Oatman Restoration Project

Report Author:  
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Project Basic Information
The Oatman Restoration Project is within the Silver Lake Ranger District of the Fremont-Winema National Forests. The project area is located in both Lake and Klamath Counties of south central Oregon on the northwest edge of the Basin and Range Physiographic Province at Township (T) 27 South (S) Range (R) 12 East (E), Sections 34-35; T 27S R 13E, Sections 8, 17-22, 27-32; T 28S R 11E, Sections 24-25, 36; T 28S R 12E, Sections 1-2, 11-15, 19-35; T 28S R 13E, Sections 18-19; T 29S R 11E, Section 1; T 29S R 12E, Sections 2-12, 15-21, 29-32; and T 30S R 12E, Sections 5-7.

The Oatman Restoration Project is approximately 36,252 total acres. The project area encompasses 26,341 acres of National Forest land and the remaining acres are private land. The project area is dominated by ponderosa pine, lodgepole pine, and western juniper stands with the occasional dry lake bed and several meadows. The majority of the project area is generally dry with no perennial streams; however four subwatersheds cover the project area: Oatman Flat, Buck Creek, Timothy Creek, and Bear Creek.

Heritage needs to be involved at the earliest stages of National Environmental Policy Act (NEPA) planning to provide input to decision makers as required by NEPA, the National Forest Management Act (NFMA) and other laws and regulations; and for the identification and protection of sites as required under Section 106 of the National Historic Preservation Act (NHPA), the Antiquities Act and other laws and regulations as amended.

Project Area Background/History
Prior to Euro-American contact, the Yahuskin band or Goyatoka (Crawfish Eaters) of the Northern Paiute occupied the project vicinity (Silvermoon 1985). The Yahuskin were a semi-nomadic group that practiced hunting and gathering, following an annual subsistence round based on local plant and animal resource availability. The Oatman Restoration Project area currently includes the Cabin Lake/Silver Lake Mule Deer Winter Range management area (MA 1), which suggests that this area has been traditionally a sustainable habitat for mule deer. This important food resource would have attracted Yahuskin populations to this area. Also, there is an ample obsidian source at Silver Creek and Sycan Marsh which is located south of the project area (Hughes, 1986). There is also archaeological evidence to suggest that the Yahooskin had contact with the Klamath people around the Silver Lake area (Wingard 2001).

Contact between the Native Americans and Euro-Americans in the vicinity of the project area began on December 11, 1843, when John Fremont’s second exploration party traveled through the Upper Klamath Marsh. According to Fremont’s journal, he met with a chief of a village located in the middle of the marsh on the second day at Rocky Point Camp (Fremont 1843).

Today, descendants of the Yahooskin people, along with the Klamath and Modoc, are members of the Klamath Tribes, a federally recognized Indian Tribe. In 1864, the Klamath Tribes signed the Klamath Lake Treaty ceding over 13 million acres of their lands to the United States government. About 1.1 million acres were retained for the Klamath Reservation. The boundary of the reservation had shrunk to 862,622 acres by 1954, when Congress terminated the Klamath
Cultural Resources Specialist Report

Tribes’ federal status under the Federal Termination Act, due to several land exclusions (Zucker et al. 1983:107-108). Private entities bought some of the old reservation land, but the majority of it became the Winema National Forest in 1961 (Zucker et al. 1983:110). The Tribes regained their federal recognition in 1986. Although, they retain their hunting and gathering rights, Restoration did not restore their former reservation land base. Only the very southernmost end of the Oatman Restoration Project area lies within former reservation lands.

The Fremont National Forest was conceived in 1908 from the Goose Lake and Fremont Forest Reserves which were created from public lands in 1907. The Goose Lake Forest Reserve was proposed in 1903 and then established in August 1906. The Reserve “extended from the Warner Mountains south of the California line, and the area surrounding Dog Lake north to the line between the Klamath Indian Reservation and the town of Paisley” (Bach, 1981: 13). It wasn’t until 2003, that the Winema and Fremont National Forests combined administratively (Tonsfeldt and Gray 2009).

Since before the early history of the Fremont National Forest, people have and continue to maintain private land holdings within the boundaries of the Forest. Settlers, attracted to the grazing potential of the area began settling around Silver Lake for trapping and the fur trade in the 1870s, after lingering hostility between the Northern Paiute and United States government quieted (Uran 2007).

The present town of Silver Lake was settled in 1884, ten years after the first post office was established in 1874. In 1894 the tragic Christmas Eve Fire occurred at the local community center. A total of 43 people died in that fire, which was nearly a third of the population of Silver Lake at that time. Some say the fire is the reason Silver Lake remains so sparsely populated. In the 1900s, Silver Lake dried up completely and ranchers claimed the new land for themselves and cattle ranching became the dominant industry for the Silver Lake area (Hatton 1988). In the 1930s, the Civilian Conservation Corps (CCC) built several spring developments across the Fremont National Forest and built a fire lookout on top of Rodman Rock in the southern part of the Oatman Restoration Project area (Uran 2007).

