been lost to vandalism or theft; and

(6) designation of the trackways site as a National Monument would protect the unique fossil resources for present and future generations while allowing for public education and continued scientific research opportunities.

SEC. 2102. DEFINITIONS.

In this subtitle:

(1) **MONUMENT.** — The term “Monument” means the Prehistoric Trackways National Monument established by section 2103(a).

(2) **PUBLIC LAND.** — The term “public land” has the meaning given the term “public lands” in section 103 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1702).

(3) **SECRETARY.** — The term “Secretary” means the Secretary of the Interior.

SEC. 2103. ESTABLISHMENT.

(a) **IN GENERAL.**—In order to conserve, protect, and enhance the unique and nationally important paleontological, scientific, educational, scenic, and recreational resources and values of the public land described in subsection (b), there is established the Prehistoric Trackways National Monument in the State of New Mexico.

(b) **DESCRIPTION OF LAND.**—The Monument shall consist of approximately 5,280 acres of public land in Doña Ana County, New Mexico, as generally depicted on the map entitled “Prehistoric Trackways National Monument” and dated December 17, 2008.

(c) **MAP; LEGAL DESCRIPTION.**—

(1) **IN GENERAL.**—As soon as practicable after the date of enactment of this Act, the Secretary shall prepare and submit to Congress an official map and legal description of the Monument.

(2) **CORRECTIONS.**—The map and legal description submitted under paragraph (1) shall have the same force and effect as if included in this subtitle, except that the Secretary may correct any clerical or typographical errors in the legal description and the map.

(3) **CONFLICT BETWEEN MAP AND LEGAL DESCRIPTION.**—In the case of a conflict between the map and the legal description, the map shall control.

(4) **AVAILABILITY OF MAP AND LEGAL DESCRIPTION.**—Copies of the map and legal description shall be on file and available for public inspection in the appropriate offices of the Bureau of Land Management.

(d) **MINOR BOUNDARY ADJUSTMENTS.**—If additional paleontological resources are discovered on public land adjacent to the Monument after the date of enactment of this Act, the Secretary may make minor boundary adjustments to the Monument to include the resources in the Monument.

SEC. 2104. ADMINISTRATION.

(a) **MANAGEMENT.**—

(1) **IN GENERAL.**—The Secretary shall manage the Monument—

(A) in a manner that conserves, protects, and enhances the resources and values of the Monument, including the resources and values described in section 2103(a); and

(B) in accordance with—

(i) this subtitle;

(ii) the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.); and

(iii) other applicable laws.

(2) **NATIONAL LANDSCAPE CONSERVATION SYSTEM.**—The Monument shall be managed as a component of the National Landscape Conservation System.

(b) MANAGEMENT PLAN.—

(1) IN GENERAL.—Not later than 3 years after the date of enactment of this Act, the Secretary shall develop a comprehensive management plan for the long-term protection and management of the Monument.

(2) COMPONENTS.—The management plan under paragraph (1)—

(A) shall—

(i) describe the appropriate uses and management of the Monument, consistent with the provisions of this subtitle; and

(ii) allow for continued scientific research at the Monument during the development of the management plan; and

(B) may—

(i) incorporate any appropriate decisions contained in any current management or activity plan for the land described in section 2103(b); and

(ii) use information developed in studies of any land within or adjacent to the Monument that were conducted before the date of enactment of this Act.

(c) AUTHORIZED USES.—The Secretary shall only allow uses of the Monument that the Secretary determines would further the purposes for which the Monument has been established.

(d) INTERPRETATION, EDUCATION, AND SCIENTIFIC RESEARCH.—

(1) IN GENERAL.—The Secretary shall provide for public interpretation of, and education and scientific research on, the paleontological resources of the Monument, with priority given to exhibiting and curating the resources in Doña Ana County, New Mexico.

(2) COOPERATIVE AGREEMENTS.—The Secretary may enter into cooperative agreements with appropriate public entities to carry out paragraph (1).

(e) SPECIAL MANAGEMENT AREAS.—

(1) IN GENERAL.—The establishment of the Monument shall not change the management status of any area within the boundary of the Monument that is—

(A) designated as a wilderness study area and managed in accordance with section 603(c) of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1782(c)); or

(B) managed as an area of critical environmental concern.

(2) CONFLICT OF LAWS.—If there is a conflict between the laws applicable to the areas described in paragraph (1) and this subtitle, the more restrictive provision shall control.

(f) MOTORIZED VEHICLES.—

(1) IN GENERAL.—Except as needed for administrative purposes or to respond to an emergency, the use of motorized vehicles in the Monument shall be allowed only on roads and trails designated for use by motorized vehicles under the management plan prepared under subsection (b).

(2) PERMITTED EVENTS.—The Secretary may issue permits for special recreation events involving motorized vehicles within the boundaries of the Monument—

(A) to the extent the events do not harm paleontological resources; and

(B) subject to any terms and conditions that the Secretary determines to be necessary.

(g) WITHDRAWALS.—Subject to valid existing rights, any Federal land within the Monument and any land or interest in land that is acquired by the United States for inclusion in the Monument after the date of enactment of this Act are withdrawn from—

(1) entry, appropriation, or disposal under the public land laws;

(2) location, entry, and patent under the mining laws; and

(3) operation of the mineral leasing laws, geothermal leasing laws, and minerals materials laws.

(h) GRAZING.—The Secretary may allow grazing to continue in any area of the Monument in which grazing is allowed before the date of enactment of this Act, subject to applicable laws (including regulations).

(i) WATER RIGHTS.—Nothing in this subtitle constitutes an express or implied reservation by the United States of any water or water rights with respect to the Monument.

SEC. 2105. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated such sums as are necessary to carry out this Act.

APPENDIX B

ACTS OF AUTHORITY AND MANDATES
FOR THE BLM

APPENDIX B

ACTS OF AUTHORITY AND MANDATES FOR THE BLM

A number of Federal statutes have been enacted over time to establish and define the authority of the Bureau of Land Management (BLM) to make decisions on the management and use of resources on public land. Following is a list of major legal authorities relevant to BLM land use planning.

Federal Land Policy and Management Act (FLPMA) of 1976, as amended (43 United States Code [U.S.C.] 1701, et seq.) provides the authority for BLM's land use planning. This statute and its implementing regulations define principles for the management of public land and its resources. This Act directs the Secretary of the Interior to develop, maintain, and when appropriate, revise land use plans that provide for the use of public land managed on the basis of multiple-use and sustained yield unless otherwise specified by law. Through FLPMA, BLM is responsible for the balanced management of the public land and resources and their various values. FLPMA specifically states that public land will be managed under the principles of multiple-use, and it further indicates that multiple-use includes harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment.

- Section 102 (a) (7) and (8) sets forth the policy of the United States concerning the management of BLM land.
- Section 201 requires the Secretary of the Interior to prepare and maintain an inventory of all BLM land and its resources and other values, giving priority to areas of critical environmental concern and, as funding and workforce are available, to determine the boundaries of the public land, provide signs and maps to the public, and provide inventory data to State and local governments.
- Section 202 (a) requires the Secretary of the Interior, with public involvement, to develop, maintain, and when appropriate, revise land use plans that provide by tracts or areas for the use of the BLM land.
- Section 202 (c) (9) requires that land use plans for BLM land be consistent with Tribal plans and, to the maximum extent consistent with applicable Federal laws, with State and local plans.
- Section 202 (d) provides that all public land, regardless of classification, is subject to inclusion in land use plans, and that the Secretary of the Interior may modify or terminate classifications consistent with land use plans.
- Section 202 (f) and 309 (e) provide that Federal, State, and local governments and the public be given adequate notice and an opportunity to comment on the formulation of standards and criteria for, and to participate in, the preparation and execution of plans and programs for the management of the public land.
- Section 302 (a) requires the Secretary of the Interior to manage BLM land under the principles of multiple-use and sustained yield in accordance with (when available) land use plans developed under Section 202 of FLPMA, except that, where a tract of BLM land has been dedicated to specific uses according to any other provisions of law, it shall be managed in accordance with such laws.
- Section 603 specifically directs BLM to carry out a wilderness review of public land and directs the BLM to manage such land in a manner so as not to impair the suitability of such area for preservation as wilderness.

The **National Environment Policy Act of 1969**, as amended (42 U.S.C. 4321, et seq.), requires the consideration and public availability of information regarding the environmental impacts of major Federal actions significantly affecting the quality of the human environment. The law further requires the Federal authorized officers to identify and describe the significant environmental issues associated with their decisions and to develop alternatives to a proposed action (including the alternative of no action). Federal authorized officers must disclose the direct, indirect, and cumulative effects of the decisions; adverse environmental effects that cannot be avoided; the relationship between short-term uses of the human environment and the maintenance of long-term productivity; and any irreversible or irretrievable commitments of resources made by the decision.

The **Clean Air Act of 1990**, as amended (42 U.S.C. 7418), requires Federal agencies to comply with all Federal, State, and local requirements regarding the control and abatement of air pollution. This includes abiding by the requirements of State implementation plans. The Clean Air Act provides that each State is responsible for ensuring achievement and maintenance of air quality standards within its borders so long as such standards are at least as stringent as Federal standards established by the U.S. Environmental Protection Agency (EPA).

The **Clean Water Act (CWA) of 1987**, as amended (33 U.S.C. 1251), establishes objectives to restore and maintain the chemical, physical, and biological integrity of the Nation's water. Upon passage of the Environmental Quality Acts and adoption of the water quality standards, State agencies were empowered to enforce water quality standards as long as they are at least as stringent as the Federal standards established by the EPA. The State of New Mexico has not been delegated authority from the Federal Government for any of the major water quality programs under the CWA, including the National Pollutant Discharge Elimination System, Pretreatment, Sludge Management, and Wetlands. Also, Section 404 of the CWA, administered by the U.S. Army Corps of Engineers, requires that waters of the United States be protected by permits prior to dredge or fill activities in such areas. Waters include intermittent streams, mud flats, and sand flats. Wetlands that meet jurisdictional criteria of Section 404 of the CWA are partially protected in that a permit is required before any dredge or fill activity can occur in such areas.

The **Endangered Species Act (ESA) of 1973**, as amended (16 U.S.C. 1531, et seq.), provides a means whereby the ecosystems upon which threatened and endangered species depend may be conserved and to provide a program for the conservation of such threatened and endangered species (Section 1531(b), Purposes). The ESA requires all Federal agencies to seek to conserve threatened and endangered species, use applicable authorities in furtherance of the purposes of the ESA (Section 1531(c) (1), Policy), and avoid jeopardizing the continued existence of any species that is listed or proposed for listing as threatened and endangered or destroying or adversely modifying its designated or proposed critical habitat (Section 1536(a), Interagency Cooperation). The U.S. Fish and Wildlife Service (USFWS) is responsible for administration of this Act, which also requires all Federal agencies to consult (or confer) in accordance with Section 7 of the ESA with the Secretary of the Interior, through the USFWS and/or the National Marine Fisheries Service, to ensure that any Federal action (including land use plans) or activity is not likely to jeopardize the continued existence of any species listed or proposed to be listed under the provisions of the ESA, or result in the destruction or adverse modification of designated or proposed critical habitat (Section 1536(a), Interagency Cooperation, and Title 50 Code of Federal Regulations Part 402 [50 CFR 402]). Mitigation measures are developed through the consultation process and are put forth as suggested conservation measures included in a formal USFWS Biological Opinion, which addresses whether the proposed action would jeopardize the continued existence of any officially listed endangered or threatened species.

The Statewide Resource Management Plan Amendment/Environmental Impact Statement for New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management (*Standards and Guidelines*) established a set of standards and guidelines for public land health and guidelines for livestock grazing management in New Mexico. Standards of land health are expressions of physical and biological conditions or degrees of function required for healthy and sustainable land and define minimum resource conditions that must be achieved. Standards describe conditions needed for healthy sustainable public rangelands and relate to all uses of public land. They provide the measure of resource quality and functioning condition by which the health of public land will be assessed. To measure the effectiveness of each standard, a set of indicators and associated criteria were identified. Specific standards and indicators are defined for upland sites, biotic communities (including native, threatened, endangered, and special status species), and riparian sites.

Guidelines are practices, methods, or techniques determined to be appropriate to ensure that standards can be met or that significant progress can be made toward meeting those standards. Guidelines are tools such as grazing systems, vegetative treatments, or improvement projects that help managers and permittees achieve standards. Guidelines for livestock grazing are described in the *Standards and Guidelines*. The livestock grazing guidelines were designed to improve public land health and are to be implemented at the watershed, allotment, or pasture level if it is determined that the standards are not being met and that livestock grazing is the cause. Guidelines for activities other than livestock grazing are not mandated through regulation; however, they may be developed should the need arise. If it is determined that the standards are not being met as a result of another activity (i.e., road placement, recreation, etc.), program leads would determine appropriate actions to ensure that standards can be met or that significant progress can be made toward meeting those standards.

The **Federal Water Pollution Control Act** (33 U.S.C. 1323) requires the Federal land manager to comply with all Federal, State, and local requirements, administrative authority, process, and sanctions regarding the control and abatement of water pollution in the same manner and to the same extent as any nongovernmental entity.

The **Safe Drinking Water Act** (42 U.S.C. 201) is designed to make the Nation's waters "*drinkable*" as well as "*swimmable*." Amendments in 1996 established a direct connection between safe drinking water and watershed protection and management.

The **Resource Conservation and Recovery Act of 1976** (Public Law [P.L.] 89-72) gave the EPA the authority to control hazardous waste from "*cradle to grave*." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. The Act also set forth a framework for the management of nonhazardous wastes.

The **Wilderness Act**, as amended (16 U.S.C. 1131, et seq.) authorizes the President to make recommendations to Congress for Federal land to be set aside for preservation as wilderness.

The **Antiquities Act of 1906** (16 U.S.C. 431-433) protects cultural and paleontological resources on Federal land and authorizes the President to designate national monuments on Federal land.

The **Archaeological Resources Protection Act of 1979** (16 U.S.C. 470) secures, for the present and future benefit of the American people, the protection of archaeological resources and sites that are on public land and American Indian land, to foster increased cooperation and exchange of information among governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources and data that were obtained before October 31, 1979.

The **National Historic Preservation Act**, as amended (16 U.S.C. 470), expands protection of historic and archaeological properties to include those of National, State, and local significance and directs Federal agencies to consider the effects of proposed actions on properties eligible for or included in the National Register of Historic Places. The Act mandates that when Federal undertakings (i.e., Federal projects or Federally-funded or licensed projects) are planned and implemented, the responsible Federal agencies give due consideration to historic properties (i.e., resources eligible for the National Register of Historic Places), regardless of land status. Regulations for *Protection of Historic Properties* (36 CFR 800) define a process for demonstrating such consideration by consulting with the State Historic Preservation Officers, Federal Advisory Council on Historic Preservation, and other interested organizations and individuals.

The **American Indian Religious Freedom Act of 1978** (42 U.S.C. 1996) establishes a National policy to protect and preserve the right of American Indians to exercise traditional Indian religious beliefs or practices.

The **Historic Sites Act of 1935** (16 U.S.C. 461-467) defines a National policy to identify and preserve historic sites, buildings, objects, and antiquities of National significance. The law authorizes the Secretary of the Interior to conduct surveys, collect and preserve data, and acquire historic and archaeological sites.

The **Archaeological and Historic Preservation Act of 1974** (16 U.S.C. 469-469c) provides for preservation of archaeological and historical information that might otherwise be lost as a result of Federal construction projects and other Federally-licensed activities and programs. This Act stipulates that up to 1 percent of the funding appropriated by Congress for Federal undertakings can be spent to recover, preserve, and protect archaeological and historical data. A subsequent amendment authorized the 1 percent limit to be administratively exceeded under certain circumstances.

The **Native American Grave Protection and Repatriation Act of 1990** (25 U.S.C. 3001-3013) protects the human remains of indigenous peoples and funerary objects, sacred objects, and items of cultural patrimony on Federal land. The Act also provides for the repatriation of such remains and cultural items previously collected from Federal land and in the possession or control of a Federal agency or Federally-funded repository.

The **Curation of Federally-Owned and Administered Archaeological Collections** (36 CFR 79) stipulates standards for facilities that curate Federally-owned archaeological collections, which include not only artifacts but also all associated records and reports, to ensure long-term preservation of such collections.

The **White House Memorandum on Government-to-Government Relations with Native American Tribal Governments of 1994** set forth guidelines requiring Federal agencies to adhere to directives designed to ensure that the rights of sovereign Tribal governments are fully respected.

The **Land and Water Conservation Fund (LWCF) of 1964** (16 U.S.C. 460l-4, et seq.) provides funding to assist in preserving, developing, and assuring accessibility to outdoor recreation resources including but not limited to parks, trails, wildlife land, and other land and facilities desirable for individual active participation. It also authorized BLM to collect fees for recreational use and to issue special recreation permits for group activities and recreation events and limits the services for which BLM may collect fees.

The **Federal Lands Recreation Enhancement Act (FLREA)** replaced LWCF as BLM's authority to collect fees in 2004. Under FLREA, Congress has authorized the BLM to collect two types of recreation fees, Amenity Recreation fees and Special Recreation Permit fees. FLREA also authorizes the BLM to retain these fees locally so they can be used to repair, maintain, and upgrade recreational facilities and services to meet public demand.

The **Taylor Grazing Act of 1934** (43 U.S.C. 315) establishes grazing districts of vacant, unappropriated and unreserved land in any parts of the public domain, excluding Alaska, that are not National forests, parks and monuments, American Indian reservations, railroad grant land, or revested Coos Bay Wagon Road grant land, and that are valuable chiefly for grazing and raising forage crops; the Act uses a permitting system to manage livestock grazing in the districts. In addition, the Act provides for the protection, administration, regulation and improvement of the grazing districts; promotes the adoption of regulations and cooperative agreements necessary to accomplish the purposes of the Act; regulates occupancy and use; preserves the land and resources from destruction or unnecessary injury; and provides for orderly improvement and development of the range. The Act also allows for the continuing study of erosion and flood control and performance of work to protect and rehabilitate areas subject to the Act. Willful violations of the Act, or of its rules and regulations, are punishable by fine.

The **Public Rangelands Improvement Act of 1978** (43 U.S.C. 1901) provides that the public rangeland be managed so that it becomes as productive as feasible in accordance with management objectives and the land use planning process established pursuant to 43 U.S.C. 1712.

The **Federal Cave Resource Protection Act of 1988** (43 CFR 37.11[C] and [F]) provides protection for caves containing significant geological, biological, historical, cultural, and other resources.

The **Carlson-Foley Act of 1968** (P.L. 90-583) directs Federal agencies to enter upon land under their jurisdiction that has noxious plants (weeds) and to destroy noxious plants growing on such land.

The **Federal Noxious Weed Act of 1974** (7 U.S.C. 2801-2814) provides for the control and management of nonindigenous weeds that injure or have the potential to injure the interests of agriculture and commerce, wildlife resources, or the public health. The Act requires that each Federal agency develop a management program to control undesirable plants on Federal land under the agency's jurisdiction; establish and adequately fund the program; implement cooperative agreements with State agencies to coordinate management of undesirable plants on Federal land; establish integrated management systems to control undesirable plants targeted under cooperative agreements. A Federal agency is not required to carry out management programs on Federal land unless similar programs are being implemented on State or private lands in the same area. The Act also directs the Secretaries of Agriculture and the Interior to coordinate programs for control, research, and educational efforts associated with noxious weeds. The Secretaries must identify regional control priorities and disseminate technical information to interested State, local, and private entities.

The **Plant Protection Act of 2000** (P.L. 106-224) prohibits the import, export, and movement in interstate commerce or mailing of any plant pest unless authorized by the Secretary of Agriculture; authorizes the Secretary to prohibit or restrict the import, export, or movement in interstate commerce of any plant, plant product, biological control organism, noxious weed, or means of conveyance to prevent the introduction or dissemination of a plant pest or noxious weed; and combines all or a portion of 11 Acts or resolutions into one Act.

The **Migratory Bird Treaty Act of 1918**, as amended (16 U.S.C. 703-712), implements various treaties and conventions between the United States and Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Under the Act, taking, killing, or possessing migratory birds is unlawful.

The **Fish and Wildlife Coordination Act of 1958**, as amended (16 U.S.C 661-667), proposes to assure that fish and wildlife resources receive equal consideration with other values during the planning of water resources development projects. The Act requires coordination with USFWS by the U.S. Department of Energy when a project is planned that may affect a body of water. It also requires coordination with the head of the State agency that administers wildlife resources in the affected state.

The **Sikes Act of 1960**, as amended (16 U.S.C. 670, et seq.), seeks to promote effectual planning, development, maintenance, and coordination of wildlife, fish, and game conservation and rehabilitation on military reservations.

The **Fish and Wildlife Conservation Act of 1980** (16 U.S.C. 2901-2911) authorizes financial and technical assistance to the States for the development, revision, and implementation of conservation plans and programs for nongame fish and wildlife.

Paleontological Resources Preservation Act - Public Law 111-11, Title VI, Subtitle D 270

Legislation establishing requirements that the Secretary of the Interior manage and protect paleontological resources on Federal land using scientific principals and expertise. This Act specifically requires the Secretary to develop plans for the inventory, monitoring, and scientific and educational use of paleontological resources; addresses the collection and curation of resources; identifies prohibited acts, and establishes criminal and civil penalties. This Act is contained in Public Law 111-11, Title VI, Subtitle D, which was enacted in March 2009.

Executive Order 11644: Use of Off-Road Vehicles on the Public Lands (as amended by Executive Order 11989) (37 *Federal Register* [FR] 2877 [1971]) establishes policies and provides for procedures that will ensure that the use of off-road vehicles on public land will be controlled and directed so as to protect the resources of those land, promote the safety of all users of those land, and minimize conflicts among the various uses of those land.

Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (49 FR 7629 [1994]) requires that each Federal agency consider the impacts of its programs on minority populations and low-income populations.

Executive Order 13007: Indian Sacred Sites (61 FR 26771 [1996]) requires Federal agencies to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions to accommodate access to and ceremonial use of American Indian sacred sites by Indian religious practitioners and avoid adversely affecting the physical integrity of such sacred sites.

Executive Order 13287: Preserve America directs Federal agencies to provide leadership in preserving the Nation's heritage by actively advancing the protection, enhancement and contemporary use of historic and paleontological properties owned by the Federal Government, emphasizing partnerships. Under this order, agencies shall cooperate with communities to increase opportunities for public benefit from, and access to, Federally-owned historic and paleontological properties.

Executive Order 13084: Consultation and Coordination with Indian Tribal Governments provides, in part, that each Federal agency shall establish regular and meaningful consultation and collaboration with Indian Tribal governments in the development of regulatory practices on Federal matters that significantly or uniquely affect their communities.

Executive Order 13112: Invasive Species provides that no Federal agency shall authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk or harm will be taken in conjunction with the actions.

Executive Order 11988: Floodplain Management requires each agency to provide leadership and take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains. Each agency must evaluate the potential effects of any actions it may take in a floodplain; to ensure that its planning programs and budget requests reflect consideration of flood hazards and floodplain management; and to prescribe procedures to implement the policies and requirements of this order.

Executive Order 11990 Protection of Wetlands required each Federal agency to provide leadership and take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands.

Executive Order 12906: Coordinating Geographic Data Acquisition and Access: The National Spatial Data Infrastructure requires that the Federal Government avoids wasteful duplication of geospatial data and effort and promote effective and economical management of resources by Federal, State, local and Tribal government.

Secretarial Order 3206: American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act requires U.S. Department of the Interior agencies to consult with American Indian Tribes when agency actions to protect a listed species, as a result of compliance with the ESA, affect or may affect American Indian land, Tribal trust resources, or the exercise of American Indian Tribal rights.

Regulations governing BLM's Special Recreation Permit program can be found in **Title 43 Code of Federal Regulations, Part 2930 (43CFR2930)**.

INSTRUCTION MEMORANDUMS

Instruction Memorandum (IM) No. 2008-009 (October 15, 2007) – *Subject: Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on Public Lands.* This Instruction Memorandum (IM) transmits the Bureau of Land Management (BLM) classification system for paleontological resources on public land. The classification system is based on the potential for the occurrence of significant paleontological resources in a geologic unit, and the associated risk for impacts to the resource based on Federal management actions.

Instruction Memorandum 2009-110 – *Subject: Assessment and Mitigation of Potential Impacts to Paleontological Resources.* This IM provides guidelines for assessing potential impacts to paleontological resources in order to determine mitigation steps for Federal actions on public land under the Federal Land Policy and Management Act (FLPMA) and the National Environmental Policy Act (NEPA). These guidelines also apply where a Federal action impacts split-estate land. In addition, this IM provides field survey and monitoring procedures to help minimize impacts to paleontological resources from Federal actions in the case where it is determined that significant paleontological resources will be adversely affected by a Federal action.

Instruction Memorandum No. 2009-113 – (April 24, 2009) *Subject: Casual Collecting of Common Invertebrate and Plan Paleontological Resources under the Paleontological Resources Preservation Act of 2009.* This IM provides guidelines regarding casual collecting under the provisions of the Paleontological Resources Preservation Act (PRPA) of 2009.

Instruction Memorandum No. 2009-138 (June 5, 2009) – *Subject: Confidentiality of Paleontological Locality Information under the Omnibus Public Lands Act of 2009 (123 Stat. 991), Title VI, Subtitle D, Paleontological Resources Preservation (OPLA-PRP).* This IM establishes policy regarding the confidentiality of paleontological locality information under the provisions of the OPLA-PRP.

Instruction Memorandum No. 2012-067 – *Subject: Clarification of Cultural Resource Considerations for Off-Highway Vehicle Designations and Travel Management.* As part of its comprehensive travel management program, the Bureau of Land Management (BLM) incorporates road and trail access guidance into every Land Use Plan (LUP). At a minimum, by regulation, every plan designates all public land as open, limited, or closed to off highway vehicle (OHV) use. For limited use areas, the BLM designates a network of roads and trails and may establish other limiting criteria, such as the volume and type of vehicular use and the time and season of use. The BLM considers designations of travel areas, roads and trails to be undertakings for the purposes of Section 106 of the National Historic Preservation Act (NHPA). Therefore, the Section 106 consultation process must be completed before the BLM authorized officer signs the decision record for the designation.

BLM HANDBOOKS AND MANUALS

BLM Manual 8270 and BLM Handbook H-8270-1 contain the agency's guidance for the management of paleontological resources on public land. The Manual has more information on the authorities and regulations related to paleontological resources. The Handbook gives procedures for permit issuance, requirements for qualified applicants, information on paleontology and planning, and a classification system for potential fossil-bearing geologic formations on public land.

BLM Handbook 1601-1 Land Use Planning Handbook provides supplemental guidance to the Bureau of Land Management (BLM) employees for implementing the BLM land use planning requirements established by Sections 201 and 202 of the Federal Land Policy and Management Act of 1976 (FLPMA, 43 U.S.C. 1711-1712) and the regulations in 43 Code of Federal Regulations (CFR) 1600. Land use plans and planning decisions are the basis for every on-the-ground action the BLM undertakes. Land use plans include both resource management plans (RMPs) and management framework plans (MFPs).

BLM Handbook H-1790-1 National Environmental Policy Act helps the BLM comply with the National Environmental Policy Act (NEPA), the Council on Environmental Quality's (CEQ) NEPA regulations (40 CFR Parts 1500-1508) and the Department of the Interior NEPA manual.

Manual 6220 National Monuments, National Conservation Areas, and Similar Designations 2012 provides general policies for the administration and management of these designations: Data Standards, Records Maintenance, Land-Use Planning, Compatibility of Uses, and General Principles for Management.

Manual 6310 Conducting Wilderness Characteristics Inventory on Public Lands provides policy and guidance for conducting wilderness characteristics inventories under Section 201 of FLPMA.

Manual 6320 Considering Lands with Wilderness Characteristics in the BLM Land Use Planning Process provides policy and guidance for considering lands with wilderness characteristics in the BLM's land use planning process under FLPMA.

Manual 6330 Management of Wilderness Study Areas (2012) provides general policies for administration and management of these designations: Data Standards, Records Maintenance, Land-Use Planning, Compatibility of Uses, and General Principles for Management.

Manual 8270 Management of Paleontological Resources (1998) provides guidelines for implementing the Paleontological Resources Program: Land-Use Planning, Environmental Review, Assessment and Mitigation, Permitting, Partnerships, and Law Enforcement.

Manual 6840 Special Status Species Management (2008) establishes policy for management of species listed or proposed for listing pursuant to the Endangered Species Act and Bureau sensitive species found on BLM-administered land.

Manual 1745 Introduction, Transplant, Augmentation, and Reestablishment of Fish, Wildlife, and Plants (1992) requires that land use plans identify fish, wildlife, and plants species for introduction, transplant, augmentation, and reestablishment into suitable habitats.

APPENDIX C

PREHISTORIC TRACKWAYS NATIONAL
MONUMENT COMPREHENSIVE TRAILS
AND TRAVEL MANAGEMENT PLAN

APPENDIX C

PREHISTORIC TRACKWAYS NATIONAL MONUMENT COMPREHENSIVE TRAILS AND TRAVEL MANAGEMENT PLAN

INTRODUCTION AND BACKGROUND INFORMATION

The Prehistoric Trackways National Monument (PTNM) was created on March 30, 2009 by Congressional action as part of the *2009 Omnibus Public Land Management Act*, more commonly referred to as Public Law 111-11. Title II, Subtitle B, Section 2103(a) of the Act states:

In order to conserve, protect, and enhance the unique and nationally important paleontological, scientific, educational, scenic, and recreational resources and values of the public land described in subsection (b), there is established the Prehistoric Trackways National Monument in the State of New Mexico.

The Monument encompasses approximately 5,255 acres in the southern Robledo Mountains in Doña Ana County, New Mexico. The primary objective of the Act is to conserve the unique fossil resources of the area, however; the Robledo Mountains have long provided the local recreational community with a variety of convenient opportunities for hiking, riding horses, mountain biking, and off-highway vehicle (OHV) activities. Management of OHVs within the Monument must be addressed to protect the important fossils, minimize conflicts between various user groups, and provide recreational opportunities.

The *Robledo Mountains Off-Highway Vehicle Implementation Plan* (NM-036-1997-083) identified and designated routes by association with various chile peppers, e.g., Patzcuaro's Revenge Trail, and Hopping Jalapeno. Of these routes, approximately 32 miles are within the Monument. In addition to the designated system of OHV routes, there is also a designated bicycle trail (SST).

PURPOSE AND NEED

The BLM Manual 1626 – Travel and Transportation Manual (Public) Section A(2)(a)(3)(b) states:

Travel Management Plans must be completed for all national monuments and congressionally designated national conservation areas, national recreation areas, cooperative management and protections areas, outstanding natural areas, forest reserves, and the Conservations Lands of the California Desert (in accordance with the establishing statute or Presidential Proclamation).

A Comprehensive Trails and Travel Management (CTTM) Plan is a dynamic approach to resource management that can be adjusted and modified to accommodate changes in resource allocations. A Trails and Travel Management Plan is not intended to provide evidence bearing on or addressing the validity of any Revised Statute 2477 (R.S. 2477) assertions. R.S. 2477 rights are determined through a process that is entirely independent of the BLM's planning process. Consequently, travel management planning should not take into consideration R.S. 2477 assertions or evidence. Currently, the Monument does not have any R.S. 2477 assertions.

Considerations of both social and physical elements help define the criteria for a CTTM Plan. The social aspects include public demands, historical uses, existing rights-of-way, permitted uses, resource

development, law enforcement and safety, conflicts between existing or potential users, recreation opportunities, and cultural and economic issues. Physical considerations include such things as terrain, soils, resource conflicts, vegetation, watersheds, special designations (such as Wilderness Study Areas), and public interest in specific types of vehicle use.

The Bureau of Land Management (BLM) has the responsibility to prepare a Resource Management Plan (RMP) for the Monument. The RMP establishes guidance, objectives, policies and management actions and contains two types of land management decisions for Travel Management: (1) land use decisions, and (2) implementation decisions. The land use decision for the Prehistoric Trackways National Monument is shown in Table C-1.

Table C-1 OHV Use Categories by Alternative

TABLE C-1 OHV USE CATEGORIES BY ALTERNATIVE				
CATEGORY	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
Closed	0 acres	5,255 acres	0 acres	0 acres
Limited to Designated	5,255 acres	0 acres	5,255 acres	5,255 acres
Open	0 acres	0 acres	0 acres	0 acres
Total Acres	5,255	5,255	5,255	5,255

Federal regulations (43 CFR §8340) require the BLM to identify public land as *Open*, *Limited*, or *Closed* to OHV use. The BLM designates areas as “*Open*” for intensive OHV use where there are no compelling resource protection needs, user conflicts, or public safety issues to warrant limiting cross country travel. The “*Limited*” designation is used where OHV use must be restricted to meet specific resource management objectives. An area is designated as “*Closed*” if all vehicle use is prohibited as a necessary measure to protect resources, reduce user conflicts, or provide for public safety.

Management common to Alternatives A, C, and D include the following:

- In *Limited* areas, only designated routes would be open for motorized and mechanical use.
- No cross-country travel by motorized and/or mechanical vehicles would be permitted. This includes cross-country travel associated with dispersed camping activities.
- Emergency fire, medical, and law enforcement vehicles are exempt from the prohibition of cross-country travel.
- Cross-country travel may be authorized for official use.

A CTTM Plan contains implementation decisions and is a component of the RMP and incorporates by reference all analysis (including Alternative Analyses) contained in that RMP. CTTM planning is the comprehensive process of developing and managing access and travel systems on public land at the implementation level. While motorized and OHV activities are most frequently associated with travel management strategies, the CTTM planning process is an interdisciplinary approach that takes into account all resource values/uses along with all modes of transit; motorized, mechanical, pedestrian, and equestrian.

PLANNING AREA DESCRIPTION

The Monument's rugged terrain includes 32 miles of designated OHV routes within the Monument that have received National recognition by OHV enthusiasts as a prime and challenging place to drive. All of the routes within the Monument require high clearance, four-wheel drive vehicles; with approximately 50 percent of these trails rated as extreme, or difficult, requiring modified vehicles, knowledge and skills. Approximately 45 percent of these trails are rated as easy or moderate but still require a certain degree of skill and four-wheel drive vehicles. Five percent of the trails have no difficulty rating but still require four-wheel drive. Low clearance, two-wheel drive vehicles cannot navigate within this area. The Monument also offers a 5.5-mile mountain bike trail and many undesigned hiking trails, paths, and canyon bottoms that appeal to outdoor recreationists.

Two previously designated OHV routes parallel or intersect with the Robledo Mountain Formation of the Hueco Group, which is where trackways and other trace fossils are preserved in the red siltstones.

There are no designated OHV routes in the Wilderness Study Area (WSA) portion of the Monument. The Robledo Loop Road forms the southern boundary of the Robledo Mountains WSA within the Monument.

IMPLEMENTATION DECISIONS

The following information and implementation plan is presented as Alternative C (Preferred Alternative) for the *PTNM Draft RMP/EIS*.

As provided in Instruction Memorandum (IM) 2006-173, "*Implementation of the Roads and Trails Terminology Report*":

A linear route is a linear route declared a road by the owner, managed for use by low clearance vehicles having four or more wheels, and maintained for regular and continuous use.

A primitive road is a linear route managed for use by four-wheel drive or high-clearance vehicles. Primitive roads do not normally meet any BLM road design standards.

A trail is a linear route managed for human-powered, stock, or off-highway vehicle forms of transportation or for historical or heritage values. Trails are not generally managed for use by four-wheel drive or high clearance vehicles. The hybrid utilization of single routes by a variety of users (OHV rock crawlers, mountain bikers, casual day hikers, equestrian enthusiasts and livestock) provides for multiple-use access and minimum surface disturbance.

The implementation portion of the CTTM Plan designates routes (including length). See Table C-2 for a summary of the designated routes for Alternative C, with the common and the official BLM names. The Plan also identifies sign placement, describes map content, and provides a monitoring strategy. See Map 2-3 for route placement within Monument.

Whenever the authorized officer determines that OHV use will cause or is causing considerable adverse effects on resources (such as soil, vegetation, wildlife, wildlife habitat, cultural, paleontological, historic, scenic, recreation, or other resources), the area must be immediately closed to the type of use causing the adverse effects (43 CFR §8341.2). Such limitation or closure is not an OHV designation. By regulation (Executive Order 11644--Use of off-road vehicles on the public lands), any fire, military, emergency, or law enforcement vehicle when used for emergency purposes is exempted from OHV decisions.

Table C-2 Designated Routes and Allowed Uses Within the Prehistoric Trackways National Monument

TABLE C-2 DESIGNATED ROUTES AND ALLOWED USES WITHIN THE PREHISTORIC TRACKWAYS NATIONAL MONUMENT						
Route's Common Name	BLM Route Identification Name	UTMs (beginning and ending points if possible)	Length (miles)	Use: 1-motorized 2-mechanized 3-non-motorized/ non-mechanized	OHV Rating	Previously Designated (Yes or No)
Robledo Loop or Chile Canyons Loop	PTNM 1		8.0	1,2,3	Easy	Yes
Patzcuaro's Revenge	PTNM 2	E0323 994, N3582 775 to E0320 757, N3583 632	1.8	3	Extreme	Yes
Rocotillo Rapids	PTNM 3	E0323 762, N3582 772 to E0323 567, N3582 891. E0323 175, N3583 055 to E0322 350, N3583 545.	1.0	1,2,3	Extreme	Yes
Big Jim	PTNM 4	E0321 703, N3583 045 to E0322 118, N3583 650	0.7	1,2,3	Moderate	Yes
Hopping Jalapeno (up segment)	PTNM 5	E0321 388, N3583 207 to E0321 622, N3584 129	0.7	1,2,3	Moderate	Yes
Hopping Jalapeno (down segment)	PTNM 6	E0321 333, N3583 297 to E0321 372, N3584 255	0.7	1,2,3	Moderate	Yes
Amatista Ledges	PTNM 7	E0320 757, N3583 632 to E0320 733, N3584 668	1.6	1,2,3	Moderate	Yes
Habanero Falls (entrance)	PTNM 8	E0320 696, N3584 136 to E0320 130, N3584 635	0.6	1,2,3	Extreme	Yes
Habanero Falls	PTNM 9	E0320 751, N3583 636 to E0319 836, N3584 191	0.8	1,2,3	Extreme	Yes
Tabasco Twister	PTNM 10	E0322 234, N3580 901 to E0319 553, N3583 733	2.9	3	Extreme	Yes

**TABLE C-2
DESIGNATED ROUTES AND ALLOWED USES WITHIN
THE PREHISTORIC TRACKWAYS NATIONAL MONUMENT**

Route's Common Name	BLM Route Identification Name	UTMs (beginning and ending points if possible)	Length (miles)	Use: 1-motorized 2-mechanized 3-non-motorized/ non-mechanized	OHV Rating	Previously Designated (Yes or No)
Pasado	PTNM 11	E0322 305, N3581 980 to E0323 113, N3582 350	0.7	1,2,3	Easy	Yes
Sandia Gulch	PTNM 12	E0323 600, N3581 203	1.0	1,2,3	Difficult	Yes
Cayenne Crawler	PTNM 13	E0323 017, N3582 203 to E0322 894, N3582 508	0.4	3	Difficult	Yes
Unnamed	PTNM 14	E0323 309, N3581 566 to E0323 012, N3582 196	0.5	Will not be designated for any designated use.		Yes
Discovery Trail	PTNM 15	E0323658, N3583787 to E0323136, N3584384		3		No
Rocks Thru Time Trail	PTNM 16			3		No
Ridge Line Trail	PTNM 17	E0323763, N3583717 to E0321367, N3584299		3		No
Hidden Canyons Trail	PTNM 18	E0319661, N3585481 to E0319136, N3585350		3		No
SST	PTNM 19	Beginning point outside of Monument: E0323945, N3583196. Potential intersection of trail at Monument boundary: E0323183, N3583243		2		Yes

Data collection and verification of the transportation network was accomplished using a combination of GIS and GPS technology. Designated routes were originally identified on 1:24,000 topographic maps. This data was systematically ground-truthed by the BLM during the preparation of the Robledo Mountains Off-Highway Vehicle Trail System Implementation Plan. These routes were later digitized on 1:24,000 digital orthophoto-quads (DOQQ) map images. Inasmuch as the routes follow either drainage bottoms or ridge lines, visual confirmation of the relationship between the original topographic maps and the later aerial images was reliable (See Map 2-3).

The ultimate result of the proper application and interpretation of these combined technologies is a highly reliable map of the designated OHV routes in the PTNM. Detailed imagery enables accurate (± 5 meters) measurement of route distances. There is some latitude for route distance measurements owing to slight seasonal variations in drainage channel bottoms.

The quality of the data enabled subsequent identification of unauthorized “*braids*” or obstacle bypasses that have evolved through more than a decade of almost daily non-permitted use.

Signs and Maps

The BLM will establish a system of trail signs to identify designated routes. These signs will be positioned at trailheads and route intersections. Comprehensive Trail maps will be available at the BLM Las Cruces District Office and on-line. Implementation of trail signs and maps will be accomplished within 1 year of the approval of the RMP or of the BLM obtaining public access to the Monument, whichever is later. The combination of proper sign installation and maps with accompanying UTM descriptions will allow for confident public navigation of the Monument routes.

Current Levels of Utilization

Vehicle counters have been placed at three major access points into the Trackways. One of the counters placed at a major access point to the Monument, near the eastern boundary, counted over 10,000 vehicle crossings in a year. However, the exact number of visitors crossing into the Monument is difficult to determine because there are several other routes for vehicles to enter and leave the Monument. The accepted conversion for visitor trips based on vehicle counts is 2.5 visitors per car. The BLM estimates that somewhere between 40 to 60 percent of the vehicles that crossed the vehicle counter actually entered into the Monument proper, or 10,000 to 15,000 people. Visitors entering the Monument as hikers or on mountain bikes were not counted.

Since 1997, an annual commercial OHV event (the Chile Challenge) has been authorized through the Special Recreation Permit program. This 4-day event typically attracts 200-300 participants. For the other 361 days out of the year, there are no estimates of non-permitted OHV use that takes place. The BLM has not issued any Special Recreation Permits for use of the *SST* mountain bike trail. There is no information regarding how frequently, or in what volumes, the local mountain bike community may use this trail.

Anecdotal information suggests that most camping activity occurs in direct association with OHV use, i.e., overnight trail runs.

Day hikes whether they are organized or casual, are usually confined to the eastern periphery of the Monument due to issues of motorized access and points of interest (the *Discovery Site* is most accessible from the eastern edge of the Monument). In Alternative C, there are plans for designated hiking trails in the Monument. Currently, hikers may follow abandoned mining routes, designated OHV trails, or may choose to explore canyons and ridgelines where no formal pathways have been worn.

Equestrian use of the Monument occurs, but again, there are no supporting statistics to estimate frequency and intensity of use. There are no designated bridle paths.

Monitoring and Issuance of No Fee-Day Pass

In 2008, the BLM began periodic monitoring of sensitive paleontological areas within the Monument. Those monitoring efforts have been largely photographic in nature, with monthly or quarterly photographic sequences from fixed UTM locations.

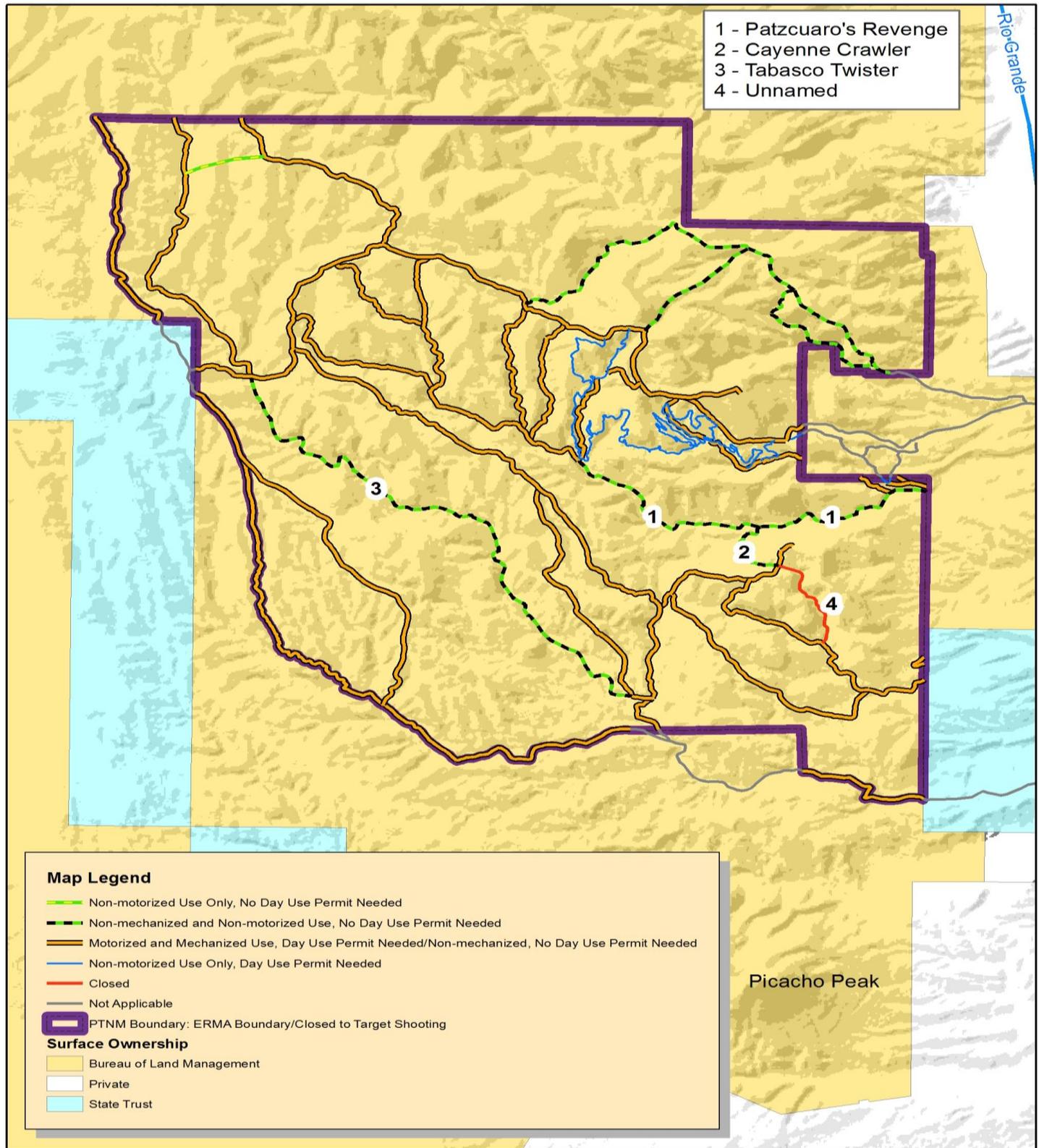
The BLM modified the original monitoring regime by expanding the effort to better correspond with the New Mexico Museum of Natural History and Science's (NMMNHS) documented paleontological resource sites. The BLM continues to develop a Monument monitoring plan in partnership with NMMNHS that will be comprehensive and implemented within 2 years of the signing of the *PTNM RMP/EIS ROD*.

Routes within the Monument that are accessible to conventional 4 wheel-drive vehicles have been added to the monitoring activity. Monument Rangers also conduct visual inspections of Monument boundary areas that receive frequent visitation. The BLM will monitor and evaluate the number of visitors that camp, hike, and use motorized and mechanized access, which could lead to development of additional designated routes through 43 CFR 8365.1-6, Supplementary Rules, subject to the appropriate level of NEPA analysis.

In order to assess the variety and nature of resource impacts, the BLM will institute a system of no-fee day passes for motorized and mechanized use of the Monument trails. This system of day passes is authorized through 43 CFR 8365.1-6, Supplementary Rules. Passes will be available at the BLM Las Cruces District Office, on-line at the BLM website and potentially at informational kiosk(s) at the approved access point(s) to the Monument. Statistics gathered from these passes will allow the BLM to accurately assess the level of public interest in motorized and mechanized activities within the Monument, and will contribute to the validity of periodic monitoring inspections designed to document and predict resource impacts and conditions. Each motorized (OHV) and mechanized (mountain bike) vehicle will be required to have a no-fee day pass to use routes within the Monument. Comprehensive trail maps will be a part of the day pass, as well as information on other recreational or educational activities, rules, and regulations. The BLM will continue to administer organized groups and commercial ventures through the Special Recreation Permit program.

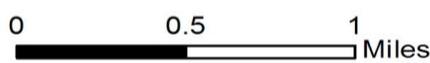
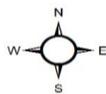
Required information for issuance of a no-fee day pass will include the name of the vehicle operator, the number of visitors in the vehicle, the license plate number (for OHV), proposed route(s) and destination if known, and expected length of visit. Optional information would include such things as the reason for the visit (OHV recreation, mountain biking, sightseeing, camping, etc.). Implementation of the no-fee day pass will occur within 2 years of approval of the RMP or of the BLM obtaining an easement for public access to the Monument, whichever is later.

Map 2-3 - Recreation, Trails & Travel Management, Alternative C



No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.

BLM GIS
Las Cruces District Office



Projection: UTM Zone 13
Datum: NAD 1983

APPENDIX D

PALEONTOLOGY

APPENDIX D

PALEONTOLOGY

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

October 10, 2008

In Reply Refer To:
8270, 1790 (240) P

EMS TRANSMISSION 10/29/2008
Instruction Memorandum No. 2009-011
Expires: 09/30/2010
To: All State Directors

From: Assistant Director, Renewable Resources and Planning

Subject: Assessment and Mitigation of Potential Impacts to Paleontological Resources

Program Areas: Paleontological Resources Management, Environmental Assessment

Purpose: This Instruction Memorandum (IM) provides guidelines for assessing potential impacts to paleontological resources in order to determine mitigation steps for federal actions on public lands under the Federal Land Policy and Management Act (FLPMA) and the National Environmental Policy Act (NEPA). These guidelines also apply where a federal action impacts split-estate lands. In addition, this IM provides field survey and monitoring procedures to help minimize impacts to paleontological resources from federal actions in the case where it is determined that significant paleontological resources will be adversely affected by a federal action.

Policy/Action: It is the policy of the BLM that potential impacts from federal actions on public lands, including land tenure adjustments, be identified and assessed, and proper mitigation actions be implemented when necessary to protect scientifically significant paleontological resources. This policy also applies to federal actions impacting split-estate lands and is subject to the right of landowners to preclude evaluation and mitigation of paleontological resources on their land. Paleontological resources removed from public lands require a Paleontological Resources Use permit for collection. Significant paleontological resources collected from public lands are federal property and must be deposited in an approved repository. Paleontological resources collected from split-estate lands are the property of the surface-estate owner, and their disposition will be in accordance with the surface agreement between the landowner and the permittee.

Timeframe: This guidance is effective immediately for all BLM offices.

Background: Surface disturbing activities may cause direct adverse impacts to paleontological resources through the damage or destruction of fossils; or loss of valuable scientific information by the disturbance of the stratigraphic context in which fossils are found. Indirect adverse impacts may be created by increased accessibility to important paleontological resources leading to looting or vandalism. Land tenure adjustments may result in the loss of significant paleontological resources to the public if paleontological resources pass from public ownership. Generally, the project proponent is responsible for the cost of implementing mitigation measures including the costs of investigation, salvage and curation of paleontological resources.

This IM together with the Potential Fossil Yield Classification system (PFYC; see IM 2008-009) will provide guidance for the assessment of potential impacts to paleontological resources, field survey and monitoring procedures, and recommended mitigation measures that will better protect paleontological resources impacted by federal actions. This guidance expands and clarifies the

guidance in the Handbook H-8270-1 (General Procedural Guidance for Paleontological Resource Management) Chapter III (Assessment & Mitigation) and will be incorporated into the next Handbook revision.

Impact on Budget: Costs are minimal for implementation of this guidance since mitigation of paleontological resources is already part of any approval of surface-disturbing actions on public lands.

Manual/Handbook Affected: Supersedes Handbook H-8270-1 (General Procedural Guidance for Paleontological Resource Management) Chapter III.B.

Coordination: Washington Office Division of Cultural and Paleontological Resources and Tribal Consultation.

Contact: For questions regarding application of this policy and guidance, please contact Lucia Kuizon, National Paleontologist, at (202) 452-5107 or lkuizon@blm.gov.

Signed by:
Edwin L. Roberson
Assistant Director
Renewable Resources and Planning

Authenticated by:
Robert M. Williams
Division of IRM Governance,WO-560

2 Attachments

1- [Guidelines for Assessment and Mitigation of Potential Impacts to Paleontological Resources \(19 pp\)](#)

2- [Paleontological Resources Assessment Flowchart \(2 pp\)](#)

Guidelines for Assessment and Mitigation of Potential Impacts to Paleontological Resources

Contents:

Introduction

- I. Assessment of Potential Impacts to Paleontological Resources
 - A. Scoping
 - B. Analysis of Existing Data
 - C. Determining the Need for Field Surveys and Mitigation
 - II. Procedures for Conducting a Paleontological Field Survey
 - A. Definition of Field Survey
 - B. Conducting Field Survey
 - C. Report of Survey Findings
 - D. Report Approval
 - III. Determination of Further Mitigation Requirements
 - A. Relocation
 - B. Deferred Fossil Collection
 - IV. Procedures for Field Monitoring
 - A. Monitoring Plan
 - B. Types of Monitoring
 - C. Types of Field Personnel
 - D. Work Stoppage
 - V. Final Project Report When Paleontological Resources are Collected
 - VI. Completion of Mitigation Responsibility
 - VII. Collections Resulting from Mitigation and Monitoring
 - VIII. Resource Management Updates
- Appendix A – Definitions

Introduction

Surface disturbing federal actions on public and split-estate lands may cause direct adverse impacts to paleontological resources through the damage or destruction of fossils or the disturbance of the stratigraphic context in which they are located. Indirect adverse impacts may be created from increased accessibility to fossils leading to looting or vandalism activities. Land tenure adjustments may result in the loss of significant paleontological resources to the public if fossils pass from public ownership.

