

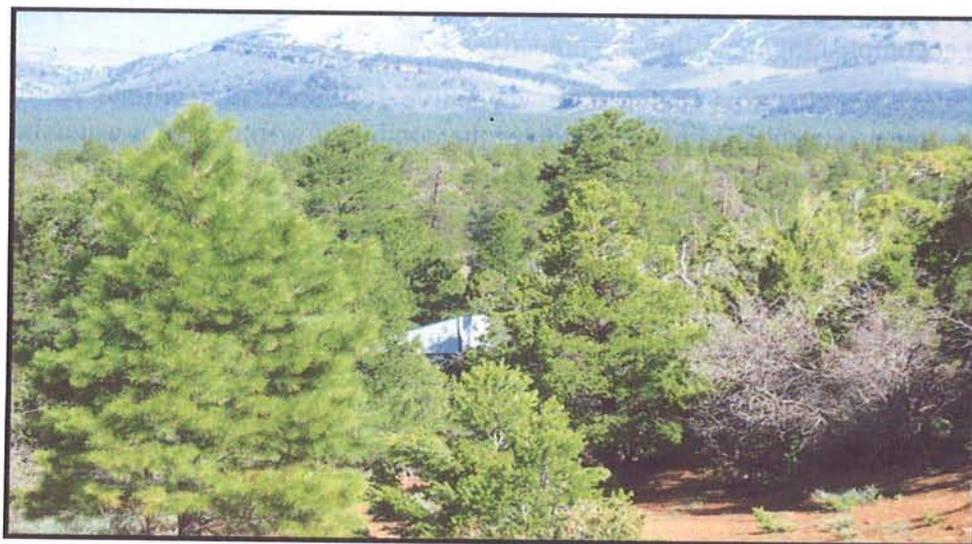
United States Department of the Interior  
Bureau of Land Management

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Finding of No Significant Impact  
Environmental Assessment  
Environmental Assessment DOI-BLM-UT-Y020-2012-0010-EA

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August, 2012



**Devil Canyon Fuels Reduction and Vegetation Restoration**

*Location:* T. 34 S., R. 23 E., Section 33  
T. 35 S., R. 23 E., Sections 3, 13, 16, 21-28, 34-36  
T. 35 S., R. 24 E., Sections 15, 17-22, 27-34  
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T. 37 S., R. 24 E., Sections 2, 3

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**FINDING OF NO SIGNIFICANT IMPACT**  
**Environmental Assessment**  
**Environmental Assessment DOI-BLM-UT-Y020-2012-0010-EA**  
**Devil Canyon Fuels Reduction and Vegetation Restoration**

**INTRODUCTION:**

The Bureau of Land Management (BLM) has conducted an environmental analysis (EA DOI-BLM-UT-Y020-2012-0010-EA) for a proposed action to address a fuels reduction and habitat restoration in the Devil Canyon area in San Juan County. The project will reduce vegetative fuels and implement vegetative/habitat restoration activities within an approximate 24,700-acre project area of public lands administered by the BLM. The underlying need for the proposal will be met while accomplishing the following objectives:

1. Improve ecosystem function and restore vegetative resilience to facilitate recovery from wildland fire. Because watershed health involves the combined workings of a watershed such as land use, soils, and vegetation, the long-term objectives of this restoration treatment are relevant to all of these resources.
2. Enhance and expand sagebrush and grassland-steppe habitat; improving soils, increasing forage and improving habitat for wildlife and livestock while preventing and discouraging the spread of invasive plant species. A number of areas within the old chaining were once open sagebrush communities that have experienced pinyon-juniper encroachment, leading to a loss of vegetative diversity and key sagebrush habitat for wildlife. Retention and improvement of a healthy sagebrush component is critical for elk and deer winter range as well as other sagebrush-dependent species.
3. Protect the Wildland Urban Interface (WUI), cultural areas, wildlife habitat, Ponderosa Pine stands, and other resources in the area from a severe, high intensity wildland fire while improving habitat diversity, resiliency, and vigor.

The 24,700 acre project is located in the Devil Canyon area located in San Juan County approximately ten miles north of Blanding, UT and nine miles south of Monticello, UT. Highway 191 runs through two of the northern project units with the bulk of the project being located south of the highway. Recapture Reservoir is located approximately four miles to the west of the project and is an important watershed for local communities. Canyon Terrace subdivision, a small community with several homes and private land parcels is located in the center of the project. The area consists of canyon type country off of the higher mesas and plateaus. Most pinyon-juniper is located on mid-level benches. Elevations range between 5200'-6500'. This entire area is of regional importance due to high densities of archeological sites, panoramic scenery and big game habitat. The northern portion of the project shares a boundary with Forest Service lands. The goals and objectives of the fuels reduction effort would be to enhance public and firefighter safety and an increased range of suppression strategies. In addition, a successful treatment would restore ecosystem health by reproducing the natural variability, stability, and diversity of the vegetative communities within the project area.

EA number DOI-BLM-UT-Y020-2012-0010-EA is available at both the BLM Monticello Field Office in Monticello, Utah and the BLM Canyon Country District office in Moab, Utah, and is incorporated by reference for this Finding of No Significant Impact (FONSI). A no action alternative and proposed action alternative were analyzed in the EA.

### **FINDING OF NO SIGNIFICANT IMPACT:**

Based upon a review of the EA and the supporting documents, I have determined that the project is not a major federal action and will not significantly affect the quality of the human environment, individually or cumulatively with other actions in the general area. No environmental effects meet the definition of significance in context or intensity as defined in 40 CFR 1508.27 and do not exceed those effects described in the Monticello Field Office RMP. Therefore, an environmental impact statement is not needed.

This finding is based on the context and intensity of the project as described:

**Context:** The project is a site-specific action directly involving approximately 24,700 acres of BLM administered land. The Alkali Ridge Area of Critical Environmental Concern (ACEC) encompasses the southern half of the project boundary. The Alkali Ridge ACEC consists of 39,196 acres with 9,726 acres lying within the Devil Canyon project boundary. The Alkali Ridge ACEC is one of the best known and influential examples of scientific archeological investigation in the Southwestern United States. The Devil Canyon project area falls within Fire Management Unit (FMU) 20 and has the highest fire occurrence of any other FMU in the fire planning unit with an average of 21 fires and 462 acres burned per year.

**Intensity:** The following discussion is organized around the Ten Significance Criteria described in 40 CFR 1508.27 and incorporated into resources and issues considered (includes supplemental authorities Appendix 1 H-1790-1) and supplemental Instruction Memorandum, Acts, regulations and Executive Orders.

The following have been considered in evaluating intensity for this proposal:

- 1. Impacts may be both beneficial and adverse.** The proposed action would impact resources as described in the EA. Mitigating measures to reduce impacts to crucial mule deer winter range and the Alkali Ridge ACEC were incorporated in the design of the action alternatives. None of the environmental effects discussed in detail in the EA and associated appendices are considered significant, nor do the effects exceed those described in the MonticelloRMP.
- 2. The degree to which the selected alternative will affect public health or safety.** One objective of the proposed action is designed to protect firefighters and the public in the event of a wildfire in the Devil Canyon area. Several communities within the Wildland Urban Interface (WUI) will have added protection from possible extreme wildfires in the area.
- 3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farm lands, wetlands, wilderness, wild and scenic rivers, or ecologically critical areas.** The historic and cultural resources of the area will have an Archaeological Report prepared for the proposed Devil Canyon Fuels

Reduction and Vegetative Restoration project area, and information documenting the archaeological inventory and compliance with the National Historic Preservation Act (NHPA) of 1966, as amended, will be on file in the Canyon Country Fire Zone office. Sites identified and determined to be eligible for the National Register of Historic Places (NRHP) and not located within the Alkali ACEC will likely be avoided during the mechanical treatment portion of the project, unless treatment options are such that it would be beneficial to the archaeological resource to treat the vegetation on site. Tribal groups have been requested to identify traditional cultural properties or any other areas of traditional cultural importance to be considered within proximity of the project. The following components of the Human Environment and Resource Issues are not affected because they are not present in the project area:

BLM Natural Areas	Farmlands (Prime or Unique)	Threatened, Endangered or Candidate Plant Species	Wetlands/Riparian Zones	Wild and Scenic Rivers
Wilderness/WSA	Wild Horses and Burros	Areas with Wilderness Characteristics		

In addition, the following components of the Human Environment and Resource Issues, although present, would not be affected by this proposed action for the reasons listed in Appendix A of the EA:

Air Quality	Cultural Resources	Greenhouse Gas Emissions	Environmental Justice	Floodplains
Geology/Mineral/Resource/Energy Production	Lands/Access	Migratory Birds	Native American Religious Concerns	Paleontology
Rangeland Standards	Health Recreation	Socio-Economics	Threatened, Endangered or Candidate Animal Species	Wastes
Water Resources/Quality	Visual Resources			

Eight components of the Human Environment and Resource Issues were analyzed in detail in Chapter 4.

Areas of Environmental Critical Concern (ACEC)	Fish and Wildlife Including USFW Designated Species	Fuels/Fire Management	Invasive Species/ Noxious Weeds
Livestock Grazing	Soils	Woodland/Forestry	Vegetation Excluding USFW Designated Species

None of these would be significantly impacted because mitigating measures to reduce adverse impacts to resources and to wildlife such as deer, elk, raptors, and migrating birds were incorporated in the design of the action alternative. None of the environmental effects discussed in detail in the EA and associated appendices are considered significant, nor do the effects exceed those described in the Monticello Field Office RMP/FEIS. Although the selected alternative is designed specifically to reduce hazardous fuels in the Devil Canyon area, indirect beneficial impacts to public health and safety will result from the decreased chance of high intensity wildland fire spreading to adjacent WUI and recreational areas.

4. **The degree to which the effects on the quality of the human environment are likely to be highly controversial.** There is no scientific controversy over the nature of the impacts.
5. **The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.** The project is not unique or unusual. The BLM has experience implementing similar actions in similar areas. The environmental effects to the human environment are fully analyzed in the EA. There are no predicted effects on the human environment that are considered to be highly uncertain or involve unique or unknown risks.
6. **The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.** The actions considered in the selected alternative were considered by the interdisciplinary team within the context of past, present, and reasonably foreseeable future actions. Significant cumulative effects are not predicted. A complete analysis of the direct, indirect, and cumulative effects of the selected alternative and all other alternatives is described in Chapter 4 of the EA.
7. **Whether the action is related to other actions with individually insignificant but cumulatively significant impacts – which include connected actions regardless of land ownership.** The interdisciplinary team evaluated the possible actions in context of past, present and reasonably foreseeable actions. Significant cumulative effects are not predicted. A complete disclosure of the effects of the project is contained in Chapter 4 of the EA.

- 8. The degree to which the action may adversely affect districts, sites, highways, structures, or other objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.** The project will not adversely affect districts, sites, highways, structures, or other objects listed in or eligible for listing in the National Register of Historic Places, nor will it cause loss or destruction of significant scientific, cultural, or historical resources. A cultural inventory will be completed for the proposed action prior to treatment implementation, and consultation with SHPO has been completed in accordance with Section 106 of the NHPA. Consultation pending final archaeological report. No affect determination anticipated because Sites identified and determined to be eligible for the National Register of Historic Places (NRHP) and not located within the Alkali ACEC will likely be avoided during the mechanical treatment portion of the project, unless treatment options are such that it would be beneficial to the archaeological resource to treat the vegetation on site.
- 9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973, or the degree to which the action may adversely affect: 1) a proposed to be listed endangered or threatened species or its habitat, or 2) a species on BLM's sensitive species list.** Mitigating measures to reduce impacts to wildlife have been incorporated into the design of the action alternatives. Canyons adjacent to the proposed project area may provide suitable nesting habitat for Mexican spotted owls. It has been determined that the project "may affect, is not likely to adversely affect" because treatment activities would take place outside the nesting season for owls (March through August). If activities are to occur during the nesting season a 0.5 mile buffer will be used around canyons. Additionally, surveys following the U.S. Fish and Wildlife Service Protocol will be done a year in advance of each phase of the project. No other threatened or endangered plants or animals are known to occur in the area. Section 7 ESA Consultation was done March 7<sup>th</sup>, 2012, and the USF&WS concurred with BLM's determination on March 20<sup>th</sup>, 2012.
- 10. Whether the action threatens a violation of a federal, state, local, or tribal law, regulation or policy imposed for the protection of the environment, where non-federal requirements are consistent with federal requirements.** The project does not violate any known federal, state, local or tribal law or requirement imposed for the protection of the environment. State, local, and tribal interests were given the opportunity to participate in the environmental analysis process. Furthermore, letters were sent to twenty-one Native American tribes concerning consulting party status, and there were two responses from the Hopi and Pubelo of Laguna tribes. Letters indicated that no properties of religious and/or cultural significance were identified. In addition, the project is consistent with applicable land management plans, policies, and programs."

Thomas Atkinson  
Authorized Officer

8/27/2012  
Date



# United States Department of the Interior Bureau of Land Management

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Decision Record  
Environmental Assessment  
DOI-BLM-UT-Y020-2012-0010-EA

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August, 2012

## Devil Canyon Fuels Reduction and Vegetation Restoration

*Location:* T. 34 S., R. 23 E., Sections 33  
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**DECISION RECORD**  
**DOI-BLM-UT-Y020-2012-0010-EA**  
*Devil Canyon Fuels Reduction and Vegetation Restoration*

The Bureau of Land Management (BLM) has conducted an environmental analysis (EA) number DOI-BLM-UT-Y020-2012-0010-EA for a proposed action to address a fuels reduction, vegetative restoration, and resource protection effort in the Devil Canyon area in San Juan County, Utah. The project will reduce vegetative fuels and implement vegetative/habitat restoration activities within an approximate 24,700 acre project area of public lands administered by the BLM. In addition, BLM resources may be used to treat State, Private and SITLA lands within the project area.

**Authorities:** The authority for this decision is contained in 43 CFR Ch. II (Revised as of October 1, 2008)

Subpart 4190—Effects of Wildfire Management Decisions

§ 4190.1 Effects of wildfire management decisions.

(a) Notwithstanding the provisions of 43 CFR 4.21(a)(1), when BLM determines that vegetation, soil, or other resources on the public lands are at substantial risk of wildfire due to drought, fuels buildup, or other reasons, or at immediate risk of erosion or other damage due to wildfire, BLM may make a rangeland wildfire management decision effective immediately or on a date established in the decision.

Wildfire management includes but is not limited to:

(1) Fuel reduction or fuel treatment such as prescribed burns and mechanical, chemical, and biological thinning methods (with or without removal of thinned materials); and (2) Projects to stabilize and rehabilitate lands affected by wildfire.

**Compliance and Monitoring:** Transects and/or photo plots to document fuel load and vegetation composition will be assembled within the treatment area prior to project implementation. Monitoring results will be documented prior to treatment and for a period following completion of the project. In addition to fuels monitoring, post treatment monitoring of cultural resources will be conducted.

**Terms / Conditions / Stipulations:**

(1) Contracts utilized for BLM work include specific language to prevent the pollution of air, soil and/or water through contracted operations; along with a cleanup and/or restoration clause in the event that operations or equipment failure or other actions by the contractor, contracted employees and/or representatives result in the pollution of public lands. Contract language also defines a “hazardous substance,” specifies a “reportable

quantity” of released hazardous substance, and describes notification regulations in the event a reportable quantity of hazardous substance is released.

(2) In addition to equipment inspection guidelines and equipment cleaning measures to prevent the introduction and/or spread of noxious weed material, contract specifications include federal regulations regarding sanitary facilities for staging areas and/or worker campsites, trash disposal requirements and other pertinent regulations.

(3) If undocumented cultural or paleontological resources are encountered during treatment activities, work at that specific location will be discontinued until field office staff can be contacted.

(4) Contract stipulations state that pile size will be no larger than six feet by six feet to mitigate potential heat-related soil damage and scorch to adjacent trees from burned piles.

(5) The use of mechanical equipment will be discontinued at the discretion of the BLM during periods of precipitation when soil moisture content could increase the potential for deep ruts and/or excess soil compaction.

(6) The treatment area will be rested from grazing for a minimum of two growing seasons following seeding.

(7) As stated in 3.3.2 Wildlife (page 18) in this EA, Devil Canyon is crucial mule deer winter range as designated in the RMP for the Monticello Field Office. Crucial mule deer winter range is protected from surface disturbing activities from November 15 to April 15, although there may be an occasion when weather conditions could allow project work to be accomplished during this period. The Field Office Manager may determine that an exception to this restriction may be allowed if, after an analysis, the authorized officer determines that the animals are not present in the project area or the activity can be completed so as to not adversely affect the animals. Routine operation and maintenance will be allowed during this period.

(8) Place buffers around wildlife corridors and drainages; leave a mosaic of the larger more mature old-growth trees that provide unique and irreplaceable ecological value for animal and plant habitat, genetic diversity and long-term climate records.

#### **PLAN CONFORMANCE AND CONSISTENCY:**

The proposed action and alternatives have been reviewed and found to be in conformance with one or more of the following BLM Land Use Plans and the associated decision(s):

In September of 2005, the San Juan Resource Management Plan was amended by the Utah Land Use Plan Amendment for Fire and Fuels Management (UT-USO-04-01), which amended 21 of the BLM’s land use plans across the state to bring them into greater compliance with national guidance and direction for wildland fire and hazardous fuel reduction activities. The Utah LUP amendment authorized the use of a full spectrum of fuels management tools in the Monticello Field Office area to reduce the risk of catastrophic wildland fire and to restore ecosystems (2.2.2.1 Management Strategies and Actions to Meet DWFC, Page 2-4). Landscape level fire management goals and objectives authorized in the LUP amendment include fuels treatments designed to restore ecosystems and to protect human, natural and cultural resources (2.2.1 Proposed Action, Page 2-2).

In November of 2008 the Monticello Field Office Resource Management Plan was finalized, which incorporates and authorizes in its entirety the Fire and Fuels LUP Amendment of 2005 (as summarized in Table 2.1, Chapter 2, page 2-16 of the RMP). Chapter 3, page 3-32 of the RMP describes the pinyon/juniper woodland in the Monticello Field Office and establishes the desired wildland fire condition as the “restoration of pinyon/juniper woodland to the vegetative community previous to pinyon/juniper encroachment.” Management objectives specify a wide array of fuel treatments to restore open stands of pinyon/juniper with grass and shrub understory.

The Healthy Forests Restoration Act focuses on hazardous fuel treatment of BLM lands at risk of wildland fire. HFRA was designed to address threats to forest and rangeland health, to protect, restore, and enhance ecosystems, and to intensify efforts to protect watersheds. Watershed condition is a term that describes the ability of a system to receive and process precipitation without ecosystem or hydrologic degradation (Brooks and others 2003). Conditions can be influenced by such things as the composition and density of vegetative cover, litter accumulations, and the amount of rock and/or bare soils in a watershed area. Because a wildland fire of high severity can destroy both vegetation and litter layer as well as altering soil properties, the ability of the watershed to process precipitation after a fire can be detrimentally impacted (RMRS-GTR-42-volume 4, Effects of Fire on Soil and Water). Restoration initiatives that focus on the retention of hydrologic equilibrium are the major focus of watershed management projects (Baker 1999, Baker et al. 1998). Section 102 of the HFRA authorizes the implementation of hazardous fuel reduction projects on federal lands in proximity to a municipal water supply system or in proximity to a stream feeding such a watershed where a fire disturbance would have adverse effects on the water quality. Adverse effects could include those risks posed by erosion following wildland fire.

San Juan County is committed to reviewing relevant federal and state planning documents for issues directly relating to the county, and to responding and/or providing recommendations for plans. The San Juan County Master Plan of 2008 references pinyon/juniper management in Amended Resolution No. 2008-01, an amendment to the Master Plan. Section 4 recommends the use of mechanical and other treatments to remove woody vegetation such as pinyon/juniper where these species have invaded areas and replaced forage species and restore these areas to more productive forage for livestock and wildlife. Section 5 of this resolution states County watershed policy to restore, maintain and maximize water resources through restoration, maintenance and enhancement of the watershed. This includes the recommendation for mechanical treatments to remove invasive woody species such as pinyon/juniper and restore these areas to grassland cover to maximize water yield and water quality for livestock, wildlife and human use.

The proposed action alternative and no action alternative are also consistent with other federal, state, and local laws, regulations, and plans listed in Section 1.6 of the EA.

**Alternatives Considered:** The No Action Alternative (Alternative B) was not selected because continued fuel loading would pose a greater wildfire hazard than currently exists. With no treatment, a combination of high temperatures, low relative humidity, winds, and/or drought conditions could result in a stand-replacing wildland fire. The potential also exists in this particular area for a wildland fire originating on BLM lands to threaten the Wildland Urban

Interface (WUI) in the area, damage adjacent soils, spread to surrounding Forest Service lands, impact high-use recreational lands, and to dramatically alter the animal community and habitat. No treatment would result in further maturation of the area's pinyon-juniper woodland with a simultaneous decline in herbaceous understory vegetation productivity and diversity. As noted in the EA, high-intensity crown fires can also be extremely damaging to archaeological sites, and the valuable cultural resources on the mesa could be negatively impacted as a result of soil erosion and new drainage patterns from rain and snow following a high-intensity fire event. In addition, a reduction in soil cover and resultant cultural resource exposure could lead to increased damage from weather, fire, looting and vandalism.

**Rationale for Decision:** The decision to authorize this important fuels reduction and restoration project has been made in consideration of the environmental impacts of the proposed action, as well as in consideration of impacts from no action. While this singular project will not provide a significant contribution to regional or state-wide ecological conditions, it could enhance habitat/population connectivity through migratory corridors and improve habitat structure, forage, and stability in the general area by impeding the progress of a high intensity wildland fire event. The project is a site-specific action directly involving approximately 24,700 acres of BLM-administered land that will benefit in the long term from a return to more natural fire cycles and improved ecosystem function.

The selected alternative will have both short-term adverse and long-term beneficial impacts to resources as described in the EA. Mitigating measures to reduce adverse impacts to resources and to wildlife such as deer, elk, raptors, and migrating birds were incorporated in the design of the action alternative. None of the environmental effects discussed in detail in the EA and associated appendices are considered significant, nor do the effects exceed those described in the Monticello Field Office RMP/FEIS. Although the selected alternative is designed specifically to reduce hazardous fuels in the Devil Canyon area, indirect beneficial impacts to public health and safety will result from the decreased chance of high intensity wildland fire spreading to adjacent WUI and recreational areas.

Section 7 Consultation with the U.S. Fish and Wildlife Service (USFWS) was initiated for the proposed project alternative with a conclusion that implementation "may affect, [but] is not likely to adversely affect" the Mexican spotted owl. The USFWS concurred with this conclusion on March 3, 2012.

The project conforms with the Monticello Field Office RMP/DEIS management objectives specifying the use of a wide array of fuel treatments to restore open stands of pinyon/juniper with grass and shrub understory. Authorized treatment activities are also aligned with the San Juan County Master Plan, which recommends a vigorous program of mechanical and other vegetative treatments to reduce the biomass of pinyon/juniper woodlands as well as to improve watershed conditions.

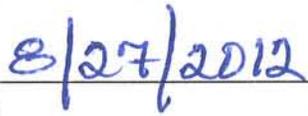
During preparation of the EA, the public was notified of the proposed action by posting on the BLM Utah State Office website on January 23<sup>rd</sup>, 2012. In addition, a public meeting was held on March 14<sup>th</sup>, 2012 at the Monticello Field office to solicit comments on project issues. An unsigned FONSI with a complete copy of the EA and maps was made available to the public on

July 3rd, 2012. Public comment on the environmental analyses was requested through the ENBB posting as well as through local media notices in the San Juan Record and Blue Mountain Panorama. A 15 day public comment period resulted in one letter from the interested public. Responses to public comment are contained as appendix H in the EA.

**Protest/Appeal Language:** This decision is subject to administrative appeal. Within 30 days of receipt of this decision, parties who are adversely affected and believe it is incorrect have the right to appeal to the Department of the Interior Board of Land Appeals, Office of the Secretary, in accordance with regulations at 43 CFR 4.4. Appellants must follow procedures outlined in the form, "Information on Taking Appeals to the Board of Land Appeals." An appeal should be in writing and specify the reasons, clearly and concisely, as to why the decision is in error. Appellants are requested to supply this office with a copy of the Statement of Reasons.

This wildfire management decision is issued under 43 CFR Part 5003.1 and is effective immediately. The BLM has made the determination that vegetation, soil, or other resources on the public lands are at substantial risk of wildfire due to drought, fuels buildup, or other reasons, or at immediate risk of erosion or other damage due to wildfire. Thus, notwithstanding the provisions of 43 CFR 4.21(a)(1), filing a notice of appeal under 43 CFR Part 4 does not automatically suspend the effect of the decision. Appeal of this decision may be made to the Interior Board of Land Appeals in accordance with 43 CFR 4.410. The Interior Board of Land Appeals must decide an appeal of this decision within 60 days after all pleadings have been filed, and within 180 days after the appeal was filed as contained in 43 CFR 4.416.

  
\_\_\_\_\_  
Authorized Officer

  
\_\_\_\_\_  
Date

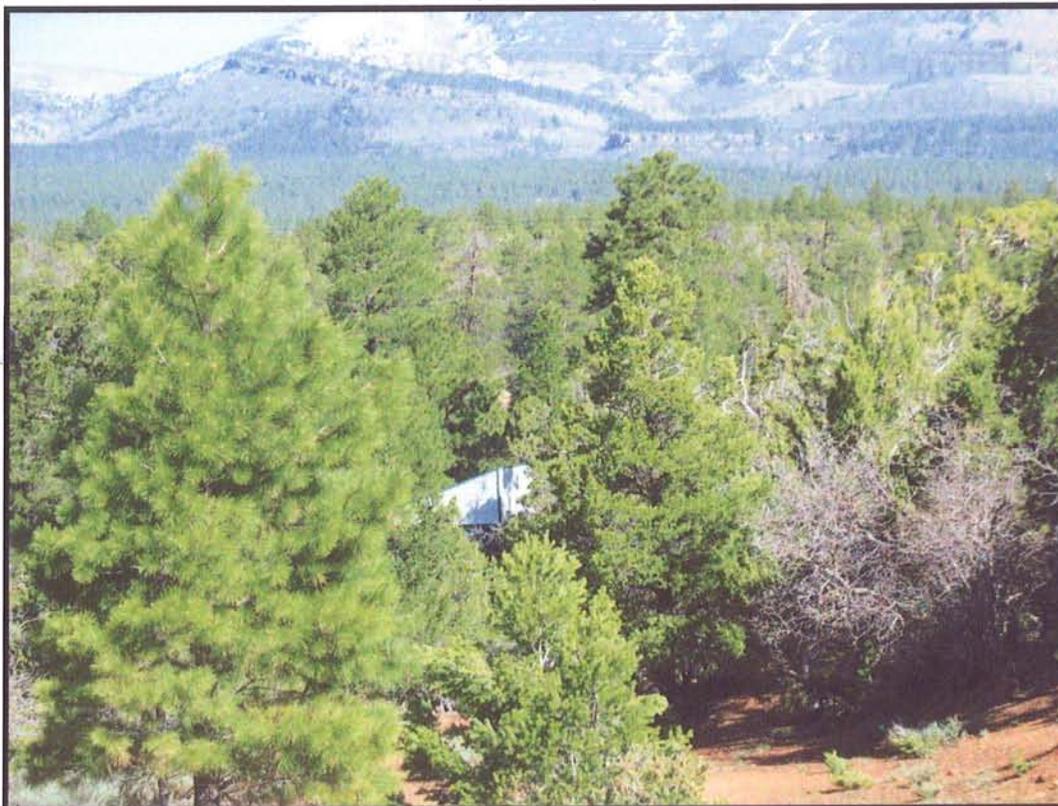
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# **Devil Canyon Fuels Reduction and Vegetative Restoration**

## **DOI-BLM-UT-Y020-2012-0010-EA**

### **1.0 PURPOSE & NEED**

#### **1.1 Introduction:**

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of the Devil Canyon Fuels Reduction and Vegetative Restoration Fuels Treatment project as proposed by the Bureau of Land Management (BLM) Canyon Country Fire Zone and Monticello Field Office. The EA is a site-specific analysis of potential impacts that could result with the implementation of a proposed action or no-action alternative. The EA assists the BLM in project planning, ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any “significant” impacts could result from the analyzed actions. “Significance” is defined by NEPA and is found in regulation 40 CFR 1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of “Finding of No Significant Impact” (FONSI). If the decision maker determines that this project has “significant” impacts following the analysis in the EA, an EIS would be prepared for the project. If not, a Decision Record may be signed for the EA approving the selected alternative, whether the proposed action or another alternative. A Decision Record (DR), including a FONSI statement, documents the reasons why implementation of the selected alternative would not result in “significant” environmental impacts (effects) beyond those already addressed in the BLM Monticello Field Office Resource Management Plan (RMP), November, 2008.