Early on in Silver Lake’s history the timber industry attempted to get established; however because of the remoteness of the area commercial timber operations were not feasible. In fact, in 1905 the closest railroad spur was Shaniko which was 170 miles north of Silver Lake (French 1905). The last major timber operations in the Oatman Project area occurred in the early 1990s (Hauge 1990).

Project Area Current Conditions
Archaeological research of Lake County Oregon has determined that Native Americans have occupied the region for many millennia. The first archaeological research conducted in the vicinity of the Oatman Restoration Project were excavations at Fort Rock Cave by Luther Cressman in 1938 (Cressman 1981, p.3). Another archaeological excavation in Lake County conducted by Cressman, was at the Paisley Fivemile Point Caves (35-LK-3500), known today as the “Paisley Caves” (Cressman 1940, 1942). Recent archeological investigation at Paisley Caves has shown that Native Americans lived in the vicinity 14,300 years ago (Barnard 2008). Other
research closer to Silver Lake has suggested contact between the Yahooskin and the Klamath at Silver Lake (Wingard 2001).

On Forest Service land within the Oatman Restoration Project area, there have been 12 previous cultural resource inventory surveys conducted (Table 1).

**Table 1. Survey History (T.S.=Timber Sale)**

<table>
<thead>
<tr>
<th>Survey Title</th>
<th>Date</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake T.S.</td>
<td>1981</td>
<td>P. Fletcher</td>
</tr>
<tr>
<td>North Willow T.S.</td>
<td>1981</td>
<td>P. Fletcher</td>
</tr>
<tr>
<td>Desert T.S.</td>
<td>1982</td>
<td>D. DeCarufel</td>
</tr>
<tr>
<td>Matty T.S.</td>
<td>1982</td>
<td>M. Martin</td>
</tr>
<tr>
<td>Oat T.S.</td>
<td>1984</td>
<td>J. Chappel</td>
</tr>
<tr>
<td>Thymon T.S.</td>
<td>1984</td>
<td>J. Chappel</td>
</tr>
<tr>
<td>Gnat T.S.</td>
<td>1987</td>
<td>D. Uran</td>
</tr>
<tr>
<td>Jades L.P. T.S.</td>
<td>1988</td>
<td>D. Uran</td>
</tr>
<tr>
<td>Cookie T.S.</td>
<td>1990</td>
<td>K. Hauge</td>
</tr>
<tr>
<td>Strip T.S.</td>
<td>1990</td>
<td>T. Lorenz</td>
</tr>
<tr>
<td>Bridge/Buck EA</td>
<td>2006</td>
<td>D. Uran</td>
</tr>
<tr>
<td>Buck Creek Range Allotment Renewal</td>
<td>2007</td>
<td>D. Uran</td>
</tr>
</tbody>
</table>

A total of 47 cultural sites were recorded during these past surveys. Cultural resources are generally greater than 50 years old and include sites, structures, buildings, districts and objects associated with, or representative of, people, cultures, and human activities and events, as defined in 36 CFR 800.2(e). The term cultural resource in this report means any property as defined above, whether previously evaluated or not yet evaluated for listing or eligibility for listing in the National Register of Historic Places (NRHP). The site total consists of 3 historic (H) (post 1825-50 years ago) sites, 40 prehistoric (P) (pre 1825) sites, and 4 multi-component (M) (combination of prehistoric and historic) sites (Table 2).

**Table 2. List of known sites within Project Area.**

<table>
<thead>
<tr>
<th>Infra #</th>
<th>Smithsonian #</th>
<th>Site Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>060204000020</td>
<td>35-LK-1497</td>
<td>Lithic Scatter (P)</td>
</tr>
<tr>
<td>060204000022</td>
<td>35-LK-1909</td>
<td>Lithic Scatter /CCC Troughs (M)</td>
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<tr>
<td>060204000023</td>
<td>Not Assigned</td>
<td>Lithic Scatter (P)</td>
</tr>
<tr>
<td>060204000638</td>
<td>Not Assigned</td>
<td>Lithic Scatter /Peeled Tree (M)</td>
</tr>
<tr>
<td>060204000024</td>
<td>Not Assigned</td>
<td>Lithic Scatter (P)</td>
</tr>
<tr>
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<td>Lithic Scatter (P)</td>
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<td>35-LK-3116</td>
<td>Lithic Scatter (P)</td>
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<tr>
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<td>35-LK-3115</td>
<td>Lithic Scatter (P)</td>
</tr>
<tr>
<td>060204000026</td>
<td>Not Assigned</td>
<td>Lithic Scatter (P)</td>
</tr>
</tbody>
</table>
To assess the current condition of heritage resources for the Oatman Restoration project, previously known sites located in high probability areas were visited. Surface inspection was conducted, observations were documented and previous site forms were updated. Of the cultural sites that were found, the vast majority of them were in fair condition. They are not being adversely affected by natural processes (i.e. erosion) nor by human-caused undertakings (i.e. construction, agriculture). Only two sites were found to have adverse affects. The impacts that were documented during the current condition assessment include wind erosion, water erosion, grazing impacts, animal trampling, and road construction (Table 3).

