

Arapaho and Roosevelt National Forests and Pawnee National Grassland



HERITAGE SPECIALIST REPORT FOR THE FORSYTHE II FUEL REDUCTION PROJECT


Sue Struthers, Heritage Program Manager

November 4, 2016

Applicable Laws and Forest Plan Direction

Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, requires Federal agencies to determine if federally funded, permitted, or licensed activities would adversely affect significant historic properties (36 CFR 800). Cultural resources are considered historic properties if they are eligible for the National Register of Historic Places (NRHP). Determination of the eligibility of cultural resources, and the potential effects that undertakings may have on historic properties are conducted in consultation with the State Historic Preservation Office (SHPO), relevant Indian Tribes, and local governments.

According to the 2004 revised regulations [36 CFR 800.4(d)(1)] for the National Historic Preservation Act (16 U.S.C. 470f), sites considered not eligible for the NRHP may be directly affected once adequately recorded and evaluated, and concurrence is received from the State Historic Preservation Office regarding eligibility.

Methods and Indications

Within the Forsythe II project area total of 2188 acres have been adequately inventoried for cultural resources within the last ten years. A cultural resource evaluation consists of the following steps: the identification of areas that have a high potential for impact, the identification of known sites that are potentially eligible (needs data), eligible, or listed on the National Register of Historic Places and that are located within those areas determined to have high potential for impact, and the determination of areas that have not been previously surveyed but where significant sites are likely to occur. Survey objectives are normally limited to identifying specific site characteristics such as spatial limits, topographic setting, inferred activities, and temporal affiliations. All cultural resources are evaluated for eligibility to the National Register of Historic Places according to the criteria described in 36 CFR 60.4. All significant cultural resources must:

- (a) Be associated with events that have made a significant contribution to the broad patterns of our past, or
- (b) Be associated with the lives of persons significant in our past, or
- (c) Embody the distinctive characteristics of a type, period or method of construction, or that represent the work of a master, or that present high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction, or
- (d) Yield or be likely to yield information important in prehistory or history.

For the purposes of this analysis, cultural resources are considered significant if they are listed on the NRHP, determined to be eligible for listing on the NRHP, or if their eligibility has not been determined.

Affected Environment

Existing Data and Previous Surveys

A literature review was completed by Sue Struthers on March 22, 2016. This review included the cultural resource atlas of Arapaho and Roosevelt National Forests and Pawnee National Grassland, the COMPASS database of the OAHP, GLO plats, the 1926 Henry Drumm map of Boulder County, and the 1938 and 1954 Forest maps. The following cultural resource inventories have been conducted in the project area.

Project	Principle Investigator	Date
LESTER A. GRIGGS SUBSTATION	GORDON E KINZIE	1980
FINAL REPORT: GROSS RESERVOIR HYDROELECTRIC PROJECT CLASS III CULTURAL RESOURCE INVENTORY BOULDER COUNTY, COLORADO (FERC NO. 2035)	SPATH, CARL	1997
EAST WINIGER RIDGE PARKING/CAMP SITES	ALFORD, PAUL	2011
NUGGET GULCH MINE SAFETY CLOSURES	STRUTHERS, SUE	2011
CULTURAL RESOURCES INVENTORY FOR FOUR SMALL TRACTS CASES IN THE BOULDER RANGER DISTRICT, BOULDER COUNTY, COLORADO	TATE, MARCIA J.	2001
CULTURAL RESOURCE INVENTORY FOR THE WOLCOTT AND BEHM SMALL TRACTS ACT IN THE BOULDER RANGER DISTRICT, ARAPAHO-ROOSEVELT NATIONAL FOREST, BOULDER COUNTY, COLORADO	STRUTHERS, SUE	1996
CULTURAL RESOURCE SURVEY OF THE GIGGEY RANCH TIMBER SALE (ITEM 7, CONTRACT NO. 33-2045)	GORDON, E. KINZIE AND KRANZUSH, KRIS	1977
CULTURAL RESOURCE SURVEY FORM FOR VON MENDE LAND EXCHANGE, BOULDER COUNTY, COLORADO	TRAINOR, GERALD	1998

