

# **Jack Smith/Schultz Fuel Reduction and Forest Health Project**

## **Archaeology Specialist Report**

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**for:**

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## Affected Environment/Existing Condition

The Jack Smith/Schultz Project area has a high archaeological site density. Within the project's current 11,827 acres there are 240 known archaeological sites. Approximately 9,650 acres of the project area have been surveyed (Lyndon, 2004; Gifford, 2007; Hedquist and Edwards, 2007) for a total survey within the project area of 82%.

The existing conditions and fuel loading of archaeological sites in the project area have been evaluated. Currently, only 16 sites are considered "fire sensitive" and the remaining 224 sites are fire tolerant. The archaeological resources in the project area have high levels of dead fuels growing in and around sites and structures. Dead and dying ponderosa, pinyon pine and other fuels throughout the project area have the potential to contribute to adverse fire effects on cultural resources from prescribed fire and wildfire, as well as potential ground disturbing suppression actions.

## Desired Condition

The archaeological resources in the project area have high levels of dead fuels growing in and around sites and structures. Hand thinning of all sites and low intensity burning of fire tolerant sites could help reduce the threat of fire damage to these resources. However, fire intolerant sites (approximately 10% of the total number of the sites located in the project area) will need to be excluded from burning activities. Mechanical thinning and prescribed fire in the areas outside of archaeological sites will also assist in the reduction of fire threats to cultural resources.

One issue that needs to be addressed and mitigated is the threat of looting and vandalism that may result from increased visibility of sites once the fuels and existing ground cover are removed through project activities.

## Basis for Evaluation of Effects

Predicated on the fire return interval of Ponderosa Pine forests (Covington, 1997) and current fire effects research on heritage resources (Deal, 2004 and 1999; Jackson, 1998; Rude and Jones, In Press; and Ruscavage-Barz, 1999) prescribed burning will be allowed within fire tolerant archaeological sites. These sites will not be adversely affected per the 2001 Region 3 Wildland Urban Interface Programmatic Agreement (WUI PA). Fire intolerant sites will be excluded from prescribed burning and all National Register eligible sites will be avoided by mechanical ground disturbing activities.

The archaeological surveys addressed potential impacts resulting from the proposed undertaking including mechanical thinning, hand thinning, temporary road construction, road closure and obliteration, and prescribed fire. The entire project area was sampled based on known and predicted site densities in addition to the mechanical and ground disturbing treatments proposed. Archaeological site density is determined through modeling of district GIS files. Sample surveys are typically around 15 to 20 percent of the area and complete survey is considered one-hundred percent based on pedestrian surveys of 20 meters apart. Surface artifacts and features were identified and documented by use, date, phase, and cultural affiliation. Fire fuel loading evaluations were completed for each site. These evaluations consist of assessing the amount of fuels on each site, potential residence time a fire will burn, and the fire tolerance of constructed features, and artifacts. Fire tolerance of a site is determined through examining artifact and feature materials, on site fuel loads, standing dead trees, slash piles, and the fire return interval of the area (has the site burned before historically or prehistorically).

## **Environmental Consequences**

### **No Action**

#### ***Direct and Indirect Effects***

Existing fuels in and around archaeological sites will remain as they are and continue to increase. No action may result in high intensity wildfires that these sites have not been subjected to in the past resulting in possible subsurface artifact damage and potentially ground disturbing fire suppression tactics.

Fire suppression actions, particularly bulldozer operations, may damage or completely destroy surface and subsurface heritage resources resulting in the loss of those resources and their associated data. Intense wildfires may also contribute to increased erosion of sites leading to the loss of their research potential and eligibility for the National Register of Historic Places. Since most of the project area lies within the Wildland Urban Interface (WUI), aggressive suppression actions are likely to occur, and the possibility of damage to a significant number of heritage resources is possible through ground disturbing fire suppression actions.