Table 3. List of Updated Sites

<table>
<thead>
<tr>
<th>Infra #</th>
<th>Site Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>06020400020</td>
<td>Lithic Scatter (P)</td>
</tr>
<tr>
<td>06020400022</td>
<td>Lithic Scatter /CCC Troughs (M)</td>
</tr>
<tr>
<td>06020400023</td>
<td>Lithic Scatter (P)</td>
</tr>
<tr>
<td>06020400063</td>
<td>Lithic Scatter (P)</td>
</tr>
<tr>
<td>06020400064</td>
<td>Lithic Scatter (P)</td>
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<td>Lithic Scatter (P)</td>
</tr>
<tr>
<td>06020400069</td>
<td>Lithic Scatter (P)</td>
</tr>
<tr>
<td>06020400070</td>
<td>Lithic Scatter /Wood Structure (M)</td>
</tr>
<tr>
<td>06020400071</td>
<td>Lithic Scatter /Cattle Guard (M)</td>
</tr>
<tr>
<td>06020400075</td>
<td>Vision Quest (P)</td>
</tr>
<tr>
<td>06020400074</td>
<td>Outhouse (H)</td>
</tr>
</tbody>
</table>
Wind erosion was noted in exposed areas with few trees. In these areas wind can both displace artifacts and expose artifacts that were beneath the soil. Water erosion was seen in the form of incised channels. Only one site displayed adverse water erosion. In this instance there was only a single incised channel that was approximately 15 cm in depth. Water can remove soil and artifacts from a site damaging the site’s integrity. Erosion was noted at sites, however the impact was minimal.

Grazing impacts seen at some of the sites included hoof prints and trailing. Hoof prints and trailing affect sites in the same ways. When cows create hoof prints and trails they step on artifacts and can crush and/or break them. Also in areas of wet soil, cows can displace soil destroying the integrity of the site.

Animal trampling is noted when there is evidence of wildlife (not cattle) walking on a site. This action can also break artifacts and displace the soil at that site. This impact was rarely seen in the project area as compared to grazing impacts.

Road construction impacts were seen at times when a site was near a road. This action can potentially destroy entire sites by the destruction of artifacts and features, and displacing soil with heavy machinery. Road construction impacts were noted at some sites; however, in these cases there was not an adverse impact to the site. The Condition assessment findings were documented in detail in the Oatman Restoration Project Condition Assessment report (Fuselier 2013).
**Data Collection/Methodology**

A records and literature review indicated that 47 cultural sites had been recorded within the Oatman Restoration project area. The literature review also indicated that previous surveys have not been conducted in the northern half of the project area for approximately 30 years. A map exercise was then conducted. The project area was stratified into high and low probability areas. The stratification was based upon the 2009 Fremont-Winema National Forest Cultural Resource Inventory Plan (Tonsfeld and Gray 2009). This plan stratifies a project area into two probability zones: high and low based on a predictive model for site distribution. The predictive model uses environmental data and previously known cultural site data to determine where the highest concentration of cultural sites may be found. Because the northern half of the project area had only outdated or insufficient cultural surveys, the entire area was considered a high probability area.

A condition assessment update of the known cultural sites in high probability areas within the Oatman Restoration Project was then conducted in the summer of 2012. Although it would have been preferable to conduct NHPA Section 106 survey within the high probability areas along with the known site condition assessment, it was not possible. However, design conditions have been put in place to ensure the protection of both known and unknown cultural resources.

Of the 47 known sites within the project area, 14 are within the high probability area. All of those sites within the high probability area were revisited. An additional 16 sites were updated in the low probability area of the project area (Table 3). Adam Fuselier, M.A. (Winter Rim Zone Archaeologist) and, on selected dates, Carrie McDermott (Chemult Archaeological Technician) conducted these updates. No ground penetrating techniques were used in data collection.

Cultural sites were found based on the information in the original site form. If the information was adequate and the site was found, the site was inspected for impacts and the artifacts and/or features were described. Photographs of the sites and/or impacts were taken and added to the site file. This information was then compared to the site description of the original site form. Mitigation, to reduce impacts, are included in the proposed actions. This information was used in determining and describing the current conditions of the cultural resources of the Oatman Restoration project.