Under the Federal Land Policy and Management Act (FLPMA) and the National Environmental Policy Act (NEPA), federal actions and land tenure adjustments that may impact or result in a loss of paleontological resources on public or split-estate lands are evaluated, and necessary mitigation is identified.

I. ASSESSMENT OF POTENTIAL IMPACTS TO PALEONTOLOGICAL RESOURCES

The following sections outline general steps designed to assist in the analysis and assessment of possible impacts to paleontological resources from proposed actions. These sections are sequential in order and provide for termination of the assessment at various stages if the analysis indicates no impacts are likely to occur.

A. Scoping. Field Offices must assess all proposed federal actions to identify possible effects to significant paleontological resources (see Appendix A for definition) that are potentially recoverable and are likely to be within the zone of expected surface disturbance or relatively close to the surface. The direct effects of all surface activities and the indirect effects of increased public access and land tenure adjustments must be considered in any paleontological assessment. The assessment will determine whether further analysis will be necessary. The Paleontology Program Coordinator (Paleontology Coordinator – see Appendix A for definition) has primary responsibility for the scoping process for projects within the Field Office area, but the Paleontology Program Lead (Paleontology Lead – see Appendix A for definition) may be responsible for projects that span multiple Field or District Offices, and can support the Paleontology Coordinator as requested.

1. Surface only activities – If the proposed project will not disturb potentially fossil-yielding bedrock or alluvium, no additional work is necessary. The project file should be documented as appropriate. Examples of such projects include weed spraying, mechanical brush treatment, geophysical exploration, or surface disturbing activities such as road construction when the fossil resource is expected to be buried well below project compression or excavation depth or when surface fossil resources would be left undamaged.

2. Land Tenure Adjustments – If parcels are identified to pass from public ownership in a proposed land tenure adjustment action but contain no potential for recoverable, significant paleontological resources, no additional work is necessary. The project file should be documented as appropriate, and conclusions addressed in the environmental document. This situation may arise, for example, in areas consisting only of granitic bedrock where paleontological resources would not normally occur.

3. Young alluvial deposits or deep soils may cover and obscure sedimentary bedrock, and any fossils that may occur in that bedrock would be unidentifiable or irretrievable prior to disturbance actions. In most of these cases, the fossil resources cannot be quantified, but the potential for impacting paleontological resources should be mentioned in the evaluation of the proposal, i.e., the planned disturbance will pass through the soil layer and impact a bedrock unit which is known to contain significant fossils elsewhere.

If the initial scoping identifies the possibility for adversely affecting significant paleontological resources, further analysis is necessary. If there will be no impact or potential impact based on the action or the fossil resource may be impacted, but is too deep to be recovered, e.g., deep well bore passing through a fossil formation, the project file must be documented, and no additional assessment is necessary.

B. Analysis of Existing Data. If scoping suggests the possibility of disturbing fossil-yielding bedrock or alluvium that is near to the surface and that may contain significant paleontological resources that are potentially recoverable, more in-depth analysis is necessary. Geologic mapping reflecting the Potential Fossil Yield Classification (PFYC) should be consulted, along with any other easily accessible information, such as GIS-based locality data, other known paleontological locality information, and existing paleontological reports for the area, aerial photos, or soils maps.

1. Potential Fossil Yield Classification (PFYC) – This is a system for categorizing the probability of geologic units to contain scientifically significant paleontological resources or noteworthy fossil occurrences. It has five levels or Classes, with Class 1 applied to geologic units that are not likely to contain significant fossils through Class 5 for geologic formations that have a high potential to yield scientifically significant fossils on a regular basis (see IM No. 2008-009). This classification does not reflect rare or isolated occurrences of significant fossils or individual localities, only the relative occurrence on a formation- or member-wide basis. Any rare occurrences may require additional assessment and mitigation if they fall within the area of anticipated impacts.

2. If the results of the preliminary analysis determine that the proposed project will only affect geologic units not likely to contain significant fossils or that have a very low or low potential for significant fossils (PFYC Class 1 or 2), and no scientifically important localities are known to occur in the area, the project file should be documented, and no additional paleontology assessment is necessary.

3. The results of an analysis of a proposed project may indicate the potential to disturb PFYC Class 3, 4, or 5 formations or potentially fossil-bearing alluvium, or known significant localities, which may then suggest the need for field surveys and/or other mitigation measures. The results may also identify areas where little or nothing is known of the fossil record so that additional attention may be given to these areas during field survey. The analysis should consider the likely impacts on the known or potential fossil resource and should be the basis for determining the need for or level of additional assessments.

C. Determining the Need for Field Surveys and Mitigation. The previously discussed procedures may result in the determination that the project may encounter bedrock or an alluvial zone that has a moderate or high potential to contain significant paleontological resources. However, it does not determine the appropriate action, such as a field survey, on-site monitoring, special stipulations, avoidance, or other mitigation.

1. If the need for further work is not clearly evident after the analysis, the Authorized Officer and/or Project Leader should be consulted for a final decision. The Paleontology Lead or Regional Paleontologist may also be consulted. A brief written report of findings should be prepared, including the rationale for supporting the decision not to require a field survey or additional monitoring. The report should be signed by the Authorized Officer and placed in the project file. For example, a seismic survey using vibroseis trucks may be proposed on areas of deep soils, or a temporary recreational event may be planned in an area of low fossil potential. These types of projects are not likely to have a reasonable potential to adversely affect important

paleontological resources. The file should be documented and a standard discovery stipulation attached to the permit proposal.

2. If the analysis in Sec. I.B indicates a reasonably high expectation of not just encountering a potential fossil-bearing zone and also causing adverse impacts to significant paleontological resources, the determination must be made as to (1) whether adverse effects cannot be avoided; (2) whether the adverse impacts can be avoided by altering the location or scope of the project; (3) whether the impacts can be mitigated through development of special stipulations such as requiring on-site monitoring; or (4) whether field surveys will be necessary to determine the presence or absence of significant paleontological resources.

3. In the case where it is known that significant paleontological resources will be adversely impacted, the preferred course of action is avoidance of the impact by moving or rerouting the site of construction, or eliminating or reducing the need for surface disturbance.

4. Application of specific stipulations may reduce or eliminate adverse impacts in many cases. A standard discovery stipulation should be included in any permit approval that is likely to affect significant paleontological resources. The stipulation should mandate an immediate work stoppage in the area of discovery, notification to the Authorized Officer, and protection of the material and geological context. Other stipulations may be appropriate on a case-by-case basis.

(a) A suggested standard discovery stipulation for a discretionary federal action is:

The permittee shall immediately notify the BLM Authorized Officer of any paleontological resources discovered as a result of operations under this authorization. The permittee shall suspend all activities in the vicinity of such discovery until notified to proceed by the Authorized Officer and shall protect the discovery from damage or looting. The permittee may not be required to suspend all operations if activities can be adjusted to avoid further impacts to a discovered locality or be continued elsewhere. The Authorized Officer will evaluate, or will have evaluated, such discoveries as soon as possible, but not later than 10 working days after being notified. Appropriate measures to mitigate adverse effects to significant paleontological resources will be determined by the Authorized Officer after consulting with the operator. Within 10 days, the operator will be allowed to continue construction through the site, or will be given the choice of either (1) following the Authorized Officer's instructions for stabilizing the fossil resource in place and avoiding further disturbance to the fossil resource, or (2) following the Authorized Officer's instructions for mitigating impacts to the fossil resource prior to continuing construction through the project area.

Note: C.1 and C.2 above would be conducted at the permittee's expense. By regulation, after a 3809 plan of operations is approved or where there is no plan, the BLM is responsible for the cost of any investigation and recovery of fossil materials.

(b) Other stipulations may be developed to reduce potential impacts, preferably in consultation with the project proponent. These may include (1) techniques to reduce surface

disturbance, (2) briefings for all personnel about the potential for discovery, (3) requiring all finds be reported, and (3) using a "light touch" in sensitive areas. These should be made a formal part of the authorization for the project and discussed at a preconstruction meeting or an on-site meeting in the case of oil and gas operations.

(c) All proponents should be directed to share the current rules and regulations regarding fossil theft and the limitations to free use collecting of invertebrate and plant fossils on BLM-administered lands with all employees and subcontractors under their direction. Unlawful removal, damage, or vandalism of paleontological resources will be prosecuted by federal law enforcement. Theft or damage to government property by a proponent, a proponent's employee, or a subcontractor that is under a proponent's direction may lead to legal actions against the proponent.

5. If avoidance actions or stipulating measures are insufficient to protect known paleontological resources, a written assessment must be completed to determine the need for field survey or monitoring. This assessment must include the anticipated direct or indirect impacts associated with the project, the inadequacies of avoidance or special stipulations to protect the resource, existing paleontological information and known localities, relevant geologic information, and the potential for additional discoveries. The assessment must be completed by the Paleontology Coordinator.

(a) In some cases, bedrock will not be visible at the surface in the project area (for example, where thin soils or alluvium obscure all outcrops), but the proposed excavation will likely penetrate into bedrock with known significant paleontological resources. Because fossil material will not be visible at the ground surface in these cases, it may be appropriate to forego a field survey prior to excavation, but require on-site monitoring or spot-checks when bedrock is finally encountered. If construction monitoring is proposed, the written assessment must include a thorough justification for the recommendation.

(b) The State Office may require the Paleontology Coordinator to notify the Paleontology Lead that a field survey or monitoring is deemed appropriate prior to the final decision to require the survey or monitoring. The notification should minimally include the name of the project, the legal description of the location or other locational information, a brief summary of the proposed action, reason(s) for the decision to require a survey or monitoring, and any other relevant information. Concurrence of the Paleontology Lead or Regional Paleontologist may be required prior to the final decision for requiring a survey or monitoring.

(c) A standardized assessment document may be developed that can be applied to projects that are similar in nature, relatively small, and repetitive in approach for use within a Field Office or District. This written assessment is intended to simplify the documentation process for those projects that are likely to have minimal impacts, and may be structured as a programmatic assessment, a form, a checklist, or other document with standard items. This assessment must include the name of the project, the legal description of the location or other locational reference, a brief summary of the proposed action, reason(s) for the decision, and any other relevant information. The parameters in the assessment should be designed to identify the need for a field survey. For example, the parameters may indicate a field survey may be required

for road and well pad construction activities occurring on Class 4 or 5 formations where the formation is likely to be encountered during surface disturbing activities. The Field Manager, in consultation with the Paleontology Lead, must approve the use of a programmatic assessment prior to initial implementation.

6. The decision to require a field survey or monitoring must be made by the Authorized Officer and documented in the project file. If required, a copy of the decision must be furnished to the Paleontology Lead.

II. PROCEDURES FOR CONDUCTING A PALEONTOLOGICAL FIELD SURVEY

If the assessment of existing data indicates: (a) the presence or high probability of occurrence of vertebrate fossils or uncommon nonvertebrate fossils (PFYC Class 4 or 5), or that the probability is unknown (Class 3), in the area of a proposed federal action or transfer of title, and (b) a reasonable probability that those resources will be adversely affected by the proposed action, a paleontological field survey should be conducted.

A. Definition of Field Surveys. Field Surveys are pedestrian surveys to be performed in areas where significant fossils can be expected to occur within the boundary and immediate vicinity of the anticipated disturbance, or where the probability of encountering significant fossils is unknown.

1. Field surveys are performed prior to any surface disturbing activities. Before conducting field surveys, the project location should be as final as possible and any staking of the location should be complete.

2. Surveys are conducted by a BLM Regional Paleontologist, Paleontology Lead, Paleontology Coordinator, appropriately trained and supervised BLM staff, or by a BLM-permitted consulting paleontologist hired by the project proponent.

(a) At the Field Manager's discretion, other qualified BLM staff may conduct surveys on small projects. Performance of surveys by BLM staff must also be approved by the Regional Paleontologist, Paleontology Lead, or Paleontology Coordinator.

(b) Surveys that are complex in nature, constrained by construction schedules, or otherwise cannot be performed by BLM staff should be performed by a consulting paleontologist holding a valid BLM Paleontological Resources Use Permit. Submission of reports may be done directly by the paleontologist to the BLM. The project proponent is also responsible for all costs associated with the survey, including the consulting paleontologist's fees and charges, all survey costs, fossil preparation to the basic identification stage, analyses, reports, and curation costs directly related to mitigation of the project's anticipated impacts. Any required monitoring and mitigation costs are also the responsibility of the project proponent. These costs are to be negotiated between the project proponent and the consulting paleontologist prior to beginning any data gathering, analysis, or field work, and these negotiations do not require BLM

involvement or approval. Any new, additional, or modified curation agreements between the paleontologist and the official repository must be in place prior to starting field work.

(c) Authorization for an activity to proceed cannot be given by a consulting paleontologist. Performance of the survey, either by a consulting paleontologist or BLM staff, or submission of the report DOES NOT constitute approval for the activity to proceed. The BLM must review the report, including adequacy of the field methods and findings. The Authorized Officer must approve the findings and determine the need for monitoring prior to approval to proceed.

B. Conducting Field Surveys. Field surveys must be performed by the Principal Investigator or an approved Field Agent or Field Monitor (see section IV.C., Types of Field Personnel for descriptions of these individuals) as authorized under a Paleontological Resource Use Permit, or by a BLM Regional Paleontologist or qualified BLM designee. Field surveys and collections performed as a mitigation measure are not intended to be scientific research studies, but are meant to identify, avoid, or recover paleontological resources to prevent damage or destruction from project activities. However, proper scientific techniques and procedures must be utilized during all mitigation efforts. Safety should be an important consideration; therefore, surveys should not be attempted on cliff faces, in open, non-reinforced trenches deeper than five feet, or other unsafe areas.

1. The scope of the survey is dependent upon the scale of the project. Small projects are defined as less than 10 acres, or, if linear, less than five miles; large projects exceed those dimensions.

2. At the start of field work, the consulting paleontologist (paleontologist) must contact the Paleontology Coordinator in each affected Field Office who may require a visit to that office. After an initial visit each year, the paleontologist may contact the Field Office by telephone or email prior to subsequent field trips, at the discretion of the Field Office. Information about the survey schedule, additional personnel, emergency field contact information, and any other pertinent data should be provided to the Paleontology Coordinator. The Field Office will inform the paleontologist of any conditions that may impact the survey, such as fire danger or restrictions, drought restrictions, wildlife timing restrictions, management restrictions, road restrictions or construction, and any other relevant information.

3. During the field survey, the paleontologist surveys, locates, and documents all paleontological resources within 200 feet of the proposed project location or corridor, or less distance upon approval.

(a) Where significant paleontological resources are at risk, data collection alone does not constitute mitigation of damage. All significant fossils that may be damaged or destroyed during project activities must be collected, along with all relevant contextual and locational data. Specimens must be collected during the survey or prior to commencement of any surface-disturbing activities.

(b) In many cases, isolated gar scales, chelonid (turtle) carapace or plastron fragments, crocodile and fish teeth, and unidentifiable bone fragments do not need to be collected. The location must be recorded and a description of the fossil material noted in the field notes and on a BLM Locality Form as part of the report. The context of these types of fossils should be considered, as they may represent rare occurrences or unusual faunal associations, and thus may be scientifically important and must be documented and voucher specimens collected where appropriate.

(c) Occurrences of plant or invertebrate fossils should be recorded and representative examples or voucher specimens collected where appropriate. Additional mitigation measures may be appropriate in some cases for these types of localities.

(d) If a large specimen or a concentration of significant fossils is located during the field survey, the available time and/or personnel may not allow for full recovery during the survey. The specimen(s) and locality(ies) should be stabilized as needed, and a determination made as to whether avoidance is necessary or whether full recovery of the specimen is required at a later time prior to disturbance activities. The Authorized Officer and project proponent must be notified, the mitigation alternatives discussed including funding for recovery, and a decision reached as soon as possible. If avoidance or later recovery is selected for mitigation, the find should be stabilized, buried if needed to protect the fossils and context, and appropriate measures implemented to reduce adverse effects from natural or human causes.

4. During the survey, locations or areas that exhibit a lithology suggesting a high probability of subsurface fossil material must be recorded, and a recommendation for the need for on-site monitoring, spot-checking, or testing should be made in the report. This may include areas where no fossil material was found on the surface during the survey. The recommendation should consider the size and type of planned disturbance, such as the depth of a trenching operation or the acreage of surface disturbance.

5. Surveys must be performed only during times when the ground is visible and not frozen. This will often preclude surveys during winter months in many areas. Biological timing restrictions, such as critical nesting or birthing times, may confine or delay field activities. Project proponents should be informed of BLM's requirement for performing any field surveys as soon as possible and should be advised of the possibilities for delays in survey completion based on seasonal weather conditions or other management restrictions to allow for adequate scheduling of available time.

C. Report of Survey Findings. After completion of the field survey, the paleontologist must file a written report with the BLM and the designated repository. If required, a copy should also be filed with the project proponent. This report must summarize the results of the survey as well as appropriate geological and paleontological background information as described below. It should also include any recommendations for on-site monitoring or other mitigation. For small projects (less than 10 acres), the report must be filed within 30 days after completion of the survey unless specific approval for a different time frame has been received from the BLM. The time frame for submission of the report for large projects should be negotiated during project scoping. On a case-by-case basis, approval to begin project activities may be granted for those

portions of the project area noted to be less paleontologically sensitive prior to final approval of the report.

1. Reports of the general findings and the background information must be submitted to the BLM project manager or Authorized Officer (if appropriate), the Paleontology Lead or Regional Paleontologist, and each affected Field Office. Reports must include the following details, as applicable. Items (a) and (b) should appear at the beginning of the report and may be presented as a title page in multi-page reports. Some of these categories may be combined.

- (a) Name, affiliation, address, date of report, and permit number (if consultant) of paleontologist doing the survey.
- (b) Project name and number (if used), name of proponent, and general location of project.
- (c) Date(s) of survey and names of any personnel assisting with the survey.
- (d) Brief description of the proposed project, emphasizing potential impacts to paleontological resources.
- (e) Description of background research conducted. (Include overview of known paleontological information, institutions consulted, previous surveys in the area, previous projects of similar nature in the area, and general description of survey techniques employed).
- (f) Summary of regional and local geology. May reference earlier projects for relevant information.
- (g) Summary of regional and local paleontology. May reference earlier projects for relevant information.
- (h) Summary of the survey results.
- (i) Significance of findings.
- (j) Potential impacts to paleontological resources resulting from the project.
- (k) Detailed mitigation recommendations that may lessen potential adverse impacts.
- (l) Potential fossiliferous areas to allow for future assessment of sites if applicable.
- (m) Cited and other pertinent references.
- (n) Map of project area, indicating areas surveyed, known localities, and new discoveries.
- (o) Relevant photos, diagrams, tables to aid in explaining, clarifying, or understanding the findings.
- (p) Listing of collected material, including field numbers, field identifications, and elements, cross-referenced to locality field numbers. This list may be submitted in electronic format, preferably in spreadsheet format.
- (q) BLM locality form (8270-3) or equivalent for each new locality (including localities where fossils were observed but not collected) with a 1:24000 scale map showing the localities (not reduced in scale during photocopying) (see items 2 and 3 below).

2. Exact locations of fossil localities contained in these reports are considered sensitive and must not be included in any public document. The BLM locality form (8270-3) or

equivalent, 1:24000 scale map showing the localities, and any other information containing specific fossil locations may be bound separately or placed in a separate section to allow for preservation of confidential locality data. A copy of this confidential section must be submitted to the Paleontology Lead (in some cases, two copies may be required). A copy for each affected Field Office may be required. Another copy must be submitted to the official repository with the collected materials.

3. BLM GPS recording and data standards must be used to report paleontological locality data. Existing USGS topographic maps are often based on the NAD27 standard, so locality data calculated from a map base must be converted before submission. Data must be recorded and reported with a mean error of +/- 12.5 meters or less, at a 95 percent confidence level. For small localities, data should be reported as point data. Larger polygonal localities should be reported using coordinates of a centroid and a description of the approximate size, or the key coordinate points of a bounding polygon. Linear features, such as roads or surveyed project boundaries, must be reported as line data. The 1:24000 scale map(s) accompanying the locality forms should graphically illustrate the locality, either as a point or an outline of the locality as appropriate, and be clearly labeled with the locality or field number.

D. Report Approval. The Authorized Officer will analyze the Survey Report for adequacy within 10 working days of receipt. Notification accepting the report, or explaining any identified deficiencies, will be sent to the consulting paleontologist and the project proponent with a copy placed in the project file. Any deficiencies must be corrected as soon as possible, usually initiated within five working days, and the report must be resubmitted for approval. Any resubmissions must be prompt, but consideration will be made for the amount of time needed for major corrections. Deficiencies directly affecting the survey, such as inadequate survey procedures or incomplete data, must be corrected before granting approval for the project to proceed. Deficiencies not directly affecting the survey, such as curation issues, will not prevent approval of the project, but must be corrected as soon as possible.

III. DETERMINATION OF FURTHER MITIGATION REQUIREMENTS

The need for additional mitigation to protect paleontological resources will be determined on a case-by-case basis. The Authorized Officer, in consultation with Regional Paleontologist or the Paleontology Lead, will analyze the Survey Report for survey findings and any mitigation recommendations. If no further mitigation is needed, the Authorized Officer will promptly notify the project proponent that there are no additional paleontological surveys or mitigation measures required, and the project may proceed pending any other approvals. The project file must be documented indicating acceptance of the survey report and identifying any additional mitigation requirements. If it is determined that additional mitigation efforts are needed to protect or preserve the paleontological resources, the project proponent will be notified as soon as possible. The Authorized Officer and/or the Paleontology Lead usually develop and approve the mitigation procedures or recommend a project be redesigned in consultation with the project proponent. Factors such as locality or specimen significance, economics, safety, and project urgency will be considered when developing mitigation measures. Additional mitigation

measures will be developed and implemented as timely as possible so as not to delay project actions.

A. Relocation. The preferred mitigation technique is to change the project location based on the results of the field survey. Relocation, however, may necessitate a field survey of the new area, as well as resurveys by other resource specialists. Anticipation of this contingency prior to or during the original survey may allow for survey of an expanded area at the same time. If relocation will eliminate impacts and is acceptable to all parties, then a report to the file, including a map showing the original and revised locations, must be completed documenting the change. Approval for the project to proceed in the revised location may then be granted by the Authorized Officer to the project proponent. When avoidance is not possible, appropriate mitigation may include excavation or collection (data recovery), stabilization, monitoring, protective barriers and signs, or other physical and administrative protection measures.

B. Deferred Fossil Collection. In some cases, fossil material may have been identified, but not completely collected during the initial field survey, such as a partial dinosaur or other large fossil assemblage. It may be possible to complete the recovery of this material and all related data prior to beginning construction activities, and thus mitigate the adverse impact. This may require a shift in the project schedule and must be coordinated with the project proponent. Approval by the Authorized Officer for the project to proceed will only be granted when recovery of the fossil material and field data is completed. A report to the file and the project proponent documenting the recovery and indicating that no further mitigation is required must be completed, and the report signed by the Authorized Officer. If the discovery cannot be fully collected within the available time frame, it may have to be avoided by relocating or redesigning the project.

IV. PROCEDURES FOR FIELD MONITORING

The purpose of on-site monitoring is to assess and collect any previously unknown fossil material uncovered during the project activities or soon after surface-disturbing actions. Based on the initial scoping, the field survey and recommendations, and the plan of operations, it may be necessary to require monitoring of surface-disturbing activities. Monitoring may be required as part of an overall mitigation for a project which was developed during the NEPA process, or upon the discovery of paleontological resources during project activities.

A. Monitoring Plan. A monitoring plan can be developed by a BLM paleontologist or a qualified paleontologist hired by the proponent. The plan must be appropriately scaled to the size and complexity of the anticipated monitoring. If developed by a third party, the appropriate Paleontology Lead or Regional Paleontologist shall review the plan for sufficiency prior to acceptance. Monitoring of the project may proceed when the monitoring plan is approved by the Authorized Officer. A monitoring plan indicates the treatments recommended for the area of the proposed disturbance and must minimally address the following:

1. The recommended approach to additional specimen collection, such as total or partial recovery or sampling; and

2. The specific locations and intensity of monitoring or sampling recommended for each geologic unit, stratigraphic layer, or area impacted.

Monitoring intensity is determined based on the analysis of existing data and/or field surveys and any previous monitoring efforts.

B. Types of Monitoring. There are two types of monitoring: 1) on-site, performed during ongoing operations, and 2) spot-checks, performed during or after disturbance, or at key times during the progress of the project.

1. On-site monitoring – In areas with a high probability for buried fossils, the presence of a monitor at the site of disturbance at all times that disturbance is occurring may be warranted. The need for a full-time monitor is based on the findings of the survey, the local geology, and the proposed actions. Efforts will be made to complete fossil recovery with minimal work stoppage. However, in some cases, an extended period of work stoppage may be required, so coordination with the project proponent or representative is important (see D below). Prior to beginning the monitoring work, the monitor, company supervisor, and machinery operators should agree on procedures for brief work stoppages to allow for examination of finds. It is critical that safety be of utmost concern because of the presence of heavy machinery and open trenches.

The monitor must assess any finds, collect loose fossil material and related data, and take appropriate steps to mitigate any current or potential damage. Consideration of the size of the expected fossils must also be considered; for example, microfossils may not be visible during excavation activities. It may be appropriate to collect samples of matrix for later recovery of microvertebrate fossils or other analyses. Activities planned to occur during night time should be assessed relative to the potential to uncover significant fossils. Fossils may not be visible at night in trenching or grading operations, so construction activities may need to be suspended during night time in sensitive areas.

2. Spot-checking – In areas with a moderate to high probability for unknown fossil material, it may be more appropriate to check only at key times rather than maintain continuous monitoring of operations. Key times for scheduling spot-checking are when the fossil-bearing bedrock is exposed to view or prior to placing spoil material back into the excavation. Examples of these key times may be when a pipeline trenching operation is complete but before pipe is placed and the trench backfilled or prior to redistribution of topsoil. Spot-checking requires close coordination with the project proponent and the paleontologist, and usually requires the paleontologist to be available on short notice. In some instances, it may be advantageous to allow rain and/or wind to erode away loose matrix and concentrate fossil material to increase visibility. The paleontologist will coordinate with the project proponent to allow sufficient time for this action to occur, as appropriate to conditions, expected fossil material, and construction schedules.

The paleontologist should report potentially fossiliferous areas in the final report to allow for future assessment of sites, even if no fossils were located during the project monitoring.

C. Types of Field Personnel. Depending on the complexity of the project, it may be necessary to employ a number of paleontology field personnel simultaneously. There may be a lack of fully qualified paleontologists to perform all the necessary monitoring during the scheduled times of construction. Use of additional personnel for field work is permissible, but Field Agents and Field Monitors (described below) must be requested by the Permittee and authorized by the BLM prior to field work.

1. **Principal Investigator** – The person listed as Permittee (Permit item 1a) on the Paleontological Resources Use Permit is the Principal Investigator (PI) and is responsible for all actions under the permit, for meeting all permit terms and conditions, and for the performance of all other personnel. This person is also the contact person for the project proponent and the BLM.

2. **Field Agent** – Other qualified paleontologists may perform field work independently of the PI under the conditions of this permit. Résumés must be submitted to BLM and must demonstrate qualifications equivalent to those of Permittees. Field Agents must be listed on the permit under “Name(s) of individual(s) responsible for planning, supervising, and carrying out fieldwork” (Permit item 8) or authorized in a separate letter from BLM. They must follow all the permit terms and conditions applicable to field work and must carry a copy of the permit, included terms and conditions, and separate authorizing letter (if used) while in the field. Field work results must be reported to the PI, who will then submit required reports.

3. **Field Monitor** – Field Monitors may be utilized for supplemental on-site monitoring of surface-disturbing activities when the PI or a Field Agent is performing field work elsewhere. Field Monitors must have sufficient field experience to demonstrate acceptable knowledge of fossil identification, collection methods, and paleontological techniques. The PI must supply a summary of each person’s experience to the BLM prior to field work. Field Monitors must be approved by the BLM prior to performing field work and must carry a copy of the permit while in the field. The PI or Field Agent must be in communication with the Field Monitor using a portable communication device, such as a cell phone or two-way radio, and are required to be near enough to the Field Monitor to allow for prompt examination of all fossil discoveries (no more than two hours away) by the PI or Field Agent.

4. **Field Assistant** – Additional personnel not meeting the previously cited experience or knowledge levels may be utilized during field work, but must be under direct, on-site supervision of either the PI or a Field Agent as part of a supervised crew. Field assistants must have at least four to eight hours of training or experience received from a qualified paleontologist in identifying paleontological resources prior to performing field work or when first utilized in this capacity. A listing of all Field Assistants (including contact information) must be supplied prior to any field work. All discoveries made by a Field Assistant must be immediately reported to the PI or Field Agent on site. To ensure proper supervision, an appropriate ratio of Field Assistants per PI or Field Agent must be maintained. The complexity of the project, the area to be covered, and the experience of the assistants are some of the factors that should be considered in determining the proper ratio, but commonly five to seven assistants is the maximum number that can be supervised by one PI or Field Agent.

D. Work Stoppage. If significant fossil material is discovered during construction activities, the PI, Field Agents, and Field Monitors have the authority to temporarily halt surface disturbing actions until an assessment of the find is completed and appropriate protection measures taken. Efforts will be made to complete fossil recovery with minimal work stoppage. However, in some cases, an extended period of work stoppage may be required. If the paleontological resource can be avoided, mitigated, or collected within approximately two hours, work may resume after approval from the PI or Field Agent, and the Authorized Officer must be notified as soon as possible of the discovery and any mitigation efforts that were undertaken. If the find cannot be mitigated within a reasonable time (two hours), the concurrence of the Authorized Officer or official representative for a longer work stoppage must be obtained. Work may not resume until approval is granted from both the PI or Agent and the Authorized Officer.

V. FINAL PROJECT REPORT

Upon completion of all field work, including survey and monitoring, the PI must submit within 30 days, a written final report to the Authorized Officer, Paleontology Lead, and the designated repository. A copy of the report may be provided to the project proponent if required, but without the BLM Locality forms. Reports must include the following details. Items 1 and 2 should appear at the beginning of the report, and may be presented as a title page in multi-page reports.

1. Name, affiliation, address, date of report, and permit number (if consultant) of the paleontologist doing the survey.
2. Project name and number (if used), name of proponent, and general location of project.
3. Date(s) of the survey and names of any personnel assisting with the survey.
4. Brief description of project and expected impacts to paleontological resources.
5. A summary of mitigation performed.
6. A summary of findings, including important discoveries.
7. A description of potentially fossiliferous areas to allow for future assessment of sites, even if no fossils were located during the project monitoring.
8. A completed BLM locality form 8270-3 or equivalent for each new locality using Universal Transverse Mercator (UTM) NAD 83 coordinates, and 1:24000 scale maps with new localities plotted using points or polygons as appropriate. Locality forms, maps, and any other information containing specific fossil locations should be bound separately or assembled as a separate section to allow for preservation of confidential locality data.
9. List of specimen field numbers and field identifications of collected material, cross-referenced to the locality field number. This list may be submitted in electronic format, preferably in a spreadsheet format.

If the survey was performed by BLM, a report similar in contents must be written and filed in the project file, and the project proponent notified as soon as possible upon completion.

VI. COMPLETION OF MITIGATION RESPONSIBILITY

When the final report with the specimen inventory and the signed receipt of confirmation of museum deposition are accepted by the BLM, mitigation for paleontological resources related to the project will be considered completed. The project proponent will be notified in writing as soon as possible by the Authorized Officer after consulting with the Paleontology Lead or Regional Paleontologist and a copy of the notification placed in the project file.

The responsibility of the project proponent ends when appropriate mitigation related directly to the project is completed and final approval is received from the Authorized Officer. Any additional field collection, quarrying, final specimen preparation, etc. will be considered to be research, and will be the responsibility of the consulting paleontologist or another approved party. The project proponent will not be held responsible for completion of any research project. However, the project proponent can choose to sponsor further research. A separate research permit will be required for additional research activities.

VII. COLLECTIONS RESULTING FROM ASSESSMENT AND MITIGATION

Fossil specimens and related data collected from public lands during field surveys and mitigation remain the property of the Federal government. They must be placed in the approved repository(s) identified on the Paleontological Resource Use Permit held by the consulting paleontologist as soon as practical and receipt(s) of collections submitted to the BLM, but no later than 60 days after all field work is completed. Written approval from the Paleontology Lead or Regional Paleontologist is required if additional time is needed for transfer of all specimens and field data.

VIII. RESOURCE MANAGEMENT UPDATES

Based on findings resulting from any of the above steps, the project file, locality and specimen information, and other BLM data should be updated to reflect any new or modified information. Paleontology permit files should be checked and updated, as well as any other administrative information.

The PFYC Class assignments can be assessed based on the analysis, survey, and monitoring results. New information may indicate a change in the PFYC Class is appropriate for one or several geologic units. Other applications of the PFYC system should be considered, such as the use for impact analyses in planning documents or for survey and mitigation determinations for other projects. Any changes in classification must be made in consultation with the Paleontology Lead or Regional Paleontologist to maintain consistency across Field Office boundaries.

APPENDIX A – DEFINITIONS

(As applicable to BLM management of paleontological resources)

Alluvium – A general term for clay, silt, sand, gravel, or similar unconsolidated detrital material [fragments of rock or mineral material derived from older rocks] deposited during relatively recent geologic time by a stream or other body of running water as a sorted or semi-sorted sediment in the bed of the stream or its flood plain or delta, or as a cone or fan at the base of a mountain slope; especially, such a deposit of fine-grained texture (silt or silty clay) deposited during a time of flood (*from American Geological Institute (AGI), Glossary of Geology, 1972 ed.*)

Alluvium may contain paleontological resources in older alluvial deposits. The location on the landscape often will provide clues to the potential for paleontological resources within alluvial deposits. As an example, alluvium developed near major river courses or lake margins has a much higher potential to contain significant paleontological resources than alluvium (colluvium) formed from slope wash.

Approved Repository – Meets the Department of the Interior 411 Departmental Manual (DM) provisions for museum property, including capability for providing adequate long-term curatorial services, such as a physically secure environment, and maintaining professional staff qualified to catalog, care for, preserve, retrieve, and loan, where appropriate, these materials and associated records.

Bedrock – A general term for the rock, usually solid, that underlies soil or other unconsolidated, surficial material (*from American Geological Institute (AGI), Glossary of Geology, 1972 ed.*) For paleontological purposes, bedrock generally excludes alluvium, colluvium, sand dunes, and loess (fine-grained blanket deposit of marl or loam). In certain situations, bedrock may contain recent soils/sediments with fossils.

Colluvium – A general term applied to any loose, heterogeneous, and incoherent mass of soil material or rock fragments deposited chiefly by mass-wasting, usually at the base of a steep slope or cliff; e.g., talus, cliff debris, and avalanche material. Also, alluvium deposited by unconcentrated surface run-off or sheet erosion, usually at the base of a slope (*from American Geological Institute (AGI), Glossary of Geology, 1972 ed.*)

Field Agent – Other qualified paleontologists may perform field work independently of the PI under the conditions of this permit. Résumés must be submitted to BLM and must demonstrate qualifications equivalent to those of Permittees. Field Agents must be listed on the permit under “Name(s) of individual(s) responsible for planning, supervising, and carrying out fieldwork” (Permit item 8) or authorized in a separate letter from BLM. They must follow all the permit terms and conditions applicable to field work and must carry a copy of the permit, included terms and conditions, and separate authorizing letter (if used) while in the field. Field work results must be reported to the PI, who will then submit required reports.

Field Assistant – Additional personnel not meeting the previously cited experience or knowledge levels may be utilized during field work, but must be under direct, on-site supervision

of either the PI or a Field Agent as part of a supervised crew. Field assistants must have at least 4 to 8 hours of training or experience received from a qualified paleontologist in identifying paleontological resources prior to performing field work or when first utilized in this capacity. A listing of all Field Assistants (including contact information) must be supplied prior to any field work. All discoveries made by a Field Assistant must be immediately reported to the PI or Field Agent on site. To ensure proper supervision, an appropriate ratio of Field Assistants per PI or Field Agent must be maintained. The complexity of the project, the area to be covered, and the experience of the assistants are some of the factors that should be considered in determining the proper ratio, but commonly five to seven assistants is the maximum number that can be supervised by one PI or Field Agent.

Field Monitor – Field Monitors may be utilized for supplemental on-site monitoring of surface-disturbing activities when the PI or a Field Agent is performing field work elsewhere. Field Monitors must have sufficient field experience to demonstrate acceptable knowledge of fossil identification, collection methods, and paleontological techniques. The PI must supply a summary of each person’s experience to the BLM prior to field work. Field Monitors must be approved by BLM prior to performing field work and must carry a copy of the permit while in the field. The PI or Field Agent must be in communication with the Field Monitor using a portable communication device, such as a cell phone or two-way radio, and are required to be near enough to the Field Monitor to allow for prompt examination of all fossil discoveries (no more than two hours) by the PI or Field Agent.

Field Survey – Pedestrian (walking) surveys performed in areas where significant fossils are expected to occur within the boundary or immediate vicinity of an anticipated disturbance. Surveys are performed by a qualified paleontologist or BLM Regional Paleontologist or other officially appointed BLM employee prior to any surface disturbing activities. Survey activities also include concurrent collection of significant fossils.

Land Tenure Adjustments/Change in Title – Changes in ownership or administration of surface or mineral estates, typically exchanges or sales, which may result in a change in ownership or control of paleontological resources.

Monitoring – a) On-site observation during all surface disturbing activities to assess and collect any previously-unknown fossil material uncovered by the project activities. b) Examination of excavation or spoil piles at key times during project activities. Monitoring must be performed by a permitted paleontologist, field agent, or field monitor (see section *IV.C.*), Regional Paleontologist, or other officially appointed BLM employee, and occurs during or soon after surface disturbing actions.

Paleontological Locality (Locality) – A geographic point or area where a fossil or associated fossils are found in a related geological context. A paleontological locality is confined to a discrete stratigraphic layer, structural feature, or physiographic area.

Paleontology Program Coordinator (Paleontology Coordinator) – The employee designated by the local BLM Office Manager to manage paleontological resource issues, including planning, mitigation, budget, and other administrative duties. The local point of contact for

paleontological resource use permittees, the State Office Paleontology Program Lead, and the Regional Paleontologist. The employee is usually a geologist or archaeologist.

(a) In some offices, additional employees may be designated by the supervisor to determine the need for field surveys and monitoring for some projects, or other duties in support of the paleontology program. The scope of duties for these additional employees must be approved by the Paleontology Program Lead and closely coordinated with the Paleontology Coordinator.

(b) A few current BLM employees may meet the same professional qualifications that are required for a BLM Paleontological Resources Use Permit applicant. BLM-approved training and field experience may also allow employees to gain sufficient background to achieve competency in the field. With the approval of the Regional Paleontologist and the Office Manager or Deputy State Director, these employees may be designated as qualified to perform field surveys or monitoring. The current availability of these employees must also be approved by the unit manager or Deputy State Director, typically on a project-by-project basis or within a defined time period. Depending on official duties, local roles and responsibilities, and management preferences, these employees may or may not be the Paleontology Coordinator.

Paleontology Program Lead (Paleontology Lead) – Any one of the following: the Regional Paleontologist in the states with an identified position; the paleontologist at Grand Staircase-Escalante National Monument; or the State Office Archeologist in the states without a Regional Paleontologist.

Principal Investigator – The person listed as Permittee (Permit item 1a) on the Paleontological Resources Use Permit is the Principal Investigator (PI) and is responsible for all actions under the permit, for meeting all permit terms and conditions, and for the performance of all other personnel. This person is also the contact person for the project proponent and the BLM.

Regional Paleontologist – The BLM paleontologist that provides professional expertise in paleontology, and is responsible for interpreting relevant laws, authorities, and policy for the administration of the BLM paleontology program for all States in his/her respective region, and as the program interface between Field and/or District Offices, State Offices, and the Washington Office. In some cases, the Regional Paleontologist also serves as the State Office Paleontologist.

Significant Paleontological Resource (syn. Significant Fossil Resource) – Any paleontological resource that is considered to be of scientific interest, including most vertebrate fossil remains and traces, and certain rare or unusual invertebrate and plant fossils. A significant paleontological resource is considered to be scientifically important because it is a rare or previously unknown species, it is of high quality and well-preserved, it preserves a previously unknown anatomical or other characteristic, provides new information about the history of life on earth, or has identified educational or recreational value. Paleontological resources that may be considered to not have paleontological significance include those that lack provenience or context, lack physical integrity because of decay or natural erosion, or that are overly redundant or are otherwise not useful for research.

Vertebrate fossil remains and traces include bone, scales, scutes, skin impressions, burrows, tracks, tail drag marks, vertebrate coprolites (feces), gastroliths (stomach stones), or other physical evidence of past vertebrate life or activities.

Soil – The natural medium for growth of land plants (*from* American Geological Institute (AGI), Glossary of Geology, 1972 ed.) Generally, well-developed soils do not contain paleontological resources. However, the C horizon (the substratum above bedrock that is little affected by soil forming processes) may occasionally contain Pleistocene-aged fossils.

Stipulations – Written conditions that may restrict or impose limits on approved activities, or require that certain procedures be followed. The general usage herein encompasses several formal terms specific to other use authorizations such as Mitigation, Terms and Conditions, Conditions of Approval, and Standard Stipulations.

Surface disturbance – Disruption of the ground surface and subsurface. Disruption may damage or destroy significant paleontological resources and their geological context.

– Generally excludes: fire (but not fire activities, see below), vegetation mowing, weed spraying, grazing, natural erosion, fence building

– Some activities that may impact the ground surface and must be assessed on a case-by-case basis are:

* Mechanized vegetative treatments – chaining, sagebrush chopping, etc

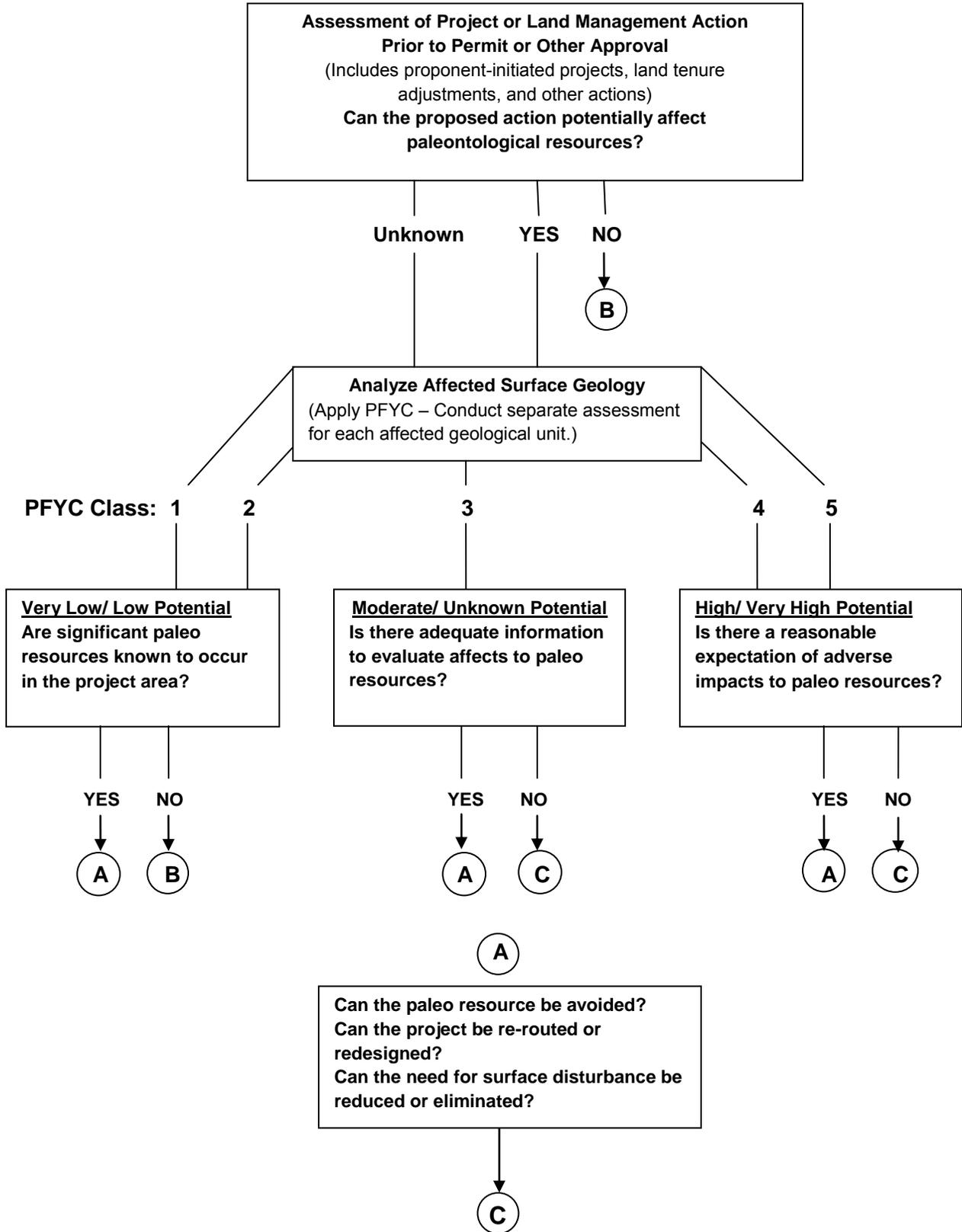
* Seismic activities – vibroseis techniques, cross-country travel

* Fire management activities – line building, brush removal and thinning using mechanized equipment

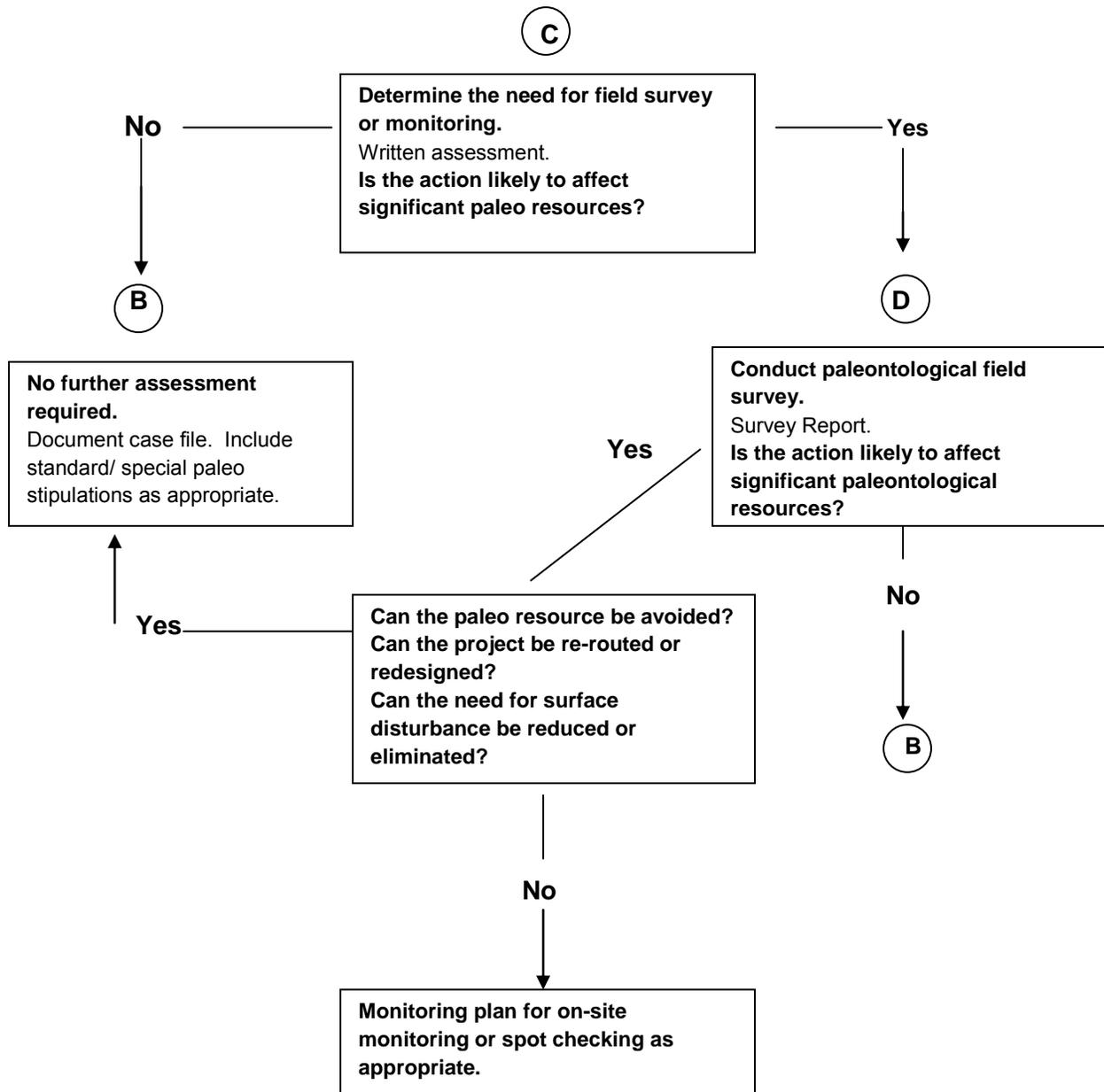
* Recreational activities – OHV, rock collecting, mountain biking, public events

Voucher Specimen – A representative sample that verifies the kind of fossil material found during a field survey, and is collected and curated in an approved repository along with its associated field data.

Paleontological Resources Assessment Flowchart



Paleontological Actions





APPENDIX E

BEST MANAGEMENT PRACTICES

APPENDIX E

BEST MANAGEMENT PRACTICES

INTRODUCTION

Best management practices (BMPs) are those land and resource management techniques designed to maximize beneficial results and minimize negative impacts of management actions. BMPs are defined as methods, measures, or practices selected on the basis of site-specific conditions to provide the most effective, environmentally sound, and economically feasible means of managing an activity and mitigating its impacts. Interdisciplinary site-specific analysis is necessary to determine which management practices would be necessary to meet specific goals. Selection and implementation of any BMPs will be evaluated against the New Mexico Public Land Health Standards to ensure progress toward public land health attainment. BMPs include, but are not limited to, structural and nonstructural controls, operations, and maintenance procedures. BMPs can be applied before, during, and after pollution producing or surface-disturbing activities to reduce or eliminate the introduction of pollutants into receiving waters (40 Code of Federal Regulation 130.2(m), Environmental Protection Agency Water Quality Standards Regulation) or to prevent unnecessary or undue degradation of resources such as water and air.

BMPs are identified as part of the National Environmental Policy Act process, with interdisciplinary involvement. Because the control of nonpoint sources of pollution and prevention of damage to other resources is an ongoing process, continual refinement of BMP design is necessary. This process can be described in five steps, which are:

1. selection of design of a specific BMP;
2. application of BMP;
3. monitoring;
4. evaluation; and
5. feedback.

Data gathered through monitoring are evaluated and used to identify changes needed in BMP design, application, or in the monitoring program.

BMPs described in this appendix are a compilation of existing policies and guidelines and commonly employed practices designed to assist in achieving the objectives for maintaining or minimizing water quality degradation from nonpoint sources; preventing the loss of soil productivity; providing guidelines for aesthetic conditions within watersheds; reducing particulate matter and emissions; and mitigating impacts to soil, vegetation, or wildlife habitat from surface-disturbing activities. BMPs are selected and implemented as necessary, based on site-specific conditions, to meet a variety of resource objectives for specific management actions. Therefore, this document does not provide an exhaustive list of BMPs, as additional BMPs or modifications may be identified to minimize the potential for negative impacts when evaluating site-specific management actions through an interdisciplinary process.

In addition, implementation and effectiveness of BMPs need to be monitored to determine whether the practices are achieving resource objectives and accomplishing desired goals. Adjustments will be made as necessary.

Each of the following BMPs are a part of the coordinated development of land use plans in the Las Cruces District and may be updated as new information becomes available to ensure objectives are met

and to conform with changes in Bureau of Land Management (BLM) regulations, policy, direction, or new scientific information. Applicants also may suggest alternative procedures that could accomplish the same result. These guidelines will apply, where appropriate, to all use authorizations, including BLM initiated projects. Any BMP listed may be used in any program wherever it may be effective.

ROAD DESIGN AND MAINTENANCE

- Design roads to minimize total disturbance, to conform to topography, and to minimize disruption of natural drainage patterns.
- Base road design criteria and standards on road management objectives such as traffic requirements of the proposed activity, overall transportation objectives, and to meet environmental objectives such as minimizing damage to natural surroundings. Locate roads on stable terrain such as ridge tops, natural benches, the flatter transitional slopes near ridges and valley bottoms, and moderate side slopes. Locate roads away from slumps, slide-prone areas, concave slopes, clay beds, and places where rock layers dip parallel to the slope. Locate roads on well-drained soil types; avoid wet areas.
- Construct cut-and-fill slopes to be approximately 3(h):1(v) or flatter where feasible. Locate roads to minimize heights of cutbanks. Avoid high, steeply sloping cutbanks in highly fractured bedrock.
- Avoid head walls; midslope locations on steep, unstable slopes; fragile soils; seeps; old landslides; sideslopes in excess of 70 percent; and areas where the geologic bedding planes or weathering surfaces are inclined with the slope. Implement extra mitigation measures when these areas cannot be avoided. Construct roads for surface drainage by using outslopes, crowns, grade changes, drain dips, waterbars, or in sloping to ditches as appropriate.
- Sloping the road base to the outside edge for surface drainage is normally recommended for local spurs or minor collector roads where traffic volume is low and low traffic speeds are anticipated. This is also recommended in situations where long intervals between maintenance will occur and where minimum excavation is wanted. Outsloping is not recommended on steep slopes. Sloping the road base to the inside edge is an acceptable practice on roads with steep sideslopes and where the underlying soil formation is very rocky and not subject to appreciable erosion or failure.
- Crowning and ditching are recommended for arterial and collector roads where traffic volume, speed, intensity, and user comfort are considerations. Recommended gradients range from 0 to 15 percent where crowning and ditching may be applied, as long as adequate drainage away from the road surface and ditch lines is maintained.
- Where possible, reroute or reengineer vehicle routes that divert overland flow and contribute to declines in public land health (watershed and vegetation standards).
- Minimize excavation when constructing roads through balancing earthwork, narrowing road widths, and end-hauling where sideslopes are between 50 and 70 percent.
- If possible, construct roads when soils are dry and not frozen. When soils or road surfaces become saturated to a depth of 3 inches, BLM-authorized activities should be limited or cease unless otherwise approved by the Authorized Officer.

