

**HERITAGE TECHNICAL SPECIALIST'S REPORT
Burned Area Emergency Response**

**King Fire
Eldorado National Forest
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1. Potential Values at Risk

The King Fire started on the south side of the South Fork of the American River canyon near the community of Pollock Pines on September 13, 2014. For the next four days the fire continued to prove extremely difficult to control. On September 17th, the combination of alignment of terrain, fuels and weather promoted extreme fire growth that resulted in a 10 mile run, consuming an additional 50,000 acres of public and private lands. By September 24th the fire had grown to over 95,000 acres.

The fire burned a total of 97,717 acres; 65,536 acres are within the Eldorado National Forest (ENF), 276 acres within the Tahoe National Forest and 33,893 acres on non-federal lands.

Cultural resource values at risk include Native American archaeological sites, historic archaeological sites, and the historic built environment such as structures, ditches, road and trails. Many are hundreds and thousands of years old and their loss considered irreversible and irretrievable. In addition, area is very important to the local Native American communities, both the cultural resource values as well as the natural resources located in the vicinity.

Wildfires clearly have the potential to damage, or destroy cultural resources through; direct effects of the fire, ground disturbing suppression or rehabilitation activities, and erosive soil movement caused by subsequent storm precipitation. These impacts may completely destroy cultural resource sites or alter the context of surface and subsurface deposits vital to scientific analysis or interpretation.

The degree of damage to cultural resources by fire is dependent upon the fire temperature and its duration within the site. In general, the effects increase as temperatures and residence time increase. While cultural sites are more likely to be adversely affected in areas of moderate or high fire severity, damage can occur from low severity fires as a smoldering ground fire can significantly damage surface and subsurface features and artifacts. Direct damage to lithic artifacts and features can range from spalling, exfoliation, potlidding, and discoloration of artifacts and features to the destruction of individual artifacts and features from breakage and shatter. Historic sites are also vulnerable to a variety of effects from fire ranging from overall consumption of wooden structure and features to loss of integrity of earthen structures such as roads and ditches. In addition to overall loss of site integrity, this damage can result in the loss of scientific data such as provenience, dating potential, material source, and plant and animal residue.

Post-fire effects pose an additional risk to cultural resources within areas of debris flows or large stands of standing fire killed trees. Cultural resource sites located within areas of slope instability or in areas of denuded vegetation can be susceptible to higher erosion rates, changes in drainage

patterns and slide activity. Damage from standing and fallen fire killed trees is likely within cultural resource sites that are located in timber stands in areas of moderate or high fire severity. Past studies and observations have demonstrated that the natural tree fall within sites years after wild fires can cause considerable direct damage to cultural resources. In addition, burned out stump holes can compromise subsurface archaeological materials and thereby diminish the provenience information available within these sites.

2. Resource Condition Assessment

Resource Setting

Within the King fire area cultural resource surveys have been conducted for a variety of federal projects due the past 30 years, these projects have resulted in approximately 37,110 acres (57% of federal lands) previously surveyed within the fire perimeter. This area is known through historical records and archaeological investigations to contain abundant historical era cultural resources and prehistoric resources. Historic resources in the area include habitation structures, cemeteries, hydraulic mining ditches, mining features (e.g., tailings, adits, shafts, trails, etc.), refuse dumps, and trails. Ethnographically the area was utilized by the Washoe and the Southern Maidu or Nisenan. Prehistoric resources include seasonal habitation areas; features include midden, flaked stone lithic scatters, bedrock milling stations and petroglyphs. Studies conducted at several sites have determined that human use spanned over several thousands of year and dating to 4,000 years before present.