Project	Principle Investigator	Date
A CLASS II CULTURAL RESOURCE INVENTORY FOR THE WINIGER ANALYSIS AREA, BOULDER RANGER DISTRICT, ARAPAHO AND ROOSEVELT NATIONAL FORESTS BOULDER COUNTY, COLORADO. (ORIGINAL AND ADDENDUM A & B)	OVERTURF, JEFF	1998
CULTURAL RESOURCE INVENTORY REPORT OF THE GOLDAN - FED TIMBER SALE, BOULDER COUNTY	ROBERT ALLISON JR. AND REGINA REINSCHMIDT	1986
CULTURAL RESOURCES SURVEY OF THE WINIGER GULCH TIMBER SALE, BOULDER COUNTY, COLORADO	ALLISON, ROBERT AND JOHN D. SLAY	1990
QUATAS SALVAGE SALE	ALLISON, ROBERT AND JOHN D. SLAY	1987
LIMITED RESULTS CULTURAL RESOURCE INVENTORY FOR THE FORSYTHE TRAILHEAD RECONSTRUCTION PROJECT, BOULDER RANGER DISTRICT, BOULDER COUNTY, COLORADO	ALFORD, PAUL	2009
NEGATIVE RESULTS CULTURAL RESOURCE INVENTORY FOR THE KELLY DAHL WELL HOUSE REPLACEMENT PROJECT, BOULDER RANGER DISTRICT, GILPIN COUNTY, COLORADO	ALFORD, PAUL	2007
NEGATIVE RESULTS CULTURAL RESOURCE INVENTORY FOR THE KELLY DAHL WASTE WATER VAULT PROJECT, BOULDER RANGER DISTRICT, GILPIN COUNTY, COLORADO	ALFORD, PAUL	2007
LIMITED RESULTS CULTURAL RESOURCE INVENTORY FOR THE ANCELIN ROAD EASEMENT, BOULDER RANGER DISTRICT, GILPIN COUNTY, COLORADO	ALFORD, PAUL	2007
NEGATIVE RESULTS CULTURAL RESOURCE INVENTORY FOR THE WINIGER RIDGE RESTORATION PROJECT, BOULDER RANGER DISTRICT, BOULDER COUNTY, COLORADO	ALFORD, PAUL	2009
NEGATIVE RESULTS CULTURAL RESOURCE INVENTORY FOR THE FORSYTHE TRAILHEAD CONSTRUCTION PROJECT FY 2011, BOULDER RANGER DISTRICT, BOULDER COUNTY, COLORADO	ALFORD, PAUL	2010
A CLASS III CULTURAL RESOURCE INVENTORY FOR THE PUBLIC SERVICE COMPANY, NEDERLAND VALVE REPLACEMENT SPECIAL USE PERMIT, BOULDER COUNTY	STRUTHERS, SUE	2011
FRONT RANGE VEGETATION MANAGEMENT	LINCOLN, THOMAS	1977
FORSYTHE FUEL TREATMENT	ALFORD, PAUL	2010
2011 ROADSIDE HAZARD TREES	ALFORD, PAUL	2011
LUMP GULCH FUEL REDUCTION	ALFORD, PAUL	2007
HAZARD TREE MITIGATION DEVELOPED REC SITES BOULDER DISTRICT	ALFORD, PAUL	2009
FORSYTHE REHABILITATION & TRAIL CONSTRUCTION	ALFORD, PAUL	2012

EAST WINIGER RIDGE PARKING/CAMP SITES	ALFORD, PAUL	2011
GIGGEY AND CALIFORNIA GULCH DISTRIBUTION LINES	BRECHTEL, JAMES	2011

There are 260 previously recorded cultural resources within the project area boundary. Of the sites previously recorded 16 of the sites represent Native American sites. All other sites are associated with mining, ranching or water control and distribution.