- Consider improving inadequately surfaced roads that are to be left open to public traffic during wet weather by using gravel or pavement to minimize sediment production and maximize safety.
- Retain vegetation on cutslopes unless it poses a safety hazard or restricts maintenance activities. Roadside brushing of vegetation should be done in a way that prevents disturbance to root systems and visual intrusions (i.e., avoid using excavators for brushing).
- Retain adequate vegetation between roads and streams to filter runoff caused by roads. Avoid riparian/wetland areas where feasible; locate in these areas only if the roads do not interfere with the attainment of proper functioning condition and riparian management objectives.
- Minimize the number of unimproved stream crossings. When a culvert or bridge is not feasible, locate drive-thru (low-water crossings) on stable rock in the drainage channel. Harden crossings with rock and gravel if necessary. Use angular rock if available.
- Locate roads and limit activities of mechanized equipment within stream channels to minimize their influence on riparian areas. When stream crossing is necessary, design the approach and crossing perpendicular to the channel, where practical. Locate the crossing where the channel is well defined, unobstructed, and straight.
- Avoid placing fill material in a floodplain unless the material is heavy enough to remain in place during flood events.
- Use drainage dips instead of culverts on roads where gradients would not present a safety issue. Locate drainage dips in such a way that water will not accumulate or where outside berms will prevent drainage from the roadway.
- Locate and design drainage dips immediately upgrade of stream crossings and provide buffer areas and catchment basins to prevent sediment from entering the stream.
- Construct catchment basins, brush windrows, and culverts so as to minimize sediment transport from road surfaces to stream channels. Install culverts in natural drainage channels in a way that conforms with the natural streambed gradients so the drainage flows to outlets that discharge onto rocky or hardened, protected areas.
- Design and locate water-crossing structures in natural drainage channels to offer adequate passage for fish, provide for minimum impacts to water quality, and be capable of handling a 100-year event for runoff and floodwaters.
- Use culverts that will withstand, at a minimum, a 50-year storm event and/or that have a minimum diameter of 24 inches for permanent stream crossings and a minimum diameter of 18 inches for drains that cross roads.
- Replace undersized culverts and repair or replace damaged culverts and downspouts. Provide energy dissipaters at culvert outlets or drainage dips.
- Locate culverts or drainage dips to avoid discharging onto unstable terrain such as head walls or slumps.

- Provide adequate spacing to avoid accumulation of water in ditches or road surfaces. Place culverts on solid ground to avoid road failures.
- Use properly sized aggregate and riprap during culvert construction. Place riprap at culvert entrance to streamline water flow and reduce erosion.
- Establish adapted vegetation on all cut-and-fill slopes immediately following road construction and maintenance.
- Remove berms from the downslope side of roads, consistent with safety considerations.
- Leave abandoned roads in a condition that provides adequate drainage without further maintenance. Close abandoned roads to traffic. Physically obstruct the road with gates, large berms, trenches, logs, stumps, or boulders as necessary to accomplish permanent closure.
- Abandon and rehabilitate roads no longer needed. Leave these roads in a condition that provides adequate drainage and remove culverts.
- When plowing snow for road use during winter, provide breaks in snow berms to allow for road drainage.
- Avoid plowing snow into streams. Plow snow only on existing roads.
- Perform maintenance to conserve existing surface material; retain the original crowned or outsloped, self-draining cross-section; and prevent or remove rutted berms (except those designed for slope protection) and other irregularities that retard normal surface runoff. Avoid casting loose ditch or surface material past the shoulder where it can cause stream sedimentation or weaken slump-prone areas. Avoid undercutting backslopes.
- Do not disturb the toe of cutslopes while pulling ditches or grading roads. Avoid side casting road material into streams.
- Grade roads only as necessary. Maintain drain dips, waterbars, road crown, insloping, and outsloping, as appropriate, during road maintenance.
- Maintain roads in special management areas according to special management area guidance. Generally, retain roads within existing disturbed areas and side cast material away from the special management area.
- When landslides occur, save all soil and material usable for reclamation and stockpile it for future reclamation needs.
- Avoid side casting slide material where it can damage, overload, or saturate embankments or flow into downslope drainage courses.
- Reestablish vegetation as needed in areas where it has been destroyed due to side casting.
- Strip and stockpile topsoil before construction of new roads, if feasible. Reapply soil to cut-and-fill slopes prior to revegetation.

SURFACE-DISTURBING ACTIVITIES

- Require special design and reclamation measures, as appropriate, to protect scenic and natural landscape values. This may include transplanting trees and shrubs, mulching and fertilizing disturbed areas, removing surfacing material, imprinting, irrigating, using low-profile permanent facilities, and painting to minimize visual contrasts. Surface-disturbing activities may be moved to avoid sensitive areas or to reduce the visual effects of the proposal.
- Design aboveground facilities that requiring painting to blend in with the surrounding environment.
- Restrict surface disturbances in areas that have special topographic (steep or broken terrain and/or benches) and soil concerns in order to reduce impacts caused by soil erosion and habitat disturbance.
- Development in these areas will be considered on a case-by-case basis and will contain site-specific mitigation designed to prevent increased sediment from being transported into drainages and to prevent fragmentation of areas determined to provide important wildlife habitat.
- Excavate topsoil and subsoil only where it is absolutely necessary. Consider brush-beating, mowing, and/or parking on vegetation for surface disturbing activities.
- Contour disturbed areas to blend with the natural topography. Blending is defined as reducing form, line, and color contrast associated with surface disturbance. Disturbances should be contoured to match the original topography, where matching is defined as reproducing the original topography and eliminating the form, line, and color caused by the disturbance as much as possible.
- Implement interim reclamation concurrent with construction and site operations to the extent possible.
- Initiate final reclamation actions within six months of the termination of operations unless otherwise approved in writing by the Authorized Officer.
- Push the fill material into cut areas and over backslopes. Do not leave depressions that could trap water or form ponds unless the authorized officer has determined that dips or depressions may be used to assist reclamation and seed propagation efforts.
- Stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate at active and inactive sites during workdays, weekends, holidays, and windy conditions.
- Make certain that reclaimed soil is free of contaminants and has adequate depth, texture, and structure for successful reclamation of vegetation. Vegetation reclamation will be considered successful when healthy, mature perennials are established with a composition and density that closely approximates the surrounding vegetation, as prescribed by the BLM, and the reclamation area is free of noxious weeds.
- Install wind fencing and phase grading operations where appropriate, and operate water trucks for stabilization of surfaces under windy conditions.

- In compliance with E.O.13112 and BLM Manual 1745, and subject to future revisions to Bureau policy and guidance, where restoration, rehabilitation, or reclamation efforts (including Bureau authorized actions such as rights-of way) require reseeding activities, or use of other plant materials (such as potted plants, poles, etc.), non-native plant species would be used only if native species are not readily available in sufficient quantities. Care would be taken in selecting non-native species that are not likely to become invasive. If non-native plant species are used or identified for use in restoration, rehabilitation, or reclamation projects, the BLM, through the Bureau Plant Conservation Program and partner organizations, would work to identify and develop native replacements for the non-native species. Additionally, seed mixes used in these actions would use the closest locally adapted selections, varieties, or cultivars of native species available to improve success of the seeding effort.
- Prevent spillage when hauling material and operating non-earthmoving equipment and limit speeds to 15 miles per hour. Limit speed of earthmoving equipment to 10 mph.
- Construct a BLM-standard barbed-wire fence if necessary to exclude livestock for a minimum of at least two successful growing seasons after reclamation.
- Plan construction scheduling to minimize vehicle trips.
- Limit idling of heavy equipment to less than 5 minutes and verify through unscheduled inspections.
- Maintain and tune engines per manufacturer's specifications to perform at EPA certification levels, prevent tampering, and conduct unscheduled inspections to ensure these measures are followed.
- Include a restoration plan for habitat of special status species when the BLM determines it is appropriate. Develop the restoration plan, in consultation with BLM, for BLM approval.
- Require additional reclamation measures, if needed, based on the conditions existing at the time of abandonment.
- Carefully handle and dispose of oil and fuel from equipment and vehicles to prevent contamination of soil or water.
- Develop a spill contingency plan that identifies all actions to be taken in the event of a chemical spill, including phone numbers for Federal, State, and local agencies that must be notified.
- Time activities to avoid wet periods of the year, if possible.

RIGHTS-OF-WAY

- Use areas adjoining or adjacent to previously disturbed areas for rights-of-way whenever possible rather than traverse undisturbed vegetation communities.
- Construct waterbars or dikes on all rights-of-way and across the full width of the disturbed area, as directed by the Authorized Officer.

- Stabilize disturbed areas within road rights-of-way by implementing vegetation practices designed to hold soil in place and minimize erosion.
- Construct sediment barriers when needed to slow runoff, allow deposition of sediment, and prevent transport from the site. Employ straining or filtration mechanisms as needed for the removal of sediment from runoff.

FIRE SUPPRESSION

- Minimize surface disturbances and avoid the use of heavy earth-moving equipment where possible, on all fire suppression and rehabilitation activities, including mop-up, except where high value resources (including lives and property), are being protected.
- Install waterbars and seed all constructed fire lines with native or adapted nonnative species as appropriate and in accordance with the BLM's *Emergency Fire Rehabilitation Handbook* (BLM 1999).
- Avoid dropping fire retardant that is detrimental to aquatic communities on streams, lakes, ponds and in riparian/wetland areas.
- Locate and construct handlines to result in minimal surface disturbance while effectively controlling the fire. Hand crews should locate lines to take full advantage of existing land features that represent natural fire barriers. Whenever possible, handlines should follow the contour of the slope to protect the soil, provide sufficient residual vegetation to capture and retain sediment, and maintain site productivity.

PRESCRIBED BURNING

- Protect soil productivity by using a low-intensity burn, if possible, to accomplish stated objectives. Burn only when the organic surface or duff layer has adequate moisture to minimize effects on the physical and chemical properties of the soil. When possible, maximize the retention of the organic surface or duff layer.
- Do not pile or burn slash within riparian/wetland areas. If riparian/wetland areas are within or adjacent to the prescribed burn unit, piles should be fire lined or scattered prior to burning.
- Avoid piling concentrations of large logs and stumps when preparing the unit for burning; pile small material (3 to 8 inches in diameter) instead. Burn slash piles when soil and duff moisture are adequate to reduce potential damage to soil resources.
- All fire management activities will be subject to the BMPs identified in the *Decision Record and Resource Management Plan Amendment for Fire and Fuels Management on Public Land in New Mexico and Texas* (BLM 2004c). BMPs are identified in these documents, which can be viewed online at <http://www.nm.blm.gov>.

LIVESTOCK GRAZING MANAGEMENT

- All rangeland projects and vegetation land treatments will meet current BLM policy and objectives of the *Prehistoric Trackways National Monument Resource Management Plan*. This includes the BMPs for Surface Disturbing Activities and Invasive/Noxious Weed Management. Other BMPs may be required depending on the rangeland improvement project.
- Rangeland improvements projects and vegetation treatments are constructed as a portion of adaptive management to reduce resource conflicts and to achieve multiple-use objectives. They have been standardized over time to mitigate impacts and will be adhered to in the construction and maintenance of rangeland projects within the Planning Area. Rangeland improvements are structures, facilities, and practices intended to improve or facilitate grazing management and improve resources.
- Grazing management practices are developed through consultation on allotment-specific objectives and progress toward multiple-use objectives and sustainability of resources. Grazing management practices may include herding, grazing, and deferment periods; use of supplements; change of class of livestock; and increase or decrease of livestock numbers.

INVASIVE/NOXIOUS WEED MANAGEMENT

- Inspect and clean all surface-disturbing equipment prior to its coming onto public lands. This is especially important on vehicles from out of state or coming from a weed-infested area.
- Make sure the source of fill dirt or gravel brought onto public land is free of noxious weeds.
- Monitor construction sites for the life of the project for the presence of invasive/noxious weeds (including maintenance and construction activities). If weeds are found, the BLM Las Cruces District Office will be notified and will determine the best method for the control of the particular weed species.
- Certify all seed as noxious-weed free. Areas will be monitored to determine the success of re-vegetation and the presence of invasive/noxious weeds and will be reseeded if necessary.
- Consider livestock quarantine, removal, or timing limitations in areas infested with invasive/noxious weeds.
- Certify all seed, hay, straw, mulch, or other vegetation material transported and used on public land for site stability, rehabilitation, or project facilitation as free of all reproductive parts of noxious weeds upon the passage of a weed-free law by the State of New Mexico. All baled feed, pelletized feed, and grain used to feed livestock also shall be certified as free of the seeds of noxious weeds.
- Consider having all vehicles that travel in or out of weed-infested areas clean their equipment before and after use on public land, including off-road and all-terrain vehicles. (This precaution is recommended.)

DEVELOPED RECREATION

- Construct recreation sites and provide appropriate sanitation facilities to minimize impacts on resource values and on public health and safety and to minimize user conflicts concerning approved activities and access within an area, as appropriate.
- Minimize impacts on resource values or enhance the recreational setting and recreation experience.
- Harden sites and locations subject to prolonged/repetitive, concentrated recreational uses with selective placement of gravel or other porous materials and allow for dust abatement, paving, and engineered road construction.
- Use public education and/or physical barriers (such as rocks, posts, vegetation) to direct or preclude uses and to minimize impacts on resource values and the quality of recreation experience.
- Employ land use ethics programs and techniques such as “*Leave No Trace*” and “*Tread Lightly*” programs. Use outreach efforts of such programs to lessen needs to implement more stringent regulatory measures to obtain resource protection and a quality recreation experience.

WILDLIFE AND RIPARIAN HABITAT

- Before a surface-disturbing activity begins, the project area will be surveyed for raptor nests or active prairie dog towns. Surveys will be conducted by professional biologists approved by the Authorized Officer. All raptor nests and active prairie dog towns will be avoided by the following distances and seasonal periods:
 - Eagle – 0.5 mile, February 1-July 15
 - Prairie falcon – 0.5 mile, March 1-August 1
 - Ferruginous hawk – 0.5 mile, February 1-July 15
 - Aplomado falcon – 0.5 mile, January 1-July 31
 - Gunnison prairie dog – 0.25 mile, February 15-June 15
 - Black-tailed prairie dog – 0.25 mile, January 1-June 15
 - All other raptor species – 0.25 mile, during observed nest establishment through fledging
- Require site-specific mitigation to avoid disturbance within a half mile of occupied special status species habitat.
- Make all livestock waters on public land available to wildlife yearlong, so long as this meets grazing rotation objectives and there is no danger of damage to facilities from freezing.
- Situations where the rotation of livestock is achieved through turning off of water sources, a fence will be constructed around the watering facility to allow for opening/closing of a gate to facilitate movement of livestock. This will allow wildlife yearlong access to the watering facility. If freezing of the pipeline/trough system is a concern, fill up trough once a month during winter period to allow wildlife continued access to a water source. All watering facilities on public land will be fitted with an escape ramp to keep small mammals and birds from becoming trapped.

- Avoid constructing new roads within critical wildlife habitats. Permanent or seasonal closures may be instituted where problems exist or are expected. Where major road projects are proposed in wildlife corridors, use fencing and wildlife passes to mitigate wildlife impacts.
- Manage wildlife habitat on lands identified for disposal as a low priority, unless site specific analysis determines that changes in the existing situation have resulted in higher resource values warranting retention of these lands to protect fish and wildlife habitat values consistent with existing laws, regulations, and policies. Conduct a site specific assessment of environmental impacts before disposal of Department of Game and Fish (NMDGF).
- Construct protective exclosures/fences around riparian areas, wildlife watering facilities, and other areas of resource concern.
- Long-term land use activities will not be allowed within the species-specific buffer zones surrounding the active raptor nests or occupied prairie dog towns of the identified species. Short-term activities will be avoided within the species-specific buffer zones during the listed dates. Short-term activities will be limited to the buffer zone outside the boundary of an occupied prairie dog town and will not occur within the occupied town. All raptor nests, including those of non-listed species, will be avoided within the vicinity is defined as an activity that would begin outside a given breeding season and end prior to initiation of a given breeding season. A long-term activity is defined as an activity that would continue into or beyond a given nesting/breeding season. An active nest is defined as any nest that has been occupied in the last 7 years. A nest will be determined active or inactive by the Authorized Officer. Surveys will be conducted by professional biologists approved by the Authorized Officer.
- Ensure that all fences are constructed to the fence specifications of the BLM Socorro Field Office to mitigate impacts on wildlife.
- Ensure that escape wildlife ramps are installed and maintained on all applicable water development projects on public lands (see the BLM *Water Developments Handbook* dated November 6, 1990 and IM No. 2004-156).
- Construct all new water improvements so they are located a minimum of 30 meters away from fences or other structures likely to pose a collision threat to bats.
- Do not allow surface disturbance within 0.5 mile of the outer edge of 100-year floodplains, playas, all artificial water developments (tanks, guzzlers, etc.), and riparian habitats (seeps, arroyos, etc.). Exceptions to this requirement will be considered on a case-by case basis.
- Avoided adverse impacts on the landscape by minimizing or excluding certain surface-disturbing activities that may degrade the objectives or intent of the project in areas where habitat or rangeland enhancement projects have been implemented, with the exception of large landscape projects (prescribed burns, chemical treatments, and mechanical treatments). Exceptions to this requirement will be considered on a case-by-case basis.
- Achieve habitat enhancement by limiting and/or mitigating existing and proposed commodity uses and by proactive habitat management practices including, but not limited to, fire management; water development; chemical, mechanical, or biological brush control; and fence modifications.

- Avoid all surface-disturbing activities, permanent or temporary, during the appropriate time periods in crucial calving, lambing, kidding, and fawning areas and wintering ranges.
- Survey the area for the presence of raptor nests prior to initiating geophysical or other preliminary surveys during the raptor breeding season.
- Follow these measures when siting facilities:
 1. In areas that constitute occupied or potential aplomado falcon habitat, a protocol survey for this species will be conducted along with the above general raptor nest survey prior to surveying/flagging locations.
 2. During operations at any time, all habitat features (pinnacles, cliffs, ledges, caves, and trees and shrubs greater than 6 feet high) containing or capable of containing raptor nests or bat habitat will be avoided by vehicular traffic or other surface-disturbing activities likely to remove or destroy them, unless approved by the BLM Authorized Officer.
 3. Tree and vegetation clearing will be limited to the minimum area required.
 4. Construction activities will be timed to avoid wet periods.
 5. Power lines will be constructed to standards outlined in the most recent version of *Suggested Practices for Raptor Protection on Power Lines* published by the Edison Electric Institute/Raptor Research Foundation, unless otherwise agreed to by the Authorized Officer. The holder is responsible for demonstrating that power pole designs not meeting these standards are raptor safe. Such proof will be provided by a raptor expert approved by the Authorized Officer. BLM reserves the right to require modifications or additions to power line structures constructed under this authorization, should they be necessary to ensure the safety of large perching birds. The modifications or additions will be made by the holder without liability or expense to the United States.
 6. All equipment installed on Federal lands will be constructed to prevent birds and bats from entering them and, to the extent practical, to discourage perching and nesting.
 7. Open-top tanks, reserve pits, disposal pits, or other open pits will be required to be equipped to deter entry by birds, bats, or other wildlife.
- Continue to coordinate arroyo habitat management with other programs and activities throughout the Monument, as needed. Specific programs include Range, Wildlife, Watershed, Recreation, and Lands. Riparian and arroyo habitat values will be addressed in all surface and vegetation-disturbing actions.

VISUAL RESOURCES MANAGEMENT

BMPs to address visual resource concerns have been incorporated into the preceding resource discussions, as appropriate. To the extent practicable, existing facilities or substantial existing visual contrasts would be brought into visual resource management class conformance as the need or opportunity arises. Additional BMPs dealing with visual resource management considerations in oil and gas development can be found on the BLM Web site at www.blm.gov/bmp.

BMPs dealing with visual resource management considerations in general are available at www.blm.gov/nstc/VRM/destech.



APPENDIX F

PUBLIC SCOPING REPORT

**PREHISTORIC TRACKWAYS NATIONAL
MONUMENT**

**Resource Management Plan/
Environmental Impact Statement**

July 2010

**United States Department of the Interior
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005**



Table of Contents

Executive Summary	i
Acronyms	ii
Introduction.....	1
1.1 Overview.....	1
1.1.1 Background & Purpose and Need.....	1
1.2 Planning Area.....	2
1.2.1 Location	2
1.2.2 Description.....	2
1.3 Scoping Process	4
1.3.1 Description of Process	4
1.3.2 Mailings	5
1.3.3 Public Notices	5
1.3.4 Media Releases and Public Service Announcements.....	5
1.3.5 Web Site.....	7
1.3.6 Public Meeting.....	7
1.4 Cooperating Agencies	7
1.5 Tribal Consultation	8
Issue Summary.....	9
Comment Summary	9
2.1 Method of Comment Collection and Analysis.....	9
2.2 Summary of Public Comments Received	10
Issues Identified Prior to and During Scoping	10
2.3 Issue 1- Paleontological and Cultural Resource Research and Protection.....	10
2.3.1 Issue Questions	11
2.4 Issue 2- Interpretation and Education	11
2.4.1 Issue Questions	12
2.5 Issue 3- Travel and Access.....	12
2.5.1 Issue Questions	13
2.6 Issue 4-Habitat and Its Users	13
2.6.1 Issue Questions	13
2.7 Issue 5- Visual Resources	14
2.7.1 Issue Questions	14

2.8	Issue 6- Socioeconomic	14
2.8.1	Issue Questions	15
2.9	Issue 6- Recreation.....	15
2.9.1	Issue Questions	16
2.10	RMP/EIS Process.....	17
2.11	Issues Raised that Will Not Be Addressed.....	17
	Draft Planning Criteria.....	19
	Data Summary/Data Gaps.....	21
	Summary of Future Steps in the Planning Process	21
	For Further Information	22

TABLES

Table 1	Public Notices in Newspapers of Record.....	5
Table 2	Articles in Newspapers of Record	6
Table 3	Public Scoping Meeting Date, Location, Attendance	7

FIGURES

Figure 1	Map of Monument in relation to Las Cruces, New Mexico	3
Figure 2	Sequence of Planning Activities for the Prehistoric Trackways National Monument RMP	23

APPENDICES

Appendix A:	Notice of Intent.....	APP-1
Appendix B:	Scoping Letter and Packet	APP-3
Appendix C:	Public Notice	APP-8
Appendix D:	Public Meeting Flyer.....	APP-9
Appendix E:	BLM News Release	APP-10

Executive Summary

The Bureau of Land Management (BLM), Las Cruces District Office in Las Cruces, New Mexico is preparing the Prehistoric Trackways National Monument Resource Management Plan (RMP) and an associated Environmental Impact Statement (EIS). An RMP for public land is more effectively implemented if the management decisions made by BLM reflect the values and interests of the public. However, for this Monument, the management plan also must address and is guided by the Legislation designating the Monument.

The formal scoping process began with the publication of a Notice of Intent on January 5, 2010. This Notice indicated the Las Cruces District Office's intent to prepare an RMP, an associated EIS, and to hold a public scoping meeting in conjunction with that process. One formal scoping meeting was held on January 26, 2010 to share information about the Monument, preliminary issues, and the planning process. The BLM asked the public for comments and suggestions regarding the management of the natural, cultural, recreation, and scientific resources within the Monument. Approximately 100 people attended the public scoping meeting. BLM received 17,388 total comment submittals, of which 17,287 were a variety of repeat form letters. The themes expressed in these form letters are summarized as follows:

- the Legislation should take precedence over any multiple-use mandate
- move Off-Highway Vehicle (OHV) routes outside of the Monument in order to protect the trackways
- keep OHV trails within the Monument
- improve non-motorized access and interpretive information
- encourage public involvement, both do and do not incorporate "Expanded Boundary Possibilities for Adjacent Areas" within the RMP
- consider all cumulative impacts such as loss of motorized recreation opportunities and Community Pit #1 reclamation

The other 99 comments followed several common themes about the natural resources within the Monument and the management of those resources.

At their request, informal meetings with a number of groups and agencies have been held prior to and since the public meeting. The initial "formal scoping" period closed on February 10, 2010, and this report will address comments from this initial scoping period. Although the formal comment period has ended, BLM will continue to accept and consider all comments received throughout the planning process. The comments will become a part of the administrative record.

This Scoping Report is intended to provide a summary of the comments received, to refine the preliminary issues, and to identify new issues. The report will provide direction to the planning team in order to clearly identify issues and to aide in the development of alternatives for the environmental impact analysis.

Acronyms

ACEC	Area of Critical Environmental Concern
AMS	Analysis of the Management Situation
BLM	Bureau of Land Management
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
EIS	Environmental Impact Statement
FLPMA	Federal Land Policy and Management Act
GIS	Geographic Information System
GPS	Global Positioning System
LCDO	Las Cruces District Office
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NLCS	National Landscape Conservation System
NOI	Notice of Intent
OHV	Off-Highway Vehicle
RMP	Resource Management Plan
ROD	Record of Decision
VRM	Visual Resource Management
WSA	Wilderness Study Area

Introduction

1 Overview

Although the Prehistoric Trackways National Monument is relatively small (5,280 acres), there is considerable public interest in managing the area. Conflicting opinions regarding Off-Highway Vehicle (OHV) use and protection of paleontological resources in the Monument are of interest. In order to address these uses, resource protection, long-term management of the area, and to fully analyze all impacts, the Bureau of Land Management (BLM) Las Cruces District Office (LCDO) in New Mexico is preparing a Resource Management Plan (RMP) for the Prehistoric Trackways National Monument (Monument) as required by the Omnibus Public Lands Management Act of 2009 (Legislation). This Legislation, signed into law by the President on March 30, 2009, states: “Not later than 3 years after the date of enactment of this Act, the Secretary shall develop a comprehensive management plan for the long-term protection and management of the Monument.” Under the National Environmental Policy Act (NEPA) of 1969 (Public Law 91-190) and the Council on Environmental Quality (CEQ) regulations for implementing NEPA, Federal agencies are required to consider the environmental impacts of their proposed actions prior to taking action. Pursuant to NEPA, the BLM will prepare an Environmental Impact Statement (EIS) associated with the Monument RMP.

The BLM understands that an RMP for public land is more effectively implemented if the management decisions made by the BLM reflect the values and sentiment of the public. The first step in the BLM’s planning process is to identify issues from agency and public comments. These issues were identified during scoping, a process intentionally conducted early in the planning process to solicit comments and translate the information gathered into meaningful input into the planning process and to guide the BLM’s actions.

In accordance with 43 Code of Federal Regulations (CFR) 1610.2(d), the BLM must document the results of scoping. The BLM’s land use planning guidance (Handbook H-1601-1) requires the preparation of a Scoping Summary Report to capture public input into one document. This report summarizes the comments received during the formal external scoping period. It also must describe the issues and management concerns derived from the public scoping meeting, internal scoping meetings, the Preparation Plan; and discuss how these comments will be incorporated into the RMP. In addition, this report provides information about the purpose and need for the RMP/EIS, the Planning Area, and BLM’s collaborative planning process. This includes a description of the scoping process; an explanation of the planning criteria developed to guide and direct the planning effort; a brief description of the data available for the studies and data needs; and summary of the future steps in the planning process.

1.1 Background & Purpose and Need

The Monument was established by Congress in the Legislation as a unit of the National Landscape Conservation System (NLCS). It encompasses 5,280 acres and was established to conserve, protect, and enhance the unique and nationally important paleontological, scientific, educational, scenic, and recreational resources and values. The Legislation that designated the Monument directs the BLM to develop a management plan for the Monument. Current BLM policy dictates that for units of the NLCS,

of which the Monument is a part, a comprehensive management plan will be developed in the form of a “stand alone” RMP and an associated EIS.

The purpose of the Monument RMP is to address management of the natural, biological, and cultural resources and resource uses while protecting paleontological resources and being consistent with the Legislation. Specific legislative points to be addressed in the RMP include the following:

- Manage the Monument in a manner that conserves, protects, and enhances the resources and values of the Monument...
- The management plan...shall describe the appropriate uses and management of the Monument, consistent with the provisions of the Legislation.
- The use of motorized vehicles in the Monument shall be allowed only on roads and trails designated for use by motorized vehicles under the management plan.
- The Secretary may issue permits for special recreation events involving motorized vehicles within the boundaries of the Monument to the extent the events do not harm paleontological resources; and subject to any terms and conditions that the Secretary determines to be necessary.

The associated RMP/EIS will propose alternative solutions to planning issues, in addition to identifying potential impacts associated with each alternative. The RMP/EIS will also identify BLM’s preferred alternative, which will be based on both public input and BLM’s need to adhere to current laws, regulations, Legislation, and planning guidance. The direction developed in the plan will facilitate management of the Monument as a component of the NLCS.

1.2 Planning Area

1.2.1 Location

The Monument contains 5,280 acres of public land in Doña Ana County, New Mexico, and is approximately 5 miles northwest of Las Cruces in the southern third of the Robledo Mountains, see *Figure 1*.

1.2.2 Description

In 1987, a major deposit of Paleozoic Era fossilized footprint megatracks was discovered in the Robledo Mountains. The trackways contain footprints of numerous amphibians, reptiles, and insects (including previously unknown species), plants, and petrified wood dating back approximately 280 million years. This collectively provides new opportunities to understand animal behaviors and environments from a time predating the dinosaurs. It is also a popular regional recreation area for hiking, mountain biking, and off-highway use (OHV), and through special use permitting, it is used for annual OHV events, which have drawn as many as 1,000 participants for a multiple-day event.

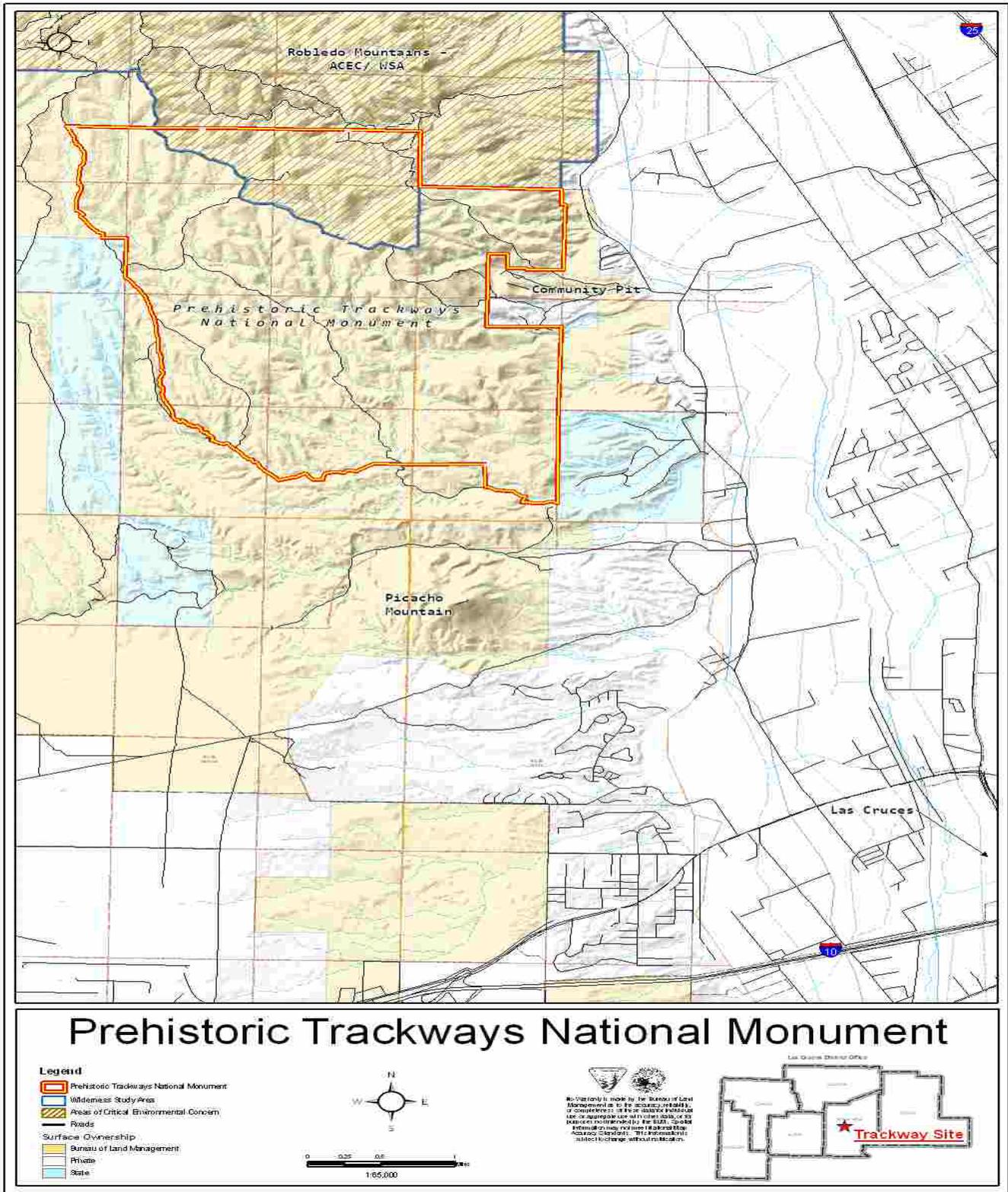


Figure 1 Map of Monument in relation to Las Cruces, New Mexico

1.2.2.1 Description of the Monument and Planning Area

The Planning Area is defined as Doña Ana County, which includes the Prehistoric Trackways National Monument, 8 Wilderness Study Areas (WSAs), 11 Areas of Critical Environmental Concern (ACECs), and several towns. The Planning Area includes both public, private, other government land, and consists of approximately 2,436,595 acres. The Decision Area, that is the area for which decisions will be made in the RMP, consists entirely of the 5,280 acres of public land, both surface and subsurface, within the designated National Monument.

1.3 Scoping Process

1.3.1 Description of Process

The formal scoping process began with the publication of a Notice of Intent (NOI) in the Federal Register on January 5, 2010 (Volume 75, Number 2, Pages 431-432). The NOI is contained in Appendix A and on the project web site, referenced below. This Notice indicated the Las Cruces District Office's intent to prepare an RMP, an associated EIS, and to hold a public scoping meeting in conjunction with that process. Press releases, flyers, paid advertisements in newspapers, and the BLM New Mexico, Las Cruces District project web site, http://www.blm.gov/nm/st/en/fo/Las_Cruces_District_Office/trackways_rmp.html announced the public scoping period and public scoping meeting also.

One formal scoping meeting was held to share information about the Monument, preliminary issues, and the planning process. The BLM asked the public for comments and suggestions regarding the management of the natural, cultural, recreation, and scientific resources within the Monument. At their request, informal meetings with a number of groups and agencies have been held prior to and since the public meeting. The initial "formal scoping" period closed on February 10, 2010, and this report will address comments from this initial scoping period. Although the formal comment period has ended, BLM will continue to consider all comments and information on resource management issues received during the planning process. The comments will become a part of the administrative record.

During scoping, preliminary planning issues and criteria were identified by BLM personnel, other agencies, and in meetings with individuals. These planning issues and criteria will be used to guide the identification and development of management alternatives. Preliminary planning issues and criteria may be refined or new ones added as a result of the public scoping process.

This scoping report describes the public scoping process for the Prehistoric Trackways National Monument RMP/EIS. It documents outreach efforts, summarizes the comments received, and identifies any issues raised and suggested alternatives. These issues are the scope of analysis for the RMP. The document does not make decisions nor does it set forth policies.

1.3.2 Mailings

An initial public scoping packet was sent to approximately 337 interested parties announcing the BLM’s intent to prepare an RMP/EIS for the Monument. Throughout the scoping period, an additional 82 scoping packets were mailed. The mailing list included adjacent landowners, grazing permittees, special recreation permittees, interested public, local agencies, government representatives, tribes, and interested organizations. The letter announced the beginning of the formal scoping period, the public Open House, and also requested comments regarding the Plan. Inserted in this mailing was a preaddressed “Scoping Comment Form” that interested individuals could complete and return to BLM. The form contained two questions, plus ample writing space to guide individuals as they submitted their comments regarding the Monument. The public scoping letter is presented in Appendix B.

1.3.3 Public Notices

Public notices in the form of Display Ads were published in the newspapers of record. Table 1 shows the newspapers that printed the public notice (contained in Appendix C) on the dates indicated.

Table 1 Public Notices in Newspapers of Record

TABLE 1 Public NOTICES IN NEWSPAPERS OF RECORD		
PUBLICATION DATE	PUBLICATION	PUBLICATION LOCATION
January 17, 2010	<i>Las Cruces Sun-News</i>	Las Cruces, NM
January 15, 2010	<i>Las Cruces Bulletin</i>	Las Cruces, NM

1.3.4 Media Releases and Public Service Announcements

Announcement regarding the public scoping meetings and scoping process were issued as news releases on January 5 and January 19, 2010, to local and regional newspapers, radio stations and TV stations in New Mexico.

1.3.4.1 Newspapers

Articles and feature stories announcing the Public Scoping Open House and scoping process were published in local newspapers.

Table 2 Articles in Newspapers of Record

TABLE 2. ARTICLES IN NEWSPAPERS OF RECORD		
PUBLICATION DATE	PUBLICATION	PUBLICATION LOCATION
January 7, 2010 January 8, 2010 January 25, 2010 January 27,2010	<i>Las Cruces Sun-News</i>	Las Cruces, NM
January 22, 2010	<i>Las Cruces Bulletin</i>	Las Cruces, NM
January 10, 2010	<i>Albuquerque Journal</i>	Albuquerque, NM

1.3.4.2 Informational Flyers

Flyers were distributed throughout Las Cruces, which advertised the location and time of the Public Scoping Open House. An example of the flyer can be found in Appendix D.

Locations where flyers were posted are as follows:

- Mesilla Park Post Office
- Thomas Branigan Library
- Las Cruces Natural History Museum
- Las Cruces BLM front desk
- Mesilla Valley Bosque State Park
- Doña Ana County Government Center
- Picacho Post Office, Las Cruces
- Dripping Springs Recreation Area (BLM)

1.3.4.3 Radio Stations

On January 21, 2010 at 4:00 p.m. the Prehistoric Trackways National Monument was the feature story for the live radio talk show called “The Bulletin on the Radio” on the local radio station, KSNM AM570. The planning process, public scoping meeting, and the paleontological resources were discussed for approximately an hour.

1.3.5 Web Site

BLM prepared news releases to introduce the project, announce the scoping period, and publicize the scoping meeting. The news releases and informational flyer were posted on the New Mexico BLM project web site (see BLM News Releases contained in Appendix E).

1.3.6 Public Meeting

BLM hosted one public meeting on January 26, 2010 to provide planning and NEPA information to the public and agencies and allow them to identify issues and concerns to BLM. The Public Scoping Meeting was advertised on the BLM project web site and through the local media. The meeting was conducted in an open-house style format including display materials concerning preliminary planning issues, natural resources, and the planning activities. Resource specialists were on-hand for discussion. Each individual was asked to sign in for the meeting and/or to request various materials that will be distributed throughout the planning process. Those not already on the mailing list were added to the project mailing list. Scoping packets were available to all who attended the public meeting and was also available on the BLM's web site. The public scoping packet is located in Appendix B.

As summarized in Table 3, approximately 100 members of the public attended the public meeting.

Table 3 Public Scoping Meeting Date, Location, Attendance

TABLE 3. PUBLIC SCOPING MEETING DATE, LOCATION, AND ATTENDANCE		
MEETING DATE	MEETING LOCATION	ATTENDANCE
January 26, 2010	Las Cruces, NM	100

1.4 Cooperating Agencies

In January and February 2010, letters were sent to the following agencies inviting recipients to become a cooperating agency for this project:

- City of Las Cruces
- Doña Ana County
- New Mexico Museum of Natural History and Science
- New Mexico Department of Game and Fish
- New Mexico State Parks

By definition, a cooperating agency is any Federal, state, or local government agency or Indian tribe that has either jurisdiction by law or special expertise regarding environmental impacts of a proposal. As a cooperating agency, it provides the formal framework for governmental units to engage in active collaboration with the lead Federal agency during the NEPA process. Although the request was sent to these agencies, no agency has pursued cooperating agency status as of yet.

1.5 Tribal Consultation

In February 2010, the BLM initiated consultation with the tribes. Included in the consultation letter was a request for the recipients to become a cooperating agency for the Monument RMP/EIS. The invitation will remain open to tribes as planning continues. Consultation/cooperating agency letters were sent to the following tribes:

- Fort Sill Apache Tribe of Oklahoma
- Comanche Indian Tribe
- White Mountain Apache
- Ysleta del Sur Pueblo
- Pueblo of Isleta
- Mescalero Apache Tribe
- Navajo Nation

Several tribes expressed interest in continued notification of planning activities, but no tribe has requested Cooperating Agency Status.

Issue Summary

2 Comment Summary

All scoping comments documented in this report were received or postmarked by March 23, 2010. However, BLM will continue to accept scoping comments throughout the planning process. BLM received 17,388 total submittals, of which 17,287 were a variety of repeat form letters. In summary, the themes expressed in these form letters included:

- the Legislation should take precedence over any multiple-use mandate
- move OHV routes outside of the Monument in order to protect the trackways
- keep OHV trails within the Monument
- improve non-motorized access and interpretive information
- encourage public involvement
- both do and do not incorporate “Expanded Boundary Possibilities for Adjacent Areas” within the RMP
- consider all cumulative impacts such as loss of motorized recreation opportunities and Community Pit #1 reclamation.

The other 99 comments followed several common themes about the natural resources within the Monument and the management of them.

2.1 Method of Comment Collection and Analysis

Individuals were encouraged to submit comments in writing to the Las Cruces District Office. Comments were collected through various sources including:

- Regular US Mail
- E-mail
- Fax
- Hand-delivery

Comments were organized by letter and issue. A majority of individual comment letters included numerous distinct comments. The form letters and the associated comments were analyzed and documented once per associated form letter, which resulted in a total of 101 comment forms/letters analyzed. There were a total number of 152 consolidated comments depicted for analysis. After all comments were received, reviewed, and documented, individual comments were entered into a database

to assist with the analytical review. The database is structured to depict comments into separate resource categories (issues), document the source of the submittal; and consolidate comments of those previously mentioned.

Then the issues were placed into one of three categories.

1. Issues to be resolved in the plan;
2. Issues to be resolved through policy or administrative action; or
3. Issues beyond the scope of the plan.

The focus of this report is to thoroughly review the comments and, based on this review, develop overarching themes in order to develop a list of possible alternatives based on public, BLM, and collaborative and cooperative agency and tribal input.

2.2 Summary of Public Comments Received

For this scoping report, the specific comments were grouped into similar topics and briefly summarized. As a result of the high volume and similarity of many comments, included is only a summary of the comments from each category and does not include all of the comments, suggestions, or concerns raised by the public. For a comprehensive summary, please refer to the Monument RMP Scoping Comment Table S-1. Copies of original comments are available for review at the Las Cruces District Office.

Comments were categorized into six planning issues. The following section represents a summary of public comments provided to the BLM during the public scoping period. Questions that need to be answered to aid in resolving the comments have been generated to help focus development of planning criteria, development of alternatives, and guide impact analysis.

Issues Identified Prior to and During Scoping

2.3 Issue 1- Paleontological and Cultural Resource Research and Protection

The Paleontological Resource section of the RMP will include a discussion of paleontological resources within the Monument. Resource protection and research will be an integral part of this section due to the Legislation stating that the BLM will provide for research and protection of paleontological resources. Cultural resource management also involves site protection, surveys for identification and evaluation, scientific research, interpretive development, and public education. A summary of the comments for paleontological and cultural resources follows.

- In favor of protecting the paleontological resources while allowing research to continue
- Emphasize protecting Monument objects as stated in the (paleontological, scientific, educational, scenic, and recreational resources) over other uses
- Preserve the ecology and natural resources to the extent that is compatible with scientific research activities

- Preserve cultural resources
- Make fossilized areas of the Monument off-limits to vehicles
- Improve awareness of cultural resources
- Provide adequate enforcement

2.3.1 Issue Questions

The following questions need to be addressed in resolving the Paleontological and Cultural Resources issue:

- How will paleontological and cultural objects located within the Monument be protected?
- How will BLM address inadvertent paleontological discoveries within the Monument?
- How will user groups be educated through paleontological objects located within the Monument?
- How will paleontological and cultural objects contained within the Monument be interpreted?
- Will the Plan encourage the preservation for *in situ* paleontological objects and sites?
- How can the public become more invested in the protection of these resources?
- What is a long-term strategy for the implementation of resource protection?
- How will paleontological resources be managed to allow for research and preservation to co-exist?
- What is the strategy for the identification of paleontological resources in un-surveyed areas?
- Where and how should paleontological resources be curated?
- Where and how should paleontological resources be displayed to allow for viewing and education by the local public?
- How will Native American interests and knowledge be conserved, encouraged, fostered, respected, and applied to interpretation of sites?
- What type of law enforcement and monitoring is necessary to protect the Monument's resources?

2.4 Issue 2- Interpretation and Education

As stated in the Legislation, “the Secretary shall provide for public interpretation of, and education and scientific research on, the paleontological resources of the Monument...” A majority of the comments supported interpretation of the trackways and other resources within the Monument. The ideas for interpretation and education varied from interpretive park rangers, signs, visitor center, brochures, and websites. A summary of the comments follows.

- Include interpretive information to improve visitor experiences
- Have interpretive park rangers
- Display the paleontological resources *in-situ*
- Construct an on-site visitor center
- Do not construct an on-site visitor center
- Create an appealing and educational website
- Prepare publications on the resources
- Permanent housing for the Monument personnel and/or volunteers

2.4.1 Issue Questions

The following questions need to be addressed in resolving the Interpretation and Education issue:

- How should educational/interpretation opportunities be accomplished?
- Where should visitors increase their knowledge of the Monument's resources?
- Is there an opportunity for local community members to assist with monitoring?

2.5 Issue 3- Travel and Access

Comments regarding travel and access were widely varied and covered many concerns. Travel and access comments varied from wanting improved access to keeping the Monument primitive. Others want the Monument to be closed to vehicular access. Comments associated with this issue are as follows.

- Put specific conditions on all forms of motorized use
- Consider and improve access from Interstate 10 and/or Rocky Acres Trail
- Build a parking lot
- Create a driving route with short hikes to the resources
- Keep the roads and trails primitive
- Build a fence to keep vehicular traffic out of the Monument
- Install signs to inform users to stay on existing, designated routes

2.5.1 Issue Questions

The following questions need to be addressed in resolving the Travel and Access issue:

- What is the current demand for motorized and non-motorized access and what is it likely to be in the future?
- What is the best way to provide for that access?
- Is there a need to provide vehicle access to exposed or excavated locations?
- Where should the main access points of the Monument be located?
- How will motorized vehicular use be managed within the Monument?

2.6 Issue 4-Habitat and Its Users

BLM guidance requires that desired outcomes for vegetative resources are identified in land use plans. This includes desired mix of vegetative types, structural stages, and landscape functions, and to provide for wildlife habitat and livestock forage. The Robledo Mountains contain habitat that is associated with a great number of mammals, birds, reptiles and several plants and other wildlife species. Currently and prior to the enactment of the Legislation, the Monument is grazed by livestock. The Legislation states BLM “may allow grazing to continue in any area of the Monument in which grazing is allowed before the date of enactment of this Act, subject to applicable laws (including regulations).” There are no known special status species that are specific to the Monument although the habitat is present.

Only a few comments were made on vegetation, wildlife, and livestock grazing.

- Protect the cactus
- Protect the wildlife
- Consider mule deer for hunting in the Plan
- Cattle grazing should not be allowed or set more stringent limits in order to promote natural plant communities
- Allow cattle grazing in the Monument
- Remove cattle in the Monument

2.6.1 Issue Questions

The following questions need to be addressed in resolving the Habitat and Its Users issue:

- Are special status species plants present, and if so, how should they be managed?
- What is current grazing use within the Monument boundary and can this use be continued without impacting Paleozoic resources?

- Will public use of the Monument impact livestock grazing?
- What are the economic impacts to the grazing permittee due to the Monument designation?
- How will habitat be managed for vegetation, wildlife and livestock?
- Are special status wildlife species and associated habitat present and if so, how should they be managed?
- How will management of domestic livestock be accomplished in consideration of wildlife needs?
- How can public safety be assured while providing the full spectrum of recreational opportunities?

2.7 Issue 5- Visual Resources

BLM guidance requires that visual resources are managed in accordance with visual resource management (VRM) objectives. Currently, the Monument is classified and managed as VRM Classes I, II, and III. A limited number of comments were received on visual resources and are as follows.

- Preserve visual resources

2.7.1 Issue Questions

The following list identifies issue statements for Visual Resources:

- How will the visual nature of the Monument be preserved while providing protection for the resources within the Monument?
- How will the visual nature of the Monument be preserved while providing areas for paleontological research and recreational use?

2.8 Issue 6- Socioeconomic

Comments regarding the opportunities for economic benefit to the community via the Monument were noted by a number of citizens. A representative group of comments follows.

- There are opportunities for cultural heritage economic opportunities with the local community
- Consider local guides, horseback tours, safaris, etc.
- There is a socioeconomic benefit to Las Cruces from having visitor services located locally
- There are socioeconomic benefits to Las Cruces from having the existing OHV trails
- Include tourism in the Plan

2.8.1 Issue Questions

The following questions need to be addressed in resolving the Socioeconomic issue:

- What opportunities for economic growth are available for the communities that are associated with the Monument?

2.9 Issue 6- Recreation

The Robledo Mountains have historically been used for many recreational pursuits such as hiking, biking, OHV use, fossil hunting, target-practicing, hunting, and camping. The Legislation states that recreational resources and values within the Monument will be conserved, protected, and enhanced. It also states *“The Secretary may issue permits for special recreation events involving motorized vehicles within the boundaries of the Monument- (A) to the extent the events do not harm paleontological resources; and (B) subject to any terms and conditions that the Secretary determines to be necessary.”* A concern in years past with the issuance of a BLM special recreation permit for an annual OHV event called the Chile Challenge was about spectators in reference to their safety and the possibility of resource damages. With the designation of the Monument, along comes the quandary of entrance fees also.

A summary of the comments follows:

- Continue to allow recreational activities within the Monument
- Restrict target shooting within the Monument
- Cross-country dog, horse, and foot traffic should be allowed
- Dispersed camping should continue to be allowed
- Disperse the recreation instead of concentrating it
- Prevent any group event that risks damage to the resources
- Recreational use should be restricted to hiking only
- Maintain primitive atmosphere
- Move the Chile Challenge outside the Monument
- Continue the Chile Challenge as it has in the past
- Evaluate alternatives for this event, which would still allow the Chile Challenge and protect the Monument
- Restrict the Chile Challenge to participants only

- Observers of the OHV event should be restricted to an observation site
- Build a self-pay station at the parking lot
- No fees

2.9.1 Issue Questions

The following questions need to be addressed in resolving the Recreation issue:

- How can recreational demands be met while ensuring that irreplaceable paleontological and cultural resources are not damaged?
- What range of recreational opportunities should be provided to meet visitors' needs?
- What facilities will be needed to support the full spectrum of recreational opportunities provided by Monument resources?
- Should the Monument be advertised for tourism and recreation?
- What level/amount of use is appropriate for each recreational use to allow for varied activities and to meet resource objectives?
- How should recreationists be educated to protection of the Monument's resources?
- How should multiple recreational uses (for foot, horseback, motorized, mechanized) be managed?
- How can primitive recreational experiences be provided within Monument?
- How is firearm use, including hunting, to be managed?
- How will law enforcement on Monument land affect hunting?
- How will safety risks resulting from hunting be managed?
- How will transportation associated with hunting and game retrieval be addressed?
- What is the current demand for off-highway use (OHV)?
- What range of recreational opportunities should be provided to meet OHV user needs?
- What is the best way to accommodate this use and still be consistent with the Legislation?
- Should OHV use continue within the Monument boundary?
- What learning opportunities about the Monument's natural resources will be available for OHV users?
- During special permitted events how will spectators be managed in order to protect the Monument's resources?
- How should the Special Recreation Permit System be addressed and managed to meet the goals of the Monument?
- Should the BLM charge an entrance fee for the Monument? If yes, how, where, and how much?

2.10 RMP/EIS Process

Several comments received were in the interest of how the BLM should manage the RMP/EIS process. A representation of the comments follows.

- Maximize public involvement in the RMP process
- Make analysis available to the public before issuing the Draft RMP
- Planning Area should be limited to the Decision Area
- Incorporate “Cumulative Loss of Motorized Recreation Opportunities”, this would include more than just BLM land
- Take a landscape view approach
- Planning process needs to approach it as if there are no monetary constraints for ideas
- Compromise, so all parties get something

2.11 Issues Raised That Will Not Be Addressed

As a result of scoping, the BLM has refined the preliminary planning issues and has determined which issues are to be carried forward and which issues will not be addressed in the RMP process.

Some comments received refer to implementation decisions made through administrative or resource program guidance and do not require land use planning decisions in order to be resolved. Other comments are beyond the scope of this planning effort and/or outside of the BLM’s decision making authority (Authority is with another agency or entity).

Comments urging the BLM to organize or support a volunteer and/or advisory group for the Monument were documented in the Scoping Report Summary Table, but will not be addressed in the RMP/EIS. Such actions can be resolved through administration or policy action. The BLM is committed to coordinating and collaborating with local groups, clubs, educational institutions, and agencies to promote the resources of the Monument.

