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Bureau of Land Management**

**Environmental Assessment EA-AZ-06-130-0040
May 2007**

**Nixon Spring Prescribed Burn
Grand Canyon-Parashant National Monument/Arizona Strip District
Bureau of Land Management
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St. George, Utah 84790
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Contents

Page

PURPOSE AND NEED 3
Introduction 3
Background..... 3
Need for the Proposed Action 3
Purpose of the Proposed Action..... 4
Conformance with BLM Land Use Plan(s) 4
Relationship to Statutes, Regulations, or other Plans..... 5
Identification of Issues 6
Summary..... 7

DESCRIPTION OF ALTERNATIVES 7
Introduction 7
Proposed Action..... 8
No Action 9
Alternatives Considered, but Eliminated from Further Analysis..... 10

AFFECTED ENVIRONMENT..... 10
Introduction 10
General Setting..... 10
 Critical Elements Not Affected By The Proposal 10
 Critical Elements and Other Resources /Issues Brought Forward for Analysis 11

ENVIRONMENTAL IMPACTS..... 15
Direct & Indirect Impacts 15
Proposed Action..... 15
No Action 18
Cumulative Impacts Analysis..... 19

CONSULTATION & COORDINATION..... 20
Persons, Groups, & Agencies Consulted 20
Summary of Public Participation..... 20
List of Preparers 21
Summary of Public Comments..... 21

Appendix

Condor Conservation Measures

Nixon Spring Prescribed Burn**EA-AZ-06-130-0040****PURPOSE & NEED****Introduction**

This Environmental Assessment (EA) has been prepared to analyze the environmental consequences of the Nixon Spring prescribed burn as proposed by BLM. The EA is a site-specific analysis of potential impacts that could result from the implementation of this proposed action. The EA assists the BLM in project planning and 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, then an EIS would be prepared for the project. If not, a Decision Record may be signed for the EA approving the selected action. 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 Arizona Strip Resource Management Plan (1992, as amended).

Background

The Mt. Trumbull Wilderness Area, in Mohave County, Arizona, contains approximately 7,900 acres of public lands managed by the Bureau of Land Management. The area is approximately 60 miles southeast of St. George, Utah. The proposed project would occur within the Grand Canyon-Parashant National Monument.

The ponderosa pine forest that covers the mountain is mixed with pinyon, juniper, and oak. Although remote, it is a popular recreation and sightseeing destination. The area provides wildlife habitat for a variety of species including turkeys, mule deer, goshawks, and Kaibab squirrels. Wildfires that occur each summer can require a full suppression response due to the potential for large, high severity burns.

BLM is proposing to conduct a low intensity prescribed understory burn. There is one 62 acre treatment unit within the Parashant National Monument along the south slope of Mt Trumbull, within the Mt. Trumbull Wilderness Area.

Need for the Proposed Action

The Nixon Spring Project is an effort to reintroduce low intensity fire into a ponderosa pine forest in an effort to reduce hazardous fuels, maintain wilderness character, and restore ecosystem function and condition.

The unit is best characterized as a mostly pure stand of ponderosa pine, with some pinyon, juniper, oak, shrubs, forbs, and grasses. The site has been protected from wildfire since the late 1800s, which has allowed high fuel loads to accumulate. Prior to European settlement the area experienced high frequency, low intensity fires that kept the canopy open and removed forest litter and debris. The unnaturally high tree density and fuel loads that have accumulated create a risk of catastrophic, stand-replacing fire that threatens the large, pre-settlement trees on the site.

The forest ecosystem on this site is outside of the range of historic variability. In order to allow naturally-ignited fires to play their natural role in the ecosystem, it is necessary to first reduce fuel accumulations and reduce stand density using prescribed burning.

Federal wildland fire policy defines fire as a critical natural process that should be reintroduced for the benefit of ecosystem integrity. It also recognizes fire hazards that can result as fuels accumulate where fire has been suppressed and recommends that fire be used to reduce these high fuel loads.

Purpose of the Proposed Action

The purpose of the proposed action is to reduce high loads of live and dead fuel in order to reduce the risk of stand-replacing fire, improve ecosystem function, protect wilderness values, and improve wildlife habitat. The long-term goal is to return the forest to a condition within the range of historic variability, which would allow wildfires to be managed for resource benefit rather than requiring full and immediate suppression.

The goals of the project are:

- Restore ecosystem function and condition
- Reintroduce fire into the ecosystem
- Remove/reduce hazardous fuels
- Protect large old growth (pre-European settlement) trees and snags
- Enhance and protect wilderness values
- Limit conflicts with visitors by avoiding burning during mule deer hunting season
- Minimize impacts on cultural resources
- Minimize impacts on wildlife and special status species (plants and animals)

Specific burn objectives are:

- Reduce forest litter and duff by 40-70% immediately postburn
- Reduce fuel loading of dead and down fuels <20" diameter by 40-70% immediately postburn
- Reduce live post-settlement overstory trees by 10-35% within two years postburn
- Reduce live understory trees and shrubs by 10-35% within one year postburn
- Increase native grass and forb cover by 5-25% within five years postburn
- Limit pre-settlement tree mortality from burn activity to less than 10% within five years postburn
- Limit consumption of presettlement snags from burn activity to less than 40%
- Limit reduction of downed logs greater than 20" diameter to less than 50%
- Keep the prescribed burn within the Maximum Manageable Area
- Limit smoke impacts on Class I airshed in the Grand Canyon, nearby private lands, and wilderness areas to levels permitted by ADEQ
- Limit damage to structures such as fences to less than 5%
- Limit damage to historic structures, nearby private lands, and structures on private lands to 0%

Conformance with BLM Land Use Plan

The Proposed Action is consistent with the 1992 Arizona Strip Resource Management Plan, as amended. The Proposed Action was designed in conformance with all Bureau standards and incorporates appropriate guidelines for specific required and desired conditions relevant to project activities.

Specific RMP Decisions Include:

- FW08 Protect forests from catastrophic fires while managing prescribed burns or naturally occurring fires within established prescriptions to reduce fuel buildup, maintain healthy species composition and benefit wildlife habitat, watershed cover and livestock forage.

FW04 In forest management activities, ensure protection of natural aesthetics, recreation, special status species, cultural resources, and other multiple-use values.

WD01 Continue managing the Paria Canyon-Vermilion Cliffs, Mt. Trumbull/Mt. Logan, and Cottonwood Point Wilderness areas in accordance with their activity management plans.

The proposed action is also in conformance with the following decisions as found in the Arizona Strip District RMP Implementation Plan of 1992 (Shivwits):

AFFECTED RESOURCE	DECISION NUMBER
Forest Resources	FW02, 06, 07, 15
Grazing Management	GZ01, 21
Recreation Resources	RR06, 13-1,3
Special Status Species	TE01, 02, 03
Soil, Water, Air Resources	WS01, 16, 20
Transportation/Access	TA03
Wilderness	WD01
Wildlife Resources	WL02
Woodland Resources	FW03, 09, 19

Relationship to Statutes, Regulations, or other Plans

Grand Canyon - Parashant National Monument

The proposal is not inconsistent with the Proclamation for the Grand Canyon - Parashant National Monument (2000), which is silent on the issue of prescribed burning, but does direct the BLM and NPS to manage the Monument to protect Monument objects, which includes forests that are at risk from catastrophic wildfires and other threats.

Mt. Trumbull Resource Conservation Area

The Mt Trumbull RCA Plan (June 1995) identified issues and objectives for management of the area:

Major Issue 1 - "Past and current management practices in the Mount Trumbull RCA are allowing some less than desirable vegetative/soil conditions and are promoting conflicts among different uses of these resources."

Objective 1 - Restore the ponderosa pine vegetation type to a mosaic of uneven aged stands with an understory of grass and forbs with small openings, allowing wildfire to return as a natural process of the ecosystem.

Major Issue 3 - " Opportunities for the public to engage in high quality, backcountry, recreation activities need to be maintained."

Objective 4 - Manage the spectrum of recreational settings in the Resource Conservation Area so that selected indicators of resource and social conditions are within or below the ranges described . . .

While not specifically mentioned in the Mt Trumbull RCA Plan, this project is consistent with the goals and objectives for the area. Recreation settings, and their ability to produce opportunities for various recreation activity and experience opportunities, would be slightly hindered during the early stages of the project, but moderately enhanced with successful completion of the project. Likewise, visual contrasts would be created early in the project, but VRM Class II objectives would be achieved with the successful completion of the project's seeding component.