Site Type	Number
Agricultural Sites – Ranches/fence lines	4
Hydro-electric Site (Boulder Hydro-electric plant and features)	2
Historic Habitation sites (Cabins, foundations)	5
Historic Isolates (Individual artifacts)	20
Historic Rock Cairn	2
Historic Equipment	1
Historic Landscape Features	2
Tunnels	2
Historic Survey Marker	1
Historic Trash Concentration/Dump	16
Mine Shaft	2
Mining Sites	32
Prehistoric Open Camp	2
Prehistoric Open Lithic Scatters	3
Prehistoric Isolates / tools and debitage	8
Mining Prospecting Pits	147
Prehistoric Rock Shelter	1
School/foundation	1
Stage Stop	1
Stone Circle/ prehistoric campsite	1
Stone Highway Barrier	1
Town site	1
Wickiup	2
Water Control Feature	2

Vegetation Treatments

Vegetation treatments for hazardous fuel would include mechanically or hand treating stands by removal of existing downed fuels, thinning stands, patch cuts (1-5 acres units), clear cuts (5-20 acre units). In the future, after patchcut/clearcut vegetation treatments have occurred and trees are beginning to regenerate, the units will be thinned using either mechanical or hand treatments. Within the Vegetation Treatment units 92 sites have been previously recorded.

Site Number	Type of Site	Eligibility for the NRHP
5BL11447	MINING SITE	NOT ELIGIBLE
5BL11453	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11455	HABITATION SITE, FOUNDATIONS	NOT ELIGIBLE
5BL11462	MINING SITE	NOT ELIGIBLE
5BL11463	HABITATION SITE, FOUNDATIONS	NOT ELIGIBLE
5BL11464	MINING SITE	NOT ELIGIBLE
5BL11467	MINING SITE	NOT ELIGIBLE
5BL11465	MINING SITE	NOT ELIGIBLE

Site Number	Site Type	Eligibility for the NRHP
5BL11735	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL5601	ROCKY MOUNTAIN MAMMOTH MINE	LISTED
5BL7020	ROCK SHELTER - PREHISTORIC	NOT ELIGIBLE
5BL752	BOULDER HYDRO-ELECTRICT	ELIGIBLE
5BL8833	SCHOOL (MAGNOLIA SCHOOL FOUNDATION)	NOT ELIGIBLE
5BL8834	AGRICULTURE - FENCE	NOT ELIGIBLE
5BL891	MINING SITE	NOT ELIGIBLE
5BL10783	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL10784	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL10785	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL10827	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL10832	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11139	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11143	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11144	HISTORIC ARTIFACT	NOT ELIGIBLE
5BL11145	HISTORIC ARTIFACT	NOT ELIGIBLE
5BL11146	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11147	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11148	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11152	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11159	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11162	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11380	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11381	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11384	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11385	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11386	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11387	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11388	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11389	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11390	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11391	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11439	PREHISTORIC ISOLATE - DEBITAGE	NOT ELIGIBLE
5BL11439	PREHISTORIC ISOLATE - DEBITAGE	NOT ELIGIBLE
5BL11449	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11450	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11451	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11452	PROSPECTING PITS MINING	NOT ELIGIBLE
5GL2058	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11454	HISTORIC ARTIFACT	NOT ELIGIBLE
5BL11456	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11457	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11458	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11459	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11460	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11461	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11466	PROSPECTING PITS MINING	NOT ELIGIBLE