A management concern for the BLM is the possibility of the Monument boundary changing due to new Legislation. This concern was mentioned in the Scoping Packet to bring to light this possibility. There were several comments regarding this issue stating that BLM should not consider upcoming Legislation in the RMP. This issue will be documented in the RMP as an Issue Considered, but Not Further Analyzed.

Actions regarding the adjacent Community Pit #1 are beyond the scope of the RMP because the Community Pit #1 is outside the RMP Decision Area. Cumulative Impacts from the actions taken in Community Pit #1 will be addressed in the RMP/EIS.

The Legislation allows the Secretary of the Interior to make minor boundary adjustments to the Monument if additional paleontological resources are discovered on public land adjacent to the Monument. The Secretary of the Interior has the authority to make these adjustments, outside the RMP/EIS process. This issue is beyond the scope of this planning effort and will not be addressed in detail in the RMP.

As discussed earlier in this document, the development of the Monument Plan will occur in the following phases according to the BLM Land Use Planning Handbook, H-1601:

- Making pre-scoping preparations and organizing the staff
- Identifying issues and data gaps, conducting scoping, and completing a Scoping Report
- Formulating alternatives, doing impact analysis, and identifying mitigation measures, monitoring and evaluation requirements
- Preparing and releasing the Draft Monument Plan/EIS
- Conducting public review and comment on Draft Monument Plan/EIS
- Analyzing public comment and preparing the Proposed Monument Plan and Final EIS
- Releasing the Proposed Monument Plan/Final EIS and initiating the protest period and Governor's consistency review
- Responding to any protests
- Completing and releasing the approved Monument Plan/EIS/ROD

The public are encouraged to participate throughout the planning process and the BLM is mandated to support and allow for public participation and review.

Draft Planning Criteria

The BLM's land use planning guidance (Handbook H-1601-1) states that planning criteria are the constraints or ground rules that guide and direct the development of the plan. The draft planning criteria ensure that plans are tailored to the identified issues and ensure that unnecessary data collection and analyses are avoided. Draft planning criteria for the Monument RMP/EIS are as follows:

- The RMP will be in compliance with the Federal Land Policy and Management Act (FLPMA), NEPA, New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management and all other applicable laws, regulations, and policies.
- The RMP will be in compliance with the Omnibus Public Land Management Act of 2009 (Legislation). While the multiple-use mandates of FLPMA, NEPA, and all other applicable laws, regulations, and policies will be followed to the extent appropriate, the provisions of the Legislation will prevail in managing the Monument.
- The Monument Plan will be in compliance with the Potential Fossil Yield Classification (PFYC) Manual and Handbook.
- Land use decisions in the Monument Plan will apply to the surface and subsurface estate managed by the BLM.
- For program-specific guidance for decisions at the land use planning level, the process will follow the BLM's policies in the Land Use Planning Handbook, H-1601.
- BLM staff will strive to make decisions in the plan compatible with the existing plans and policies of adjacent local, state, and Federal agencies and local American Indian tribes, as long as the decisions are consistent with the Legislation.
- The BLM and cooperating agencies will jointly develop alternatives for resolution of resource management issues and management concerns.
- BLM staff will work cooperatively and collaboratively with cooperating agencies and all other interested groups, agencies, tribal entities, and individuals.
- The planning process will provide for ongoing consultation with American Indian tribal governments and the public regarding strategies for protecting recognized traditional uses and heritage resources.
- Broad-based public participation and collaboration will be an integral part of the planning process.
- In the RMP, the BLM will recognize the state's responsibility and authority to manage wildlife. The BLM will consult with the New Mexico Department of Game and Fish.
- The Monument Plan will recognize valid existing rights.

- The Monument Plan will incorporate, where applicable, management decisions brought forward from existing planning documents.
- The BLM will consider public welfare and safety when addressing hazardous materials and fire management.
- Wilderness Study Areas will continue to be managed under the BLM's Interim Management Policy for Lands under Wilderness Review (IMP) until Congress either designates all or portions of the WSAs as wilderness or releases the land from further wilderness consideration.
- Where practicable and timely for the planning effort, the best available scientific information, GIS and metadata information will meet Federal Geographic Data Committee (FGDC) standards, as required by Executive Order 12906. All other applicable BLM data standards will also be followed.
- Fire management strategies will be consistent with the Las Cruces District Fire Management Plan (2009)
- Planning and management direction will focus on the relative values of resources and not the combination of uses that will give the greatest economic return or economic output.
- Actions must comply with all applicable laws and regulations and must be reasonable, achievable, and allow for flexibility while supporting adaptive management principles.
- The Economic Profile System (EPS) will be used as one source of demographic and economic data for the planning process. EPS data will provide baseline data and contribute to estimates of existing and projected social and economic conditions.
- The Monument Plan will identify specific goals, objectives, and actions for the use, conservation, protection, and possible restoration of the Monument's resources.
- The Monument Plan will identify Best Management Practices and/or mitigation measures to be applied to existing uses and planned uses to ensure protection of the Monument's objects, such as the paleontological, scientific, educational, scenic, and recreational resources and values of the Monument.

As stated in Instruction Memorandum No. 2009-215, "according to Section 302(a) of FLPMA, the National System of Public Lands is to be managed under the principles of multiple use and sustained yield "except that where a tract of such public land has been dedicated to specific uses according to any other provisions of law it shall be managed in accordance with such law." This section of FLPMA directs that when an area of public land is set aside by a presidential proclamation issued under the Antiquities Act of 1906 or an Act of Congress, the designating language is the controlling law. Therefore, as a general rule, if the management direction of the proclamation or Act of Congress conflicts with FLPMA's multiple-use mandate, the designating language supersedes that section of the FLPMA."

Data Summary/Data Gaps

Geographical Information System (GIS) maps are the building blocks to quantify resources and display information during alternative formulation. Existing and available resource information will be used in formulating resource objectives and management alternatives. Additionally, the data will be used as the basis for analyzing unresolved conflicts. Most of this information needs to be compiled and put into digital format for use in the planning process and developing resource maps. This must be done before actual analysis can begin.

Data gaps were not specifically identified during scoping; however, data for GIS layers associated with the Las Cruces District Office are routinely updated and can be found in the Las Cruces GIS Corporate Data List.

Additional information on the geospatial database and development, GIS applications, and data standards is contained in the Prehistoric Trackways National Monument RMP Preparation Plan (January 2010), which is available upon request.

Summary of Future Steps in the Planning Process

A concurrent step in the planning process is to complete the “Analysis of the Management Situation” (AMS). The AMS analyzes available inventory data, portrays the existing management situation, and identifies management opportunities to respond to identified issues. As stated in 43 CFR 1610.4-4, this is the basis for formulating reasonable alternatives, including the types of resources for development or protection. This analysis will also result in identification of the “No Action Alternative” - the baseline (current) management condition, which includes management designated thru the Legislation.

Following development of the AMS and the Scoping Report, the next phase of the BLM’s planning process is to develop management alternatives based on the issues presented in the Issue Summary section of this report. These alternatives will address planning issues identified during both internal and external scoping and will be designed to meet the goals and objectives developed by the interdisciplinary team. In compliance with NEPA, CEQ regulations, and the BLM planning regulations and guidance, alternatives should be reasonable and capable of implementation. The BLM will also continue to meet with collaborating agencies, interested tribes, community groups and individuals during development of the alternatives.

A detailed analysis of the alternatives will be documented in a Draft RMP/EIS. Based on the analyses of the alternatives, the BLM’s Preferred Alternative will then be selected. The Preferred Alternative, a stand-alone Alternative, is often made up of a combination of management options from the various alternatives to provide the best management for the resources and Monument objects, which would also implement the guidance from the Legislation.

Although the BLM welcomes public input at any time during the planning process, the next official public comment period will begin when the Draft RMP/EIS is published, which is anticipated for Spring 2011. The draft document will be widely distributed to elected officials, regulatory agencies, and members of the public, and will be available on the project website (http://www.blm.gov/nm/st/en/fo/Las_Cruces_District_Office/trackways_rmp.html).

The availability of the draft document will be announced via a Notice of Availability in the Federal Register and local news media. A 90-day public comment period will follow. A public meeting will be held during this 90-day period.

At the conclusion of the public comment period, the Draft RMP/EIS will be revised as necessary based on public comment. A Proposed RMP/Final EIS will then be published. The availability of the proposed document will be announced in the Federal Register, and a 30-day public protest period will follow. Concurrently, the Governor of New Mexico will review the document for consistency with approved state or local plans, policies, or programs. At the conclusion of the public protest period and Governor's consistency review, the BLM will resolve all protests and any inconsistencies and revise the document as needed. The Record of Decision/RMP will be approved by the State Director and published. The availability of these documents will be announced in the Federal Register and local news media. Figure 2 outlines the major milestones of the Monument RMP/EIS planning process and public participation. All publications, including this report, newsletters, the Draft RMP/EIS, and the Notices of Availability, will be available on the official Prehistoric Trackways National Monument RMP web site (http://www.blm.gov/nm/st/en/fo/Las_Cruces_District_Office/trackways_rmp.html) as they are completed.

For Further Information

The public is invited and encouraged to participate throughout the planning process for the RMP. Some ways to participate include:

- Reviewing the progress of the RMP at the official Prehistoric Trackways National Monument RMP/EIS web site at http://www.blm.gov/nm/st/en/fo/Las_Cruces_District_Office/trackways_rmp.html
- The website will be updated with information, documents, and announcements throughout the duration of the RMP preparation; and
- Requesting to be added to or to remain on the official RMP project mailing list in order to receive future mailings and information.

Anyone wishing to be added to or deleted from the distribution list or requesting further information may e-mail their request to Lori_Allen@blm.gov or contact Lori Allen, RMP Planner at (575) 525-4454. Please provide your name and mailing address.

Sequence of Planning Activities

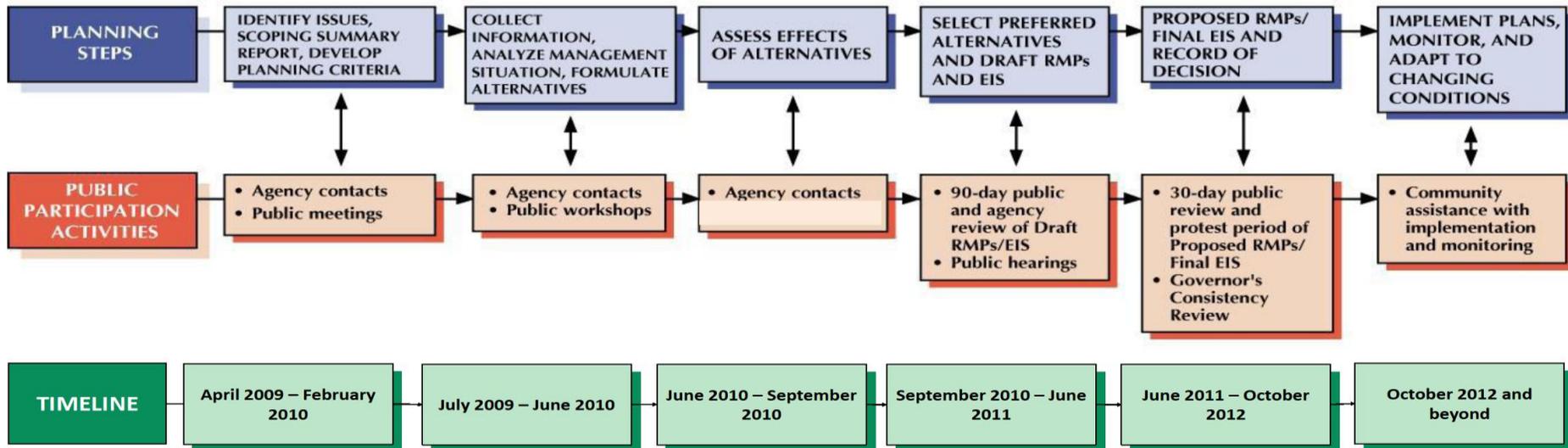


Figure 2 Sequence of Planning Activities for the Prehistoric Trackways National Monument RMP

Appendix A: Notice of Intent

until February 19, 2010. The date(s) and location(s) of any scoping meetings will be announced at least 15 days in advance through local media, newspapers, and the BLM Web site at: http://www.blm.gov/ut/st/en/fo/cedar_city/planning.html. In order to be considered in the Draft EIS, all comments must be received prior to the close of the scoping period or 15 days after the last public meeting, whichever is later. The BLM will provide additional opportunities for public participation upon publication of the Draft EIS.

ADDRESSES: You may submit comments related to the Sigurd-Red Butte 345 Transmission Line Project by any of the following methods:

- *Web site:* http://www.blm.gov/ut/st/en/fo/cedar_city/planning.html.
- *Mail:* Bureau of Land Management, Cedar City Field Office, 176 East D.L. Sargent Drive, Cedar City, Utah 84721, Attention: Lucas Lucero.

- *E-mail:* utsrbproj@blm.gov.

Documents pertinent to the right-of-way (ROW) application for the transmission line project may be examined at:

- U.S. Forest Service, Dixie Office, 1789 North Wedgewood Lane, Cedar City, Utah 84721.
- U.S. Forest Service, Fishlake Office, 115 East 900 North, Richfield, Utah 84701.
- BLM, Cedar City Field Office, 176 D.L. Sargent Drive, Cedar City, Utah 84721.

FOR FURTHER INFORMATION CONTACT: For further information and/or to have your name added to our mailing list, contact Lucas Lucero, BLM Project Manager; telephone (702) 515-5059; e-mail Lucas.Lucero@blm.gov; address BLM, Cedar City Field Office, 176 East D.L. Sargent Drive, Cedar City, Utah 84721.

SUPPLEMENTARY INFORMATION: PacifiCorp, doing business as Rocky Mountain Power Company, has filed a ROW application seeking authorization to construct, operate, maintain, and decommission a 345 kV single-circuit overhead electric transmission line on Federal lands. The project would provide an additional 600 megawatts of reliable electrical capacity by 2014 to respond to anticipated load growth in Southwestern Utah. The proposed project begins at the existing Sigurd Substation near Richfield, Utah, and terminates at the existing Red Butte Substation near the town of Central, Utah. The project area spans approximately 160 miles. Rocky Mountain Power Company has identified multiple alternative routes between the two substations.

Alternative routes identified so far would affect Federal, State, and private lands. The requested ROW width on Federal lands is 150 feet. Rocky Mountain Power Company proposes to predominantly use steel H-frame towers approximately 80 to 130 feet in height with average spans between towers of 1,000 to 1,200 feet. Permanent access roads approximately 14 feet wide would be needed. Temporary work space would be needed during construction for material storage, conductor tensioning sites, and to accommodate vehicles and equipment. Alternative routes currently identified would use portions of utility corridors on Federal lands and parallel portions of existing overhead and underground utilities and roadways.

The BLM is the designated lead Federal agency for preparation of the EIS. Other agencies with legal jurisdiction or special expertise have been invited to participate as cooperating agencies in preparation of the EIS. Currently, the U.S. Forest Service (Dixie and Fishlake National Forests), State of Utah, Millard County, Sevier County, Beaver County, Utah Division of Wildlife Resources, City of St. George, and City of Enterprise have agreed to participate as cooperating agencies.

The purpose of the public scoping process is to determine relevant issues that will influence the scope of the environmental analysis, including alternatives, and guide the process for developing the EIS. At present, the BLM has identified the following preliminary issues: public health and safety, noise, visual intrusions, migratory bird habitat, crucial deer and elk habitat, Utah Prairie Dog habitat, socioeconomic impacts, cultural and historic sites, National Scenic and Historic Trails, and nearby inventoried roadless areas on National Forests.

The BLM will use and coordinate the NEPA commenting process to satisfy the public involvement process for Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) as provided for in 36 CFR 800.2(d)(3). Native American Tribal consultations will be conducted and Tribal concerns will be given due consideration, including impacts on Indian trust assets. Federal, State, and local agencies, along with other stakeholders that may be interested or affected by the BLM's decision on this project are invited to participate in the scoping process and, if eligible, may request or be requested by the BLM to participate as a cooperating agency.

Before including your address, phone number, e-mail address, or other

personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Authority: 40 CFR 1501.7.

Selma Sierra,

State Director.

[FR Doc. E9-31239 Filed 1-4-10; 8:45 am]

BILLING CODE 4310-00-P

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[LLNML00000 L16100000.D00000]

Notice of Intent To Prepare a Resource Management Plan for the Prehistoric Trackways National Monument, Las Cruces District Office, New Mexico and Associated Environmental Impact Statement

AGENCY: Bureau of Land Management, Interior.

ACTION: Notice of intent.

SUMMARY: In compliance with the National Environmental Policy Act of 1969 (NEPA), as amended, and the Federal Land Policy and Management Act of 1976 (FLPMA), as amended, the Bureau of Land Management (BLM) Las Cruces District Office, Las Cruces, New Mexico, intends to prepare a Resource Management Plan (RMP) with an associated Environmental Impact Statement (EIS) for the Prehistoric Trackways National Monument and by this notice is announcing the beginning of the scoping process to solicit public comments and identify issues. The RMP will replace the existing Mimbres RMP (1993).

DATES: This notice initiates the public scoping process for the RMP with associated EIS. Comments on issues may be submitted in writing until February 4, 2010. The dates and locations of any scoping meetings will be announced at least 15 days in advance through local media, newsletters, and the BLM Web site at: http://www.blm.gov/nm/st/en/fo/Las_Cruces_District_Office.html. In order to be included in the Draft EIS, all comments must be received prior to the close of the scoping period or 15 days after the last public meeting, whichever is later. We will provide additional opportunities for

public participation upon publication of the Draft RMP/EIS.

ADDRESSES: You may submit comments on issues and planning criteria related to Prehistoric Trackways National Monument RMP/EIS by any of the following methods:

- *Web site:* http://www.blm.gov/nm/st/en/fo/Las_Cruces_District_Office.html.
- *E-mail:* lcfp_rmp@nm.blm.gov.
- *Fax:* (575) 525-4412.
- *Mail:* BLM, Las Cruces District Office, 1800 Marquess Street, Las Cruces, New Mexico 88005.

Documents pertinent to this proposal may be examined at the Las Cruces District Office.

FOR FURTHER INFORMATION CONTACT: For further information and/or to have your name added to our mailing list, contact Lori Allen; telephone (575) 525-4454; address BLM, Las Cruces District Office, 1800 Marquess Street, Las Cruces, New Mexico 88005; e-mail Lori_Allen@blm.gov.

SUPPLEMENTARY INFORMATION: This document provides notice that the BLM District Office, Las Cruces, New Mexico, intends to: (1) Prepare an RMP with an associated EIS for the Prehistoric Trackways National Monument; (2) announce the beginning of the scoping process; and (3) seek public input on issues and planning criteria.

The planning area is located in Doña Ana County, New Mexico and encompasses approximately 6,000 acres of public land.

The purpose of the public scoping process is to determine relevant issues that will influence the scope of the environmental analysis, including alternatives, and guide the planning process. Preliminary issues for the planning area have been identified by BLM personnel, Federal, State, and local agencies, and other stakeholders and include Paleozoic resource protection, scientific research, off-highway vehicle use/recreation, and interpretation and education. Preliminary planning criteria will include the following:

1. The RMP will be in compliance with the Omnibus Public Land Management Act of 2009, FLPMA, NEPA, and all other applicable laws, regulations, and policies;
2. Land use decisions will apply to the surface and subsurface estate managed by the BLM;
3. The planning process will follow the BLM Land Use Planning Handbook, H-1601-1 and NEPA Handbook, H-1790-1 for program specific guidance;
4. Public participation and collaboration will be an integral part of the planning process;

5. The BLM will strive to make decisions in the plan compatible with the existing plans and policies of adjacent local, State, and Federal agencies and tribal entities, as long as the decisions are consistent with the purposes, policies, and programs of Federal law and regulations applicable to public land;

6. The RMP will recognize valid existing rights;

7. The RMP will incorporate, where applicable, management decisions brought forward from existing planning documents;

8. The BLM will work cooperatively and collaboratively with cooperating agencies and all other interested groups, agencies, and individuals;

9. The BLM will consider public welfare and safety when addressing hazardous materials and fire management;

10. Geographic Information System and metadata information will meet Federal Geographic Data Committee standards, as required by Executive Order 12906;

11. The planning process will provide for ongoing consultation with tribal entities and strategies for protecting recognized traditional uses;

12. Planning and management direction will focus on the relative values of resources and not the combination of uses that will give the greatest economic return or economic output;

13. Where practicable and timely for the planning effort, the best available scientific information, research, and new technologies will be used; and

14. The Economic Profile System will be used as one source of demographic and economic data for the planning process.

You may submit comments on issues and planning criteria in writing to the BLM at any public scoping meeting, or you may submit them to the BLM using one of the methods listed in the **ADDRESSES** section above. Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. The minutes and list of attendees for each scoping meeting will be available to the public and open for 30 days after the meeting to any participant who wishes to clarify the views he or she expressed. The BLM will evaluate

identified issues to be addressed in the plan, and will place them into one of three categories:

1. Issues to be resolved in the plan;
2. Issues to be resolved through policy or administrative action; or
3. Issues beyond the scope of this plan.

The BLM will provide an explanation in the Draft RMP/Draft EIS as to why an issue was placed in category two or three. The public is also encouraged to help identify any management questions and concerns that should be addressed in the plan. The BLM will work collaboratively with interested parties to identify the management decisions that are best suited to local, regional, and national needs and concerns.

The BLM will use an interdisciplinary approach to develop the plan in order to consider the variety of resource issues and concerns identified. Specialists with expertise in the following disciplines will be involved in the planning process: Planning and NEPA, Paleontology, Outdoor Recreation, Minerals and Geology, Archeology, Wildlife, and others as may be needed.

Authority: 40 CFR 1501.7; 43 CFR 1610.2.

Linda S. C. Rundell,

State Director, New Mexico.

[FR Doc. E9-31248 Filed 1-4-10; 8:45 am]

BILLING CODE 4310-VC-P

DEPARTMENT OF THE INTERIOR

National Park Service

Notice of Extension of Concession Contracts

AGENCY: National Park Service, Interior.
ACTION: Public notice.

DATES: *Effective Date:* January 1, 2010.

FOR FURTHER INFORMATION CONTACT: Jo A. Pendry, Chief, Commercial Services Program, National Park Service, 1201 Eye Street, NW., 11th Floor, Washington, DC, 20005, Telephone 202/513-7156.

SUMMARY: Pursuant to 36 CFR 51.23, public notice is hereby given that the National Park Service proposes to extend the following expiring concession contracts for a period of up to 1 year, or until such time as a new contract is executed, whichever occurs sooner.

SUPPLEMENTARY INFORMATION: All of the listed concession authorizations will expire by their terms on or before December 31, 2009. The National Park Service has determined that the proposed short-term extensions are necessary in order to avoid interruption

Appendix B: Scoping Letter and Packet



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Las Cruces District Office
1800 Marquess
Las Cruces, New Mexico 88005
www.blm.gov/nm



In Reply Refer To:
1610 (03100)

January 8, 2009

Dear Interested Party:

In March 2009, Congress designated the Prehistoric Trackways National Monument (Monument) through the Omnibus Public Land Management Act of 2009 (the Act). The Monument encompasses 5,280 acres and was established to conserve, protect, and enhance the unique and nationally important paleontological, scientific, educational, scenic, and recreational resources and values. The Monument is located in Doña Ana County, New Mexico, and is approximately 5 miles northwest of Las Cruces in the southern third of the Robledo Mountains (see enclosed map).

As stated in the Act "Congress finds that-

- (1) in 1987, a major deposit of Paleozoic Era fossilized footprint megatrackways was discovered in the Robledo Mountains in southern New Mexico;*
- (2) the trackways contain footprints of numerous amphibians, reptiles, and insects (including previously unknown species), plants, and petrified wood dating back approximately 280,000,000 years, which collectively provide new opportunities to understand animal behaviors and environments from a time predating the dinosaurs;"*

The Act requires the Bureau of Land Management (BLM) to develop a comprehensive management plan for the long-term protection and management of the Monument. In order to address resource uses versus resource protection as well as the long-term management of the area, and to fully analyze all impacts, the BLM will develop a Resource Management Plan and Environmental Impact Statement (RMP/EIS) for the Monument. Two terms will be used in this process to describe areas being addressed: they are Planning Area and Decision Area. Both are within the Robledo Mountains. The Planning Area includes the Robledo Mountains and immediately surrounding areas where actions may impact the Monument or where resources may be impacted by Monument management. The Decision Area, that is the area for which decisions will be made in the RMP, consists entirely of the 5,280 acres of public land, both surface and subsurface, within the designated National Monument.

Several management mandates are stated in the Act and are quoted below:

"The Secretary shall manage the Monument (A) in a manner that conserves, protects, and enhances the resources and values of the Monument ..."

“(2) National Landscape Conservation system – the Monument shall be managed as a component of the National Landscape Conservation System.”

“The Secretary shall provide for public interpretation of, and education and scientific research on, the paleontological resources of the Monument, with priority given to exhibiting and curating the resources in Doña Ana County, New Mexico”

“Except as needed for administrative purposes or to respond to an emergency, the use of motorized vehicles in the Monument shall be allowed only on roads and trails designated for use by motorized vehicles under the management plan ...”

“The Secretary may issue permits for special recreation events involving motorized vehicles within the boundaries of the Monument—

*(A) to the extent the events do not harm paleontological resources; and
(B) subject to any terms and conditions that the Secretary determines to be necessary.”*

“The Secretary may allow grazing to continue in any area of the Monument in which grazing is allowed before the date of enactment of this Act, subject to applicable laws (including regulations).”

As the planning process begins, the BLM’s goal is to reach out and involve the public. The first opportunity for you to participate in this planning process will be the upcoming public scoping open house. The open house format will allow staff to provide information explaining the planning and EIS study process, as well as information regarding the resources and uses that occurs in the Planning Area. The open house will be:

JANUARY 26, 2010
3:00 P.M. – 7:00 P.M.
BEST WESTERN MISSION INN
EL PUEBLO ROOM
1765 S. MAIN STREET
LAS CRUCES, NEW MEXICO

Your thoughts, ideas, and comments are important to us throughout the process. Please attend the scoping meeting or send us your written comments on the enclosed pre-addressed comment form before the scoping period ends, which is February 10, 2010.

Also, if you wish to be removed from the mailing list, please let us know by checking the box on the comment form. Otherwise your name will be retained on the list and you will receive information on the Monument RMP/EIS in the future.

BLM will provide you an opportunity later in the process to review the Draft RMP/EIS, which is scheduled for release in Spring 2011. During the public review period, BLM will conduct a

public meeting to accept comments on the adequacy of the Draft RMP/EIS. Written comments will also be accepted during the review period.

Informational materials like this letter will be available on the Las Cruces District Office website at www.blm.gov/nm/st/en/fo/Las_Cruces_District_Office. If you have any questions, would like to be on the mailing list, or would like to speak with someone, please call Lori Allen at (575) 525-4454.

Sincerely,

/s/ Bill Childress

Bill Childress
District Manager

3 Enclosures

PREHISTORIC TRACKWAYS NATIONAL MONUMENT RMP/EIS

PLANNING ISSUES AND MANAGEMENT CONCERNS

The process for developing a Monument Plan begins with identification of planning issues (40 CFR 1502.7 and 43 CFR 1610.4-1).

Planning issues express opportunities, conflicts and problems associated with the management of public land. Issues also reflect new data, new or revised policies, and changes in resource uses that affect a Resource Management Plan - issues are considered generally external to the BLM

Management concerns are topics or points of dispute that involve a resource

management activity or land use and often are internal to the agency. While some of these concerns may overlap issues, a management concern is generally more important to BLM staff, an individual or group, whereas a planning issue has the potential to be a more widespread source of conflict or opportunity.

The issues and management concerns presented below are preliminary, based on the best available information. The issues or concerns will be refined and new ones may be identified during public scoping and throughout the planning process.

Preliminary Planning Issues and Management Concerns

Paleozoic Resource Research and Protection
Interpretation and Education
Recreation Use and Paleozoic Resource Protection
Travel and Access
Off-Highway Use
Livestock Grazing
Special Designations
Community Pit #1
Expanded Boundary Possibilities for Adjacent Areas
Possible Upcoming Legislation

PLANNING CRITERIA

The BLM planning regulations (at 43 CFR 1610.4-2) require development of planning criteria to guide preparation of an RMP. *Planning criteria* are the standards, rules, and other guidelines developed by managers and interdisciplinary teams, with public input, for use in forming judgments about plan-level decision making, analysis and data collection. These criteria are used to establish the parameters or “ground rules” for making planning decisions and

simplifying RMP actions. The criteria may be adjusted during RMP development based on management concerns and the results of the public scoping process.

Potential cooperative agencies, such as Federal and State regulatory agencies, local governments, and tribal governments, will be invited to participate as a cooperating agency in preparation of the Monument RMP/EIS.

Preliminary Planning Criteria

- **The Monument Plan will be in compliance with the Omnibus Public Land Management Act of 2009 (the Act).**
- **The Monument Plan will be in compliance with the Potential Fossil Yield Classification (PFYC) Manual and Handbook.**
- **While the multiple-use mandates of, Federal Land Policy & Management Act (FLPMA), National Environmental Policy Act (NEPA), and all other applicable laws, regulations, and policies will be followed to the extent appropriate, the provisions of the Act will prevail in managing the Monument.**
- **Land use decisions in the Monument Plan will apply to the surface and subsurface estate managed by the BLM.**
- **The planning process will follow the BLM’s policies in the Land Use Planning Handbook, H-1601-1 for program specific guidance.**
- **Public participation and collaboration will be an integral part of the planning process and will involve all interested groups, individuals and agencies.**

Appendix C: Public Notice



PUBLIC NOTICE

PREHISTORIC TRACKWAYS NATIONAL MONUMENT MANAGEMENT PLAN

BLM PUBLIC OPEN HOUSE
JANUARY 26, 2010
3:00 P.M. to 7:00 P.M.
BEST WESTERN MISSION INN
EL PUEBLO ROOM
1765 S MAIN STREET
LAS CRUCES NEW MEXICO

BLM will be hosting an open house to provide information explaining the planning and Environmental Impact Statement (EIS) study process, as well as information regarding the resources and uses that occur in the area. The Monument is located in Doña Ana County, New Mexico and is approximately 5 miles northwest of Las Cruces in the southern third of the Robledo Mountains.

For information contact: Lori Allen, BLM Las Cruces District Office, (575) 525-4454.

Appendix D: Public Meeting Flyer



PUBLIC NOTICE

**PREHISTORIC TRACKWAYS NATIONAL
MONUMENT MANAGEMENT PLAN**

**BLM PUBLIC OPEN HOUSE
JANUARY 26, 2010
3:00 P.M. to 7:00 P.M.
BEST WESTERN MISSION INN
EL PUEBLO ROOM
1765 S MAIN STREET
LAS CRUCES NEW MEXICO**

BLM will be hosting an open house to provide information explaining the planning and Environmental Impact Statement (EIS) study process, as well as information regarding the resources and uses that occur in the area. The Monument is located in Doña Ana County, New Mexico and is approximately 5 miles northwest of Las Cruces in the southern third of the Robledo Mountains.

***For information contact:
Lori Allen, BLM Las Cruces District Office, (575) 525-4454.***

Appendix E: BLM News Release



BLM NEWS RELEASE

US DEPARTMENT OF THE INTERIOR ■ BUREAU OF LAND MANAGEMENT
NEW MEXICO STATE OFFICE ■ 1474 RODEO RD ■ SANTA FE, NM 87505
Hans Stuart ■ External Affairs Chief ■ 505.438.7510

For Immediate Release
January 5, 2010

For Additional Information
Tom Phillips 575.525.4377

BLM to Prepare Management Plan for Prehistoric Trackways National Monument

The Bureau of Land Management's Las Cruces District Office will prepare a Resource Management Plan for the Prehistoric Trackways National Monument that will guide future management of the 5,280-acre area northwest of Las Cruces.

A public scoping process opened today in order to solicit public comments and identify issues (e.g., natural resource and public use issues) anticipated within the Monument, which was created under the Omnibus Public Land Management Act of 2009.

Comments on issues may be submitted in writing by any of the following methods:

- Website: http://www.blm.gov/nm/st/en/fo/Las_Cruces_District_Office.html
- E-mail: lco_rmp@nm.blm.gov
- Fax: (575) 525-4412
- Mail: BLM, Las Cruces District Office
Prehistoric Trackways National Monument Planner
1800 Marquess Street
Las Cruces, New Mexico 88005

In addition, a public scoping meeting will be scheduled in Las Cruces in early February to present information about the effort and receive input from the public. The meeting will be announced within the next 2 weeks and notices will be published in Las Cruces newspapers. The comment period will close 15 days after the date the public scoping meeting is held.

For further information about this effort contact and/or to have your name added to the BLM's Prehistoric Trackways mailing list, contact Lori Allen at (575) 525-4454 or write the BLM at the address listed above; you can also e-mail Lori at Lori.Allen@blm.gov.

The purpose of the public scoping process is to determine relevant issues that will influence the scope of the environmental analysis, including alternatives, and guide the planning process. Preliminary issues for the planning area that have been identified by the BLM, other agencies, and other stakeholders include Paleozoic resource protection, scientific research, off-highway vehicle use/recreation, plus interpretation and education.

-more-

www.blm.gov/nm

The BLM will work collaboratively with interested parties to identify the management decisions that are best suited to local, regional, and national needs and concerns within the scope of the BLM's legal authorities. The agency will use an interdisciplinary approach to develop the plan in order to consider the variety of resource issues and concerns identified. Specialists with expertise in the following disciplines will be involved in the planning process: Planning and NEPA, Paleontology, Outdoor Recreation, Minerals and Geology, Archeology, Wildlife, and others as may be needed.

X X X

The BLM manages more land -- 253 million acres -- than any other Federal agency. This land, known as the National System of Public Lands, is primarily located in 12 Western states, including Alaska. The Bureau, with a budget of about \$1 billion, also administers 700 million acres of sub-surface mineral estate throughout the nation. The BLM's multiple-use mission is to sustain the health and productivity of the public lands for the use and enjoyment of present and future generations. The Bureau accomplishes this by managing such activities as outdoor recreation, livestock grazing, mineral development, and energy production, and by conserving natural, historical, cultural, and other resources on public lands.

www.blm.gov/nm

APPENDIX G

SAFETY ZONES FOR RECREATIONAL
TARGET SHOOTING ANALYSIS

APPENDIX G

SAFETY ZONES FOR RECREATIONAL TARGET SHOOTING ANALYSIS

Recreational target shooting contains many hazards based on predictable projectile physics and unpredictable human behavior. The following information depicts industry standards for predictable projectile physics, given a single point of weapon discharge. These standards are used during construction of safe shooting ranges. Surface Danger Zone (SDZ) is a depiction of the mathematically predicted area a bullet will return to earth by direct fire (Gun Target Line or GTL) or ricochet.

PROJECTED AMMUNITION CAPABILITIES

Standardized industry tables exist identifying a host of variations in Distance X, Distance Y, and Distance W for different calibers, types of bullets, and powder charges resulting in a wide range of variability in SDZs. Distance X provides for the maximum distance along GTL that a projectile will travel. Distance Y provides the depth of ricochet area along the GTL and likewise is not a significant concern because most likely the target location is against a hillside. Distance W defines the ricochet area width where uncontrolled projectiles can place the public in harm. However, Distance W is the dominant factor when considering target shooting on public land near developed recreations sites or areas where the public congregate for extended periods of time. Distance W varies from 1/16-mile for the .45 caliber to 1/2-mile for the 7.62 or .30 caliber, which is North America’s most common rifle caliber.

Table G-1 identifies distances, in meters, used to construct a typical SDZ for commonly used calibers and factory ammunition.

TABLE G-1				
SDZ ELEMENT DISTANCES, IN METERS				
Caliber	Distance X	Distance Y	Distance W	Distance W + Area A
.22 long rifle	1400	1125	386	404
9 mm	1800	1211	399	579
.38	1806	1258	389	569
.45	1690	1111	290	470
5.56 (or .223)	3437	2029	462	642
7.62 (or .30)	4100	4053	861	1041

RICOCHET AREA

The types of ammunition, targets, and firing activities dictate SDZ dimensions. A basic SDZ consists of three parts: impact area (dispersion area), ricochet area (Area W), and secondary danger area (Area A and Area B) (see Figure 1). The primary dispersion area established for the impact of all rounds extends five degrees to the left and right limits of weapon discharge and downrange to the maximum range of the ammunition (Gun Target Line or GTL) used. The ricochet area lies to both sides of the dispersion area and extends downrange to the maximum distance of the ammunition used. The ricochet area contains two angles determined specifically by the type and caliber of ammunition being fired. This analysis assumes the following: a single firing point, compliance with shooting safety protocol, using a hillside for a target backdrop, predictable human behavior, and no steel targets. Any of these assumptions, when violated, could greatly increase distance and negate the previously described SDZ. Distance W plus Area A identifies a secondary danger area with decreasing probability of receiving a projectile or debris. This secondary danger area is that area paralleling and 90 meters outside of the outermost limits of the ricochet area and extending downrange to the maximum distance of any ammunition used.

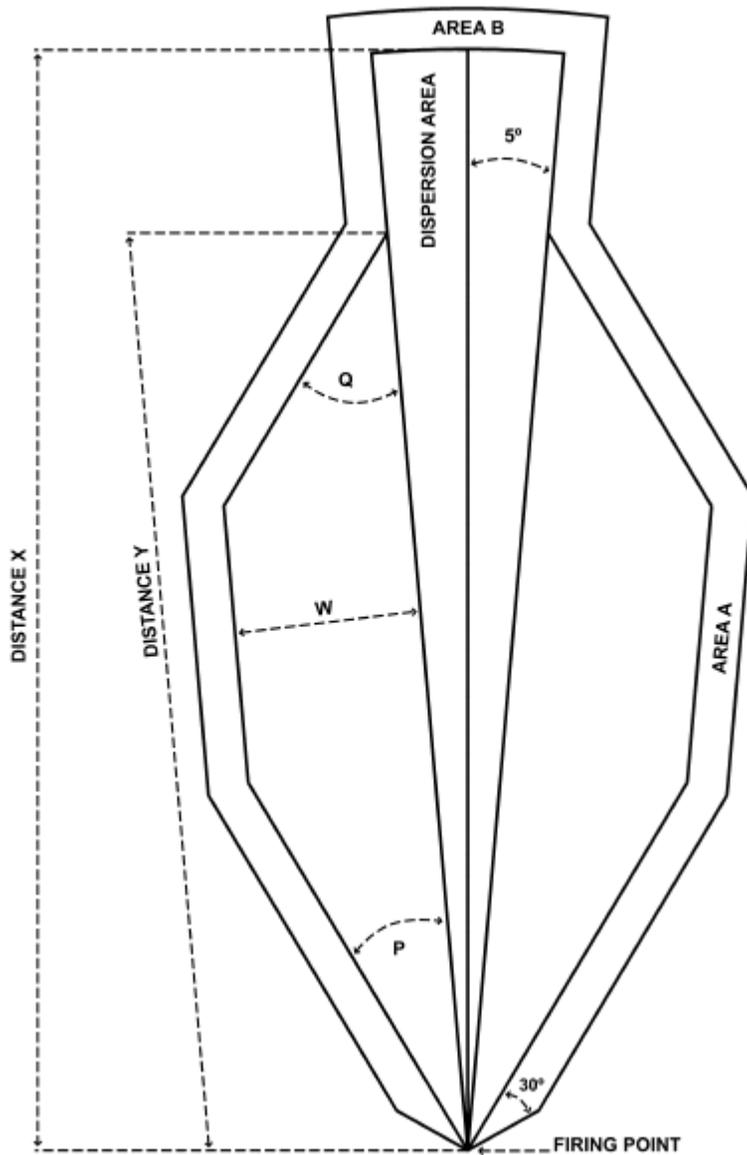


FIGURE 1. BATWING SURFACE DANGER ZONE (SDZ) FOR FIRING SMALL ARMS DIRECT-FIRE WEAPONS.

Distance X: maximum distance along GTL that a projectile will travel.

Distance Y: maximum distance downrange of which a lateral ricochet is expected to occur when a projectile is fired given elevation.

Angle P: beginning angle for the ricochet area measured from the firing point downrange along the edge of the dispersion area.

Angle Q: angle measurement downrange, beginning at distance Y along the edge of the dispersion area.

Distance W: distance between the outside edge or border of the ricochet area and the outside edge or border of the dispersion area on the SDZ.

Area A: identifies a secondary danger area with decreasing probability of receiving a projectile or debris

CONCLUSION

The development of SDZs is used primarily for the construction and management of outdoor shooting ranges, but the BLM used this data to determine a safety zone around areas where the public congregates. In regards to the most common North American rifle caliber, the maximum Distance X for a .30 caliber is approximately 2¼-mile although typical target shooting occurs at distances of 25 to 100 yards. Typically, shooters use hills for backstops and identify their targets so the Distance X is not the main concern regarding target shooting on public land around developed recreation sites or areas where the public congregate. However, this technical data is used to synthesize a practical definition of a rectangle entailing a 2¼-mile by ½-mile SDZ for the most commonly owned rifle caliber. Again, the greatest concern for an area used for target shooting would be the ½-mile lateral deflection or ricochet area.

REFERENCES:

- 1) Department of Army Pamphlet 385-63. Range Safety. 30 January 2012.
- 2) Range Design Criteria. US Department of Energy-Office of Health, Safety and Security. 18 November 2008.
- 3) USMC Range Safety Pocket Guide-Version 1.0. Full version of MCO 3570.1B and DA PAM 385-63.

APPENDIX H

Public Comments on the Draft RMP/EIS
and Responses

APPENDIX H

PUBLIC COMMENTS ON DRAFT RMP/EIS AND RESPONSES

The *Draft RMP/EIS* was released for a 90-day public review and comment period on July 20, 2012. During this period, the Las Cruces District received 45 comment letters, forms, or emails. Each submission was carefully reviewed to identify substantive comments.

In accordance with regulations on the implementation of the National Environmental Policy Act (40 CFR 1503.4), all substantive comments must be addressed in the *Proposed RMP/Final EIS*. Substantive comments are generally those that:

- Question, with reasonable basis, the accuracy of the information in the Draft EIS.
- Question, with reasonable basis, the adequacy of, methodology for, or assumptions used for the environmental analysis.
- Present new information relevant to the analysis.
- Present reasonable alternatives other than those analyzed in the Draft EIS.
- Cause changes or revisions in one or more of the alternatives.

These criteria were used as a guide for the evaluation of comments submitted by the public. The Las Cruces District Office made every effort in its comment analysis to be inclusive of comments. It should be noted that comments are not treated or tallied as “votes.” Rather the substances of the comments help the BLM to understand and weigh the multiple factors considered as part of its decision making process.

Table H-1 identifies comment letter/emails received during the public review period. Comment letters are printed in their entirety. Some personal addresses have been redacted under Exemption 6* of the Freedom of Information Act. Responses are presented adjacent to the comments in each letter.

*Exemption 6 protects information about individuals when the disclosure of such information “would constitute a clearly unwarranted invasion of personal privacy”.

TABLE H-1
PTNM DRAFT RMP/EIS COMMENTS RECEIVED

ASSIGNED NUMBER IN ORDER OF RECEIPT	NAME OF COMMENTOR	TYPE	RESPONSE REQUIRED
1	Dara Parker, Field Representative Senator Jeff Bingaman's Office	Email	No
2	Mark T Altaha White Mountain Apache Tribe	Email & letter	No
3	Greg Buntain	Email	No
4	Clint Cates	Email	No
5	Greg McNeil	Email	No
6	Resa Johnson	Email	No
7	Jim Kinnerup	Email	Yes
8	John Rice	Email	Yes
9	Environmental Protection Agency	Letter	Yes
10	David Smith	Email	Yes
11	Joshua Simmons WSTF	Email	Yes
12	Chery Eckhardt National Park Service	Email	No
13	Lance Harkey	Email	Yes
14	William Massie	Email	No
15	New Mexico Off Highway Vehicle Alliance	Letter	Yes
16	Western Watersheds Project	Letter	Yes
17	Mark & Joan Wolf	Letter	Yes
18	Dirk Keeper	Email	No
19	Angelia Steelman	Email	No
20	Linus Brewer	Email	No
21	Curtis Hill	Email	No
22	Tracy Hooker	Email	No
23	Bob Reich	Letter	Yes
24	Jim Huff Hytech 4x4	Letter	No
25	James Huff	Letter	No
26	Marlene Mayfield	Letter	Yes
27	Billy Steelman	Email	No
28	Larry Candelaria President Paleozoic Trackways Foundation	Letter	Yes
29	Connie & Larry Candelaria	Letter	No
30	The Wilderness Society	Letter	Yes
31	NM Department of Game and Fish	Letter	No
32	M Florence Dougherty	Letter	No
33	Jim Enright	Letter	Yes
34	Robert Mathis	Letter	Yes
35	Joan Smith	Letter	Yes
36	Jeffrey Smith	Letter	No
37	James Berryman	Letter	No
38	Beba Richardson	Letter	No
39	Les Owen NM Department of Agriculture	Letter	No
40	Alexandra Nason Hall	Letter	No
41	David Nivek	Comment Form	No
42	Allison Smith	Comment Form	No
43	Gregory Smith	Comment Form	No
44	Carole Grady	Comment Form	No
45	Shooting Roundtable	Letter	Yes

BLM_NM_LCDO_Comments

From: Childress, William T
Sent: Tuesday, July 17, 2012 1:01 PM
To: Parker, Dara (Bingaman)
Cc: Phillips, Thomas E; Wallace, David L; Allen, Lori D
Subject: RE: Trackways question

Dara, the no-fee day pass is for mechanized or motorized travel uses. It would not apply to non- commercial hiking and equestrian uses who may enter without a pass/permit.

Bill Childress
 District Manager
 Las Cruces District Office
 1800 Marquess Street
 Las Cruces, New Mexico 88005
wchildre@blm.gov
 Office: 575-525-4499
 Cell: 575-644-8777
 Fax: 575-525-4412

From: Parker, Dara (Bingaman) [mailto:Dara_Parker@bingaman.senate.gov]
Sent: Monday, July 16, 2012 10:33 AM
To: Childress, William T
Subject: Trackways question

Hi Bill.

Thanks for the heads up on the DEIS, and I got my copy in print on Friday. Having the book makes it so much easier to read though!

I have one question so far: Under Alternative C (the preferred alternative), "motorized and mechanized travel within the Monument is limited to designated routes and trails with a permit." Would the no-fee day use pass be required for entry to the Monument, or just to enjoy mechanized or motorized travel within the Monument?

Thanks for any additional info on this!

Regards,
 Dara

Dara Parker
 Field Representative, Office of U.S. Senator Jeff Bingaman
 505 South Main St. #148 | Las Cruces, NM 88001
 Office: 575-523-6561 | Fax: 575-523-6584
Dara_Parker@bingaman.senate.gov | <http://bingaman.senate.gov>
[Sign up](#) for Senator Bingaman's newsletter today!

BLM_NM_LCDO_Comments

From: markaltaha@wmat.us
Sent: Thursday, July 19, 2012 5:05 PM
To: BLM_NM_LCDO_Comments
Subject: Prehistoric Trackways National Monument EIS
Attachments: Tribal Consultation Letter.doc

Please refer to the attached tribal consultation letter in regards to the above proposed action.

Thank you,

Mark T. Altaha
 White Mountain Apache Tribe
 Historic Preservation Office
 Fort Apache, Arizona

**White Mountain Apache Tribe**

Office of Historic Preservation

PO Box 507

Fort Apache, AZ 85926

Ph: (928) 338-3033 Fax: (928) 338-6055

To: Lori Allen, BLM Las Cruces District Office
Date: July 19, 2012
Project: Draft Resource Management Plan and EIS for Prehistoric Trackway National Monument

The White Mountain Apache Tribe Historic Preservation Office appreciates receiving information on the proposed project, July 2012. In regards to this, please attend to the following checked items below.

► *There is no need to send additional information unless project planning or implementation results in the discovery of sites and/or items having known or suspected Apache Cultural affiliation.*

N/A - The proposed project is located within an area of probable cultural or historical importance to the White Mountain Apache tribe (WMAT). As part of the effort to identify historical properties that maybe affected by the project we recommend an ethno-historic study and interviews with Apache Elders. The tribe's *Cultural Heritage Resource Director Mr. Ramon Riley* may be contacted at (928) 338-3033 for further information should this become necessary.

► Please refer to the attached additional notes in regards to the proposed project:

We have received and reviewed the information regarding the Resource Management Plans and the EIS for the Prehistoric Trackway National Monument, located 10 mile north of Las Cruces, Dona Ana County, New Mexico, and we have determined the proposed action/plans *will not have an adverse effect* on the White Mountain Apache tribe's (WMAT) historic properties and/or traditional cultural resources. Regardless, we recommend all ground disturbing activities be monitored *if there are reasons to believe that there are human remains and/or funerary objects are present, and if such remains and/or objects are encountered all project activities should cease and the proper authorities and/or affiliated tribe(s) be notified to evaluate the situation.*

Thank you. We look forward to continued collaborations in the protection and preservation of place of cultural and historical significance.

Sincerely,

Mark T. Altaha

White Mountain Apache Tribe

Historic Preservation Office

BLM_NM_LCDO_Comments

From: Gregory Buntain <gbuntain@me.com>
Sent: Thursday, July 19, 2012 11:15 PM
To: BLM_NM_LCDO_Comments
Subject: Prehistoric Trackways National Monument Resource Management Plan

Dear Sir,

I am writing to urge you to implement option D. I believe Options B-C are too restrictive. My second choice would be option A.

Thank you for your consideration.

Greg Buntain
 1118 Big Rock Loop
 Los Alamos, NM 87544

BLM_NM_LCDO_Comments

From: c4cateselectric@aol.com
Sent: Saturday, July 21, 2012 7:43 AM
To: BLM_NM_LCDO_Comments
Subject: Chili Canyons

Hello BLM officials,

I am asking that our existing OHV and all other motorized trails be left open for all the public to enjoy. These offroad trails have been around for many decades and have brought millions of dollars to the US and Las Cruces economy. By people buying offroad vehicles, spare parts, camping supplies, motels, fuels, meals, entertainment. I know for a fact that I usually spend around 1K to 2K on any offroad trip I take including at least one trip a year for the last 20 years to the Chili Canyon's later known as Chili Challenge. Please keep our trails open. It's good for the US and Las Cruces economy. Please don't over govern by looking for things to do to keep staff busy.

Thanks Clint
 Clint Cates
c4cateselectric@aol.com
 7820 Sunrose Dr., N.W.
 Albuquerque, NM 87120
 Ph: 505-379-6638 / Fax: 505-899-0362

BLM_NM_LCDO_Comments

From: GREG MC*NEIL <captaincrunch69@msn.com>
Sent: Saturday, July 21, 2012 1:37 PM
To: BLM_NM_LCDO_Comments
Subject: Chili Canyons

Hello; my name is Greg McNeil. I live in Denver and for the last 15 years have come to Las Cruces to enjoy the trails in that area. My family and I spend a lot of money in town for Food, Fuel, Parts, Camping etc. We spend approximately \$ 500 dollars at least every time we go down. So please keep this area open for the recreation and the money we spend in town.

Thanks Greg McNeil

BLM_NM_LCDO_Comments

From: sjohnson757@msn.com on behalf of Resa Johnson <resamom@msn.com>
Sent: Monday, July 23, 2012 10:09 AM
To: BLM_NM_LCDO_Comments
Subject: trackways national monument draft

I believe in family recreation and keeping pubic lands open builds on family values . I am infavor of alternative
a

BLM_NM_LCDO_Comments

From: Jim Kinnerup <kinnerup@comcast.net>
Sent: Monday, September 03, 2012 6:36 PM
To: BLM_NM_LCDO_Comments
Subject: The Bureau of Land Management (BLM) has released a Draft Resource Management Plan and Draft Environmental Impact Statement (Draft RMP/Draft EIS) for the Prehistoric Trackways National Monument

I support Alternative D of the subject plan as it represents a maximum use approach to management of the Monument and the widest range of public uses of the resources while still following the constraints of the designating Legislation. I would support new motorized and non-motorized routes developed by the BLM to enhance visitor experiences and research opportunities. Where possible citizens of the United States should have proper public access and use of federal lands. I believe it is in keeping with the belief that we as citizens of his country are "... endowed with such inalienable Rights, that among these are Life, Liberty and the pursuit of Happiness." Managing big things for the benefit of all of its citizens to enjoy now and into the future is the duty of government. Surely historical objects must be protected from the irresponsible among us, and with proper use, management and maintenance of the Monument area this worthy goal can be achieved. Having enjoyed the area by OHV responsibly and staying on marked trails I believe that it is possible to have multi-use of this Monument. I believe that not all citizens would wish to visit the Monument area, but most would support Alternative D as most citizens probably support the federal park system even though it is unlikely they would visit regularly. I also believe that those who would actually visit this important part of our Las Cruces area would be supportive of, as I am of an annual or multi-annual pass for a fee not unlike what is charged for state and federal parks.

Jim Kinnerup

7-1 Thank you for your comment. Your comment will be taken into consideration when we are making our decisions for management of the Monument.

BLM_NM_LCDO_Comments

From: Jon Rice <jonrice305@gmail.com>
Sent: Monday, September 17, 2012 9:19 PM
To: BLM_NM_LCDO_Comments
Subject: Trackways

My vote is leave the area alone.

8-1 | By the way, one thing I have noticed is that there is no access to rocotillo if patscorro revenge is closed. Would need to a least open the beginning of the trail.

Jon Rice
Accu-Tech

Sent from my iPhone

8-1 Rocotillo has access from the east. Rocotillo and Patzcuaro fork off of Permian Tracks Way.