#### **1.2 Background:**

Since the inception of the National Fire Plan (NFP) in 2002, the BLM has been prioritizing areas for fuels treatment based on fuel conditions, distance from Wildland/Urban Interface areas (WUI) and other human infrastructure, ecosystem health, and resource values that may be at risk. The general goals outlined in the NFP include the implementation of fuels treatments that will (1) reduce the risk of catastrophic fire; (2) protect communities; (3) reduce fuel hazards; (4) reduce wildfire acres and costs; and (5) restore fire-adapted ecosystems. The Monticello Field Office RMP incorporates the landscape level fire management goals and objectives for the Moab Fire Zone first established in the Utah Land Use Plan (LUP) Amendment for Fire and Fuels Management (September, 2005) that were based on the general goals of the NFP. Detailed information included in the LUP Amendment and incorporated into the RMP describes wildland fire conditions based on fire regime and current condition class, a measurement that reflects the fire frequency and potential for fire severity and intensity in a selected area compared with assumed historic wildland fire conditions for that area (Chapter 3, page 3-31). In addition, the RMP authorizes the reduction of hazardous fuels throughout the Monticello Field Office to restore ecosystems; to protect human, natural and cultural resources; and to reduce the threat of wildfire to communities (Chapter 2, Page 2-16). Treatments may be planned in areas where key ecosystem components have been compromised and/or where a high intensity catastrophic fire would severely impact resources. Compromised factors may include vegetation composition (density, canopy closure, displacement of historical community, etc.), structural stage, and/or stand age;

where invasive plants have spread or have the potential to spread; in areas with high fire frequency and/or severity; and/or where insects or diseases have altered vegetation or have the potential to severely alter vegetative composition. In addition, the FY 2012 Appropriations Act (Wildland Fire Management) clarifies the use of federal appropriated funds and provides legislative authority for the Secretary of Interior to enter into procurement contracts, grants, and cooperative agreements for hazardous fuels reduction activities on Federal and adjacent non-Federal lands for activities that benefit resources on Federal Land.

The goal of treating vegetation is to restore ecosystem health by reproducing the natural variability, stability, and diversity of the vegetative communities within a project area. In addition, successfully completed treatments enhance public and firefighter safety by providing an increased range of suppression strategies.

In many areas of the southwestern United States and particularly across public lands, pinyon pine (*Pinus edulis*) and juniper (*Juniperus osteosperma*) trees are the dominant species. Although controversy exists regarding the historic density and structure of the pinyon-juniper woodlands that currently occupy millions of acres of land across the Colorado plateau region, it is generally accepted that much of what is now pinyon-juniper woodland may once have been land vegetated dominantly by grasses and forbs with no more than 10-15 trees every two-to-three acres (Brockway, et al, *Journal of Environmental Management* (2002) 179-197). Climate, grazing and fire suppression are the major factors most often linked to the expansion of pinyon-juniper woodlands (Miller and Wigand, 1994).

Historical conditions and historic fire occurrence in pinyon-juniper woodlands can vary across a given landscape due to many different contributing factors. Fire patterns and fire behavior are closely related to unique topography, soils, environmental conditions and vegetation that is present at a given time (RMRS-GTR-202, 2007). Prior to European settlement, more complex vegetative communities contained a mixture of fire patterns and behavior based on their multifaceted fuel types. In general, studies show that southern Utah sagebrush and tree-dominated cover was fifty percent less in pre-Euro American settlement landscapes than in present day (RMRS-GTR-202) with greater mixtures of size and age-classes of trees. Fires may have been infrequent across the area, although patterns of disturbance indicate that there was a shifting distribution of woodland and sagebrush dominance throughout the landscape (RMRS-GTR-202). Canyon bottoms and swales appear to have the highest fire frequencies with larger fires occurring during periods of drought.

The Canyon Country Fire Zone Fire Management Plan (FMP) September, 2004, identifies and integrates up-to-date wildland fire management guidance, direction, and activities required to implement national fire policy as addressed in the goals and objectives authorized by the Monticello Field Office RMP. The FMP is a more detailed representation of the fire management activities relative to the Monticello Field Office. Page five of the document outlines specific management objectives including the use of various fuels management methods to: reduce hazardous fuels; restore wildlife habitat; improve and/or maintain rangelands; protect the characteristics of special areas; protect

developed recreation facilities; and prevent watershed degradation. The FMP further specifies (Chapter 2, pages 2-5 and 2-6) that pinyon-juniper woodlands with less than 100-year-old trees should be treated through the use of prescribed fire or mechanical means to restore native shrub and grass communities.

The FMP also outlines the risks, values, and hazards for the three field offices within the Canyon Country Fire Zone and delineates the entire area into fire management units. The 22 fire management units (FMUs) within the Canyon Country Fire Zone are discussed in the FMP in relation to wildland fire management goals for each unit. Goals outlined include hazardous fuel reduction both within and outside of WUI areas. FMU boundaries were based on topographic features, values to be protected, political boundaries, fuel types, fire regime and/or condition class, accessibility and other distinguishing characteristics. The proposed action falls generally within FMU 20, Montezuma, located south and southeast of Monticello. The most predominate land feature is the Montezuma Canyon Drainage. The FMU extends west from the Colorado border to Comb Ridge. The primary vegetation type in FMU 20 is described as predominantly closed stands of pinyon-juniper (PJ), sagebrush parks, and chainings (seedings). The fuel loading is heavier towards the northern and western sides of the FMU. The mesa tops are generally farm fields with crops such as wheat, beans, or sunflower. A good portion of the PJ is on mid-level mesa benches. Fuel loads decrease towards the southern half of the FMU unless there is significant winter moisture, in which case cheat grass will grow in this FMU. Recent drought conditions are causing a bug (Ips beetle) invasion of the pinyon trees resulting in the loss of many of the pinyon trees. This FMU has the highest fire occurrence of any other FMU in the fire planning unit with an average of 21 fires and 462 acres burned per year. The FMP recommends fuels management strategies such as prescribed fire and mechanical and/or other types of treatment to reduce hazardous fuel conditions and increase high value browse and herbaceous production (Canyon Country Fire Zone FMP, page 27). Wildland fire is undesirable in mature pinyon-juniper stands utilized as thermal cover by wildlife, although low intensity fires in previously chained areas are recommended for fire management to remove undesirable vegetation.

Within the last 10 years two large fires have burned in the vicinity of the Devil Canyon project area. The Nizhoni fire started on June 2<sup>nd</sup>, 2002 and burned 2,354 acres west of the Devil Canyon project area; and the Horse fire which started on July 12<sup>th</sup>, 2002 and burned 1,250 acres east of the project area.

Within the last 50 years many areas within the Devil Canyon area have been chained. Approximately 965 acres or 3.9% of the proposed project area has been chained in the past. Many of these chaining's have not been maintained after the initial treatment. These areas are experiencing pinyon and juniper re-growth and much of the slash from the initial treatment still remains.

The Alkali Ridge Area of Critical Environmental Concern (ACEC) encompasses the southern half of the project boundary. ACEC's require special attention to protect and prevent irreparable damage to important historic, cultural, or scenic values (Monticello RMP pg. 118). The Alkali Ridge ACEC consists of 39,196 acres with 9,726 acres lying within the Devil Canyon project boundary.

### **1.3 Need for the Proposed Action**

The Devil Canyon area is currently experiencing heavy pinyon juniper encroachment. This expansion throughout the area is threatening the local ecosystems by degrading the landscape and creating a pinyon juniper monoculture. In addition, the Devil Canyon area experiences more fire starts than any other Fire Management Unit within the Canyon Country Fire Zone. The combination of increased fuel loads and high fire frequency increases the possibility for high-severity wildfire in the area. Increased fire size and intensity could put local communities within the Devil Canyon vicinity at risk.

Ecological restoration is generally approached from the context of the “fundamental characteristics” of an ecosystem, which may be determined from historical data, commonly accepted indications of past conditions, and/or from scientific data collected directly from undisrupted sites. Over the past several decades, ecosystems on public lands in southeastern Utah have experienced gradual losses of biodiversity, sustainability, and successional vegetative development. Overall, compromised ecosystems have a lowered resiliency and cannot easily recover from impacts such as prolonged climate changes and/or cycles of disturbance like high intensity fire. Elements critical to an ecosystem that may result from or be affected by an uncharacteristically intense wildland fire or from lengthy periods of drought include accelerated erosion; altered and/or declining soil development and losses in sustainable nutrient cycling; loss of natural hydrologic pathways; deterioration or loss of watershed integrity resulting in degradation of water quality and quantity; and deterioration of habitat and habitat diversity (Bartos, D., et al, 1999).

Healthy sagebrush ecosystems should consist of a diverse array of plants and support a wide variety of wildlife species. However, sagebrush habitat throughout the Great Basin and Colorado Plateau is being degraded due to pinyon/juniper encroachment (Miller, R.F. and R.J. Tausch 2001). Research has clearly shown that pinyon and juniper woodlands have increased substantially throughout the Intermountain West over the past 130 – 150 years (Romme et al. 2009; Wisdom and Chambers 2009; Miller and Tausch 2001; Tausch and West 1995, 1988). Prior to 1860 sagebrush-steppe communities were dominant and trees were virtually absent on two-thirds of the landscape. Now, less than one-third of the landscape is treeless with more than 90% of the trees establishing since 1860 (Miller et al. 2008). Without disturbance these woodlands will continue to mature and expand leading to increased fuel loading and nearly closed canopy conditions within the next 50 years (Miller et al. 2008). Where pinyon/juniper dominates they out-compete understory species for light, moisture, and nutrients eventually resulting in nearly complete removal of the understory (Miller et al. 2000, 2005). A diverse understory, consisting predominantly of perennial species, is the key to ecosystem resilience which promotes soil stability and resistance to invasive species (Janet et al. 2010) like cheatgrass and enables a system to recover naturally following disturbance. Excessive fuel buildup due to juniper expansion and infilling can eventually lead to catastrophic wildfire which may threaten private property and further degrade the ecosystem by promoting cheatgrass dominance. Once established cheatgrass becomes a major obstacle preventing the recolonization and growth of native perennial vegetation and can also result in major increases in fire occurrence and size (Whisenant 1990; Brooks and Pyke 2001). In order

to curb this process it is essential that action be taken (Wisdom and Chambers 2009; Meinke et al. 2009; Miller et al. 2008). Degraded sagebrush habitat can be improved by removing junipers and reseeded with perennial species where desirable understory species are lacking (USDI Bureau of Land Management 1999, 2000). This proactive approach reduces the risk of catastrophic wildfire and promotes ecosystem resiliency.

The term “natural fire regime” is a general classification of the role of fire in a landscape based on what is known or understood about the historical conditions in a given area. Fire regime classifications are devised based on the average number of years between fires, and are further distinguished by “condition class.” The condition class of a specific area relates directly to its departure from a natural fire regime and the present condition of the ecosystem as a result of this departure. Fire regime condition class, or FRCC, can range from low (FRCC 1) to high (FRCC 3) depending on the attributes in an area and how substantially those attributes have been altered from their natural or historic range. The Healthy Forests Restoration Act of 2003 (HFRA) authorizes the expedited treatment of areas with a high FRCC in which wildland fire poses a threat to the quality of a watershed and/or in areas that have experienced significant resource damage.

Fuels reduction treatments often target FRCC2 and FRCC3 areas where dense monocultures of pinyon-juniper woodlands have substantially altered understory species and where fire has been absent to the extent that fuel loads are considered to be a threat to the ecosystem and/or Wildland Urban Interface (WUI) areas. The proposed Devil Canyon Hazardous Fuels Reduction and Habitat Restoration project area and surrounding lands are generally classified as FRCC3.

Fire occurrence and size varies from year to year depending on the amount of moisture associated with lightning-producing thunderstorms, but pinyon-juniper woodlands are the primary fire carrier with fire intensity a direct result of high stand density and weather conditions. Over the past fifteen years, Utah has had ongoing drought periods that have depleted both soil and fuel moistures. Drought stress can increase vulnerability to insects and disease, and persistent low fuel moistures increase tree flammability. Combined, these conditions magnify the probability for hot, fast-spreading fire. High severity wildland fire in this particular area could create unstable slopes, increased erosion and/or sedimentation, charred soils and vegetation, damage to riparian areas along the creeks, altered wildlife habitat, and possible economic loss due to damaged rangelands.

#### **1.4 Purpose(s) of the Proposed Action**

Due to the closed canopy nature of dense pinyon-juniper stands, understory vegetation does not have the ability to compete for essential resources such as moisture and sunlight, which prevents understory vegetation from establishing or surviving in these conditions. Opening up the canopy through vegetative removal activities reduces the potential for damage from high-severity wildland fire while creating environmental site conditions favorable to grass, forb and shrub establishment. Therefore, hazardous fuel removal activities would address the underlying need for the proposal as detailed above while also addressing the following objectives:

1. Improve ecosystem function and restore vegetative resilience to facilitate recovery from wildland fire. Because watershed health involves the combined workings of a watershed such as land use, soils, and vegetation, the long-term objectives of this restoration treatment are relevant to all of these resources.

2. Enhance and expand sagebrush and grassland-steppe habitat; improving soils, increasing forage and improving habitat for wildlife and livestock while preventing and discouraging the spread of invasive plant species. A number of areas within the old chaining were once open sagebrush communities that have experienced pinyon-juniper encroachment, leading to a loss of vegetative diversity and key sagebrush habitat for wildlife. Retention and improvement of a healthy sagebrush component is critical for elk and deer winter range as well as other sagebrush-dependent species.

3. Protect the Wildland Urban Interface (WUI), wildlife habitat, Ponderosa Pine stands, and other resources in the area from a severe, high intensity wildland fire while improving habitat diversity, resiliency, and vigor.

#### **1.5 Conformance with BLM Land Use Plan(s):**

As required by 43 CFR 1610.5, the proposed action is in conformance with established management guidelines. In September of 2005, the San Juan Resource Management Plan was amended by the Utah Land Use Plan Amendment for Fire and Fuels Management (UT-USO-04-01), which amended 21 of the BLM's land use plans across the state to bring them into greater compliance with national guidance and direction for wildland fire and hazardous fuel reduction activities. The Utah LUP amendment authorized the use of a full spectrum of fuels management tools in the Monticello Field Office area to reduce the risk of catastrophic wildland fire and to restore ecosystems (2.2.2.1 Management Strategies and Actions to Meet DWFC, Page 2-4). Landscape level fire management goals and objectives authorized in the LUP amendment include fuels treatments designed to restore ecosystems and to protect human, natural and cultural resources (2.2.1 Proposed Action, Page 2-2).

In November of 2008 the Monticello Field Office Resource Management Plan was finalized, which incorporates and authorizes in its entirety the Fire and Fuels LUP Amendment of 2005 (as summarized in Table 2.1, Chapter 2, page 2-16 of the RMP). Chapter 3, page 3-32 of the RMP describes the pinyon/juniper woodland in the Monticello Field Office and establishes the desired wildland fire condition as the "restoration of pinyon/juniper woodland to the vegetative community previous to pinyon/juniper encroachment." Management objectives specify a wide array of fuel treatments to restore open stands of pinyon/juniper with grass and shrub understory.

#### **1.6 Relationship to Statutes, Regulations, or other Plans:**

The Federal Land Policy and Management Act of 1976 (FLPMA), as amended (43 U.S.C. 1701 et seq.) is the basic authority for BLM activities. It establishes the principle that public lands be retained in Federal ownership and provides for the management, protection, development, and enhancement of the public lands under the principles of multiple use, sustained development, and sustained yield.

The National fire Plan was designed to manage the potential impacts of wildland fire to communities and ecosystems and to reduce the risk of catastrophic wildland fire. Implemented in 2001 and encompassing agencies of the Department of Agriculture (Forest Service) and Department of Interior (National Park Service, Fish and Wildlife Service, BLM), the NFP focuses on strategies for improving fire preparedness, restoring and rehabilitating burned areas, reducing hazardous fuels, assisting communities, and identifying research needs. The National Fire Plan stresses accountability and collaboration at the local level (state, county and local communities).

The proposed action is directly influenced and supported by the *Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Report* (November, 2005), which evaluates the effects of vegetation treatments such as manual, mechanical, and biological activities (non-herbicide) on public lands.

The Healthy Forests Restoration Act focuses on hazardous fuel treatment of BLM lands at risk of wildland fire. HFRA was designed to address threats to forest and rangeland health, to protect, restore, and enhance ecosystems, and to intensify efforts to protect watersheds. Watershed condition is a term that describes the ability of a system to receive and process precipitation without ecosystem or hydrologic degradation (Brooks and others 2003). Conditions can be influenced by such things as the composition and density of vegetative cover, litter accumulations, and the amount of rock and/or bare soils in a watershed area. Because a wildland fire of high severity can destroy both vegetation and litter layer as well as altering soil properties, the ability of the watershed to process precipitation after a fire can be detrimentally impacted (RMRS-GTR-42-volume 4, Effects of Fire on Soil and Water). Restoration initiatives that focus on the retention of hydrologic equilibrium are the major focus of watershed management projects (Baker 1999, Baker et al. 1998). Section 102 of the HFRA authorizes the implementation of hazardous fuel reduction projects on federal lands in proximity to a municipal water supply system or in proximity to a stream feeding such a watershed where a fire disturbance would have adverse effects on the water quality. Adverse effects could include those risks posed by erosion following wildland fire.

The Utah Division of Water Quality (UDWQ) stresses the importance of treating uplands to stabilize soils in their Watershed Approach initiative. High severity fires can be followed by extreme soil erosion, with unstable soils that may be swept down drainages into lowland watersheds or water bodies. General standards for water quality in Utah are found in the "Standards of Quality for Waters of the State," R317-2-6, Utah Administrative Code, December 1997.

A memorandum of understanding (MOU) was developed between the Department of Interior, Forest Service, State Foresters and the National Association of counties to prioritize the annual selection of fuels treatment projects in both the wildland-urban interface and outside the wildland-urban interface. In conformance with the guidelines developed within the MOU, areas that have the highest risk for catastrophic fire have been identified by cooperating agencies in southeastern Utah and prioritized for

completion over the next several years to meet goals of both the President's Healthy Forests Initiative as well as the HFRA.

The Fundamentals of Rangeland Health (43 CFR 4180) regulations require the BLM to develop and implement rangeland health standards in consultation with Resource Advisory Councils. Standards for land health include measures such as fuels treatments to ensure functioning watersheds, riparian/wetlands, vegetation communities, and water quality resources.

As required by the American Indian Religious Freedom Act of 1978 (42 USC 1531) and the National Historic Preservation Act (16 USC 1531), local Native American tribes were notified of the proposed action in May of 2012.

The implementation of effective wildland fire management programs is mandated in Departmental Manual 620 (Wildland Fire Management). Section 1.5 (C) (Objectives) instructs the BLM to "...develop fire management plans, programs, and activities which are based on the best available science; that incorporate public health and environmental quality considerations; and support bureau land, natural, and cultural resource management goals and objectives."

Public Rangelands Improvement Act 1978, Title II (43 U.S.C. 1901 *et seq.*), as amended. Among other management objectives, this act provides for temporary discontinuance of grazing uses for the specific purpose of improving public rangeland conditions and production.

BLM Grazing Management Regulations, 43 CFR Subpart 4180.2(e), requires development of guidelines to address the restoration, maintenance and enhancement of habitats to promote the conservation of federally proposed, federally candidate, and other special status species.

BLM National Policy Guidance on Special Status Species Management (Manual 6840) provides direction for the conservation of special status animal and plant species as well as for their habitats.

San Juan County is committed to reviewing relevant federal and state planning documents for issues directly relating to the county, and to responding and/or providing recommendations for plans. The San Juan County Master Plan of 2008 references pinyon/juniper management in Amended Resolution No. 2008-01, an amendment to the Master Plan. Section 4 recommends the use of mechanical and other treatments to remove woody vegetation such as pinyon/juniper where these species have invaded areas and replaced forage species and restore these areas to more productive forage for livestock and wildlife. Section 5 of this resolution states County watershed policy to restore, maintain and maximize water resources through restoration, maintenance and enhancement of the watershed. This includes the recommendation for mechanical treatments to remove invasive woody species such as pinyon/juniper and restore these areas to grassland cover to maximize water yield and water quality for livestock, wildlife and human use.

The proposed action alternatives and no action alternative are also consistent with other federal, state, and local laws, regulations, and plans to the maximum extent possible, including the following:

- Endangered Species Act of 1973 (ESA), as amended.
- Executive Order on the Responsibilities of Federal Agencies to Protect Migratory Birds (Migratory Bird Treaty Act), January 11, 2001.
- FY 2012 Appropriations Act (Wildland Fire Management)
- Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances, November 1999.
- Bureau of Land Management National Sage-Grouse Habitat Conservation Strategy, November, 2004; and, National Sage-Grouse Strategy Implementation, December 20, 2004.
- Federal Noxious Weed Act of 1974, 7 U.S.C. §§ 2801-2814, January 3, 1975, as amended 1988 and 1994.
- Environmental Protection Agency, 40 CFR 51.300, Protection of Visibility.
- Clean Air Act of 1963; Air Quality Act of 1967; Clean Air Act Extension of 1970; Clean Air Act Amendments of 1977 and 1990.
- The environmental analysis in this EA is tiered to and incorporates by reference the environmental analysis contained in the Monticello Field Office PRMP/FEIS (citation) including the Utah Land Use Plan Amendment for Fire and Fuels Management (citation); and the Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Report, November 2005 (citation).
- 2012 Fiscal Year Appropriations Act (Wildland Fire Management)
- Section 106 of the National Historic Preservation Act (NHPA) (16 U.S.C. 470(f) pursuant to 36 CFR 800.2(d)(3).
- Executive Order 13175

### **1.7 Identification of Issues:**

Project discussion, design, and scoping have been coordinated with resources specialists in the Monticello Field Office, cooperating agencies and the public. The current project proposal was presented to the Monticello Field Office resource staff in early January of 2012 with comments, suggestions and mitigation incorporated into the final project

design. Specific direction from the Healthy Forest Restoration Act regarding the development of alternatives requires the BLM to study, develop and describe the proposed action and the alternative of no action. Current scientific information was utilized in the development of the proposed action including analyses of similar pinyon/juniper fuels reduction projects within the Canyon Country Field Offices as well as data assimilated from Canyon Country Fire Zone Emergency Stabilization and Rehabilitation projects conducted in pinyon/juniper communities. In addition to the expertise of the BLM fuels specialist, information was also exchanged with collaborating agencies including other federal, state, and local entities. The interested public was notified of the proposed treatment and the ongoing analysis phase of the project in January of 2012 through the Utah BLM State Office Environmental Notification Bulletin Board (<https://www.blm.gov/ut/enbb/index.php>) and through a public scoping meeting held on March 14<sup>th</sup>, 2012 at the Monticello Field Office to solicit comments on project issues.

An Archaeological Report will be prepared for the proposed Devil Canyon Fuels Reduction and Vegetative Restoration project area, and information documenting the archaeological inventory and compliance with the National Historic Preservation Act (NHPA) of 1966, as amended, will be on file in the Canyon Country Fire Zone office. Sites identified and determined to be eligible for the National Register of Historic Places (NRHP) and not located within the Alkali ACEC will likely be avoided during the mechanical treatment portion of the project, unless treatment options are such that it would be beneficial to the archaeological resource to treat the vegetation on site. Tribal groups have been requested to identify traditional cultural properties or any other areas of traditional cultural importance to be considered within proximity of the project.

The use of specific herbicide active ingredients and formulations on BLM lands in Utah was authorized by the 17 States Herbicide PEIS in 2007. The 2007 PEIS identifies potential impacts to the natural and human environment from the use of herbicides, incorporates standard operating procedures and mitigation measures to ensure the protection of resources, and approves for use on western BLM lands specific herbicide active ingredients.

The 2007 17 States Vegetation Management PER analyzes potential effects of vegetation treatment methods (fire, mechanical, manual, and biological), considers reasonably foreseeable hazardous fuels reduction activities, and provides a cumulative impact analysis for the use of herbicides in conjunction with other vegetation treatment activities.

Proposed vegetation treatments and the environmental analysis of each treatment are completed on a site-specific and project-specific basis. Because of the evolving nature of fuels treatment, the variety of factors involved in determining treatment alternatives, and the effect of unpredictable external factors such as drought, disease, and/or insect predation, each treatment area is analyzed on an individual basis to study the most effective way to achieve treatment goals. Two letters from an interested party have been received to date on the project. Team analysis and interested parties identified potential impacts (PI) from the proposed action to resources listed below:

- Areas of Critical Environmental Concern (ACEC)
- Wildlife Including USFW Designated Species
- Fuels/Fire Management
- Invasive Species/Noxious Weeds
- Livestock Grazing
- Soils
- Woodland/Forestry
- Vegetation Excluding USFW Designated Species

Those elements either not present (NP) or present but not impacted (NI) are not listed (see Appendix A).

### **1.8 Summary:**

This chapter has presented the purpose and need of the proposed project, as well as the relevant issues, i.e., those elements of the human environment that could be affected by the implementation of the proposed project. In order to meet the purpose and need of the proposed project in a way that resolves the issues, BLM scoping and alternative development resulted in an action alternative and a no action alternative as outlined in Chapter 2. The potential environmental impacts or consequences resulting from the implementation of the actions are analyzed in Chapter 4 for each of the identified issues.