Site Number	Site Type	Eligibility for the NRHP
5BL11469	HISTORIC ARTIFACT	NOT ELIGIBLE
5BL11470	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11472	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11473	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11474	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11475	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11478	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11479	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11480	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11482	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11483	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11513	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11683	HISTORIC ARTIFACT	NOT ELIGIBLE
5BL11781	HISTORIC ARTIFACT	NOT ELIGIBLE
5BL11782	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL7891	MINING SITE	ELIGIBLE
5BL7893	HISTORIC TRASH CONCENTRATION - DUMP	NOT ELIGIBLE
5GL657	MINING SITE	NOT ELIGIBLE
5GL1725	HISTORIC TRASH CONCENTRATION - DUMP	NOT ELIGIBLE
5GL1726	HISTORIC EQUIPMENT	NOT ELIGIBLE
5GL1821	PROSPECTING PITS MINING	NOT ELIGIBLE
5GL1826	PROSPECTING PITS MINING	NOT ELIGIBLE
5GL1827	PROSPECTING PITS MINING	NOT ELIGIBLE
5GL1828	MINING SITE	NOT ELIGIBLE
5GL1829	PROSPECTING PITS MINING	NOT ELIGIBLE
5GL1830	PROSPECTING PITS MINING	NOT ELIGIBLE
5GL1831	MINING SITE	NOT ELIGIBLE
5GL1882	PROSPECTING PITS MINING	NOT ELIGIBLE
5GL1883	PROSPECTING PITS MINING	NOT ELIGIBLE
5GL1884	MINING SITE	NOT ELIGIBLE
5GL2051	PROSPECTING PITS MINING	NOT ELIGIBLE
5GL2052	HISTORIC TRASH CONCENTRATION - DUMP	NOT ELIGIBLE
5GL2053	HISTORIC TRASH CONCENTRATION - DUMP	NOT ELIGIBLE
5GL2054	HISTORIC CAIRN	NOT ELIGIBLE
5GL2055	PROSPECTING PITS MINING	NOT ELIGIBLE
5GL2057	PROSPECTING PITS MINING	NOT ELIGIBLE
5GL2056	HISTORIC TRASH CONCENTRATION - DUMP	NOT ELIGIBLE

Broad Cast Burn

Ten previously recorded cultural resources are located within the proposed broadcast burn units. All of these resources are not eligible for the NRHP.

Site Number	Site Type	Eligibility for the NRHP
5BL11683	HISTORIC ARTIFACT	NOT ELIGIBLE
5BL11439	PREHISTORIC ISOLATE - DEBITAGE	NOT ELIGIBLE
5BL905	PREHISTORIC ISOLATE DEBITAGE	NOT ELIGIBLE
5BL11139	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11142	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11440	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL11682	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL7024	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL7025	PROSPECTING PITS MINING	NOT ELIGIBLE
5BL7020	ROCK SHELTER - PREHISTORIC	NOT ELIGIBLE

Decommission Roads

Several of the roads identified for decommissioning are historic roads that appear on the Drumm's 1925 Map of Boulder County.

Roads 201.1B, 201.1C are associated with the Walker Ranch Historic District (5BL235), that is listed on the NRHP. These roads may be contributing to the Historic District.

Road 349.1A appears to be a major road from the historic Winiger Ranch to Kessler Lake and eventually into the town of Boulder.

Road 350.1 is part of the major road from Winiger Ranch north to Magnolia Road.

Roads 351.1, 356.1B, 356.1C, 356.1D, and 356.1E are all segments of historic roads.

Egress Roads

The Wildewood and Doe Trail are existing primitive roads/trails that may be improved to provide emergency egress to the residences north of the project boundary. Neither the Wildewood nor the Doe Trail routes appear on the Drumm's 1925 Map of Boulder County. Neither road is shown as a developed road on the 1972 Tungsten 7.5 U.S.G.S. Quadrangle Map.

Potential Effects of Proposed Activities

No Action Alternative

Direct Effects

Under this alternative no vegetation management activities would occur, no roads would be reconstructed or closed, and no prescribed fire would be used. This alternative would have no immediate effect on significant cultural resources. No mitigation or monitoring activities would be necessary.

Indirect Effects

This alternative would have no immediate indirect effects on significant cultural resources. However, the current beetle epidemic and associated accumulation of fuel wood would result in an increase in hazardous conditions in the project area. Dead and dying trees present a risk to historic structures when falling. Once on the ground, they present a secondary risk in the case of wildfire. While adding a benefit of obscuring artifacts from public view (thus reducing vandalism potential), the increased fuel load raises the potential duration, intensity, and heat penetration of a wildfire, which in turn increases the destructive capability of fires to both prehistoric and historic materials (NIFC 1995). In addition, measures taken to combat wildfires have a greater destructive potential given the urgency of operations over the controlled methods of prescribed fire treatment. For example, the use of retardants “on wall structures causes possible corrosion and contamination of subsurface materials (NIFC 1995).” Urgent placement of fire lines may cause undiscovered subsurface sites to be damaged or destroyed. This could result in the increased risk of loss of a number of cultural resources in the event of a wildfire.