BLM_NM_LCDO_Comments

From: John MacFarlane <MacFarlane.John@epamail.epa.gov>
Sent: Friday, September 21, 2012 12:22 PM
To: BLM_NM_LCDO_Comments
Cc: Rhonda Smith; Debra Griffin; Michael Jansky
Subject: Attn: Lori Allen, Prehistoric Trackways Draft RMP/EIS 309 Comment Letter
Attachments: 20120233.pdf

Attention: Lori Allen

Please accept EPA's 309 comment letter for the above referenced project. A hard copy will be mailed. If you have any questions or concerns, please contact me.

Thank you,
 John MacFarlane
 NEPA Specialist
 Office of Planning and Coordination (6EN-XP)
 USEPA Region 6
 1445 Ross Ave., Dallas, Texas 75202
 (214) 665-7491

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

Region 6
 1445 Ross Avenue, Suite 1200
 Dallas, TX 75202-2733

September 21, 2012

Lori Allen
 Bureau of Land Management
 Las Cruces District Office
 1800 Marquess Street
 Las Cruces, NM 88005

Dear Ms. Allen,

In accordance with our responsibilities under Section 309 of the Clean Air Act (CAA), the National Environmental Policy Act (NEPA), and the Council on Environmental Quality (CEQ) regulations for implementing NEPA, the U.S. Environmental Protection Agency (EPA) Region 6 office in Dallas, Texas, has completed its review of the Draft Environmental Impact Statement (DEIS) prepared by the Bureau of Land Management (BLM). The DEIS considers and evaluates alternative management strategies and their potential effects on lands and resources administered by the BLM's Las Cruces District Office in south-central New Mexico.

EPA rates the DEIS as "LO" i.e., EPA has a "Lack of Objections" with this Draft EIS. We have enclosed detailed comments that provide recommendations for further clarification and additional discussion in the FEIS. The EPA's Rating System Criteria can be found here: <http://www.epa.gov/oecaerth/nepa/comments/ratings.html>. Responses to comments should be placed in a dedicated section of the FEIS and should include the specific location where the revision, if any, was made. If no revision was made, a clear explanation should be included.

EPA appreciates the opportunity to review the DEIS. Our classification will be published on the EPA website, www.epa.gov, according to our responsibility under Section 309 of the CAA to inform the public of our views on the proposed Federal action. Please send our office one copy of the FEIS and an internet link. Beginning October 1, 2012, you may only file your EIS using our *e-NEPA Electronic Filing* at <http://www.epa.gov/compliance/nepa/submiteis/index.html>. If you have any questions or concerns, please contact John MacFarlane of my staff at macfarlane.john@epa.gov or 214-665-7491 for assistance.

Sincerely,

Debra A. Griffin
 Associate Director
 Compliance Assurance and
 Enforcement Division

Enclosure

RECEIVED
 2012 SEP 24 PM 2:10
 D:\S\010\010\010\010\010

**DETAILED COMMENTS ON THE
BUREAU OF LAND MANAGEMENT
DRAFT RESOURCE MANAGEMENT PLAN AND
ENVIRONMENTAL IMPACT STATEMENT
FOR THE
PREHISTORIC TRACKWAYS NATIONAL MONUMENT
DOÑA ANA COUNTY, NEW MEXICO**

BACKGROUND: The Prehistoric Trackways National Monument Draft Resource Management Plan (RMP) and Environmental Impact Statement (EIS) considers and evaluates alternative management strategies and their potential effects on lands and resources administered by the Bureau of Land Management's (BLM) Las Cruces District Office in south-central New Mexico. The planning area is located within Doña Ana County and includes approximately 5,280 surface acres and 4,812 acres of Federal minerals administered by the Las Cruces District Office. BLM management decisions considered in the plan must be consistent with the Omnibus Public Lands Management Act of 2009.

The following comments are offered for your agency's consideration in completing the Final EIS/RMP:

DETAILED COMMENTS

3.2.5 Air Resources

Page 3-10 of the Draft EIS/RMP states the following:

"Air quality monitors measure concentrations of PM throughout the country; Doña Ana County currently has several monitoring stations. EPA, state, tribal and local agencies use that data to ensure that PM in the air is at levels that protects public health and the environment. Two monitoring stations for PM₁₀ can be considered representative of the Analysis Area. The West Mesa site is located approximately 6 miles south of the Planning Area and the Holman Road Site is approximately 12 miles to the east-northeast. In addition, PM_{2.5} is monitored in Las Cruces approximately 7 miles to the southeast. A review of 2010 data indicates that the PM_{2.5} levels have remained well within the standards. PM₁₀ levels show occasional spikes above the 24-hour standard but these are likely associated with naturally occurring dust storms. The New Mexico Environment Department recently published a study showing that in 2008 exceedances of the PM₁₀ standards were associated with dust storms and not human activities in Doña Ana County 3-11 (NMED 2011). Southern Doña Ana County is also impacted by industrial sources in Mexico and Texas as well as in the Sunland Park and Anthony areas south of Las Cruces. A small area around the community of Anthony, approximately 30 miles southeast of the Planning Area, is designated as nonattainment for the PM₁₀ standard. In addition, an area in the corridor from Anthony south to Sunland Park is currently considered a maintenance area for ozone."

As stated above, the project area is near a designated non-attainment area for particulate matter (PM₁₀), and an ozone maintenance area in Doña Ana County. Additionally, areas of the Monument may be designated as Visual Resource Management Class I and Class II areas. Therefore, it is especially important that information regarding the potential air quality impacts during the construction phase (surface disturbance related to route/trail network and possible facilities expansion) of the project and related mitigation measures (i.e., mitigation measures for PM/dust control, air quality impacts of construction vehicles etc.) are discussed. The Draft EIS/RMP only briefly mentions air quality impacts related to construction activities. For example, page ES-9 of the Draft EIS/RMP, states that construction of facilities could cause emissions, yet no information regarding mitigation measures is discussed in any detail.

Recommendation:

9-1

EPA recommends the use of best management practices for PM₁₀ and fugitive dust control (e.g., gravel roads, soil wetting practices, limiting access, traffic and speed reduction). In order to further reduce potential air quality impacts, the responsible agencies should also include a Construction Emissions Mitigation Plan (Plan) and adopt this Plan in the Record of Decision. In addition to measures included in the Draft EIS/RMP and all applicable local, state, or federal requirements, EPA recommends that the following mitigation measures (as applicable) be included in the Plan in order to reduce impacts associated with emissions of PM, and other pollutants from any construction-related activities:

Fugitive Dust Source Controls:

- Stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate at active and inactive sites during workdays, weekends, holidays, and windy conditions;
- Install wind fencing and phase grading operations where appropriate, and operate water trucks for stabilization of surfaces under windy conditions; and
- Prevent spillage when hauling material and operating non-earthmoving equipment and limit speeds to 15 miles per hour. Limit speed of earth-moving equipment to 10 mph.

Mobile and Stationary Source Controls:

- Plan construction scheduling to minimize vehicle trips;
- Limit idling of heavy equipment to less than 5 minutes and verify through unscheduled inspections; and
- Maintain and tune engines per manufacturer's specifications to perform at EPA certification levels, prevent tampering, and conduct unscheduled inspections to ensure these measures are followed.

9-1 The specific measures recommended by the EPA have been added to Best Management Practices in Appendix E, and a more detailed discussion appears in Chapter 3.

9-1

The FEIS should provide a more detailed discussion of emission increases and mitigation measures related to possible facilities construction, increased motor vehicle traffic, and any route/trail network expansion activities for motorized and non-motorized uses, for each of the project's alternatives.

9-2

3.2.15 Special Status Species, page 3-39

Table 3-13 should include a column that states if the project area contains the preferred habitat. Due to the status of the night-blooming cereus with the U.S. Fish and Wildlife Service, the BLM, and the State of New Mexico, attempts to survey or inventory the plant and any efforts to delineate the habitat within the Monument should be discussed.

5.3.2 Tribal Consultation, page 5-2

EPA recommends BLM continue to include the Tribes listed in this section during all appropriate phases of the project and contact Tribes as indicated in the text.

9-2 Information on habitat suitability is stated in Section 3.2.15, and BLM's process for survey and clearance was added to Chapter 2, Special Status Species Management Common to All Alternatives.

BLM_NM LCDO Comments

From: David Smith <dsmith@nmsu.edu>
Sent: Sunday, September 30, 2012 11:58 PM
To: BLM_NM_LCDO_Comments
Subject: Comment on PTNM Draft RMP

The *Prehistoric Trackways National Monument Draft Resource Management Plan and Environmental Impact Statement, July 2012* is lengthy, voluminous document that contains a great deal of information regarding the purpose, need, paleontology, environment, uses, and competing alternatives. The four alternatives can be summarized as

- 1) Alternative A -- leave it alone
- 2) Alternative B -- keep everybody out
- 3) Alternative C -- limit access enough to mollify the 'keep everybody out' crowd but still let the public use public lands
- 4) Alternative D -- maximize public use while still throwing a bone to the 'keep everybody out' crowd.

10-1 Alternative C is presented as the 'preferred' alternative; however there is no discussion to be found that justifies its preference. In all the presented maps depicting different attributes of the monument area, not one map shows an overlay of the currently used roads and trails with any resource to justify closing the four trails named in Chapter 4 Environmental Consequences for closure, nor for the slight difference between the trail closures in Alternative C and Alternative D.

Besides not showing any reasoning that relates the data to the conclusions, the conclusions presented are inconsistent. In *Chapter 4 Environmental Consequences, Impacts Of The Alternatives, 4.4.1 Paleontological Resources, 4.4.1.3 Alternative C, Impacts from Trails and Travel Management* It states the following:

Under Alternative C, within the Monument boundaries, 100 percent of the Tabasco Twister Trail (2.7 miles), and 100 percent (1.8 miles) of Patzcuaro's Revenge Trail would be closed to motorized and mechanized vehicle use. In addition, 100 percent (0.4 miles) of the Cayenne Crawler Trail would be closed to motorized and mechanized use to eliminate access from the south to Patzcuaro's Revenge Trail. ... One-hundred percent of an unnamed route (0.5 miles) from the intersection of Cayenne Crawler and Pasado to Sandia Gulch would be closed to motorized and mechanized use.

Yet in *Appendix C, Prehistoric Trackways National Monument Comprehensive Trails And Travel Management Plan*, it states, "See Table C-2 for a summary of the designated routes for Alternative C." And Table C-2 lists Patzcuaro's Revenge as designated for uses 1,2,3 (1-motorized, 2-mechanized, 3-non-motorized/non-mechanized). That contradicts Chapter 4.

10-1 The location of the sensitive fossil areas was not published in the *Draft RMP/EIS* because this information is considered proprietary. Information on monitoring and damage to fossils has been updated in Chapter 4, Alternative A Impacts to Paleontological Resources. Also, Impacts of Trails and Travel alternatives on Trails and Travel have been added to Chapter 4 to further clarify the slight differences between trail closures in Alternatives C and D. In Appendix C, you noted a mistake in Table C-2. Motorized and mechanized use of Patzcuaro's Revenge has been removed for *the Proposed RMP/Final EIS*. Thank you for your comment.

In sum, the Draft RMP fails to support any conclusions with any of the data so copiously presented.

--
David Smith
4082 Powers Dr
Las Cruces NM 88012

BLM_NM_LCDO_Comments

From: Simmons, Joshua M (WSTF) <joshua.m.simmons@nasa.gov>
Sent: Tuesday, October 02, 2012 7:19 AM
To: BLM_NM_LCDO_Comments
Subject: Comments regarding the Prehistoric Trackways National Monument Draft Resource Management Plan and Environmental Impact Statement.

Comments regarding the *Prehistoric Trackways National Monument Draft Resource Management Plan and Environmental Impact Statement*.

Things to consider

- 11-1** 1. The Las Cruces Four Wheel Drive Club has been hosting the Chile Challenge for over a decade. Over 250 participant during a 4 day period run trails in the Chile Canyons. Every year the BLM's post Chile Challenge report states that the OHV use during the period DID NOT cause any damage to the canyon. So why, after over decade of Federally documented responsible use of the area, would the BLM consider closing any of the existing trails
- 11-2** 2. Guard Rails, signs, and other protective measure will need to be constructed to insure mountain bikers, hikers, and other visitors to the area stay off of the red rock. Why can't these barriers be made to insure OHV users stay off the red rock and stay on designated trails?
- 11-3** 3. Why can't a structure be made to allow OHV vehicles to safely pass over the red rock n the Tabasco Twister trail? The red rock in Tabasco twister that spans the bottom of the canyon is approximately 15 yards wide and 10 yards long. Should an entire trail be shutdown due to such a small area? Could in alternative route be found to bypass this small section of trail?
- 11-4** 4. Won't constructing buildings, parking lots, toilets, trash can receptacles, hiking trails, etc., cause more damage to the area? Won't making it easier to access the monument add more CO2 emission, trash, traffic on the trails, traffic to the monument, and increase the chance that monument will be vandalized? How can three out of the four options include previsions for such structures to be built within the monument, but not allow access to OHV users who, without any supervision, have kept the area well maintained for over a decade?
- 11-5** 5. How do the researchers plan to study this area? The majority of the fossils are buried under hundreds of tons of overburden. Won't this overburden need to be removed to reach the fossils? Won't heavy equipment need to be brought in, new roads need to be constructed, digging, etc. need to be done? Won't this cause more damage to the environment than the continued use of OHV vehicles? Since there is hundreds of tons of overburden protecting the fossils why not leave the area the way it is?
- 11-6** 6. What is the deference between a few 100 OHV vehicles running the canyons over the course of the year and tens of thousands of visitors to the monument? Won't the tens of thousands of visitors cause more carbon emissions, waste, damage, and general ware on the area than the couple of 100 OHV vehicles do now?

For the reasons stated above I believe option A is the best route.

Joshua Simmons
 Electrical Engineer Calibration Lab.
 Work 575-525-7652
 Cell 575-649-2622

11-1 During the EIS analysis, we aggregated a variety of monitoring data that specifically demonstrate that OHV use damages fossil resources. Chapter 4, Alternative A Impacts to Paleontology, has been re-written to better describe the problems associated with simultaneously protecting significant fossil outcrops and managing off-highway vehicles.

11-2 The environment is too dynamic. During monsoon flood events, boulders and erosion will continually alter any kind of barrier system.

11-3 The BLM previously explored by-pass alternatives but the impacts would have been damaging to watershed and fossil resources, and mitigation techniques would have been prohibitively expensive.

11-4 This was analyzed in Chapter 4, Impacts to Paleontological Resources from Recreation and Visitor Services alternatives.

11-5 The scientific approach will employ a systematic removal of overburden when necessary. This process preserves the paleontological resources. Research designs will be prepared by qualified institutions and will be assessed for compatibility with fossil conservation. Any additional ground disturbing activity will have to go through NEPA analysis.

11-6 Please see the response to 11-4.

Phillips, Thomas E

From: BLM_NM_LCDO_Comments
Sent: Wednesday, October 17, 2012 11:53 AM
To: Phillips, Thomas E
Subject: FW: No Comment DES-12/0036, Prehistoric Pathways National Monument Draft Resource Management Plan

-----Original Message-----

From: [Cheryl Eckhardt@nps.gov](mailto:Cheryl_Eckhardt@nps.gov) [mailto:Cheryl_Eckhardt@nps.gov] On Behalf Of IMRextrev@nps.gov
Sent: Wednesday, October 03, 2012 3:28 PM
To: BLM_NM_LCDO_Comments; Allen, Lori D
Cc: waso_eqd_extrev@nps.gov; Spencer, Stephen
Subject: No Comment DES-12/0036, Prehistoric Pathways National Monument Draft Resource Management Plan

Dear Ms. Allen -

NPS has no comment on the subject project.

Thank you,
Cheryl Eckhardt

Environmental Quality External Review Team National Park Service Intermountain Region (AZ, CO, NM, MT, OK, TX, UT, WY) IMRextrev@nps.gov

Phillips, Thomas E

From: BLM_NM_LCDO_Comments
Sent: Wednesday, October 17, 2012 11:53 AM
To: Phillips, Thomas E
Subject: FW: Management plan for the Trackways National Monument

From: Lance [<mailto:lance@sunlandnursery.com>]
Sent: Thursday, October 11, 2012 10:01 AM
To: BLM_NM_LCDO_Comments
Subject: Management plan for the Trackways National Monument

I have three main problems with the management plan.

- 13-1** 1) The plan fails to justify the BLM's choice of Option C. Despite all the data there in no justification to close the roads picked and no evidence that any perceive or actual damage has ever been done to any of the sites. It fails to show any possible damage done by keeping the roads open.
- 13-2** 2) All plans failed to look at alterative options to protect the Abo formations that contain the artifacts. It also failed to point out that most of the Abo areas protected are underground with no potential damage possible. We suggest that the few areas where the Abo is exposed could easily protected by barriers and in the case of Tabasco Canyon (Apache Canyon) Steel pathways could be built over the exposed Abo formations. The four wheel drive groups that use these roads could and would construct these paths at no cost to the BLM. This has been done in other more sensitive areas.
- 3) All plans except option A is stopping a way of life that our fathers, ourselves and our children have experienced. By closing these trails in endangers our ability to teach our kids about nature and about the life styles that BLM is removing from our native culture.
- 13-3** 4) The plan fails to show the economic damage closing the roads will cost the local economy by the loss of thousand of four wheeling tourist and people interested in the trackways that will not be able to reach the sites that the BLM is trying to protect for the people of the US.
- 5)

I feel that option A would be better than any other to address my concerns, but if the BLM could come up with a plan that would protect the trackways without damaging our sport, our culture and our economy. My suggestion is to scrape all options and come up with a plan that will attempt to solve all the concerns.

Lance Harkey
 1450 Tierra del Sol
 Las Cruces, NM 88007

13-1 Please see response to Comment Letter 10.

13-2 Please see Comment Letter 11, response 11-3

13-3 The BLM analyzed the economics of OHV use in Chapters 3 and 4.

Phillips, Thomas E

From: BLM_NM_LCDO_Comments
Sent: Wednesday, October 17, 2012 11:53 AM
To: Phillips, Thomas E
Subject: FW: Please dont close off our access to public lands !!!!!!!!!!!!!

From: blackgp@aol.com [<mailto:blackgp@aol.com>]
Sent: Friday, October 12, 2012 10:01 PM
To: BLM_NM_LCDO_Comments
Subject: Please dont close off our access to public lands !!!!!!!!!!!!!

I was told that if I didnt want our public lands to be turned into a monument that would restrict access to " our lands " that I should write to the you all and provide reasons to stop the actions that the greenies have put into place. In our country it has always been the people/groups with money that had all the power, they are the ones that get heard, this way of life will problemly always be that way. There is always a but, the but in all of this is that us the little guys will continue to speak up and try our very best to keep our lands open to all of us, to be used for all kind of uses. We care about our land and we care about the future of our lands. I have been an avid outdoorsman for 50 years and want my sons and my family to have the same opportunities that i have enjoyed all these years. Bottom line, please dont close off or turn our land into a federal monument. We don't want it, we dont need it, and above all the land is not and should not be classified as a national monument. Stand up the " greenies " and tell them NO. lets leave the land open to all uses.

Thanks for caring.

William Massie

Anthony, NM

Phillips, Thomas E

From: BLM_NM_LCDO_Comments
Sent: Wednesday, October 17, 2012 11:53 AM
To: Phillips, Thomas E
Subject: FW: Comments on the Draft Resource Management Plan and Environmental Impact Statement for the Prehistoric Trackways National Monument
Attachments: Comments on the PTNM.pdf

From: Werkmeister, Mark R [<mailto:mark.r.werkmeister@intel.com>]
Sent: Sunday, October 14, 2012 2:29 PM
To: BLM_NM_LCDO_Comments
Subject: Comments on the Draft Resource Management Plan and Environmental Impact Statement for the Prehistoric Trackways National Monument

Dear Ms. Allen,

Please find our comments on the Draft Resource Management Plan and Environmental Impact Statement for the Prehistoric Trackways National Monument attached.

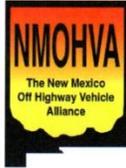
Thank you for the opportunity to comment.



Mark R. Werkmeister, P.E.
Board of Directors
New Mexico Off Highway Vehicle Alliance
Telephone: 505-893-1247

October 14, 2012

BLM Las Cruces District Office,
Attn. Lori Allen, PTNM Project Lead
1800 Marquess Street
Las Cruces, NM 88005



Dear Ms. Allen:

I am on the Board of Directors of the New Mexico Off Highway Vehicle Alliance (NMOHVA) and am representing that organization in providing these comments on the Prehistoric Trackways National Monument Draft Resource Management Plan and Environmental Impact (draft RMP). NMOHVA represents motorized recreationists in New Mexico including 4WD enthusiasts, dirt bike riders, and ATV users. The area occupied by the Prehistoric Trackways National Monument (PTNM) analyzed in this DEIS provides important recreational resources to the members of the public we represent.

We appreciate the opportunity to comment on the DEIS and take the responsibility of reviewing the DEIS for compliance with the National Environmental Policy Act, the Federal Land Policy and Management Act (FLPMA), and the Omnibus Public Lands Management Act 2009 (OPLMA09) with the utmost seriousness. We would like to point out several major errors in the DEIS:

ERROR #1: The draft RMP makes an erroneous statement that materially affects the alternatives in its description of 2.2 ALTERNATIVE DEVELOPMENT. It claims that alternatives must "be viable and reasonable". This is in direct contradiction to CEQ regulations. Alternatives must, indeed, be "reasonable" but there is no requirement that the alternative be "viable".

DISCUSSION OF ERROR #1: The Collins World English Dictionary defines "viable" thus:

"capable of becoming actual, useful, etc; practicable: a viable proposition"

15-1 "Viable" is not a requirement for the consideration of an alternative. It is, in fact, a direct contradiction of CEQ regulations and guidance. 40 CFR 1502(c) makes it very plain:

(c) Include reasonable alternatives not within the jurisdiction of the lead agency.

"Viability" is obviously not a requirement if alternatives are to be included that is not even within the jurisdiction of the agency. CEQ's 40 Questions, Question 2b, expounds further on the questions of reasonable and viability:

15-1 While the CEQ regulations do not refer to viability as a characteristic of alternatives, the word was used in this context to underscore and emphasize the need for alternatives that are practical or feasible from the technical and economic standpoint (and this is further described as an aspect of reasonableness in the CEQ 40 Most Asked Questions, #2a). The context of the bulleted list of Alternative characteristics is introductory in nature and meant to set the stage for the reader. The difference between "viable" and "reasonable" are slight in this context and narrowed the BLM's alternative only to exclude activities the BLM could not implement. The word viable has been removed.

15-1

2b. Must the EIS analyze alternatives outside the jurisdiction or capability of the agency or beyond what Congress has authorized?

A. An alternative that is outside the legal jurisdiction of the lead agency must still be analyzed in the EIS if it is reasonable. A potential conflict with local or federal law does not necessarily render an alternative unreasonable, although such conflicts must be considered. Section 1506.2(d). Alternatives that are outside the scope of what Congress has approved or funded must still be evaluated in the EIS if they are reasonable, because the EIS may serve as the basis for modifying the Congressional approval or funding in light of NEPA's goals and policies. Section 1500.1(a).

Why is this important and material to this draft document? CEQ regulations require reasonable alternatives be fully evaluated if they meet the "reasonable" test ("practical or feasible from the technical and economic standpoint and using common sense"¹) even if they don't meet federal law! This draft EIS makes it clear that the illegal inclusion of "viability" arbitrarily limited or narrowed the alternatives that were considered by the agency.

15-2

One could (and we will) argue that the current management practices, based on the Mimbres RMP and the legislation designating the Monument are already meeting all legal requirements and that removing existing motorized use is without merit. OHV use has been allowed on the Patzcuaro's Revenge and Tobasco Twister trails without further jeopardizing the paleontological resources found there. The draft RMP offers no evidence that continuing this historic and current use is unresponsive to the Monument's enabling Act of protecting and preserving the resources.

RESOLUTION of ERROR #1: Remove the requirement that the alternatives be "viable". Consider a proper range of alternatives that not only provides the required protection for paleontological resources but also "enhance the unique and Nationally-important...recreational resources and values of the public land".²

ERROR #2: The draft RMP doesn't adequately or fully address the identified issue of "How will the RMP address the conflict between motorized use and protection of the Monument objects?"

DISCUSSION of ERROR #2: The draft RMP inadequately explores potential mitigation/protection measures that would protect paleontological resources while still allowing historic/current motorized use. The agency has known about, and fully comprehended, the extent and nature of the paleontological resources since at least 1993 when it established the Paleozoic Trackways Research Natural Area (RNA). Since that time, the agency prepared and implemented the Robledo

¹ Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, Question 2A.

² Draft RMP, p 1-17

15-2 Regarding the use of Patzcuaro's Revenge and Tobasco Twister, recent monitoring results of the important Permian fossil resources demonstrate the degradation and loss of various ichnofossils. The *Proposed RMP/Final EIS* demonstrates this in a revised Chapter 4 analysis of the impacts of Travel and Transportation alternatives on fossil resources. Analysis of the information during the RMP process shows that current levels of OHV use do not meet the Monument objectives, or the goals and objectives as described in the *Proposed Final RMP/EIS*.

The enabling legislation specifically directs the BLM to develop a new Resource Management Plan for the PTNM.

15-3

Mountains Off-Highway Vehicle Implementation Plan (NM-036-97-083). That full-blown and NEPA-compliant environmental document established the trail system (commonly known as the Chile Canyons Trail System) that has been used by the public since that time. This bears repeating. In 1997, four years after the RNA was established to protect the paleontological resource, the agency established the current trail system in canyons that had, up to that time, not had motorized recreation use. The agency took the protection of the paleontological resources into account at the time they established the trail system. They had to do so, it is required by the NEPA process they employed.

Also starting in 1997, the agency started formally permitting the event known as the Chile Challenge on that same trail system. Again, the agency followed all of the prescribed rules and regulations for issuing the special recreation permit for the event. These rules and regulations require them to ascertain potential resource impact issues and identify appropriate mitigation measures before they allow the event. This has happened each and every since 1997, fourteen times to date! Each of those times, the event has been permitted.

Beginning in 2008, the BLM established Special Stipulations to mitigate damage to exposed paleontological resources and to monitor permitted events for comprehensive resource impacts.³

Each of those times, motorized use occurred in the canyon without impacting the paleontological resources. It had to be so or the permit and its mitigation measures would not have occurred the following year! Yet the agency makes this claim:

Identified paleontological resources are exposed on portions of the Tabasco Twister (Apache Canyon) and Patzcuaro's Revenge Trail (Branson Canyon) and documented in the 1994 report (Spencer L.; Hunt, A.; and Hotton II, N. 1994). These localities were confirmed again in an updated inventory during 2010. Under the No Action Alternative, the paleontological resources exposed on parts of the Tabasco Twister and Patzcuaro's Revenge Trails would continue to be destroyed by motorized vehicle use through crushing, fracturing, tire scuff marks, and petroleum product staining of the red beds. The Robledo Member (Abo Tongue) sandstones hosting fossil specimens are usually fine-bedded and friable. The impact from the weight of an OHV is often sufficient to fracture or exacerbate the natural exfoliation of these thin compositional layers. Degradation of the exposed surface destroys visible fossil specimens, but also compromises the subsequent integrity of the entire formation segment.

Although the limestone block layers are generally more resistant to natural erosion, their natural bedding planes make them susceptible to fracturing along exposed seams from excessive pressure or weight. These are exactly the kind of forces imparted by OHV activity during climbing maneuvers. The results of these impact fractures are evident at the vertical obstacles located in the arroyos.⁴

³ Draft RMP, p 4-5

⁴ Draft RMP, p 4-6

15-3 The 1997 Environmental Assessment (EA) does not identify the Paleozoic fossils as a resource in the Affected Environment, but the Environmental Consequences section states that paleontological resources would not be adversely impacted. Since the signing of the 1997 EA, several factors have improved the BLM's ability to assess, monitor, and conserve the important Paleozoic fossils of the Robledo Mountains:

1. The Paleontological Resources Preservation Act (PRPA) was passed by the US Congress and signed into law in 2009, requiring the Secretary of the Interior to manage and protect paleontological resources on Federal land using scientific principles and expertise.
2. Concurrent with the passage of the PRPA, the Prehistoric Trackways National Monument (PTNM) was also signed into law. The PTNM was established to primarily conserve important fossil resources, which are further defined by the BLM as Monument Objects. Please see Chapter 1, Section 1.9 for a definition of the Monument Objects.
3. The Las Cruces District Office implemented a fossil monitoring program in 2008 and results from the program are incorporated into the *Proposed RMP/Final EIS*.
4. Establishment of the area as a Research Natural Area does not have the same requirements as a Monument.

In Chapter 4 of the *Proposed RMP/Final EIS*, the BLM has inserted the results of monitoring data and descriptions of the on-going damage OHVs cause to the significant fossils of the Abo Formation.

15-3

The draft RMP proposes to completely eliminate use in Apache Canyon (Tobasco Twister) and eliminate the critically key portion (from a motorized recreation perspective) of Branson Canyon (Patzcuaro's Revenge) in all of the action alternatives. The action alternatives do not adequately reflect the previous fourteen years of history of accommodation of motorized use and mitigation of paleontological resource concerns. The draft RMP does not adequately account for the previous NEPA-compliant environmental documents. The draft RMP does not adequately justify such a radical departure from previous agency decisions and actions.

This particular issue was clearly pointed out in scoping comments⁵ but the agency has failed to address this issue in the draft RMP.

The inclusion of the existing trail system in the PTNM does not substantially or significantly change the resource protection mandate that the agency has been operating under since the initial establishment of the original RNA. The agency has failed to disclose the data and analysis that would justify such a radical departure from previous management practices.

RESOLUTION OF ERROR #2: Disclose the data and analysis that justifies the radical departure from previous agency decisions and actions or restore motorized recreation access to Apache and Branson Canyon routes.

ERROR #3: The draft RMP makes erroneous assumptions that lead to mis-informed conclusions when comparing the alternatives and addressing the identified issue, "How will the management action in the RMP impact economic and social opportunities in the community?"

DISCUSSION OF ERROR #3: In a nutshell, the draft RMP radically underestimates the negative social and economic impact the reduction in motorized opportunity will have on the community.

The Draft RMP makes several erroneous assumptions that lead to error-filled conclusions about the alternatives:

*"Therefore, while social values related to access and OHV recreation would decrease relative to Alternative A, the change would be small. It is unlikely that many individuals would choose not to recreate on the Monument as a result of this change. Therefore, no measurable economic impact is expected. In social terms, Alternative C would balance some of the conflicting interests related to public land management. Specifically, Alternative C would continue to support public land access and diverse recreation opportunities while also reducing damage to natural and cultural resources."*⁶

⁵ Scoping comments submitted by the New Mexico Off Highway Vehicle Alliance, dated February 6, 2010

⁶ Draft RMP, p 4-56

The agency is making the assumption that all of the route mileage within the PTNM is "equal" in terms of "value" to motorized recreationists. This is not true. While motorized recreationists come from across the US to enjoy the special qualities of the Chile Canyon trail system, it is primarily the "Big Four" that draw the motorized recreationist to the Las Cruces area. The Big Four are the trails commonly known as Patzcuaro's Revenge, Tobasco Twister, Rocoillo Rapids, and Habanero Falls. Even among the Big Four, the "value" assigned by motorized recreationist is not equal. Patzcuaro's and Tobasco are universally recognized as the most challenging in terms of both difficulty and total length. As such, they are the trails that are most likely to satisfy the specific needs of their "fan base". Simply put, without access to Patzcuaro's and Tobasco, motorized recreationists simply will not drive hundreds of miles to enjoy the trail system anymore.

- 15-4 One of the specific instructions to the planning process is that the agency pay specific attention to the scarcity of the values (including the recreational resources) involved:

FLPMA mandates the BLM to prepare and maintain a current inventory of public land and its resources and values. It also mandates the BLM to develop, maintain, and where appropriate revise land use plans for the public land. Section 202 of FLPMA states that land use plans must observe and use the principles of multiple-use and sustained yield, use a systematic interdisciplinary approach, give priority to ACECs, rely on the available inventory of public land, consider present and potential uses, consider the scarcity of the values involved, weigh the long- and short-term benefits, comply with applicable laws and regulations, and coordinate with State and local governments.⁷

Extreme challenge "rock crawling" is among the scarcest recreation resources. Why else would hundreds of enthusiasts drive for hundreds (if not thousands) of miles annually to enjoy the Chile Canyons unique trails? This particular issue, again, was clearly pointed out in scoping comments⁸ but the agency has failed to adequately address this issue in the draft RMP.

The data to support the above statements is readily available to the agency via the registration information for these specific trails during the Las Cruces Four Wheel Drive Club's annual Chile Challenge. By examining this data, it will be readily apparent that without the two premier routes, the Chile Challenge will cease to successfully draw enthusiasts from far outside the area.

- 15-5 Furthermore, the agency's data shows that the lure of the high-challenge four wheeling within the monument is the primary draw of visitors to the area:

Although these are not hard numbers, annual visitation to the PTNM is estimated at between 5,000 and 7,000...⁹

⁷ Draft RMP, p 1-11

⁸ Scoping comments submitted by the New Mexico Off Highway Vehicle Alliance, dated February 6, 2010

⁹ Draft RMP, p 3-8

- 15-4 The PTNM designating language directs the Secretary to manage the Monument "in a manner that conserves, protects and enhances the resources values of the Monument and in accordance with the provisions in the Act and FLPMA. FLPMA 302(a) requires that public land "shall be managed under principles of multiple use and sustained yield...except that where a tract of land has been dedicated to specific uses according to any other provisions of law it shall be managed in accordance with such law." The PTNM legislation directs the BLM to conserve, protect, and enhance the important paleontological resources, as well as recreational resources. The priority for the Monument is paleontological. The *Proposed RMP Final EIS* analyzes impacts from a range of recreational activities and describes the consequences of continued and regular OHV use on the important paleontological values (Chapter 4).

- 15-5 The estimates for annual visitation were inaccurate and have been revised with actual use figures derived from vehicle counters and other visitation documentation. Additionally, the number of visitors is not determinative of the uses that should occur in the area in the future. Recreation is a Monument Object only to the extent that it is recreation that supports paleontological resources; this type of OHV use is not such an Object.

Reported utilization (by vehicle registration) typically runs between 200 and 300 vehicles per day for the 4-day event. There are no reliable estimates of guests and spectators, although anecdotal information suggests that each vehicle averages one passenger (guest)...¹⁰

Simple math using the above excerpts from the Draft RMP tells us that a single four day event each year accounts nearly half of the PTNM's annual visitation. Logic would dictate that a fairly large proportion of the remaining visitors are engaged in causal use of the same specific resource: extreme challenge four wheeling. The bottom line is that deleting motorized access to the "few" miles identified in Alternative C could actually eliminate the majority of visitor's to the monument. The draft RMP uses a very faulty assumption:

"Visitor use is expected to continue at current levels, with steady annual increases. Monument visitation estimates are unavailable."¹¹

The agency could very easily find itself with a Monument that no one will visit. The public doesn't (and probably won't) come to see the trackways. The agency clearly knows this. It even tells the public that there is nothing to "see" at PTNM:

"However, viewing trackways is limited; as they are discovered, and to preserve them for ongoing and future scientific study, the trackways are removed and transported to the New Mexico Museum of Natural History and Science. Anyone interested in viewing these fascinating tracks can do so by visiting the Museum, which offers public tours of their Geoscience Collection, including the Trackways Collection, by reservation."¹²

RESOLUTION OF ERROR #3: Remove the erroneous assumptions the agency uses within the draft RMP. Evaluate the impact of removing critical recreation resources from public use. Re-evaluate the conclusions when comparing the impacts of the various alternatives.

Thank you for the opportunity to comment.

Sincerely,

Mark R. Werkmeister, P. E.
Board of Directors
New Mexico Off Highway Vehicle Alliance

1700 Willow Rd NE
Rio Rancho, NM 87144
mark_r.werkmeister@intel.com
505-893-1247

¹⁰ Draft RMP, p 4-8

¹¹ Draft RMP, p 4-52

¹² http://www.blm.gov/nm/st/en/prog/recreation/las_cruces/trackways.html



**Western
Watersheds
Project**

Arizona Office

PO Box 2264

Tucson, AZ 85702

tel: (520) 623-1878

fax: (208) 475-4702

email: arizona@westernwatersheds.org

web site: www.westernwatersheds.org

Working to protect and restore Western Watersheds and Wildlife

October 16, 2012

BLM Las Cruces District Office

Attn: Lori Allen

1800 Marquess Street

Las Cruces, NM 88005

BLM_NM_LCDO_Comments@blm.gov

Submitted via email and hard copy on October 16, 2012

COMMENTS ON THE DRAFT RESOURCE MANAGEMENT PLAN AND DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE PREHISTORIC TRACKWAYS NATIONAL MONUMENT

Dear Ms. Allen,

The following comments on the Draft Resource Management Plan and Draft Environmental Impact Statement ("DRMP/DEIS") for the Prehistoric Trackways National Monument ("PTNM") are submitted on behalf of the staff and members of Western Watersheds Project. We offer these comments on behalf of our organizations staff and members who care about and are affected by management decisions impacting the Monument objects. We support management actions that benefit wildlife, watersheds, and the aesthetic qualities of open space, and we encourage the Bureau of Land Management ("BLM") to consider the needs of the majority of public lands visitors and not just those of special interest groups. Many of our staff and members recreate in and enjoy the lands of the planning area.

In general, we do not believe that the DRMP/DEIS meets the requirements of the National Environmental Policy Act (NEPA), 42 U.S.C. § 4321 *et seq.*, or the Federal Lands Policy and Management Act, 43 U.S.C. § 1701 *et seq.*, and in failing to do so, is an insufficient basis for a fully informed decision about the management of these important public lands.

1. Purposes of Monument Designation

The DRMP/DEIS fails to sufficiently distinguish this national Monument from BLM's typical multiple-use lands. The FLPMA contains an explicit exception to its general multiple-use prescription: Multiple-use management applies, except "...where a tract of such public land has been dedicated to specific uses according to any other provisions of law it shall be managed in accordance with such law" (FLPMA, as amended, Public Law No. 94-579, Title III, Sec. 302(a)). The BLM has interpreted this exemption thusly:

"That means in some places, conservation may be elevated over development or production if a law identifies conservation as the primary use for which the land is designated. On the protection end of the multiple-use spectrum, NLCS areas are designated by act of Congress or presidential proclamation (in

16-1 The RMP/EIS process began in 2009 and the most recent BLM guidance on National Monuments was published in 2012 (BLM Manual 6220). The *Final RMP/EIS* has been revised and updated to reflect the most recent guidance throughout. Specific examples are found in our approach to defining Monument Objects and establishing Monument Goals.

- 16-1** accordance with the 1906 Antiquities Act) to conserve, protect, and restore specified natural and cultural values” and on lands within the NLCS, the BLM intends to, “Limit discretionary uses to those compatible with conservation, protection, and restoration of the values for which NLCS lands were designated,” and in order to do this, BLM will “Use the best available science to conduct capacity studies, establish specific, measurable, attainable, relevant and time-specific (SMART) objectives, and develop monitoring plans for compatible uses to ensure the NLCS values are protected, consistent with the designation legislation or presidential proclamation.” 15-Year Strategy for the NLCS at 10.¹

This clarity of vision for the NLCS lands should have extended to the PTNM DRMP/DEIS. It did not. Instead, the BLM maintains its focus on deleterious multiple uses, by allowing deleterious livestock grazing to continue within the Monument lands.

- 16-2** The PTNM establishing legislation states, “The Secretary shall only allow uses of the Monument that the Secretary determines would **further the purposes** for which the Monument has been established.” Emphasis added. The purpose of the designation was to, “**Conserve, protect and enhance** the unique and nationally important paleontological, scientific, educational, scenic, and recreational values of the public land [of the PTNM].” Emphasis added. Thus, the BLM’s proposed land management plan has the burden of demonstrating that each of the uses it allows furthers conservation, protection, and enhancement of the five specific values. However, nothing in the DRMP/DEIS provides evidence that allowing livestock grazing to continue furthers any of the purposes that the BLM is supposed to be managing for.
- 16-3** Nothing in the enabling legislation puts impacts to permittees on par with impacts to wildlife and vegetation, as the DRMP/DEIS mistakenly suggests. DRMP/DEIS at 1-8. This is the wrong basis from which to evaluate the resource management, and BLM has erred at the outset by adding livestock grazing operations to the list of “resources” it is supposed to protect. Livestock grazing is not a Monument object. DRMP/DEIS at 1-16. The BLM has not shown any reason why it needs to continue livestock grazing in the PTNM, or how doing so **conserves, protects, or enhances** the Monument objects. Continuing livestock grazing within the PTNM is incompatible with the conservation, protection, and enhancement of the resources the designation is intended to protect, and the DRMP/DEIS does not provide a sufficient basis for its preferred alternative to maintain status quo grazing on the PTNM.
- 16-4** The DRMP/DEIS admits that the removal of livestock grazing under Alternative B would, “provide less impact to soils, better vegetation communities and densities, and a healthier ecosystem. Areas around livestock watering facilities would begin rehabilitating, and vegetation would likely begin to grow within degraded areas. This would increase soils moisture and infiltration and lower erosion potentials. Fewer rangeland improvements [sic] would cause reduced surface disturbance except during periods of maintenance for wildlife purposes.” DRMP/DEIS at 4-60. BLM’s failure to select this alternative for livestock grazing, which is the best alternative for livestock grazing in fulfillment of the management objectives for the PTNM, is unsupported by the analysis, unjustified by the record, and improper under federal law.

2. Alternatives

NEPA requires that the BLM consider a range of management alternatives, which is “the heart of the environmental impact statement.” 40 C.F.R. § 1502.14. NEPA requires BLM to “rigorously explore and objectively evaluate” a range of alternatives to proposed federal actions. See 40 C.F.R. §§ 1502.14(a) and 1508.25(c).

¹ http://www.blm.gov/pgdata/etc/medialib/blm/wo/Communications_Directorate/public_affairs/news_release_attachments.P ar.16615.File.tmp/NLCS_Strategy.pdf

- 16-2** Section 2104 (h) of the Monument Legislation reads “*GRAZING.—The Secretary may allow grazing to continue in any area of the Monument in which grazing is allowed before the date of enactment of this Act, subject to applicable laws (including regulations).*” Under the Preferred Alternative, Alternative C, grazing would be allowed to continue. If it is determined that livestock are impacting the fossil resources, those areas would be fenced off from livestock to remove the direct impact. See Section 4.4.1.3.

- 16-3** Grazing has been removed from the list of protected resources. Livestock are not an Object but see Comment 16-2. Also, we have added discussions on the susceptibility levels of the fossils to livestock hoof action in Chapter 4, Paleontological Resources.

- 16-4** An Allotment Health Assessment was performed in 2012 and those data have been added to the description of Vegetation in Chapter 3 and the analysis of Impacts to Vegetation from Livestock Grazing in Chapter 4. The additional information provides a more complete picture of the environment and demonstrates that continued grazing is compatible with the Monuments Goals and Objectives.

The DRMP/DEIS analyzes just two alternatives, to continue grazing on all allotments (Alt. A, C, D) or to exclude it on all allotments (Alt. B). DRMP/DEIS at ES-11. Western Watersheds Project fully supports Alternative B's provision to discontinue livestock use within the PTNM. DRMP/DEIS at ES-4. We do not support that alternative's continued authorization of recreational target shooting.

- 16-5** BLM's, "All In" strategy to either allow grazing to continue or discontinue it entirely neglects key differences between the two allotments within the PTNM. The Altamira Ranch allotment is seldomly used. DRMP/DEIS at 3-15. There are no stock waters or reliable water sources, and the terrain is rugged. Ibid. The DRMP/DEIS admits that the Picacho Peak allotment is stocked at 58 percent of the authorized stocking rate. Ibid. The BLM could have considered an alternative closing the portion of Altamira Ranch within the PTNM and reducing the stocking rate of the Picacho Peak allotment to balance authorized uses with actual uses. No alternatives were identified or analyzed that would have closed allotments that are in non-use or which are in poor condition, nor any alternatives that would have presented alternative management regimes (such as changing the season of use, etc.). This failure to evaluate a range of reasonable alternatives also violates NEPA.

The DRMP/DEIS does not include provisions for administrative retirement of grazing permits upon their voluntary relinquishment. The BLM should have included a provision allowing the retirement of the allotments within the PTNM for the life of the plan should the permits for those allotments be relinquished voluntarily or cancelled by the agency for any reason. Establishing this overarching option for resolving livestock grazing conflict under each of the grazing alternatives allows for market-based solutions to the problem.

- 16-6** In addition to analyzing management on the national monument, the DRMP/DEIS should have assessed the cumulative impacts of livestock grazing on the adjacent BLM, state trust, and private lands in context of its impacts on monument objects. For example, some species of wildlife or plants that are protected in the PTNM may be affected by off-Monument grazing management (i.e. impacts may include delayed recovery, reduced dispersal potential, or invasive species competition resulting from grazing disturbances). NEPA requires this kind of assessment; the DRMP/DEIS failed to provide it.

3. Range infrastructure and developments

- 16-7** Wildlife become entangled or impaled on fencelines. See Avery et al 1978, Anderson 1977, Craig and Powers 1976, Fitzner 1975. Fences, unless properly constructed, can also impede wildlife movement across the landscape. Man-made watering sources (for livestock or other reasons) are a source of non-native and feral species spread and can negatively impact wildlife. See Burkett and Thompson 1994. Despite these adverse effects, the DRMP/DEIS for the PTNM only touts the benefits of livestock waters for wildlife, without any evidence that this is actually so. NEPA requires "Agencies shall insure the professional integrity, including scientific integrity, or the discussions and analyses in environmental impact statements.... and shall make explicit reference to the scientific or other sources relied upon for conclusions in the statement." 40 C.F.R. 1502.24.

The DRMP/DEIS mistakenly characterizes the impacts of Alt. B (No Grazing) to wildlife and special status species. It says, "Elimination of livestock grazing... would also have adverse impacts by eliminating livestock improvement water sources." DRMP/DEIS at ES-13. Elsewhere, the DRMP/DEIS admits that the Altamira Ranch allotment within the Monument is generally devoid of water developments and reliable water sources. DRMP/DEIS and 3-15, Map 3.3. This suggests that BLM's water-based justification for retaining livestock operations on the PTNM is inaccurate reasoning for the Altamira Ranch allotment.

- 16-8** The DRMP/DEIS does not provide a basis for, "Management Common to All Alternatives," which includes "Existing range improvements would continue to be protected and maintained." DRMP/DEIS at 2-30. Clearly, if BLM selected Alternative B (No Grazing), there would be no need for protecting and maintaining all existing range improvements. The BLM should take a site-specific look at wildlife use before vowing to protect and

- 16-5** The majority of the land base for both Picacho Peak and Altamira Allotments lies outside the Trackways boundary. Closure of either grazing allotment within PTNM would be based on livestock grazing decisions in the *Mimbres RMP* (which is currently under revision so any proposed changes to the allotment would be considered in the *TriCounty RMP* process). Based on data in the recent Allotment Health Assessment presented in Chapter 3 of the *PTNM Proposed RMP*, current management does not warrant changes to the grazing permit.

- 16-6** While important resources, plants and animals are not Monument Objects. It is reasonable to assume that livestock grazing surrounding the Monument would continue but the impact of this would not have an effect on Monument Objects. To emphasize this point, the US Fish and Wildlife Service has concurred with the BLM's determination in the *TriCounty Draft RMP/EIS* that livestock grazing in Alternative C (the Preferred Alternative) would have no effect on Special Status Species.

- 16-7** The BLM may maintain waters without active livestock grazing in an allotment through use of range improvements or the addition of water collection systems known as "guzzlers." We have added this concept in Chapter 2 to Alternative B, Livestock Grazing, and Alternatives B and C, Wildlife.

- 16-8** Chapter 2 Wildlife now includes the specific recommendation of installing water developments as needed for wildlife if livestock are excluded from the Monument. Similarly, in Livestock Alternative B, the BLM would maintain livestock waters for wildlife. The Chapter 3 Wildlife section has been updated to describe the benefits of artificial waters in the Las Cruces District.

16-8 maintain livestock waters. Ibid. Moreover, BLM's claims that "Livestock grazing improvements would benefit special status species by providing water facilities," (under Alts. A, C, and D) is unsupported, and nowhere does the DRMP/DEIS explore or explain the water needs of native species that will be met through livestock waters. Most of the scientific literature on livestock water developments provides contrary conclusions, and BLM has failed to support its rosy claims here with any site-specific or general evidence that this is so. For a discussion of what the BLM should have analyzed and disclosed before claiming benefits of water infrastructure, see Scott 1997.

16-9 The BLM discusses the expense of a new perimeter fence for the PTNM under Alternative B, but nowhere does the DRMP/DEIS estimate or disclose the cost of the fencing under the proposed action. DRMP/DEIS at 2-52. The BLM also fails to discuss the cost to the taxpayers of maintaining livestock grazing on the Picacho Peak and Altamira allotments. Instead, the BLM focuses on the reduction of labor income to ranchers. For the other alternatives, the BLM merely repeats itself: "Social and economic consequences of grazing are the same under Alternatives A, C, and D." It does not, unfortunately, describe those consequences. DRMP/DEIS at 2-52. The DRMP/DEIS also does not "do the math" regarding the contributions of livestock grazing to county coffers; despite discussions about the percentage of grazing fees recovered as payments to the counties, the BLM does not state, that at best (under Section 15 leasing), Dona Ana count stands to receive \$183.60 in returns on grazing fees, equivalent to the amount returned to the agency. The financial contribution of grazing therefore is negligible, and BLM's failure to admit this means the DRMP/DEIS is an incomplete analysis and illegal under NEPA, and it biases the decision-maker with its selective reporting.

16-10 The BLM is inconsistent in its description of the current livestock use of the PTNM. In one place, it states that the current stocking rate provides 272 AUM to grazing permittees. DRMP/DEIS at 3-29. Elsewhere, it is revealed that 272 AUM is the actual use, but the authorized rate is nearly double. DRMP/DEIS at 3-15. This is confusing, and downplays the reality of the preferred alternative, which maintains the full authorization and not the actual use, which varies from year to year.

16-11 The BLM has not fully considered the implications of its preferred alternative (increasing livestock infrastructure and fencing to exclude sensitive areas) on wildlife, nor has the agency analyzed and disclosed the effects of fencing on the objective to maintain and restore "habitat connectivity in and between public land including breeding, foraging, dispersal, and seasonal use habitats." DRMP/DEIS at 2-46. The DRMP/DEIS fails to analyze the impacts of existing livestock infrastructure (interior fencing, pipelines, and troughs on the Picacho Peak allotment) to wildlife, and/or discuss the extent to which wildlife already depend on those waters.

16-12 The BLM includes the construction of a perimeter fence to exclude livestock as a visual impact. DRMP/DEIS at 2-55. The BLM does not analyze or disclose the visual impacts of livestock exclusion fences under the other alternatives. This is selective disclosure, and such biased decision-making is a violation of NEPA. The DRMP/DEIS is also misleading about the need for a perimeter fence to exclude livestock. DRMP/DEIS at 4-49. The law does not require the BLM to fence out livestock. Allowing livestock or other privately owned or controlled animals to graze on or be driven across public lands without a permit or lease is prohibited by federal law. 43 C.F.R. § 4140.1(b)(1).

16-13

4. Baseline conditions

NEPA requires that an EIS must "provide full and fair discussion of significant environment impacts of the proposed actions and shall inform decision-makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment." See 40 C.F.R. § 1502.1.

NEPA also requires that the agency analyze impacts in comparison to an accurate determination of baseline data, such that BLM adequately and accurately describes the environment that will be affected by the proposed action under consideration – the "affected environment." 40 C.F.R. § 1502.15. The importance of accurate

16-9 The costs of administering the grazing program have been updated in Chapters 3 and 4 in the Socio-Economics sections.

16-10 The livestock section has been re-written to describe the complexity of analyzing the Monument as a subset of two larger grazing allotments. The current stock rate of 272 was used in the socio-economics analysis to portray actual billing. Also, as described in WWP Point 5 BLM Response, the grazing authorization spans beyond the planning unit. The appropriate planning unit for changes to the allotment permit would be in the TriCounty RMP process.

16-11 The Chapter 4 analyses on impacts to wildlife have been updated to more fully consider impacts.

16-12 The Alternative B livestock decision in Chapter 2 has been revised to show that visual impacts would be mitigated by the use of solid green posts. The Chapter 4 impacts of livestock grazing (a fence) on VRM has been revised to show that the mitigation and a new line would be noticeable to anyone near the perimeter of PTNM the sunlight is correct and that the wire may be visible until it tarnishes. The VRM inventory considers the impacts of the current fence.

16-13 This section has been rewritten to highlight the importance of controlling livestock with or without a fence. However, the perimeter fence is a reasonable alternative and a practical solution to exclude livestock because both allotments also exist outside the boundary of the PTNM. Any allotment closures or reductions would be considered in the TriCounty RMP process as described in BLM Response 16-5.

baseline data has been emphasized by the U.S. Court of Appeals for the Ninth Circuit, which stated that “without establishing . . . baseline conditions . . . there is simply no way to determine what effect [an action] will have on the environment, and consequently, no way to comply with NEPA.” Half Moon Bay Fisherman’s Marketing Ass’n v. Carlucci, 857 F.2d 505, 510 (9th Cir. 1988). The court further held that, “The concept of a baseline against which to compare predictions of the effects of the proposed action and reasonable alternatives is critical to the NEPA process.” Id.

FLPMA requires that the Secretary of the Interior, “prepare and maintain on a continuing basis an inventory of all public lands and their resource and other values, giving priority to areas of critical environmental concern. This inventory shall be kept current so as to reflect changes in conditions and to identify new and emerging resources and other values. 43 U.S.C. §1711(a). The BLM is obligated to “arrange for resource, environmental, social, economic and institutional data and information to be collected, or assembled if readily available.” 43 C.F.R. § 1610.4-3.