Standards and Guidelines

The Arizona Standards and Guidelines for Rangeland Health include the following:

Standard 1: Upland Sites: Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate, and landform (ecological site).

The proposed action is to reintroduce low intensity fire into the treatment areas, then to seed. Low intensity fire was a frequent occurrence prior to European settlement. Based on similar treatments in the area, there would be only negligible change to soil infiltration, permeability, and erosion from low intensity fire. The proposal would not preclude attainment of Standard #1.

This proposed application of low intensity fire differs from the impacts that a high intensity wildfire would have. Under summertime conditions, the intensity and severity of a wildfire in these areas could have the effect of reducing permeability, increasing erosion, and perhaps even sterilizing soils. Failure to implement the proposal could lead to a situation where Standard #1 would not be met.

Fires could result in some soil erosion and run-off, depending on amount of vegetation burned, soil, slope, and fire frequency. In the event that a high intensity fire occurs, this could result in soil sterilization that could take several years to recover. Most impacts to soils would be short-term (less than 5 years).

Standard 2: Riparian-Wetland Sites: *Riparian-wetland areas are in properly functioning condition.*

There are no riparian/wetland sites within the unit. The nearby Nixon Spring could see a slight increase in recharge from the removal of biomass on the treatment unit.

Standard 3: Desired Plant Communities: *Productive and diverse upland and riparian-wetland plant communities of native species exist and are maintained.*

In past prescribed burns in overdense ponderosa pine forests in the area, grasses and forbs have re-established in the burn areas and have provided ground cover, decreasing erosion. There would be a temporary, short-term loss of herbaceous ground cover in treatment unit. The current amount of ground cover in the form of duff and leaf/needle litter is quite high, nearly 100% in some areas. There would be short-term loss of ground cover in areas covered by needle and duff litter, but it is expected that herbaceous cover would increase within one or two growing seasons.

The proposed project would be in compliance with the Arizona Standards and Guidelines for Rangeland Health and would not preclude attainment of any of the three standards.

Wilderness Act

The Wilderness Act of 1964 sets the standard for what can occur in designated wilderness areas. Section 4(c) of the Wilderness Act of 1964 prohibits certain activities in wilderness by the public, and, at the same time allows agencies to engage in those prohibited activities in some situations. Section 4(c) states “...*except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no other structure or installation within any such area.*”

Mt. Trumbull Wilderness/Mt. Logan Wilderness Management Plan

The Mount Trumbull Wilderness was incorporated into the National Wilderness Preservation System on August 28, 1984, by the Arizona Wilderness Act of 1984 (Public Law 98-406). The wilderness is managed in accordance with the Mt. Trumbull/Mt Logan Wilderness Management Plan (1990).

Arizona Department of Environmental Quality Smoke Management

Prior to conducting the prescribed burn BLM would request a permit for smoke from ADEQ. BLM would not burn unless a permit was issued. BLM would conduct the burn in accordance to all applicable requirements established by ADEQ, and would provide ADEQ with a report of burn accomplishments.

Identification of Issues

- ~ Air Quality
 - Burning may affect the Class I Airshed in the Grand Canyon
 - Burning may affect visitors
- ~ Cultural
 - Prepping and burning may affect cultural resources

- ~ Invasive, Non-native Species
Potential for introduction/establishment of invasive, non-native species
- ~ Monument Objects
Treatment may affect Monument Objects
- ~ Recreation
Treatment operations may impair visitor experience (solitude, hunting)
Burning may change visitor experience/opportunity
- ~ Soils
Treatment may temporarily increase runoff and erosion slightly
- ~ Special Status Species
Treatment may affect sensitive bats
Treatment may affect California condors
- ~ Visual Resource Management
Treatment may impact visual quality
- ~ Wilderness
Treatment may affect appearance of naturalness
Minimum tool
- ~ Wildlife
Treatment may affect turkey populations
Treatment may affect mule deer
Treatment may affect non-game wildlife populations

Summary

This section 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. The proposed action, as well as a no action alternative, is presented in the next section. The potential environmental impacts resulting from the implementation of the proposed action are analyzed in the section on environmental consequences for each of the identified issues.

DESCRIPTION OF ALTERNATIVES

Introduction

The goals of the project are to reduce hazardous fuels, maintain wilderness character, and restore ecosystem function in a ponderosa pine forest on the south slope of Mt. Trumbull. The proposed action was developed based on the following criteria:

- ~ Likelihood of successfully reducing hazardous fuels and restoring ecosystem function
- ~ National Monument and wilderness policies
- ~ Minimizing impacts on visitors
- ~ Minimizing impacts on sensitive cultural and biological resources
- ~ Employee and visitor safety

Proposed Action

Prior to initiating operations, BLM would conduct surveys and inventories of cultural and biological resources (northern goshawks, turkey, mule deer, Kaibab squirrel, California condors), as necessary. BLM would then prepare the unit for burning,

and then apply low intensity understory fire to approximately 62 acres of a ponderosa pine forest in T. 35 N., R. 8 W., section 28, with a small portion in section 27. BLM also proposes to apply native seed to the unit immediately post-burn. BLM would rehabilitate surface disturbance after burning operations are completed by obliterating firelines using handtools. BLM would conduct post-treatment monitoring of treatment effects.

Burn Preparation

BLM would use handtools (shovels, pulaskis, rakes, handsaws, loppers) to prepare the units for burning. Burn preparation consists of removing duff/litter concentrations and ladder fuels around significant features such as fences, spring developments, pre-settlement trees, snags, and downed logs. The unit would not be thinned except within approximately 30 feet of such features. Crews would rake around these features, and cut, lop, and scatter smaller diameter, post-settlement trees and brush. Debris would be scattered around the unit to minimize visual impacts.

Short sections of fireline would be constructed as necessary to prevent the spread of fire outside of unit boundaries. Fireline is not needed in most areas where bare soil serves as an effective natural barrier. Where fireline is constructed it would be the minimum necessary – usually consisting of a 1-3 ft wide handline. All stumps would be flush cut and camouflaged to reduce visual impacts. Nixon Spring would be lined and prepped to minimize likelihood of any damage to the development from burn operations. No mechanized equipment – chainsaws – would be used to prep the unit.

Up to 20 personnel would be on the site for up to three weeks preparing the unit for burning.

Prescribed Fire

BLM would introduce low intensity understory fire in accordance with an approved burn plan. Project personnel would ignite the fuels so that fire would back through the unit, removing a portion of the post-settlement live trees and shrubs, as well as some of the accumulated dead fuel. BLM would take care not to allow fire into the canopy or to kill pre-settlement (old growth) trees. Personnel would attempt to avoid burning pre-settlement snags that provide important wildlife habitat.

The burn would likely occur in the spring or fall to reduce intensity. Burn implementation would be coordinated with Arizona Game and Fish Department to avoid conflicts with hunting seasons. The prescribed burn would be ignited using a variety of handheld devices, including drip torches and fusees. The burn is expected to take one day to complete, although personnel would be on site for up to two weeks to monitor the burn and ensure control objectives were achieved.

BLM would analyze smoke production and dispersal patterns and apply for a Smoke Permit from the Arizona Department of Environmental Quality, and would not burn unless a permit is granted by the State. Burning would not occur when winds were predominantly from the northeast, to limit smoke moving into the Grand Canyon NP Class I airshed.

Seeding

BLM would use hand seeders to apply native seed to the Nixon Spring Treatment Unit, using species listed in Table 1. Some variation in seed mix could occur, based on price and availability.

Monitoring/Research

Prior to burning BLM would monitor fuel conditions on the unit, measuring fuel moistures, and estimating fuel density. During the burn operations BLM would monitor fire behavior. BLM would implement pre-project herbaceous vegetation monitoring to establish baseline grass/forb conditions and post-burn monitoring to evaluate treatment effectiveness (objectives) and determine seed mix success. Prior to burning BLM would establish at least one photo monitoring plot, and return post-treatment to revisit that plot. BLM would monitor the treatment unit for the presence of non-native, invasive noxious weeds, and would use hand tools such as shovels and pulaskis to remove any of these weeds that were found.