## **2.0 DESCRIPTION OF ALTERNATIVES, INCLUDING PROPOSED ACTION**

### **2.1 Introduction**

Treatment goals in pinyon-juniper woodlands may be varied, although fuel load reduction, restoration of sagebrush communities, improvement of watersheds, and enhancement of forage production are common treatment objectives (Miller and Tausch, 2001). Research shows that increasing the treatment focus in these dense woodlands to a broad landscape scale can improve treatment effectiveness (Hann and Bunnell, 2001). “Restoration” of the project area does not necessarily imply an objective of returning an ecosystem to a condition that may have existed at a point in history, but rather the restoration of functional processes required to sustain resource values.

Tree removal and/or thinning are the primary management tools employed in the process of decreasing fuel loads and continuity in pinyon/juniper woodlands. With Stand Density Index (SDI) used as a measurement tool, thinning guidelines generally recommend reducing stands approximately 25% of maximum SDI or lower, which will open the canopy and allow an increase in understory species. SDI is based on the relationship between mean tree size and the number of trees per unit area in a forest stand. The maximum SDI for pinyon/juniper stands has not been fully determined, although ongoing studies generally reflect a maximum SDI of 415 for mixed stands (Page, BLM, 2006).

### **2.2 Alternative A - Proposed Action:**

The proposed Devil Canyon Fuels Reduction and Vegetation Restoration project would thin and reduce hazardous fuels including trees and heavy brush, utilizing several

different treatment methods within approximately 24,700 acres of public land administered by the BLM's Monticello Field Office, Canyon Country Fire Zone. Of these acres, approximately 965 acres were previously manipulated in the 1950's and 1960's through chaining of pinyon and juniper woodlands and subsequent seeding of crested wheatgrass. This was done for watershed values and to provide livestock and wildlife habitat and forage. These acres would be re-treated as maintenance of the original project to reduce pinyon and juniper re-establishment for the restoration of previous and current objectives.

In addition, the FY 2012 Appropriations Act (Wildland Fire Management) clarifies the use of federal appropriated funds and provides legislative authority for the Secretary of Interior to enter into procurement contracts, grants, and cooperative agreements for hazardous fuels reduction activities on Federal and adjacent non-Federal lands for activities that benefit resources on Federal Land. The project would be accomplished in several phases over approximately five to ten years; however, conflicts with other projects, extreme fire seasons, budgetary constraints, or other factors could extend the estimated project period to facilitate achievement of goals and objectives. Each phase of treatment over the life of the project would be divided into treatment units with each unit averaging between 50-500 acres. The specific amount of acreage for each phase and lands treated within an individual unit would vary dependent upon vegetation type and fuel loading, and a single unit may be treated at one time or in conjunction with another unit. Treatment design and methods to accomplish goals and objectives are discussed below.

### **Treatment Design and Methodology**

The goal of treating dense pinyon-juniper is to reduce the fuel hazard while restoring ecosystem health by re-establishing the natural variability, stability, and diversity of the vegetative community within the project area. In designing a specific fuel treatment prescription, techniques for reducing crown fire occurrence and severity may include (1) increasing canopy base height, (2) reducing canopy bulk density, (3) reducing forest canopy continuity and (4) reducing surface fuels.

Proposed treatment activities would involve hand cutting and piling; hand cutting with lopping and scattering of slash; mechanical shredding; seeding; prescribed fire; and herbicide/biological controls. Woody surface materials and ladder fuels considered to have hazardous fuel potential would be cleared and scattered. Untreated islands of trees and buffered areas would be left in a mosaic pattern throughout the proposed treatment area to benefit wildlife and improve ecosystem function. Prescribed fire would be used in addition to and as a complement to mechanical treatments and would include pile burning as well as broadcast burning. Due to the unique and often irreplaceable ecological values that old-growth stands provide for animal and plant habitat, genetic diversity, and long-term climate records (Kaufmann et al. 1992; Miller et al. 1999) old-growth trees would be avoided.

There are several drainages within the collective project boundary in which treatment methods may be modified to protect prospective or existing aquatic or riparian resources. Because canyons and drainages are areas most frequented by wildlife species and because

drainages are also valuable components of the watershed, care will be taken to establish vegetative buffer zones (generally feathered and 100'-200') at the head of drainages and along ridge tops to enhance raptor habitat and provide for watershed integrity. Fuel reduction efforts in primary canyons and drainages would focus on reducing pinyon-juniper and invasive non-native plant species such as tamarisks.

Before project implementation standing timber in selected areas may be made available for wood harvest. In select areas, slash and debris from fuel management activities along designated roads or other accessible areas may be made available to the public by permit for wood harvest. Permits and maps with available wood harvest areas will be available through the Monticello BLM Field Office (Monticello RMP pg.157 FOR-4, 5 & 6). All wood harvest will be limited to designated routes only.

Any new routes created during project work as well as non-designated routes occurring within treatment areas would be rehabilitated to prevent further use by off-highway vehicle (OHV) users. Some areas would require rehabilitation techniques where appropriate, such as mechanical shredding, mechanical seedbed preparation, seeding, and the installation of signs stating 'closed to motorized vehicles' to prevent OHV use until the evidence of tracks is obscured by vegetation.

Standard Operating Procedures, Best Management Practices for Fuels Management Activities, and Herbicide SOP's are attached (Appendix C & D) and incorporated into this proposed action along with Best Management Practices for Raptors and their Associated Habitats in Utah (MFO RMP Appendix N-1).

### **Mechanical Treatment**

Where soils are deeper and at higher elevations where moisture is more favorable to tree growth there are stands of extremely dense pinyon-juniper growth. Dense pinyon-juniper presents a challenge both from a fuel hazard perspective and as an impediment to restoration. Crown fire potential in these areas is significant because of canopy closure along with an abundance of dead woody fuels remaining on the surface. In accessible dense stands with flat terrain (less than 20% slope) and in areas where rocky outcrops are minimal, a mechanical chipper/shredder or "bullhog" would be used to achieve treatment goals. A bullhog "mechanically shreds" both green and dead trees as well as ladder fuels, scattering the remaining chipped materials (mulch) over the ground and redistributing the fuel load. A recent study shows that understory cover in mastication treatments was 15 times greater following two growing seasons, compared to untreated controls (Ross, Castle and Barger, 2012). Mulched material generated from bullhog treatments would eventually decompose, although future follow-up treatment with prescribed fire could be used in some areas to reach desired wildland fire condition. Units targeted for mechanical treatment and treatment design would be determined through coordination between the fuels staff and Monticello Field Office resource staff.

### **Manual Treatment**

Manual thinning is typically used in areas not suitable for mechanical treatment such as steep, rocky slopes and areas that require mitigation such as cultural or riparian. Selected portions of the proposed treatment area would be hand-cut and thinned with chainsaws by

BLM and/or contract crews. Open areas in the pinyon-juniper would be created to mimic naturally-occurring gaps in size and spatial patterns. In units where stand densities are low and existing surface fuels shallow, hand crews could cut and scatter fuels over the ground for follow-up surface burning. In sparsely vegetated areas, scattered slash and debris would be left intact for soil stabilization and use by small mammal and reptile species.

While scattered fuels retain the surface fuel load necessary for future prescribed fire maintenance, the immediate fire threat is reduced because potential flame height and rate of spread are inhibited by the dispersion of fuels. In some of the more dense stands, hand-cut materials may be piled in specific areas to avoid scorching of live trees. Piles would be located at least ten feet from any green trees and natural openings of cleared vegetation would be utilized for pile placement in an effort to minimize scorch or mortality to residual vegetation. As in the cut and scatter method of fuels reduction, piling of cut materials redistributes the fuel load for future follow-up burning. Vegetation removed through all methods would be selected based on hazardous potential, restoration goals, and retention of the existing character of the landscape. Thinning of living, diseased and other trees would occur in selected areas to decrease stand density while giving consideration to wildlife habitat.

### **Prescribed Fire**

A low intensity understory burn in the Ponderosa pine would provide the most cost-effective and efficient treatment of fuels. Development of the burn prescription would include low-moderate fire intensity to allow mortality of small forbs and shrubs and remove built up surface litter.

The broadcast burn and/or pile burning follow-up treatments would be planned for late fall, winter, or spring periods when fuel and site moisture conditions were high, to avoid fire damage to adjacent vegetation. A detailed burn plan would delineate weather and fuel moisture conditions required to meet fuels reduction and resource objectives. Ignition of the burn would be conducted by hand (drip torches using a diesel/gasoline mixture), aerial ignition, or by truck-mounted terra torch (utilizing a gasoline/alumagel mixture). Aerial ignition would include Plastic Sphere Dispenser (PSD) and/or helitorch operations. Helitorches can produce more heat and are useful when weather conditions are moist and cool or when burning damp fuels. PSD burning is more efficient under drier, warmer conditions. A combination of both methods can be used if there are widely varying fuel and moisture conditions throughout the units.

During the burning of debris, natural and man-made barriers (i.e. hand line or mechanically constructed) and/or an established wetline could be used as control lines. Smoke management would consist of burning when clearing indices comply with Utah Smoke Management Plan guidelines, in order to reduce localized haze and smoke inversion and to provide for maximum smoke uplift and dispersal. To prevent cumulative air quality impacts from simultaneous treatment projects or wildland fires, any portion of the proposed project involving burning would undergo interagency cooperation and consultation prior to implementation.

The use of fire in sagebrush parks can force a conversion to grassland, which would be of detriment to habitat value. For this reason, treatment of sagebrush areas would consist only of manual cutting and piling or mechanical shredding. Any piled material would be burned under conditions which minimize fire spread and damage to the sagebrush community.

### **Seeding**

Units within the entire project area may be seeded following or prior to treatment with both native and selected non-native grasses, forbs and browse species. Seed selection would be determined through collaboration with resource specialists and from monitoring results in similar vegetative communities. Seed selection (appendix G) would also be based upon the most current data regarding the establishment of species likely to promote successional changes toward the desired vegetative community.

Seeding would be accomplished with a broadcast spreader or harrow dragged behind an ATV, tractor or dozer, through the use of a rangeland drill, or by aerial methods. Seeded portions of the treatment area would be rested from grazing for a minimum of two growing seasons following seeding (Rangeland Health Standards and Guidelines Appendix F pg.4 #13 Monticello RMP). Livestock would be kept out of pastures with the use of existing pasture barriers (fences and topographic barriers) in most areas, or new fencing could be required to create pastures in some areas. In the event a single pasture contained several seeded units the pasture could be closed for use entirely until treatment goals were achieved. Treatments would be scheduled over several years to avoid cumulative impacts to grazing permittees. Cattle could be allowed in the area of the proposed action sporadically during the treatment timeframe.

### **Herbicide**

In cheatgrass monocultures and in existing sagebrush stands where perennial species are lacking and cheatgrass is present in the understory, herbicide may be necessary. In general, current cheatgrass populations in the project area are a secondary component of the composition in the vegetative communities. Herbicide control would be in response to cheatgrass response post vegetation treatment that may negatively influence rehabilitation efforts. To control cheatgrass, Plateau® herbicide (or the generic equivalent Panoramic; active ingredient imazapic) may be applied either aerially or by ground. Plateau® may be used to treat degraded rangeland in need of re-vegetation. Areas selected for herbicide application would be treated according to manufactures specifications.

Herbicide application would be carefully recorded and documented. Herbicide use information would be reported to the BLM Utah State Office and the BLM Washington Office. A pesticide use proposal (PUP) would be prepared and approved by the BLM Utah State Office prior to application of the herbicide. The BLM MFO would follow the applicable standard operating procedures (SOP's) for applying herbicide as listed in the Record of Decision Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States Programmatic EIS (appendix C).

### **Biological**

Goats and/or sheep may be used to help in the control of woody species within the project area. Woody Species such as Gambel oak are less susceptible to traditional shrub control techniques (i.e. fire, herbicides, mechanical control) than associated species (Kufeld 1983). Studies have shown that browsing can have a severe (78%) reduction in Gambel oak, while having a strong positive response in sagebrush productivity (Riggs and Urness, 1989). Units targeted for biological treatment and treatment design would be determined through coordination between the fuels staff and Monticello Field Office resource staff.

### **Monitoring**

Collaboration between agencies is a critical step in adaptive management of vegetative communities in southeastern Utah. The Canyon Country Fire Zone has taken the lead in an effort to combine datasets such as past fire occurrence and fuels treatments with newer treatment data from cooperating agencies in southeastern Utah to create a comprehensive look at collective activities on a landscape scale. Monitoring of treatments including documentation of seeding success in sagebrush parks is invaluable in planning for future sagebrush/grassland treatments. Transects and/or photo plots to document fuel load and vegetation composition may be established for this treatment, both before and after mechanical treatment as well as prescribed burning.

Research and monitoring results would be incorporated into management decisions regarding future resource treatments that could include maintenance burning, additional seeding, additional mechanical treatments, and/or other actions. Management decisions requiring treatments not previously analyzed could initiate further environmental assessment.



**Desired Visual Aesthetic Following Fuel Reduction**

### **Desired Future Condition and Project Results**

The desired outcome of the project would include: 1) Protection of WUI areas from high intensity wildfire; 2) reduction of the continuous tree canopy to decrease the probability of resource damage from a high-intensity, stand-replacing wildland fire; 3) a decrease in

tree density and an increase in age-class difference to provide visual variety and biological diversity; 4) the re-establishment of vegetative diversity, vigor, and resilience, resulting in better forage and habitat for wildlife and livestock; 5) a return to a more historic fire regime where low-intensity fire can be utilized to maintain the health and vigor of the vegetative community.

### **2.3 Alternative B – No Action:**

No management action involving fuels treatment would occur to reduce fuel loads or to change the current vegetative condition. Suppression of wildland fire would continue under the current policy, and management of other resources in the area would not change. Future reactive actions such as emergency stabilization and rehabilitation could be applied in response to wildland fire, but no further proactive fuels treatments would be implemented in the near future to reduce the threat from wildland fire to improve watershed conditions, or to enhance forage and wildlife habitat in the area of the proposed project. Fuel loading would continue to increase due to juniper expansion and infilling which would lead to loss of ecosystem function. Fire threat to WUI areas, cultural resources, sagebrush communities, watersheds, elk and mule deer winter range would remain high.

## **3.0 AFFECTED ENVIRONMENT**

### **3.1 Introduction:**

This chapter presents the potentially affected existing environment (i.e., the physical, biological, social, and economic values and resources) of the impact area as identified in the Interdisciplinary Team Checklist found in Appendix A and presented in Chapter 1 of this assessment. This chapter provides the baseline for comparison of impacts/consequences described in Chapter 4.

### **3.2 General Setting:**

San Juan County is located on the Colorado Plateau in the southeastern corner of Utah. The largest county in Utah, San Juan County encompasses over five million acres, 72 percent of which is managed by federal or tribal agencies. Agriculture has been an integral part of the economic base of San Juan County since the late 1800's, although food production among Native American tribes occurred as early as 200 A.D. Farming and ranching activities have decreased in the past twenty years and many of the areas cultivated or used for rangeland are no longer in production. Because the county covers such an expansive area, it includes a diversity of elevations, landforms, and vegetation from high desert to timbered mountains. The average growing season is June 1<sup>st</sup> through October 1<sup>st</sup> and average annual precipitation varies widely between 1.5 and 14.9 inches per year. Temperature averages range from 44 degrees F. in winter months (November-March) to 77 degrees F. in summer months (April-October).

The area proposed for treatment is in the Devil Canyon area located in San Juan County approximately ten miles north of Blanding, UT and nine miles south of Monticello, UT. Highway 191 runs through two of the northern project units with the bulk of the project being located south of the highway. Recapture Reservoir is located approximately four miles to the west of the project and is an important watershed for local communities.

Canyon Terrace subdivision, a small community with several homes and private land parcels is located in the center of the project. The area consists of canyon type country off of the higher mesas and plateaus. Most PJ is located on mid-level benches and elevations range between 5200'-6500'. This entire area is of regional importance due to high densities of archeological sites, panoramic scenery and big-game habitat. The northern portion of the project shares a boundary with Forest Service lands.

The greatest precipitation events in the Devil Canyon area generally occur between July and October in the form of high intensity, short duration, convective thunderstorms that can produce lightning as well as brief periods of high precipitation events (greater than one inch per hour). Fire occurrence in the vicinity of Devil Canyon varies from year to year depending on the amount of moisture associated with lightning-producing thunderstorms. Pinyon-juniper woodlands are the primary fire carrier in the area, with fire intensity a direct result of stand density and weather conditions. "This area has the highest fire occurrence of any other FMU in the fire planning unit with an average of 21 fires and 462 acres burned per year. The 650 acre Coal Bed fire in 1994 and the 1,250 acre Horse fire in 2002 are two examples of large PJ fires in the area. Natural barriers can help to contain fires, but the potential threat to private land holdings in many areas is high" (FMP pg.101).

Drought stress can increase vulnerability to insects and disease, and persistent low fuel moistures contribute to tree flammability. Combined factors can raise the probability of high-intensity fires. A severe wildland fire can create unstable slopes, increased erosion and/or sedimentation, charred ground, and loss of wildlife forage/habitat and forage for livestock.

### **3.3 Resources Brought Forward for Analysis**

#### **3.3.1 Area of Critical Environmental Concern**

The Federal Land Policy and Management Act (FLPMA) requires that in the development of land use plans, priority be given to the designation and protection of areas of critical and environmental concern. Areas of Critical Environmental Concern, commonly known as ACECs, are public lands where special management is required in order to protect the area's values. To be eligible for designation as an ACEC, an area must meet criteria for both relevance and importance. An ACEC possesses significant historic, cultural, or scenic values, fish or wildlife resources (including habitat, communities, or species), natural processes or systems, or natural hazards. In addition, the significance of these values and resources must be substantial in order to satisfy the importance criteria.

The Alkali Ridge ACEC (39,196 acres) lies between Alkali Canyon and Montezuma Canyon and includes Alkali Ridge National Historic Landmark (2,030 acres). The majority of land is owned by BLM except for scattered state sections and some private land holdings.

“This area is one of the best known and influential examples of scientific archeological investigation in the Southwestern United States. This area contains numerous large cultural structural sites that have revealed evidence of the full range of prehistoric pueblo occupation from Basketmaker III to Pueblo III (500-1300 AD), and represents the defining morphological site type for the prehistoric Pueblo II cultural period (900-1150 AD).

The cultural resources located in this area are regionally and nationally significant, and include Basketmaker and Pueblo village sites often reaching densities of 200 sites per square mile. Special management attention is required to protect the fragile nature and extensiveness of the cultural resources to prevent irreparable damage, resulting primarily from oil and gas development. Vegetative manipulation (chaining) associated with grazing and agricultural activities has also contributed to damaged cultural resources in the past. The cultural resources found here are irreplaceable and extremely vulnerable to oil and gas exploration and development, intense pot hunting, increased site visitation and road maintenance in the area.” (ACEC Evaluations for Existing and Nominated ACEC pg.10)

### **3.3.2 Wildlife Including USFW Designated Species**

The proposed project area covers 24,700 acres with a variety of habitat types that are important for many wildlife species. Habitat provides cover, feeding, roosting, breeding, nesting, and refuge areas for a variety of wildlife species including migratory birds, many species of raptors and bats, wild turkeys, elk and mule deer and various small mammal species.

Each wildlife species within the Monticello Field Office area requires a specific set of habitat conditions in order to meet their particular needs for survival and reproduction. Different plant communities at different stages growth are also important in providing habitat requirements. As plant communities move through transitional stages, habitats are occupied by different wildlife species. For the purpose of this EA, special interest species and general groups of species that are more common will be discussed in detail which will generally indicate the effects of other species that utilize the area.

#### *Big Game (Mule Deer and Elk)*

Mule deer occupy most ecosystems in Utah, but are characteristically found in shrublands with rough, broken terrain and abundant browse and cover. Mule deer winter diets consist primarily of browse in the form of sagebrush, bitterbrush, mountain mahogany, and other shrubs, as well as a small amount of grasses and trees. Rocky Mountain Elk can be found throughout Utah and utilize a variety of habitat types throughout the year. Sedges, grasses and forbs comprise most of an elk’s diet. Elk also eat shrubs during the winter, but have an advantage over deer in that they are able to eat a greater variety of plants.



**Mule Deer**



**Rocky Mountain Elk**

The proposed treatment area is within crucial mule deer habitat. Treatment activities could take place throughout approximately 24,168 acres of crucial mule deer winter range as designated in the RMP for the Monticello Field Office. The Devils Canyon project area is adjacent to 10,919 acres of crucial elk winter range. Although the proposed project area is not considered crucial elk winter range as designated in the RMP for the Monticello Field Office, the area does provide habitat for elk. "Crucial winter range" is considered to be part of the habitat necessary to sustain a wildlife population at critical periods of its lifecycle. This is often a limiting factor on the

populations such as breeding habitat, winter habitat, etc. Winter range habitat primarily consists of shrub-covered, south-facing slopes and is often considered a limiting factor for mule deer and elk in the intermountain west.

Because of learned behavioral use patterns passed on from one generation to the next, deer and elk migrate for the winter into the same areas every year, regardless of forage availability or condition. These are generally areas lacking in snow depth which allows for easier movement, within pinyon-juniper and sagebrush vegetation types that provide forage as well as escape and thermal cover.

#### Raptors

The Devil Canyon area and surrounding areas provide habitat of value to a variety of raptors such as eagles, falcons, hawks, and owls. Special habitat needs for raptors include nest sites, foraging areas, and roosting or resting sites. The most utilized raptor nesting habitats are generally found along riparian areas and/or cliff faces. A variety of birds, small mammals, reptiles, amphibians, and insects constitute the bulk of the prey base for raptor species (Palmer 1988).

#### Migratory Birds

There are a wide variety of songbirds and neo-tropical migrants which spend at least part of the year within the general area. Birds that are dependent upon sagebrush and pinyon-juniper habitat that may be found within the proposed project area include species such as: gray vireo, Virginia's warbler, blue-gray gnatcatcher pinyon jay, western scrub jay, and western bluebird. Depending on the species of birds, they primarily consume vegetative material and insects.

#### Bats

Species of bat that are known to occur in southeastern Utah include the fringed myotis, Allens big-eared bat, Townsends big-eared bat, spotted bat, and big free-tailed bat (Mollhagen and Bogan 1997, Bogan et al, 2006), and there is a high probability that they could be found in one or more of the canyon drainages in the proposed project area.

Given the close proximity of different habitat types and the ability of flying bats to move great distances, many bat species probably migrate seasonally among the habitat types. Cliff openings, caves, mines, and buildings are used for day roosting and winter hibernation. Bats are primary predators to beetles, moths, leafhoppers, mosquitoes, and many other insects.

#### Utah BLM State Sensitive Species

The *Utah Sensitive Species List*, April 2011, was used to identify potential habitat for Utah State Sensitive Wildlife Species. Potential Utah Sensitive Species that could occur in or near the project area include Townsend's big-eared bat, Fringed myotis, Big free-tailed bat, Bald eagle, Lewis' woodpecker, Short-eared owl, and Northern goshawk. The BLM's Special Status Species Management Policy 6840 (6840 Manual Section Rel. 6-121) directs the agency to identify and protect sensitive species and species identified as candidates for Federal listing.

A number of wildlife species utilize the pinyon-juniper habitat type for all or portions of their lifecycles. The Utah Comprehensive Wildlife Conservation Strategy (CWCS) lists the ferruginous hawk as a Tier II species with pinyon-juniper as its primary habitat. Tier II species are considered to be "species of concern" for which there is "credible scientific evidence to substantiate a threat to continued population viability" (UDWR, 2005). Other Tier II species that utilize pinyon-juniper habitat as either primary or secondary habitat include the Allen's big-eared bat, fringed myotis, Townsend's big-eared bat, cornsnake, desert night lizard, and western banded gecko.

#### Threatened and Endangered Species

The Mexican spotted owl (MSO) was listed as a threatened species under the ESA (58 FR, 14248-14271) (USDI, 1993) in 1993, because of declining populations. The decline was attributed primarily to the loss of habitat and prey base as a result of timber management practices and catastrophic wildfires that have destroyed the closed canopy mixed conifer forests preferred by this owl in portions of its range. If a stand replacing fire occurs, reestablishment of target conditions for MSO may take over 200 years (Sheppard and Farnsworth 1995).

The U.S. Fish and Wildlife Service approved a Recovery Plan for the MSO in 1995 and subsequently designated critical habitat for this species (69 FR, 53181-53298) (USDI 2004). The Recovery Plan identified several recovery units, the largest of which is the Colorado Plateau Recovery Unit. This unit encompasses suitable habitat types in the southern half of Utah and elsewhere on the Colorado Plateau.

Willey et al. (2007) predicted the location of suitable MSO habitat in southern Utah using geomorphological and vegetation-based habitat variables, where habitat associations were identified by comparing occupied and unoccupied sites located during extensive field surveys. The set of habitat covariates they identified included landscape ruggedness, slope, complexity, relative surface temperature, presence of cool zones, and vegetation cover (Rinkevich 1991 and Willey 1998).

### 3.3.3 Fuels/Fire Management

Aggressive fire suppression programs and several continuous years of drought have influenced the natural fire regime within the proposed project area. The condition class of this area is indicated by the regeneration of pinyon/juniper in what was historically a grass-dominant landscape where low-intensity wildfires swept across the foothills every five to twenty-five years. Most fires were started by lightning and burned in large patches creating a mosaic of open meadowlands. Throughout the area, these historic low-intensity fires prevented the build-up of high density fuels by periodically clearing away brush, small trees, and dead and downed trees.

Presently, the dominant vegetation in the area is juniper with scattered pinyon, ranging from new growth up to trees twenty feet in height. Several small meadows are scattered throughout the wooded area containing grasses, sagebrush and other woody shrubs. A successful treatment in this area would result in fire moving from the tree canopy to the ground through reduction of a continuous canopy. Fire would then spread through perennial grasses, forbs and shrubs, burning at a lower intensity and resulting in safer and more efficient fire control.

Studies show that the average density of pinyon/juniper in sagebrush ecosystems in some Utah areas is 50% higher than it was historically (Chambers, et al, 2005). As pinyon/juniper dominance increases, both fuel loading and continuity continue to multiply with a corresponding increase in the occurrence of crown fire (Miller and Tausch, 2001). As stated in Chapter 1.3, the proposed project area falls primarily in FMU 20, the Montezuma Unit. The largest fires in recent history in this FMU were the 650 acre Coal Bed fire in 1994 and the 1,250 acre Horse Canyon fire in 2002. These fires demonstrated that wildland fires will actively burn in PJ and old chaining areas.