There are 193 cultural resource sites within the burned area (34 unburned or very low burn severity, 61 low burn severity, 38 moderate burn severity, 60 high burn severity), but only 23 sites were assessed by the BAER team archaeologists. Selecting cultural resources to assess was a four step process. The first step was to choose sites that are eligible or potentially eligible for listing on the National Register of Historic Places based on criteria as described in 36 CFR 60.4. The second step was considering those sites that are inheritably at greater risk of destruction due to the characteristics they possess (e.g. artifact scatters, structures, and foundations). The third step was overlaying the known burn intensity, slope, and stream shed information in a GIS with the locations of the various cultural resources. The fourth step was dictated by access, which was governed by the fact that many of the sites are in very steep canyon bottoms.

Findings on the Ground

Thirteen sites monitored were located in areas of moderate and high burn intensity. The remaining sites located within moderate to high burn severity were not visited due to safety concerns, a lack of potential BAER issues, or the necessity to prioritize a large assessment in a relatively short amount of time.

3. Emergency Determination

Of the cultural resources assessed, four are within areas where increased runoff, erosion, flooding, or debris flow pose a significant threat; however, due to location on the landscape and other important factors, treatment opportunities are limited to monitoring and full site recordation and sample artifact collection in anticipation of debris flow or landslide. One site is located within standing fire killed trees and poses a potential emergency due to natural tree fall, due to the nature of the cultural resource features and deposits on site. Monitoring will be conducted to determine if such a threat is imminent.

Site #1 is a large, prehistoric occupation site containing bedrock milling stations and flaked stone artifacts. The site has been determined to be eligible for listing in the National Register of

Historic Places. It is located on a series of benches that are bisected by a couple of ephemeral drainages in a high intensity burned area. Minor amounts of soil and debris have begun to fill in some of the bedrock mortar cups due to erosion, and additional minor debris flows across the site are anticipated. Monitoring of the site following initial precipitation events this fall and monitoring as early as access is available in the spring will provide opportunities to remove soil and other debris from these cultural features, and determinations will be made whether additional protection measures are needed to slow or prevent debris flows and the deposition of materials on the site.

Site #2 is a large, prehistoric seasonal occupation, which burned at a very low intensity. The site area contains three discrete loci which are characterized by bedrock milling stations and associated ground stone artifacts, flaked-stone artifacts, midden soils, and pitted boulder petroglyphs. Locus 2 does not contribute to the NRHP eligibility of the site. Alternatively, Locus 1 was found to contribute to the site's NRHP-eligible status, and a determination for Locus 3 is pending additional studies. Loci 1 and 3 are located within timber stands of fire killed trees. There is a concern that features within these loci may experience significant damage from natural tree fall of these fire killed trees. However, it is uncertain whether this threat is imminent; therefore, thorough monitoring of the site will be conducted in the fall and as early as access is available in the spring.

Site #3 is a seasonal prehistoric food processing and stone tool manufacturing site that is characterized by a bedrock milling feature, flaked stone artifacts, possible ground stone artifacts, and a possible hearth or other structural feature. The site is located in a small, open meadow that burned with high intensity. The entire slope of the canyon above the site to the north, west, and southwest also burned with high intensity. It is expected that with the loss of vegetation on the surrounding steep slopes, the site will be susceptible to the flow of high volumes of soil and debris as a result of erosion and potential landslides. Full recordation of the site and sample artifact collections prior to the first precipitation event this fall will mitigate the potential loss of access to the site and a potential loss of scientific values.

Site #4 is a prehistoric seasonal food processing and stone tool manufacturing site that contains a bedrock milling station, portable milling stones, ground stone and flaked stone artifacts. The site is located on a small, mid-slope bench on the steep western. This specific location burned with high intensity, and the entire slope above and below the site burned with mixed high and moderate intensities. It is expected that with the loss of vegetation upslope, the site will be susceptible to the flow of high volumes of soil and debris as a result of erosion. In addition, the channeling of water through the site and erosion of soils downslope have the potential to displace artifacts, and could possibly affect a cultural feature located at the slope break. Monitoring of the site following the first fall precipitation event and as early as access is available in the spring will provide opportunities to remove soil and other debris that may be deposited atop the cultural feature. Determinations will also be made whether additional protection measures are needed to slow or prevent further debris flows and channeling from upslope, and to prevent erosion of soil and artifacts downslope.