Table 1. Potential species and application rates

SPECIES	LBS/ACRE
Big bluegrass (Poa ampla)	0.6
Sand dropseed (Sporobolus cryptadrus)	0.5
Sideoats grama (Bouteloua curtipendula)	1.5
Utah serviceberry (Amelanchier Utahensis)	0.5
Fringed sagebrush (Artemisia frigida)	0.5
Wood's rose (Rosa Woodsii)	0.5
Arizona fescue (Festuca Arizonica)	1.75
Prairie Junegrass (Koeleria cristata)	1.0
Bottlebrush squirreltail (Sitanion hystrix)	1.25
Slender wheatgrass (Agropyron trachycaulum)	1.25
Mountain brome (Bromus marginatus)	1.25
Western wheatgrass (Agropyron Smithii)	1.25

Rehabilitation

Immediately post-burn the BLM would obliterate all handlines and remove signs of human activity.

No Action

Under the no action alternative BLM would continue to manage the Mt. Trumbull Wilderness under existing plans and policies. The site preparation and prescribed burn described in the proposed action would not occur unless a new decision was made based on additional NEPA analysis.

BLM personnel would continue to suppress wildfires in the wilderness using an appropriate management response. Minimum tool/minimum impact suppression techniques are used by firefighters to manage wildfires. The suppression response varies depending on the nature of the fire, ranging from a small crew walking in to contain and control a single tree or snag that is burning, to the use of mechanized equipment and aerial firefighting resources to support larger operations to address high intensity/high severity fires that threaten to burn large acres. The response is a factor of current and predicted weather and fire behavior, with firefighter and public safety as the priority.

The Arizona Strip Fire Management Plan (2004) describes Appropriate Management Response as a range of available management responses to wildland fires. Responses range from full fire suppression to managing fires for resource benefits (fire use). Management responses applied to a fire will be based on objectives derived from the land use allocations . . . relative risk to resources, the public and firefighters; potential complexity; and the ability to defend management boundaries.

The Arizona Strip Fire Management Plan (2004) describes the fire management strategy for the area:

a) Suppression – Firefighter and public safety is the first priority in all fire management strategies and suppression actions. An Appropriate Management Response will be used on all wildland fires. A resource advisor will be assigned or contacted for any fire that escapes initial attack. Wildland fires will be suppressed according to conservation measures for the Arizona Statewide Land Use Plan Amendment (Appendix D) where applicable. MIST will be used in all areas with known Federally protected species or habitat.

Suppression strategies and tactics in ponderosa pine are dependent on fire intensity. For low intensity fires, allow for direct attack. For high intensity fires, suppression strategies and tactics are usually indirect. Fires in ponderosa pine usually go into multiple burning periods. Emphasize use of aircraft (helicopter and SEAT) to minimize surface disturbance.

Mt. Trumbull and Mt. Logan Wildernesses: Fire management will be consistent with the Mt. Trumbull and Mt. Logan Wilderness Management Plan. When suppression actions are required in wilderness areas, MIST will be used and coordinated with wilderness area management objectives and guidelines. If more than minimum impacting tools are required, management approval will be required prior to use.

Alternatives Considered, but Eliminated from Further Analysis

The use of mechanized equipment – chainsaws – to develop fireline and thin around pre-settlement trees and snags prior to burning was considered but eliminated from further analysis as an alternative. Using chainsaws would reduce the time necessary to construct fireline, and allow BLM personnel to construct wider lines (1-3 foot wide lines with a 10-20 foot saw line) by removing trees and brush. Using chainsaws to remove ladder fuels (small diameter trees, logs, and brush) from around pre-settlement trees and snags would reduce the likelihood of low intensity ground fire moving into the canopy and damaging trees.

However, the use of mechanized equipment such as chainsaws in wilderness is discouraged by the Wilderness Act and BLM policy, except in emergency situations or where the use of such equipment is critical to the success of the project. On this unit BLM determined that the use of chainsaws to construct line and reduce ladder fuels was not necessary. There are natural barriers in several places that can be used to restrict the spread of fire outside of the unit. Construction of a fireline that minimally meets the requirements for containment and control can be accomplished using only non-mechanized equipment. BLM has determined that burning when environmental conditions will promote a low intensity fire, combined with minimal non-mechanized pre-treatment of ladder fuels will meet the goals and objectives of the project, without impairing wilderness values.

AFFECTED ENVIRONMENT

Introduction

This chapter presents the potentially affected existing environment (i.e., the physical, biological, social, and economic values and resources) of the impact area and provides the baseline for comparison of impacts/consequences described in the Environmental Consequences Section.

General Setting

The treatment unit is T. 35 N., R. 8 W., section 28, with a small portion in section 27. It is comprised of a bench, or ledge, that lies approximately 2/3 of the way up the south slope of Mt. Trumbull, immediately west of Nixon Spring. Designated as wilderness in 1984, this area saw substantial human use by native peoples as well as settlers. The surrounding area was logged for timber for a variety of uses, including a flume used to carry water from the spring to a lumber mill and camp at the base of the mountain.

Critical Elements of the Human Environment Not Affected By This Proposal

Environmental Justice

Executive Order 12898, General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires all Federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. The proposed action would not have health or environmental effects on minorities or low-income populations or communities as defined in the Environmental Protection Agency's Environmental Justice Guidance (1998). Therefore, environmental justice will not be analyzed.

Floodplain

Executive Order 11988, Floodplain Management, requires an examination of impact to floodplains. Executive Order 11988 requires all Federal agencies to avoid construction in the 100-year floodplain unless no other practical alternative exists. This project does not propose any construction, and there would be either no impacts or negligible impacts to floodplains. Therefore, this topic was eliminated.

Hazardous Materials

The proposed action would not involve the use of hazardous materials, nor would any facilities that contain hazardous facilities be affected. Therefore this topic was eliminated.

Prime and Unique Farmlands

In August 1980, the Council on Environmental Quality (CEQ) directed that Federal agencies must assess the effects of their actions on farmland soils classified by the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) as prime or unique. Prime or unique farmland is defined as soil that particularly produces general crops such as common foods, forage, fiber, and oil seed; unique farmland produces specialty crops such as fruits, vegetables, and nuts. According to NRCS, none of the soils in the project area are classified as prime and unique farmlands. Therefore, the topic of prime and unique farmlands will not be analyzed.

Riparian

There are no riparian areas that would be affected by the proposal; therefore, this topic was eliminated.

Socioeconomic Environment

The proposed action would neither change local and regional land use nor impact local businesses or other agencies. Due to the remote location, difficulty and regulation of access to project areas, impacts to other entities would not occur. Therefore, socioeconomic environment will not be addressed as an impact topic.

Critical Elements of the Human Environment and Other Resources Brought Forward for Analysis:

- ~ Air Quality
- ~ Cultural Resources
- ~ Invasive, Non-native Species
- ~ National Monument Objects
- ~ Native American Religious Concerns
- ~ Recreation
- ~ Special Status Species
- ~ Soils
- ~ Wilderness
- ~ Wildlife
- ~ Visual Resource Management

Air Quality

The existing air quality in the project area is typical of undeveloped regions in the western United States. Air quality in the project area is generally good, although regional haze can impair vistas. Regional haze is most common in the summer, although visibility in general remains very good. In general, winters are clean and clear, although local inversions may trap pollutants in the canyon.

Clean Air Act, as amended (42 USC 7401 et seq.), provides direction for air quality. The Grand Canyon National Park approximately ten miles to the south is designated a Class I area. Maximum allowable increases of sulfur dioxide (SO₂), particulate matter (TSP), and nitrogen oxides (NO_x) beyond baseline concentrations established for Class I areas cannot be exceeded. The Act also sets a national goal to restore natural visibility to Class I areas. Section 118 of the Clean Air Act requires all Federal facilities to comply with existing Federal, state, and local air pollution control laws and regulations.

The proposed project area is within a Prevention of Significant Deterioration Class II designation. Class II allows for a moderate amount of growth or activity that may degrade air quality. The degree of degradation should be minimal or temporary. Prescribed burns fall into this category.

Cultural Resources

Cultural resources are any site, structure, object, landscape, or natural resource feature assigned traditional, legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it. Mt. Trumbull is traditionally affiliated with the Havasupai, Hopi, Hualapai, Kaibab-Paiute, Navajo Nation, Zuni, and Southern Paiutes.

Archaeological and historical resources are defined as any material remains or physical evidence of past human life or activities which are of archeological or historical interest. This also includes the effects of human activities on the environment. These materials are capable of revealing scientific or humanistic information through research.