Cumulative Effects

Archaeological sites are non-renewable resources that are being lost with an increasing frequency to alteration or destruction. The failure to address the increasing tree mortality and resultant accumulation of deadwood in the project area could subject an unknown number of undiscovered cultural resources to potentially destructive wildfires, thus reducing their contribution to the overall knowledge of our cultural heritage.

Alternative 1 - Proposed Action

Direct Effects

Several activities of the proposed action have the potential to impact cultural resources within the project area. The methods of clear cutting, harvesting, and thinning may use machinery that can disturb soils and subsurface cultural deposits. Road construction would also employ heavy equipment for ground disturbing activities. Primary impacts to prehistoric cultural resources include the displacement, alteration, and destruction of surficial artifacts and cultural features, as well as disturbance to site soil deposition through mechanical ground disturbance with heavy equipment. Impacts to historic sites include the destruction of wooden structures and organic materials by means of fire, machinery or tree felling and the displacement and alteration of metal and glass surficial artifacts. The use of skid trails may disturb subsurface cultural deposits or earthen features. Pile burning of slash could result in severe damage or destruction of both historic and prehistoric materials if the pile is located on a site. Piles are concentrated and produce a long duration fire with high intensity, albeit localized.

Indirect Effects

Historic properties may be indirectly affected in numerous ways by the proposed action. One potential effect is the alteration of the visual characteristics of a landscape, resulting in changes to a site's historic character. Altering viewsheds and other visual characteristics could adversely affect sites that are located on land other than those managed by the Forest Service.

The removal of timber also has the potential to indirectly impact cultural resources by increasing surface soil erosion. Exposure of subsurface cultural deposits could result in destruction of site stratigraphy, artifact displacement, and the deterioration of delicate organic materials. Exposure could also result in increased potential for vandalism due to the visibility of previously buried materials.

A positive indirect effect of the proposed action would be an overall reduction of the risk of long duration, intensive wildfires. Unnaturally heavy fuel loads from the previous policy of fire suppression has created a situation that is more precarious than in the past. "The buildup of fuels can be particularly damaging to archaeological resources of more recent age- late 19th century/early 20th century (Sturdevant 2011)." Given that the majority of cultural resources within the analysis area are from this time period, this produces a wide-scale risk. The removal of vegetation would reduce burn temperatures, fire intensity, and penetration of heat, thus reducing the destructive capability of fire when coming into contact with cultural resources.

Design criteria have been established so as to avoid adverse direct or indirect effects to historic properties.

Cumulative Effects

Archaeological sites are non-renewable resources that are being lost with an increasing frequency to alteration or destruction. The accumulated loss of numerous individual cultural resources has the potential to limit our understanding of broader patterns of human history essential to the overall knowledge of our national cultural heritage. Although sample surveys have been conducted, not all sites can be located and there is the potential that undiscovered sites could be impacted by project activities. The proposed activities have the potential to impact individual cultural resources with various mechanical vegetation treatments and use of fire.

Irreversible or Irretrievable Commitment of Resources

Cultural resources are non-renewable, but the project has been designed so as to avoid adverse effects to significance cultural resources per 36 CFR 800.

Alternative 2

Direct Effects

Several activities of the proposed action have the potential to impact cultural resources within the project area. The methods of clear cutting, harvesting, and thinning may use machinery that can disturb soils and subsurface cultural deposits. Road construction would also employ heavy equipment for ground disturbing activities. Primary impacts to prehistoric cultural resources include the displacement, alteration, and destruction of surficial artifacts and cultural features, as

well as disturbance to site soil deposition through mechanical ground disturbance with heavy equipment. Impacts to historic sites include the destruction of wooden structures and organic materials by means of fire, machinery or tree felling and the displacement and alteration of metal and glass surficial artifacts. The use of skid trails may disturb subsurface cultural deposits or earthen features. Pile burning of slash could result in severe damage or destruction of both historic and prehistoric materials if the pile is located on a site. Piles are concentrated and produce a long duration fire with high intensity, albeit localized.