16-14 The BLM’s preferred alternative is, “Allotment management plans would be adjusted to exclude grazing at specific locations such as exclosures around campsites or in areas to protect paleontological resources as deemed necessary.” DRMP/DEIS at 2-3. Nowhere does the DRMP/DEIS identify those areas or disclose to the reader or decision-maker what would deem exclusions “necessary.” The DRMP/DEIS does not identify the process for these changes, or set any schedule for evaluating whether or not exclusion is necessary. As such, the preferred alternative amounts to “magical thinking,” anticipating that at some unspecified future time, an unspecified future process will complete unspecified future projects to protect the Monument objects. Unfortunately, that time should be now, in this plan. Such vagueness and procrastination fails the requirements of NEPA.

16-15 The DRMP/DEIS states that the New Mexico Standards and Guidelines for Livestock Grazing Management (2001) provide guidance for livestock grazing management within the Monument and throughout New Mexico. DRMP/DEIS at 1-15. The DRMP/DEIS references the “most recent monitoring data” regarding utilization, but it does not disclose when those data were collected or what the stocking rate was at the time. DRMP/DEIS at 3-18. It appears that BLM has not completed monitoring studies since 1995 on the Picacho Peak allotment. Ibid. It does not appear that BLM has current information about the Altamira Ranch allotment; the DRMP/DEIS references monitoring data from 1982! DRMP/DEIS at 3-19. This outdated information is insufficient to serve as a baseline with which to compare alternatives.

5. Air quality and greenhouse gases

16-16 The DRMP/DEIS does not analyze the effects of livestock grazing on air resources or air quality. DRMP/DEIS at 2-50. Even the discussion of the “No Grazing” alternative, Alt. B, fails to admit that removing livestock grazing from the PTNM would improve the air quality by decreasing livestock-created dust and emissions. The BLM’s only discussion of livestock grazing and air quality pertains to the temporary and limited use of roads by permittees. DRMP/DEIS at 4-35. Livestock have profound deleterious effects on biological soil crusts, which are known to slow wind and water erosion. BLM’s failure to explore that in the in the DRMP/DEIS is but one shortcoming of the DRMP/DEIS.

16-17 BLM states that it is not possible to predict with certainty the potential emissions and sequestration of greenhouse gases associated with its planning alternatives. DRMP/DEIS at 2-50. That doesn’t mean BLM doesn’t have to try, or explain why BLM didn’t provide some estimate of the GHGs associated with livestock grazing. The BLM’s cursory and narrow analysis in the DRMP/DEIS is insufficient under NEPA. DRMP/DEIS at 4-38.

16-14 In Chapter 2, a monitoring process is proposed that will assist the BLM in both inventory and management.

16-15 Chapter 3 descriptions of monitoring data have been updated in the Vegetation Section to reflect the recent 2012 Allotment Health Assessment.

16-16 The BLM does not analyze in detail the impacts of GHG from livestock on the Monument for the following reasons; (1) while it is possible to estimate the amount of methane and CO₂ produced from the livestock in the Monument, it is difficult to quantify the degree of air quality impact (negative or positive) from those livestock in conjunction with other nearby livestock (cows, horses, sheep, etc.) on public and private lands, large ruminants, and dairy farms in the area for each alternative, and (2) while livestock would be removed in Alternative B, many of the cattle could be moved to other locations surrounding the Monument. A detailed analysis would be needed to determine any adjustments to the stocking rate, and thus any change to GHG emissions from cattle under Alternative B. Additional information regarding livestock induced dust emissions has been added (4-42). The soils in the Monument do not have any well-formed, complex, or unique biological soil crusts. However, additional information regarding the type of soil crust that is present has been added (page 3-30).

16-17 Please see BLM Response to Comment 16-16.

The BLM also doesn't analyze its proposed action in context of the GHG changes already underway. The DRMP/DEIS should have considered the ongoing drought and the likelihood that such conditions will persist and worsen. See Catlin, *et al.* 2011.

6. Cultural resources

- 16-18** The DRMP/DEIS does not analyze the effects of livestock grazing on cultural resources. DRMP/DEIS at 2-51. Once again, the BLM isn't treating livestock grazing as a surface disturbing activity, or the cessation of grazing under Alternative B as a way to conserve, protect, and enhance cultural objects.

The National Historic Preservation Act (NHPA) requires that the Bureau conduct a literature search to determine whether grazing may affect any listed or eligible areas on the National Register of Historic Places. The NHPA also requires that federal agencies administer federally owned, administered, or controlled prehistoric and historic resources in a spirit of stewardship for the inspiration and benefit of present and future generations. The cessation of livestock production on the Monument is one of the ways that the Bureau can comply with this directive.

Because livestock can trample pottery, knock over structures, create undue wear on trails and routes, and generally impact the landscape in highly visible ways, it should not be permitted within any part of the Monument. The history of this region is too important to be fragmented under cattle hooves. The BLM's analysis is limited to the impacts of new infrastructure (water and fences) and not the ongoing impacts of trampling and erosion. DRMP/DEIS at 4-40. This is insufficient under NEPA.

7. Vegetation resources and stocking rate

The impact of livestock grazing on vegetation communities has been extensively documented, and this activity has resulted in soil loss and vegetative shift in southwestern ecosystems. See Jones 2000. Livestock grazing can alter fire regimes, through vegetation type conversion and the spread of non-native weeds. See, Belsky and Gelbard 2000, Brown *et al.* 1997, Brooks and Berry 2006. Livestock grazing can denude the landscape, accelerating weed invasions and disrupting the formation of cryptobiotic crusts through vegetation removal and trampling. See Eckert *et al.* 1986, Kaltenecker and Wicklow-Howard 1999, Mack 1989, Rosentreter 1994, Schiffman 1997. Indeed, a review of scientific literature specifically pertinent to livestock grazing in Arizona found significant impacts, including the decreased abundance of perennial grasses and native shrubs. See Fleischner 1994. The removal of livestock increases species richness as well as canopy cover in some vegetation classes, and reduces herbaceous vegetation by more than half. *Ibid.*

- 16-19** The BLM's analysis of livestock impacts to vegetation resources is biased and unscientific. The agency claims that the cessation of livestock grazing "would increase the amount of plant biomass to accumulate." DRMP/DEIS at 2-54. The agency has not analyzed whether this is a positive or negative development, how it would compare to the historic climax plant community, or whether native herbivores might also affect the available biomass.

- 16-20** The BLM provides cursory conclusory statements regarding the impacts of removing livestock grazing on wildland fire management, stating, "Reduction in livestock grazing would increase fuels and the likelihood that a wildfire would carry." DRMP/DEIS at 2-55. The BLM has not provided a hard look at the types of fuels and fires that are likely to be increased with a livestock grazing restriction.

The DRMP/DEIS describes a specific, *pro rata* reduction in livestock grazing that would occur following the withdrawal of acreage for Monument uses. ES-11. This is inappropriate. Stocking rates should be based on forage availability and carrying capacity, and any adjustments require a site-specific hard look at the forage resources on each excluded acre and the remaining acres.

- 16-18** The land within the Monument boundary has shown little evidence of past cultures and artifacts (see Chapter 3- Cultural Resources section), and cultural resources are not a legislated Monument Object. Impacts to cultural resources caused by on-going grazing in the Picacho Peak and Altamira Allotments have not been documented. As described in Section 4.4.6 of the FEIS, BLM will comply with Section 106 of the NHPA as projects with the potential to adversely affect significant cultural resources are proposed. Although impacts from grazing are expected to be minimal, based on the location of the paleontological resources (see Section 4.4.1.1), the Monument Monitoring Plan will assist the BLM in determining whether livestock are impacting the fossil resources. If such impacts exist, those areas would be fenced off from livestock to remove the direct impact (Section 4.4.1.3).

- 16-19** Impacts of Livestock Grazing on Vegetation have been re-written in Chapter 4 to include a more detailed assessment. This section now uses new data presented in the Chapter 3 Vegetation section, such as State and Transition models that consider historic climax vegetation.

- 16-20** The *pro rata* reduction on grazing has been re-written in Chapter 3, Vegetation and Livestock Grazing, to more clearly characterize the BLM forage availability assessment process.

- 16-21** The DRMP/DEIS includes plans for “forage increases as a result of grassland restoration treatments,” including prioritizing watershed function and then, “Forage in excess of those needs...” to be allocated to wildlife and livestock use. DRMP/DEIS at 2-31. It is unclear how the agency would quantify the needs of “watershed function” for vegetation, and this statement is vague and unsupported. What is clear is that removing the 454 AUM that are currently allocated to livestock would allow at least 408,600 lbs of vegetation on the landscape each year, enough to support many more native wildlife species. The BLM has wholly failed to evaluate, analyze, or disclose the benefits of this increased forage for native wildlife species.

8. Soil resources

- 16-22** The DRMP/DEIS essentially admits that the cessation of livestock grazing would conserve, protect, and enhance the soil resources of the PTNM when it identifies the removal of grazing as a passive restoration technique. DRMP/DEIS at 2-33. Despite this, and despite the mandate of Monument designation, the BLM’s preferred alternative allows livestock grazing to continue.

The BLM claims that soil resources would be managed to meet the New Mexico Standards and Guidelines. DRMP/DEIS at 4-58. Those S&Gs were adopted in 2001. The most recent monitoring on the grazing allotments occurred in 1982 and 1995. The BLM’s reliance on these S&Gs to ensure against degradation of soil resources is therefore misplaced and unsupported. The DRMP/DEIS does not specify a schedule for the evaluation of soil resources of provide any monitoring information that would otherwise support its claims here.

Allowing ongoing livestock grazing within the PTNM allows livestock induced degradation of the soil communities, and this has implications for all of the resources the Monument was designated to protect. Livestock impacts to soils are direct and indirect, and range from reduced vegetation cover and reduced soil nitrogen and carbon storage. *See* Fernandez, *et al.* 2008.

9. Non-native species

- 16-23** The DRMP/DEIS admits that livestock concentration areas can be sources of weed infestations, but the agency has apparently not surveyed the livestock concentration areas on the PTNM to reach its conclusions that “There are no known populations of Class A or Class B noxious weeds of invasive species within the Monument.” DRMP/DEIS at 3-41.

The DRMP/DEIS admits that it as a population of salt cedar within the Monument, primarily in Apache Canyon. DRMP/DEIS at 3-41. It does not analyze whether water withdrawals for livestock operations have changed the hydrologic regime so as to create disturbed conditions for salt cedar establishments, or the extent to which direct impacts of livestock loafing and wallowing in the riparian areas has affected the distribution and development of non-native communities.

The DRMP/DEIS considers the potential for livestock to introduce new species to the PTNM. DRMP/DEIS at 4-68. It does not consider that livestock also create disturbed conditions that facilitate non-native species establishment through the trampling of biotic soil crusts, disproportionate impacts to native vegetation, and serving as distribution mechanisms for species that arrive on the Monument in other ways.

The inclusion of non-native species in restoration, rehabilitation, and reclamation activities on the PTNM should be withdrawn. DRMP/DEIS at 2-37. BLM must not allow the use of non-native species on the Monument.

10. Watershed effects

- 16-21** Impacts of livestock removal in the PTNM have been further evaluated in Section 4.4.18.2.

- 16-22** More detailed information describing the characteristics of the soil classifications found within the Monument have been updated in Section 3.2.13. Additional impacts from livestock grazing on soils have been addressed in Section 4.4.11.1 and 4.4.11.2. Although it is stated that the continuation of grazing within the Monument will increase the likelihood of soil movement, soil loss and degradation, and decreases in soil moisture, based on the high surface rock content of the Monument, overall erosion is expected to be slight.

- 16-23** There are no riparian areas in the PTNM. Chapter 3 has been re-written to make this clearer. The salt cedar is not associated with a riparian area, as described in Chapter 3-Vegetation. Also, the BLM does not favor the use of non-native species but provides the language that non-natives may be used in the unlikely event that if native species are not effective, other species may be considered.

- 16-24** The BLM has not proposed mitigation measures for the surface disturbance of livestock grazing, and/or the water quality impacts of livestock grazing on the Rio Grande watershed. DRMP/DEIS at 2-44. The BLM failed to analyze the extent and intensity of livestock pollution within the PTNM and the extent to which this has water quality impacts downstream. DRMP/DEIS at 3-45.

The BLM relies on compliance with the New Mexico Standards and Guidelines to manage hydrologic processes on the PTNM. DRMP/DEIS at 4-77. Those S&Gs were adopted in 2001. The most recent monitoring on the grazing allotments occurred in 1982 and 1995. Thus, the BLM's reliance on these S&Gs to ensure against impacts to hydrological function is therefore misplaced and unsupported.

11. Paleontological resources

- 16-25** The DRMP/DEIS does not analyze the effects of livestock grazing operations on paleontological resources. DRMP/DEIS at 2-48. BLM does discuss the impacts of off-road vehicle traffic and proposes closing routes within the Monument where ORVs could cause destruction of these resources. Ibid. However, the BLM does not discuss the effects livestock have on these resources, or analyze whether any high-impact/concentration areas have the potential to destroy paleontological resources via accelerated erosion, trampling, or aesthetic effects. Elsewhere, the BLM admits that paleontological resources have the potential to be stepped on and crushed by livestock. DRMP/DEIS at 4-6.

Rather than provide a firm plan to "conserve, protect, and enhance," these resources, BLM simply states that under the preferred alternative, "[P]aleontological resources could be fenced off from livestock... if it is determined that livestock are impacting the resources." DRMP/DEIS at 4-9. There are three problems with this approach. The first is that a Land Use Plan is the appropriate place to determine if there are impacts to the resources the Monument is supposed to protect. The second is that BLM has not set a protocol for determining when or whether livestock are impacting paleontological resources. And the third, this is a reactive approach, not a proactive/protective approach. The BLM is going to wait until damage occurs before fencing it off, instead of developing a management plan that conserves, protects, and enhances this resource. This fails the spirit of the designation, and BLM's preferred alternative doesn't cross the threshold of protection that the BLM should be providing at PTNM. It also fails FLPMA's mandate for the BLM to, "shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands." 43 U.S.C. §1732(b), because it is waiting for degradation to occur before taking action.

12. Special status species

The BLM's Special Status Species Policy requires that "sensitive" species be afforded, at a minimum, the same protections as candidate species for listing under the Endangered Species Act. The policy declares that BLM managers must "obtain and use the best available information deemed necessary to evaluate the status of special status species in areas affected by land use plans...." See Policy at § 6840.22.A. It goes on to provide specific direction for land use planning, specifying that land use plans "shall be sufficiently detailed to identify and resolve significant land use conflicts with special status species without deferring conflict resolution to implementation-level planning." Id.

The objectives of the policy are, "To initiate proactive conservation measures that reduce or eliminate threats to Bureau sensitive species to minimize the likelihood of and need for listing of these species under the ESA." § 6840.2.B.

Recent case law pertaining to RMP's emphasized this special obligation of the BLM to adhere to its own policies and the national strategy when managing sensitive species. BLM's own policies stress the need to avoid

- 16-24** Watershed conditions and potential impacts have been updated in Chapter 3 sections on Vegetation, and Soils, and in Chapter 4, Impacts to Vegetation and Impacts to Soils. Specific mitigation has not been proposed because there is no finding that watersheds are impacted by grazing or a finding that water quality is polluted.

- 16-25** The Chapter 4 analysis of Impacts to Paleontological Resources has been updated to show that in rare cases, hoof action could cause chipping or abrasion of fossils. Because there are not expected to be major impacts from grazing on the paleontological resources, based on the location of the grazing and the paleontological resources, BLM made the decision in the preferred alternative to allow grazing on the Monument. Although the analysis finds impacts to be unlikely, if such impacts are discovered, BLM will take measures to fence areas to prevent future impacts.

waiting for the site-specific project to consider habitat protections, and to consider those issues in the programmatic land use planning process.²

- 16-26** Whereas the DRMP/DEIS repeatedly (and without support) touts the benefits of livestock water developments to special status species, it has not really taken a “hard look” at which species occur on the PTNM in context of whether this is true or necessary benefit. Most of the special status species identified in the plan are bats, with a couple of birds, a lizard, and a cactus. DRMP/DEIS at 3-36. Certainly, the Texas horned lizard neither relies on stockwaters nor benefits from livestock grazing reducing the vegetation cover within its habitat. The burrowing owl needs some access to water, but the agency has not identified whether the stockwaters are the only source of water in the Monument, or whether restored seeps and springs could suffice in the absence of livestock infrastructure. Likewise for the insectivorous bats, which can forage over great distances and don’t need the frequency and abundance of water sources that is present to support the livestock operations on PTNM. And clearly, there is no justification for maintaining livestock waters to support night-blooming cereus. Rather, this species may be adversely affected by livestock grazing, through trampling and direct damage to the plant. The DRMP/DEIS does not take a hard look at this effect.

In its discussion of weeds, the DRMP/DEIS describes a riparian habitat in Apache Canyon. DRMP/DEIS at 3-41. Might this area serve as sufficient water instead of livestock infrastructure? Nowhere does the DRMP/DEIS discuss livestock use in Apache Canyon, despite livestock spending disproportionately large amounts of time in riparian habitats and having wholly negative impacts therein.

On the whole, this LUP doesn’t sufficiently analyze or disclose the impacts of the proposed management on the sensitive and special status species with habitat on the PTNM, and as such, violates the agency’s own policies that were designed to afford higher levels of protection to these plants and animals.

13. Recreation and visitor services

NEPA requires the BLM to assess impacts and effects that include: “ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative.” 40 C.F.R. § 1508.8.

- 16-27** The BLM dismisses without any discussion the impacts of livestock management on Recreation and Visitor Services. DRMP/DEIS at 4-18. By doing so, the agency fails to acknowledge the visual and aesthetic impacts of livestock operations, including olfactory experiences of livestock waste. The failure to evaluate whether recreation is impacted by this land use extends to the BLM’s failure to evaluate whether the livestock infrastructure impacts recreational users.

- 16-28** The values of public lands recreational users are discounted in BLM’s unfair weighting of the socio-economic analysis in favor of continued public lands ranching. The DRMP/DEIS states, “The loss of grazing opportunities on public land, therefore, would reduce the quality of life for individuals who hold [cultural and heritage] values.” DRMP/DEIS at 4-55. The BLM has not attempted to discuss the improved quality of life for individuals who believe public lands livestock grazing is a “tragedy of the commons” and whose recreational, aesthetic, and spiritual enjoyment of nature is harmed by the presence of livestock, livestock-related infrastructure, and the resulting environmental degradation.

- 16-29** The BLM discounts the visual impacts of existing range infrastructure at the same time it concerns itself with the stated “need” for boundary fencing under Alternative B. DRMP/DEIS at 4-73 to 4-75. This is inconsistent; if future fencing has visual impacts, current fencing does too.

² *WWP v. Salazar* 2011, http://westernwatersheds.org/legal/11/rmp/RMP_SJ_Order.pdf

- 16-26** Section 4.4.13 discusses impacts to Special Status Species, which have been rewritten and more specific analyses added. As described in Section 3.2.15 and Appendix B, BLM has acted in accordance with procedures set forth in BLM Manual 6840: Special Status Species Management. Also, see BLM Response to Comment 16-8.

- 16-27** A more thorough assessment of Livestock Grazing impacts on Recreation and Visitor Services has been added to Chapter 4.

- 16-28** This viewpoint has been added to the social values discussion of grazing in Chapter 4.

- 16-29** Current fencing is considered in the existing VRM. The impacts of fencing are fully disclosed in Chapter 4, Impacts of Livestock Grazing on Visual Resources.

Conclusion

In conclusion, we do not feel that the BLM has either scientific information or legitimate reasons to maintain livestock grazing operations on the IFNM. Without a high degree of certainty that this marginal use is not harming the Monument and the significant Monument objects, the use should be phased out to provide permanent protection and recovery of these lands and this habitat. Failure to do so could constitute violations of NEPA, FLPMA, the Antiquities Act and other relevant federal laws.

Thank you for considering our comments.

Sincerely,



Greta Anderson, Deputy Director
Western Watersheds Project
PO Box 2264
Tucson, Arizona 85702
greta@westernwatersheds.org

References (provided upon request)

- Anderson, H. L. 1977. Barbed wire impales another great horned owl. *Raptor Research* 11:71-72.
- Avery, M. L., P. F. Springer, and N. S. Dailey. 1978. Avian mortality at man-made structures: An annotated bibliography. U.S. Fish and Wildlife Service.
- Belsky, J., and J.L. Gelbard. 2000. Livestock Grazing and Weed Invasions in the Arid West. Oregon National Desert Association, Bend, OR. 1-31.
- Brooks, M.L. and K.H. Berry. 2006. Dominance and environmental correlates of alien annual plants in the Mojave Desert, USA. *Journal of Arid Environments* 67 (2006) 100-124
- Brooks, M.L., J.R. Matchett, and K.H. Berry. 2006. Effects of livestock watering sites on alien and native plants in the Mojave Desert, USA. *Journal of Arid Environments* 67 (2006) 125-147
- Brown, J. H., T. J. Valone, and C. G. Curtin. 1997. Reorganization of an arid ecosystem in response to recent climate change. *Proceedings of the National Academy of Sciences of the United States of America* 94:9729-9733.
- Burkett, Douglas W. and Bruce C. Thompson. 1994. Wildlife association with human-altered watersources in semi-arid vegetation communities. *Conservation Biology* 8(3): 682-690.
- Catlin, J.C., J.G. Carter, A. L. Jones. 2011. Range management in the face of climate change. 2010 Shrublands Proceedings NREI XVII.
- Craig, T.H. and L.R. Powers. 1976. Raptor mortality due to drowning in a livestock watering tank. *Condor* 78:412.
- Eckert, R. E. J., F. F. Peterson, M. S. Meurrisse, and J. L. Stevens. 1986. Effects of soil-surface morphology on emergence and survival of seedlings in big sagebrush communities. *Journal of Range Management* 39:414-420.

Fernandez, D.P., J.C. Neff, and R.L. Reynolds. 2008. Biogeochemical and ecological impacts of livestock grazing in semi-arid southeastern Utah, U.S.A. *Journal of Arid Environments* 72:777-791.

Fitzner, R. E. 1975. Owl mortality on fences and utility lines. *Journal of Raptor Research* 9:55-57.

Fleischner, T.L. 1994. Ecological costs of livestock grazing in western North America. *Conservation Biology* 8: 629-644.

Halvorson W.L. and B.S. Gebow. 2000. Floristic Surveys of Saguaro National Park Protected Natural Areas. Technical report No. 68. United States Geological Survey, Western Ecological Research Center, Sonoran Desert Field Station and School of Renewable Natural Resources, Tucson, Arizona.

Jones, A. 2000. Effects of cattle grazing on North American arid ecosystems: a quantitative review. *Western North American Naturalist* 60: 155-164.

Kaltenecker, J. H., and M. C. Wicklow-Howard. 1999. Biological soil crusts: natural barriers to *Bromus tectorum* L. establishment in the northern Great Basin USA. Vth International Rangeland Congress- Proceedings, Townsville 109-111.

Mack, R. N. 1989. Temperate grasslands vulnerable to plant invasions: characteristics and consequences. Pp. 155-179 in J. A. Drake, H. A. Mooney, F. DiCasteri, R. H. Groves, F. J. Kruger, M. Rejmanek and M. Williamson, eds. *Biological invasions: a global perspective*. Wiley & Sons, Chichester, UK.

Rosentreter, R. 1994. Displacement of rare plants by exotic grasses. Pp. 170-175 in S. B. Monsen and S. G. Kitchen, eds. *Ecology and management of of annual rangelands- proceedings*. USDA Forest Service, Ogden UT.

Scott, Joan E. 1997. Do livestock waters help wildlife? *Arizona Game and Fish Department*.

US Government Accountability Office. 2005. Livestock grazing: Federal expenditures and receipts vary, depending on the agency and the fee charged. Report to congressional requesters. (GAO-05-869).

Phillips, Thomas E

From: BLM_NM_LCDO_Comments
Sent: Wednesday, October 17, 2012 11:53 AM
To: Phillips, Thomas E
Subject: FW: [EXTERNAL]
Attachments: Comments Draft RMP_EIS 16Oct12.pdf

From: Joan Wolf [<mailto:jwolf51@q.com>]
Sent: Tuesday, October 16, 2012 8:01 PM
To: BLM_NM_LCDO_Comments
Subject: FW: [EXTERNAL]

Please see attached comments.

7019 Red Sky Ct. NE
Albuquerque NM 87111
October 16, 2012

BLM Las Cruces District Office
Attn: Lori Allen, PTNM Project Lead
1800 Marquess Street
Las Cruces NM 88005
BLM_NM_LCDO_Comments@blm.gov

Re: Prehistoric Trackways National Monument (PTNM)
Draft Resource Management Plan and Environmental Impact Statement dated July 2012

Dear Ms. Allen:

As avid Jeepers and long-time members of the NM4W (New Mexico 4-Wheelers) and NMOHVA (New Mexico Off-Highway Vehicle Alliance), this document is of great concern to us. We have visited and four-wheeled in the Las Cruces area for 18 years with our Jeep and have an appreciation for the stark beauty and wildness of the Robledo Mountains. We echo the sentiments of the BLM and others that the PTNM is a unique area and deserves respect.

As OHV enthusiasts our preference is that all existing trails remain open. However, we have reviewed the four alternative plans and, if forced to choose, we prefer Alternative D because it closes the least amount of OHV trails and includes widest range of public uses. We offer the following comments.

17-1 **Comment #1, Reference p. 4-52, Sec. 4.4.10-Socio-Economic Conditions.** The plan does not adequately and accurately address the socioeconomic benefits to Las Cruces from having the existing OHV trails.

Discussion: There is insufficient data to assess visitor spending and local economic impacts. Specifically, Table 4-3 Average Party Spending By Activity (p. 4-53), lists dollar amounts by Hiking/Biking and OHV users. The sentence above the table states, "These figures are based on the average spending of visitors to National Forests, as data specific to the Monument or the BLM are not available."

Point #1: In Table 4-3, why is the spending by OHV Users higher in every category except Non-local Overnight (\$473 Hiking/Biking vs \$277 OHV)? Those figures appear reversed.

Point #2: How were the dollar amounts in Table 4-3 derived (i.e., when and what population)? How inclusive was the data? The visitor profile is important because hiker/bikers tend to be younger and on tighter budgets than OHV users. Our experience, as OHV users who travel from Albuquerque to Las Cruces at least annually, \$277/day is too low. We typically stay in a local hotel, eat meals out, buy fuel, and sometimes purchase

17-1 These estimates are based on surveys of visitors to National Forest Service land. This is the best available scientific information (White and Stynes 2010b, pg. 5).

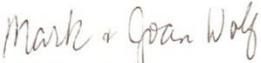
17-1 | expensive automotive repair items. And, since we have a four-passenger Jeep, there are usually three or four individuals in our party.

17-2 | **Comment #2, Reference p. C-6, Appendix C, Current Level of Utilization.** The BLM does not have adequate data to estimate PTNM usage and therefore cannot accurately calculate the socio-economic impacts of the OHV community.

Discussion: Appendix C clearly states that the BLM does not have adequate data to estimate the level of annual recreation within the PTNM. Other than estimated attendance at the annual 4-day Chile Challenge event, there is no data. The document states, "For the other 361 days of the year, there are no estimates of non-permitted OHV use that takes place." Therefore, year-round OHV use is not adequately accounted for. We and others from our 60-member club visit Las Cruces multiple times every year and add to the local economy. In addition, OHV users from Las Cruces, Alamogordo, El Paso and other nearby communities visit year-round. Without accurate data it is impossible to know the positive socio-economic impacts of the OHV community.

Suggested Changes to PTNM Draft Resource Management Plan and Environmental Impact Statement: Provide accurate data on the socio-economic impacts to Las Cruces if existing OHV trails are closed. Provide an alternative that keeps all existing trails open. Modify Alternative D to keep the 4.0 miles of designated routes (Tobasco Twister and Patzcuaro's Revenge) open.

Sincerely,



Mark & Joan Wolf
mxw8539@q.com
Phone 505-856-8539

17-2 Visitation data have been updated in Chapter 3- Recreation and Visitor Services. The Impacts to Socio-Economics have been re-analyzed in Chapters 4.

Phillips, Thomas E

From: BLM_NM_LCDO_Comments
Sent: Wednesday, October 17, 2012 11:52 AM
To: Phillips, Thomas E
Subject: FW: Trackways Monument Closure

From: Dirk Keeler [<mailto:dirkkeeler@gmail.com>]
Sent: Tuesday, October 16, 2012 11:46 PM
To: BLM_NM_LCDO_Comments
Subject: Trackways Monument Closure

Hello,
 I take my Jeep to the area where the "Trackways Monument" is. Please do NOT close this area to 4WD use. The roads that are there are plenty and have been used for many years. Keep them open.

Dirk Keeler
 Deming, NM

Phillips, Thomas E

From: BLM_NM_LCDO_Comments
Sent: Wednesday, October 17, 2012 11:52 AM
To: Phillips, Thomas E
Subject: FW: Trackways Monument Closure

From: Angelia Steelman [<mailto:baills@hotmail.com>]
Sent: Wednesday, October 17, 2012 5:12 AM
To: BLM_NM_LCDO_Comments
Subject: Trackways Monument Closure

Thank you for allowing me the opportunity to express my opinion regarding the Trackways National Monument Draft. I am a stay at home mother in which I homeschool my son. We have taken many trips to the The Trackways Monument Areas adventuring out to explore and learn of people, animals and the actual land of the past. My son not only learns of the prehistoric era, the Mongollon culture, the Apache way of life and even hideouts and caves that outlaws once frequented, he is able to actually experience them due to the current BLM availability. As the draft is written, many of the places I choose to take my son will not be available without a strenuous hike. I believe the closure contradicts the BLM Mission statement: To sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations. How can the current generation and future generations use and enjoy the land if the only way to access it is by strenuous hiking or on horseback? It saddens me to know that my son and future generations, may not be able to experience history and science first hand.

Thank you,
 Angelia Steelman

Phillips, Thomas E

From: BLM_NM_LCDO_Comments
Sent: Wednesday, October 17, 2012 11:52 AM
To: Phillips, Thomas E
Subject: FW: Trackways Monument

From: Lin Lin [<mailto:tyne2222@yahoo.com>]
Sent: Wednesday, October 17, 2012 6:46 AM
To: BLM_NM_LCDO_Comments
Subject: Trackways Monument

Make no changes.Linus Brewer DDS

Phillips, Thomas E

From: BLM_NM_LCDO_Comments
Sent: Wednesday, October 24, 2012 10:02 AM
To: Phillips, Thomas E
Subject: FW: trackways

From: Curtis Hill [<mailto:madjeepist62@yahoo.com>]
Sent: Thursday, October 18, 2012 10:27 PM
To: BLM_NM_LCDO_Comments
Subject: trackways

Dear BLM,

My name is Curtis Hill and i live in Sierra Co. I have been an avid outdoorsman and offroader for more than thirty years. Off roading has been a passion for me since childhood and now has even become my profession. I have always been a responsible user of our public lands and teach other the same practices. I would very much like to see the trackways monument STAY open to All forms of use. With responsible use and maintenance of the trail systems the area would be well served VS. no access- (people enter unauthorized, dump trash, destroy area). Im an active member in the Las Cruces 4 Wheel Drive Club and know first hand how well responsible use can work. PLEASE consider my request. Thank you.

Phillips, Thomas E

From: BLM_NM_LCDO_Comments
Sent: Wednesday, October 24, 2012 10:01 AM
To: Phillips, Thomas E
Subject: FW: Trackways EIS Monument comments

From: Tracy Hooker [<mailto:thooker@nmsu.edu>]
Sent: Friday, October 19, 2012 10:38 PM
To: BLM_NM_LCDO_Comments
Subject: Trackways EIS Monument comments

Hi,
I wanted to let you know that I prefer Alternative A, No Action. The reasons are simple, I dont think we need to continue the pressure to close roads on every piece of federal land, and that includes the Monument.

I have have been involved in using our public lands for recreational off roading since I was 10. My dad bought an old Ford Bronco in 1972. That was my first taste of off roading (of course, that term is misleading, as we always stayed on roads, I should be using the term Off Highway).

I moved to Las Cruces in 1981 to attend college, and used the same Bronco during that time. I still have it, and enjoy going on the trails in the Robledo mountains with it.

Because of my love of the outdoors, the automotive industry, and my 1966 Ford Bronco, I do not want any change to the way the roads are managed, and I certainly do not want road closures withing the monument.

Sincerely,
Tracy Hooker

Comments on the Proposed Management Plan for the
PRESTORIC TRACKWAYS NATIONAL MONUMENT

RECEIVED
LAS CRUCES DISTRICT OFFICE
2012 OCT 19 AM 10:44
LAS CRUCES, NM 88005

It appears that the Las Cruces BLM field office and especially Lori Allen have put forth a major effort in drafting the four proposed options for the Management plan of the new Prehistoric Trackways National Monument. It is obvious that there has been much thought and collaboration in the preparation of this document. In the following paragraphs I will try to briefly elaborate on some of the points that I feel are necessary to successfully manage the Monument, not only for a select few special interest groups, but so that a large portion of the local and non-local population have a chance to use and enjoy the beauty and resources of the Monument, while preserving the resources for future generations.

In the proposed management plan there are four proposed options; these range from (A) leaving things the way that they are, to (B) which proposes the extreme of closing the Monument to all mechanized and motorized use and excluding any grazing from the monument. Alternatives (C) and (D) propose limited use of mechanized and motorized use and also propose the closure of between 4 and 5.4 miles of existing designated routes.

As they currently stand, I am inclined to favor (Option A), even though I don't think that it is the perfect solution as it stands.

Option (B) appears to cater to the interests of the people who are anti mechanized or motorized access to the monument and also anti legal use of the land for continued grazing purposes. This appears to be a "no compromise" option favoring a special interest group and excluding a majority of the people who currently use, enjoy and help to keep the monument and other areas of remote land clean. If this option is chosen, my opinion is that instead of

preventing damage and vandalism as it states, that damage and vandalism will increase like it has in Organ Pipe Cactus National Monument in Arizona.

Option (C) seems to be more reasonable than (B), but also proposes the closure of 5.4 miles of existing designated routes to motorized travel.

Option (D) would be my second choice if I have to accept one of the proposed options "as is." Again, this option closes 4 miles of existing designated routes to motorized travel.

My suggestion to the deciding parties on the Management Plan would be to use a conglomerate of the proposals and also give some additional thought to some positive options that are used in other US Parks and Monuments to preserve and protect the sensitive historic resources and areas.

23-1 To expand on this thought I would suggest that in lieu of closing large areas to mechanized and motorized travel, there could be barricades and or barriers placed to direct the traffic flow around the sensitive areas (such as the abo formations in Apache Canyon. *There is a good possibility that some of the local clubs and individuals would be willing to contribute time, materials, and the necessary equipment to assist the BLM in constructing these barriers.*

As far as the permitted commercial activities, the BLM records show that the permitted activities are not responsible for damages to the sensitive resources or other areas. It is unfortunate, but it is a monumental task to apprehend and prosecute the perpetrators of the damage that has been done in the Monument and other sensitive areas. There is always a lot of "finger pointing" by special interest groups saying that "the other guy" is responsible for the damage, but in reality, the individuals that do the damage and cause the problems are criminals and are a small minority of either side of the fence.

I would like to see the existing designated routes in the Monument remain open to mechanized and motorized travel and I would also like to see steps taken to preserve the resources and sensitive areas of the Monument. Historically, closure of an area does not prevent criminal activity or vandalism, but rather gives the

23-1 See response to Letter 11, Comment 11-2.

attention Lori Allen

B L M comments

As a Local Business owner the Land
Needs to Stay Open For Multiple uses

There are people that Travel Long Distances
to come to Las Cruces to Rent the 4x4
Trails Both ATV and 4x4's

Please use Plan A with no
change

Thanks you Jim Huff
Hytech 4x4

RECEIVED
LAS CRUCES DISTRICT OFFICE
2012 OCT 19 PM 4: 14
LAS CRUCES, NM 88005

attention Lori Allen

B L M comments

as a Person that can not walk
in to these areas I Have to use a 4x4
to get in to these areas to see and
use these Trails. The Trails need to stay
open for people like me to be able
to use Public Lands Use Plan
A with no change

James L Huff

RECEIVED
LAS CRUCES DISTRICT OFFICE
2012 OCT 19 PM 4: 14
LAS CRUCES, NM 88005



Prehistoric Trackways National Monument

DRAFT RESOURCE MANAGEMENT PLAN/DRAFT ENVIRONMENTAL IMPACT STATEMENT

PLEASE PRINT

NAME
 EX 6
 Marlene Mayfield

Organization (if applicable)
 Paleozoic Trackways Foundation

Add to Mailing List YES NO

Withhold Personal Information* YES NO

Receive Notification of EIS availability? YES NO

COMMENTS:



26-1

I favor Alternative D but would like to see more OHV closings.

26-2

I would also like to see all shooting and hunting prohibited in the Monument.

26-3

I also recommend inclusion of the Community Pit into the Monument to properly protect the paleozoic resources therein.

*Submittal of comments are completely voluntary and any identifying information provided will become part of the public record, and as such, must be released to any individual upon request. Request to withhold comments and associated person identifying information from public review cannot be guaranteed.

- 26-1 The BLM has proposed road closures only in areas where OHV use is known to degrade the fossil resources. If degradation to fossils on other routes is known, this information should be provided to the BLM.
- 26-2 A closure to recreational target shooting is analyzed in Alternatives C and D because it has been identified as a safety issue for visitors. Hunting has not been identified as a safety issue.
- 26-3 The Community Pit #1 is outside the boundary of the Planning Area and cannot be added through the RMP process.

Phillips, Thomas E

From: BLM_NM_LCDO_Comments
Sent: Wednesday, October 24, 2012 10:01 AM
To: Phillips, Thomas E
Subject: FW: Land Closure in Las Cruces, NM

From: Billy Steelman [<mailto:bajts@yahoo.com>]
Sent: Saturday, October 20, 2012 8:05 PM
To: BLM_NM_LCDO_Comments
Subject: Land Closure in Las Cruces, NM

To whom it may concern:

Why?! How can this possibly be a good thing? I hear the ads on the radio promoting the "monument" designation of nearly all public lands around Las Cruces, and how this will bring jobs and tourist to the area. Bull! The people of New Mexico and other states come here to use and enjoy OUR public lands. Whether it's hiking, biking, or motorized recreation, we the people of New Mexico should not be restricted from OUR right to enjoy public lands. Patrol, prosecute, fine, those who abuse or litter, but don't use this as an excuse to punish everyone for the actions of a few.

And on the other side of the coin, our ability to enjoy public lands should not be denied under the guise of "environmental protection". Regardless of their message, any rational person can see through the rapid hatred that these pro-green environmentalist have for anyone who opposes their Prius driving, Birkenstock wearing, medical marijuana smoke clouded views, but I digress.

Politics aside, do not make this huge mistake. Take the "Hard Right and not the Easy Wrong", leave OUR public lands open. Choose "Option A".

One of "We the People",

Billy Steelman

Phillips, Thomas E

From: BLM_NM_LCDO_Comments
Sent: Wednesday, October 24, 2012 10:00 AM
To: Phillips, Thomas E
Subject: FW: Comments to the BLM RMP/EIS for the Prehistoric Trackways National Monument
Attachments: Comments from The Paleozoic Trackways Foundation.doc

From: Larry Candelaria [<mailto:candelconsulting@aol.com>]
Sent: Monday, October 22, 2012 2:14 PM
To: BLM_NM_LCDO_Comments
Subject: Comments to the BLM RMP/EIS for the Prehistoric Trackways National Monument

Enclosed are comments from The Paleozoic Trackways Foundation on the BLM RMP/EIS for the Prehistoric Trackways National Monument.

Thank you for the excellent work invested in the generation of this magnificent document. We await completion of the final RMP/EIS and will be available for further discussion or coordination on any Monument issue.

Connie Candelaria
President, PTF
521-0017

Comments from The Paleozoic Trackways Foundation (PTF) on The BLM Prehistoric Trackways National Monument Draft Resource Management Plan and Environmental Impact Statement, dated July 2012 are as follows:

1. Alternative C is preferred, with the following caveats or recommendations:

- 28-1 A. All shooting should be prohibited, anywhere in the Monument. Any form of shooting cannot be monitored or controlled 100% of the time. Behavior of individual shooters cannot be predicted nor depended upon and therefore should be prohibited, period. Signage to that effect should be posted.
- 28-2 B. The PTF recommends eventual closure of the access to off-road vehicles, other than those operated by the BLM or those used for scientific study, to avoid further damage or destruction to fossils and other Paleozoic resources. It is recognized that the Omnibus Public Lands Management Act of 2009 (the Legislation) authorizes and provides for continued Chile challenges and therefore cessation will not be in near term; however, for the record the PTF prefers cancellation at the earliest possible time. One area that is unclear is that in Paragraph 2.2.1 Alternate Themes, Alternative C, it is stated "Motorized and mechanized travel within the Monument would be limited to designated routes and require a no-fee day-use permit," and, "OHV SRP's would have additional restrictions." In the Alternative C column, page 2-9, Activities include OHV use. On page 2-10, MANAGEMENT COMMON TO ALL ALTERNATIVES, it is stated, "Recreation opportunities with the Robledo Mountains WSA portion of the Monument would remain primitive with no motorized or mechanized vehicle traffic in order to preserve the wilderness characteristics. Perhaps this explains the difference between the Wilderness Study Area and the Extensive Recreation Management Area?"
- C. Reference page 2-11, Camping: Recommend Alternative C initially, then possibly Alternative D, if justified.
- D. While the PTF agrees with and appreciates including enhanced on-site and off-site interpretation and education, as the BLM solidifies its management plan and decisions are made regarding logical locations for visitor contact, we recommend a visitors' center as provided for in Alternative D.
- 28-3 E. The PTF strongly recommends including the Community Pit #1 in the current RMP. While the PTF recognizes that the Pit must be reclaimed before any public use can be achieved, and that possibly including it now can add to the RMP process, we feel that labor, time and deadlines can be saved and shortened in the long run. The Legislation states that in the case of Minor Boundary Adjustments, "If additional paleontological resources are discovered on public land adjacent to the Monument after the date of enactment of this Act, the Secretary may make minor boundary adjustments to the Monument to include the resources in the Monument." We feel that this authority should be used in this case, and have discussed this with BLM staff and with Senator Bingaman's staff. We feel that addition of the approximately 180 acres attributed to the quarry constitutes a minor adjustment to the 5,280 acres currently within Monument boundaries. Such an addition would provide multi-use space for the Monument, such as: space for a visitors' center, visitor contact location, parking, tour gatherings/assemblies, nature discussions, scientific research/study center and/or nature attraction such as Butchart Gardens, in Victoria, British Columbia, a reclaimed quarry, although on a Southwest, rather than Northwest-oriented theme.

28-1 Please see the response to Letter 26, response 26-2.

28-2 Please see the response to Letter 26, response 26-1.

28-3 Please see the response to Letter 26, response 26-3.

2. BLM is to be complemented on the splendid, professional and outstanding work done on the Monument RMP/EIS. The PTF is gratified to be a Friends of BLM organization and looks forward to continued work together toward a Monument for all ages. It is our hope and within our objectives to further interest by our young people, locally and nationally, in careers in the sciences.

FOR THE PALEOZOIC TRACKWAYS FOUNDATION:


CONNIE M. CANDELARIA
President
Dated October 21, 2012

Phillips, Thomas E

From: BLM_NM_LCDO_Comments
Sent: Wednesday, October 24, 2012 10:00 AM
To: Phillips, Thomas E
Subject: FW: Coments to RMP/EIS for The Prehistoric Trackways National Monument
Attachments: CandCmtsRMP102212.doc

From: Larry Candelaria [<mailto:candelconsulting@aol.com>]

Sent: Monday, October 22, 2012 2:29 PM

To: BLM_NM_LCDO_Comments

Subject: Coments to RMP/EIS for The Prehistoric Trackways National Monument

Enclosed are our comments to the RMP/EIS for the PTNM.

Thank you for the excellent work displayed in this professional, thorough and beautifully executed document. It really says good things about BLM!

Larry and Connie Candelaria
 521-0017

Comments on The BLM Prehistoric Trackways National Monument Draft Resource Management Plan and Environmental Impact Statement, dated July 2012 are as follows:

1. Alternative C is preferred, with the following caveats or recommendations:

A. All shooting should be prohibited, anywhere in the Monument. Any form of shooting cannot be monitored or controlled 100% of the time. Behavior of individual shooters cannot be predicted nor depended upon and therefore should be prohibited, period. Signage to that effect should be posted.

B. The PTF recommends eventual closure of the access to off-road vehicles, other than those operated by the BLM or those used for scientific study, to avoid further damage or destruction to fossils and other Paleozoic resources. It is recognized that the Omnibus Public Lands Management Act of 2009 (the Legislation) authorizes and provides for continued Chile challenges and therefore cessation will not be in near term; however, for the record the PTF prefers cancellation at the earliest possible time. One area that is unclear is that in Paragraph 2.2.1 Alternate Themes, Alternative C, it is stated "Motorized and mechanized travel within the Monument would be limited to designated routes and require a no-fee day-use permit," and, "OHV SRP's would have additional restrictions." In the Alternative C column, page 2-9, Activities include OHV use. On page 2-10, MANAGEMENT COMMON TO ALL ALTERNATIVES, it is stated, "Recreation opportunities with the Robledo Mountains WSA portion of the Monument would remain primitive with no motorized or mechanized vehicle traffic in order to preserve the wilderness characteristics. Perhaps this explains the difference between the Wilderness Study Area and the Extensive Recreation Management Area?"

C. Reference page 2-11, Camping: Recommend Alternative C initially, then possibly Alternative D, if justified.

D. While the PTF agrees with and appreciates including enhanced on-site and off-site interpretation and education, as the BLM solidifies its management plan and decisions are made regarding logical locations for visitor contact, we recommend a visitors' center as provided for in Alternative D.

E. The PTF strongly recommends including the Community Pit #1 in the current RMP. While the PTF recognizes that the Pit must be reclaimed before any public use can be achieved, and that possibly including it now can add to the RMP process, we feel that labor, time and deadlines can be saved and shortened in the long run. The Legislation states that in the case of Minor Boundary Adjustments, "If additional paleontological resources are discovered on public land adjacent to the Monument after the date of enactment of this Act, the Secretary may make minor boundary adjustments to the Monument to include the resources in the Monument." We feel that this authority should be used in this case, and have discussed this with BLM staff and with Senator Bingaman's staff. We feel that addition of the approximately 180 acres attributed to the quarry constitutes a minor adjustment to the 5,280 acres currently within Monument boundaries. Such an addition would provide multi-use space for the Monument, such as: space for a visitors' center, visitor contact location, parking, tour gatherings/assemblies, nature discussions, scientific research/study center and/or nature attraction such as Butchart Gardens, in Victoria, British Columbia, a reclaimed quarry, although on a Southwest, rather than Northwest-oriented theme.

2. BLM is to be complemented on the splendid, professional and outstanding work done on the Monument RMP/EIS. The PTF is gratified to be a Friends of BLM organization

and looks forward to continued work together toward a Monument for all ages. It is our hope and within our objectives to further interest by our young people, locally and nationally, in careers in the sciences.



October 22, 2012



2012 OCT 24 PM 12:00
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

October 22, 2012

Via electronic mail and U.S. Mail

Lori Allen, Monument Manager
Prehistoric Trackways National Monument
BLM Las Cruces District Office
1800 Marquess Street
Las Cruces, NM 88005

Re: Comments on the Prehistoric Trackways National Monument Draft Resource Management Plan (RMP)/Environmental Impact Statement (EIS)

Please accept and fully consider these comments on behalf of The Wilderness Society (TWS). Our more than five hundred thousand members and supporters care deeply about the management of our public lands, and our National Conservation Lands in particular. We appreciate this opportunity to comment and appreciate the Bureau of Land Management's commitment to addressing the circumstances and values related to management of the public resources and the unique and significant paleontological objects within the Prehistoric Trackways National Monument.

<u>Planning Issues and Management Concerns Addressed</u>	<u>Page</u>
I. Special Management Framework for the Monument	2
II. Interpretation of Monument Resources	4
III. Lands with Wilderness Characteristics	6
IV. Travel Management	7
V. Recreation	8
VI. Management of the Chile Challenge	10
VII. Community Pit #1	11

I. Special Management Framework for the Monument

The Prehistoric Trackways National Monument was established in Section 2103 of the Omnibus Public Lands Management Act of 2009. As stated by Congress, the purpose of the monument is to "conserve, protect, and enhance the unique and nationally important paleontological, scientific, educational, scenic, and recreational resources and values of the public land." This is the charge for BLM and the framework under which all other management actions must follow.

The monument has the special distinction of being part of the National Landscape Conservation System (Conservation Lands). The Conservation Lands, comprised of lands created by both presidential and congressional directives, is the largest and most far-reaching conservation initiative in the history of the BLM. The National Landscape Conservation System represents the cornerstone of a new era in land stewardship, in which BLM focuses on a mission of public land management to: "conserve, protect, and restore these nationally significant landscapes that have outstanding cultural, ecological, and scientific values for the benefit of current and future generations." 16 U.S.C. § 7202(a) (2009). In addition to the legislation establishing the monument, BLM must follow policy guidance for the management of the Conservation Lands in developing the management plan for the monument.

A. **BLM must prioritize protection of monument resources and values over other multiple uses.**

The Federal Land Policy and Management Act (FLPMA) requires BLM to manage public lands under multiple-use principles unless an area has been designated by law for specific uses, in which case BLM must manage the land for those specific uses. 43 U.S.C. § 1732(a). In other words, BLM manages national monuments not under the FLPMA multiple use mandate, but rather under the language of the proclamation or legislation establishing the monument. This is expressly provided for in FLPMA itself:

The Secretary shall manage the public lands under the principles of multiple use and sustained yield, in accordance with the land use plans developed by him under section 1712 of this title when they are available, *except that where a tract of such public land has been dedicated to specific uses according to any other provisions of law it shall be managed in accordance with such law.*" FLPMA, 43 U.S.C. § 1732(a) (emphasis added).

Congress designated the Prehistoric Trackways National Monument for the explicit purpose of protecting and preserving identified historic and scientific objects. Pub. L. 111-11, § 2103. Accordingly, the standard approach to multiple-use management does not apply to this monument, and any effort to adopt such a management approach to the detriment of its scientific, natural and cultural values would be in violation of the legislation establishing the monument and the mandates of FLPMA. BLM must manage the monument for the protection and preservation of its natural, historic and scientific values, and only allow uses other than those needed for protection of monument resources and values when those uses do not conflict with the directives of the legislation establishing the monument.

Because of its significance, which merited designation as a national monument and inclusion in the Conservation Lands, the Prehistoric Trackways National Monument requires different management from other BLM lands. As stated above, Congress established the National Landscape Conservation System to "conserve, protect, and restore these nationally significant landscapes that have outstanding cultural, ecological, and scientific values for the benefit of current and future generations." 16 U.S.C. § 7202(a) (2009).

Secretarial Order 3308 speaks to the management of the National Landscape Conservation System. The Order states in pertinent part that “[T]he BLM shall ensure that the components of the NLCS are managed to protect the values for which they were designated, including, where appropriate, prohibiting uses that are in conflict with those values.” The 15-Year Strategy for the Conservation Lands reinforces this by stating the “conservation, protection, and restoration of the NLCS values is the highest priority in NLCS planning and management, consistent with the designating legislation or presidential proclamation.” NLCS Strategy at 8.

BLM has recently released a series of manuals related to the management of the Conservation Lands with specific policy direction. The new BLM manuals relative to this planning process include Manuals 6100 (NLCS), 6220 (National Monuments/NCAs), 6310 (Inventory of Lands with Wilderness Characteristics), 6320 (Considering Lands with Wilderness Characteristics in Land Use Planning), and 6330 (WSAs). Appropriate changes to the Draft RMP must be made to incorporate the guidance from these manuals into the monument RMP.

With regard to land use planning for monuments, Manual 6220, at 1.6(G), requires BLM to do the following in the RMP:

- a. clearly identify Monument and NCA objects and values as described in the designating proclamation or legislation; where objects and values are described in the designating legislation or proclamation only in broad categories (e.g. scenic, ecological, etc.), identify the specific resources within the designating area that fall into those categories;
- b. identify specific and measurable goals and objectives for each object and value, as well as generally for the Monument or NCA;
- c. identify management actions, allowable uses, restrictions, management actions regarding any valid existing rights, and mitigation measures to ensure that the objects and values are protected;
- d. provide, to the extent possible, a thorough quantitative analysis of the effects of all plan alternatives on the objects and values;
- e. where a thorough quantitative analysis is not possible, provide a detailed qualitative analysis of the effects of all plan alternatives on the objects and values;
- f. consider designating Monuments and NCAs as ROW exclusion or avoidance areas;
- g. include a monitoring strategy that identifies indicators of change, methodologies, protocols, and time frames for determining whether desired outcomes are being achieved; and
- h. be evaluated at least every five years, consistent with and as required by BLM land use planning guidance.

30-1

BLM has not yet clearly identified the monument resources and values in the RMP and thus cannot satisfy the rest of the listed obligations as set forth in Manual 6220. One example of BLM identifying monument objects and values in a land use plan can be seen in the Proposed RMP/EIS for the Sonoran Desert National Monument. See, Table 1-3 of the Sonoran Desert National Monument Proposed RMP/EIS, attached to these comments. In that plan, BLM not only identified the monument objects in the RMP, but also showed how these objects would be specifically impacted by implementation actions, such as designating routes in the monument. See, Section 4.26, beginning at 4-543.

Recommendations: BLM is obligated by law to prioritize the protection of monument resources and values over other discretionary uses in the creation of an RMP for the monument. As stated in current

3

30-1 The RMP/EIS process began in 2009 and the most recent BLM guidance was published in 2012. The *Proposed RMP/Final EIS* has been revised and updated to reflect the most recent guidance. Monument Objects have been more clearly articulated in Chapter 1 and emphasized in the goals and objectives in Chapter 2. Chapter 4 of the *Proposed RMP/Final EIS* discusses the impacts of how Objects would be impacted by management actions. Under each of the alternatives, protection of the Monument Objects is prioritized over other management decisions.