Cultural landscapes are defined as a geographic area, including both cultural and natural resources, and the wildlife or domestic animals therein, associated with a historic event, activity, or person, or exhibiting other cultural or aesthetic values. Within the project area, there are no historic designed landscapes documented, however, historic sites, vernacular landscapes and ethnographic landscapes may exist.

Invasive, Non-native Species

There are no known noxious weeds within the treatment unit. Scotch Thistle (*Onopordum acanthium*) and cheatgrass (*Bromus sp.*) have been found in the area. These species (and other exotics) can become established in areas that have been disturbed.

National Monument Objects

On January 11, 2000, President Clinton established the Grand Canyon-Parashant National Monument under authority from Section 2 of the Antiquities Act, 16 U.S.C. 431, which authorizes the President to establish as national monuments "historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States...."

The Antiquities Act authorizes the President, as part of his declaration of a national monument, to reserve land, "the limits of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected." These objects include the geological, archeological, historic and biological objects identified in the Proclamation.

From the Presidential Proclamation of January 11, 2000: "The Grand Canyon-Parashant National Monument is a vast, biologically diverse, impressive landscape encompassing an array of scientific and historic objects. This remote area of open, undeveloped spaces and engaging scenery is located on the edge of one of the most beautiful places on earth, the Grand Canyon. Despite the hardships created by rugged isolation and the lack of natural waters, the monument has a long and rich human history spanning more than 11,000 years, and an equally rich geologic history spanning almost 2 billion years. Full of natural splendor and a sense of solitude, this area remains remote and unspoiled, qualities that are essential to the protection of the scientific and historic resources it contains."

Interim Management for the Grand Canyon-Parashant National Monument was developed from the Monument Proclamation and Bureau policy and includes the statement: "*In general, actions that are not precluded by the Proclamation or legislation and which do not conflict with the established purposes of the monument or national conservation area may continue. Allowed activities can be restricted only where (1) the BLM, through processes required by existing law, identifies places where such uses ought to be restricted or prohibited as necessary to protect the federal lands and resources, including the objects protected by the monument or national conservation designation; or (2) where the BLM finds a clear threat from such a use to the federal lands and resources, including the objects protected by the national conservation area or monument designation and the circumstances call for swift protective action.*" (Instruction Memorandum No. 2002-008 Interim Management Policy for Bureau of Land Management National Monuments and National Conservation Areas).

Native American Religious Concerns

The spring and surrounding area is an important place for Native Americans, whose ancestors used the site for a variety of purposes. Local tribes have expressed concerns about surface disturbance and other disruptions of the spring.

Recreation

In the project area, recreation setting attributes include geology, scenic view sheds, remoteness and solitude. Visitors enjoy the area in a variety of ways: some view the mountain as they pass by on Mohave County Rd 5, just below the unit, and from other

Comment [r1]: The proposed project area is within a Prevention of Significant Deterioration class II designation. Class II allows for a moderate amount of growth or activity which may degrade air quality. The degree of degradation should be minimal or temporary. Prescribed burns fall into this category. RS

vantage points; some (averaging about 300 each year) venture into the wilderness to hike and camp; some hunt turkeys and mule deer. The area within the Mt. Trumbull Wilderness is designated as closed to motorized and mechanized transport use.

Recreation activities occur primarily in physical settings that are Routed Natural and Semi-Primitive Non-Motorized; social settings that are Semi-Primitive Motorized and Primitive; and administrative settings that are Rural and Primitive. (See following tables)

PHYSICAL – Resources & Facilities: Character of the natural landscape					
Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Routed Natural	Rural	Urban
SPECIFIC PHYSICAL ATTRIBUTES					
a. Remoteness					
>3 miles from any road	>½ mile from any kind of road, but not as distant as 3 miles, and no road is in sight	On or near 4WD roads, but at least ½ mile from all improved roads, though they may not be in sight	On or near improved country roads, but at least ½ mile from all highways	On or near primary highways, but still within a rural area	On or near primary highways, municipal streets, and roads within towns or cities
b. Naturalness					
Undisturbed natural landscape	Naturally-appearing landscape having modifications not readily noticeable	Naturally-appearing landscape except for obvious primitive roads	Landscape partially modified by roads, utility lines, etc., but none overpower natural features	Natural landscape substantially modified by agriculture or industrial development	Urbanized developments dominate this landscape
c. Facilities					

None	Some primitive trails made of native materials such as log bridges and carved wooden signs	Maintained and marked trails, simple trailhead developments, improved signs, and very basic toilets	Improved yet modest, rustic facilities such as campgrounds, restrooms, trails, and interpretive signs	Modern facilities such as campgrounds, group shelters, boat launches, and occasional exhibits	Elaborate full-service facilities such as laundry, groceries, and book stores
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SOCIAL – Visitor Use & Users: Character of recreation & tourism use					
Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Routed Natural	Rural	Urban
SPECIFIC SOCIAL ATTRIBUTES					
d. Group Size (other than your own)					
Fewer than or equal to 3 people per group	4-6 people per group	7-12 people per group	13-25 people per group	26-50 people per group	Greater than 50 people per group
e. Contacts (w/other groups)					
Fewer than 3 encounters per day at campsites and fewer than 6 encounters per day on travel routes	3-6 encounters/day off travel routes(e.g., campsites) and 7-15 encounters/day on travel routes	7-14 encounters/day off travel routes(e.g., staging areas) and 15-29 encounters/day en route	15-29 encounters/day off travel routes(e.g., campgrounds) and 30 or more encounters/day en route	People seem to be everywhere, but human contact is still intermittent	Other people consistently in view
f. Evidence of Use					
Only footprints may be observed	Footprints plus slight vegetation trampling at campsites & travel routes. Only infrequent litter	Vehicle tracks and occasional litter and soil erosion. Vegetation becoming worn	Well-worn soils and vegetation, but often gravel surfaced for erosion control. Litter may be frequent	Paved routes protect soils and vegetation, but noise, litter, and facility impacts are pervasive	A busy place with what seems like constant noise. Unavoidable litter seems to be a lifestyle choice

ADMINISTRATIVE – Administrative & Service Setting: How public land managers, county commissioners and municipal governments, and local businesses care for the area and serve visitors and local residents

Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
SPECIFIC ADMINISTRATIVE ATTRIBUTES					
g. Visitor Services					
None is available on-site	Basic maps, but area personnel seldom available to provide on-site assistance	Area brochures and maps, plus area personnel occasionally present to provide on-site assistance	Information materials describe recreation areas and activities. Area personnel are periodically available	Everything described to the left in this row, and describe experiences and benefits available. Area personnel do on-site education	Everything described to the left in this row, plus regularly scheduled on-site outdoor skills demonstrations and clinics
h. Management Controls					
No visitor controls apparent. No use limits. Enforcement presence very rare.	Signs at key access points on basic user ethics. May have back country use restrictions. Enforcement presence rare	Occasional regulatory signing. Motorized and mechanized use restrictions. Random enforcement presence	Rules clearly posted with some seasonal or day-of-week use restrictions. Periodic enforcement presence	Regulations prominent. Total use limited by permit, reservation, etc. Routine enforcement presence	Continuous enforcement to redistribute use and reduce user conflicts, hazards, and resource damage
i. Mechanized Use					
None whatsoever	Mountain bikes and perhaps other mechanized use, but all is non-motorized	4WD, ATV, dirt bikes, or snowmobiles in addition to non-motorized, mechanized use	2WD vehicles predominant, but also 4WD and non-motorized, mechanized use	Ordinary highway auto and truck traffic is characteristic	Wide variety of street vehicle and highway traffic is ever-present

Soils

The area was mapped as Godding gravelly loam, 3 to 40 percent slopes. It grades to gravelly clay loam to very cobbly clay within a depth of 12 inches. It is very deep and well drained with slow permeability. Runoff is medium to rapid with a very severe hazard of water erosion. There may be inclusions of Sholow very cobbly clay loam or very cobbly silty clay loam on slopes of 15 to 35 percent with similar attributes except they have a moderate erosion hazard. Some of these soils merge with talus slopes of basalt.

Special Status Species

There are no known Federally-listed species within or adjacent to the treatment unit, except for a section 10J experimental population of California condors that travel over a broad area that includes the treatment unit. The area is not designated as critical habitat for any listed species. If a listed species is observed during implementation, all work in the area would stop and would not be allowed to resume if there was any possibility that activities could adversely affect the species. If it is determined that the project would affect any listed species, the project would halt until consultation with the US Fish and Wildlife Service could occur.