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Irreversible or Irretrievable Commitment of Resources

Cultural resources are non-renewable, but the project has been designed so as to avoid adverse effects to significance cultural resources per 36 CFR 800.

Alternative 3

Direct Effects

Several activities of the proposed action have the potential to impact cultural resources within the project area. The methods of clear cutting, harvesting, and thinning may use machinery that can disturb soils and subsurface cultural deposits. Road construction would also employ heavy equipment for ground disturbing activities. Primary impacts to prehistoric cultural resources include the displacement, alteration, and destruction of surficial artifacts and cultural features, as well as disturbance to site soil deposition through mechanical ground disturbance with heavy equipment. Impacts to historic sites include the destruction of wooden structures and organic materials by means of fire, machinery or tree felling and the displacement and alteration of metal and glass surficial artifacts. The use of skid trails may disturb subsurface cultural deposits or earthen features. Pile burning of slash could result in severe damage or destruction of both historic and prehistoric materials if the pile is located on a site. Piles are concentrated and produce a long duration fire with high intensity, albeit localized.

Indirect Effects

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Design criteria have been established so as to avoid adverse direct or indirect effects to historic properties.

Cumulative Effects

Archaeological sites are non-renewable resources that are being lost with an increasing frequency to alteration or destruction. The accumulated loss of numerous individual cultural resources has the potential to limit our understanding of broader patterns of human history essential to the overall knowledge of our national cultural heritage. Although sample surveys have been conducted, not all sites can be located and there is the potential that undiscovered sites

could be impacted by project activities. The proposed activities have the potential to impact individual cultural resources with various mechanical vegetation treatments and use of fire.

Irreversible or Irretrievable Commitment of Resources

Cultural resources are non-renewable, but the project has been designed so as to avoid adverse effects to significance cultural resources per 36 CFR 800.

Alternative 4

Direct Effects

Several activities of the proposed action have the potential to impact cultural resources within the project area. The methods of clear cutting, harvesting, and thinning may use machinery that can disturb soils and subsurface cultural deposits. Road construction would also employ heavy equipment for ground disturbing activities. Primary impacts to prehistoric cultural resources include the displacement, alteration, and destruction of surficial artifacts and cultural features, as well as disturbance to site soil deposition through mechanical ground disturbance with heavy equipment. Impacts to historic sites include the destruction of wooden structures and organic materials by means of fire, machinery or tree felling and the displacement and alteration of metal and glass surficial artifacts. The use of skid trails may disturb subsurface cultural deposits or earthen features. Pile burning of slash could result in severe damage or destruction of both historic and prehistoric materials if the pile is located on a site. Piles are concentrated and produce a long duration fire with high intensity, albeit localized.

Indirect Effects

Historic properties may be indirectly affected in numerous ways by the proposed action. One potential effect is the alteration of the visual characteristics of a landscape, resulting in changes to a site's historic character. Altering viewsheds and other visual characteristics could adversely affect sites that are located on land other than those managed by the Forest Service.

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A positive indirect effect of the proposed action would be an overall reduction of the risk of long duration, intensive wildfires. Unnaturally heavy fuel loads from the previous policy of fire suppression has created a situation that is more precarious than in the past. "The buildup of fuels can be particularly damaging to archaeological resources of more recent age- late 19th century/early 20th century (Sturdevant 2011)." Given that the majority of cultural resources within the analysis area are from this time period, this produces a wide-scale risk. The removal of vegetation would reduce burn temperatures, fire intensity, and penetration of heat, thus reducing the destructive capability of fire when coming into contact with cultural resources.

Design criteria have been established so as to avoid adverse direct or indirect effects to historic properties.