In defining “fuels reduction,” the characteristics that comprise vegetative fuels include crown fuels (live and dead material in the canopy of trees), surface fuels (grass, shrubs, litter, and wood in contact with the ground), and ground fuels (duff, buried wood, etc.). Some of the vegetative components that may contribute to an increase in the number or intensity of crown fires are the continuity and density of the tree canopy combined with fuel moisture levels and wind. Shrubs and small trees also contribute to crown fires both by increasing the intensity of fire on the ground and by serving as “ladder fuels” that carry surface fire to the canopy. Surface fuels can also carry fire when vegetation is dead or has low moisture content. Because of the potential for surface fires to ignite ladder fuels and result in a crown fire, surface fuels must also be considered when planning treatments. The relationship between surface and crown fire has been researched and described (Scott and Reinhardt, 2001), with specific methods identified to help determine stand-level fuels treatment prescriptions.

In vegetative communities such as pinyon/juniper, effective treatments have limited crown fires by first reducing volatile surface fuels and then thinning trees or pruning to elevate the fuel base to above the ground surface. In designing a specific fuel treatment prescription, techniques for reducing crown fire occurrence and severity may include (1) increasing canopy base height, (2) reducing canopy bulk density, (3) reducing forest canopy continuity and (4) reducing surface fuels.

### **3.3.4 Invasive Species/Noxious Weeds**

The expansion of invasive species on public lands, along with the build-up of hazardous fuels, are a major threat to ecosystem health, and one of the greatest challenges in managing vegetation on public lands administered by the BLM. Because the spread of invasive plant species is one of the factors leading to the degradation of watersheds, the improvement of watersheds and water resources through vegetation treatments to control populations of non-native and invasive species is of primary importance in land-use planning. In the year 2000, the BLM estimated that approximately 36 million acres of BLM-administered public lands are infested with weeds, spreading at a rate of 2,300 acres each day (17 States Herbicide PEIS, Page 66).

The proposed action is largely contained in an Upland Stony Loam (Pinyon-Juniper), Upland Shallow Loam (Pinyon-Juniper), and Upland Steep Stony Loam (Pinyon-Juniper) ecological sites, which are dominated by pinyon-juniper (PJ) woodlands (See Appendix E). 965 acres of these PJ communities were previously chained and seeded primarily to crested wheatgrass (non-native species). Currently, crested wheatgrass has reduced in prevalence and soil cover from past seeded levels. Thereby, this situation has increased exposed bare ground with limited herbaceous cover, which may be prone to invasive species and/or noxious weed establishment.

Cheatgrass is an introduced, invasive, and annual grass that is extremely flammable when cured, its seeds have prickly awns, and it has fibrous and shallow roots that provide poor soil stability. It provides fair to good forage quality (less than native grasses) early in the growing season, but mature plants are essentially unpalatable. Cheatgrass occurs in all 50 states and is one of the most extensively established introduced annual grasses in North America (Skinner, 2010). Cheatgrass in the project area is present as a secondary, sub-dominant, component in the plant community's functional / structural groups in the project area. It is not an immediate threat for infestation and dominance, yet a wide-scale disturbance agent, such as wildfire and/or drought, could produce favorable site conditions for the further establishment and dominance of cheatgrass in the area.

There are no known infestations of State of Utah listed noxious weeds in the boundary of the project area. Potential weeds for concern for this area are primarily whitetop (Class A weed), musk thistle (Class B weed), Russian Knapweed (Class B weed), Canada thistle (Class C weed), morning glory (Class C weed), and tamarisks (Class C weed). Class A weeds are the highest priority for early detection and rapid response, Class B weeds are emphasized for control efforts, and Class C weeds may be beyond control, yet efforts are made towards containment of smaller infestations. Vectors for the establishment, infestation, and propagation of noxious weeds are present in the area, such as off-highway vehicle use, livestock grazing, road maintenance, and wildfire.

### **3.3.5 Livestock Grazing**

There are a total of 73 allotments administered within the Monticello Field Office. Livestock use is managed through Allotment Management Plans (AMPs), annual Grazing Application, and/or Grazing Permits, which establish terms and conditions regarding grazing numbers, duration of use, and timing of livestock use. Livestock use is measured

through Animal Unit Months (AUMs), which generally equates to the amount of forage necessary for the sustenance of one cow for a period of one month.

Of these 73 allotments, the proposed Devil Canyon project falls within the following 10 allotments:

Allotment Name	Livestock Numbers	Grazing Season	Percent Public Land	Active AUMs
Alkali Point	90	6/1 - 7/6	100	340
	90	9/1 - 10/15	100	
	90	11/1 - 11/30	100	
	8	2/1 - 02/28	100	
Blue Mountain	10	7/1 - 9/30	100	30
Corral	8	5/20 - 7/19	100	16
Devils Canyon	116	7/7 - 8/31	100	212
Dodge Point	6	6/1 - 10/31	100	30
Dodge Canyon	Unavailable	Unavailable	Unavailable	Unavailable
Long Canyon	40	5/16 - 10/15	70	140
Montezuma Canyon	205	11/1 - 5/31	100	1900
	60	11/8 - 11/30	100	
	60	6/10 - 6/16	100	
	90	6/1 - 10/15	100	
Round Corral	60	6/30 - 7/1	100	8
	60	9/30 - 10/1	100	
Verdure Creek	35	12/16 - 3/15	10	96
	35	3/16 - 5/15	60	
	35	10/15 - 12/15	60	

The Dodge Canyon Allotment was made unavailable for livestock grazing in the MFO RMP. Thus, no livestock use is permitted on this allotment. The majority of the allotments listed in the table above contains acres outside the project boundaries, and have private land within their boundaries that is used in conjunction with BLM administered lands for livestock grazing purposes.

### 3.3.6 Soils

The proposed project area contains several soil map units. These units are described in Appendix E and are shown on the map in Appendix F.

The soil map units are described in detail in the Soil Survey of San Juan County, Utah, Central Part (citation) and the Soil Survey, San Juan Area, Utah (citation). The following is a summary of the primary soil map units for the proposed action:

The 8 (15,394 acres, 62.2% of the project area)–Bodot-Strych-Skos association and similar soils occur on canyon hillsides and benches. These soils are well-drained, have

moderate to moderately rapid permeability, very low to moderate available water capacity, low surface layer organic matter, rapid runoff, moderate to severe water erosion hazard, and slight wind erosion hazard.. The Bodot soil is moderately deep, up to 38" and the Strych soil is very deep, up to 60". The Bodot and Strych soils are located on slopes of 20% to 50 %, rendering them unsuitable for mechanical "bullhog" treatment. The Skos soil is very shallow or shallow, up to 13" deep and is located on slopes of 4% to 30% making portions suitable for mechanical "bullhog" treatment. Some areas of the Skos soil have been chained.

The 46 (2,639 acres, 10.7% of the project area)-Rizno-Cahona-Rock outcrop complex and similar soils occur on the mesas. The Rizno and Cahona soils are well-drained, have moderately slow to moderately rapid permeability, very low to low surface layer organic matter, medium runoff, moderate water erosion hazard, and severe wind erosion hazard. The Rizno soil is shallow, up to 19", has low or very low available water capacity and occurs on slopes of 3% to 15%. The Cahona soil is very deep, up to 60", has moderately high available water capacity, and occurs on slopes of 1% to 8%.

#### Biological Soil Crusts

In arid and semi-arid regions where vegetative cover is generally sparse, open spaces are often covered by biological soil crusts. These crusts are highly specialized communities of cyanobacteria, green algae, mosses, lichens, microfungi, and other bacteria. Formed by these living organisms and their by-products, they create a surface crust of soil particles bound together by organic materials. The crusts promote soil stability, nitrogen fixation, nutrient contributions to plants, soil-plant-water relations, infiltration, seedling germination, and plant growth (Belnap et al., 2001). Biological soil crusts are usually darker than the surrounding soil, due in part to the density of the organisms and to the often dark color of their cyanobacteria, lichens, and mosses. These organisms swell when wet, migrating out of their sheaths. After each migration new sheath material is exuded, thus extending sheath length. Repeated swelling leaves a complex network of empty sheath material that maintains soil structure after the organisms have dehydrated and decreased in size (USGS, 2006). Sheath material is apparent as a marked increase in soil surface roughness, often referred to as pinnacles or pedicles.

Biological soil crusts are typically found on barren soil in plant interspaces and near shallow and surfacing bedrock. Biological soil crusts are not present on bedrock exposures, cliff faces, or talus slopes where no soil is present. Biological soil crusts are present in the proposed project area, their distribution and development influenced by many factors including soil texture and depth, plant cover and management activities. Biological soil crusts are fragile and are severely damaged or destroyed by surface disturbing activities. There is no inventory data to indicate the distribution and development of biological soil crusts for the project area.

#### 3.3.7 Woodland/Forestry

In southeastern Utah, woodlands are primarily mixed stands of Utah juniper (*Juniperus osteosperma*), also known as cedar trees, and two-needled pinyon pine (*Pinus edulis*). The principle forestry uses for these woodlands by the public are for firewood collection

from pinyon and junipers, Christmas trees from pinyons, and fenceline posts from juniper trees.

As shown in Appendix E, 87% of the project area contains Upland Stony Loam (Pinyon-Juniper), Upland Shallow Loam (Pinyon-Juniper), Upland Steep Stony Loam (Pinyon-Juniper), and Upland Very Steep Stony Loam (Pinyon-Juniper) ecological sites. The major vegetative communities associated with these ecological sites are pinyon and juniper woodlands. Approximately 965 acres of these woodlands in the project area were uprooted and eradicated by chainings primarily in the 1950's and 1960's. These formerly treated areas were then seeded to crested wheatgrass. This was done as a range improvement project to provide livestock and wildlife forage and for watershed enhancement. The pinyon-juniper woodlands are currently re-establishing in the previously treated areas and reducing the herbaceous understory and altering hydrologic functions.

The current vegetation composition within the proposed treatment area is dominantly a 30 to 80-year-old pinyon/juniper stand. The natural fire regime in the entire area has been altered as a direct result of past chainings, livestock grazing management, and fire suppression practices. These factors have reduced the natural wildland fire frequency in these woodlands.

The proposed treatment area consists of all ages of pinyon-juniper, including thick closed-canopy stands, as well as groups of young trees that are moving into chained/grass seeded areas and sagebrush communities. This expansion of woodlands is displacing herbaceous plants and sagebrush stands through direct competition and altered ecological processes.

Because stand density within these woodlands directly affects the ability of individual trees to sustain enough resources to survive, more dense stands have higher stress levels per tree than more open stands. These densely packed woodlands become vulnerable to individual tree mortality, especially in drought years. Several species of bark beetles also naturally occur in these woodlands, attacking trees through the bark to feed on the cambium layer between the wood and the bark. The natural defensive mechanism of the tree is to exude sap from a wound, successfully preventing further invasion. If a tree is stressed by over-crowding as well as drought, sap production is reduced and the tree has a greater chance of mortality from beetles. Tree mortality occurs when the insects girdle the tree trunk and sever the tree's ability to transport water and nutrients. In more open stands, individual trees are more able to withstand beetle attack because they are healthier and have more resources available for defense.

In the last 10 years the pinyon pine woodlands have experienced a partial die-off in the project area due to insect (e.g. Ips beetle) attacks. Today, these affected trees are typically standing dead and intermixed through the project area, and unaffected trees are at risk for attack. Beetle killed trees present a high fire risk, especially before needles drop, as the damaged trees can act as tinder for surrounding woodlands.

It has been well-documented that pinyon-juniper woodlands have been rapidly expanding since the late 1800's in the Intermountain West. These semi-arid woodlands have displaced shrub steppe communities, influenced wildlife habitat, and altered ecological processes including fire (Chambers et al., 2005). Much of the wooded portion of the proposed collective treatment area consists of densely packed pinyon juniper trees with little variation in age or tree height.

### **3.3.8 Vegetation Excluding USFW Designated Species**

As shown in Appendix E, approximately 21,539 acres, or 87%, of the 24,766 acres in the project area contains Upland Stony Loam (Pinyon-Juniper), Upland Shallow Loam (Pinyon-Juniper), Upland Steep Stony Loam (Pinyon-Juniper), and Upland Very Steep Stony Loam (Pinyon-Juniper) ecological sites. The major vegetative communities associated with these ecological sites are pinyon and juniper woodlands. 965 acres of these woodlands were chained and seeded to crested wheatgrass (non-native) in the 1950's and 1960's. Currently, young pinyon and juniper trees are re-establishing, and crested wheatgrass is reduced in frequency and cover in these formerly treated and seeded sites.

The remaining 3,228 acres, or 13%, of the project area is composed of Upland Loam (Basin Big Sagebrush), Mountain Loam (Mountain Big Sagebrush), Mountain Loam (Oak), and Semidesert Loam (Wyoming Big Sagebrush) ecological sites (Appendix E). The major vegetative communities associated with these ecological sites are sagebrush, mahogany, Mexican cliffrose, Utah service berry, and gamble oakbrush overstories, with herbaceous plants consisting of Indian ricegrass, blue grama, galleta grass, needle-and-thread, western wheatgrass, and seeded crested wheatgrass. Pinyon and juniper woodlands are partially establishing in these shrub communities and displacing the potential and desired plant communities.

The vegetation composition within the proposed treatment boundary is dominated by 30-80 year old pinyon and juniper stands, which in many areas exhibit a closed canopy with hindered and limited understory development. Lack of maintenance of the previous vegetation manipulation projects, past influences of livestock grazing management practices, prolonged droughts, and fire suppression have altered the natural fire regime of the planning area. The benefits of the original treatments are being lost because of the current decline in productivity, vigor, and diversity of the plant community.

## **4.0 ENVIRONMENTAL IMPACTS**

### **4.1 Introduction**

This chapter provides a summary of the environmental impacts of the proposed action and the no-action alternative. The discussion of environmental impacts focuses on how the proposed action and no action alternative meet the purpose and need and address key issues. The issues evaluated here were determined by the responsible officials to be the key issues related to the proposed action, based on feedback from agency specialists, the public and cooperating partners.

## **4.2 Direct/Indirect Impacts**

Potential impacts to the resources of concern identified in the analysis and planning stage of the proposed project are considered below.

Impacts may be direct or indirect and may include both beneficial and detrimental (adverse effects). Direct impacts may be caused by an action occurring at the same time and place as the proposed action, while indirect impacts may result from the proposed action but may occur later in time. Direct and/or indirect effects to resources from the proposed action are identified below by treatment activity within each resource potentially affected for the 27,400 acre landscape-level treatment (Collective Treatment Area).

### **4.2.1 Alternative A - Proposed Action**

#### **4.2.1.1 Area of Critical Environmental Concern**

The proposed action (e.g. prescribe fire, hand cutting, mechanical shredding, and biological control) will provide additional protection to the Alkali Ridge ACEC by removing heavy fuel loads in the area, which can lead to high intensity wildfire. High-intensity crown fires can be extremely damaging to archaeological sites, especially rock art panels (exfoliation) and flammable artifacts (wood, leather, bone, etc.). Treatment areas will have a cultural survey completed prior to any units being treated. Sites eligible for the NRHP will be surrounded by an avoidance area sufficient to all permanent protection (Monticello RMP pg. 118 ACEC-4).

#### **4.2.1.2 Wildlife Including USFW Designated Species**

Completion of the proposed action would result in a more natural fire regime and reduced risk of high-intensity wildland fire in the crucial deer and elk winter range. The decrease in pinyon-juniper canopy cover would provide an opportunity for the understory of sagebrush, grasses and forbs to increase. As a result, it is expected that the habitat quality and sustainability for wintering deer and elk herds would increase. Additionally, reducing fuels would reduce the risk of catastrophic fire, which is one of the major threats to MSO listed in the recovery plan (USDI, FWS 1995).

#### **Mule Deer and Elk**

Deer and elk may be temporarily displaced during the treatment. Winter work would only be conducted during mild winters; this would prevent added stress to mule deer and elk. No activities in crucial deer winter range will take place from November 15<sup>th</sup> to April 15<sup>th</sup> unless an authorized officer determines that the animals are not present in the project area or the activity can be completed so as to not adversely affect the animals (Monticello RMP, Appendix B pg. 11).

The long-term impacts to deer and elk would overall be beneficial. Considerable research has been done on mule deer and elk responses to mechanical treatments and prescribed burning. Reducing trees, protecting sagebrush parks, and seeding vegetative species preferred by wildlife, deer and elk would increase forage while still providing thermal cover in the winter. This would also help increase survival rates for deer and elk throughout the winter, as well as fecundity rates since females would potentially be

healthier coming off the winter range while pregnant.

### Raptors and Migratory Birds

An intentional take under the Migratory Bird Treaty Act is the deliberate taking of migratory birds when the take is the primary purpose of an action. An unintentional take is the accidental taking of a species as a result of the other management actions. No actions considered in this analysis involve the intentional take of migratory birds. This analysis will focus on the potential for an unintentional take.

By conducting treatments outside of the main portion of the nesting season for raptors and owls (typically March through August) or avoiding surface disturbing activities within spatial buffers to known nests as recommended Best Management Practices for Raptors and Their Associated Habitats in Utah (BLM 2006), direct impacts to nesting raptors would be mitigated. Mitigation could also include protecting known nesting trees and snags known to contain nest sites, thus allowing for future use. Nesting surveys would be conducted to identify occupied nest sites if surface disturbing activities were to be implemented during the March through August period. Long-term impacts would be beneficial by reducing the chance of a catastrophic fire, improving rangeland health, increasing plant diversity, improving sagebrush meadows and reducing soil erosion. Improved nesting habitat would result from opening the canopy and leaving healthy and different age classes of trees. This would also encourage an increase in prey base as the increase in understory vegetation would attract insects and rodents.

By conducting treatments outside of the main portion of the nesting season for migratory birds (May, June, and July), impacts to nesting birds would be mitigated. Nesting surveys would be conducted to identify occupied nest sites if surface disturbing activities were to be implemented during May through July. Long-term impacts would be beneficial by reducing the chance of a catastrophic fire, improving rangeland health, increasing plant diversity, improving sagebrush meadows and reducing soil erosion. Improved nesting habitat would result from opening the canopy and leaving healthy and different age classes of trees. This would also encourage an increase in prey base as the increase in understory vegetation would attract insects and rodents.

Numerous migratory bird species and raptors may use the project area for a portion of the year as noted in the affected environment. A decrease in foraging opportunity would not be expected based on the surrounding areas that contain abundant acreages of suitable undisturbed habitat.

### Bats

The loss of roost habitat (caves, abandoned mines, and rock crevices) is the major threat to bat populations in Utah. Project activities would occur during the day, therefore there would be no direct impacts to foraging bats. Most bats utilize caves, mine and rocky crevices for roosting and will not be impacted by disturbance from project activity. Species, such as the Western red bat may utilize trees as roost sites and project activity may cause bats to flee while roosting, but impacts would be temporary and short term, as alternative roost sites are readily available within the area. Long-term impacts would be beneficial by reducing the chance of a catastrophic fire, improving rangeland health, increasing plant diversity, improving sagebrush meadows and reducing soil erosion. The

increase in plant diversity and understory vegetation would attract and increase the amount of insects.

Project activities would occur during the day, therefore there would be no direct impacts to foraging bats. Most bats utilize caves, mine and rocky crevices for roosting and will not be impacted by disturbance from project activity. Western red bats may utilize trees as roost sites and project activity may cause bats to flee while roosting, but impacts would be temporary and short term, as alternative roost sites are readily available within the area.

#### **4.2.1.3 Fuels/Fire Management**

According to accumulated research results, the most effective strategy in fuel management is thinning of vegetation followed by prescribed fire, piling and burning, and/or mechanical treatment. These activities reduce canopy, ladder and surface fuels and can reduce both the intensity and severity of wildland fire (RMRS-GTR-120, page 27). The proposed action would result in the reduction of regenerative pinyon-juniper and the eventual elimination of chaining debris as well as slash debris from cutting and dispersal of live trees and brush. A successful project would reduce the potential for high-intensity wildland fire while restoring natural ecological processes. A subsequent increase in vegetative diversity and woodland productivity would be expected, with greater availability of soil moisture and lower evaporation rates over the long term from a gradual increase in vegetative understory species. The production of understory grasses and forbs is known to decline as crown cover increases in pinyon-juniper woodlands (Arnold et al., 1964). In reducing the overstory, research shows that at least two-thirds of the crown cover must be removed to achieve a substantial increase in the growth of understory vegetation (Fowler and Witte, 1987). Vegetation that has proven to quickly respond to this type of reduction in pinyon-juniper includes various grasses that flourish from reduced competition from overstory junipers. Research results show additional benefits of increased herbaceous biomass from livestock rest following treatment.

#### **Fuels/Fire Management Collective Treatment Area**

##### ***Manual Treatment***

While scattered fuels retain the surface fuel load necessary for future prescribed fire maintenance, the immediate fire threat is reduced because potential flame height and rate of spread are both inhibited by the dispersion of fuels. Piling of hand-cut slash for future follow-up burning similarly reduces the immediate fire threat through redistribution of the fuel load.

##### ***Mechanical Treatment***

Mechanical mastication treatments do little to affect surface fuels with the exception of compacting and crushing vegetation, and may have the potential to increase surface fire spread and fireline intensity due to fine-wood surface loading from the mulch (Raymond and Peterson, 2005). Spread and intensity can present fire-control issues in the event of a wildland fire following treatment, and high temperature surface fires have the potential to damage soils and new vegetation. The potential to increase surface fire is decreased when mechanical treatment is followed by prescribed fire to remove the resulting fine fuels. However, even if a wildland fire occurs in a mechanically-thinned area, research shows

that the fire would be easier to control than a crown fire in an untreated area (Resh et al., 2007). Consequently, overall impacts from a wildland fire following mechanical treatment may be lower in spite of higher surface fuels because less acreage would be expected to burn than in a crown fire situation.

The reduction of closed-canopy pinyon-juniper from this project would decrease the potential for a crown fire, causing fire to move from the tree canopy to the ground through reduction of a continuous canopy. Fire would then spread through perennial grasses, forbs and shrubs, burning at a lower intensity and resulting in safer and more efficient fire control.

### ***Prescribed Fire Treatment***

The benefits of altering fuel structure and wildfire behavior through prescribed fire have been observed and reported for many years (Weaver 1955, 1957, Cooper 1960, Biswell and others 1973, Fernandes and Botelho, 2003; RMRS-GTR-120, page 24). Because prescribed fire is not utilized to precisely modify stand structure and composition as in mechanical thinning, there is generally less predictability of post-treatment stand structure. However, prescribed fire does influence multiple fuelbed characteristics including the reduction of fine fuels, large woody fuels and other live surface fuels, which can decrease both the spread rate and intensity of wildland fire by changing the continuity of fuels. Decreasing the horizontal fuel continuity can also limit fires to lower intensities and reduce spot fire ignitions. A prescribed fire of low to moderate severity would be expected to benefit most plant communities in the general vegetative communities found in the proposed project area by facilitating the recovery of desired species.

There are inherent risks associated with the use of prescribed fire including the possibility of promoting the spread of invasive annuals. The monitoring segment of the proposed action would instigate follow-up action if monitoring plots showed a high invasive component. Risks of prescribed fire could also involve fire escaping the established perimeter of the burn and related economic and resource damage. However, compared to the large number of prescribed fires successfully completed over the years by BLM crews in the Canyon Country Fire Zone and other state and federal agencies, escaped fires are rare (RMRS-GTR-120, 2004).

### ***Herbicide/Biological Treatment***

Accidental spill, drift or browse from treatments could have a potential negative effect on non-target vegetation in the short term, although SOPs are in place to prevent non-target impacts to adjacent vegetation. The long-term beneficial effects of reducing non-native invasive species, understory shrub components and their hazardous fuel component would outweigh the short-term negative effects.

#### **4.2.1.4 Invasive Species/Noxious Weeds**

Activities and disturbances to the soil surface caused by the proposed treatment methods (e.g. prescribe fire, hand cutting, mechanical shredding, and biological control) could allow for conducive ecological and micro-site conditions for the introduction, establishment, and/or spread of invasive species and noxious weeds.

Mitigation measures built into the proposed action would minimize these potential negative effects with detection of invasive and noxious weed species through monitoring before, during, and after proposed treatment activities. As indicated through monitoring and early detection, adjustments to treatment methods would be made to mitigate any such negative effects and direct control efforts.

The BLM will aggressively control any identified State of Utah listed noxious weeds in the project area utilizing integrated pest management techniques. This will involve early detection and rapid response to control noxious plants as necessary to ensure these non-native weeds do not infest treated acres.

Cheatgrass, an invasive non-native species, poses the greatest threat to infestations post treatment activities. Applications of chemical herbicide, as needed dependent upon conditions and invasive plant response following rehabilitation efforts, would directly hinder invasive species (e.g. cheatgrass) establishment and growth in treated areas. This would enable greater competitive interactions of native and seeded plant species against invasives, which should increase the success rate for the propagation, establishment, and further growth of seeded plants and current vegetative communities. The *17 Western States Herbicide PEIS* (BLM 2007 pp.4-44 through 4-53) discusses Standard Operating Procedures (SOPs) developed to reduce impacts from herbicide use, including Plateau, on vegetative resources, as well as the general impacts of herbicides. An integrated pest management strategy will be followed that includes strict adherence to the SOPs, label restrictions, and mitigations measures to allow for safety, environmental protection, and the greatest desired vegetative response post treatment.

#### **4.2.1.5 Livestock Grazing**

Proposed vegetation treatments would be closely coordinated with the authorized grazing permittees on the 10 allotments affected by the proposed action. A signed agreement by the permittee and BLM, or if needed a BLM decision issued, to rest treatment seeded areas for a minimum of 2 growing seasons, or as needed until plants adequately establish and provide sufficient resilience against grazing pressure, would be reached between the BLM and permittee prior to on-the-ground treatment work. The required rest would be provided through adaptive grazing management, such as herding, fencing, utilizing water away from treatments, and/or not running livestock in project area.

In the short-term, livestock grazing could be impacted by the need to rest the areas selected for seedings for at least two growing seasons as outlined in the proposed action, particularly if a mutual agreement cannot be reached. Partial closure of an allotment could be harmful to livestock operations, as these users are dependent upon federal grazing allotments for livestock forage, especially since these public lands are connected to private lands utilized during the grazing period. These impacts would occur over 50-500 acre treated units that are generally contained in a much larger pasture, thereby potentially necessitating the need to rest the entire pasture. This required rest periods would limit potential distribution of livestock, alter grazing rotations, and may impose the need for the permittee to provide more intensive livestock management (e.g. herding, hauling water, increased maintenance of range improvements, etc.), graze underutilized

areas of the allotments, and/or alter livestock numbers to compensate for the temporary loss of available forage.

These short-term impacts would be partially off-set by the proposed action's ability to use or create additional pastures within allotments (e.g. fencing) that would allow for the remainder of the area to be grazed. The sequence of treatments would be coordinated with the grazing permittee, and be focused one pasture at a time to lessen impacts to the overall livestock operation. Also, the proposed action incorporates Standard Operating Procedures (SOPs) that were developed in the *17 States Vegetation PER* (BLM, 2007) to reduce impacts of herbicide use on livestock grazing.

Long-term impacts would be beneficial to the grazing permittee with treated areas providing enhanced forage production and improved vegetative diversity post treatment. This would be accomplished by removal of pinyon and juniper trees that allows for increased expression of herbaceous plants (i.e. forage), providing a seed mix that includes grasses, rehabilitating degraded areas with desired plants, providing a more reliable forage base, and maintaining previous range improvement seedings to regain production levels.