A variety of bat species considered ‘sensitive’ by BLM are also known from this area, including spotted bats (*Euderma maculatum*), big free-tailed bats (*Nyctinomops macrotis*), Allen’s lappet-browed bat (*Idionycteris phyllotis*), and Townsend’s big-eared bat (*Corynorhinus townsendii*).

Wilderness

The Wilderness Management Plan (1990) states “The first and dominant goal is to provide for the long-term protection and preservation of the area’s wilderness character under a principle of non-degradation. The area’s natural condition, opportunities for solitude, opportunities for primitive and unconfined types of recreation, and any ecological, geological, or other features of scientific, educational, scenic, or historical value present will be managed so that they remain unimpaired.” There is also a

Comment [m2]: The part about listed species is true, but there is no discussion of BLM sensitive species. I added sensitive bat species to the Wildlife section below, but they really should be shown as SSS. Also, if there is no impact to SSS and none are known to be present within or adjacent to the project area, why do we need condor stips? I suggest adding a line or two on condors (see S&G reports for text).

requirement to manage the area using the minimum tool, equipment, or structure necessary to successfully, safely, and economically accomplish the objective.

The plan describes three opportunity class zones for the wilderness. The proposed project would occur entirely within Opportunity Class II, where management is focused primarily on providing a primitive recreation experience setting balanced with a strong emphasis on maintaining and enhancing the natural ecosystem and its processes. The fire management plan (Appendix A of the wilderness management plan) specifically states that management ignited prescribe fire is allowed for the purposes of fire regime restoration.

Wildlife

The area is managed in accordance with the Trumbull Habitat Management Plan (1983, revised 1992), a cooperative document between the BLM and the Arizona Game and Fish Department. This HMP places emphasis on non-game species, wilderness designations, apparent decline of mule deer numbers, full establishment of wild turkeys, and full establishment of Kaibab squirrels. The overall goal of the Trumbull Habitat Management Plan is to improve or protect wildlife habitat.

Wildlife, particularly Merriam's turkeys (*Meleagris gallapavo merriami*), Kaibab squirrels (*Sciurus aberti kaibabensis*), and mule deer (*Odocoileus hemionus*), contribute to outstanding values of the area.

Visual Resource Management

The project area is in a Class I Visual Resource Management area, as designated by the 1992 RMP. The objective for Class I areas is to preserve the existing character of the landscape. The level of change to the characteristic landscape should be very low and must not attract attention.

ENVIRONMENTAL IMPACTS

Direct/Indirect Impacts

Under the proposed action, BLM would conduct surveys and inventories of cultural and biological resources on the treatment unit. BLM would then prepare the unit for burning, and then apply low intensity understory fire to approximately 62 acres of a ponderosa pine forest in T. 35 N., R. 8 W., section 28, with a small portion in section 27. BLM also proposes to apply native seed to the unit immediately post-burn. BLM would rehabilitate surface disturbance after burning operations are completed by obliterating firelines using handtools. BLM would conduct post-treatment monitoring of treatment effects.

There would be a direct impact on vegetation in the area. There would be a direct impact to visitors from the presence of crews working in the area. There would be no change to the visual appearance of the units from a distance, but those on the site would notice ash and burned woody debris. During burning there would be an impact on visitors from an increase in smoke. Some live vegetation would be killed and dead woody debris reduced as a result of burning. Herbaceous species would increase as a result of seeding. Small amounts of vegetation debris would be scattered about the area.

The impacts of the proposed action and no action alternative on specific resources are discussed in detail below.

Proposed Action

Air Quality

Burning of vegetation would produce small amounts of smoke that would dissipate within two to 24 hours post-burn. The smoke would not cause substantial degradation to the Class I airshed of the Grand Canyon National Park. Visitors during (and immediately following) burn periods would notice smoke, but would not suffer adverse health impacts due to the low volume and short duration of exposure.

Cultural

Light thinning of shrubs and trees that are ladder fuels near pre-settlement trees would have little or no impact on cultural resources. The removal of the thick duff/leaf litter layer in some parts of the unit could expose surface artifacts currently concealed by dense vegetation. The fireline would be located to avoid impacts to any surface artifacts or other cultural resources.

No impacts to cultural resources are anticipated from the burning. Should any cultural resources be identified within or near the treatment unit, care would be exercised to avoid burning them. Any sites would be lined and prepped to avoid any impacts. Project personnel would receive training in cultural resources, allowing them to avoid potential impacts.

There would be no impact on archaeological resources of Archaic and Ancestral Puebloan origin and on historic resources, such as ranch structures and corrals, fences, water tanks, mines, and historic routes, except that removal of vegetation has the potential to expose resources currently hidden by dense vegetation to the public.

Invasive, Non-native Species

As a result of the removal of nonnative vegetation, opportunities would be created for the establishment of nonnative/noxious weed species.

Project personnel would be trained to reduce the introduction of non-natives into the project area. The treatment areas would be monitored for the establishment of new non-native/noxious species. Follow-up treatments with handtools would occur that would target non-native/noxious plants.

Monument Objects

The geologic structure, stratigraphy and erosional processes within the monument would remain intact.

There would be no impact on archaeological resources of Archaic and Ancestral Puebloan origin and on historic resources, such as ranch structures and corrals, fences, water tanks, mines, and historic routes, except that removal of non-native vegetation has the potential to expose resources currently hidden by dense vegetation to the public.

The proposed action would help restore ecosystem conditions and functions by reducing tree density and removing accumulated fuels. By reducing the risk of stand-replacing fire, important objects such as large presettlement trees would be protected.

Native American Religious Concerns

The spring would be avoided except for light handtool work to protect the water collection system. The surrounding area would see minimal handtool work to construct scratch line and remove small ladder fuels. The low intensity broadcast burn would be very similar to the fires the unit experienced during pre-European settlement periods.

The spring and surrounding area would retain the characteristics that make it an important place for Native Americans. A slight increase in groundwater recharge could increase flows.

Recreation

The project would slightly impact the “naturalness” attribute of the primitive and semi-primitive non-motorized physical recreation settings in the short-term due to the burn preparations that would be conducted.

Immediately post-treatment, visitors would see treated areas that contained burned vegetation. Natural processes would gradually reduce the visibility of the burn; after a few years the only evidence that would remain of the burn would be blackened tree trunks and some burnt logs and sticks; these are inherently natural and would not impair recreation experience.

There would be a reduction in the opportunity for solitude during periods of treatment activity. During periods of burning, visitors would see project personnel burning, and could see and smell smoke. Project personnel would be trained professionals who would ensure public safety. Smoke amounts and durations are not anticipated to be sufficient to create respiratory problems or other concerns.

If preparation and burn activity occurred when hunters were scouting or hunting for game, some hunters might be slightly inconvenienced and be forced to move into other nearby areas. The proposal contains a provision to avoid preparation and burn activities during hunting seasons. By creating a mosaic of conditions and restoring ecosystem condition and function, hunting opportunities would be improved over the long term.

Soils

Except for some small areas, treatments usually leave enough plants, litter, and ash to protect the soil surface from most rain events. Until recovery, runoff and erosion would increase slightly on those areas that have all litter burned off, but this would be countered by surface gravels and cobbles, especially on slopes less than 10 percent.

Special Status Species

There are no known Federally-listed species within or adjacent to the treatment unit, except for a section 10J experimental population of California condors that travel over a broad area that includes the treatment unit. The area is not designated as critical habitat for any listed species.

Adherence to the attached California condor mitigation measures would minimize the likelihood of any adverse impacts to individual animals. Provisions to cease activity should new information become available would prevent any adverse impact to any listed species.

A variety of sensitive bat species are also known from this area, including spotted bats (*Euderma maculatum*), big free-tailed bats (*Nyctinomops macrotis*), Allen's lappet-browed bat (*Idionycteris phyllotis*), and Townsend's big-eared bat (*Corynorhinus townsendii*). Loss of individual snags for roost sites would force displaced bats to find adequate shelter elsewhere in the forest. Mitigation to reduce the loss of roost snags would minimize any impact.

Comment [m3]: The part about listed species is true, but there is no discussion of BLM sensitive species. I added sensitive bat species to the Wildlife section below, but they really should be shown as SSS. Also, if there is no impact to SSS and none are known to be present within or adjacent to the project area, why do we need condor stips? I suggest adding a line or two on condors (see S&G reports for text).