**Regulatory Framework**

A current condition analysis was conducted to ascertain the current conditions of the cultural resources within the Oatman Project to fulfill the National Environmental Policy Act (NEPA) obligations. The analysis does not satisfy Section 106 of the National Historic Preservation Act (NHPA). The Fremont-Winema National Forests is required under the National Historic Preservation Act of 1966 (NHPA), as amended (Public Law 89-665; 16 USC 470-470w-6), to consider potential effects to cultural resources prior to authorizing any ground disturbing undertaking and is responsible for the management of cultural resources that are listed on or are eligible for listing on the National Register of Historic Places (NRHP). Under NHPA a significant or adverse effect is one that may diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or associations (36 CFR 800.9[b]). Any ground disturbing project that will be implemented under the Oatman Restoration Environmental Assessment (EA) will be subject to NHPA Section 106 survey.
**Alternatives Descriptions**

A total of three alternatives were developed and analyzed in detail, two alternatives and one no action alternative. These alternatives have been analyzed to address issues that arose during the comment period.

**Alternative 1 (No Action)**

Alternative 1 is a no action alternative. This alternative would propose not doing anything to the project area and allowing current conditions to continue.

This alternative serves as a baseline for evaluating other alternatives during the effects analysis for proposed actions. Current activities, such as permitted grazing, dispersed recreation use, fire protection, personal use firewood cutting, weed and invasive plant treatments, public safety, and scheduled road maintenance within the project area would continue. The existing land and resource conditions would be otherwise unaffected, except through natural occurrences and processes.

Alternative 1 does not propose any new ground disturbing activities. Therefore, no timber harvest, wildlife habitat enhancements, riparian and meadow enhancements, or fuels reduction activities would occur on National Forest System lands within the project area as a result of this alternative. The transportation system would not be refined as a result of Alternative 1. No roads would be reconstructed, nor would any roads be identified for closure or decommissioning.

**Alternative 2 (Action)**

Alternative 2 would require three forest plan amendments:

The Fremont Forest Plan would be amended (Forest Plan Amendment #41) to allow the cutting and removal of conifers greater than 21” diameter at breast height (DBH) in the Oatman project area. The project area will be exempted from the Eastside Screens because there is a need to remove some conifers greater than 21” DBH, excluding five-needle pine species. Approximately 3,318 acres of meadows and other non-forest vegetation have encroaching conifers that need to be removed to restore the desired condition and remove seed sources to reduce future encroachment. There is also a need to remove some conifers greater than 21” DBH, excluding five-needle pine species, in the approximately 21,334 acres of commercial thinning treatments to improve stand health and achieve the desired watershed resiliency to drought.

The Fremont Forest Plan would be amended (Forest Plan Amendment #42) to use a commercial contract (timber sale or stewardship) in the Oatman project area as a tool to accomplish thinning treatments in “dedicated” pine and pine-associated stands (MA 14), to develop sustainable conditions that would benefit old growth habitat. Up to approximately 1,249 acres of ponderosa pine-associated old growth would be thinned. Treatments would be focused on maintaining or promoting late and old structural conditions, while creating resilient forest conditions.
Alternative 2 includes the proposed action of cutting and removing selected live trees greater than 21 inches diameter at breast height (dbh), including ponderosa pine (*Pinus ponderosa*), white fir (*Abies concolor*), and lodgepole pine (*Pinus contorta*). Harvest of such material is limited to individual trees or groups of trees displaying relatively poor health and vigor, redistributing limited growing space of drought-prone sites onto more vigorous and healthier tree individuals or groups. Proposed harvest is also limited to areas where large diameter material is not in deficit. Cutting and removing of large material would be restricted in areas deficient of large diameter trees.

In addition, all five-needle pines are excluded from cutting consideration and designated for retention. Five-needle pines include sugar pine (*Pinus lambertiana*), western white pine (*Pinus monticola*), and whitebark pine (*Pinus albicaulis*). Sugar pine does occur within the project area; western white pine and whitebark pine are not currently noted. A goal of treating across the various tree diameters is a health and vigor approach in providing favorable conditions for longer term, healthier, more resilient forest stands comprising a diversity of tree ages and sizes. The next project-level entry into the area could be another twenty years. Therefore, prescribe more encompassing treatments at this time.

A second goal is monetary receipts from harvested material would apply to treating noncommercial ground where treatment of small diameter material is desirable for the management of stand health and wildland fire fuels. Current funding for treating small diameter material is limiting or lacking.