BLM policy direction for the Conservation Lands, BLM must clearly identify the monument resources and values and show how each of these will be protected. BLM should provide a list of the monument resources and values, identify specific and measurable goals for each of these, set management prescriptions for protecting these resources and thoroughly analyze the impacts to all monument resources from management proposed in the RMP.

B. BLM must designate a range of alternatives that protects monument resources and values from impacts.

To comply with the legislation, current guidance, and FLPMA, all of the management alternatives must conserve, protect and enhance monument resources and values first, and then make other management decisions that do not interfere with their protection and conservation. As described above, BLM must present a reasonable range of alternatives for the management of the monument. The management of the monument cannot lead to anything less than protection of the objects before all other uses. Thus, in order to comply with these requirements, the range of alternatives cannot include management decisions that will undermine protection of monument resources and values in favor of other resources or uses, or that will harm these values.

Recommendation: Under the legislation establishing the monument, all of the alternatives must conserve monument resources first, and then make other management decisions that do not interfere with the conservation of monument resources. Thus, in order to comply with these requirements, the range of alternatives cannot include management decisions that will undermine protection of monument resources and values in favor of other resources or uses.

C. BLM should provide a historical narrative of the establishment and purpose of the monument.

The designation of the Prehistoric Trackways National Monument provides an engaging story of how BLM came to manage this area as a national monument and what it means to be part of the National Landscape Conservation System. In the RMP for the Canyons of the Ancients National Monument, BLM prepared a document entitled "History and Intent of the Proclamation for Canyons of the Ancients National Monument." Addendum to the Canyons RMP/ROD. This document provides a history of the landscape, agency, and former conservation efforts on up to the present day designation of the monument and National Landscape Conservation System.

Recommendation: BLM should provide a narrative within the RMP for the Prehistoric Trackways National Monument that demonstrates the rich history and the intent of the legislation establishing the monument as well as the monument's place in the National Landscape Conservation System.

II. Interpretation of Monument Resources

A. Visitor services facilities should be located primarily off-site.

BLM policy guidance states a clear preference for locating visitor centers and facilities within nearby communities rather than inside of monuments like many of the national parks. BLM Manual 6220 regarding the management of national monuments and NCAs states the following:

4

30-2

30-2 A narrative of the Monument and important facets of its establishment are documented in a booklet by Spencer G. Lucas, *Traces of a Permian Seacoast*, found on the BLM Las Cruces website. The Paleozoic Trackways Foundation also maintains a website that contains background on the establishment of the Monument.

When new administrative offices, visitor centers, contact stations, and similar facilities are needed for a Monument or NCA, the BLM will generally develop, or encourage the development of, these facilities within nearby communities to enhance local economic vitality and quality of life and to minimize disturbance within the Monument or NCA.

Manual 6220 at 1.6(F)(2).

The basis for this guidance is found in the 15-Year Strategy for the Conservation Lands, which directs BLM to minimize facility development within units of the Conservation Lands, consider placing facilities in nearby communities and only develop facilities to further the purposes for which the unit was designated. NLCS Strategy, Goal 1F(2). This goes back to the development of the Monument Management Plan (MMP) for the Grand Staircase-Escalante National Monument—BLM's first RMP for a national monument. In that MMP, BLM stated that “[i]n an effort to protect Monument resources and provide economic opportunities in the local communities, major facilities and the services associated with them will be located in these communities, outside the Monument.” MMP at 37.

30-3 BLM's preferred alternative in the draft RMP, which would elect not to build an on-site visitor center as proposed in alternative D, is consistent with policy guidance for the Conservation Lands. However, the preferred alternative of developing a contact station within the monument, without further explanation of the necessity for such a facility, seems to be inconsistent with BLM policy guidance. Instead of locating visitor facilities within the monument, BLM should consider taking the approach that was taken in the Grand Staircase-Escalante National Monument Plan and work to develop these facilities in nearby communities, such as Las Cruces, in order to promote economic opportunities and protect resources.

We support the draft RMP proposing to “support the development of paleontological exhibits for venues in Dona Ana County and beyond.” Draft RMP, p. 2-8. Developing educational facilities in nearby communities is a good way for the agency to build community support for the monument, foster stewardship and contribute to the local economy.

Recommendations: BLM should adopt an alternative that includes development of visitor facilities off-site and in nearby communities while also providing some minimal signage and interpretation on-site.

B. Research in and about the monument resources should be a more explicit focus in the RMP.

Scientific research is central to the mission and values of the Conservation Lands, as set forth in the 15-Year Strategy and NLCS Manuals. The 15-Year Strategy encourages BLM to utilize the NLCS as an “outdoor laboratory” and promote and enhance science partnerships and research integration. NLCS Strategy, Goal 1D. Prehistoric Trackways National Monument offers an extraordinary example of an outdoor laboratory, and the research history and opportunities at the Monument are the primary reason for its designation as a unit of the Conservation Lands.

We support the goals, objectives and management actions proposed for research management in the draft RMP, including the criteria by which proposed research projects would be evaluated. Draft RMP, p. 2-32. However, we encourage BLM to build on this foundation to ensure that a proactive approach to scientific research is applied in the Monument. BLM Manual 6220 requires BLM to promote monuments as sites for scientific research and to develop and regularly update a science plan that includes:

5

30-3 In Chapter 3 Recreation and Visitor Services, the BLM explains that the Las Cruces Museum of Nature and Science, in the nearby community, would be the in-town visitor center for PTNM. Chapter 4 discusses the benefits and costs of a visitor contact station, such as an on-site presence deterring vandalism and litter, and providing amenities such as toilets for sanitation reasons, as well as information and permits.

- 30-4
- a. the scientific mission of the unit;
 - b. the scientific background of the unit;
 - c. the identification and prioritization of management questions and science needs, including:
 1. investigations of the values for which the Monuments and NCAs were designated;
 2. assessment, inventory, and monitoring needs;
 3. science that addresses restoration needs; and
 4. landscape-level issues;
 - d. the unit's plan to meet science needs, often in coordination with partners;
 - e. the development and application of scientific protocols for the unit, including authorizing and tracking research projects;
 - f. the organization of scientific reports in order to facilitate communication of scientific findings throughout the BLM, with partners, and with the public; this section of the plan must include:
 1. a bibliographic list of completed reports from science on the unit; and
 2. any syntheses of relevant scientific information; and
 - g. the plan for integrating science into management.

Manual 6220 at 1.6(M)(3).

While the full science plan need not be developed as part of the RMP, the RMP should commit to a timeline for developing the science plan and set the foundation and parameters for the science plan. For example, the Grand Staircase-Escalante National Monument Management Plan commits to developing a "comprehensive and integrated research and science program" that will "ensure that scientific resources are not only available for current research opportunities, but that certain scientific resources are preserved in place for future study." MMP at 44. We encourage BLM to develop a full science and research program for Prehistoric Trackways National Monument that goes above and beyond responding to research proposals and the minimal management actions proposed in the draft RMP.

Recommendations: BLM should fulfill the spirit and vision of the 15-Year Strategy for the Conservation Lands by incorporating a more robust management framework for scientific research at the Monument. The RMP should commit to developing a science program for the Monument and lay the groundwork for the science plan required by Manual 6220.

III. Lands with Wilderness Characteristics

We support BLM inventorying and proposing to manage lands with wilderness characteristics in the RMP, as required by BLM Manuals 6310 and 6320. We also support the management prescriptions identified in Alternatives B and C, which include no surface disturbance, VRM I, ROW exclusion, and closed to motorized and mechanized use. Draft RMP, p. 2-27.

- 30-5
- We encourage BLM to manage the full 576 acres of lands found to possess wilderness characteristics to maintain and protect those characteristics, as is contemplated in Alternative B. Draft RMP, p 2-27. In the Draft RMP, BLM reasons that 323 acres of lands with wilderness characteristics would be impacted by development of a hiking trail and signage for the "Discovery Site" under the preferred alternative, and therefore those lands should not be managed to protect their wilderness characteristics. Draft RMP, p. 4-47. However, a hiking trail and interpretive signage or kiosks are not incompatible with management for wilderness characteristics.

6

- 30-4 The Science and Research sections of Chapter 2 have been combined with Paleontological Resources to strengthen the interdependency of these two objects. Additionally, a science plan is under development but has not been completed for the *Proposed RMP/Final EIS*.

- 30-5 Although hiking trails and trail signs may be considered substantially unnoticeable in most situations, and therefore compatible with managing for wilderness characteristics, a trail developed with interpretive signs or kiosks is not considered compatible with managing for wilderness characteristics. These types of facilities are substantially noticeable and are unrelated to the preservation or enhancement of wilderness characteristics. Construction of interpretive facilities are generally understood as incompatible within a setting managed to protect wilderness values. The BLM has provided a range of alternatives for managing the wilderness characteristics identified in the *Planning Area*, and Alternative B would provide protection for some of the lands with wilderness characteristics while also forgoing protection of wilderness characteristics so that interpretive facilities may be installed.

30-5

Manual 6310, Conducting Wilderness Characteristics Inventory on BLM Lands, specifically addresses trails and signs as examples of “human-made features that may be considered substantially unnoticeable” and therefore do not affect the naturalness of the area. Manual 6310, p. 6. The guidance cautions to avoid an “overly strict approach to assessing naturalness.” Manual 6310, p. 7. The RMP could commit to managing the area to protect wilderness characteristics and also provide for the construction of a hiking trail and interpretation for the “Discovery Site” as an initial activity prior to other protective management prescriptions taking effect. This would be an appropriate approach for the monument, which as a unit of the Conservation Lands should prioritize conservation of lands with wilderness characteristics.

Recommendation: The RMP should manage all 576 acres of lands found to possess wilderness characteristics to protect those characteristics through the management prescriptions outlined in Alternative C, with the exception that the RMP should specifically allow for the development of a hiking trail and signage to interpret the “Discovery Site” properly.

IV. Travel Management

As discussed in more detail below in Section VI (Management of the Chile Challenge), BLM Manual 6100 (National Landscape Conservation System Management) and Manual 1626 (Travel and Transportation) set forth guidance for designating a travel network that prioritizes protection of monument resources and values and minimizes impacts to natural resources and conflicts among users. The travel network proposed in alternative C does not comply with this guidance.

The legislation establishing the monument states that “[e]xcept as needed for administrative purposes or to respond to an emergency, the use of motorized vehicles in the Monument shall be allowed only on roads and trails designated for use by motorized vehicles under the management plan.” In order to comply with the legislation creating the monument, the transportation plan set out in the draft RMP should be revised to include a legal definition of a road and actually prioritize protection of monument objects.

BLM Manuals 6100 and 6220 provide guidance for managing facilities within Conservation Lands units that conserve, protect, and restore the values for which those lands were designated. Specifically, the manuals state that “[t]he BLM will only develop new facilities, including roads, within NLCS units where they are required under law, required for public health and safety, are necessary for the exercise of valid existing rights or other non-discretionary uses, prevent impacts to fragile resources, or further the purposes for which an area was designated.” Manual 6100, 1.6(l)(3). This is a clear recognition that roads should be limited to the minimum network necessary for the management of the monument. A “minimum route network” is defined as “the smallest system of routes designed to provide for the enjoyment of the designated area without compromising the conservation, protection and enhancement of the resources that the area was established to protect.”

BLM is required to consider a reasonable range of alternatives in developing the EIS for the RMP. This mandate obligates the agency to “rigorously explore and objectively evaluate all reasonable alternatives.” 40 C.F.R. § 1502.14(a). Since minimizing facilities and roads within units of the Conservation System is a stated priority, the draft RMP for the Prehistoric Trackways National Monument must consider an alternative that would designate a minimum route network for the monument. This is similar to Alternative B proposed in the Proposed RMP/Final EIS for the Ironwood

30-6

Forest National Monument, which presented the “minimum routes necessary for the management of the IFNM, including administrative access needs.” Ironwood PRMP at J-168.¹

The draft RMP/EIS does not currently contain an alternative that would designate the minimum route network necessary for protection of the monument objects. Map 2-3 – Recreation, Trails & Travel Management, Alternative C (Draft RMP, p. 2-19) depicts a web of motorized routes that is incompatible with protective management of a unit of the Conservation Lands. This high route density and redundancy are far beyond what is required for accessing and experiencing the monument. BLM must close additional motorized routes in the monument to create a network that prioritizes protection of monument objects while providing necessary access.

We recognize that the majority of motorized routes designated in alternative C are utilized in the Chile Challenge, and this may be BLM’s reasoning for leaving them open to motorized use in the RMP. However, BLM could close routes to public motorized use and still allow the Chile Challenge to utilize those routes by designating them as “motorized use by special recreation permit only.” This would be different than the no-fee Day Use Pass, which presumes that all routes designated on Map 2-3 are available to all users who acquire the Day Use Pass. Rather, BLM would need to process a special recreation permit to approve motorized use of the routes designated “motorized use by special recreation permit only.” This would be an appropriate way to protect monument objects, reduce user conflict and provide quality quiet recreation experiences, and still allow for the Chile Challenge if BLM approves that use through additional analysis and a special recreation permit.

Finally, we support the proposed use of no-fee day passes to evaluate the number and types of visitors to the monument and assess resource impacts resulting from visitor use. Draft RMP, Appendix C, p. 7-8. This is a good way to better serve monument visitors and recreational demand while monitoring and mitigating potential resource damage.

Recommendations: The RMP should adopt a minimum route network to fulfill the direction of Manuals 6100 and 6220 by closing routes to motorized use other than those necessary to access and experience the monument resources and values. BLM may reserve the discretion to allow motorized use on routes that are otherwise closed to public motorized use for specially permitted events. The no-fee day use pass system should be carried through to the final RMP.

V. Recreation

A. **ERMA designation and management should focus on activities that are consistent with protection of monument resources.**

30-7

We support BLM designating the full monument as an extensive recreation management area (ERMA). However, it is inappropriate for the RMP to identify OHV use as a primary activity in the monument and in fact to list it as the first activity. Draft RMP, p. 2-9. While OHV use may be an activity that occurs in the monument, BLM should not be emphasizing or prioritizing this use in a unit of the Conservation Lands.

¹ This was not the preferred alternative in the Ironwood PRMP. This is likely due to the fact that much of the PRMP was already being finalized before the Secretarial Order 3308 and the 15-Year NLCS Strategy was released. However, there is an outstanding protest on this issue asking that BLM resolve the conflict with its own policy direction by choosing Alternative B in the Record of Decision. We believe that BLM will eventually choose the minimum road network approach over the FLPMA multiple use approach in the Ironwood PRMP.

30-6 The minimum route network is not a BLM objective and is not recommended in Manuals 6100 or 6220.

30-7 Monument Objects have been re-stated in Chapters 1 and 2. The *Proposed RMP/Final EIS* redefines Monument Objects; the Recreation Object is defined as *Recreational opportunities that do not damage fossil resources*.

The route designations were designed to protect the Monument Objects. Fossil localities are proprietary so were not published in the *Draft RMP/EIS*. If the preferred alternative is selected, Monument Objects of significant fossil resources would be protected from impacts from OHVs through route closures.

We recommend BLM remove OHV use as a primary activity in the monument and instead focus on exploring the paleontological resources as well as the other quiet-use recreation activities that are compatible with monument protection.

The draft RMP proposes to manage the Robledo Mountains WSA as primitive classification and the remainder of the monument as front country classification throughout the range of alternatives. Draft RMP, p. 2-10. This does not represent a range of alternatives, and it is inappropriate for a unit of the Conservation Lands to be managed primarily as a front country setting. The RMP should evaluate a range of recreation settings, including back country and passage zones. BLM should consider protective classifications for large portions of the monument, such as designating lands managed for wilderness characteristics as back country or primitive classifications.

By way of example, the Grand Staircase-Escalante National Monument Management Plan (MMP) included four zones to "provide guidance to help define permitted or excluded activities and any stipulations pertaining to them." MMP, p. 8. These zones included Frontcountry, Passage, Outback, and Primitive Zones. *Id.* at 8-9, attached to these comments.

Another example is the Craters of the Moon National Monument RMP which included Frontcountry, Passage, Primitive, and Pristine Zones for the entire planning area. Craters RMP, p. 13-14, attached to these comments. The plan describes the use of zones as a useful way to guide decisions to meet desired conditions.

Recommendations: BLM should remove OHV use as a primary recreational activity in the Monument and instead emphasize activities that are focused on and compatible with the exploration and protection of the monument objects. The RMP should evaluate a range of recreation settings and designate larger areas of the monument as back country or primitive classifications.

B. Special recreation permits should be governed by a more rigorous framework to protect monument resources.

The criteria for authorizing special recreation permits (SRPs) in alternatives C and D are inadequate to protect monument resources and values and do not meet the higher standard of management required for units of the Conservation Lands. As discussed in more detail below in Section VI (Management of the Chile Challenge), BLM should not allow for multiple motorized events in the monument. If the agency wants to permit the Chile Challenge to proceed, then the RMP should limit ORV events to this single event, state that approval of the event is discretionary and subject to stipulations, and require a strict burden of proof to ensure the event does not harm monument resources and values as required by the enabling legislation.

BLM should also put a more rigorous framework in place for evaluating SRPs to ensure any future events permitted by SRPs do not harm monument resources. It cannot be assumed that the Chile Challenge will continue throughout the life of the RMP or that another motorized event will not seek an SRP for the monument. We have attached a framework for processing SRPs as well as standard terms and conditions that is similar to the framework used in the Draft Programmatic EA for Motorized SRPs in the Vermilion Cliffs National Monument for your consideration. Importantly, the RMP should make it clear that the capacity of the agency to administer the permit must be a determining factor on whether to issue an SRP and BLM must also prove that it has the ability to do so for each SRP through documentation.

30-8

Recommendation: The RMP should adopt the attached framework for processing SRPs to ensure any motorized events permitted during the life of the plan are appropriate for the Monument and do not harm monument resources and values as required by the enabling legislation.

C. Target shooting should not be permitted in the monument.

We support the BLM closing the monument to target shooting to prevent resource damage and protect the safety of visitors, as contemplated in alternatives C and D. Draft RMP, p. 2-12, 3-9, 4-27—28. We encourage BLM to carry the prohibition on target shooting through to the final RMP.

VI. Management of the Chile Challenge

The Chile Challenge is the only off road vehicle (ORV) event that occurs on the lands now encompassed by the monument. The legislation establishing the Prehistoric Trackways National Monument states that special recreation events **may** be permitted within the monument “to the extent the events do not harm paleontological resources; and subject to any terms and conditions that the Secretary determines to be necessary.” 16 U.S.C. § 431, Pub.L. 111-11, Title II, § 2104(f)(2) (emphasis added). BLM’s environmental assessment (EA) for the 2010 Chile Challenge found many potential impacts to the monument, including widening of trails that results in increased erosion, habitat damage, impacts to sensitive species, and impacts to paleontological resources. See, e.g., EA at 16-21. In light of these impacts, the direction given in the legislation, and the direction in the recent guidance regarding management of the Conservation Lands and national monuments, permitting an event such as the Chile Challenge is generally not consistent with managing the monument for resource protection. To the extent that BLM intends to continue this event because of its history in the area, BLM should limit ORV events to the Chile Challenge and must make a stronger case for how it will protect monument values, as discussed below.

A. Designation of routes for the Chile Challenge must be supported by documentation showing impacts to monument objects and other resources have been minimized.

As noted above, BLM’s current guidance for motorized use within the Conservation Lands requires a showing that designations are consistent with protecting the values for which units were created. BLM Manual 6100 explicitly requires that: “roads, primitive roads, and trails within NLCS units will be located to minimize impacts to sensitive resources, enhance visitor recreation experiences, and conserve, protect, and restore the values for which NLCS units were designated.” BLM Manual 6100 at 1.6(M)(2). In addition to the direction pertaining specifically to the monument and to the Conservation Lands, the BLM’s Travel and Transportation Manual (Manual 1626, issued July 14, 2011) requires that “criteria to select or reject specific transportation linear features in the final travel management network... must include those identified in 43 C.F.R. § 8342.1.” 1626.06B3a. Referred to as the “minimization criteria,” the referenced BLM regulations require BLM to ensure that areas and trails for off-road vehicle use are located:

- “to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability”;
- “to minimize harassment of wildlife or significant disruption of wildlife habitats” with special attention “to protect endangered or threatened species and their habitats”; and
- “to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with

10

30-8 The analysis of impacts to Monument Objects from issuing SRPs for OHV use have been strengthened in Chapter 4. SRPs that harm Monument resources and values will not be permitted under the prescriptions of the *Proposed RMP/Final EIS*.

existing conditions in populated areas, taking into account noise and other factors.”

BLM is also obligated to close routes to ORV use if ORVs are causing or will cause considerable adverse effects on natural resources, wilderness suitability, and cultural and historic resources. 43 C.F.R. § 8341.2.

Consequently, in order to permit the Chile Challenge to occur, BLM must specifically document the basis for concluding each designated route will minimize impacts to other resources and protect monument objects.

B. Permitting the Chile Challenge to occur must comply with BLM’s guidance on issuing special recreation permits.

BLM Instruction Memorandum (IM) 2011-019 addresses the administration of special recreation permits. This guidance was issued in response to an event that was streamlined through the permitting process, not well planned, and allowed to proceed with little oversight, resulting in the deaths of eight people. Due to the nature of these types of large group events, it is critical that BLM set the right criteria up front for the safety of those involved and to protect the natural and cultural resources.

One of the most important requirements in IM 2011-019 is the agency’s obligation to deny any SRP if the field office cannot guarantee that every step of the permit can be properly administered. BLM has to make a determination for every permit that it has the capacity to properly administer the permit.

In this RMP, based on the agency’s current guidance and the priority for protecting monument objects, BLM cannot responsibly leave open the possibility for multiple events and should proactively apply these criteria to limit the type and number of permits that will be issued for an ORV event like the Chile Challenge. Further, the RMP should provide that the permit:

- will be tailored to an event, including routes, that can be managed to protect monument objects and consistent with agency capacity;
- will not be issued if these conditions cannot be met;
- will be subject to monitoring of the event and reevaluated based on the results of such monitoring in terms of routes, participants and overall issuance.

Recommendations: The RMP should not permit multiple ORV events. If the agency wants to permit the Chile Challenge to proceed, then the RMP should limit ORV events to this single event and also make the continuation of the Chile Challenge subject to route design and participant levels designed to minimize impacts and protect monument objects. In addition, the RMP should provide that the BLM is not obligated to permit the Chile Challenge every year and that the permit will be reevaluated each year based on monitoring of impacts and other aspects of the event. BLM must also provide specific documentation regarding how the Chile Challenge routes will be designed, participant levels determined, and BLM supervision deployed in order to minimize impacts to other resources and protect monument objects.

VII. Community Pit #1

We understand that the Community Pit #1 is outside of the planning area for this RMP and also that the RMP cannot alter the boundaries of the monument, as explained in Section 2.2.2, Alternatives

Considered but Not Analyzed in Detail. Draft RMP, p. 2-4. However, as part of the RMP/EIS, BLM can evaluate the paleontological resources found within the community pit and the manageability of the pit as part of the monument to inform the Secretary’s decision on whether to adjust the boundaries of the monument as provided for in the enabling legislation.

One of the main themes from BLM’s National Strategy for the Conservation Lands is the management of the System as part of the larger landscape. See, National Conservation Lands Strategy, Theme 2. BLM has a stated goal of taking a “cross-jurisdictional, community based approach to landscape-level conservation planning and management.” *Id.* at Goal 2B. Thus, BLM should not ignore the paleontological resources that lie adjacent to the boundary of the monument solely because they are outside of the planning area. Instead, the monument staff should make an effort to coordinate management of resources that occur on shared boundaries to ensure that management is consistent within the context of the larger landscape.

The legislation establishing the monument states: “If additional paleontological resources are discovered on public land adjacent to the Monument... the Secretary may make minor boundary adjustments to the Monument to include the resources in the Monument.” 16 U.S.C. § 431, Pub.L. 111-11, Title II, § 2103(d). Many paleontological resources have been discovered in the pit area; in fact, the only examples of proto-jellyfish were found in this area. This planning process provides BLM an opportunity to assess those resources so that the Secretary has pertinent and relevant information on which to base any decision regarding boundary adjustments.

Recommendation: The RMP should evaluate paleontological resources and manageability of Community Pit #1 to inform future decision-making on adjusting the boundaries of the monument.

Thank you for your consideration of these comments. We look forward to seeing them addressed as this planning effort proceeds.

Very truly yours,

Juli Slivka, Planning & Policy Associate
The Wilderness Society
BLM Action Center
1660 Wynkoop Street, #850
Denver, CO 80202
(303) 650-5818 Ext. 129
Juli_Slivka@twc.org

Attachments:

1. Sonoran Desert National Monument Proposed RMP/EIS, Table 1-3: Sonoran Desert National Monument Objects
2. Grand Staircase-Escalante National Monument Management Plan, Management Zone Descriptions
3. Craters of the Moon National Monument Management Plan, Table 1: Management Zones
4. Recommended Mandatory Criteria and Terms for SRPs

ATTACHMENT 1

1. Purpose and Need for the Resource Management Plan, Planning Area Guidance

**Table 1-3
Sonoran Desert National Monument Objects**

Object as Described in Presidential Proclamation 7397	Monument Object	Characteristics	Protection Criteria
<p>"The Sonoran Desert National Monument is a magnificent example of untrammeled Sonoran desert landscape. The area encompasses a functioning desert ecosystem with an extraordinary array of biological, scientific, and historic resources. The most biologically diverse of the North American deserts, the Monument consists of distinct mountain ranges separated by wide valleys, and includes large saguaro cactus forest communities that provide excellent habitat for a wide range of wildlife species."</p>	<p>Functioning Desert Ecosystem</p>	<p>Physical: Distinct mountain ranges separated by wide valleys Ecological: Sonoran desert landscape with properly functioning desert ecosystem, large saguaro cactus forest communities, habitat for a wide range of wildlife species</p>	<p>Prevent avoidable soil loss Maintain properly functioning plant communities defined by structure, cover, diversity, composition, and presence or absence of invasive species</p>
<p>"The Monument's biological resources include a spectacular diversity of plant and animal species. The higher peaks include unique woodland assemblages, while the lower elevation lands offer one of the most structurally complex examples of palo verde/mixed cacti association in the Sonoran Desert. The dense stands of leguminous trees and cacti are dominated by saguaros, palo verde trees, ironwood, prickly pear, and cholla. Important natural water holes, known as tinajas, exist throughout the Monument. The endangered acuña pineapple cactus is also found in the Monument."</p>	<p>Diversity of Plant and Animal Species</p>	<p>Biological: Saguaros, palo verde trees, ironwood, prickly pear, cholla, acuña pineapple cactus Physical: Tinajas Ecological: Woodland assemblages, structurally complex palo verde-mixed cacti association, dense stands of leguminous trees and cacti</p>	<p>Maintain normal variation in plant composition, diversity, and abundance of native species, diversity of niches, and landscape-level structural complexity</p>
<p>"The most striking aspect of the plant communities within the Monument are [sic] the abundant saguaro cactus forests. The saguaro is a signature plant of the Sonoran Desert. Individual saguaro plants are indeed magnificent, but a forest of these plants, together with the wide variety of trees, shrubs, and herbaceous plants that make up the forest community, is an impressive site [sic] to behold. The saguaro cactus forests within the Monument are a national treasure, rivaling those within the Saguaro National Park."</p>	<p>Saguaro Cactus Forests</p>	<p>Biological: Saguaro communities; saguaro cactus forests; wide variety of trees, shrubs, and herbaceous plants</p>	<p>Maintain age class and stand structure and density. Ensure suitable nurse plants are present and saguaro recruitment is adequate for cactus forest sustainability</p>

Table 1-3
Sonoran Desert National Monument Objects

Object as Described in Presidential Proclamation 7397	Monument Object	Characteristics	Protection Criteria
"The rich diversity, density, and distribution of plants in the Sand Tank Mountains area of the Monument is especially striking and can be attributed to the management regime in place since the area was withdrawn for military purposes in 1941. In particular, while some public access to the area is allowed, no livestock grazing has occurred for nearly 50 years. To extend the extraordinary diversity and overall ecological health of the Sand Tanks [sic] Mountains area, land adjacent and with biological resources similar to the area withdrawn for military purposes should be subject to a similar management regime to the fullest extent possible." "The Monument contains an abundance of packrat middens, allowing for scientific analysis of plant species and climates in past eras. Scientific analysis of the midden [sic] shows that the area received far more precipitation 20,000 years ago, and slowly became more arid. Vegetation for the area changed from juniper-oak-pineon pine woodland to the vegetation found today in the Sonoran Desert, although a few plants from the more mesic period, including the Kofa Mountain barberry, Arizona rosewood, and junipers, remain on higher elevations of north-facing slopes."	Sand Tank Mountains	Physical: Sand Tank Mountains Ecological: Diversity, density, and distribution of plants	Maintain normal variation in diversity, density, and distribution of plants
"The lower elevations and flatter areas of the Monument contain the creosote-bursage plant community. This plant community thrives in the open expanses between the mountain ranges, and connects the other plant communities together. Rare patches of desert grassland can also be found throughout the Monument, especially in the Sand Tank Mountains area. The washes in the area support a much denser vegetation community than the surrounding desert, including mesquites, ironwood, palo verde, desert honeysuckle, chuperosa, and desert willow, as well as a variety of	Vegetation Communities: Creosote Bush- Bursage, Desert Grassland, and Washes	Biological: Mesquite, ironwood, palo verde, desert honeysuckle, chuperosa, desert willow, herbaceous plants Physical: Sand Tank Mountains Ecological: Creosote-	Protect packrat middens, dry caves or rock shelters, and relic species. Within established guidelines, make middens available for scientific study and analysis Prevent avoidable soil loss Maintain properly functioning plant communities as defined by structure, cover, diversity, composition, invasive species, desert washes-bank stability, woody over story, and continuity of vertical structure

June 2012

Lower Sonoran-Sonoran Desert NM Proposed RMP/Final EIS

1-19

Table 1-3
Sonoran Desert National Monument Objects

Object as Described in Presidential Proclamation 7397	Monument Object	Characteristics	Protection Criteria
herbaceous plants. This vegetation offers the dense cover bird species need for successful nesting, foraging, and escape, and birds heavily use the washes during migration."		bursage plant community, desert grassland, densely vegetated wash communities	
"The diverse plant communities present in the Monument support a wide variety of wildlife, including the endangered Sonoran pronghorn, a robust population of desert bighorn sheep, especially in the Maricopa Mountains area, and other mammalian species such as mule deer, javelina, mountain lion, gray fox, and bobcat. Bat species within the Monument include the endangered lesser long-nosed bat, the California leaf-nosed bat, and the cave myotis. Over 200 species of [song] birds are found in the Monument, including 59 species known to nest in the Vekol Valley area. Numerous species of raptors and owls inhabit the Monument, including the elf owl and the western screech owl. The Monument also supports a diverse array of reptiles and amphibians, including the Sonoran desert tortoise and the red-backed whiptail. The BLM has designated approximately 25,000 acres of land in the Maricopa Mountains area as critical habitat for the desert tortoise. The Vekol Valley and Sand Tank Mountain areas contain especially diverse and robust populations of amphibians. During summer rainfall events, thousands of Sonoran green toads in the Vekol Valley can be heard moving around and calling out."	Wildlife	Biological: Sonoran pronghorn, desert bighorn sheep, mule deer, javelina, mountain lion, gray fox, bobcat, bat species (including lesser long-nosed bat, California leaf-nosed bat, and cave myotis), 200 species of songbirds, raptors, owls (including elf owl and western screech owl), red-backed whiptail, Sonoran green toads, critical habitat for: Sonoran desert tortoise Physical: Maricopa Mountains, Vekol Valley, Sand Tank Mountains Ecological: Diverse plant communities	Maintain viable populations of wildlife species, focusing as appropriate, on foraging habitat, hiding cover, nesting/roosting habitat, escape cover, and thermal cover Prevent avoidable loss of special status species

1-20

Lower Sonoran-Sonoran Desert NM Proposed RMP/Final EIS

June 2012

**Table I-3
Sonoran Desert National Monument Objects**

Object as Described in Presidential Proclamation 7397	Monument Object	Characteristics	Protection Criteria
<p>"The Monument also contains many significant archaeological and historic sites, including rock art sites, lithic quarries, and scattered artifacts. Vekol Wash is believed to have been an important prehistoric travel and trade corridor between the Hohokam and tribes located in what is now Mexico. Signs of large villages and permanent habitat sites occur throughout the area, and particularly along the bajadas of the Table Top Mountains. Occupants of these villages were the ancestors of today's O'odham, Quechan, Cocopah, Maricopa, and other tribes. The Monument also contains a much used trail corridor 23 miles long in which are found remnants of several important historic trails, including the Juan Bautista de Anza National Historic Trail (NHT), the Mormon Battalion Trail, and the Butterfield Overland Stage Route."</p>	<p>Archaeological and Historic Sites</p>	<p>Cultural: Archaeological and historic sites, rock art sites, lithic quarries, scattered artifacts, large villages, permanent habitat sites, Anza NHT corridor, Mormon Battalion Trail, Butterfield Overland Stage Route</p> <p>Physical: Vekol Wash, bajadas, Table Top Mountains</p>	<p>Reduce threats and resolve conflicts from natural and human-caused degradation affecting integrity of sites and settlement clusters, site condition context, setting, stability, and capacity to yield scientific information</p> <p>For the Anza Trail, reduce threats related to the historic trail corridor, its setting, and loss of interpretative opportunities</p>

June 2012

Lower Sonoran-Sonoran Desert NM Proposed RMP/Final EIS

I-21

ATTACHMENT 2

Introduction

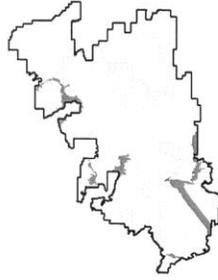
This chapter describes objectives and actions aimed at fulfilling the management direction discussed in Chapter 1. These decisions are organized under five main headings: **Management Zone Descriptions**, **Management of Resources**, **Management of Visitors and Other Uses**, **Special Emphasis Areas**, and **Cooperation and Consultation**. The management zones are described in detail below, and provide the framework for many of the decisions and strategies described later. The **Management of Resources** section provides objectives and decisions for resources mentioned in the Proclamation and the Federal Land Policy and Management Act (FLPMA) of 1976. The **Management of Visitors and Other Uses** section outlines decisions relating to activities such as recreation, livestock grazing, science and research, and valid existing rights. The **Special Emphasis Areas** section outlines decisions relating to Wilderness, Areas of Critical Environmental Concern, Special Recreation Management Areas, and Visual Resource Management. Finally, the **Cooperation and Consultation** section outlines a strategy for working with adjacent land management agencies, local and State governments, Native American Indian tribes, and the scientific and education communities. Each of the decisions in this chapter is numbered to facilitate referencing such decisions in future documents.

Management Zone Descriptions

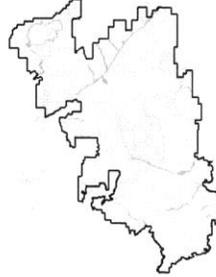
Management zones are used in this Plan to display various management emphases and strategies that will best fulfill the established purposes of the Monument and the overall vision described in Chapter 1. These zones, which are delineated by geographic area (Map 2 - in the envelop at the back of this document), provide guidance to help define permitted or excluded activities and any stipulations pertaining to them. In this context, zones are tools that guide decision making on permitting visitor uses and other activities within the Monument. The zone boundaries portrayed on Map 2.

may not exactly correspond to on the ground geographic features.

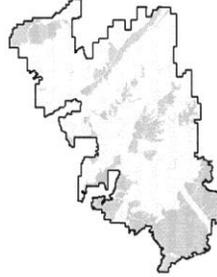
The **Frontcountry Zone** (78,056 acres or 4 percent of the Monument) is intended to be the focal point for visitation by providing day-use opportunities in close proximity to adjacent communities and to Highways 12 and 89 which traverse the Monument. This zone will accommodate the primary interpretation sites, overlooks, trails, and associated facilities necessary to feature Monument resources. The zone boundaries were developed by locating a corridor along Highways 12 and 89, Johnson Canyon Road, and the portion of Cottonwood Canyon Road leading to Grosvenor Arch. The zone was then expanded or constricted to coincide with the dominant terrain features which provide identifiable boundaries on the ground. Existing destinations such as Grosvenor Arch, the Pahreah townsite, and the Calif Creek Recreation Area were included in order to provide necessary improvements and to accommodate expected visitation. Lands close to the Town of Escalante were also included due to extensive visitor use. In delineating this zone, Wilderness Study Areas (WSAs), threatened and endangered species habitat, relict plant areas, riparian areas, and other sensitive resources were avoided whenever possible. Highway 89, from the western boundary to The Cockscomb, lacks dominant terrain to delineate this zone. For this reason, a one-mile buffer along each side of the highway was used.



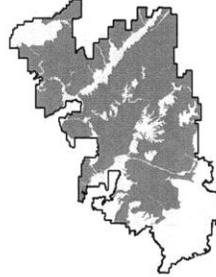
Frontcountry Zone



Passage Zone



Outback Zone



Primitive Zone

The **Passage Zone** (39,037 acres or 2 percent of the Monument) includes secondary travel routes which receive use as throughways and recreation destinations. While rudimentary facilities necessary for safety, visitor interpretation, and for the protection of resources will be allowed in this zone, the Bureau of Land Management (BLM) will generally avoid directing or encouraging further increases in visitation due to the condition of routes and distance from communities. The primary criterion for developing the zone boundaries was again dominant terrain. The boundary does not constrict closer than 100 feet to designated routes, and encompasses most obvious imprints of human activities such as trailheads, transmission rights-of-way, and potential resource interpretation sites within $\frac{1}{2}$ mile of the subject route. In many cases, dominant terrain was not available along route segments. In these cases, a 660 foot ($\frac{1}{4}$ mile) buffer was used. Again, WSAs, threatened and endangered species habitat, relict plant areas, riparian areas, and other sensitive resources were avoided whenever possible.

The **Outback Zone** (537,748 acres or 29 percent of the Monument) is intended to provide an undeveloped, primitive and self-directed visitor experience while accommodating motorized and mechanized access on designated routes. Facilities will be rare and provided only when essential for resource protection. The remaining public routes not in the Frontcountry or Passage Zones are included in the Outback Zone. Dominant terrain was again a primary criterion for the zone boundary. The boundary does not constrict closer than 100 feet to the routes. WSAs were avoided wherever possible.

The **Primitive Zone** (1,210,579 acres or 65 percent of the Monument) is intended to provide an undeveloped, primitive and self-directed visitor experience without motorized or mechanized access. Some administrative routes are included in this zone, which could allow very limited motorized access. Facilities will be non-existent, except for limited signs for resource protection or public safety. The zone is intended to facilitate landscape-scale research and therefore connects each of the three major landscapes (Escalante Canyons, Kaiparowits Plateau, and Grand Staircase), as well as linking low elevation areas to higher elevations. This zone is also intended to connect primitive and undeveloped areas on surrounding lands managed by other Federal agencies.

ATTACHMENT 3

TABLE 1. MANAGEMENT ZONES

	FRONTCOUNTRY ZONE	PASSAGE ZONE	PRIMITIVE ZONE	PRISTINE ZONE
Basic Concept	The frontcountry zone is defined by structures and grounds provided for visitor support services such as information, education, and recreation. Access will be easy and convenient, and the encounter rate very high. High maintenance and intervention will be required to accommodate concentrated visitor use. Challenge and adventure is less important compared to other zones. Zone corridor will be 660 feet wide along roads.	The passage zone is intended to accommodate the flow of people and vehicles from one place to another and to provide minimal accommodations such as parking, trailheads, primitive campsites, and information kiosks or signs for people preparing to venture into the Primitive and/or Pristine Zones of the Monument. Where the zone is only a narrow corridor following a road (660 feet wide), the expectation is that a particular road will be maintained to a consistent standard along the length of the corridor, normally a Class B or Class C road from one end of the corridor to the other.	The primitive zone provides an undeveloped, primitive, and self-directed visitor experience while accommodating motorized and mechanized access on designated routes. Facilities will be rare and provided only where essential for resource protection.	The pristine zone includes mostly lava flows, designated Wilderness, and Wilderness Study Areas. This zone provides an undeveloped, primitive, and self-directed visitor experience, generally without motorized or mechanical access. Facilities will be virtually nonexistent.
Visitor Experience	High chance for encounters with people.	Medium chance for encounters with people.	Low chance for encounters with people.	High chance for solitude.
	Travel on paved, improved, or maintained roads.	Travel on higher level of road maintenance than the Primitive Zone.	Travel on low-standard roads with challenging driving conditions.	Travel involves challenging conditions and no roads.
	Developed campgrounds.	Rustic, designated campsites.	No developed campsites; dispersed primitive camping.	No developed campsites; dispersed primitive camping.
	A high level of interpretation programs, informational exhibits.	Limited interpretation, wayside exhibits.	Minimal on-site interpretation.	No on-site interpretation.
	Diverse trail system, some paved.	Multituse, maintained, and designated trails.	Low-standard multituse trails with little or no maintenance.	Very few trails.
	Low chance for encounters with livestock or associated developments.	High chance for encounters with livestock or associated developments.	Medium chance for encounters with livestock or associated developments.	Low chance for encounters with livestock or associated developments.
	High level of contact with agency staff.	Low to moderate level of contact with agency staff.	Very low level of contact with agency staff.	Essentially no contact with agency staff.
Typical visitor activities: sightseeing, driving, bicycling, walking, nature study, ranger-led programs, camping, and picnicking.	Typical visitor activities: driving, sightseeing, hiking, mountain biking, horseback riding, and dispersed camping.	Typical visitor activities require self-sufficiency: hiking, hunting, horseback riding, mountain biking, remote camping, and driving on unimproved roads.	Typical visitor activities require self-sufficiency and involve challenge, risk, and adventure: dispersed camping, backpacking, nature study, and hunting.	
Access and Kinds of Development	Paved roads and high-standard gravel roads.	Class B-D roads. Some arterial roads would be regularly maintained to allow seasonal car, SUV, light truck passage.	Class C-D roads. Dirt roads, accessible seasonally only with high-clearance vehicles and off-highway vehicles.	No roads.
	Hardened and maintained pedestrian trails.	Trailheads; maintained motorized and non-motorized trails.	Low standard multituse trails.	Very few trails; no motorized trails.
	Frequent signs for directions, safety, and interpretation.	Signs for directions, safety, resource protection, and interpretation.	Minimal signs for visitor safety and resource protection only.	Very few signs.
	Offices, utilities, maintenance facilities, storage areas, visitor center, employee housing, and restrooms.	Minimal administrative structures, vault toilets.	No buildings.	No buildings.

ATTACHMENT 4

Attachment 1: Recommended Mandatory Criteria and Terms for SRP/SUPs

A strong programmatic document sets forth enough guidance, criteria, and direction for the administration of the proposed project. We strongly recommend the agencies to consider including, as a minimum, the following criteria and terms as part of the programmatic EA:

I. BLM should propose mandatory criteria for evaluating each permit

BLM has the opportunity to propose a system by which each SRP is evaluated for a determination of whether the use is appropriate or not. This not only makes the agencies' job of processing these applications standardized and easier, it also gives the applicant an expectation of how the application should be structured.

As a baseline, BLM regulations require the agency to apply the following criteria to SRPs:

- (a) Conformance with laws and land use plans;
- (b) Public safety,
- (c) Conflicts with other uses,
- (d) Resource protection,
- (e) The public interest served,
- (f) Whether in the past you complied with the terms of your permit or other authorization from BLM and other agencies, and
- (g) Such other information that BLM finds appropriate.

43 C.F.R. § 2932.26

The following are comments and recommendations on what should be included in the RMP as well as a suggested methodology for processing SRP applications:

A. Evaluation factors that should be considered before an SRP/SUP is issued

Due to the nature of SRPs/SUPs, the agencies can set evaluation criteria for all permits across the board in order to better anticipate challenges that may arise from an increase in conflicts stemming from these permits. This approach allows the agencies more of a rational basis and control of groups requesting permits, whether anticipated or not. This also allows the agency with the discretion to grant the permit based on these factors. We recommend each of the following criteria be evaluated and ranked before any SRP is issued:¹

¹ A similar approach was recently proposed by Vermilion Cliffs National Monument in a draft programmatic EA for commercial motorized SRPs in the monument and surrounding areas. See Environmental Assessment DOI-BLM-AZ-A020-2010-0001-EA, available at:

Criteria	Permit More Likely	Permit Less Likely	Deny as proposed
Is the primary interest of the organized group the experience of the historic resources and cultural heritage along the Hole-in-the-Rock Trail as pioneers and others experienced the area?	Yes, the organized group wishes to educate themselves, through reenactment or utilizing primitive technology, about the history or cultural heritage of the Trail.	The group may be interested in the history or cultural heritage of the Trail, but prefers utilize modern-day technology and devices to explore the area. <i>Note, the permit may fall under provisions of the MMP or the monument-wide programmatic EA for SRPs, but should not be granted under this EA.</i>	The group's primary purpose is something other than education of the history and experience of cultural heritage of the Trail. <i>Note, the permit may fall under provisions of the MMP or the monument-wide programmatic EA for SRPs, but should not be granted under this EA.</i>
Is there potential for harm of listed monument objects in the area?	No, the area does not contain monument objects or there is no chance of harm	Uncertain of the occurrence of monument objects in the area or the chances of harm	Yes, the activity will almost certainly have some harmful impact on monument objects
If this is an event involving motorized vehicles, are all vehicles street-legal?	Yes, all vehicles are street-legal and all participants have been informed that any vehicles that are not street-legal are subject to prosecution	There is a possibility that some of the vehicles will not be compliant to be street-legal and the applicant has not provided adequate assurances that all vehicles will be street-legal	No, this event involves some vehicles that are not street-legal
Is the activity one that minimizes conflicts with other users?	Yes, there is a very small chance of conflict with other users	Conflict may occur because of the time of year, size of the group, type of event or other factor	No, conflict will likely occur among users in the area
Are the routes to be use located to prevent impairment of wilderness quality or suitability?	Yes, the routes are located away from Wilderness Study Areas or lands maintained for wilderness character so as not to impair wilderness quality or suitability	Routes may not have a direct impact on the wilderness resource, but have not necessarily been located to minimize damage.	No, routes will likely impair wilderness quality and/or suitability due to the continuous impact of the activity and proximity to the wilderness area or lands maintained for

<http://www.blm.gov/pgdata/etc/medialib/blm/az/pdfs/nepa/projects/strip/10.Par.6591.File.dat/AZ-A020-2010-0001-EA.pdf>

Ability of soils and vegetation to recover from impacts?	Yes. Site and associated features demonstrate resilience and resistance to anticipated impacts	Moderate. Site and associated features demonstrate some ability to resist/recover from impacts	wilderness character No. Site and associated features demonstrate limited ability to resist/recover from impacts
Contribution to climate change?	Low. GHG emissions, creation of dust, and other contributing factors to climate change will be insignificant relative to other activities occurring in the area	Moderate. GHG emissions, creations of dust, and other contributing factors to climate change will be notable relative to other activities occurring in the area	High. GHG emissions, creation of dust, and other contributing factors to climate change will be substantial relative to other activities occurring in the area
Exclusive use of the area/conflicts with other users?	No, the proposed activity will not require the exclusive use of the area and/or conflicts with other users will be minimal.	Moderate. The activity will likely conflict with other users' experiences in the short term as a dominant use, even if not the exclusive use of the area.	Yes, the proposed activity will require the exclusive use of the area at the expense of other users
Duration of use?	Short. 1 day or less.	Moderate. 2 to 4 days.	Long. More than 4 days.
Number of vehicles used for the event?	Low. 2 or less vehicles.	Moderate. 3 to 6 vehicles.	High. More than 6 vehicles.
Propensity of the type of activity to cause damage?	Low. Activity is one that commonly has little to no impact to resources in the area.	Moderate. Activity is one that tends to have some short term impacts to resources in the area.	High. Activity commonly has impacts on the resources of the area.
Competitive event?	No.		Yes. Competitive events are prohibited by the MMP.
Mechanical equipment required?	No. No vehicles or other mechanized equipment is required in support of the proposed activity	Moderate. Some vehicles or mechanized equipment is required in support of the proposed activity.	High. Vehicles or other mechanized equipment is required in support of the proposed activity
Monitoring and inspection required?	BLM can devote adequate resources and personnel for the enforcement of the proposed activity throughout the duration of the permit	BLM has relatively little resources or personnel to devote to enforcement of the proposed activity and can only provide partial enforcement	No resources or personnel to devote to enforcement of the proposed activity. The BLM will need to cancel or alter workloads measures

	per BLM H-2930-1. Issuance of permit will not affect workload measures.	and will impact BLM workload measures.	to monitor the permit.
Past violation of terms or conditions by applicant?	No. The applicant has not violated the law, policies or guidance of the agencies, or the terms of prior permits issued with respect to the nature of the proposed activity.	The applicant has not violated the law or terms of an SRP, but has received a warning or informal reprimand in a review of the application after the event occurred.	Yes. The applicant, on at least one occasion, has violated the law, policies and guidance of the agencies, or the terms of prior permits issued with respect to the nature of the proposed activity.
Additional facilities needed?	No. No additional facilities or facility maintenance are needed throughout the duration of the proposed activity.	Yes, some additional facilities and/or additional facility maintenance are needed for the proposed activity.	Yes, major additional facilities and/or additional facility maintenance are needed for the proposed activity.
Capacity of sites and areas to withstand repeated use?	Low. The proposed area has a low capacity for such use and/or is unable to withstand repeated use	Moderate. The proposed area has an average capacity for such use and is able to withstand a medium amount of repeated use	High. The proposed area has much capacity for such use and is able to withstand a large amount of repeated use
Does BLM have the capacity to fulfill, or complete, all the necessary steps of a use authorization?	Yes. BLM has enough resources allocated to ensure the completion of every step of the use authorization.		No. BLM does not have enough money, staff, time, or other resources to fully complete every step of the use authorization.

Once the agency has analyzed the appropriate mandatory factors for each permit, the agency can then classify each application into one of four classes in order to determine whether the application will be accepted, accepted with modifications, or denied.

II. BLM should propose standard terms and conditions to apply to each permit

The terms of the permits are another very important management tool that the agencies should use to ensure that the proposed activity stays in line with the policies and rules of the Monument. Once the decision is made to issue a SRP, the agencies should require that each permit contains strict and mandatory terms for the applicant. Terms that should apply include the following:

- All appropriate fees are paid prior to the proposed activity
- Compliance with all Federal law, policy, and guidance and New Mexico State law

- Compliance with existing land use plan decisions
- Minimum guide to participant ratio
- Seasonal restrictions
- Performance standards for specific uses
- No harassment of wildlife (slow down or stop if wildlife in the area)
- Yield to other users
- Abide by tread lightly/leave no trace standards
- Wash all vehicles before the event to help prevent the spread of non-native and invasive species
- Minimum number of permits per year for uses in certain areas (e.g. permits can be issued by a lottery system)
- Mitigation standards set
- Reclamation of the area if necessary
- All camps would be located at least 200 feet from any known paleontological or archaeological sites, including, but not limited to trackways or fossilized remains, prehistoric camps, rock shelters, caves, and historic buildings.
- All existing camps intended for SRP use would be inventoried for paleontological or cultural resource values and closed if sensitive sites are being impacted either by current SRP users, or members of the general public.

Strict enforcement measures and penalties should be prescribed for breach of the terms of the SRP, including permit revocation and prosecution if the a noncompliant activity is illegal. We also recommend that BLM set forth an annual performance evaluation process of the permittee's compliance with the terms and general performance.²

² One example of a performance evaluation process for SRPs can be found in Alaska BLM SRP Application Booklet (2008) at 13-14, available at: http://www.blm.gov/pgdata/etc/medialib/blm/ak/aktest/rec/rec_pdfs.Par.61619.File.dat/SRP-2008.pdf

GOVERNOR
Susana Martínez



DIRECTOR AND SECRETARY
TO THE COMMISSION
James S. Lane, Jr.

Daniel E. Brooks, Deputy Director

STATE OF NEW MEXICO
DEPARTMENT OF GAME & FISH

One Wildlife Way
Santa Fe, NM 87507
Post Office Box 25112
Santa Fe, NM 87504
Phone: (505) 476-8008
Fax: (505) 476-8124

Visit our website at www.wildlife.state.nm.us
For information call: (888) 248-6866
To order free publications call: (800) 862-9710

STATE GAME COMMISSION

JIM McCLINTIC
Chairman
Albuquerque, NM

THOMAS "DICK" SALOPEK
Vice-Chairman
Las Cruces, NM

DR. TOM ARVAS
Albuquerque, NM

SCOTT BIDEGAIN
Tucuman, NM

ROBERT ESPINOZA, SR.
Farmington, NM

PAUL M. KIENZLE III
Albuquerque, NM

BILL MONTOYA
Alto, NM

October 17, 2012

Lori Allen
Bureau of Land Management
1800 Marquess Street
Las Cruces, NM 88005

Draft Resource Management Plan for the Prehistoric Trackways National Monument; NMGF
No. 15213

Dear Ms. Allen:

The New Mexico Department of Game and Fish (Department) appreciates the opportunity to review and comment on the draft Resource Management Plan for the Prehistoric Trackways National Monument (Monument). We appreciate the commitment by the U.S. Bureau of Land Management that hunting will continue to be allowed within the Monument. The lands within the Monument have been important to and popular with the sportsmen of New Mexico. The Department supports and encourages all alternatives that support the continuation of hunting within the Monument.

Thank you for the opportunity to review and comment on this project. If you have any questions please contact Patrick Mathis, Southwest Regional Habitat Biologist at (575) 532-2108 or patrick.mathis@state.nm.us.