Wilderness

The treatment unit would retain some evidence of human activity up to several years, until rehabilitated firelines completely recovered and scattered debris decayed. Evidence of burning would remain in the form of ash, burnt logs, and blackened tree trunks in the short-term, but these would appear as natural components of the ecosystem. During periods of treatment activity, there would be an increased management presence in the area, reducing opportunities for solitude for brief periods. The appearance of naturalness would quickly return as natural processes occurred.

The use of hand tools for cutting, and the use of drip torches would be consistent with minimum tool guidelines for wilderness.

The reduction of hazardous fuels would increase manager's ability to allow naturally occurring fire to play its natural role in the ecosystem, and broaden the range of environmental conditions where fires could be managed for resource use, rather than suppressed.

Wildlife

Preparation activities and prescribed burning would cause direct impacts to wildlife in the area. Mule deer, neotropical migratory songbirds, Merriam's wild turkey, and Kaibab squirrel would be displaced in the short term.

Wildlife habitat would be affected by the proposed action through the reduction in the accumulation of dead and down woody material on the forest floor. Herbaceous cover increases should meet AGFD requirements for turkey, contingent upon successful reestablishment of herbaceous understory, but may not meet overall requirements such as being in close proximity to a high proportion of dense forest stands. It is anticipated that re-establishment of herbaceous cover will occur, with likely increases in production and species diversity either through natural re-establishment or reseeding efforts.

Requirements for turkey roosting habitat would be met by the Proposed Action. Loss of turkey roost sites would be minimal due to the nature of the prescription. All old growth trees would be protected from prescribed fire by removing dead organic material from their bases prior to burning.

Feeding habitat post-treatment should meet requirements of turkey. Oak, pinyon and juniper will be reduced, however it is believed that enough acorn, juniper berry and pinyon nut production would be retained by the restoration guidelines to provide adequate food sources for turkeys. Increases in insect abundance in restored areas due to greater understory vegetation diversity should benefit turkey poults. Ground cover structural changes and resurgence of herbaceous vegetation following burning may increase abundance and availability of foods for wild turkeys in pine forests.

Open stand conditions would limit the capability to maintain and develop interlocking canopies that are necessary for the highest quality Kaibab squirrel habitat. Mycorrhizal fungi that are utilized by Kaibab squirrels as a food source are best produced in conifer stands that exceed 60% canopy cover.

The proposed action would break up the interlocking nature of ponderosa canopy found in dense conditions. Interlocking canopy would be retained in adjacent areas, but would be found only in areas of pre-settlement origin trees and post-settlement replacement trees. The continuous interlocking canopy characteristic presently found in the potential restoration units would be reduced. In addition, the availability of fungi needed to support abundant squirrel populations may be lacking. Reliable fungi production would only be expected to occur in pre-settlement/replacement tree clumps.

Neotropical migratory bird species that are dependent upon habitat components associated with dense forest conditions could be impacted indirectly through habitat alteration. By the same token, it is expected that species that thrive in open forest conditions and species that feed on insects will be impacted in a beneficial sense from implementation of restoration treatments. Adjacent untreated dense forest, and all old growth clumps in restored areas would remain to help meet the habitat needs of species dependent upon dense forest. In addition, the proposed action would benefit species that require dense forest by lessening the potential for crown fire and associated habitat destruction in adjacent, dense, untreated forest areas within the Mount Trumbull Wilderness.

Habitat diversity would increase through implementation of the proposed action. Re-establishment of understory herbaceous and shrub species, while maintaining and/or invigorating all old growth trees through implementation of restoration treatments would cause increases in habitat diversity.

Some mortality to small mammals and reptiles would occur from the use of prescribed fire, the removal of trees and associated surface disturbance. This impact is negligible for the area at large.

Visual Resource Management

The long-term success of improving forest health would contribute to enhancing visual resource conditions by increasing the variety of visual forms, lines, colors and textures where past land use practices have led to more monotypic conditions, visually. Conversely, the proposed action could potentially create minor to moderate visual contrast, as viewed from above on the southern rim of the Mt. Trumbull basalt cap. In the short-term, the contrast would be from the burn preparations and the conditions immediately following the burn. The result would generally appear as natural ecological change (e.g., the results of natural fire), adding weak, broken horizontal lines and contributing dull grey tones in burn areas. Black, vertical form/line would replace green/brown vertical lines where targeted fuels are successfully burned but not consumed. In the long-term and following successful establishment of the proposed seeding, these potential effects would be greatly diminished, meeting the Class I objective. The majority of the project work and results would not be visible from County Road 5, far below the bench-like project area. As viewed from the road, contrast potentially created by rust-colored needles of taller dead, standing trees would be short-term, fading away as needle-fall occurs.

No Action

Air Quality

No prescribed burning of vegetation would occur under this alternative. Smoke could be generated by wildfires in the area, although BLM would take action to suppress any fires that occur. There would be no impact to the Class I airshed of the Grand Canyon National Park. Visitors during (and immediately following) wildfires would notice smoke; the extent of any adverse health impacts of wildfire smoke would depend upon the volume and duration of exposure.

Cultural

There would be no direct impact on cultural resources from the no action alternative. During wildfire suppression actions BLM would attempt to clear potential firelines prior to construction, based on availability. Wildfires that occurred during warmer, drier periods could burn sufficiently intense to impact cultural resources.

Invasive, Non-native Species

No opportunities would be created for the establishment of nonnative/noxious weed species as a result of the no action alternative.

Monument Objects

The geologic structure, stratigraphy and erosional processes within the monument would remain intact.

There would be no impact on archaeological resources of Archaic and Ancestral Puebloan origin and on historic resources, such as ranch structures and corrals, fences, water tanks, mines, and historic routes, except from possible wildfires.

The no action alternative would maintain current ecosystem conditions and functions, including tree density and accumulated fuel outside the range of historic variability. The no action alternative would not reduce the risk of stand-replacing fire; important objects such as large presettlement trees would not be protected.

Native American Religious Concerns

The spring and surrounding area would not be treated. High intensity stand-replacing wildfire would remain a high probability occurrence that could adversely affect the quality of the area.

Recreation

Visitors would see the area as it now exists. There would be no reduction in the sense of solitude since there would be no treatment activity.

Soil

High intensity fire could remove all plants and litter, and could require intensive suppression actions that would create surface disturbance. The subsequent erosion, potentially caused by heavy thunderstorms, would be very severe.

Special Status Species

Under the no action alternative there would be no treatment activity, and so there would be no resulting impact on any special status species. Bat species dependent upon snags for roosts could be displaced by a high intensity stand-replacing wildfire.

Wilderness

The build-up of hazardous fuels would decrease manager's ability to allow naturally occurring fire to play its natural role in the ecosystem, and restrict the range of environmental conditions where fires could be managed for resource use, rather than suppressed.

Wildlife

There would be no direct impact on wildlife from selection of the No Action Alternative. The potential for a stand-replacing wildfire would not be reduced, continuing to threaten suitable wildlife habitat.

Visual Resource Management

There would be no impact on visual quality from selection of the no action alternative.

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.

Past and Present Actions

Since the area was settled by Europeans in the late 1870's the area has been used for logging and livestock grazing. Throughout the mid-to-late 1900's attempts have been made to suppress wildfires in the area. The removal of large trees for logging purposes provided smaller trees with an opportunity to become established, increasing stand density. The removal of fine fuels by livestock grazing reduced the frequency of wildfires. Combined with an aggressive suppression program, the small trees that became established were able to survive, albeit in a dense, closed canopy forest.

The designation of the area as wilderness in 1984 provoked a change in management; although grazing remains an authorized use, no motorized/mechanized equipment is authorized, except in emergency situations.

BLM continues to manage wildfires in the area under the concept of Appropriate Management Response, but environmental conditions during the summer when most naturally-ignited fires occur requires a full suppression response. High temperatures, high winds, low relative humidity, high fuel loads, and the nature of ladder fuels contribute to the likelihood of a rapidly-spreading stand-replacing crown fire.

Reasonably Foreseeable Action Scenario (RFAS)

It is reasonable to anticipate that wildfires will continue to occur in the area, both from natural and human causes. BLM would continue to manage fires under the Appropriate Management Response policy, as described above.

Until naturally occurring fire is allowed to play its normal role in maintaining forest ecosystems, high stand densities will continue to exist. Under high stand densities, presettlement trees will continue to face intense competition for light, space, and water, and be a risk of stand-replacing wildfire.

High stand density will continue to reduce groundwater percolation and affect spring recharge at Nixon Spring.