The following list intends on presenting considerations for the cutting and removing of tree individuals or groups greater than twenty-one inches DBH, including ponderosa pine (that is, any material considered for cut should first meet criteria number one, then at least one other criteria):

1. Apply to areas where large diameter trees are not in deficit, including snag recruitment trees (Appendix-A)
2. Cutting is generally limited to trees displaying Keen’s Vigor Class-C and Class-D for ponderosa pine (Appendix-B)
3. Cutting of overstory trees displaying heavy western dwarf mistletoe infection (Individual tree Dwarf Mistletoe Rating, DMR, equal to or greater than “four”)
4. Cutting of seed-source trees actively contributing to conifer encroachment into meadows (cut-trees must show active seeding encroachment; retain all others not showing seeding evidence)

Other actions involved in Alternative 2 includes the following:

- **Fuels**
  - Approximately 21,448 acres of prescribed burning (i.e., pile burning and/or underburning) and burn allowed. Treatments would occur in strategic blocks over several years.
  - Approximately 2080 acres of shrub vegetation with no timber overstory will be treated with prescribed fire only.
Active fire ignition won’t occur within recent burn units, 1990s through present, but will occur in 1988 burn areas.

- Backing/creeping-in will be allowed on approximately 4,894 acres in units identified as “no treatment” areas, snag retention areas, and exclusions; and in the burn from 1988.
- In prescribed burn areas, livestock allotments would be rested from grazing as needed, prior to and post burn operations.
- Re-entry on up to approximately 10,000 acres of underburning 5 to 8 years following initial underburn treatments would be possible. These areas would need to meet criteria as identified in the design features for a second entry underburn.
- Biomass option for piles

### Wildlife

- Approximately 1,120 acres of snag retention and recruitment units where no harvest activities occur. Rx-fire backing/creeping-in permitted.
- Approximately 1,249 acres of old growth habitat improvement. Small diameter tree removal (sub-merchantable); thinning from below (merchantable, up to 21” DBH), and partial cutting around large diameter trees. No 21” + DBH tree removal in old growth habitat. Will follow groupy clump Rx. Rx underburn, low intensity.
- Approximately 2,500 acres of mountain mahogany restoration treatments including:
  - removal of encroaching conifers. Thinning from below for sub-merchantable and merchantable materials; would also include 21” + DBH removal (following cutting criteria).
  - Rx underburning. Edge would be up to 100 ft from group edge.
  - Visual monitoring would determine new seedling establishment. If monitoring determines a lack of new growth, mahogany seedlings could be planted.
- Approximately 10 (up to 5 acre) wildlife forage openings, distributed throughout the project area. Group selective cutting to improve forage conditions, specifically bitterbrush.
  - Hand-seeding of native grasses, shrubs and forbs would be an option if monitoring indicates the need.
- Conifer removal, thinning from below, in stands of Aspen and/or Black cottonwood to reduce competition. Rx burning. No 21” DBH + cutting or removal.
- Bitterbrush mowing treatments on approximately 500 acres in MA 1 to encourage sprouting of new growth.

### Non-forested Vegetation

- Approximately 3,318 acres of restoration and enhancement treatments:
  - 1,846 acres of meadow restoration: removal of encroaching shrubs and conifers, thinning from below by hand-felling of sub-merchantable and merchantable trees, leaving some trees 21” + DBH (see design features); prescribed fire, creeping/backing, with no direct ignitions in meadows. Soil moisture conditions would need to be met.
  - 1,472 acres riparian enhancement: removal of encroaching conifers (same as RHCA treatments).
• Bitterbrush and bunchgrass restoration: removal of encroaching conifers. (same as wildlife treatments).
  o Place up to four troughs along the edges of Antelope Flat, extending an existing system originating at Antelope Well, to divert livestock use from a pond area that has cultural and botanical concerns. The troughs would be above ground, each supported on a concrete base with a footprint of up to 350 square feet; and connected by approximately 3.5 miles of 1½ inch diameter polyethylene pipe installed in a 5 inch wide trench, up to 10 inches deep. Float shut-off valves would prevent overflow. The system would be purged in winter.

• Hydrologic function
  o Restore spring flow and associated vegetation at five small springs by removing conifers to 100 feet from the existing conifer edge, using hand-felling and landing.
  o Repair headcuts and incised channels to reduce the rate and magnitude of headcutting and improve water spreading.
  o Fill sources (e.g. soil, rock, large wood) for meadow and stream restorations will come from decommissioning of reads and reshaping of the flood plain and areas adjacent to the project site.
  o RHCA treatments: Thinning from below (up to 10” DBH) to reduce loss of water via transpiration, open up the canopy to increase snow accumulation and reduce potential for uncharacteristic wildfire events. Trees 21”+ DBH may be removed, per cutting criteria (Design Features, below). Prescription underburn.
  o When necessary for stream and meadow restoration projects, up to 100 trees 18” DBH or less could be felled or knocked over (so the root wad remains attached) from areas adjacent to the project site, including overstocked RHCA’s. All material would be used for the restoration project or left onsite.