Cumulative Effects

Archaeological sites are non-renewable resources that are being lost with an increasing frequency to alteration or destruction. The accumulated loss of numerous individual cultural resources has the potential to limit our understanding of broader patterns of human history essential to the overall knowledge of our national cultural heritage. Although sample surveys have been conducted, not all sites can be located and there is the potential that undiscovered sites could be impacted by project activities. The proposed activities have the potential to impact individual cultural resources with various mechanical vegetation treatments and use of fire.

Irreversible or Irretrievable Commitment of Resources

Cultural resources are non-renewable, but the project has been designed so as to avoid adverse effects to significance cultural resources per 36 CFR 800.

Design Criteria

The following design criteria are required in order to prevent effects to significant cultural resources:

MECHANICAL TREATMENT UNITS

- A Class II (sample) Cultural Resource Inventory would be completed on all units designated for mechanical (other than chainsaw) thinning and aspen enhancement, in consultation with the Colorado State Historic Preservation Office (SHPO) prior to project implementation. Implementation would not begin until the SHPO has concurred with a determination of no historic properties affected or no historic properties adversely affected.
- In accordance with the Programmatic Agreement Among the Advisory Council on Historic Preservation, The Colorado State Historic Preservation Office, and the USDA Forest Service Arapaho and Roosevelt National Forests and Pawnee National Grassland Regarding the Implementation of Bark Beetle Management, Hazardous Fuel and Tree Reduction Programs and Management of Cultural Resource Programs Within Hazardous Tree Environments (Bark Beetle PA) when sites that are evaluated as field eligible historic properties are located during the field inventory, no mechanical treatment would occur within the site boundary and a 50-foot buffer around the site. If treatment is necessary, these sites and a 50-foot buffer will be hand treated for hazard trees and accumulated fuel build up utilizing treatment options in Stipulation B of the Programmatic Agreement. No thinning, pile burning, or other slash treatments would occur within these buffers unless determined to be appropriate by the Project Archaeologist.
- All NRHP eligible, listed or unevaluated sites within the units proposed for mechanical treatments would be flagged on the ground for avoidance during implementation.

- Previously undiscovered sites encountered during the course of project activities would be avoided until they can be evaluated by an archaeologist. If affected properties are discovered after project activities are completed, the Forest would document any damage and consult with SHPO and Council pursuant to 800.13(b).

PRESCRIBED BURN UNITS

- A cultural resource inventory would be completed on all areas within prescribed burn units that have been identified by the Project Archaeologist and Forest fire planners as being within the burn's Area of Potential Effects and in areas of high potential for historic properties. This inventory may be completed after the NEPA decision has been made but prior to burn implementation.
- All NRHP eligible, listed or unevaluated sites located within prescribed burn units would be marked on the ground by the Project Archaeologist. The Project Archaeologist and fire staff would design protection measures to remove the sites from the burn's Area of Potential Effects. These protection measures would take into consideration the site type, environmental setting, and anticipated burn conditions. These protections may include, but are not limited to: fuel breaks, no treatment buffers, wrapping, foaming, wetting, black line, fire line (machine or hand dug), and raking.
- All potentially ground-disturbing fire lines, staging areas, helispots, and all road improvement, construction or deconstruction, or designated ATV or vehicle routes/ways would be intensively (Class III) surveyed for cultural resources prior to project implementation; any NRHP-eligible cultural resources would be avoided by project design.
- Additional site protection measures may be required for NRHP-eligible or unevaluated sites located within the secondary burn area. These protection measures would take into consideration the site type, environmental setting, and anticipated burn conditions. These protections may include, but are not limited to: fuel breaks, no treatment buffers, wrapping, foaming, wetting, black line, fire line (machine or hand dug), and raking.