The use of goats and/or sheep as a biological tool to control woody species may interfere with authorized livestock operations through mixing of animals and overlapping uses. This would be partially minimized through tight control, herding, penning of goats and/or sheep, and with site specific targeting of woody species that does not make measurable overlapping use of authorized livestock forage (e.g. grasses).

Following treatment and re-vegetation of the area, livestock could be drawn into new areas of the pastures. This may shift livestock use patterns, enhance livestock distribution, and moderate overall forage utilization levels and rates.

Also, long-term benefits of completion of the proposed treatments would reduce fuel loads, and continuity of heavy fuels would decrease the potential for high-intensity and large-scale wildfire in closed-canopy pinyon and juniper woodlands. A severe wildland fire event could negatively affect livestock grazing throughout the allotments by reducing the amount of forage, and because it may require an emergency closure of the burn area to livestock grazing. Thereby, the project would reduce these risks and effects.

#### **4.2.1.6 Soils**

Vegetation removal by any method will expose more of the soil surface to water and wind erosion. This will cause decreased water infiltration into the soil, increased surface water runoff and sediment load, increased sedimentation of downstream riparian/wetlands (Ott, 2000), and reduced soil productivity. This impact would be temporary. The establishment of a desirable, diverse, self-sustaining plant community will stabilize the soil surface to a greater degree than existed prior to treatment.

Mechanical treatment with a "bullhog" will cause soil compaction from the operation of the machine. Soil compaction will result in increased surface water runoff and sediment load. The bullhog will reduce the above ground woody vegetation to mulch that will

mitigate many of the impacts expected from the removal of vegetation and soil compaction.

Seeding operations with a tractor pulling a rangeland drill, and/or a tractor or ATV broadcast seeding and drag will cause soil compaction from equipment operation, and will disturb the top 2" to 4" of the soil surface. These impacts will be temporary. Seeding operations will decrease the time required and improve the probability of successful seeded species establishment.

Impacts to the soil from fire are measured by severity. Severity of impacts is determined by fire intensity and duration. Physical impacts include a breakdown in the soil structure, reduced moisture retention and capacity, development of water repellency, and increased soil loss to erosion. Biochemical impacts are most pronounced when burning is of high intensity, with carbon and nitrogen strongly affected. Biological impacts include a reduction in soil microorganisms and invertebrates (Neary, 2004). The prescription for fire in the proposed action would include moderate fire intensity to allow mortality of pinon and juniper trees while minimizing the impacts to the soil. The proposed action will achieve a reduction in the continuous tree canopy and decrease the probability of a high intensity, long duration, stand replacing wildfire and associated high magnitude impacts to the soil.

The operation of mechanical equipment (bullhog, rangeland drill, tractors, ATVs, seed drags) will destroy or seriously damage biological soil crusts. Destruction of biological soil crusts results in decreased organism diversity, soil nutrients, soil stability, and organic matter,

High intensity fire associated with stand replacing wildfire would likely destroy biological soil crusts. Low intensity fire would have few adverse effects on the healthy biological soil crusts in the open interspaces (Warren, 2009).

Undisturbed crusts located proximate to disturbed or destroyed crusts act as an inoculum to increase the rate of recovery to nearby disturbed areas (USGS, 2006). When disturbed, crust recovery rates are dependent on disturbance type, severity, and extent; vascular plant community structure; adjoining substrate condition; inoculation material availability; and climate during and after disturbance. On the Colorado Plateau, studies of scalped plots (severe disturbance resulting in bare soil) reassessed 2 to 5 and 10 to 14 years after disturbance indicated that recovery of early successional cyanobacteria occurred within 14 to 34 years. Recovery times for mid- and late-successional species are unknown, as recovery times are so long no estimates are possible (Belnap et al., 2001).

Following a successful treatment, fire regimes would return to a more natural pattern with fewer indirect soil impacts common to high-intensity fire. The establishment of a vigorous, diverse, and self-sustaining vegetation community would cause an unquantified improvement in soil stability and productivity over present conditions.

#### **4.2.1.7 Woodland/Forestry**

Direct effects to woodlands include burning of woodlands with prescribed fire, and selective mechanical shredding and hand cutting, lopping, and scattering of individual pinyon and juniper trees. These actions would occur over a 5-10 year period in 50-500 acre increments across approximately 24,700 total acres. Roughly 21,538 acres, or 87%, of the project area's ecological sites are associated with pinyon and juniper woodlands (Appendix E). Successful tree removal treatments are specific to a particular site and can depend on timing, the method used for removal, and other details such as soils and weather patterns.

As stated in the proposed action's treatment design and methodology section, old growth trees would be avoided. Thereby, these unique and often irreplaceable ecological values that old-growth stands provide for animal and plant habitat, genetic diversity, and long-term climate records (Kaufmann et al. 1992; Miller et al. 1999) old-growth trees would remain intact.

Proposed prescribed fire of woodlands would provide a natural process to reduce closed canopies of trees, reduce hazardous fuels, create mosaics, and release the existing plant understory that may be supplemented with seeded species. This process would essentially eliminate the woody biomass within the burn unit, and release nitrogen and other nutrients from the burn back into the soil in the form of mineral-rich ash.

Proposed mechanical shredding and hand removal of pinyon and juniper trees would selectively reduce the number and diversify the age classes of these woodlands. Also, removal of pinyon-juniper woodlands encroaching into sagebrush communities would return these Upland Loam (Big sagebrush), Mountain Loam (Big sagebrush), and Semidesert Loam (Big sagebrush) ecological sites towards their natural potential and increase biotic integrity across approximately 3,229 acres, or 13% of the project area (Appendix E).

Proposed biological control using goats and/or sheep would be used to target browsing on woody species, such as gambel oak. Browsing on targeted oakbrush would be at a severe utilization level to reduce their canopies, fuel loads, and partial termination of plants.

Pinyons, junipers and shrubs typically re-establish in four to six years, and additional treatment would be necessary to these stands from overtaking treated sites, which would be expected to occur within forty to sixty years without further treatment (West and Van Pelt, 1987).

Previous range improvement projects in the 1950's and 1960's in the project area removed approximately 965 acres of the woodland community and then seeded the area to grass. Pinyon and juniper trees are re-establishing in these sites and lowering desired ecological conditions and productivity. The proposal is in part maintenance of these previous range improvements that would partially eradicate the re-growth of trees by utilizing natural processes, such as prescribed fire, and selective removal of individual trees by hand cutting and mechanical shredding.

Allowing woodland harvesting permits to be distributed in the thinned and piled areas, as proposed, could advance the removal of trees and slash debris from previous treatments and within portions of the untreated proposed area.

A reduction in the presence of woodlands would lower fuel loads and reduce the possibility of wildfires on a high intensity and large landscape scale. This would be beyond management objectives that cause total stand loss and greater potential for further sagebrush reductions. Thereby, the proposal would help restore proper fire intervals, intensity, and burn size, which would allow for the future use of wildfire as a tool for land management practices.

Overall, a successful project would restore natural ecological processes, reduce crown fuels, stimulate understory growth, increase the age-diversity of remaining pinyon and juniper trees, and provide increased soil moisture availability for remaining trees and vegetation. The health and vigor of the reduced numbers of pinyon-juniper would provide better defenses against drought and insect depredation.

#### **4.2.1.8 Vegetation Excluding USFW Designated Species**

Natural recovery of proposed treatment areas to a desired ecological condition is not feasible due to impacts from past disturbances (e.g. drought, wildlife and livestock pressure, past manipulations, etc.) that altered the vegetation's transitional state. A portion (approximately 965 acres) of the proposed treatment area have been previously treated, chained, and seeded in the 1950's and 1960's as a range improvement with no follow-up maintenance to date. This situation has altered current ecological processes, and necessitates the need for proposed re-vegetation efforts to help restore and stabilize vegetation with a diversity of functional and structural plant groups that sustains the desired level of productivity and properly functioning conditions on public lands. Successful re-vegetation efforts through proposed treatments methods and reseeding should enable a mixture of plant communities that better serve the needs for plant productivity, biotic diversity, desired species habitats, and the fundamentals of rangeland health.

The proposed treatments would directly remove the existing vegetative structure and cover through prescribe fire, or partial woodland cover removal through mechanical (e.g. bull hog) and/or hand cutting efforts, across approximately 24,700 acres. This would be done incrementally in 50-500 acres over a 5-10 year period, or as needed for successful rehabilitation of treatment areas.

Proposed prescribed fire would provide a natural process to reduce closed canopies of trees, reduce hazardous fuels, create mosaics, and release the existing plant understory that may be supplemented with seeded species. This process would essentially eliminate all vegetative biomass within the burn unit, and release nitrogen and other nutrients from the burn back into the soil in the form of mineral-rich ash. The initial loss of plant biomass resulting from prescribe burning would be short-term, until seeded and existing desired plants germinate, sprout, regrow, and establish to provide for biotic integrity post fire. In the long-term, early seral vegetative communities will establish, propagate, and

dominant post fire and provide for soil stability, desired species composition and diversity, and rangeland health.

Proposed mechanical treatment in deeper and more productive soils would shred green and dead tree canopies. This would create a mulch layer from masticated trees on the ground's surface. An initial decrease in vegetation cover would occur immediately following mechanical treatment. This mulch and debris from the treatment would have a stabilizing effect on soils and vegetative communities. It would provide a protective layer for seedling germination, retain moisture, and allow existing understory plants to recover post treatment.

Removal of pinyon and juniper woodlands encroaching into sagebrush communities on approximately 3,229 acres would return these Upland Loam (Big sagebrush), Mountain Loam (Big sagebrush), and Semidesert Loam (Big sagebrush) ecological sites towards their natural potential as described in ecological site descriptions and increase biotic integrity. This would benefit rangeland health over the long-term and maintain desired functional and structural plant groups at a level appropriate for the site.

Proposed use of goats and sheep as a biological tool to control woody species would cause severe utilization on browse species (e.g. gamble oakbrush). This may lead to degradation and potential death of the plants. Yet, oakbrush would likely re-sprout and re-establish in several years after the goats and/or sheep are removed. Use would be controlled through temporary fencing and active herding, yet potential exist for excess denuding of non-target plant material in areas utilized by goats and sheep. This may hinder desired vegetative recovery in these targeted vegetation zones.

Proposed temporary fencing around treated areas would displace and crush vegetation immediately along the narrow fence corridor through installation efforts and tendencies for livestock travel along fencelines in the short-term. This situation would be minimal in the overall extent of the vegetative communities as the fences would be built to the minimal degree necessary and compose a minor linear component of the rangeland.

The actual application of aerially applied seed would have minimal direct effect to treated areas until seeded species are established. Broadcast seeding, drill seeding, and harrowing would have a direct short-term effect to remaining plant populations through physical displacement by the equipment and drill, yet this situation would be minimal in extent as the equipment is designed for rangelands conditions. Successful establishment of seeded species, in conjunction with native plant re-growth, would allow positive long-term direct effects by providing an appropriate level of desired species for the site.

Monitoring would be conducted to determine if objectives of the proposed action are achieved and to determine potential impacts post-treatment. This collected data would help make management decisions to direct modifications in the proposed actions, if needed, to make progress to achieving desired rangeland rehabilitation efforts.

The treatment efforts would help to restore many functions of the affected ecological sites. This would be accomplished by removal of pinyon and juniper trees that allows for

increased expression of understory plants, providing a seed mix that includes a diversity of plant species, rehabilitating degraded areas with desired plants, and maintaining previous range improvement seedings to regain productivity levels. These factors would assist the proposal area in achieving rangeland health and associated standards by allowing for proper ecological processes to support healthy biotic populations and communities (USDI, 2005). Successful treatments would restore natural ecological processes with a subsequent increase in vegetative diversity, productivity, composition, and cover rates.

#### **4.2.1.9 Mitigation Measures**

Only two mitigation measures other than those incorporated into the proposed action have been identified.

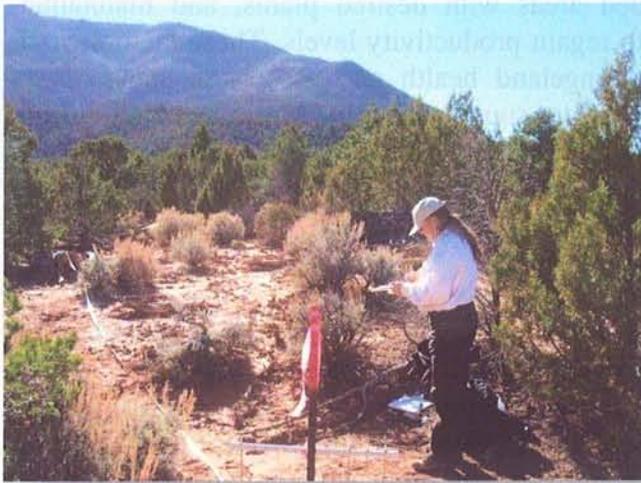
1.) As stated in 3.3.2 Wildlife (page 18) in this EA, the Devil Canyon project contains crucial mule deer winter range as designated in the RMP for the Monticello Field Office. Crucial mule deer winter range is protected from surface disturbing activities from November 15 to April 15, although there may be an occasion when weather conditions could allow project work to be accomplished during this period. The Field Office Manager may determine that an exception to this restriction may be allowed if, after an analysis, the authorized officer determines that the animals are not present in the project area or the activity can be completed so as to not adversely affect the animals. Routine operation and maintenance would be allowed during this period.

2.) Within the Alkali Ridge ACEC all cultural properties eligible for or listed on the NRHP would be surrounded by an avoidance area sufficient to avoid direct and indirect impacts. An exception could be granted if the BLM authorized officer determines that avoidance of direct and indirect impacts to historic properties is not feasible (Monticello RMP app. B pg. 7).

#### **4.2.1.10 Monitoring and/or Compliance**

Transects and/or photo plots to document fuel load and vegetation composition would be assembled within the treatment area prior to project implementation. Monitoring results would be documented prior to treatment and for a period following completion of the project. A successful reduction in fuel load and reduced flammability of the treatment area, in addition to improved habitat and forage, would indicate desired goals had been reached.

BLM monitoring projects are ongoing from Canyon Country Fire Zone treatments in similar vegetative communities in the Moab, Monticello and Price field offices, and treatment results are utilized in both design and methodology for newly proposed projects. Because restoration is a relatively new science, treatments may deviate from the predicted or desired outcome even in a carefully planned and implemented treatment.



**Plot Set-up Prior to Treatment**

Treatment monitoring is therefore essential to improve future project planning as well as to contribute to the growing database of monitoring results. Partnership between agencies is a critical step in adaptive management of forests and woodlands in southeastern Utah. The Canyon Country Fire Zone has taken the lead in an effort to combine datasets such as past fire occurrence and fuels treatments with newer treatment data from

cooperating agencies in southeastern Utah to create a comprehensive look at collective activities on a landscape scale.

Joint research studies have taken place in several other project areas within the Moab and Monticello Field offices. The BLM and the University of Colorado (CU) are collaborating on research studies to evaluate different types of fuels management treatments (mechanical, manual and prescribed fire) to measure potential effects on soils, water quality and vegetative recovery.

Research collaboration supports the BLM's ongoing efforts to better understand the ecological processes occurring in pinyon/juniper woodlands and assists in the design of future treatments in this type of ecosystem. Research and monitoring results from the Devil Canyon Fuels Reduction and Vegetative Restoration Fuels Treatment project would be incorporated into management decisions regarding future resource treatments in this area as well as in other areas of the Canyon Country Fire Zone. Further treatment in this project area could include maintenance burning, additional seeding, reintroduction and/or adjustment of grazing seasons or numbers, additional fuels treatments, and/or other actions. Any work to be completed on State, Private or SITLA lands will comply with all federal regulations and mandates (i.e. archeological clearance, special status species surveys etc.). Management decisions requiring treatment methods not previously analyzed could initiate further NEPA analysis.



**Photo Plot Monitoring Following Hand-cut Treatment**

In addition to fuels monitoring, post treatment monitoring of cultural resources will be conducted.

#### **4.2.2 Alternative B – No Action**

If the proposed project were not approved, there would be no direct, indirect or cumulative impacts resulting from management action in this area. The following resource analyses are based on potential results from taking no management action.

##### **4.2.2.1 Area of Critical Environmental Concern**

With no treatment, the risk of an intensive stand-destroying fire would be high. The Alkali Ridge ACEC, which is one of the best known and influential examples of scientific archeological investigation in the Southwestern United States, could be at risk of losing irreplaceable cultural resources. A stand destroying fire would denude the landscape of all vegetation and expose many of the cultural sites. Exposure could make the area extremely vulnerable to intense pot hunting and increased site visitation.

##### **4.2.2.2 Wildlife Including USFW Designated Species**

While the no-action alternative would not significantly impact wildlife, the eventual occurrence of a high intensity and potentially stand-replacing wildland fire would have direct adverse impacts. A wind-driven, canopy fire event would typically alter the animal community and habitat more dramatically than an understory fire, as animal species are adapted to survive fire patterns of high fire frequency and low severity. The impact to wildlife from a high-severity fire in the proposed project area would depend on the tree density and the amount of grass in a given area. Most animal species respond predictably to wildland fire, although responses vary widely among species (Komarek, 1969). Large, intense fires are dangerous to animals caught in their path, and animals with limited mobility living above ground appear to be the most vulnerable to injury and mortality from fire. The removal of groundcover as a result of a high-intensity fire would affect prey species such as raptors by temporarily reducing the number of prey available for consumption. Bird mortality from wildland fire would depend on the season in which the

fire occurred. For example, species nesting in the tree canopy could be injured in a wildland fire, but fires in pinyon-juniper areas often occur in the hotter summer seasons rather than during nesting season.

Studies show that many bird species will take advantage of woodlands altered by wildland fire, but others abandon burned areas because the ecosystem no longer supports the habitat required for their survival and reproduction. Spotted owls in south-central Washington reportedly continued to use areas where low-intensity fire had occurred, but abandoned stand-replacement areas (Bevis and others, 1997). The number of bird populations absent or declining two years following fire has been reported to exceed populations that are stable or that increase after fires in a variety of shrub and grassland habitats (RMRS-GTR-42-vol. 1, page 21, 2000). Literature research shows that bird communities are disturbed for at least two years by stand-replacing fires, although vegetation usually responds more slowly after fire in dry forest such as pinyon-juniper. Changes can be positive for insect-eating and seed-eating bird species, but can adversely affect species that depend on bark and foliage such as woodpeckers.

Stand-replacing fires and severe, high-intensity wildland fires can trigger high rates of mammal emigration because of their dependence on vegetation for forage, cover and thermal protection. Small mammal species are also adversely affected when their habitat burns and may relocate due to decreased protection from predators and competition for decreased food sources.

Invasion by non-native plant species, particularly cheatgrass in sagebrush ecosystems, increases fuel load and continuity which results in increased fire frequency. More fires result in the spread of invasive annuals, which disrupts the balance of shrubs/forbs and native grasses and threatens the native habitats of sagebrush obligate species such as sage grouse, sage sparrow, Brewer's sparrow and sage thrasher.

#### **4.2.2.3 Fuels/Fire Management**

With no treatment, the risk of an intensive stand-destroying fire would be high. Stand-destroying fires effectively eliminate existing forage and wildlife cover. A decline in vegetative diversity would continue into the future if pinyon/juniper regeneration were allowed to continue unabated. If no action were taken to reduce the hazardous fuels threat continued fuel loading would pose a greater wildfire hazard than currently exists. A combination of high temperatures, low relative humidity, winds, and/or continued drought conditions could create the potential for a catastrophic and hazardous fire, jeopardizing the health and safety of property owners and firefighters and posing a threat to public property.

#### **4.2.2.4 Invasive Species/Noxious Weeds**

Potential for the spread of invasive, non-native plant species and noxious weeds would be low since no surface disturbance would occur. Annual control of noxious weeds would continue to occur as determined by early detection and rapid response, and currently the area is clean of known noxious plants.

If a stand replacing fire were to occur, it may cause an increase in dominance and cover of non-native invasive plants (e.g. cheatgrass). A proliferation in cheatgrass, in turn, may lead to a potential increase in fire frequency due to its flammability.

#### **4.2.2.5 Livestock Grazing**

Under the No Action Alternative, livestock grazing would continue under current management and there would be no need for required rest periods under the Proposed Action. There would be no potential benefits to the 10 allotments that may have been realized from the fuels reduction and corresponding improvement in vegetative diversity, vigor, and productivity.

A lack of maintenance across approximately 965 acres of previous range improvement projects (e.g. chainings and seedings) would allow for the continued re-establishment of pinyon and juniper trees in these previously treated sites. This reduces herbaceous understory plants and reduces the carrying capacity for livestock on the rangelands.

Fuel loads would continue to increase, thereby escalating the chance of large wildland fires that would impact intact native perennial grass/shrub communities and existing range improvements. This could lead to emergency livestock grazing closures of a large area, thereby limiting livestock use of authorized allotments.

#### **4.2.2.6 Soils**

The no action alternative has the greatest potential for indirect impacts to soils due to an increased risk of a large scale high-intensity wildland fire if the area is left untreated. In the absence of a fuels reduction treatment, the existing densities of pinyon-juniper and woody debris that have accumulated over the years would increase, along with the projected likelihood of a high severity wildland fire. Although fire suppression activities would continue as in the past, a fast-moving wildland fire could out-pace suppression efforts and the fire could potentially affect a large area. Research has shown that woodland encroachment into sagebrush steppe systems increases surface runoff and erosion (Miller et al., 2005). Runoff and erosion rates are highest in the inter-space zones between canopies and can negatively affect wildlife habitat and decrease soil productivity.

#### **4.2.2.7 Woodland/Forestry**

The pinyon and juniper woodland would remain intact and fuels loads would increase under the no action alternative. No treatment would result in further maturation of the pinyon-juniper woodlands with a simultaneous decline in herbaceous understory's ground cover, productivity, and diversity. Increased canopies of pinyon and juniper trees into an Upland Loam (Big sagebrush), Semidesert Loam (Big sagebrush), and Mountain Loam (Big sagebrush) ecological sites and previously treated rangelands do not maintain hydrologic cycles, increasing surface run-off, in turn can negatively influencing soil stability.

The past vegetative treatments of chainings and seedings would not be maintained, and allow for the further encroachment of pinyon and juniper woodlands into these previously treated range improvements. As a result, there would be a further decline in the

productivity and altering vegetative groups from desired ecological conditions in the Upland Stony Loam (Pinyon and Juniper), Upland Shallow Loam (Pinyon and Juniper), and Upland Loam (Big sagebrush), Semidesert Loam (Big sagebrush), and Mountain Loam (Big sagebrush) ecological sites.

With no treatment, given the current fire regime and condition class, the risk of an intensive stand destroying fire in the project area would be high. A combination of high temperatures, low relative humidity, winds, and/or drought conditions could result in a stand replacing wildland fire that would eliminate existing ground and wildlife cover. The potential also exists in this particular area for a wildland fire originating on BLM lands to spread to adjacent private and/or United States Forest Service administered lands as well.



**Pinyon/Juniper Woodland following Stand-replacing Wildland Fire**

#### **4.2.2.8 Vegetation Excluding USFW Designated Species**

Under the No Action Alternative, there would be no direct impact to vegetation resulting from the Proposed Action's use of rangeland equipment (e.g. bull hog, drills, harrows, tractors, etc.), herbicides, burns, hand cutting, biological control methods (e.g. goats and sheep), and/or from fencing.

Vegetation within the proposed treatment areas would continue in their current ecological condition. Sagebrush communities would continue to be encroached by pinyon and juniper woodlands in the Upland Loam (Big sagebrush), Mountain Loam (Big sagebrush), and Semidesert Loam (Big sagebrush) ecological sites. Past vegetative treatments would not be maintained and also be further encroached by woodlands. These situations result in the decline in productivity, oppression of herbaceous understories, and hindering of biotic integrity at these sites. Desired species would not be maintained at a level appropriate for the sites and species involved.

These situations of altered levels of desired plant communities appropriate for the site and species involved influences Standard #3 (Biotic) for Rangeland Health (USDI, 2001). Indicators for rangeland health will likely be departed from expected levels identified in ecological site descriptions and/or ecological reference areas due to plant communities

not sustaining or maintaining the desired level of productivity and modified ecological processes.

Other indirect impacts include the increased potential for high intensity, large scale wildland fires across the various ecological sites due to increased fuel loads associated with expanding pinyon and juniper woodlands. This situation may cause soil sterilization that would limit vegetative response after a high intensity wildfire. Also, cheatgrass (non-native, invasive plant species) would have a greater opportunity for establishment post high intensity fire that could displace native and desired vegetative communities.

#### **4.3 Cumulative Impacts Analysis:**

“Cumulative impacts” are those impacts resulting from the incremental impact of an action when added to other past, present, or reasonably foreseeable actions regardless of what agency or person undertakes such other actions.

- **Increased recreational use of BLM lands within the planning area**

Southeastern Utah and BLM lands in particular experience heavy seasonal recreational visitation which has more than doubled in the past twenty years. Recreationists include those visiting the area to engage in personal recreational activities as well as those who attend many of the special events in the area and/or participate in an organized activity with a commercial outfitter. Recreational use includes camping, OHV use (ATV, dirt bike, and four-wheel driving), mountain biking, horseback riding, hiking, and river recreation including river corridor camping. There are developed recreation sites throughout the Monticello Field Office with facilities including campgrounds and picnic areas (tables, dumpsters, shade shelters, fire grills, etc.), vault toilets, boat ramps, information boards, and parking lots.

Because visitation has increased every year since 1999, it is estimated that the number of visitors will continue to increase and that the demand for facility development will increase concurrently. Priorities for suppression of wildland fires include not only protecting firefighter and public safety, but also preventing damage to BLM improvements.

- **Continued expansion of mineral extraction activities associated with oil and gas, coal, copper, and uranium/vanadium**

Exploration and development will continue to expand throughout the planning area. Oil, gas, uranium, gold, and potash exploration and production has been on the rise, and it is likely that resources will continue to be developed over the next fifteen years.

- **Transportation and utility corridor development, expansion, maintenance, and improvement**

Cumulative impacts to the viewshed in the Monticello Field Office are resulting from increases in recreation and visitation as well as from the development of utility corridors, oil and gas production, and other land use disturbances. The increasing number of two-track roads and routes allow OHV users, campers, and woodlands harvesters to access

more backcountry areas. As the 2008 ROD/RMP for the Monticello Field Office designates areas available for off-road travel, it is also possible that areas previously open may now receive fewer visitation numbers with associated decreases in human-caused wildland fire ignitions.

- **Continued and increased invasive/non-native weed infestation**

Major areas of uplands and rangelands are being converted to invasive annual grasses such as cheatgrass, as well as halogeton, Russian thistle, and Russian knapweed. These species become a fire hazard in wet years, produce little forage in dry years, and prevent the establishment of native species.