### **Proposed Action - Alternative 1 - and New Alternative (2)**

#### ***Direct and Indirect Effects***

Unnatural fuel loading will be reduced in and around National Register eligible archaeological sites. Wildfires and associated suppression actions along with

post fire erosion impacts will be reduced through thinning and low to moderate intensity prescribed burning. Initial reduction of heavy fuels may lead to an increase in site visibility, public visitation, and possibly vandalism.

Allowing low intensity prescribed fires to burn through prehistorically/historically burned archaeological sites along with thinning will reduce current fuel loads in and around those sites. This treatment will prevent extensive heat damage during any future wildfire event thus lowering fire damage to heritage resources. Increased visibility/vandalism resulting from loss of ground cover can be mitigated through archaeological monitoring, public education and law enforcement patrols. Additionally, ground cover will recover more quickly after a low intensity prescribed fire than after a high intensity wildfire.

If the Proposed Action or New Alternative (2) is implemented, emergency fire suppression activities will be lessened and the potential for ground disturbing activities like bulldozer fire-line construction will be reduced, therefore, protecting National Register eligible heritage resources per the 1966 National Historic Preservation Act as amended, the 2001 Region 3 WUI Programmatic Agreement, and the 1987 Coconino National Forest Plan. Erosion from high intensity fire through soil sterilization and complete loss of ground cover will be reduced through selective thinning and low intensity burning that will not sterilize soil and leave large portions of the existing ground cover. Fire intolerant sites will be excluded from burning and ground disturbing actions unlike in an emergency wildfire situation. Also, closing roads in the project area will limit access to archaeological sites and, therefore, will be considered a beneficial effect.

### ***Cumulative Effects***

Fire damage, suppression actions, increased visibility/vandalism, and erosion are the primary issues involving archaeological properties in the 11,827 acre project area. Cumulative effects are minimal and can be reduced and/or mitigated through appropriate actions for this and other WUI Fuel Reduction Projects on the forest.

There will be no cumulative effects resulting from fire damage as current forest fuels projects allow the burning of previously burned or fire tolerant sites and exclude all fire intolerant sites from those actions. There will be no change in the current status or treatment of archaeological sites resulting from the project.

There will be no cumulative effect resulting from suppression any more than without with project. Currently in the WUI, the forest uses aggressive suppression tactics and life and property take precedence over all other values. If the Proposed Action or the New Alternative (2) is implemented, the proposed activities will reduce the need for emergency suppression actions, and in the unlikely even that suppression actions are necessary, they will be minimal after treatment.

There is a possibility of increased cumulative effects with regards to the visibility/vandalism issue for archaeological properties once the project is implemented. The Jack Smith/Schultz project has more archaeological sites of all other WUI Fuels projects on the forest combined. Much of the project area is used by local residents for recreation and the reduction of ground cover through thinning and burning has the potential to increase site visibility and vandalism issues. This situation can be mitigated through the measures previously identified. Cumulative effects of erosion issues resulting from prescribed burning are currently unknown. However, if low to moderate intensity prescribed fires are implemented and some vegetation remains, erosion should be minimized. To reduce any potential threat, post fire archaeological monitoring over the next 10 years, especially on slopes, drainages, and other high probability areas, will be implemented.

## **Compliance with the Forest Plan and Other Regulatory Direction**

### FOREST PLAN AND GAP ANALYSIS:

#### FOREST LAND MANAGEMENT PLAN DIRECTION (FLMP)

The 1987 Coconino National Forest Land Management Plan as amended provides general direction for the management of historic and cultural resources significant to our national heritage. The plan provides direction for forest-wide management of cultural resources. General management direction for cultural resources is outlined below:

The forest-wide standards and guidelines pertinent to this analysis are detailed in FLMP pp. 53-54; Amendment 1, p. 50; Amendment 9, pp. 52-3 to 52-4; and the FSM, Section 2360. These are summarized below:

#### Forest Plan (1987)

- Project undertakings are inventoried for cultural resources and areas of Native American traditional use. Inventory intensity complies with Regional policy, and the settlement agreement in the Save the Jemez Lawsuit, and is determined in consultation with the State Historic Preservation Officer (SHPO). Generally, inventory standards are:
  - One hundred percent survey of all projects causing surface disturbance;
  - When less than 100 percent survey is deemed appropriate, the proportion of survey is generally greater than 10 percent and is

determined in consultation with the State Historic Preservation Officer. Factors determining the appropriate inventory sample include the nature and extent of project impact, site density, site type, and ground cover;

- Consultation with appropriate Native American groups;
- Consultation with the SHPO, and if necessary, the Advisory Council on Historic Preservation (ACHP) before project implementation.

**Gaps: None**

- Management strives to achieve a “No Effect” determination. Sites not evaluated are managed as “Eligible” and avoided by all projects and undertakings.

**Gaps: In the case of the Jack Smith/Schultz project, a determination of “no adverse effect” will be used to allow burning through fire tolerant sites. This change in determination of effects may require a Forest Plan amendment.**

- Within project areas, site condition is monitored during and after project implementation.

**Gaps: None**

- Sites listed on the National Register of Historic Places are visited at least biannually.

**Gaps: Limited by work loads and funding constraints**

- Cultural resource sites are interpreted through lectures, tours, papers, reports, publications, brochures, displays, films, trails, signs, and other means.

**Gaps: Limited by funding constraints**

- Survey priorities are to:
  - Provide clearance for projects;
  - Fill in gaps in existing inventory coverage;
  - Survey areas of known high site density;
  - Survey areas that would do the most to answer current archaeological questions.

**Gaps: Limited by funding constraints**

*Additional Tribal Consultation Direction*

In accordance with Section 101 (d)(6)(B) and Section 110 of NHPA, the FS shall consult with Indian tribes that attach traditional religious and cultural significance to historic properties that may be affected by FS undertakings. The Forest Service is instructed to use the principles in the USDA Forest Service policy, *Consultation with American Indian and Alaska Native Tribes* (FSM 1563.06) to guide its tribal consultation procedures and relationships. This policy underscores the unique legal and political relationship the United States Government has with federally-recognized Indian tribes, including trust responsibilities, government-to-government relationships, consultation responsibilities (E.O. 13175, "Consultation and Coordination with Indian Tribal Governments") and protection of sacred sites (E.O. 13007, "Indian Sacred Sites").

As early as possible in the planning process, but no later than the identification stage, the FS shall consult with Indian tribes to determine if any historic properties of traditional cultural or religious significance are present within an undertaking's area of potential effect. The FS shall ensure that Indian tribes receive quarterly NEPA lists of proposed actions and that Indian tribes are maintained on NEPA mailing lists. In addition, the FS shall utilize periodic meetings, supplemental project lists, and project-specific consultation requests as needed to assure that Indian tribes have the opportunity to identify historic property concerns and to participate as consulting parties in all aspects of consultation for projects that are of interest to them. When it is determined that an undertaking may affect a property identified by a Tribe as having traditional cultural or religious significance, the FS shall consult further with the Tribe regarding the identification, evaluation, assessment of effects, and the resolution of adverse effects, if applicable, with respect to the property.

Indian tribes will be contacted and tribal concerns and recommendations derived from the consultation process shall be documented and addressed in the inventory report and NEPA project file, consistent with the confidentiality considerations.

The FS shall be sensitive to tribal concerns and rights regarding confidentiality and privacy and shall protect sensitive information to the fullest extent permitted by law, using applicable provisions and exemptions of Section 304 of NHPA, Section 9 of ARPA, and Section (b) of the Freedom of Information Act (AIRFA).

FLMP Amendments:

- Protect nonrenewable resources to ensure their future availability (SLMP Amendment 9, pp. 21).