Site #5 is a prehistoric seasonal food processing site that contains a large bedrock milling feature with associated ground stone artifacts. The site is located on a bench that burned with moderate intensity. The entire slope of the canyon above the site to the northeast, east, and southeast burned with high and moderate intensities. It is expected that with the loss of vegetation on the surrounding steep slopes, the site will be susceptible to the flow of high volumes of soil and

debris as a result of erosion and potential landslides. Full recordation of the site and sample artifact collections prior to the first fall precipitation event will mitigate the potential loss of access to the site and a potential loss of scientific values.

Implementation of potential emergency rehabilitation treatments will be conducted in compliance with the provisions of the *Programmatic Agreement Among the U.S.D.A. Forest Service, Pacific Southwest Region (Region 5), California State Historic Preservation Officer, Nevada State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding the Process for Compliance with Section 106 of the National Historic Preservation Act for Management of Historic Properties by the National Forests of the Pacific Southwest Region* (Regional PA 2013).

The Eldorado National Forest has initiated emergency consultation per the provisions within 36 CFR 800.12, 36 CFR Part 78 & Stipulation 7.11 of the Regional PA 2013.

4. Treatments to Mitigate the Emergency

Site #1:

- A. Treatment Type: Monitoring
- B. Treatment Objective: Protect cultural features of the site from being covered with soil and debris.
- C. Treatment Description: To prevent cultural features from being covered with soil and debris, archaeological monitoring will occur following the first fall precipitation event and as early as access is available in the spring to assess conditions, to remove deposited materials from atop cultural features, and/or to prescribe erosion control protection measures, if necessary.

Site #2:

- A. Treatment Type: Monitoring
- B. Treatment Objective: Prevent damage to significant site features from natural tree fall of fire killed trees.
- C. Treatment Description: To prevent damage from natural tree fall of fire killed trees, monitoring of the site will be conducted in the fall and as early as access is available in the spring when assessments can be made to determine needs for directional felling away from significant site features.

Site #3:

- A. Treatment Type: Site recordation and sample artifact collection.
- B. Treatment Objective: To improve and update information about the site and collect additional data given constraints on time and access.
- C. Treatment Description: To mitigate the potential loss of access to the site and a potential loss of scientific values, the site will be fully recorded with updated information and samples of artifacts will be collected.

Site #4:

- A. Treatment Type: Monitoring
- B. Treatment Objective: To protect cultural features of the site from being covered with soil and debris from upslope, and to protect soils and artifacts from eroding downslope.
- C. Treatment Description: To prevent cultural features from being covered with soil and debris, archaeological monitoring would occur following the first fall precipitation event and as early as access is available in the spring to assess conditions and to remove

deposited materials from atop cultural features. Determinations will also be made whether additional erosion control protection measures are needed to address debris flows and/or displacement of soil and artifacts.

Site #5:

- A. Treatment Type: Site recordation and sample artifact collection.
- B. Treatment Objective: To improve and update information about the site and collect additional data given constraints on time and access.
- C. Treatment Description: To mitigate the potential loss of access to the site and a potential loss of scientific values, the site will be fully recorded with updated information and samples of artifacts will be collected.

5. Summary and Recommendations

The effects described above have likely resulted in the loss of important information, and therefore, a loss of cultural resource values that potentially could have contributed to the NRHP significance for many of these resources. Four of these resources appear to be eminently threatened by further degradation due to erosion, storm runoff, or debris flows. One site is located within standing fire killed trees and poses a potential emergency due to natural tree fall on features of high cultural and archaeological value. Locations where non-cultural resource related treatments are proposed will require review by ENF Heritage Resource Management prior to implementation. Cultural resource survey and site protection measures may also be required for proposed BAER treatment areas prior to implementation.

6. References – None

7. Appendices – None