The Invasive Species Executive Order 13112 encourages all agencies, including the BLM, to research mechanisms to control the introduction and spread of invasive species. Invasive/non-native weed infestation can spread to BLM lands from adjacent public and private lands and vice versa. The BLM Noxious Weed Program has identified and documented populations of invasive/non-native/noxious weeds in the Monticello Field Office area. These sites are monitored annually and controls and/or treatments are applied as dictated by time and budgetary constraints. This ongoing monitoring, documentation, and treatment program supports the achievement of DWFC goals by identifying potential treatment sites and reducing the likelihood of sites that may go un-noticed, uncontrolled, and that could spread further if untreated.

- **Continued human-caused and natural ignitions of wildland fire**

Human-caused fires can increase along major highways in wet years when annual grasses have matured and dried. If these climatic conditions occur in combination with an increase in the number of visitors to an area, the occurrence of wildland fire can increase. Wildland fire as a result of natural ignitions can also depend on FRCC (vegetative conditions) and seasonal conditions. Extended periods of drought, low fuel moistures, and environmental influences, for example, can all affect human-caused wildland fire spread.

#### **4.3.1 Past and Present Actions:**

Past or ongoing actions that affect the same components of the environment as the proposed action are:

Other fuels reduction treatment projects have occurred on BLM and USDA Forest Service lands in the general area. The BLM reduced pinyon-juniper woodlands along portions of the Devil Canyon project in the early 1960's through the use of an anchor chain-type treatment in which trees were upended and root balls exposed.

Positive long-term impacts from the completion of this project would include increased ability to directly attack wildfire, increased safety and efficiency of fire suppression forces, and the protection of public health and private property. If implemented, the proposed action would result in continuing vegetative improvements such as the establishment of quality forage species.

Under the no-action alternative, fuel loadings would increase exponentially and could lead to a severe wildfire event that could cause damage to private homes and structures and compromise the health and safety of both the public and firefighters. A high intensity wildland fire could also lead to increased growth of noxious weeds and other invasive species, resulting in an increased fire frequency rate.

Past and present actions that have impacted soils include road construction, power line and pipeline construction, oil and gas exploration and development, and pinon and juniper chaining.

Power line and pipeline construction, oil and gas exploration and development, and pinon and juniper chaining have been actively reclaimed or show adequate natural re-vegetation. This has stabilized the soil surface resulting in no significant cumulative soil impacts.

Road construction and use, both designated and undesignated, would continue to cause impacts to soils, effectively removing these areas from soil productivity.

#### **4.3.2 Reasonably Foreseeable Action Scenario (RFAS)**

The following RFAS identifies reasonably foreseeable future actions that could cumulatively affect the same resources in the proposed project area as the proposed action and no action alternative. Cumulative effects are incremental and can result from projects such as the proposed action as well as other past, present, and reasonably foreseeable future actions.

Multiple activities to differing degrees have previously affected portions of the proposed project area. These include wood gathering, hunting, dumping of miscellaneous wastes, and recreational off-highway vehicle (OHV) use; fire control and fuels treatments (chaining); livestock grazing management; and oil and gas exploration. Any of these activities could continue or increase in future years and could impact the area encompassing the proposed project.

Public burning of weeds as well as wood and coal stove smoke occurs in the area and can affect air quality. These activities have not resulted in violations of Utah air quality standards, and therefore the additional impact of smoke from the burning portion of this project would not be expected to exceed standards.

Invasion and/or spread of non-native species (noxious weeds) could affect vegetation within the proposed area. Other fuels reduction treatment projects have occurred on BLM and State-owned parcels in the general area which could decrease the spread of noxious weeds through successful regeneration of native and non-native plant species. Monitoring of the project area would be ongoing following treatment and results could warrant further management action if non-native species proliferate in this area.

Thinning and tree removal from the proposed action would directly reduce the chance of wildland fire spreading from public to private land or the reverse. Because firefighter access to both public and private lands would be enhanced through completion of this

project, it is expected that future firefighter safety and effectiveness of wildland fire control would result.

The proposed action is the only proposal that would impact the soil resource in the Cumulative Impact Analysis Area (CIAA). The Monticello planning area Reasonable Foreseeable Development Scenario for Oil and Gas predicted that 5 oil and gas wells would be drilled per year on BLM lands. To date, there are no proposals for oil and gas drilling in the CIAA.

#### **4.3.3 Cumulative Impacts:**

The distribution of vegetative communities across a landscape are primarily influenced by soil type, elevation, precipitation, topography, and on public lands in varying degrees by management of land uses such as livestock and wildlife grazing, roads, oil, gas, and mineral development, and recreational uses. Vegetative communities form a mosaic pattern across the landscape of the Canyon Country Fire Zone, sometimes occurring in relatively homogenous stands but more often occurring in various species combinations and associations that may be affected indiscriminately by the land uses listed above as well as other uses. Many of the lands adjacent to public lands are undergoing urbanization, which can result in impacts such as increased human-caused fire threats and further fragmentation of vegetative communities.

Recent influences to vegetative communities have occurred as a result of extended periods of regional drought across southeastern Utah, which has brought about changes in the types and distribution of vegetation. The effects of regional drought are still being studied, although research and monitoring indicate severe stress to particular species and in some cases loss of significant portions of vegetative communities in the region; in particular, pinyon pine, sagebrush, and salt desert shrub species. Drought stress is in addition to a documented increase in the distribution of invasive species, particularly halogeton and cheatgrass.

Below normal precipitation and variations in seasonal weather patterns over the region are coupled with an increase in overall temperatures recorded over the past century. According to a recent report from the United States Geologic Survey (USGS) Office of Global Change, the southwest portion of the United States is likely to experience summertime temperature increases greater than the annual average over the next decades ([www.globalchange.gov/usimpacts](http://www.globalchange.gov/usimpacts)). This temperature increase could have a variety of long-term effects including: Plants entering spring green up earlier and going into dormancy later, altered snowmelt patterns and subsequent water availability, changes in evapo-transpiration dynamics and soil infiltration capacity, and growth impacts in particular species as a result of decreased nutrient uptake. The uncertainty associated with future climatic conditions makes the identification of cumulative effects uncertain to some extent. If the current ongoing regional dry trend continues and temperatures continue to rise, restoration and treatment efforts could take longer, be more costly and time-consuming to implement, and/or could be subject to increased failure rates. Climate change is also predicted to have fire regime effects including an increase in fire frequency and extent in years that fuels have accumulated from the previous growing season. Increased temperatures would most likely result in longer fire seasons with a higher

number of fires occurring both earlier and later than the fire season that has been typical over the past 100 years (Chambers and Pellant, 2008). Fires that occur on adjacent lands managed by other entities could affect natural resources such as soil, vegetation, water and wildlife in the area encompassing the proposed action. In the case of a large fire on adjacent lands, less native vegetation would be available to serve as a seed source for burned areas on BLM lands, and there may be less vegetative cover for wildlife species on BLM lands.

It has now become well accepted that a link between rising carbon dioxide levels and generally increasing temperatures will lead to a national focus on global climate change as it relates to the reduction of the human “carbon footprint” as well as to the sequestering of carbon in vegetative communities such as forests, grasslands, and sagebrush meadows. Currently, forests and other vegetative communities absorb carbon dioxide from the atmosphere and store it as carbon, offsetting up to twenty percent of the nationwide human-caused carbon emissions (Knudson, 2008). Grasslands and planted pastures also store carbon in aboveground vegetation as well as in the soil organic matter (Sharrow, 2008). Although land management practices and specifically fuels reduction projects will affect carbon storage on a particular project site, it is hard to predict an impact because research in this area is still in the beginning stages. For example, a recent study near Corvallis, Oregon comparing carbon inventories for pastures, forests, and pasture/forest combinations, showed that all test sites had roughly the same total amount of stored carbon. It should be noted, however, that carbon storage above the ground was higher in forested vegetation and carbon stored below the ground was higher in pasture land (Sharrow, 2008). Generally, the rehabilitation of rangelands is one of the practices that would likely increase carbon storage because of the expansive area covered by these lands. Because rangeland productivity can vary greatly from year to year considering location, weather factors, and vegetative variability, carbon sequestration rates would be difficult to measure as well as to sustain at a consistent level over the long term.

Although prescribed fire releases carbon dioxide while burning, prescribed fires are generally much lower in intensity than wildland fire and therefore release less overall carbon. Prescribed fire can also reduce the probability of high-intensity wildland fire and can therefore be considered effective at reducing emissions. Mechanical treatments that reduce the risk of wildland fire and associated high carbon emissions are also considered to have beneficial effects in that they store carbon in mulched soils.

General cumulative impacts to threatened, endangered, or candidate plant and animal species could result from land uses which are ongoing or that have historically occurred in the area. BLM authorized land uses include but are not limited to livestock grazing, on- or off-road recreation by motorized and non-motorized vehicles, oil and gas activities, camping, hiking, hunting, wildlife viewing, rights-of-way development and maintenance, and mining. With the exception of recreation, which has increased drastically in the past ten years, most ongoing activities have been constant over the past 80-100 years.

Treatments that remove hazardous fuels would be expected to benefit the long-term health of plant communities in which natural fire cycles have been altered. The

suppression of fire on pinyon-juniper woodlands has resulted in the growth of substantial acres of dense closed-canopy trees as well as the buildup of litter and dead woody materials in the understory of these woodlands. Treatments designed to restore and maintain fire-adapted ecosystems would decrease the effects of wildland fire on plant communities and would generally improve ecosystem resilience and sustainability.

Long-term benefits to special status and non-status plant and animal habitat could result from a return to more natural fire cycles and improved ecosystem function. Species in general could benefit from well-functioning ecosystems and cumulative impacts could include increased habitat/population connectivity as well as enhanced migratory corridors, habitat structure, forage, and stability.

The proposed action would cause temporary and long term impacts to soils, as described in Chapter 4.2.1.6. Long term cumulative impacts from the proposed action would be an un-quantified improvement in soil stability and productivity due to the establishment of a vigorous, diverse, and self-sustaining vegetation community.

The primary focus of the proposed project is to reduce the hazard of wildland fire in the San Juan County area. Reduction of fuels in the immediate vicinity of homes and other structures is considered to be the most efficient and effective way to reduce the public health and safety impacts of uncontrolled wildfire. Hazards would be reduced when all debris was burned and the project completed.

After completion of the proposed project, wildfire moving into the project area would drop from the tree canopies to the ground and would spread by perennial grasses, forbs and shrubs rather than through the tree canopy. Fire intensity, flame length, and the rate of spread would decrease, lowering resistance to fire control efforts. Fire control would be safer and more efficient, and the existing threat to public health and property would be greatly reduced. Firewise education of community members and ongoing reduction of fire hazards on private properties in the communities-at-risk will augment efforts to reduce the threat of wildland fire spreading from public lands.

The currently existing noxious and invasive plants within the analysis area are manageable with monitoring and treatment; however, a high intensity wildland fire could increase impacts from invasive species and cause a concurrent increase in control costs.

## **5.0 CONSULTATION AND COORDINATION:**

### **5.1 Introduction:**

The issue identification section of Chapter 1 identifies those issues analyzed in detail in Chapter 4. Appendix A provides the rationale for issues that were considered but not analyzed further. The issues were identified through the public and agency involvement process described in sections 5.2 and 5.3 below. Scoping, which is an early process for determining issues to be addressed, also helps to identify the issues that are not relevant or that have been reviewed in other environmental documents. Scoping for this project was initially accomplished by resource staff and fuels team members after collaboration with cooperating Federal and State agencies. Quarterly fuels meetings, attended by

members of cooperating agencies, serve as a forum to discuss ongoing projects, to plan and propose future projects, and to prioritize treatments for each of the agencies. The Devil Canyon Fuels Reduction and Vegetative Restoration project will help to build upon the success of previous fuels treatments within the area.

Notification of the preparation, on-going progress and decision regarding this environmental assessment was posted on the Environmental Notification Bulletin Board (ENBB) located at <https://www.blm.gov/ut/enbb/index.php> on January 23<sup>rd</sup>, 2012. Two letters containing comments have been received to date on this project. Issues analyzed in detail in Chapter 4 were identified through resource staff, cooperating agencies and interested public involvement.

A copy of the finalized EA will be mailed to San Juan county, the livestock permittee, cooperating agencies and other interested parties.

**5.2 Persons, Agencies and Organizations Consulted for Purposes of this EA**

<b>Name</b>	<b>Purpose &amp; Authorities for Consultation or Coordination</b>	<b>Findings &amp; Conclusions</b>
Utah State Historic Preservation Office (SHPO)	Consultation for undertakings, as required by the National Historic Preservation Act (NHPA) (16 USC 470)	Consultation pending final archaeological report. No affect determination anticipated because Sites identified and determined to be eligible for the National Register of Historic Places (NRHP) and not located within the Alkali ACEC will likely be avoided during the mechanical treatment portion of the project, unless treatment options are such that it would be beneficial to the archaeological resource to treat the vegetation on site.
Native American Tribes	Consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1531) and NHPA (16 USC 1531) EO 13007	The Hopi and Pubelo of Laguna tribes responded to the request, no properties of religious and/or cultural significance were Identified.

Utah State Division of Forestry, Fire and State Lands [Alison McCluskey, Southeastern Area Sovereign Lands Coordinator/ WUI Coordinator]	Collaboration and coordination to meet goals and objectives of Community Wildfire Protection Plan; coordination with BLM on potential adjacent private land treatments.	
Utah Partners for Conservation and Development (UPCD)	Collaboration in procurement of seed.	
San Juan County	Project Coordination	Letters received on March 26 <sup>th</sup> & July 10 <sup>th</sup> , 2012 support the project.
Division of Wildlife Resources (DWR)	Project Coordination.	

### 5.3 Summary of Public Participation:

Notification of the preparation, on-going progress and decision regarding this environmental assessment was posted on the Environmental Notification Bulletin Board (ENBB) located at <https://www.blm.gov/ut/enbb/index.phpn> on January 23<sup>rd</sup>, 2012. When finalized, a copy of the EA will be available by link from the ENBB. A public meeting was held on March 14<sup>th</sup>, 2012 at the Monticello Field Office to solicit comments on project issues. Press releases were sent to the San Juan Record and Blue Mountain Panorama on February 13<sup>th</sup>, 2012 for interested parties to attend the public meeting. Public press releases were published in the San Juan Record and Blue Mountain Panorama on July 5<sup>th</sup>, 2012 to solicit public comments on the Devil Canyon EA. The EA was posted on the ENBB on July 3<sup>rd</sup>, 2012 for 15 day public comment and review. One letter was received and the comments and responses are included as appendix H.

### 5.4 List of Preparers:

Name	Title	Responsible for the Following Section(s) of this Document
Brian Keating	Fuels Program Manager, Canyon Country Fire Zone	Collaboration, technical coordination and verification of analyses content; fuels/fire management.
Paul Plemons	Fuels Technician, Monticello F.O., Canyon Country Fire Zone	Collaboration, resource team coordination; project design and planning; fuels/fire management.
Mandy Scott	Rangeland Management Specialist, Monticello F.O.	Fish and Wildlife and Woodland Forestry
Cliff Giffen	Realty/Mineral	Soils
Gabe Bissonette	GIS Specialist, Canyon Country Fire Zone	Project Boundary planning and coordination, map creation and consultation
Joshua Relph	NEPA Coordinator, Canyon Country Fire Zone	Resource team consultation, administrative record, data compilation, research, and analysis composition, ACEC's.
Leigh Grench	Canyon Country Fire Zone Archeologist	Cultural Resources and Native American Religious Concerns

Jed Carling	Rangeland Management Specialist, Monticello F.O.	Invasive Species/Noxious Weeds, Livestock Grazing, Vegetation Excluding USFW Designated Species
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## 6.0 REFERENCES, GLOSSARY AND ACRONYMS

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## 6.2 Glossary of Terms:

**Areas of Environmental Concern** – Public lands where special management attention is required) when such areas are developed or used or where no development is required) 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 and safety from natural hazards.

**Air Quality** – A measure of the health-related and visual characteristics of the air, often derived from quantitative measurements of the concentrations of specific injurious or contaminating substances.

**Allotment** – An area of land designated and managed for grazing by livestock. An allotment may include land not suitable for livestock grazing.

**Alluvium** – Unconsolidated material, such as sand, silt, or clay deposited on land by running water.

**Broadcast Burning** – Intentional burning within well-defined boundaries for reduction of fuel hazard, as a resource management treatment, or both.

**Crown Fire** – The movement of fire through the crowns of trees or shrubs, more or less independent from the surface fire.

**Dead Fuels** – Fuels with no living tissue in which moisture content is governed almost entirely by atmospheric moisture (relative humidity and precipitation), dry bulb temperature, and solar radiation.

**Drip Torch** – Hand-held device for igniting fires by dripping flaming liquid fuel on the materials to be burned; consists of a fuel fount, burner arm, and igniter. Fuel used is generally a mixture of diesel and gasoline.

**Endangered Species** – Any animal or plant species in danger of extinction throughout all of a significant portion of its range. These species are listed by the U. S. Fish and Wildlife Service.

**Escaped Fire** – As determined by the person in charge of the fire, a fire which has exceeded attack actions or established conditions within a prescribed fire plan.

**Extensive Recreation Management Area** – An area where significant recreation opportunities and problems are limited and explicit recreation management is not required. Minimal management actions related to the BLM's stewardship responsibilities are adequate in these areas.

**Fire Management Plan** – An activity plan developed to support and accomplish resource management objectives and applicable land use decisions authorized in BLM Resource Management Plans.

**Forbs** – A plant with a soft, rather than permanent woody stem that is not a grass or grass-like plant.

**Fuel Moisture** – The quantity of moisture in fuel expressed as a percentage of the weight when thoroughly dried at 212 degrees Fahrenheit.

**Grazing Permit** – An authorization which allows grazing on public lands. Permits specify class of livestock on a designated area during specified seasons each year. Permits are of two types: preference (10 year) and temporary nonrenewable (1 year).

**Integrated Pest Management** – Management practices that control and eradication noxious weed infestations such as Prevention, Chemical (herbicides), Biological Control, Mechanical, Controlled Burning, Grazing and Revegetation.

**Ladder Fuels** – Fuels which provide vertical continuity between strata, thereby allowing fire to carry from surface fuels into the crowns of trees or shrubs with relative ease. Ladder fuels instigate and advance crowning.

**Mechanical Treatment** – The employment of equipment such as mowers or masticators as the primary method of modifying or removing fuels.

**Mitigation** – Constraints, requirements, actions, or conditions to reduce the significance of or eliminate an anticipated impact to environmental, socioeconomic, or other resource values from a proposed project or land use.

**Rangeland** – Land on which the native vegetation is predominantly grasses, grass-like plants, forbs or shrubs suitable for grazing or browsing use. Includes lands revegetated naturally or artificially to provide forage cover managed like native vegetation.

**Resource Management Plan (RMP)** – A document prepared by field office staff with public participation and approved by management that provides general guidance and direction for land management activities at a field office. An RMP may identify the need for fire in a particular area and for a specific benefit.

**Revegetation** – The reestablishment or improvement of vegetation through management practices or chemical or mechanical means.

**Shaded Fuel Break** – A wide strip or block of land on which the vegetation has been modified so that fires burning into it may be more readily suppressed.

**Slope** – The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

**Special Status Species** – Wildlife and plant species either federally listed or proposed for listing as endangered or threatened; state-listed or BLM determined priority species.

**Surface fuels** – Loose surface litter on the soil surface, normally consisting of fallen leaves or needles, twigs, bark, cones, and small branches that have not decayed. Surface fuels can also consist of grasses, forbs, low and medium shrubs, tree seedlings, heavier branch-wood, downed logs and stumps, and/or debris from a “lop and scatter” treatment.

**Threatened Species** - Any animal or plant species likely to become endangered within the foreseeable future throughout a significant portion of its range. These species are officially listed by the U. S. Fish and Wildlife Service.

**Treatment** – A technique or action customarily applied to improve a damaged or deteriorated area through management action such as vegetation establishment (seeding, planting, etc.), restricted use, or resource manipulation (i.e. livestock, wildlife, fire, mechanical, recreation, etc.)

**Uncontrolled Fire** – Any fire which threatens to destroy life, property, or natural resources.

**Vegetation Treatment** – Fire vegetation and fuel load treatments generally entail reducing the quantity of the fuel load to impede fire’s ability to pass through the habitat. Continuity is often “rearranged” vertically or horizontally; firebreaks or shaded fuel breaks are created in some treatments, or fuels are cut and burned on site and/or removed.

**Visual Resource Management (VRM) Classes** - Management classes are determined on the basis of overall scenic quality, distance from travel routes, and sensitivity to change.

**Wildland Fire** – Any naturally ignited, non-structure fire other than prescribed fire.

**Wildland-Urban Interface (WUI)** - Lands on which buildings, homes, and other structures of human development are adjacent to or directly intermingling with undeveloped wildland or other fuel sources.

### **6.3 List of Acronyms Used in this EA:**

ACEC – Areas of Critical Environmental Concern

AQRV – Air Quality Related Values

BLM - Bureau of Land Management

DAQ - Utah State Division of Air Quality, a division of the Utah State Department of Environmental Quality

DR - Decision Record

EA - Environmental Assessment

EIS - Environmental Impact Statement

ERMA – Extensive Recreation Management Area

FLPMA - Federal Land Policy and Management Act of 1976, as amended (43 U.S.C. 1701 et seq.)

FONSI - Finding of No Significant Impact

HFI - Healthy Forests Initiative

HFRA - Healthy Forests Restoration Act of 2003

IPM – Integrated Pest Management

MFO – Monticello Field Office

MOU - Memorandum of Understanding

MSO - Mexican spotted owl

NEPA - National Environmental Policy Act

NRHP – National Register of Historic Places

NFP - National Fire Plan

VRM - Visual Resource Management System

WUI - Wildland/Urban Interface

**APPENDICES:**

**APPENDIX A:  
Interdisciplinary Team Analysis Record Checklist**

**INTERDISCIPLINARY TEAM CHECKLIST**

**Project Title:** Devil Canyon Fuels Reduction and Vegetation Restoration

**NEPA Log Number:** DOI-BLM-UT-Y020-2012-0010-EA

**File/Serial Number:**

**Project Leader:** J. Relph and P. Plemons

**DETERMINATION OF STAFF:** *(Choose one of the following abbreviated options for the left column)*

NP = not present in the area impacted by the proposed or alternative actions

NI = present, but not affected to a degree that detailed analysis is required

PI = present with potential for relevant impact that need to be analyzed in detail in the EA

NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section D of the DNA form. The Rationale column may include NI and NP discussions.

Determi- nation	Resource	Rationale for Determination*	Signature	Date
<b>RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)</b>				
NI	Air Quality	<p>The proposed action is consistent with the air quality and fire management decisions of the RMP, 2008 (AQ-2 and 4, pg. 57 and Fire 1, 3, 8, 9, 10, and 11, pgs. 62 – 65). Potential impacts to air quality from the proposed action were adequately analyzed the PRMP/FEIS (including the analysis contained in the Utah Land Use Plan Amendment for Fire and Fuels Management, UT-USO-04-01). Prescribed burning in the proposed action will be conducted in compliance with the State of Utah Division of Air Quality (UDAQ) permitting process and the Smoke Management Memorandum of Agreement between the BLM, U.S.F.S., and the UDAQ. Compliance with the permitting process insures that prescribed burning is conducted when atmospheric conditions allow for rapid dispersal of smoke.</p> <p>Mechanical treatments in the proposed action will result in emissions from the operation of internal combustion engines and fugitive dust from the operation of vehicles and equipment on unpaved surfaces. These emissions will be temporary and will rapidly disperse.</p> <p>The proposed action is not likely to cause or contribute to a violation of the National Ambient Air Quality Standards, nor is it likely to impact Class 1 visibility.</p> <p>Air quality is not analyzed in detail in the EA.</p>	C.Griffen	03/12/12
PI	Areas of Critical Environmental Concern	The Alkali Ridge ACEC encompasses the southern portion of the project boundary and will be analyzed in the EA.	J. Relph	04/13/12
NP	BLM Natural Areas**	The 1999 and 2007 Wilderness Characteristics Inventories determined the area of proposed project did not have Wilderness Character. The 2008 RMP did not include the	Robert A. Leaver	03/07/12

Determination	Resource	Rationale for Determination*	Signature	Date
		area as one to be managed for Wilderness Character and, therefore, it is not a BLM Natural Area.		
NI	Cultural Resources	Sites identified and determined to be eligible for the National Register of Historic Places (NHRP) and not located within the Alkali ACEC will likely be avoided during the mechanical treatment portion of the project, unless treatment options are such that it would be beneficial to the archaeological resource to treat the vegetation on site.	Leigh Grench	04/02/12
NI	Greenhouse Gas Emissions**	There are no currently identified regulatory standards for controlling GHG emissions or generally accepted analytical methods for evaluating project specific impacts related to GHG emissions. Consequently, the impacts of site-specific proposals cannot be determined and GHG emissions are expected to be minimal.	J. Relph	04/02/12
NI	Environmental Justice	The ethnic composition and economic situation of residents in San Juan County indicates that minority or low-income populations are not experiencing disproportionately high or adverse effects from current management actions (MFO FRMP/FEIS, pg 4-421). This fuels reduction and habitat restoration project would not adversely or disproportionately affect minority, low income or disadvantaged groups.	J. Relph	04/02/12
NP	Farmlands (Prime or Unique)	There are no designated prime or unique farmlands within the Monticello Field Office (MFO FRMP/FEIS, pg 4-7).	Jed Carling	04/09/12
PI	Fish and Wildlife Excluding USFW Designated Species	The project area includes substantial crucial mule deer habitat. Additionally, there are several UT BLM Sensitive species that are found within the proposed project area.	M. Scott	03/06/12
NI	Floodplains	There would be no impacts to floodplains by the action because the majority of the proposal occurs in the uplands outside of active floodplains. Also, the proposed action does not result in any permanent fills or diversions, or placement of permanent facilities in floodplains or special flood hazard areas. Thereby, there are no affects to a degree that detailed analysis is required.	Jed Carling	04/09/12
PI	Fuels/Fire Management	Issues related to Fuels/Fire Management makes up the Proposed Action and is the purpose and need of the EA. The EA analyzes hazardous fuels reduction and fire management activities, all related issues and impacts related to these will be discussed.	P. Plemons	02/16/12
NI	Geology / Mineral Resources/Energy Production	The proposed project is within an area which has moderate potential for the development of uranium and vanadium resources and therefore, may contain mining claim locations. The BLM would notify all mining claimants of record within the proposed project area in order to afford them the opportunity to clearly identify and mark all claim monuments on the ground that could be potentially affected by the project. The project would be temporary and SOPs would include measures to avoid claim monuments. Therefore, there would be no interference with future development of locatable or other minerals.	T. McDougall	06/11/12
PI	Invasive Species/Noxious Weeds (EO 13112)	The proposed project incorporates Standard Operating Procedures (SOPs) and Best Management Practices (BMPs) that provides mitigation measures to reduce impacts associated with the proposal. These measures include noxious weed control, seeding of vegetation, and monitoring.  The potential exist for invasive plant species, particularly cheatgrass, to establish post treatment as a result of the vegetation manipulation. Monitoring post treatment will help	Jed Carling	04/09/12