• Transportation
  o Approximately five miles of temporary roads will be necessary to provide access to thinning treatment areas and allow for removal of forest products. All temporary roads would be constructed to low-standards, used for only a short time, and decommissioned after timber harvest and hauling activities. Gravel will not be used to surface roads; wood chips/debris may be used. All temporary road activities would follow the direction in BMPs.
  o Routine maintenance could occur on existing transportation system roads in the project area, which total 113 miles. Road maintenance actions may include clearing brush and trees from the travel way; clearing ditches and culverts; replacing culverts with better-functioning culverts, or with fords where conditions are appropriate; removing sloughs and slides; blading and watering; and constructing waterbars, earthen berms and/or cross ditches.
  o An interdisciplinary team completed a project level roads analysis as a component of this landscape restoration project. That analysis focused of providing a transportation system that is safe, reduces ecological impacts, and meets immediate and projected long-term public and resource management needs. The analysis produced recommendations that are summarized in. Based on these recommendations, the Oatman project includes the following actions:
38 miles of existing system roads would be closed following other project work. Closing involves constructing barricades of rock, earthen berms, and/or logs near the beginning of the road, using materials from onsite if possible. Existing culverts are removed and cross ditches and waterbars are constructed to control drainage. Closed roads are designated as “Operational Maintenance Level 1” in the Forest’s transportation system database.

52 miles of existing system roads would be decommissioned following other project work. Decommissioning effectively removes the road from vehicle access in order to allow full revegetation and a return of hydrologic function to the roadway’s footprint on the land. Decommissioning actions can range from surface scarification with the road prism left intact to a complete recontouring of the road prism back to a natural slope. Culverts are removed and their sites rehabilitated. Typically revegetation is accomplished through natural seeding or by planting seedlings appropriate to the native plant community. Decommissioned roads are removed from the Forest’s transportation system database.

- Maintenance Level Changes to Roads
  - Add 2.3 miles of existing user-created non-system roads to the NFS roads inventory as Maintenance Level (ML) 2 (2.0 miles) and ML1 (0.3 miles).
- Changes to Forest Motorized Travel Plan
  - Temporary lifting of seasonal road restrictions on deer winter range
  - The Motorized Travel Management Decision imposed seasonal restrictions (December 1 to March 31) on roads in MA 1 to limit disturbance to deer winter range. This restriction may be temporarily lifted during project implementation.
- Cut and leave danger trees on roadsides.
- Easements

- Allow for firewood gathering.

- Monitoring
  - Monitor deer migration corridors to determine how vegetation treatments may affect patterns of deer use.
  - Place bitterbrush monitoring boxes at several locations throughout the project area. Boxes would have two compartments: one to exclude browsing by both wildlife and livestock; the other by livestock only.

**Alternative 3 (Action)**

Alternative 3 is a proposed action that is the same as Alternative 2 excluding the removal of ponderosa pine (*Pinus ponderosa*) greater than 21” (dbh). Forest Plan amendment #40 would still be required to remove other conifers greater than 21” (dbh).
Effects Analysis

Direct & Indirect Effects

The analysis of direct and indirect effects to cultural resources in the Oatman Restoration project area is based upon condition assessment findings conducted for this project during the summer and fall of 2012 (Fuselier 2014). The Alternatives were measured by comparing potential impacts against current conditions. The temporal bound of the analysis is 15 years. This bound is appropriate because projects can be implemented under a NEPA decision for approximately 15 years.

Alternative 1 – No Action

A “no action” alternative would not have any direct effects on cultural resources within the project area. Possible indirect effects may include an increase in the build-up of forest litter and fuel loads which would intensify wildfire temperatures. High temperatures can damage/alter artifacts (see Fuels Treatments below).

Alternative 2 – Proposed Action

Silvicultural Treatments

Commercial Tree Harvest

Harvest activities that have direct impacts to cultural resources include tree falling, use of heavy machinery, and yarding. Tree falling could damage sites by the physical action of large trees landing on sites, gouging tree limbs into the ground surface. Use of rubber tired and tracked equipment and yarding (dragging trees) to landings could also cause damage to sites in the form of soil displacement, compaction and displacement or damage to artifacts. However, tracked equipment compacts soil to a lesser degree than rubber tired equipment. If machinery crosses scab rock, the sheer weight of the machine can crush basalt rocks. Indirect impacts include increased traffic near site locations, exposure both to the elements, and the creation of vegetation “islands” because the Forest practices the “Flag and Avoid” method to protect sites from direct impacts. Un-cut “islands” may draw attention from woodcutters, recreationists and even to cattle seeking shade. One impact with removing ponderosa pine (Pinus ponderosa) greater than 21” (dbh) is the potential to remove Cambium Trees, but a design feature calls for surveying potential locations, identifying and protecting any cambium trees. Cambium is a layer of cells between the bark and the wood of the tree. A Cambium Tree is a tree in which the bark has been removed to access the cambium layer underneath for food.