ROAD CONSTRUCTION, TEMPORARY ROAD CONSTRUCTION, FIRE LINE, AND SKID TRAILS

- A Class II (sample) Cultural Resource Inventory would be completed on all road construction, temporary road construction, fire line, skid trail and road decommissioning, in consultation with the Colorado State Historic Preservation Office (SHPO) prior to project implementation. Implementation would not begin until the SHPO has concurred with a determination of no historic properties affected or no historic properties adversely affected.
- In accordance with the Bark Beetle PA, when sites that are evaluated as field eligible historic properties are located during the field inventory, a 50-foot buffer around the site will be established. The construction will be moved to avoid the site and the 50-foot

buffer area. If the undertaking consists of construction and there is the potential for unidentified buried cultural remains, the location will be moved to avoid the site and the construction activities in the area will be monitored by an archaeologist.

- All potentially ground-disturbing activities proposed for staging areas, road improvement, construction, or obliteration outside of planned treatment units would be intensively surveyed for cultural resources prior to project implementation. Any NRHP-eligible cultural resources would be avoided by project design.
- Consultation with Native American tribes must be completed prior to the closure of roads to ensure that access to areas of cultural importance is not inadvertently removed.

Results of Cultural Resource Inventories

The cultural resource inventory was completed and sent to the Colorado State Historic Preservation Officer (SHPO) for review and concurrence.

Mechanical Treatment Units – During the cultural resource inventory twenty three newly recorded cultural resource sites and 51 isolates were recorded within the mechanical treatment units. All of the sites and isolates were determined to be not eligible for inclusion on the National Register of Historic Places (NRHP). Within the the entire project boundary three sites (5BL5601, 5BL7891 and 5BL7890) are recommended as eligible for the NRHP.

Decommission Roads – During the cultural resource inventory five new cultural resources were recorded. These resources consist of three segments of three historic roads (5BL13416.1; 5BL13417.1; 5BL13432.1), one historic fence (5BL13415.1) and one historic archaeological site (5BL13266). None of these resources were determined to be eligible for inclusion on the NRHP.

Historic Properties Requiring Protection During Implementation

Within the area of potential effect for the Forsythe II Fuel Reduction Project there are three cultural resource sites that are eligible for the NRHP and will need to be protected during the implementation of this project.

5BL5601 is the Rocky Mountain Mammoth Mine and is listed on the National Register of Historic places. Prior to implementation a Forest Service Archaeologist will visit the site and determine the external boundary of the site. From the external boundary a 50 foot buffer will be placed around the site. No mechanical treatment would occur within the site boundary and the 50-foot buffer around the site. If treatment is necessary, this site and the 50-foot buffer area will be hand treated for hazard trees and accumulated hazardous fuels.

5BL7890 is an early homesteading site. Prior to implementation a Forest Service Archaeologist will visit the site and determine the external boundary of the site. From the external boundary a 50 foot buffer will be placed around the site. No mechanical treatment would occur within the site boundary and the 50-foot buffer around the site. If treatment is necessary, this site and the 50-foot buffer area will be hand treated for hazard trees and accumulated hazardous fuels.

5BL7891 is a mining site. Prior to implementation a Forest Service Archaeologist will visit the site and determine the external boundary of the site. From the external boundary a 50 foot buffer will be placed around the site. No mechanical treatment would occur within the site boundary and the 50-foot buffer around the site. If treatment is necessary, this site and the 50-foot buffer area will be hand treated for hazard trees and accumulated hazardous fuels.

Stipulations

Inadvertent Discovery

The Boulder District Ranger has been informed of the recommendations above. If additional prehistoric or historic materials are found during the course of this project, work in that area would cease until the District Ranger has been notified. Work in the area of the cultural resource may not resume until a professional archaeologist has evaluated the cultural materials and potential effects. The discovery must be protected until notified in writing to proceed by the authorized officer (36 CFR 800.110 & 112, 43 CFR 10.4).

If so requested by the SHPO or an Indian Tribe, the Forest will conduct additional consultation for the identification of properties of traditional cultural and religious significance to Indian Tribes or other interested parties. Additional mitigations may be required if areas or sites are determined to be of importance to an Indian Tribe.

Pre-Implementation Survey

If any new actions are planned that were not specifically identified in this report, an archaeological assessment is required since additional cultural resource surveys may be needed.

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