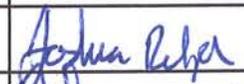
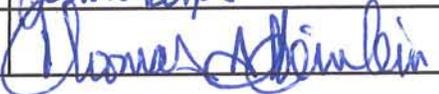
Determination	Resource	Rationale for Determination*	Signature	Date
		<p>identify potential impacts and direct further management actions as appropriate.</p> <p>If noxious weeds become established as a result of the proposed action, the BLM will be responsible, following protocols, SOPs, and BMPs for treatment and control of noxious weeds utilizing integrated pest management techniques.</p> <p>Potential impacts to invasive species / noxious weeds will be carried forward and analyzed in the EA.</p>		
NI	Lands/Access	No new permanent access is proposed. BMPs will be utilized to minimize long term disturbance to the land	Maxine Deeter	02/07/12
PI	Livestock Grazing	<p>The proposed treatments occur in the Roundup Corral, Blue Mountain, Corral, Dodge Point, Verdure Creek, Long Canyon, Montezuma Canyon, Devils Canyon, and Alkali Point livestock grazing allotments.</p> <p>The proposal includes site-specific Standard Operating Procedures (SOPs) and Best Management Practices (BMPs) to help mitigate impacts to livestock grazing. These include advance notice to grazing permittees prior to treatment, leaving gates open or closed as found, and exclusion of livestock from the seeded portions of pastures for at least two grazing seasons, or until management objectives have been accomplished.</p> <p>Potential impacts include the proposed removal of canopy and overstory vegetation that will allow for the increase expression of herbaceous plants. This situation will provide enhanced livestock grazing forage over the long-term. Potential short-term impacts include disruption to livestock operations during treatment activities, influences to livestock distribution, and rest requirements post treatment. Potential impacts to livestock grazing will be carried forward and analyzed in the EA.</p>	Jed Carling	04/09/12
NI	Migratory Birds.	By conducting treatments outside of the main portion of the nesting season for migratory birds (May, June, and July) when possible, impacts to nesting birds would be mitigated. If surface disturbing activities were unavoidable in nesting season, nesting surveys would be conducted to identify occupied nest sites, nest sites would be verified by a biologist, and recommended mitigation strategies would be implemented. Where possible, treatment activities would also take place outside of the main portion of the nesting season for raptors and owls (typically March through August). As stated in the Monticello field Office RMP, "raptor management will be guided by the use of Best Management Practices for Raptors and Their Associated Habitats in Utah (Utah BLM 2006, Appendix N, attached to this document as Appendix B), utilizing seasonal and spatial buffers, as well as mitigation, to maintain and enhance raptor nesting and foraging habitat, while allowing other resource uses." Nesting surveys would be conducted to identify occupied nest sites if surface disturbing activities were to be implemented during the period March through August, and mitigation would also include protecting known nesting trees and snags known to contain nest sites.	M. Scott	03/06/12

Determination	Resource	Rationale for Determination*	Signature	Date
		Standard Operating Procedures and Best Management Practices for Fuels Management Activities are attached as Appendix A. Fuel reduction activities would follow the guidelines established for raptors and their associated habitats in Utah as adopted in the BLM Monticello Field Office Record of Decision and Approved Resource Plan, Appendix N, November, 2008 (see Appendix B, this document).		
NI	Native American Religious Concerns	Native American tribes were contacted in May, 2012. To date, no tribes have identified concerns or submitted comments regarding the proposed project.	L. Grench	04/02/12
NI	Paleontology	There are several geologic units in the area of the proposal, consisting of J1: a grouping of Jurassic bedrock units including the Summerville Formation, Curtis Formation, Entrada Sandstone, and Carmel Formation, which together have a Potential Fossil Yield Classification (PFYC) of 3: Moderate or unknown potential; J2: the Jurassic Morrison Formation which has a PFYC of 5: Very high potential; K1: the Cretaceous Dakota Sandstone and Burro Canyon Formation which together have a PFYC of 5; and various Quaternary eolian and other alluvial deposits which together have a PFYC of 2: Low potential. The greatest part of the area occupies exposures of the Morrison Formation. Despite the very high potential for paleontological resources in much of the project area, the project itself will avoid eroded exposures and focus on areas of deeper soil development and heavier ground cover, where preservation is poorer, and remaining fossils are better protected and harder to locate. Additionally, the proposal seeks to avoid ground disturbance to the extent possible. This proposal would not cause significant impact to paleontological resources.	L. Naylor	5/18/12
NI	Rangeland Health Standards	Components of the Standards for Rangeland Health that have potential to be impacted are carried forward in their respective sections (Standard #1-Soils and Standard #3-Vegetation/biotic). These sections will be analyzed in the EA for environmental impacts to the affected environment.  Rangeland Health Standards #2 (Riparian) and #4 (Water Quality) have been determined to be not present or not impacted to a degree requiring detailed analysis.  See rationale of determination for these resources in this checklist for further details.	Jed Carling	04/09/12
NI	Recreation	The Proposed Project is an area used by a major SRP holder autumn through spring. The SRP includes four (4) specific authorized campsites in an area of 27,00 acres and also authorized backpacking in the project area. The project might require limited use in specific burn areas. However, the Proposed Project requires that only specific areas be burnt and any one time. The BLM will notify the SRP holder well in advance of any proposed burns which will allow the SRP holder to find an alternative campsite either inside the Proposed Project area or outside the Proposed Project area.	Robert A. Leaver	03/07/12
NI	Socio-Economics	The proposed action would not exceed those conditions projected in the (MFO FRMP/FEIS, pg. 4-419). There would be no changes in circumstances or conditions that warrant further analysis relative to this project. Given the conditions analyzed and documented therein, no further socio-economic analysis is required for the subject project and no impacts to	J. Relph	04/02/12

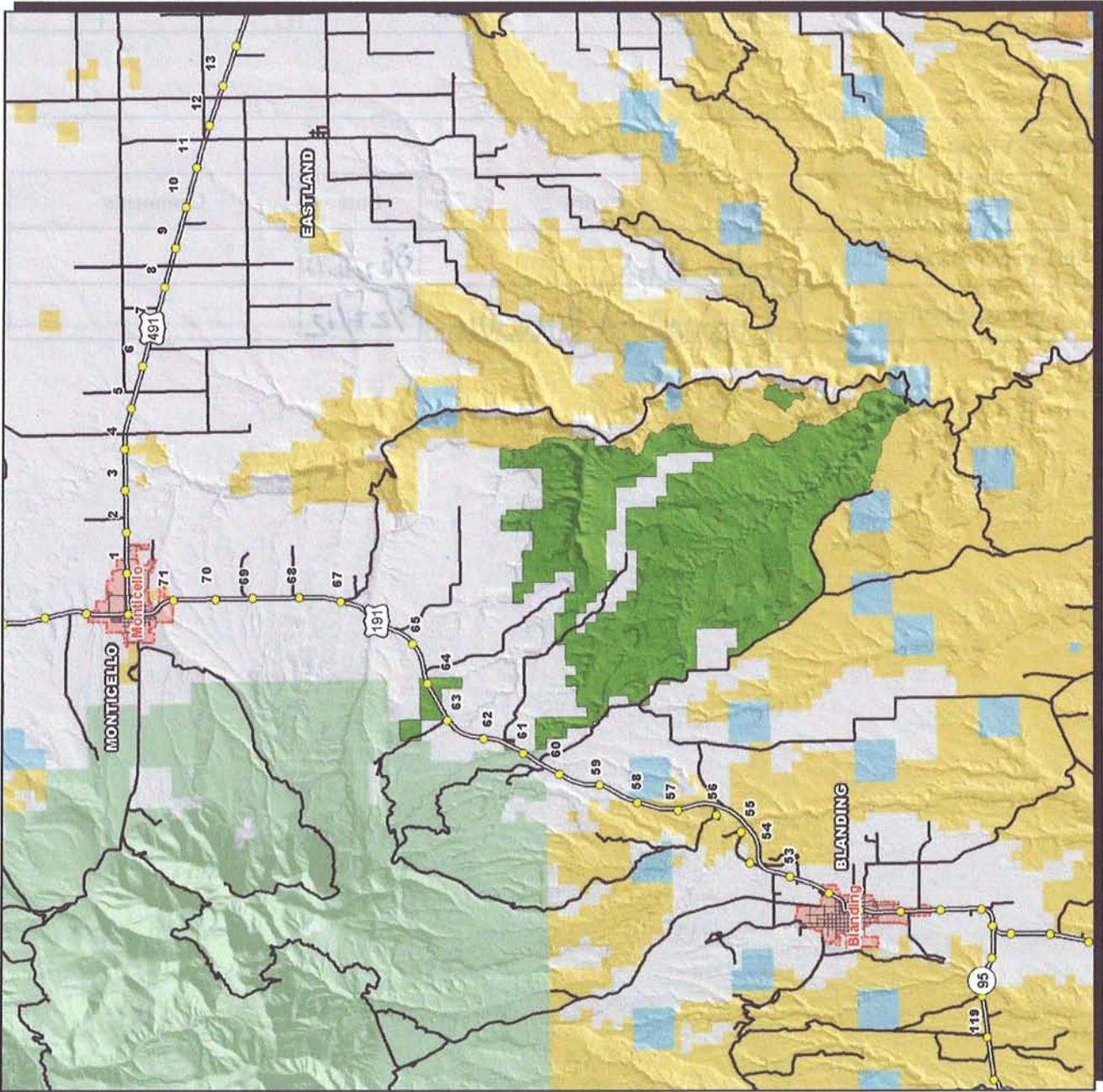
Determination	Resource	Rationale for Determination*	Signature	Date
		socio-economics are expected to occur as a result of the proposed action		
PI	Soils	<p>The primary soils located on the canyon slopes in the proposed project area are the 8--Bodot-Stryct-Skos association and the 63—Strych-Rizno-Strych, very steep association. These soils occur on slopes from 15 to 70 percent and exhibit a hazard of water erosion of moderate to severe. The primary soil on the mesa tops is the 46—Rizno-Cahone-Rockoutcrop complex. This soil occurs on 1 to 15 percent slopes and exhibits a hazard of water erosion of moderate.</p> <p>The RMP, 2008 includes management decisions SOLW-14 and SOLW-15 and stipulations applicable to surface disturbing activities that would apply to the proposed action.</p> <p>Prescribed fire, the operation of the bullhog, and seeding operations have the potential to impact the soil resource. Soils will be analyzed in the EA.</p>	C. Giffen	03/13/12
NP	Threatened, Endangered or Candidate Plant Species	There are no known Threatened, Endangered, or Candidate plant species within the proposed project area.	M. Scott	02/06/12
NI	Threatened, Endangered or Candidate Animal Species	The proposed project is expected to occur over the next 5-10 years in phases. 500-2000 acres are expected to be treated with each phase. Canyons adjacent to the proposed project area may provide suitable nesting habitat for Mexican spotted owls. Treatment activities would take place outside the nesting season for owls (March through August). If activities are to occur during the nesting season a 0.5 mile buffer will be used around canyons. Additionally, surveys following the U.S. Fish and Wildlife Service Protocol will be done a year in advance of each phase of the project.	M. Scott	02/06/12
NI	Wastes (hazardous or solid)	No appreciable impacts are expected to occur as a result of this project because the PA contains SOP that provide adequate mitigation to prevent and/or reduce impacts from wastes, solid or hazardous.	J. Brown	4/28/12
NI	Water Resources/Quality (drinking/surface/ground)	There may be temporary impacts to water quality immediately following treatments if a high precipitation event occurs. Overall, there may be a long-term benefit to water quality due to an increase in ground cover which may decrease soil loss and erosion.	M. Scott	02/16/12
NP	Wetlands/Riparian Zones	The proposed treatment of vegetation occurs in the uplands outside of any wetlands and/or riparian zones.	Jed Carling	04/09/12
NP	Wild and Scenic Rivers	There are no Wild and Scenic River Segments within the proposed project area.	Robert A. Leaver	03/07/12
NP	Wilderness/WSA	There are no Wilderness/WSA designations within the proposed project area.	Robert A. Leaver	03/07/12
PI	Woodland / Forestry	Woodlands may be impacted resulting from canopy reduction and removal within the scope of the project. Overall woodland may benefit through a diverse age classes.	J. Relph	04/02/12
PI	Vegetation Excluding USFW Designated Species	The proposal includes fuels reduction and vegetative restoration activities across approximately 24,766 acres of public land administered by the BLM. The majority of the project occurs in the Upland Stony Loam (Pinyon-Juniper), Upland Shallow Loam (Pinyon-Juniper), and Upland Loam (Sagebrush) ecological sites.	Jed Carling	04/09/12

Determination	Resource	Rationale for Determination*	Signature	Date
		Vegetation within the treatment areas would be potentially impacted as a result of these activities through altered functional/structural plant groups, removal of woodland canopies, seeding, transformed ecological states, and physical removal, masticating, crushing, and cutting of vegetation. Vegetation will be carried forward for analysis.		
NI	Visual Resources	Visual resource would not be impacted in the long term. Some short term impacts may be visible during the project.	Maxine Deeter	02/07/12
NP	Wild Horses and Burros	After review of the Monticello Field Office Resource Management Plan and GIS data, the project area was found to not contain lands identified for the management of Wild Horses or Burros.	J. Relph	04/02/12
NP	Areas with Wilderness Characteristics**	The 1999 and 2007 Wilderness Characteristics Inventories determined the area of proposed project did not have Wilderness Character.	Robert A. Leaver	03/07/12

**FINAL REVIEW:**

Reviewer Title	Signature	Date	Comments
Environmental Coordinator		8/27/2012	
Authorized Officer		8/27/12	

APPENDIX B:  
Maps



**Devil Canyon Project  
Planning Area  
24,766 Acres**



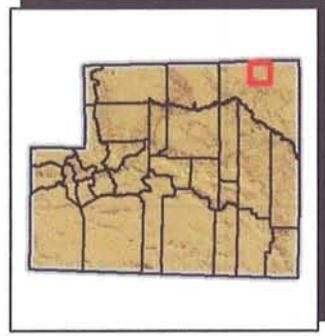
State of Utah  
Created June 21, 2012  
By garrison



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**Legend**

- Mile Markers
- == State Highway
- B Road
- C Road
- Devil Canyon Planning Area
- Bureau of Land Management (BLM)
- US Forest Service (USFS)
- State
- Private (White)



# Devil Canyon Project Planning Area 24,766 Acres



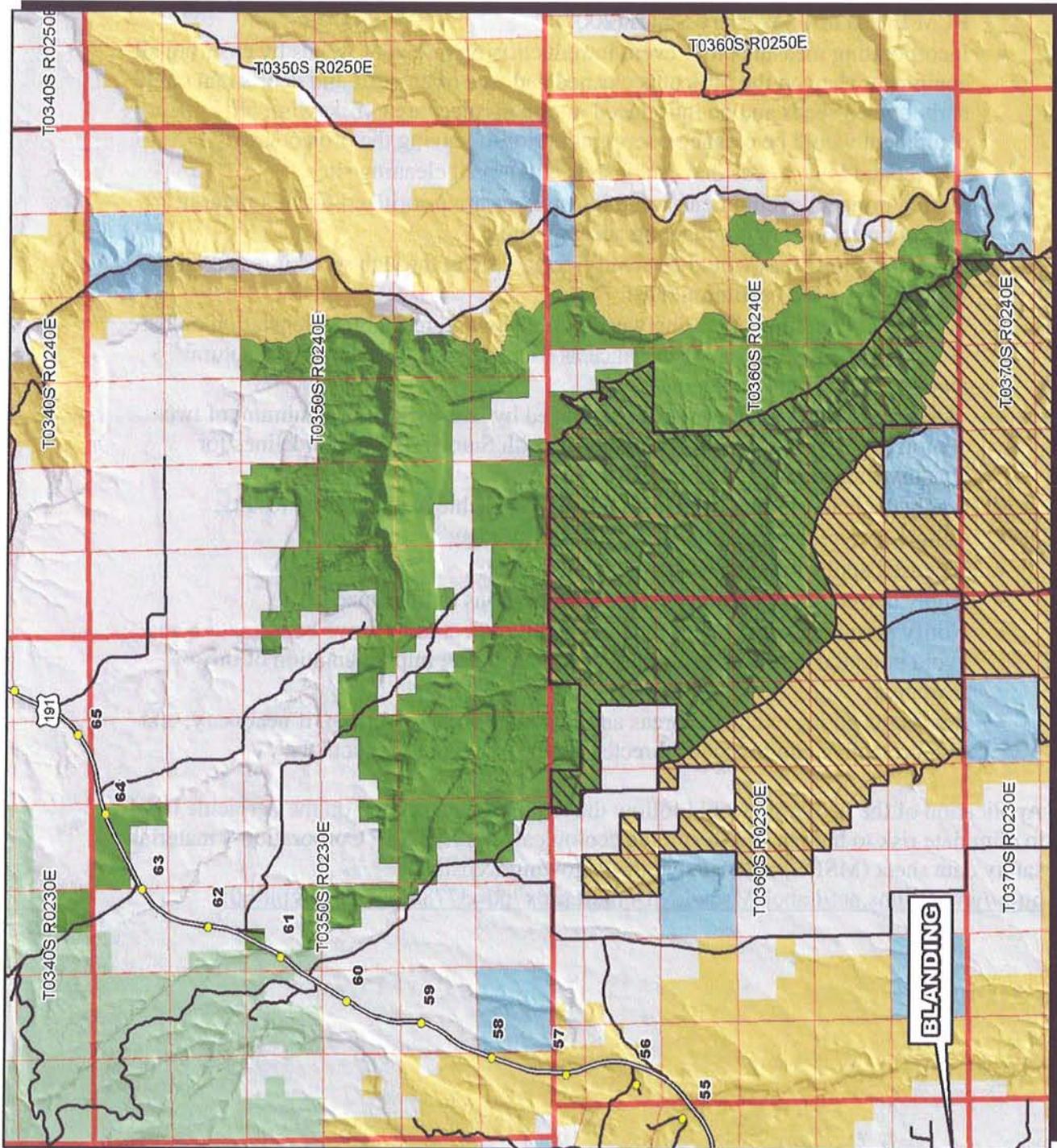
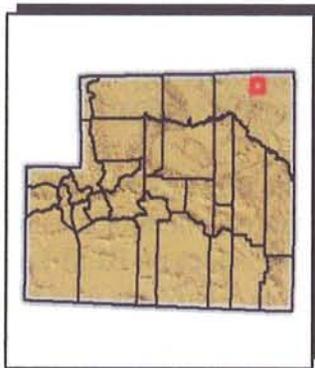
State of Utah  
Created July 19, 2012  
by gblissone



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### Legend

- Mile Markers
- State Highway
- B Road
- C Road
- Devil Canyon Planning Area
- Alkali Ridge ACEC
- Bureau of Land Management (BLM)
- US Forest Service (USFS)
- State
- Private (White)



## **Appendix C: Herbicide SOP**

The BLM MFO would follow the applicable standard operating procedures (SOP's) for applying herbicide as listed in the Record of Decision Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States Programmatic EIS, such as:

- Noxious weeds or invasive weed species that may be promoted due to the proposed activity would be identified and treated with in accordance to the SLDO Five Year Noxious Weed Control Plan (1996) and The Final Programmatic Environmental Impact Status for Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (2007);
- Incorporating measures to prevent introduction or spread of weeds by ensuring all equipment used on the project is cleaned and free of any dirt and debris that could harbor weed seeds and be introduced into the project area. Likewise, all equipment would be cleaned once again prior to leaving the project area;
- Inspect and treat weeds that establish at equipment cleaning sites;
- During project development, weed infestations are prioritized for treatment in project operating areas and along access routes;
- Project staging areas would be weed free and travel through weed infested areas would be avoided or minimized;
- To prevent conditions favoring weed establishment, reestablish vegetation on bare ground caused by project disturbance as soon as possible using either natural recovery or artificial techniques;
- Areas that are reseeded would be ungrazed by livestock for a minimum of two complete growing seasons (Rangeland Health Standards and Guidelines for Healthy Rangelands Utah State Office 1997);
- Apply the least amount of herbicide needed to achieve the desired results;
- Follow herbicide product label for use and storage;
- Licensed applicators would apply the herbicide;
- Apply herbicides in favorable weather conditions to minimize drift.
- Notify permittees of the herbicide treatment project to improve coordination and avoid potential conflicts and safety concerns during implementation of the treatment;
- Post signs noting exclusion areas and the duration of exclusion, if necessary; and Use protective equipment as directed by the herbicide product label.

Application of the herbicide would follow the requirements printed on the herbicide label to eliminate risk to human health and the ecological site. A BASF Corporation's material safety data sheet (MSDS) is located at the following websites:

<http://www.cdms.net/LabelsMsd/LMDefault.aspx?pd=3778&t=1,2,3,4&pid=0>,

**Appendix D:**  
Fuels Management Best Management Practices

**Fuels Management Activities**  
**Standard Operating Procedures and Best Management Practices**

These Standard Operating Procedures (SOPs) and Best Management Practices (BMPs) are designed to achieve resource management mitigation proposed by various disciplines specifically for fuels management-related activities. Because fuels management activities are dynamic and largely dictated by budget and contracting constraints, the majority of these mitigation measures are based on site-specific conditions and implemented when necessary to meet resource objectives for fuels management actions. Primary SOPs and BMPs that apply to all fuels management-related activities are listed as items 1, 2, and 3 below.

**SOPs and BMPs Applicable to All Fuels Management-Related Activities**

1. Areas with sensitive cultural or historical resources will be identified utilizing flagging or GPS/GIS technology prior to project implementation, and will be avoided or protected utilizing buffer zones, hand treatment of vegetation, or other non-ground disturbing actions. If undocumented historic, archaeological, or paleontological resources are encountered during treatment, activities will be stopped until the authorized officer and appropriate field office staff members determine the best option for mitigation.
2. Fuels management activities in designated wilderness and/or Wilderness Study Areas (WSA) will require application of techniques to minimize surface disturbance and permanent impacts to naturalness. Activities in designated wilderness will follow the management prescriptions included as part of the enabling legislation. Activities in WSA's will follow the procedures and guidelines incorporated in H-8550-1, *Interim Management Policy for Lands under Wilderness Review*. Activities in BLM Natural Areas will follow the prescriptions outlined in the Resource Management Plan for the Field Office in which the project is being implemented.
3. Work may be conducted by BLM crews with coordination and potential assistance from other federal and Utah state agencies and/or BLM-contracted crews. In the event a contract is utilized for fuel management activities, the following stipulations will be included in the contract language:
  - The Government will identify unit boundaries for the work executed under the contract and will include all known locations of cadastral markings. The contractor will, immediately upon entering a project area, begin to locate and take action to protect all known survey monuments found within the project area. In addition, contractors will be directed to protect any previously unknown survey monuments that are discovered during the duration of the project. Survey

monuments include but are not limited to: General Land Office and BLM Cadastral Survey monuments and accessories (including bearing trees, bearing objects, posts marked with scribing, or bearing tags), reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event obliteration or disturbance of any of the above should occur, the incident will be immediately reported, in writing, to the authorized officer. Where General Land Office or BLM right-of-way monuments or references are obliterated during operations, a registered land surveyor or BLM cadastral surveyor will be contacted to restore the monument.

- Contractors and all contracted representatives will prevent the pollution of air, soil and/or water throughout operations. The contract will include a cleanup and/or restoration clause in the event that operations or equipment failure or other actions by the contractor, contracted employees and/or representatives result in the pollution of public lands. Contract language will also define a “hazardous substance,” specify a “reportable quantity” of released hazardous substance, and describe notification regulations in the event a reportable quantity of hazardous substance is released.
- Contract specifications will include federal regulations regarding sanitary facilities for staging areas and/or worker campsites, trash disposal requirements, clean-up requirements, and other pertinent regulations.

4. All fences constructed or repaired for the purposes of fire and fuels or fire and fuels-related projects will conform to BLM Manual Handbook H-1721-1 design and construction standards. Fencing details will be determined on a project-specific basis by the purpose and use for the fence (type of animal, topography, season of use, intensity of animal pressure against the fence, etc.).

### **Site-Specific SOPs and BMPs**

#### General Wildlife

(Note: Other stipulations and/or mitigation in addition to those listed below may be required for site-specific treatments.)

1. Trees containing obvious nesting cavities and/or stick nests will be avoided when feasible.
2. Active nest sites will be monitored by a qualified biologist during authorized treatment activities that may impact the behavior or survival of raptors at a nest site.

#### Range/Livestock

1. Grazing permittees will be given advance notice prior to broadcast burning and when workers with chainsaws and/or mechanical mastication equipment are expected to be in pastures. No fencing will be altered during the project implementation period unless a specific plan is included in the proposed action. Gates normally kept closed or identified as such will be closed to prevent impact to cattle if they are scheduled to be in a treatment area at the time work is ongoing.

2. Livestock will be excluded from seeded portions of pastures for at least two growing seasons or until management objectives have been accomplished. Coordination, cooperation and consultation with the affected grazing permittees would be followed as outlined in 43 CFR 4130.4 – Authorization of Temporary Changes in Grazing Use within the Terms and Conditions of Permits, including Temporary Nonuse, and under 43 CFR 4180 – Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration. Prior to the implementation of seeding treatments, it is recommended that a Grazing Use Agreement or other written agreement be completed. The written agreement would outline the two year growing season rest requirement and subsequent actions agreed to by both the affected grazing permittees and the BLM.

### **SOPs and BMPs Applicable to Specific Fuels Reduction Activities**

#### Mechanical Treatment

1. The use of heavy machinery such as mechanical masticators will be discontinued at the discretion of the project inspector during periods of precipitation when soil moisture content could increase the potential for deep ruts and/or excess soil compaction.

2. Prior to mobilization in a new project area, all heavy equipment will be power washed off-site to remove potential contaminants. Cleaned equipment will be inspected by the authorized contracting officer to assure that equipment used in mechanical treatment is free of soil and other debris that could contain invasive weed seed or other plant parts prior to transport and use at the project site.

3. Heavy equipment will generally not be utilized within 100 meters of riparian areas. In areas of special concern such as those requiring removal of dense invasive species, a resource advisor will be consulted. Mechanical fuel removal may be allowed to reduce fuels and/or invasive species in areas of special concern. Native riparian vegetation such as willows and cottonwoods are plant species targeted for restoration and will continue to be selectively avoided during riparian treatment.

#### Prescribed Fire

1. Prescribed fire is normally conducted in the early spring, late fall, and winter months, and only under specific conditions dictated by humidity, wind speed, moisture levels, and time of day. A detailed burn plan delineates weather and fuel moisture conditions required to meet resource objectives. A test fire is typically conducted prior to full ignition to ensure resource objectives can be met. Ignition of burns are conducted by hand (drip torches using a diesel/gasoline mixture), aerial ignition, or by truck-mounted terra torch (utilizing a gasoline/alumagel mixture). Mitigation measures associated with burning-related hazardous materials are included in the risk assessment, job hazard analyses appendix in each authorized burn plan.