It is reasonable to assume that BLM will continue to implement hazardous fuels treatments outside of the wilderness area in the surrounding forest. The primary focus of treatments will be on reentering the Mt. Trumbull Ecosystem restoration Project treatment units with fire. These units were mechanically treated and burned as part of a long term research in cooperation with Northern Arizona University – Ecological Restoration Institute and Arizona Game and Fish Department. No significant impacts have been identified as a result of the cumulative body of restoration work in the area.

Cumulative Impacts

It has been determined that cumulative impacts would be negligible as a result of the proposed action or no action alternative because: 1) the small size of the treatment unit in relation to the size of the wilderness and surrounding ponderosa pine forest; 2) the relatively minor change in forest structure expected to result from the use prescribed fire only; 3) the relatively low amount of other activities or impacts occurring in the area; and 4) the restrictions on allowable uses from the wilderness and national monument designations.

CONSULTATION AND COORDINATION

Introduction

The issue identification section of the Purpose and Need Section identifies those issues analyzed in detail in the environmental Consequences Section. The issues were identified through the public and agency involvement process described below.

Persons, Groups, and Agencies Consulted

BLM and David Ostergren from NAU-ERI visited the site prior to the development of the EA. The project was discussed with Grand Canyon Trust, NAU-ERI, and Arizona Game and Fish Region II.

Summary of Public Participation

On May 25, 2007, the EA, draft FONSI and DR were mailed to the ASDO mailing list and posted on the Arizona BLM website. One comment was received.

List of Preparers

BLM

Name	Title	Responsible for the Following Section(s) of this Document
Gloria Benson	Native American Coordinator	Cultural Resources
Whit Bunting	Rangeland Management Specialist	Seed, Range
Timothy Duck	Fuels Program Manager	Project Lead, Wildfire, Fire Effects, Smoke/Air Quality
Tom Folks	Wilderness	Wilderness, Recreation
Michael Herder	Wildlife Biologist	Wildlife
John Herron	Cultural Resource Specialist	Cultural Resources
Ken Moore	Forester	Monument Objects
Linda Price	Vermilion National Monument Manager	Standards and Guides
Robert Smith	Soil, Water, and Air Specialist/Hazardous Materials Coordinator	Watershed, Soils, Hazardous Materials
Richard Spotts	Environmental Coordinator	
LD Walker	Noxious Weed Coordinator	Invasive Weeds
Aaron Wilkerson	Forester	Forest Health, Seed

Summary of Public Comments

We received one letter in response to our request for public comments. Arizona Game and Fish Department expressed concerns about the fuel loads and potential impacts on soils and vegetation from the prescribed burn. They expressed a desire to follow up with us during or after the treatment and to continue our discussion of ‘minimum tool’. It appears that they would support an increase in the amount of mechanized preparation work pre-burn. Despite these concerns AGFD is willing to accept the project as designed and use it as an experiment.

No changes were made to the EA.

Appendix

California Condor Conservation Measures
Applying to Actions Authorized, Funded or Carried Out
By the BLM Arizona Strip Field Office

Conservation measures are based on the following assumptions:

1. Condors may be found anywhere on the Arizona Strip.
2. The experimental non-essential designation (10(j)) for California condors established the need for different conservation measures within the 10(j) area.
3. In keeping with the intent of the Implementation Agreement for releasing California condors in Arizona, some conservation measures do not apply to the general public, including permit holders, within the 10(j) area. Conservation measures in Section A apply to projects implemented by authorized or permitted members of the public within the 10(j) area. Most of these are optional for the public.
4. Conservation measures in Section B apply to projects constructed or implemented by BLM (employees of the Field Office or contractors) within the 10(j) area and to all projects, regardless of proponent, outside the 10(j) area on the Arizona Strip.
5. All fire related activities, even if interagency, are conducted by BLM.
6. Aviation related activities are limited here to those either conducted by or authorized by BLM. Private and commercial aviation operations not specifically authorized or permitted by BLM are not subject to these conservation measures.

**Section A. Conservation Measures for Projects Constructed or Implemented
by Authorized or Permitted Members of the Public Within the 10(j) Area**

CC1A. Immediately prior to the start of a permitted project, BLM will contact personnel monitoring California condor locations and movements on the Arizona Strip to determine the locations and status of condors in or near the project area.

CC2A. BLM will request that permit holders notify the BLM wildlife team lead or condor biologist if California condors visit the worksite while permitted activities are underway. BLM may request that project activities be modified, relocated, or delayed where adverse affects to condors may result. Compliance with such requests is optional.

CC3A. Where condor nesting activity is known within 0.5 miles of permitted or authorized activities that include operation of heavy machinery, BLM may request that the operator not use the equipment during the active nesting season (February 1- November 30) as long as the nest is viable. Compliance with such requests is optional.

CC4A. Where condors occur within 1.0 mile of permitted or authorized activities that include blasting, BLM may request that blasting be postponed until the condors leave the area or are hazed away by personnel permitted to haze condors. Where condor nesting activity is known within 1.0 mile of the project area, BLM will request blasting activity be delayed until after the active nesting season (February 1- November 30) as long as the nest is viable. These dates may be modified based on the most current information regarding condor nesting. Compliance with such requests is optional.

Section B. Conservation Measures for Projects Constructed or Implemented
by BLM Employees or Contractors Within the 10(j) Area AND
For All BLM-Authorized Actions, Regardless of Proponent,
Outside the 10(j) Area on the Arizona Strip

CC1B. Immediately prior to the start of a permitted project, BLM will contact personnel monitoring California condor locations and movement on the Arizona Strip to determine the locations and status of condors in or near the project area.

CC2B. Where California condors visit a worksite while activities are underway, the on-site supervisor will notify the BLM wildlife team lead or condor biologist. Project workers and supervisors will be instructed to avoid interaction with condors. Project activities will be modified, relocated, or delayed if those activities could have adverse effects on condors. Operations will cease until the bird leaves on its own or until techniques are employed by permitted personnel which results in the individual condor leaving the area.

CC3B. Where condor nesting activity is known within 0.5 miles of activities that include operation of heavy machinery, BLM will direct the operator to cease equipment use during the active nesting season (February 1- November 30) as long as the nest is viable. Where feasible and consistent with NEPA, BLM may relocate operations to a site greater than 0.5 miles from the condor nest site.

CC4B. Where condors occur within 1.0 miles of activities that include blasting, BLM will require that blasting be postponed until the condors leave the area or are hazed away by personnel permitted to haze condors. Where condor nesting activity is known within 1.0 miles of the project area, BLM would cease blasting during the active nesting season (February 1- November 30) as long as the nest is viable. These dates may be modified based on the most current information regarding condor nesting.

CC5B. The project site will be cleaned up at the end of each day the work is being conducted (e.g., trash removed, scrap materials picked up) to minimize the likelihood of condors visiting the site. BLM staff will conduct a site visit to ensure adequate clean-up measures are taken.

CC6B. To prevent water contamination and potential poisoning of condors, a vehicle fluid-leakage and spill plan will be developed and implemented for each project. It will include provisions for immediate clean-up of any hazardous substance, and will define how each hazardous substance will be treated in case of leakage or spill. BLM will use the first plan that is developed for a specific project as a template for a fluid-leakage and spill plan that would apply to each construction project. The plan will be reviewed by the BLM condor lead biologist to ensure condors are adequately addressed.

CC7B. Use of non-lead ammunition is strongly encouraged for activities involving the discharge of firearms.

For any operations using aircraft:

CC7B. Aircraft use along the Vermilion Cliffs, Paria Plateau, or any sites where condors are actively breeding or roosting will be minimized to the extent possible. Known active nest sites will be avoided.

CC8B. The BLM condor biologist or Wildlife Program Lead will contact the Peregrine Fund, as appropriate, immediately before operations involving aviation begin to check on possible locations of condors in the subject area.

CC9B. All BLM-authorized aviation personnel will be provided literature and/or instructed regarding condor concerns prior to conducting aerial operations.

CC10B. Aircraft will maintain and maximize safe flying separation distances from condors in the air or on the ground unless safety concerns override this restriction. If airborne condors approach aircraft, aircraft will give up airspace to the extent possible, as long as this action does not jeopardize safety. Aircraft will keep a minimum of 0.25 miles away from condors located on the ground.

For herbicide or other pesticide application:

CC11B. BLM will implement the protective measures for California condors that are contained in the March 2004 "Recommended Protection Measures for Pesticide Applications in The Southwest Region of the U.S. Fish and Wildlife Service."