Non-Commercial Tree Harvest

According to Appendix A of the 2004 Programmatic Agreement between the US Forest Service (Region 6), the Advisory council on Historic Preservation, and SHPO, thinning using hand methods is an undertaking that has little to no potential to cause direct effects to historic properties. Indirect impacts include exposure due to increased traffic near site locations and the elements, and the creation of “vegetation islands” because the Forest
practices the “Flag and Avoid” method to protect sites. As previously mentioned, un-cut “islands” draw attention from woodcutters, recreationists and even livestock seeking shade.

**Fuels Treatments**

**Prescribed Fire**
Prescribed fire would be used to treat excess fuel buildups and to promote the growth of meadow vegetation. Direct effects of prescribed fire could include site damage associated with fireline construction and potentially excessive heat. Fireline construction, whether by hand or mechanical methods could displace or physically alter surface and subsurface artifacts and other site characteristics such as site context and integrity. Fireline construction may reveal that the site was larger than its surface manifestation. High temperatures generated by heavy fuel loads, and/or unfavorable burning conditions, could damage sites by consuming or altering artifacts such as glass, metal, wood or lithics. Low intensity fires – such as those lower than 212°F at a depth of 1-2 cm – have less adverse effects on many cultural resources than high intensity fires – lower than 662-842°F at 1-2 cm and greater than 212°F at 5 cm (Fowler 2008). Obsidian hydration rinds are compromised at 400-650°F (Green et. al. 1997, p.13). Cherts are physically altered at 350-550°F and basalt fractures around 400°F. Fire also causes potlidding and discoloration to groundstone (Deal 2002). Indirect effects may include tree mortality of culturally altered trees (arborglyph and cambiam trees) and increased erosion due to loss of vegetation cover.

Negative indirect effects of re-introducing fire maybe increased damage from erosion and artifact exposure. A positive indirect effect could be the restoration of the visual context of the site and possible revitalization of ethnobotanical flora.

**Pile Burning**
Pile burning can directly impact cultural resources if the material is piled on a site. When the pile is ignited, the ground where the pile meets the soil experiences intense temperatures. As previously noted, high temperatures consume or alter artifacts.

**Wildlife**

**Small Diameter Tree Removal**
See Silvicultural Treatments above.

**Prescribed Fire**
See Fuels Treatments above.

**Hand Seeding**
According to Appendix A of the 2004 Programmatic Agreement between the US Forest Service (Region 6), the Advisory council on Historic Preservation, and SHPO, planting using hand methods is an undertaking that has little to no potential to cause direct effects to historic properties.
Bitterbrush Mowing
Mowing in previously undisturbed areas has the potential to cause direct effects to cultural resources including damage to sites in the form of soil displacement, compaction and displacement or damage to artifacts.

Non-Forested Vegetation

Removal of Trees by Hand
See Silvicultural Treatments above.

Prescribed Fire
See Fuels Treatments above.

Grazing Troughs
Trough maintenance and construction will be implemented to reduce cattle traffic and protect natural resources by spreading out the water sources and dispersing cattle at different concentration areas. This activity could have direct effects on cultural sites by the use of heavy machinery to dig trenches to lay down pipe to disperse water from a well to the troughs. Also placing the new troughs at the new areas will involve removing some of the topsoil. Both of these activities could have the potential to disperse soil, move artifacts, and destroy artifacts. This could also damage the integrity of cultural sites.

Hydrologic Function

Meadow Restoration
When necessary for stream and meadow restoration projects, up to 100 trees 18” DBH or less, with the root wad remains attached, could be felled or knocked over from areas adjacent to the project site, including overstocked RHCAs. All material would be used for the restoration project or left on site. This process disturbs and displaces the soil around the root wad. This is a major displacement of soil which has the potential to move and/or destroy artifacts and seriously damage the integrity of a cultural site. Other direct effects to the cultural resources could be artifacts being moved, artifacts being broken or damaged by the heavy equipment rolling over them, and possible features destroyed. These actions could damage the integrity of the sites. A potential indirect effect to cultural resources would be the increase of cattle grazing to these meadows. With the increase in meadow vegetation such as grasses and forbs, more cows will be attracted to these meadows over time. Cattle can crush artifacts and create trails that displace the soil damaging the integrity of the cultural sites.

Mechanical/Hand Removal of Trees
See Silvicultural Treatments above.

Headcut Repairs
Stream stabilization is usually achieved by re-contouring the stream banks using heavy equipment. The use of heavy equipment has the potential to directly damage sites.
Damage occurs when moving material, compacting soil and leaving the area susceptible to erosion. Surface and subsurface artifacts could be displaced and/or crushed by heavy equipment and traffic. Soil “fill” would be taken from decommissioned road beds which would displace the ground and have a potential to disturb cultural resources that are buried beneath the ground. Site context and integrity are also threatened. Another ground disturbing action that can occur during headcut repairs is the pulling of live trees and placing them along stream banks to reduce erosion. This process disturbs and displaces the soil around the root wad. This is a major displacement of soil which has the potential to move and/or destroy artifacts and seriously damage the integrity of a cultural site.