**Gaps: None**

- Inventory, evaluate, nominate, protect, study, interpret, and enhance cultural resources in accordance with the management prescriptions (FLMP Amendment 9, pp. 22).

**Gaps: Limited by funding constraints**

- A complete or sample cultural resource survey is done on project undertakings. The intensity of sampling is determined by using FSM 2360, the Region 3 Programmatic Agreement and consultations with the State Historic Preservation Officer. Any area, even those surveyed at 100 percent, may have cultural resources present that have not been identified. Project Administrators and Operators are alert for such sites. It is the Project Administrator's responsibility to mark, protect, and report unreported sites (FLMP Amendment 1, pp. 50).
- Cultural resource sites are located and protected from project activities in accordance with FSM 2360 and 2430 and FLMP pp. 49-50. Unauthorized disturbance of cultural resource sites is handled according to laws that include the Archaeological Resources Protection Act (1979), the Native American Graves Protection and Repatriation Act (1990), CFRs, as well as FSM direction (FLMP, Amendment 1, pp. 49-50).

**Gaps: None**

## References

- Covington, W. Wallace, Peter Z. Fule, and Margaret M. Moore  
1997 Restoring Ecosystem Health in Ponderosa Pine Forests of the Southwest. *Journal of Forestry*, 95 (4): 23-29.
- Deal, Krista  
2004 Fire Effects to Lithic Artifacts. Presented at NPS Cultural Resources Protection and Fire Planning Course, January 12-16, 2004, Tucson.
- 1999 Effects of Prescribed Fire on Obsidian and Implications for Reconstructing Past Landscapes. Annual Meeting of the Society for California Archaeology, April 23-25, 1999, Sacramento.
- Gifford, David  
2007 A Cultural Resources Clearance Report for the Jack Smith Wildland Urban Interface Project, Coconino National Forest. CNF Project 2006-52-B. Ms on file at the Coconino National Forest, Flagstaff.
- Hedquist, Saul and Joshua S. Edwards  
2007 The Jack Smith Archaeological Survey Project: A Cultural Resource Assessment of 3,080 acres in the Peaks Ranger District, Coconino National Forest. CNF Project 2006-52-A. Ms on file at the Coconino National Forest, Flagstaff.
- Jackson, Robert J.  
1998 Prescribed Fire and the Protection of Heritage Resources. A Heritage Resources Management Module, Prepared for the USDA Forest Service, Pacific Southwest Region, National Forests of the Sierra Nevada. Pacific Legacy, Inc. Sacramento.
- Lyndon, Michael  
2004 An Archaeological Survey and Cultural Resources Clearance Report for Schultz Pass Wildland Urban Interface Project, Coconino National Forest. CNF Project 2004-27. Ms. On file, Coconino National Forest, Flagstaff.
- Rude, Trish and Anne Trinkle Jones  
In Press Prehistoric Fire Effects to Prehistoric Ceramics. In *Wildland Fire in Ecosystems: Effects of Fire on Cultural Resources and Archaeology* General Technical Report No. RMRS-GTR-42-vol.3: Chapter 3, edited by Jones, A.T. and K.C. Ryan. USDA Forest Service, Rocky Mountain Research Station, Fort Collins, Colorado. On file, NPS Western Archaeological and Conservation Center, Tucson.
- Ruscavage-Barz, Samatha  
1999 Fire in the Hole: The Effects of Fire on Subsurface Archaeological Materials(Draft). National Park Service, Bandelier National Monument,

New Mexico. Manuscript on file, Bandelier National Monument, New Mexico, and Western Archaeological and Conservation Center, Tucson.

USDA Forest Service, AZ and NM SHPOs and Advisory Council  
2001 Programmatic Agreement Among USDA Forest Service, Southwestern Region, Arizona State Historic Preservation Office, New Mexico State Historic Preservation Office and the Advisory Council on Historic Preservation Regarding Wildland Urban Interface Hazardous Fuels Reduction Projects. Ms. On file Coconino National Forest, Flagstaff.