Sincerely,

Matt Wunder, Ph.D.
Chief, Conservation Services Division

MW/pm

xc: USFWS NMES Field Office
Pat Mathis, SW Regional Habitat Biologist, NMDGF
Donald Auer, Habitat Manager, NMDGF

RECEIVED
LAS CRUCES DISTRICT OFFICE
Prehistoric Trackways National Monument
DRAFT RESOURCE MANAGEMENT PLAN/DRAFT ENVIRONMENTAL IMPACT STATEMENT
LAS CRUCES, NM 88005

PLEASE PRINT

M. FLORENCE DOUGHERTY
NAME
4901 CHAGAR
ADDRESS
LAS CRUCES NM 88007
CITY STATE ZIP

PALEOZOIC TRACKWAYS
FOUNDATION

Organization (if applicable)

Add to Mailing List YES NO

Withhold Personal Information*
 YES NO

Receive Notification of EIS availability?

YES NO

COMMENTS:

HONORABLE: JEFF BINGAMAN
HONORABLE: TOM UDALL
HONORABLE: STEVE PEARCE

COMMENTS DUE
OCTOBER 22, 2012

RE: PREHISTORIC TRACKWAYS NATIONAL MONUMENT / RMP

TO PREVENT FUTURE DUPLICITY IN COST, REPEATED RESEARCH,
TIME INVOLVED IN SESSIONS, I URGE THAT COMMUNITY PIT #1, LOCATED
DIRECTLY ADJACENT TO THE BOUNDARY OF THE MONUMENT, BE
INCLUDED NOW IN THE PRESENT DRAFT.

CONTINUED DELAY WOULD JEOPARDIZE IMPORTANT PALEOLITHIC
RESEARCH AND DISCOVERIES WAITING TO BE UNCOVERED!

*Submittal of comments are completely voluntary and any identifying information provided will become part of the public record, and as such, must be released to any individual upon request. Request to withhold comments and associated person identifying information from public review cannot be guaranteed.

Prehistoric Trackways National Monument

DRAFT RESOURCE MANAGEMENT PLAN/DRAFT ENVIRONMENTAL IMPACT STATEMENT



PLEASE PRINT

JIM ENRIGHT

NAME
EX 6PALEOZOIC TRACKWAYS FOUNDATION
Organization (if applicable)Add to Mailing List YES NOWithhold Personal Information* YES NOReceive Notification of EIS availability? YES NO**COMMENTS:**

I AGREE WITH THE BLM THAT ALTERNATIVE 'C'
IS THE BEST OPTION.

I WOULD RECOMMEND THAT THE PT
CONTACT STATION INCLUDE A BUILDING, TOILET,
PARKING LOT, A PAVED ROAD WOULD BE WARD.

THIS DRAFT ESTIMATES THAT PTNM VISITATION
TO ABOUT 15,000 PER YEAR. I RECOMMEND THAT THE
INSTITUTE A SELF-PAY STATION TO RAISE MONEY, A WOMEN.
\$2 PER PERSON FEE WOULD RAISE ABOUT \$30,000 PER YEAR.
THUS ONE YEAR OF FEE COLLECTION WOULD PAY FOR TOILETS, TWO
YEARS WOULD PAY FOR A PARKING LOT, A FEW MONTHS OF FEES
WOULD PAY FOR A PAVED ROAD, AND A BUILDING WOULD TAKE
ABOUT 5 YEARS OF \$2 USER FEES. (ALL COST ESTIMATES ARE
TAKEN FROM THIS DRAFT), IT WORKS AT AGUIRA SPRINGS!
THE VISITOR'S CONTACT STATION SHOULD BE MODELED AFTER

COMMENTS DUE
OCTOBER 22, 2012

33-1 The establishment of a fee site is authorized under the Federal Lands Recreation Enhancement Act (REA), which has explicit requirements for a site to provide, prior to establishment of fee collection. For a Standard Amenity Recreation Site to be established, items such as designated developed parking, permanent toilet facilities, permanent trash receptacles, interpretive signage, picnic tables, and security services must be in place. While a few of these items are in place now, approval for establishment of a fee site would not be considered unless all were in place. Fees could then be considered, as a means to supplement the cost of management of those facilities/services. Any fee proposal would follow specific steps that include development of a business plan, public involvement, Washington Office approval, and Resource Advisory Council consideration/recommendation. At this point, fee collection consideration would be premature.

*Submittal of comments are completely voluntary and any identifying information provided will become part of the public record, and as such, must be released to any individual upon request. Request to withhold comments and associated person identifying information from public review cannot be guaranteed.

THE STATION AT TARRIA UTAH, (BLM OWNED GRAND STAIRCASE NM)
 A SIMPLE, SMALL BUILDING WITH INFORMATION AND TOILETS. CHECK IT OUT!
 THE SELF-PAY SYSTEM COULD BE MODELED AFTER THE OTHER
 BLM-OWNED NM AT TENT ROCKS (NORTH OF ALBUQUERQUE). THIS
 SYSTEM WORKS WELL ON THE HONOR SYSTEM TO RAISE NEEDED FUNDS.
 THE FIRST PRIORITY OF THE BLM SHOULD BE TO OBTAIN
 EASEMENTS FOR PTM ACCESS. WITHOUT THESE EASEMENTS, NO
 IMPROVEMENTS CAN BE IMPLEMENTED.
 - A TYPO: ON PAGES 254 + 258 THE PTF IS MIS-NAMED.
 IT SHOULD BE PALAZOZIC, NOT PREHISTORIC TRACKWAYS FOUNDATION.
 - THE RMP DRAFT TRANSPOSED PALAZOZIC ERA + PERMIAN PERIOD
 A FEW TIMES.
 GOOD OVERALL JOB! IF I CAN BE OF ANY HELP, LET
 ME KNOW.

FOLD HERE

ERIOR
 .MENT
 OFFICE
 EET
 .MEXICO 88005

NO POSTAGE
 NECESSARY
 IF MAILED
 IN THE
 UNITED STATES

BUSINESS
 .ate Use \$300

BUSINESS REPLY MAIL
 FIRST CLASS PERMIT NO. 14153 WASHINGTON DC

POSTAGE WILL BE PAID BY
 THE BUREAU OF LAND MANAGEMENT

BUREAU OF LAND MANAGEMENT
 ATTN: LORI ALLEN
 LAS CRUCES DISTRICT OFFICE
 1800 MARQUESS STREET
 LAS CRUCES NM 88005

#33

33-2

33-3

33-2 Since the publication of the Draft RMP/EIS, the BLM has obtained an access easement to the Monument.

33-3 These editorial changes have been made. Thank you.

RECEIVED
LAS CRUCES DISTRICT OFFICE

Prehistoric Trackways National Monument
DRAFT RESOURCE MANAGEMENT PLAN/DRAFT ENVIRONMENTAL IMPACT STATEMENT

PLEASE PRINT

Robert Neil Mathis
NAME

4855 River Heights Dr.
ADDRESS

Las Cruces NM 88007
CITY STATE ZIP

Organization (if applicable)
Add to Mailing List YES NO
Withhold Personal Information*
YES NO
Receive Notification of EIS availability?
 YES NO

COMMENTS:
Please see my comments attached. The Paleozoic Trackways Foundation will proceed to get the Community Pit #1 area added to the Prehistoric Trackways National Monument (PTNM) as soon as possible. A request to accomplish this is being prepared and will be forwarded through Senator Bingaman, et al, to the Secretary of the Interior to include Pit #1 within the monument boundaries. A copy of this request will also be provided to the local BLM office. We hope that the local BLM organization will concur with and support these actions to include Pit #1 within the boundaries of the PTNM.
My thinking and rationale are included in my attached comments.

**COMMENTS DUE
OCTOBER 22, 2012**

Robert Neil Mathis

*Submittal of comments are completely voluntary and any identifying information provided will become part of the public record, and as such, must be released to any individual upon request. Request to withhold comments and associated person identifying information from public review cannot be guaranteed.

Comments
by
Neil Mathis
October 21, 2012

Re: Draft BLM PTNM RMP/EIS

An excellent plan as far as it goes, but it has a vital short coming.

In my opinion, this short coming is or should be a "show stopper" for completing the PTNM plan. **This short coming is the failure to include the Community Pit #1 and it's surrounding land which is not currently within the PTNM boundary in the planning process.** To kick the issue of the inclusion of Community Pit #1 down the road to a later date after the PTNM plan is "completed" makes absolutely no sense to me because of its critical location, the need

for reworking of any plans in the future when the Community Pit#1 is included within the monument boundary, the incursion of additional expenses (tax dollars) later on due to previous restrictions, and the consumption of time by the BLM staff to realign the plans for both the PTNM RMP and the Reclamation plan, etc.

Of course, the BLM is technically right in not including the the Community Pit #1 in their current plan because it is not in the PTNM current boundary. Their hands are currently tied by definition. But why not correct this issue by getting the boundary of the PTNM changed so that it can be included in the planning process. Is this such a big deal, or or we dodging the issue just because **we think** it is too **BIG** a deal.

I think that a concerted effort should be made to rectify this short coming now (immediately).

Look at the excerpt of the “Issues Raised That Will Not Be Addressed” quoted below.

Reference: Prehistoric Trackways National Monument-Resource Management Plan/ Environmental Impact Statement: Public Scoping Report. Appendix F, paragraph 2.11: Issues Raised That Will Not Be Addressed

“2.11 Issues Raised That Will Not Be Addressed”

“A management concern for the BLM is the possibility of the Monument boundary changing due to new Legislation. This

concern was mentioned in the Scoping Packet to bring to light this possibility. There were several comments regarding this issue stating that BLM should not consider upcoming Legislation in the RMP. This issue will be documented in the RMP as an Issue Considered, but Not Further Analyzed.”

Actions regarding the adjacent Community Pit #1 are beyond the scope of the RMP because the Community Pit #1 is outside the RMP Decision Area. Cumulative Impacts from the actions taken in Community Pit #1 will be addressed in the RMP/EIS.

The Legislation [*the Omnibus Land legislation that approved the monument*] allows **the Secretary of the Interior** to make **minor** [*bold letters added for emphasis*] boundary adjustments to the

Monument if additional paleontological resources are discovered on public land adjacent to the Monument. **The Secretary of the Interior has the authority to make these adjustments, outside the RMP/EIS process. This issue is beyond the scope of this planning effort and will not be addressed in detail in the RMP** [*bold letters added for emphasis*].”

Quote from the PTNM RMP p.18 of the Public Scoping Report.

Random thoughts and notes

By not considering the Community Pit #1 and it's surrounding land can have a big

impact upon the PTNM planning process. Let us get this changed.

If I understand the above quote from the RMP, The current Secretary of the Interior, former Senator Ken Salazar of Colorado, has, right now, the authority to make a minor changes in the boundary of the PTNM. How do you define minor? In checking with Lori Allen, PTNM Planner, the area that includes the Community Pit #1 that is not included within the monument is about **180 acres**. The current area of the PTNM is 5280 acres. **If my math is correct, 180 acres is only about 3.4% of the current PTNM area.** Now, in my book, that is a “**minor**” amount and therefore The Secretary of the Interior, has the authority to change the PTNM boundary to include the Community Pit #1 with the stroke of his pen.

But some will say, “ the Community Pit #1 must be environmentally restored to its original condition” before anything else is done. Does that mean it must look just like it did before all of that previous rock was removed? Let’s use some common sense here. If the Pit area is to eventually become a part of the PTNM it does not need to be reclaimed as if there was no other use for this land. If the Pit area is within the monument area, it should be changed or modified to best suit the development of the monument, and the people to decide that are the BLM personnel who are working on the plans for the monument. The Secretary of the Interior can also make this happen as all of this land is now under the supervision of the BLM. Let us not get bogged down in a lot of red tape on this.

Other Miscellaneous Notes:

Not including the Pit in the plan is an impediment to coming up with a good and comprehensive plan.

We do not have to wait until the reclamation of the Community Pit #1 is “reclaimed” to get the area included in the PTNM plan.

These are not exclusive actions.

We can consolidate all of this land together now, and we should.

Let’s remove this issue from the “not being considered” to “being considered”.

Community Pit #1 is not within the current PTNM boundary, but it is somewhat at the heart of access to the entire PTNM its self. One of the proposed key access roads to the monument goes directly to this area and possibly it could end up being the main entrance to the PTNM.

The Community Pit #1 is not really a pit, it is a hill that has been proven to contain excellent track specimens (primarily in the red rock layers). This has been well documented by Jerry MacDonald in the reports that he has previously prepared.

Because of previous excavations of rock, the area around this hill already presents an open, somewhat flat area that could easily be used for parking, visitors information kiosks, covered trackway exhibits, facilities for future paleontological research, a ranger headquarters, tourist support facilities access to drinking water, snack, restrooms, covered picnic areas), and possibly at some future time a visitor’s center.

This currently excluded area from BLM planning could end up be a hub for all PTNM activities.

It seems to make no logical or rational sense to me to not include this area in a comprehensive plan for PTNM development. If the PTNM plan goes forward without including this critical area which may later be added to the PTNM, how many changes will have to be later at greatly added expense and time to accomplish what many would say “we wish we had done this in the original plan”. Are we going to go for a second rate plan because the Community Pit #1 area is not included within the current PTNM boundary?

My strong recommendation to BLM and the Secretary of the Interior is to include the Community Pit #1 within the PTNM boundary. As I understand, Community Pit #1 must be properly “reclaimed” because of previous excavations there. Why can’t this reclamation be accomplished with an

integrated Community Pit #1 and the BLM PTNM development plan. Any reclamation of the Community Pit #1 should be driven by the BLM monument development plan and overseen by the local BLM office with final authority to determine how the reclamation will be accomplished so that it fulfills desired, common sense, final land use objectives. This will save tax dollars, much time and effort, many headaches, and simplified development planning.

We already know that “additional paleontological resources” exist within the Community Pit #1. If there exists some legislation that already allows the Secretary of the Interior to make minor boundary adjustments, then I request that the Secretary of the Interior declare the inclusion of the Community Pit #1 be included within the PTNM boundary.

This boundary adjustment needs to be made now so that BLM can rightfully include the area identified as Community Pit #1 in its PTNM developmental planning process. To not make this decision now makes no logical sense and would be a gross example of government management ineptitude.

To continue the current BLM planning process without making the boundary change is akin to the old farmer saying about “ getting the cart before the horse”.

We need to avoid a past developmental process reflection of “ we should have, we could have, we ought to have, but we didn't.”

{Please forgive my repetitious rambling}

RNM



Prehistoric Trackways National Monument

DRAFT RESOURCE MANAGEMENT PLAN/DRAFT ENVIRONMENTAL IMPACT STATEMENT

PLEASE PRINT

NAME Joan R. Smith
EX 6

Organization (if applicable)

Add to Mailing List YES NO

Withhold Personal Information*

YES NO

Receive Notification of EIS availability?

YES NO

COMMENTS:

Attached



*Submittal of comments are completely voluntary and any identifying information provided will become part of the public record, and as such, must be released to any individual upon request. Request to withhold comments and associated person identifying information from public review cannot be guaranteed.

From: Joan R. Smith

EX 6

Date Submitted to BLM: October 18, 2012
 Re: Prehistoric Trackways National Monument RMP

With the following changes, I would support Alternative "C".

The most serious disagreement I have with the Preferred Alternative C is the expanded "Road Network" for mechanized vehicles. The Chile Challenge and other similar events are totally INCOMPATIBLE with preserving the paleontological items in the Monument area. Please see the attached clipping from the Sun News February 25, 2012. Those vehicles are NOT on existing roads. I agree that reasonable access should be provided for scientists, BLM personnel, law enforcement, authorized people and guided tours. Large, competitive mechanized events. **However, large, competitive mechanized events SHOULD NOT BE ALLOWED WITHIN THE MONUMENT BOUNDARIES BECAUSE THEY DESTROY THE ANCIENT RESOURCES.**

35-1

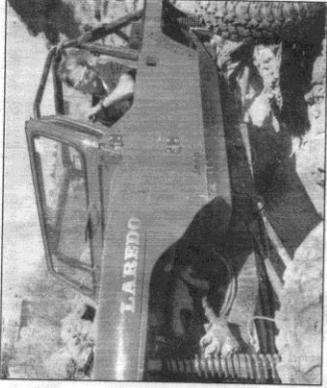
Second, Target Shooting. Alternative C (page 4-27) (4.4.3.3). I recommend that the word "would" be replaced with the word "will" in this whole section to make a stronger statement. In the first sentence, I recommend inserting after "scenic, and recreational values"...**"In order to honor this mandate, BLM analyzed public safety in regard to predictable projectile safety areas and confirmed the advisability of "No Target Shooting within the Monument. The following 5 paragraphs detail BLM's research which confirms "No Shooting."** I believe this is necessary because the extra information in the 5 paragraphs can leave the reader with the impression that sometimes shooting will be allowed after all.

STRONGLY, I SUPPORT INCLUDING COMMUNITY PIT 1 IN THE BOUNDARIES OF THE NATIONAL MONUMENT...GERONIMO'S CAVE, TOO, IF POSSIBLE. I understand there is an effort developing to bring this about and I support that.

Re: Proposals for reclamation of the Community Pit. I propose modest modification (not leveling nor rounding) and then utilizing the area for Interpretive Studies, parking, hiking, non-motorized biking, native plant gardens etc. Think "Butchart Gardens" in Victoria, British Columbia. An ugly eyesore of a rock quarry, right in the middle of Victoria is now a world renowned destination of great beauty. Our version of this, of course would be different because of our climate and terrain but has the potential to make this Monument one of the most unique in the world.

35-1 In NEPA documents, the use of the word "will" is considered pre-decisional. The *Draft RMP/EIS* is an analysis document and the final decisions will be made in the *Record of Decision*.

PATZCUARO'S REVENGE



PHOTOS BY ROBIN ZIELINSKI/SUN-NEWS
ABOVE: Art Teague, of Lubbock, Texas, maneuvers his jeep over rocky terrain at Patzcuaro's Revenge on Friday during the 22nd annual Chile Challenge off-road trail event.

AT RIGHT: Teague tries to crawl his vehicle up some rocks on Friday during the Chile Challenge. The final day of the event is today.

Obituaries
Cross Catholic Church,
1307 N. Miranda Street

Saenz

Las Cruces San News
February 25, 2012
Paredes, Roberto Saenz,
Cynthia Woods, Mark





Prehistoric Trackways National Monument

DRAFT RESOURCE MANAGEMENT PLAN/DRAFT ENVIRONMENTAL IMPACT STATEMENT

PLEASE PRINT

Jeffrey Smith

NAME

EX 6

Organization (if applicable)

Add to Mailing List YES NO

Withhold Personal Information*

YES NO

Receive Notification of EIS availability?

YES NO

COMMENTS:

Current destructive motor activities should not happen in the Monument area. Roads need to be minimal but maintainable.

I support "putting back" the "removed" rock quarry and developing it to support the rest of the monument.

Preservation of the tracks and careful scientific study areas with supervised visitors should be developed. An "Interpretive Center" (eventually) would be excellent.

It should be made clear there will be NO SHOOTING in the Monument.

COMMENTS DUE
OCTOBER 22, 2012

*Submittal of comments are completely voluntary and any identifying information provided will become part of the public record, and as such, must be released to any individual upon request. Request to withhold comments and associated person identifying information from public review cannot be guaranteed.

RECEIVED
LAS CRUCES DISTRICT OFFICE

Prehistoric Tracks National Monument
DRAFT RESOURCE MANAGEMENT PLAN/DRAFT ENVIRONMENTAL IMPACT STATEMENT

PLEASE PRINT

NAME James C. Berryman

ADDRESS 6370 Sexton Ln

CITY Las Cruces STATE NM ZIP 88012

Organization (if applicable) _____

Add to Mailing List YES NO

Withhold Personal Information* YES NO

Receive Notification of EIS availability? YES NO

COMMENTS:

Please do not close this area off to (OHV) type vehicles. Myself and many many others attend these areas for other use besides to see the prehistoric areas. We mostly use this for general offroading, and minor hunting, and general use of being out of town and staying in the desert where you can stay away from trouble and violence. I have lived here in Las Cruces all of my life and don't appreciate some of the best things we have here locally to be closed down because there is a lack of ability to manage these areas efficiently. Myself and everyone I know (which is quite a few) always attend

**COMMENTS DUE
OCTOBER 22, 2012**

*Submittal of comments are completely voluntary and any identifying information provided will become part of the public record, and as such, must be released to any individual upon request. Request to withhold comments and associated person identifying information from public review cannot be guaranteed.

the desert with respect and gratitude, we never leave trash, and if we see any, we pick it up. We the offroaders, aren't the ones messing up the desert and trashing it. I hope you understand and appreciate what we do. Thank you very much, and I appreciate you taking the time to read this. Please take this into consideration.

Thank You Mam, S-i-r,

ChB

FOLD HERE

U S DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICT OFFICE
1800 MARQUESS STREET
LAS CRUCES NEW MEXICO 88005

OFFICIAL BUSINESS
Penalty for Private Use \$300

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 14153 WASHINGTON DC

POSTAGE WILL BE PAID BY
THE BUREAU OF LAND MANAGEMENT

BUREAU OF LAND MANAGEMENT
ATTN: LORI ALLEN
LAS CRUCES DISTRICT OFFICE
1800 MARQUESS STREET
LAS CRUCES NM 88005

#37



Prehistoric Trackways National Monument

DRAFT RESOURCE MANAGEMENT PLAN/DRAFT ENVIRONMENTAL IMPACT STATEMENT

PLEASE PRINT

BEBA RICHARDSON

NAME

EX 6

Organization (if applicable)

Add to Mailing List YES NO

Withhold Personal Information*

YES NO

Receive Notification of EIS availability?

YES NO

COMMENTS:

I would like to see
the area developed
carefully with room
for the scientists to work.
Roads should be for the
purposes of the Monument
and not for Off the Road
4 wheelers - There are many
other places available for them
where they will not damage
precious tracks. I support
having the "Community Pit"
being part of the Monument.
I like the "NO SHOOTING" provision.

COMMENTS DUE
OCTOBER 22, 2012

*Submittal of comments are completely voluntary and any identifying information provided will become part of the public record, and as such, must be released to any individual upon request. Request to withhold comments and associated person identifying information from public review cannot be guaranteed.

Phillips, Thomas E

From: BLM_NM_LCDO_Comments
Sent: Wednesday, October 24, 2012 9:59 AM
To: Phillips, Thomas E
Subject: FW: PTNM RMP Comments
Attachments: Allen - BLM comments on PTNM 10-22-12.pdf

From: Owen, Les [<mailto:LOwen@nmda.nmsu.edu>]
Sent: Tuesday, October 23, 2012 8:53 AM
To: BLM_NM_LCDO_Comments
Subject: PTNM RMP Comments

Hi Lori,
 Attached are NMDA's comments regarding the draft Resource Management Plan for the Prehistoric Trackways National Monument.

Thank you,

Les Owen

Range Resources and GIS Specialist

New Mexico Department of Agriculture
 Agricultural Programs and Resources
 MSC APR / P.O. Box 30005
 Las Cruces, NM 88003-8005
 575-646-2642 fax: 575-646-1540
lowen@nmda.nmsu.edu



New Mexico Department of Agriculture
 Office of the Director/Secretary
 MSC 3189
 New Mexico State University
 P.O. Box 30005
 Las Cruces, NM 88003-8005
 Phone: (575) 646-3007

October 22, 2012

Ms. Lori Allen
 PTNM Project Lead
 Bureau of Land Management
 Las Cruces District Office
 1800 Marquess Street
 Las Cruces, NM 88005

Dear Ms. Allen:

New Mexico Department of Agriculture (NMDA) submits the following comments in response to the Draft Resource Management Plan/Environmental Impact Statement (RMP) for the Prehistoric Trackways National Monument (PTNM) for the Bureau of Land Management (BLM) Las Cruces District Office.

Part of NMDA's vision is "...proactive advocacy and promotion of New Mexico's agricultural industries." Our comments focus on effects this RMP may have on ranching operations and natural resources associated with the Altamira and Picacho Peak grazing allotments.

NMDA supports sustainably managed livestock grazing as a congressionally mandated use of federal lands that is vital to the ranching industry and beneficial to wildlife and associated natural resources. The importance of consistent access to forage on the PTNM cannot be overstated for the affected grazing allotments. Livestock grazing on BLM allotments helps maintain economic viability for producers and communities.

With respect to livestock grazing, alternatives are presented in the RMP that range from continuance of current management (Alternatives A and D) to complete exclusion of livestock grazing within the monument (Alternative B). NMDA is opposed to consideration of any management plan that would exclude livestock grazing from the monument. Enabling legislation for the PTNM specifically states that grazing may be allowed to continue subject to applicable laws and regulations. A managed livestock grazing program does not represent a threat to any of the resources or values for which the monument was created, but it does provide continual stewardship for the land and vital water sources to sustain wildlife populations.

Ms. Lori Allen
Page 2
October 22, 2012

BLM's preferred Alternative C provides for continuance of the livestock grazing program with adjustments of allotment management plans to exclude grazing at specific locations as determined necessary for campsites or to protect paleontological resources. The analysis does not identify any specific exclusions. Thus potential impacts to livestock grazing operations are not quantified. NMDA recognizes that the need may arise to exclude livestock from small areas to protect paleontological resources. It is imperative that any adjustments to allotment management plans to address this need to be developed in careful and considered consultation and coordination with affected grazing permittees.

In conclusion, NMDA supports a decision to implement the BLM's preferred Alternative C. Thank you for the opportunity to comment on this proposal. We request you continue to keep us informed of this and other planning decisions for the PTNM.

Sincerely,



Jeff M. Witte
Director/Secretary

LO/ya

Prehistoric Trackways National Monument

DRAFT RESOURCE MANAGEMENT PLAN/DRAFT ENVIRONMENTAL IMPACT STATEMENT

PLEASE PRINT

Alexandra Nason Hall
 NAME
 P.O. Box 365
 ADDRESS
 Mesilla NM 88046
 CITY STATE ZIP

Organization (if applicable)

Add to Mailing List YES NO

Withhold Personal Information* YES NO

Receive Notification of EIS availability? YES NO

COMMENTS:

Meetings - This is the 3rd time I have written in comments during this long planning process. I spent many volunteer hours to help make the Trackways created a "monument" so I feel very strongly about some issues which I included in other letters during previous opportunities to respond. I traveled all over the USA and visited many monuments and parks. Certainly, they each have unique characteristics which must be preserved and made accessible at the same time. A "catch 22" at times for sure. What I feel is MOST important:

1. Add the quarry because of the tracks it contains and is a perfect place for a research/interpretive center for grad students and visitors (with families) Can be done economically with trails and sheds.

*Submittal of comments are completely voluntary and any identifying information provided will become part of the public record, and as such, must be released to any individual upon request. Request to withhold comments and associated person identifying information from public review cannot be guaranteed.

COMMENTS DUE

OCTOBER 22, 2012

*I did not look this Sunday note checked if for a week - safe but dumbhead!

2. Preserve the area using groomed trails with interpretive markers. This means NO motorized vehicles in the fragile areas. Chile challengers have many other mountains to choose from. These tracks are WORLD CLASS. Do not miss the opportunity to preserve them. Also NO guns in area as you have stated. Thank you! There will be no guns permitted within 1/2 mile.

3. The "recreational" value is hiking, flora and fauna views, as well as some value of the in situ tracks and chance to see "work in progress" in sheds in the Quarry Center with films etc. in trailers. An open air, hands on museum. Visitors, professionals and students would come from all over the country for this but not if plagued by the incessant drone of ATVs. Thank you for your attention.

FOLD HERE

Alexandra Nason Hall

U.S. DEPARTMENT OF THE INTERIOR
 BUREAU OF LAND MANAGEMENT
 LAS CRUCES DISTRICT OFFICE
 1800 MARQUESS STREET
 LAS CRUCES NEW MEXICO 88005

OFFICIAL BUSINESS
 Penalty for Private Use \$300



BUSINESS REPLY MAIL
 FIRST CLASS PERMIT NO. 14153 WASHINGTON DC

POSTAGE WILL BE PAID BY
 THE BUREAU OF LAND MANAGEMENT

BUREAU OF LAND MANAGEMENT
 ATTN: LORI ALLEN
 LAS CRUCES DISTRICT OFFICE
 1800 MARQUESS STREET
 LAS CRUCES NM 88005

Prehistoric Trackways National Monument

DRAFT RESOURCE MANAGEMENT PLAN/DRAFT ENVIRONMENTAL IMPACT STATEMENT

PLEASE PRINT

NAME DAVID NIVER
 ADDRESS 3812 AZALEA DR
LAS CRUCES NM 87005
 CITY STATE ZIP

Organization (if applicable) N/A
 Add to Mailing List YES NO
 Withhold Personal Information* YES NO
 Receive Notification of EIS availability? YES NO

COMMENTS:

- 1 CROSS-COUNTRY DOG, HORSE AND HIKING SHOULD BE ALLOWED.
- 2 THE CHAIR CHALLENGE SHOULD BE ALLOWED TO CONTINUE AS IN THE PAST.
- 3 HUNTING SHOULD BE ALLOWED AS IN THE PAST
4. NO RESTRICTION ON EMERGENCY EQUIPMENT RESPONDING TO MEDICAL ISSUES
- 5 VEHICLE ACCESS SHOULD BE ALLOWED ON EXISTING ROADS AND ARRIBOS.



*Submittal of comments are completely voluntary and any identifying information provided will become part of the public record, and as such, must be released to any individual upon request. Request to withhold comments and associated person identifying information from public review cannot be guaranteed.

Prehistoric Trackways National Monument

DRAFT RESOURCE MANAGEMENT PLAN/DRAFT ENVIRONMENTAL IMPACT STATEMENT

PLEASE PRINT

NAME Allison Smith
 ADDRESS EX 6

Organization (if applicable)
 Add to Mailing List YES NO
 Withhold Personal Information* YES NO
 Receive Notification of EIS availability? YES NO

COMMENTS:

- Recreation Trails & Travel Alternative "C" seems to be the option that best protects the natural resources while still allowing motorized access. I believe requiring a daypass is necessary so those using motorized vehicles can be monitored & held responsible if damage occurs.
- I would encourage BLM to work with the ~~the~~ University or similar organization to work on projects such as a tourist "attraction" or experience component that could include audio guides that people could rent that would explain what the person is seeing.
- I would like to see the site contain a contact center that could become a full fledged visitors center as funds ^{become} available.



*Submittal of comments are completely voluntary and any identifying information provided will become part of the public record, and as such, must be released to any individual upon request. Request to withhold comments and associated person identifying information from public review cannot be guaranteed.

Prehistoric Trackways National Monument

DRAFT RESOURCE MANAGEMENT PLAN/DRAFT ENVIRONMENTAL IMPACT STATEMENT

PLEASE PRINT

GREGORY Z. SMITH

NAME
EX 6

CITY OF LAS CRUCES

Organization (if applicable)

Add to Mailing List YES NO

Withhold Personal Information*

YES NO

Receive Notification of EIS availability?

YES NO

COMMENTS:

- * THE "C" ALTERNATIVES SEEM MOST IN KEEPING WITH THE INTENT OF THE LEGISLATION AND MOST APPROPRIATE IN RESPECT TO THE IMPORTANCE OF THE TRACKWAYS.
- * IN PARTICULAR THE RECREATION * TRAILS & TRAVEL MANAGEMENT ALTERNATIVE C PROMOTES ACCESS, PERMITTING (MONITORING), AND PROTECTION OF THE TITLE RESOURCES
- * THE CAVE JUST EAST OF THE NATIONAL MONUMENT (SOMETIMES REFERRED TO AS "GERONIMO CAVE" AND KNOWN TO THE PEABODY MUSEUM AS "CHAVEZ CAVE") AND JUST WEST OF THE RIO GRANDE ON BLM LAND WOULD MAKE A GREAT ADDITION TO THE NATIONAL MONUMENT

COMMENTS DUE
OCTOBER 22, 2012

*Submittal of comments are completely voluntary and any identifying information provided will become part of the public record, and as such, must be released to any individual upon request. Request to withhold comments and associated person identifying information from public review cannot be guaranteed.

Prehistoric Trackways National Monument

DRAFT RESOURCE MANAGEMENT PLAN/DRAFT ENVIRONMENTAL IMPACT STATEMENT

PLEASE PRINT

Carole Grady

NAME
EX 6

General Public

Organization (if applicable)

Add to Mailing List YES NO

Withhold Personal Information*

YES NO

Receive Notification of EIS availability?

YES NO

COMMENTS:

Worthwhile project for honoring our history in this region. I hope it comes to fruition in my life time. (I am now 72)

COMMENTS DUE
OCTOBER 22, 2012

*Submittal of comments are completely voluntary and any identifying information provided will become part of the public record, and as such, must be released to any individual upon request. Request to withhold comments and associated person identifying information from public review cannot be guaranteed.



Phillips, Thomas <tphillip@blm.gov>

Fwd: Temporary Closure of Prehistoric Trackways National Monument to target shooting

Phillips, Thomas <tphillip@blm.gov>
To: Rena Gutierrez <rgutierr@blm.gov>

Wed, Nov 6, 2013 at 11:27 AM

----- Forwarded message -----

From: **Recce, Susan** <SRecce@nrahq.org>
Date: Fri, May 31, 2013 at 3:20 PM
Subject: RE: Temporary Closure of Prehistoric Trackways National Monument to target shooting
To: "Wallace, David" <dwallace@blm.gov>
Cc: Bill Childress <wchildre@blm.gov>, Tom Phillips <tphillip@blm.gov>

Attached are the comments as revised with the addition of the Association of Fish and Wildlife Agencies.

Thanks,

Susan

From: Wallace, David [mailto:dwallace@blm.gov]
Sent: Friday, May 31, 2013 12:47 PM
To: Recce, Susan
Cc: Bill Childress; Tom Phillips
Subject: Temporary Closure of Prehistoric Trackways National Monument to target shooting

Susan,

As we discussed on the teleconference, please find the Environmental Assessment for the temporary target shooting closure to the PTNM previous to the RMP decision. Given the similarity in analysis between the PTNM RMP and the Temporary closure EA, I would assume that you comments would be very similar, as well. However, this is another opportunity for you and the other NGOs to provide feedback. Thanks for your efforts and have a great weekend.

--
Dave Wallace

Assistant District Manager-Multiple Resources

Las Cruces District Office

1800 Marquess Street

Comments on Draft RMP/EIS for Prehistoric Trackways National Monument

May 31, 2013

1. The RMP identifies shooting as a popular recreational activity in the Prehistoric Trackways National Monument (PTNM) and yet the preferred alternative closes the entire monument to recreational shooting.

45-1 2. The RMP is an “all-or-nothing” approach for recreational shooting. Under Alternatives A and B, there are “no restrictions on the discharge of firearms” and under Alternatives C and D “target shooting would be prohibited.” The RMP implies a pre-decision by the agency on the outcome of recreational shooting. Logically, recreational shooting would not be permitted throughout the monument, but the RMP provides no other option except closure. There is no middle ground where certain currently used sites by shooters would remain opened.

45-2 3. The BLM accommodates OHV users, particularly those engaged in extreme off-roading and rock crawling, with a special trail system. At the same time, the BLM abrogates any duty or responsibility to accommodate a traditional and equally popular recreational activity like recreational shooting.

45-3 4. The BLM has created a method to “scientifically” support closing the PTNM to shooting by applying industry tables on travel distance of bullets to create a ½ mile buffer around paleontological resources and OHV trails. The buffer application conveniently concludes that “there are no areas in the Monument that are more than ½-mile from areas of high public use where recreational shooting could take place safely.”

The RMP does not state that this standard of applying a buffer is supported by law or agency regulation or policy. It sets a dangerous precedent for future RMPs by implying that shooting is unsafe and inappropriate within ½ mile of OHV trails or paleontological resources, irrespective of unique or even common circumstances.

Implying that it is impossible to safely and responsibly shoot within ½ mile of existing trails would significantly impact shooting opportunities not only on the PTNM, but throughout federal lands managed by the BLM and other agencies. It is also unclear whether this standard is being applied because the PTNM is part of the National Landscape Conservation System or whether any site within the projected ammunition capabilities listed in Appendix G from a trail is candidate for closure.

45-4 5. The RMP did not consider designating some area(s) for shooting which could include a minimum amount of infrastructure to provide a safe shooting venue (backstops, target holders) that would also resolve the concern over user conflicts. The lack of proactive management for recreational shooting can be compared with the 32 miles of designated OHV trails in the PTNM.

The enacting statute for the PTNM states that the Secretary shall manage the monument in a manner that conserves protects and enhances the resources, including recreational resources, and values of the designated public land. By declaring in the RMP that “the area is known and used frequently for target shooting” and that the “Monument is often used by locals for recreational target practice”, the BLM acknowledges that shooting is an important recreational activity and that the recreational resources of the PTNM provide a value that should be conserved, protected and

45-1 Alternatives were developed for target shooting based on a safety analysis. The results of the analysis, described in detail in Appendix G and Map 4-1, illustrate that public safety is at risk from target shooting throughout the Monument, with the exception of one small inaccessible location at the southern edge.

45-2 The PTNM was designated primarily to protect significant paleontological resources while continuing to support recreation that also supports or does not damage paleontological resources. Motorized trail systems, as well as non-motorized trail systems, provide access for continuing education, interpretation, and research associated with the fossil resources. The PTNM designation does not direct the BLM to provide opportunities for target shooting.

45-3 The conclusions of the shooting analysis are unique to the unusual terrain associated with the PTNM. The *Draft RMP* clearly describes the dissected nature of the canyons and ridges and the safety risks associated with that particular landscape. The safety analysis was performed after several “near misses” where target shooting has taken place concurrent with school field trips. The safety analysis confirmed what the BLM has experienced in the field- that the terrain conditions in the PTNM are unsuitable for safely furthering the legislative goals of research, education and interpretation.

45-4 The BLM would like to emphasize that within the 5.5 million acres the Las Cruces District manages, the Prehistoric Trackways constitutes just 0.1 percent of the whole. In this southwestern landscape, the 5,000 acres of the PTNM is dwarfed by the remaining lands available. The PTNM has offered a convenient, accessible spot for local target shooters. The *Proposed RMP/EIS* discusses the availability of other similar sites within a 10-mile radius of the Monument, in Chapter 4, impacts of Recreation and Visitor Services on Recreation and Visitor Services Alternative C.

The BLM must manage the PTNM in a manner that “conserves, protects, and enhances” fossil resources and other uses that also conserve, protect, and enhance fossil resources. Providing backstops and target holders for target shooting would not achieve this management objective (See *Final RMP/EIS*, Chapter 2, Paleontological Resources Goals and Objectives).

The BLM has initiated dialogue with local shooting clubs and the New Mexico Department of Game and Fish to explore the possibility of providing recreational target shooting sites outside the boundary of PTNM, but in the vicinity.

enhanced. Conversely, the BLM's preferred alternative proposes to completely close the PTNM to this legitimate and traditional activity. This is at odds with Congress' declared intent to preserve and conserve recreational resources and values within the PTNM's identified boundaries. Further, enhancing recreational shooting by building backstops and installing target holders would be consistent with the legislative intent of the designating Act.

- 45-5 6. There is no consideration in the RMP for setting aside an area of current OHV use for recreational shooting. The RMP could suggest, as it did for recreational shooters, that there are over a million acres outside of the NM for OHV users who might be displaced because of accommodation to shooters. The point here is not to create an argument with OHV users, but rather to underscore how seemingly easy it is to write off one class of recreation use by suggesting that millions of acres remain open outside the planning area for that use.

Recreational shooting while recognized as a popular recreational activity in the NM is evidentially not recognized by the BLM as a legitimate and traditional activity in the planned area, and thus must yield to OHV users.

- 45-6 7. The Federal Lands Hunting, Fishing and Shooting Sports Roundtable Memorandum of Understanding (MOU) signed by the BLM, FWS, and USFS in 2006 pledges a partnership with hunting, wildlife conservation and shooting sports organizations to address issues and opportunities associated with hunting, fishing and recreational shooting on Federal Lands. The Roundtable, in partnership with Tread Lightly! Inc., launched an education outreach campaign "Respected Access is Open Access" to address issues of debris, vandalism, and other negative behaviors. While these issues are identified as a reason to close the NM to shooting, there is no indication that the BLM ever reached out to the local shooters and organizations or to its MOU partners to assist in resolving problems.

- 45-7 8. In most every instance, the BLM justifies closing areas by saying there are millions of surrounding public land that remains open to shooters. But, there is no discussion of whether this land has access, how far displaced shooters will have to travel, and whether the displaced shooters will create new impacts by concentrating use in these other areas. The reality is that concentrated recreational shooting, by definition, is site specific and cannot be picked up and placed just anywhere on the millions of acres that BLM manages.

9. The RMP includes several inflammatory statements about recreational shooting that could be interpreted as setting the stage for the BLM to slowly, but steadily close public lands, and not just monuments, to shooters. One notable example is the opening sentence in Appendix G which states that "Recreational target shooting contains many hazards based on predictable projectile physics and unpredictable human behavior." This speaks to an agency mindset about recreational shooting, irrespective of BLM statements to the contrary. Millions of acres of public land outside of national monuments may be open to shooting today, but it appears that it is only a matter of time before closures catch up to them.

The BLM through this RMP is holding recreational shooting to a different standard than other recreational activities in spite of the fact that shooting has one of the lowest accidental injury and death statistics of recreational activities. One can certainly claim that OHV use and mountain biking, for example, have "predictable projective physics and unpredictable human behavior" which can result in human injuries and death and destruction of resources. Yet, the BLM encourages and even sets aside areas for these uses, charging user fees in some cases.

- 45-5 Chapter 4, Impacts to Recreation and Visitor Services from Travel and Transportation Alternative A, has been updated to reflect the availability of off-highway vehicle routes and challenging terrain outside of the PTNM boundary.

- 45-6 The *Proposed RMP/EIS* includes a stronger discussion of target shooting in Chapter 4, Recreation and Visitor Services Impacts to the Alternatives. Since the publication of the Draft RMP/EIS, BLM has conducted further outreach to shooting sports organizations relating to the proposed closure to target shooting. This outreach is described in Section 5.4

- 45-7 The *Draft RMP/EIS* describes other target shooting opportunities in Section 4.4.3.3.

45-8

10. The RMP justifies monument closure by stating that “Prohibiting target shooting would eliminate trash and litter left by target shooters, reduce the opportunity for user conflicts and increase visitor and BLM staff safety by reducing risks associated with stray bullets.” Further in the same paragraph, the RMP states that “Closing the Monument to target practice shooting would create a safer environment for researchers, visitors, and BLM staff and volunteers.”

The problems that the RMP identifies fall squarely at the feet of the BLM for not managing recreational shooting, as it does OHV use, camping, hiking and other pursuits, as a legitimate recreational activity in a national monument. The BLM can take these statements and overlay them on any public land and draw its conclusion that the lands should be closed. And, as noted in #7, the BLM evidences no effort to work with shooters and local, state, or national organizations to resolve issues.

11. In summary, the RMP for the PTNM is as alarming as have been the RMPs for Ironwood Forest NM and the Sonoran Desert NM where no effort on the part of the BLM was made to continue opportunities for an activity that has had a legitimate and historic use of the land. The opportunities for recreational shooting under these RMPs are illusory.
12. The undersigned organizations appreciate the opportunity to comment on the RMP and are open to continued discussion with the BLM, under the umbrella of our MOU, on how we as partners can work together to promote and enhance safe and responsible recreational shooting on our federal public lands.

Archery Trade Association
 Association of Fish and Wildlife Agencies
 Boone and Crockett Club
 Campfire Club of America
 Catch-A-Dream Foundation
 Congressional Sportsmen’s Foundation
 Dallas Safari Club
 Masters of Foxhounds Association
 Mule Deer Foundation
 National Rifle Association
 National Shooting Sports Foundation
 North American Bear Foundation
 Orion, The Hunter’s Institute
 Pope and Young Club
 Quality Deer Management Association
 Rocky Mountain Elk Foundation
 Ruffed Grouse Society
 Theodore Roosevelt Conservation Partnership
 Wildlife Forever
 Wildlife Management Institute

45-8 Please see response to Comment 45-2.



INDEX

INDEX

A

Air Quality 2-21, 2-37, 2-50, 3-10, 4-11, 4-35, 4-77, 4-81, 4-84, 4-90

Allotment 2-3, 2-22, 2-30, 2-31, 2-52, 3-15, 3-17, 3-28, 3-33, 4-48, 4-60, 4-67, 4-85, 4-92

Allotment Management Plan (AMP) 2-3, 2-30, 3-15, 3-17, 4-50

American Indian 2-47, 2-51, 3-11, 4-3, 4-54, 5-2

Alternatives 1-1, 1-4, 1-13, 1-14, 1-15, 2-1, 2-2, 2-4, 2-6, 2-23, 2-30, 2-32, 2-33, 2-35, 2-37, 2-39, 2-44, 2-45-47, 2-50, 2-52, 3-1, 3-29

Area of critical environmental concern (ACEC) 1-2, 1-4, 1-11, 1-16, 2-5, 2-35, 2-53, 3-8, 3-14, 3-30, 3-32, 3-41, 3-46, 4-2, 4-5, 4-31, 4-43-46, 4-48, 4-63, 4-67, 4-78

Avoidance area 3-14

B

Best management practices (BMPs) 1-10, 4-2, 4-3, 4-35, 4-58, 4-86, 4-95

BLM Sensitive Species 2-35, 2-37, 2-38

C

Casual Collecting 2-2, 2-3, 2-6, 2-13, 2-48, 2-49, 2-53, 4-5, 4-6, 4-12, 4-13, 4-18, 4-19, 4-22, 4-31, 4-32, 4-39-41, 4-59, 4-60, 4-81, 4-82, 4-95

Cooperating Agency 1-14, 5-2

Cultural Resources 2-6, 2-14, 2-21, 2-32, 2-35, 2-38, 2-51, 3-11, 3-12, 4-39

Cumulative Impacts 1-1, 1-9, 4-4, 4-84, 4-89-94, 5-2

D

Decision Area 2-1, 2-4, 2-22, 2-51, 2-52, 2-53, 3-1, 3-14, 3-19, 3-20, 3-41, Chapter 4

Dispersed Recreation 2-9, 2-54, 4-52, 4-65, 4-73, 4-82

Discovery Site 1-7, 2-7, 3-7, 3-8, 3-18, 4-6, 4-12, 4-13, 4-16, 4-29, 4-31, 4-47

E

Easement 1-2, 2-10, 2-22, 2-23, 2-51, 3-14, 4-11, 4-15, 4-18, 4-28, 4-31, 4-33, 4-43, 4-44

Endangered Species 2-14, 3-30, 3-35, 3-38

Environmental Consequences 1-14, 3-29, Chapter 4

Environmental Justice 2-52, 2-53, 3-19, 3-21, 3-22, 4-54

F

Federal Land Policy and Management Act (FLPMA) 1-1, 2-1, 2-21, 2-22, 2-23, 3-14, 3-18

Federal Register 1-11, 5-1, 5-7

Fire Management Plan 1-15, 2-45, 2-50, 2-55, 3-1, 3-46, 4-47

Fossil 1-4, 1-7, 1-8, 1-9, 1-16, 2-6, 2-48, 3-2, 3-6-8, 3-13, 3-18, 4-3, 4-5-8, 4-12, 4-14-16, 4-19, 4-22, 4-26, 4-28-32, 4-40, 4-46, 4-82, 4-86, 4-88, 4-89, 4-95

G

Geographic Information System (GIS) 1-4, 2-32, 4-2, 4-3, 4-19, 4-25

Greenhouse Gases 2-50, 4-90

Groundwater 2-44, 3-43, 4-77

I

Interpretation and Education 2-3, 2-7, 2-48, 2-49, 3-7,3-8, 4-11

Interim Management Policy for Lands under Wilderness Review (IMP) 1-10, 2-1, 2-4, 2-10, 2-14, 2-21, 2-22, 2-34, 3-35, 4-2, 4-63

Impacts 2-47-50, 2-53-55, 3-1, 3-5, 3-6, 3-10, 3-22, 3-30, 3-41, Chapter 4

Issues 1-1, 1-6, 1-8,1-9,1-11, 1-13, 1-14, 2-2, 2-45, 2-51, 3-28, 3-50, 4-3, 4-43, 4-84, 4-86, 4-87, 4-91

J

Jurisdiction 1-6, 1-14, 3-14, 4-44, 4-85, 5-2

L

Legislation 1-9, 1-11, 1-13, 1-14, 2-1-4, 2-22, 2-23, 2-30, 2-35, 2-36, 2-53, 3,14, 3-32, 4-2, 4-7, 4-18, 4-19, 4-25, 4-43, 4-63, 4-92, 5-2

Livestock Grazing 1-8, 1-9, 1-15, 2-2, 2-30, 2-33, 2-35, 2-46, 2-50, 2-52-55, 3-15, 3-32, 4-48

Long-Term 1-1, 1-4, 1-11, 2-55, 3-29, 3-40

M

Minerals 1-17, 2-5, 2-23, 2-47, 2-55, 3-1, 3-8, 3-13, 3-14, 3-27, 3-29, 4-3, 4-13, 4-26, 4-35-37, 4-39, 4-40, 4-43, 4-44, 4-58, 4-67, 4-73-74, 4-89 4-91

Mission 1-17, 2-21

Mitigation 1-8, 1-10, 1-14, 2-21, 2-34, 2-37, 2-44, 3-5, 4-58, 4-59, 4-61, 4-68, 4-70, 4-74, 4-75, 4-77, 4-87, 4-95

Monitoring 1-14, 2-11, 2-30, 2-45, 3-8, 3-10, 3-17, 3-18, 3-43, 3-50, 4-18, 4-35, 4-59, 4-68, 4-90 4-93

N

National Ambient Air Quality Standards: 3-10

National Environmental Policy Act (NEPA) 1-1, 2-1, 2-12, 2-23, 3-8, 4-3, 4-75, 4-94-95, 5-2

National Historic Preservation Act (NHPA) 2-21, 2-22, 4-39

National Register of Historic Places (NRHP) 2-21, 2-22, 4-39

Notice of Intent (NOI) 1-11, 5-1

O

Off-Highway Vehicle 2-2, 2-14, 2-49, 3-8-10, 3-29, Chapter 4, 5-1

P

Paleontological Resources 1-1, 1-2, 1-4, 1-6, 1-7, 1-8, 1-9, 1-16, 1-17, 2-2-4, 2-6, 2-9, 2-12, 2-15, 2-30, 2-36, 2-48, 2-52, 2-53, 3-1, 3-5, 3-18, 3-30, 4-5

Paleozoic 2-36, 3-6, 3-13, 3-14, 3-32, 4-6, 4-7, 4-15, 4-63

Planning Criteria 1-9, 1-13, 2-2

Planning Issues 1-6, 4-3

Planning Area 1-4, 2-2, 2-4, 2-22, 2-23, 2-50, 3-8-11, 3-13, 3-28, 3-35, 3-38, 3-43, 3-44, 3-50, 4-2, 4-19, 4-35, 4-72-74, 4-76, 4-84

Planning Process 1-11, 2-2, 3-1, 5-1

Preferred Alternative 1-13, 2-3, 2-48

Purpose and Need 1-4, 2-2, 4-1

R

Record of Decision 1-14, 2-1

Recreation 1-1, 1-4, 1-6, 1-7, 1-8, 1-10, 1-13, 1-15, 1-16, 2-2-4, 2-6, 2-7, 2-9, 2-10, 2-12, 2-14, 2-15, 2-35, 2-48, 2-52, 2-54, 2-55, 3-15, 3-19, 3-20, 3-27, 3-32, 3-40, Chapter 4

Recreation and Visitor Services 2-9, 2-49, 3-8, 4-17

Recreational Target Shooting 2-4, 3-9, 4-19, 4-21-22, 4-25, 4-27-29, 4-79

Research Natural Area (RNA) 1-2, 2-36, 2-48, 2-53, 3-32, 4-63

S

Scoping 1-6, 1-8, 1-9, 1-11, 1-13, 2-2, 2-4, 4-3, 5-1

Short-Term 1-11, 3-29, 4-21, 4-27, 4-35, 4-36, 4-58-60, 4-62, 4-74

Soils 2-29, 2-33, 2-34, 2-37, 2-50, 2-53, 3-29, 3-38, 3-46, 4-58

Stakeholders 1-15, 5-4

Standards and Guidelines 1-9, 1-10, 1-13, 1-15, 2-2, 2-33, 2-46, 3-46, 4-58, 4-77

Surface Water 2-44, 3-30, 3-44, 4-61, 4-77

T

Threatened Species 2-14, 3-35

Topography 3-30, 3-38, 4-29, 4-61

Trackways 1-1, 1-2, 1-7, 1-15, 1-16, 2-1, 2-30, 2-36, 2-37, 3-7, 3-8, 3-13, 3-14, 3-17, 3-27, 4-6, 4-7, 4-15, 4-18, 4-63, 4-86, 4-87, 4-89, 5-1, 5-3, 5-7, 5-8

V

Vertebrate 2-2, 2-3, 2-6, 2-48, 2-49, 2-53, 3-5, 3-6, 3-7, 3-32, 4-6, 4-95

Visual Resources 1-8, 2-39, 2-51, 2-54, 2-55, 3-40, 3-41, 3-43, 4-72

Vision 1-17, 4-87, 4-91, 4-94

W

Water Resources 2-44, 2-55, 3-38, 3-43, 3-44, 4-77

Wildfire 2-50, 2-55, 3-46

Wildland Fire Management 4-78

Wildlife 1-8, 1-10, 1-16, 2-14, 2-30, 2-31, 2-37, 2-38, 2-46, 2-55, 3-28, 3-35, 3-38, 3-40, 3-44, 3-50, 4-81

Wilderness Study Area (WSA) 1-2, 1-4, 1-10, 1-16, 2-4, 2-10, 2-14, 2-27, 2-30, 2-39, 2-50, 2-53, 3-10, 3-15, 3-30, 3-32, 3-35, 3-41, 3-46, 4-63

Withdrawal 3-14, 4-91, 4-92, 4-95

UNITED STATES

Department of the Interior

BUREAU OF LAND MANAGEMENT

LAS CRUCES DISTRICT OFFICE

1800 MARQUESS ST

LAS CRUCES NM 88005-3371

OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE \$300