Conservation Measures For Fire Operations:

CC12B. The Resource Advisor will contact the Peregrine Fund daily (at 520-606-5155 or 520-380-4667) to check on locations of condors during fire suppression or fuels treatment activities involving aviation. This information will be communicated to the Incident Commander and aviation personnel.

CC13B. Any presence of condors in the general area of an active fire will be reported immediately to the Resource Advisor, who will in turn advise the BLM condor biologist, as appropriate. The BLM condor biologist or the AZ Strip F.O wildlife team lead will be the primary contacts with the U.S. Fish and Wildlife Service and the Peregrine Fund when such contacts are needed regarding condor concerns.

CC14B. Fire dispatch will immediately notify the Peregrine Fund at either (208) 362-3811 or (928) 355-2270 whenever a fire or other event on the Paria Plateau is reported which may conceivably threaten the condor holding pens and facilities atop the Vermilion Cliffs.

CC15B. If condors arrive at any area of human activity associated with fire suppression or fuels treatment projects (wildland fire use, prescribed fire, vegetation treatments), the birds will be avoided. The assigned Resource Advisor or a qualified wildlife biologist approved by BLM will be notified, and only permitted personnel will haze the birds from the area.

CC16B. All District BLM fire personnel, including helicopter pilots, will be provided literature or instructed regarding condor concerns. Normally this will be done by the BLM condor biologist when the fire crews first come on and are trained on various subjects, including desert tortoise concerns. If additional pilots come on during the summer, fire dispatch will notify the BLM condor biologist (435 688-3224) so that they can also be briefed.

CC17B. All helicopter dip tanks containing water will be covered when not in use or personnel will be stationed nearby until a cover is in place.

CC18B. If any fire retardant chemicals must be used in areas where condors are in the vicinity, the application area will be surveyed and any contaminated carcasses will be removed as soon as practical to prevent them from becoming condor food sources.

CC19B. Smoke from prescribed fire projects will be prevented from negatively affecting condor holding pens and breeding, nesting, and chick rearing sites. A proposed prescribed fire will not be

initiated, or an existing fire use event will be modified or terminated, in order to prevent or stop significant amounts of smoke, or smoke that will remain in place for an extended period of time, or chronic smoke events, from occurring in area(s) where condors are held or attempting to breed, nest, or rear chicks.

CC20B. BLM will adhere to the air quality standards set by the Arizona Department of Environmental Quality.

CC21B. All camp areas will be kept free from trash.

SRP Stipulations for Hunting Guides

Use of non-lead ammunition is strongly encouraged for activities that involve use of firearms.

**FINDING OF NO SIGNIFICANT IMPACT
AND
DECISION RECORD**

**Nixon Spring Prescribed Burn
Environmental Assessment EA-AZ-06-130-0040
July 2007**

**Grand Canyon-Parashant National Monument/Arizona Strip District
Bureau of Land Management
345 East Riverside Drive
St. George, Utah 84790
435-688-3200**

FONSI: Based on the analysis of potential environmental impacts contained in the attached environmental assessment (EA-AZ-06-130-0040), I have determined that the proposed action will not have a significant effect on the human environment and an environmental impact statement is therefore not required.

DECISION: It is my decision to implement the Nixon Spring Prescribed Burn, as described in the Proposed Action of EA-AZ-06-130-0040, including preparation, seeding, monitoring, and rehabilitation efforts associated with the burn. The forest ecosystem on this site is outside of the range of historic variability. In order to allow naturally-ignited fires to play their natural role in the ecosystem, it is necessary to first reduce fuel accumulations and reduce stand density using prescribed burning. I have determined that authorizing this hazardous fuels reduction treatment is in the public interest. This decision is contingent upon meeting all stipulations and monitoring requirements listed below.

Stipulations: BLM will only use handtools (shovels, pulaskis, rakes, handsaws, loppers) to prepare the units for burning. Burn preparation consists of removing duff/litter concentrations and ladder fuels around significant features such as fences, spring developments, pre-settlement trees, snags, and downed logs. The unit will not be thinned except within approximately 30 feet of such features. Crews will rake around these features, and cut, lop, and scatter smaller diameter, post-settlement trees and brush. Debris will be scattered around the unit to minimize visual impacts.

Short sections of fireline will be constructed as necessary to prevent the spread of fire outside of unit boundaries. Fireline is not needed in most areas where bare soil serves as an effective natural barrier. Where fireline is constructed it will be the minimum necessary – usually consisting of a 1-3 ft wide handline. All stumps will be flush cut and camouflaged to reduce visual impacts. Nixon Spring will be lined and prepped to minimize likelihood of any damage to the development from burn operations. No mechanized equipment – chainsaws – will be used to prep the unit.

BLM will apply native seed to the unit immediately post-burn. BLM will rehabilitate surface disturbance after burning operations are completed by obliterating firelines using handtools.

All burn activities will be conducted in accordance with an approved burn plan. No burning will occur without a smoke permit from the Arizona Department of Environmental Quality.

Project personnel will ignite the fuels so that fire would back through the unit, removing a portion of the post-settlement live trees and shrubs, as well as some of the accumulated dead fuel. BLM will take care not to allow fire into the canopy or to kill pre-settlement (old growth) trees. Personnel will avoid burning pre-settlement snags that provide important wildlife habitat.

Burn implementation will be coordinated with Arizona Game and Fish Department to avoid conflicts with hunting seasons. Burning will not occur when winds were predominantly from the northeast, to limit smoke moving into the Grand Canyon NP Class I airshed.

Monitoring: Prior to initiating operations, BLM will conduct surveys and inventories of cultural and biological resources (northern goshawks, turkey, mule deer, Kaibab squirrel, California condors). Prior to burning BLM will monitor fuel conditions on the unit, measuring fuel moistures, and estimating fuel density. Prior to burning BLM will establish at least one photo monitoring plot, and return post-treatment to revisit that plot. During the burn operations BLM will monitor fire behavior. BLM will implement pre-project herbaceous vegetation monitoring to establish baseline grass/forb conditions and post-burn monitoring to evaluate treatment effectiveness (objectives) and determine seed mix success. BLM will monitor the treatment unit for the presence of non-native, invasive noxious weeds. BLM would conduct post-treatment monitoring of treatment effects.

RATIONALE: The decision to authorize the treatment has been made in consideration of the environmental impacts of the proposed action. The action is in conformance with the Arizona Strip Resource Management Plan, which directs BLM to “Protect forests from catastrophic fires while managing prescribed burns or naturally occurring fires within established prescriptions to reduce fuel buildup, maintain healthy species composition and benefit wildlife habitat, watershed cover and livestock forage.”

It also is consistent with the Trumbull Wilderness Management Plan (1990). The proposed project would occur entirely within Opportunity Class II, where management is focused primarily on providing a primitive recreation experience setting balanced with a strong emphasis on maintaining and enhancing the natural ecosystem and its processes. The fire management plan (Appendix A of the wilderness management plan) specifically states that management ignited prescribe fire is allowed for the purposes of fire regime restoration.

The proposal is not inconsistent with the Proclamation for the Grand Canyon - Parashant National Monument (2000), which is silent on the issue of prescribed burning, but does direct the BLM and NPS to manage the Monument to protect Monument objects, which includes forests that are at risk from catastrophic wildfires and other threats.

The No Action Alternative was not selected because it would not protect National Monument objects, wilderness character, and important ecological and social resources. The pre-European settlement trees are at risk from stand-replacing fire. Furthermore, it is likely that due to the unnaturally high fuel loads on and near the treatment unit that BLM would be required to take aggressive suppression actions in the event of a wildfire. By reintroducing low intensity understory fire BLM believes that wilderness character and naturalness will be protected in the long term under the proposed action.

Potential adverse impacts on wilderness character (solitude and naturalness) were resolved through mitigation and monitoring stipulations (above). Concerns regarding wildlife habitat were addressed in the project design and through mitigation stipulations. These concerns were brought forth from the Arizona Game and Fish Department. This NEPA action was posted on the BLM website, and a Notice of Availability was sent out for a 30-day public comment/review period.

One comment was received during the public comment period. Arizona Game and Fish Department expressed concerns about the fuel load and potential impacts of prescribed burning on soils and vegetation, but agreed to proceed with the project and review the results.

Dennis Curtis
Manager
Grand Canyon-Parashant National Monument

Date