2. All prescribed fire will be conducted consistent with the regulations and policies set forth by the Utah Division of Air Quality permitting process as specified in Utah Administrative Code Rule R307-204, Emission Standards: Smoke Management, and the Utah Smoke Management Plan. The goal of this process is to minimize the impacts to air quality from prescribed fire projects. These rules and procedures are designed to coordinate multiple burning projects conducted by multiple agencies to assure that prescribed fires are permitted at a time when weather and atmospheric conditions allow for adequate smoke dispersal.

#### Manual Treatment (Lop and Scatter and/or Hand Piling)

1. Manual thinning is typically used in areas not suitable for mechanical treatment such as steep, rocky slopes, in areas with resources that require mitigation such as cultural or riparian, or in areas where biomass utilization (firewood permitting) is desirable. Cut trees and brush from hand thinning is either scattered across the ground or stacked into piles to add surface fuels for follow-up prescribed fire. Contract stipulations state that pile size will be no larger than six feet by six feet to mitigate potential heat-related soil damage from burned piles.

2. Piles are burned during peak soil moisture conditions, preferably during periods of light snow cover or during precipitation events, to minimize soil sterilization and to decrease mortality risk to nearby live trees. In riparian areas, piles will not be constructed within the center of the draw or in areas that could be impacted by normal flood flows.

#### Herbicide Use

1. The use of specific herbicide active ingredients and formulations on BLM lands in Utah are authorized by the Final Environmental Impact Statement and Record of Decision (Utah) for Vegetation Treatment on BLM Lands in Thirteen Western States (BLM 1991b), and the Record of Decision for the 17 Western States Vegetation Management Programmatic Environmental Impact Statement, September, 2007. Both of these documents identify potential impacts to the natural and human environment from the use of herbicides, incorporate standard operating procedures and mitigation measures to ensure the protection of resources, and approve for use on western BLM lands specific herbicide active ingredients. Standard operating procedures (SOPs) are the management controls and performance standards intended to protect and enhance natural resources potentially affected by vegetation treatments that include the use of herbicides. The use of a specific list of herbicide active ingredients and formulations is approved contingent upon uses and application rates as specified in an approved Pesticide Use Proposal (PUP) and on individual herbicide product labels. Application of active ingredients is allowed only where state registration permits the use of these ingredients.

2. The BLM will comply with all Utah state registration requirements for the use of herbicides. In herbicide treatment applications, the BLM Canyon Country Fire Zone will follow SOPs for herbicide use identified in the 2007 Vegetation Management PEIS to ensure that risks to human health and the environment from treatment actions are kept to a minimum. In addition to using the SOPs identified in Appendix A, the BLM will also implement mitigation measures described in the 2007 Vegetation Management PEIS to

alleviate potential adverse environmental effects as a result of vegetation treatment activities using herbicides. Herbicides may be applied manually with hand-held devices, aerially, or with broadcast sprayers from an ATV. In fuel management activities that include the use of herbicides, both the SOPs and mitigation measures mentioned above will be attached to the environmental assessment as appendices.

### Seeding

1. Fuels management actions may include seeding portions of or an entire project area following or prior to treatment with both native and selected non-native grasses, forbs and browse species. Seed selection is determined through collaboration with resource specialists and from monitoring results in similar vegetative communities. Seed selection is also based upon the most current data regarding the establishment of species likely to promote successional changes toward the desired vegetative community.
2. Seeding can be accomplished with a broadcast spreader or drill seeder, harrow or harrow chain dragged behind mechanized equipment, roller chopper, tractor/dozer, or through aerial application. Seeded portions of treated areas will be rested from grazing for a minimum of two growing seasons following seeding.

### Monitoring

1. Transects to document fuel bed characteristics and vegetation composition are established prior to implementation within selected proposed treatment areas. When feasible, transect readings and/or photo plots are documented pre-treatment and at one, three and seven year intervals following treatment completion. Monitoring results are incorporated into management decisions regarding future resource actions that may involve maintenance burning, additional seeding, reintroduction and/or adjustment of grazing seasons or numbers, additional mechanical or herbicide treatment and other actions.
2. Management decisions requiring treatments not previously analyzed would initiate further environmental assessment.

### Miscellaneous

1. In select areas, slash and debris from fuel management activities along designated roads or other accessible areas may be made available to the public for wood harvest.
2. All-terrain vehicles (ATVs) may be utilized at various times by BLM and/or contract crews throughout the project area to transport fuel, supplies and equipment. ATV's will avoid disturbance to any identified archaeological sites and/or other buffered areas.
3. BLM personnel will periodically observe ongoing treatments to ensure no adverse effect to nesting raptors or other bird species or to cultural and/or historic remains.

## **Fireline Rehabilitation Guidelines**

The following guidelines can be used in whole or in part depending on ecological site needs, severity of disturbance and management directive within the Canyon Country Fire Zone fuels program(CYFZ):.

### **Fireline:**

- 1.) Pull soil, duff, litter and rocks over line
  - Rake the line to scarify the soil surface; pull soil, duff, litter and rocks back into original position and mimic natural grade
  - Rehabbed line should blend with surrounding contours.
  
- 2.) Scatter Brush over the Line
  - Cover at least 50% of the fire line
  - Scattered duff, needle litter, and brush should appear random to eliminate the appearance of a straight line disturbance. In general the amount and type of duff, litter, and brush should match the surrounding area.
  
- 3.) Construct water bars or berms to reduce channeling and deflect erosion on slopes
  - Temporary berms are preferable to water bars. When constructing water bars utilize local woody material
  - Use the following table to create water bars or berms:

<b>Slope %</b>	<b>Spacing (Ft.)</b>
2	250
5	135
10	80
15	60
20	45
25	40
30	35

- Construct at 45 degree angles to the contour

### **Aesthetic Considerations**

- When replacing larger rocks in the fireline, place the weathered side up
- Obliterate cup trenches and ditches
- Flush cut all stumps
- Remove all flagging, signs, and garbage associated with activity

Walk through adjacent undisturbed areas to take a look at your rehab efforts to determine your success at returning the area to as natural as possible.

**Appendix E**  
Soil Units Within Project

<b>SYM</b>	<b>Project Acres</b>	<b>% of Project Area</b>	<b>Soil Type</b>	<b>Slope %</b>	<b>Ecological Site(s)</b>	<b>Potential Vegetation and Composition</b>	<b>Seeding Potential</b>	<b>Erosion Potential</b>	<b>Water</b>
8	15394	62.2%	Bodot-Strych-Skos association	4-50%	Upland Stony Loam (Pinyon-Utah Juniper), Upland Shallow Loam (Pinyon-Utah Juniper), Upland Steep Stony Loam (Utah Juniper-Pinyon)	Saline wildrye, green Mormon tea, Indian ricegrass, birchleaf mountainmahogany, Bigelow sagebrush, Mormon tea. Bodot and Strych - 40% grasses, 5% forbs, 55% shrubs. Skos- 10% grasses, 10% forbs, 80% shrubs.	Very Poor	Slight	Severe
46	2639	10.7%	Rizno-Cahona-Rock outcrop complex	1-15%	Upland Shallow Loam (Pinyon-Utah Juniper), Upland Loam (Basin Big Sagebrush), Rock Outcrop	Wyoming big sagebrush, Indian ricegrass, needleandthread, blue grama, Bigelow sagebrush, Mormon tea. Cahona- 60% grasses, 5% forbs, and 35% shrubs. Rizno- 10% grasses, 10% forbs, and 80% shrubs.	Poor	Severe	Moderate
MvG	2386	9.6%	Montvale very rocky very fine sandy loam	2-25%	Upland Shallow Loam (Pinyon-Utah Juniper)	Bigelow sagebrush	Poor		

<b>SYM</b>	<b>Project Acres</b>	<b>% of Project Area</b>	<b>Soil Type</b>	<b>Slope %</b>	<b>Ecological Site(s)</b>	<b>Potential Vegetation and Composition</b>	<b>Seeding Potential</b>	<b>Erosion Potential</b>	<b>Water</b>
63	1119	4.5%	Strych-Rizno-Strych very steep association	15-70%	Upland Steep Stony Loam (Utah Juniper-Pinyon), Upland Shallow Loam (Pinyon-Utah Juniper, Upland Very Steep Stony Loam (Pinyon-Utah Juniper)	Saline wildrye, Indian ricegrass, birchleaf mountainmahogany, green Mormon tea, Bigelow sagebrush, Mormon tea, and Utah serviceberry. Strych- 40% grasses, 5% forbs, and 55% shrubs. Rizno- 10% grasses, 10% forbs, and 80% shrubs. Strych, very steep- 45% grasses, 5% forbs, 50% shrubs.	Very Poor	Slight	Moderate
11	987	4.0%	Cahona very fine sandy loam	1-8%	Upland Loam (Basin Big Sagebrush)	Wyoming big sagebrush, Indian ricegrass, needleandthread, and blue grama. 60% grasses, 5% forbs, 35% shrubs.	Good	Severe	Moderate

<b>SYM</b>	<b>Project Acres</b>	<b>% of Project Area</b>	<b>Soil Type</b>	<b>Slope %</b>	<b>Ecological Site(s)</b>	<b>Potential Vegetation and Composition</b>	<b>Seeding Potential</b>	<b>Erosion Potential</b>	<b>Water</b>
52	959	3.9%	Rizno-Strych association	3-70%	Semidesert Shallow Sandy Loam (Utah Juniper-Blackbrush), Upland Very Steep Stony Loam (Pinyon-Utah Juniper)	Rizno -Indian ricegrass, Mexican cliffrose, galleta, bottlebrush squirreltail. 45% grasses, 10% forbs, 45% shrubs. Strych- Saline wildrye, Utah serviceberry, Indian ricegrass, and birchleaf mountainmahogany. 45% grasses, 5% forbs, and 50% shrubs.	Very Poor	Severe Slight	Moderate
9	350	1.4%	Bookcliff-Bookcliff, dry, complex	2-30%	Mountain Loam (Mountain Big Sagebrush), Mountain Loam (Oak)	Bookcliff- bluegrass, wheatgrass, needleandthread, mountain brome, mountain big sagebrush, and snowberry. 60% grasses, 10% forbs, and 30% shrubs. Bookcliff, dry-Gambel oak, bluegrass, snowberry and Utah serviceberry. 35% grasses, 10% forbs, 55% shrubs.	Fair	Moderate	Moderate
NIC	224	0.9%	Northdale loam	0-6%	Upland Loam (Basin Big Sagebrush)	Wyoming big sagebrush	Good		

<b>SYM</b>	<b>Project Acres</b>	<b>% of Project Area</b>	<b>Soil Type</b>	<b>Slope %</b>	<b>Ecological Site(s)</b>	<b>Potential Vegetation and Composition</b>	<b>Seeding Potential</b>	<b>Erosion Potential</b>	<b>Water</b>
58	173	0.7%	Ruinpoint-Cahona association	1-8%	Semidesert Loam (Wyoming Big Sagebrush)	Indian ricegrass, galleta, bottlebrush, s uirreilail, winterfat, and Wyoming big sagebrush. 45% grasses, 10% forbs, and 45% shrubs.	Poor	Severe Moderate	Moderate
50	160	0.6%	Rizno-Ruinpoint-Rock outcrop complex	1-15%	Semidesert Shallow Sandy Loam (Utah Juniper-Blackbrush), Semidesert Loam (Wyoming Big Sagebrush), Rock Outcrop	Ruinpoint- Indian ricegrass, galleta, bottlebrush, s uirreilail, winterfat, and Wyoming big sagebrush. 45% grasses, 10% forbs, 45% shrubs. Rizno- Indian ricegrass, Mexican cliffrose, galleta, and bottlebrush s irreltail. 45% grass, 10% forbs, 45% shrubs.	Very Poor	Severe	Moderate Severe
Sd	146	0.6%	Sandstone Rockland, steep						

<b>SYM</b>	<b>Project Acres</b>	<b>% of Project Area</b>	<b>Soil Type</b>	<b>Slope %</b>	<b>Ecological Site(s)</b>	<b>Potential Vegetation and Composition</b>	<b>Seeding Potential</b>	<b>Erosion Potential Wind</b>	<b>Erosion Potential Water</b>
43	76	0.3%	Redbank family-Riverwash-Green River family association	0-4%	Semiwet Saline Streambank (Fremont Cottonwood)	Redbank family- western wheatgrass, blue grama, basin big sagebrush, and fourwing saltbrush. 55% grasses, 5% forbs, 40% shrubs. Green River family-inland saltgrass, alkali sacaton, saltcedar, coyote willow, and Fremont cottonwood. 60% grasses, 5% forbs, and 35 % shrubs.	Fair	Severe Slight	Slight
3	33	0.1%	Bankard family-Riverwash complex	0-4%	N	Ikali sacaton, seepweed, and black greasewood. 30% grasses, 10% forbs, and 60% shrubs.	Poor	Severe	Slight
66	27	0.1%	Suwanee silt loam	1-5%	Loamy Bottom (Basin Big Sagebrush)	Western wheatgrass, blue grama, basin big sagebrush, and fourwing saltbrush. 55% grasses, 5% forbs, and 40% shrubs.	Fair	Moderate	Moderate
ShB3	26	0.1%	Shay clay loam	0-3%	Loamy Bottom (Basin Big Sagebrush)	Big western sagebrush, western wheatgrass	Good		
bGC	24	0.1%	ba o cobbly loam	2-25%	Upland dissected Slope (Pinyon-Utah Juniper)	Perennial grasses	Good		
Mn	20	0.1%	Monticello very fine	0-10%	Upland Loam (Basin Big Sagebrush)	Basin Big Sagebrush, blue grama	Good		

SYM	Project Acres	% of Project Area	Soil Type	Slope %	Ecological Site(s)	Potential Vegetation and Composition	Seeding Potential	Erosion Potential	
								Wind	Water
			sandy loam						
ICL	16	0.1%	orthdale loam	0-6%	Upland Loam (Basin Big Sagebrush)	ourwing saltbrush	Good		
VcC2	8	0.0%	Vega clay loam	0-6%	Loamy Bottom (Basin Big Sagebrush)	ourwing saltbrush	Good		
Sd	0	0.0%	Sandstone rockland, sloping						
total	24766	100%							



**Appendix G**  
Example Seed Mix

<b>Appendix G : Potential Seed Mix For Devil Canyon Project</b>		
<b>Grasses</b>	<b>Forbs</b>	<b>Shrubs</b>
alkali sacaton ( <i>Sporobolus airoides</i> )	blue flax ( <i>Linum perenne</i> )	roundleaf buffaloberry ( <i>Shepherdia rotundifolia</i> )
bottlebrush s uirreltail ( <i>Sitanion hystrix</i> )	Utah penstemon ( <i>Penstemon utahensis</i> )	Utah serviceberry ( <i>Amelanchier utahensis</i> )
indian ricegrass ( <i>Achnatherum hymenoides</i> )	Rocky Mountain penstemon ( <i>Penstemon strictus</i> )	Wyoming big sagebrush ( <i>Artemisia tridentata wyomingensis</i> )
needleandthread grass ( <i>Hesperostipa comata</i> )		alderleaf mountain mahogany ( <i>Cercocarpus montanus</i> )
Sandberg bluegrass ( <i>Poa sandbergii</i> )		antelope bitterbrush ( <i>Purshia tridentata</i> )
saline wildrye ( <i>Leymus salinus</i> )		fourwing saltbush ( <i>Atriplex canescens</i> )
crested wheatgrass ( <i>Agropyron cristatum</i> )		shadscale ( <i>Atriplex confertifolia</i> )
intermediate wheatgrass ( <i>Agropyron intermedium</i> )		winterfat ( <i>Krascheninnikovia lanata</i> )
blue grama ( <i>Bouteloua gracilis</i> )		sumac ( <i>Rhus spp</i> )
galleta ( <i>Pleuraphis jamesii</i> )		
muttongrass ( <i>Poa fendleriana</i> )		
prairie unegrass ( <i>Koeleria macrantha</i> )		
sand dropseed ( <i>Sporobolus cryptandrus</i> )		
western wheatgrass ( <i>Pascopyrum smithii</i> )		

**Appendix H**  
Comment & Response

Commenter Name	Record ID & Comment Number	Resource Category	Comment Text	Response to Comment	Doc Mod
Owen Severance	1 1	General CUL	BLM is not complying with manuals 8111, 8131, and 8132 (summarized comment).	Bureau of Land Management Manual 8111 no longer exists. It was superseded by BLM manual 8110 – “Identifying and Evaluating Cultural Resources” in 2004. In addition, BLM manuals 8131 and 8132 no longer exist. They have been superseded by BLM manual 8130 – “Planning For Uses of Cultural Resources” in 2004. 8110.01 states, “This manual provides general direction for identifying, evaluating, categorizing, and allocating to uses all the cultural resources” (8110.01).	NO
Owen Severance	1 2	General CUL	The BLM must confer with the Advisory Council on Historic Preservation (ACHP) if any impacts to the National Register eligible sites may occur (Section 106, NHPA).	We do not anticipate negatively affecting either directly or indirectly historic properties or sites eligible for the National Register of Historic Places (NRHP) within the Devil Canyon project area. The State Historic Preservation Officer (SHPO) and the Bureau of Land Management (BLM), Canyon Country District, are in constant communication with regards to cultural resources within the project area. This communication is in full compliance with the National Historic Preservation Act of 1966, as amended and a Class III Archaeology Report will be prepared for each unit prior to treatment implementation (Devil Canyon EA pg. 9).	NO
Owen Severance	2 1	ACEC	The maps of the project area are inadequate. No township or section lines are shown, so the projects boundaries are not clear. In addition, while the Alkali Ridge ACEC is discussed, it is not shown on any map. Where is it located?	A map showing the location of the project using township and range have been added to the appendix within the Devil Canyon EA. In addition, the Alkali Point Area of Environmental Concern (ACEC) has been added to the map for reference.	YES

Owen Severance	2	2	CUL	<p>Pages 11, 12, and 14. It is not known what effects herbicides will have on cultural resources. This question can't be answered because you don't know what sensitive techniques archaeologists will be using a hundred years from now. Herbicides should not be used in the project area because of the high density of archeological sites.</p>	<p>Cultural Resources were identified as (NI) Present, but not affected to the degree that detailed analysis is required and thus were not analyzed in the document. Effects of herbicides on cultural resources have previously been analyzed and discussed in the "Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States Programmatic Environmental Impact Statement" (PEIS pg. 4-148).</p>	NO
Owen Severance	2	3	FOR	<p>Page 12. How will cultural resources be protected when the public is allowed to salvage firewood from the project area?</p>	<p>Available wood harvest (firewood) will be allowed in specific areas within the project boundary. A firewood permit will be required, and a map provided showing available areas for wood harvest. All wood harvest will be limited to designated routes only. (Monticello RMP pg. 157 FOR-4, 5 &amp; 6) and (Devil Canyon EA pg.12)</p>	NO
Owen Severance	2	4	FIRE	<p>Pages 13, 14. The BLM plans to use prescribed fire extensively in the project area. In past BLM prescribed fire projects, cultural resources were damaged when archeological sites were not protected from fire. How will this project differ? How will archeological sites be protected from the prescribed fires?</p>	<p>In areas planned for prescribed fire, contracts will be written to state that debris will be placed far enough away from known eligible cultural sites to protect them from damage. A prescribed fire plan will also be prepared prior to implementation which will indicate specific weather and fire behavior parameters and identify specific resource management objectives and concerns (Devil Canyon EA pg.14). In addition piles will be burned during peak soil moisture conditions, preferably during periods of light snow cover or precipitation events.</p>	NO

Owen Severance	2	5	VEG	Page 14. I strongly object to the use of non-native plants (especially crested wheatgrass) for reseeding. Only native species should be used	<p>As a multiple use agency we must consider all resource uses across the landscape. Using only native grass and forb species often times will not meet our desired future conditions. The desired outcome of the project would include, "4.) the re-establishment of vegetative diversity, vigor, and resilience, resulting in better forage and habitat for wildlife and livestock (Devil Canyon EA pg.16)." In areas where invasive species are present or have the potential of establishing, research has shown that the use of non-native plants has a greater chance of success. In similar projects, seed mixes have been dominated by native grasses, forbs and shrub species. Due to concerns over invasive species and the rapid and more successful establishment of non-native species the BLM considers them to be important in meeting long-term management goals and has incorporated non- native species as part of the overall seed mix. The replacement of cheatgrass with perennial plants has been a management and research priority in the Great Basin beginning in the 1930's (Piemeisel 1932) and continuing into the 1940's (Hull and Pehanec 1947). A great deal of research was carried out in southern Idaho by A.C. Hull on suitable plant materials to reseed cheatgrass infested rangelands (Hull and Stewart 1948; Hull and Holmgren 1964; Hull 1974). This research clearly indicated that introduced wheatgrasses i.e. crested wheatgrass were superior to the native grasses in establishing and persisting in cheatgrass infested rangelands.</p> <p>These findings were collaborated in Nevada by Robertson and other (1966) who found that native species were not as competitive as most introduced perennial plants and the natives did not tend to persist after 5 years.</p>	NO
Owen Severance	2	6	CUL	On page 16, Desired Future Condition, cultural resources are not discussed. Apparently their "desired future condition" is not important.	<p>Cultural Resources were identified as (NI) Present, but not affected to the degree that detailed analysis is required and thus were not analyzed in this document. Although cultural resources were not specifically mentioned under Desired Future Condition, statement 2 does apply and covers culture resources. Point number 2 under Desired Future Condition on page 16 of the Devil Canyon EA states, the desired outcome of the project would include "a reduction of the continuous tree canopy to decrease the probability of resource damage from a high-intensity, stand replacing wildland fire."</p>	NO

Owen Severance	2	7	FIRE	On page 3 and 17, the Nizonhi fire was not in P/J. It was on the National Forest in an area dominated by Ponderosa Pine and Gambel Oak.	The Nizonhi Fire was removed from page 17 since the primary fire carrier was not pinyon/juniper. However, the Nizonhi fire still represents an example of a large fire in the area (regardless of land ownership) and will remain on page 3.	YES
Owen Severance	2	8	SOILS	Biological Soils Crusts on pages 24 and 25. Cattle are the primary source of damage to these crusts. This project will increase the amount of forage for cattle and that will increase the damage to these crusts. Why isn't there any discussion of this problem?	Livestock do cause disturbance to biological soil crusts. The proposed action includes biological control of woody shrub species by sheep and goat grazing. This control method would likely occur in the Mountain Loam (Gambel Oak) soil type which composes less than 2% of the project area and will not significantly impact biological soil crusts. Permitted livestock use in the grazing allotments is not part of the proposed action and will not be increased as a result of the proposed action. Other factors that cause damage are recreational use, significant precipitation or wind events and large wildland fires. Research that has been done and is currently being carried out indicates that these crusts are able to recover from these disturbances. Some biological crust communities may be more resistant to disturbance due to protection of the soil surface by rock or gravel. Others may recover more quickly due to cooler temperatures, higher annual precipitation, or short duration of the hot, dry season. The most fragile communities are those with little surface rock and vascular plant cover. By increasing the plant cover within the project area, biological crusts may be more protected and able to recover from disturbance.	NO
Owen Severance	2	9	FIRE	On page 25 there is no discussion of the burning of chained areas in the project area that occurred 10 or 15 years ago. Archaeological sites were significantly damaged at that time, especially on Long Canyon Bench.	The E.A. addresses pile burning and the possibility of a low intensity understory burns if post project monitoring indicates that it would be beneficial to the resources (Devil Canyon EA pg.14). As stated above in point 4, these burns can be done in a responsible manner and are not akin to the type of prescribed fire that was utilized to burn the chaining debris many years ago within the project area. Past prescribed fires were called a broadcast slash burn and though it is a very useful tool when employed under the correct circumstances it will not be utilized on this project as it is not consistent with ecological, prescribed fire or resource management goals and objectives. The Long Canyon Bench prescribed burn, conducted in 1990, had a BLM archaeologist on site conducting an archeological inventory prior to areas being burned. Sites were flagged prior to prescribed fire and they were avoided by the firing crew (Long Canyon Bench admin. record).	NO

Owen Severance	2	10	FOR	Woodland/Forestry on pages 25 and 26. Most of the Pinyon that was killed by the Ips beetle outbreak has turned to "punk" and fallen over. These trees are no longer a fire hazard. The only way they will burn is if they are soaked in a flammable liquid. What percentage of the trees in the project area were killed by beetles?	Pinyon Pine tree mortality directly associated with the Ips beetle infestation is very difficult to quantify within the project area. It is difficult to know exactly the number of trees killed by the beetle, drought or other natural occurrences. During a Pinyon/Juniper fire event dead and down materials play a large part in fire spread and intensity. "Punky" logs are very receptive to fire brands and will smolder holding heat for extended periods of time (i.e. throughout the night or cool morning hours). At the height of the burning period these logs will burn and can and very often do ignite adjacent vegetation resulting in a "spot fire" in advance of the main fire. As the main fire approaches the spot fire grows in size and intensity and is pulled into the advancing front multiplying the size, speed and intensity of the advancing fire. This is a common characteristic of Pinyon/ Juniper wildfire events.	NO
Owen Severance	2	11	ACEC	Alkali Ridge ACEC, page 28. The ACEC, as well as the entire project area is a cultural landscape that deserves to be protected. This EA only discusses individual sites and does not address how the cultural landscape will be protected.	As stated, all areas that will have treatments completed will have a full archaeology survey completed prior to treatments throughout the Devil Canyon EA. The Alkali Ridge ACEC was identified as having potential impacts (PI) and was analyzed throughout the document. It was not singled out because of cultural resources present, but because of land designation and the effects this project would have within the ACEC.	NO
Owen Severance	2	12	GRA	Livestock grazing, pages 32 and 33. The long-term result of this project will be an increase in the number of cattle using the area. This will result in increased damage to archaeological sites. This issue is not addressed in the EA.	This issue was addressed in the range permit renewal E.A. An increase in AUM's does not automatically equal an increase in livestock numbers on a given allotment. Additional AUM's spread across the landscape can also aid in cultural resource protection as the rancher may now have the ability to spread livestock throughout the allotment so they are not concentrated in one area such as around a water source where cultural resources are likely to be found.	NO

Owen Severance	2	13	CUL	Monitoring and/or compliance, pages 38, 39. Apparently no monitoring of archaeological sites will be conducted to determine the effects of the project on cultural resources. Why not?	Post treatment archaeological site monitoring information has been added to the Devil Canyon EA under Section 4.2.1.10 Monitoring and/or Compliance.	YES
Owen Severance	2	14	CIA	Cumulative Impacts Analysis, pages 44-49. Amazing. Not a single reference to cultural resources and impacts that can be expected from this project. Nothing about opening up areas and allowing increased access to archaeological sites. Nothing about the impacts cattle have on archaeological sites.	Cultural Resources were identified as (NI) Present, but not affected to the degree that detailed analysis is required and thus were not analyzed in the document.	NO
Owen Severance	2	15	REF	References Cited, pages 51-54. Amazing (again). Not a single reference to cultural resources in the project area.	Cultural Resources were identified as (NI) Present, but not affected to the degree that detailed analysis is required and thus were not analyzed in the document.	NO