Transportation

Temporary Road Construction
Temporary road construction and road maintenance, such as installation and cleaning of ditches and culverts, construction of water bars, earthen berms and/or cross ditches, in undisturbed ground; has the potential to directly damage sites. Damage occurs when moving material, compacting soil and leaving the area susceptible to erosion. Surface and subsurface artifacts could be displaced and/or crushed by heavy equipment and traffic. Site context and integrity are also threatened. A negative indirect effect may be increased public access that may lead to vandalism and/or looting. A positive indirect effect may be increased access to locations where Tribal members may practice cultural traditions and/or treaty rights.

Road Decommissioning
Road decommissioning has the potential to cause effects to cultural resources. Road decommissioning can take a variety of forms from simply removing road identification signs; constructing a barrier, removing culverts, and ripping the road surface; to full re-contour of the road prism. A positive indirect effect of decommissioning would be decreased access to cultural sites that may lead to a decrease in vandalism and looting. A negative indirect effect would be a decrease in tribal access. Coordination between heritage and road management personnel to ensure that barrier construction and ripping doesn’t occur within a site would prevent direct effects to cultural resources.

Culvert Replacements
Removing culverts has little to no potential to affect cultural resources. According to Item No. 27, in Appendix A of the 2004 Programmatic Agreement between USDA-Forest Service (Region 6), Oregon SHPO and the Advisory Council on Historic Preservation, removing and replacing non-historic culverts that are located entirely within the road prism is an undertaking that is excluded from case-by-case review. A direct effect may occur if the excavator digs deeper then the road prism into undisturbed strata uncovering a previously unknown buried cultural resource.

Firewood Gathering

Firewood gathering would have the same effects on cultural resources as manual removal of trees which is discussed under Silvicultural Treatments listed above.
Monitoring

Mule Deer Monitoring
Mule Deer populations will be monitored by track count and pellet count. This action has no direct or indirect effects on cultural resources because it is not a ground disturbing action. Also according to Appendix A of the 2004 Programmatic Agreement between USDA-Forest Service (Region 6), Oregon SHPO and the Advisory Council on Historic Preservation (Item 18), placement of monitoring stations without disturbing the ground will not cause any direct or indirect effects to cultural resources.

Bitterbrush Monitoring
Small areas will be fenced to observe the results of the restoration efforts on bitterbrush. According to Appendix A of the 2004 Programmatic Agreement between the US Forest Service (Region 6), the Advisory council on Historic Preservation, and SHPO, new fence construction without trenching is an undertaking that has little to no potential to cause direct effects to historic properties.

Cumulative Effects
In order to understand the contribution of past actions to the cumulative effects of the proposed alternative, this analysis relies on current environmental conditions as a proxy for the impacts of past actions. This is because existing conditions reflect the aggregate impact of all prior human actions and natural events that have affected the environment and might contribute to cumulative effects. The cumulative effects analysis in this specialist report is also consistent with forest Service NEPA regulations (36 CFR 220.4(f)) which state that CEQ does not require the consideration of the individual effects of all past actions to determine the present effects of past actions. Nor do they require agencies to catalog or exhaustively list and analyze all individual past actions.

The bounds for the cumulative effects of the cultural resource analysis considered the entire Oatman Restoration project area over a time period of the next fifteen years. The project area would not remain static over time. Like all features on the landscape, cultural resource sites and artifacts are susceptible to the ravages of time and weather. Known and unknown cultural sites could receive direct effects from natural events such as vegetation growth, blowdown, and wildfire. Activities such as wood gathering, hunting, cross country travel and other recreational pursuits have the potential for direct and indirect effects. Illegal artifact collecting, if conducted, would affect site inventory and integrity.

However, sites can be protected from ground disturbing human caused activities. The Forest Service would continue to protect cultural resources as mandated.

Alternative 3 – Proposed Action

The direct, indirect, and cumulative effects on cultural resources in the Oatman Restoration project area are the same for Alternative 2 except that Cambium Trees would no longer be impacted.
Design Criteria
Potential direct and indirect impacts were considered in this analysis. Effects determinations made above included the implementation of the following design criteria.

- Conduct Section 106 survey prior to ground disturbing activities
- Protect cambium trees; the silviculturist will work with the archaeologist to identify locations with potential cambium trees, survey these locations and identify and protect any cambium trees.
- Construct firelines around known sites with wood components prior to underburning
- Wet line known sites without a wood component prior to underburning
- Allow hand cutting through sites to avoid the “vegetation island” effect and pile the material outside of flagged site boundary
- Monitor temporary road construction and road decommissioning when a known cultural site is within 100 meters of the ground disturbing activity
- Reconstruct the spring enclosure fence around North Willow Spring
- Monitor all ground-disturbing activities associated with the grazing trough improvements on Bear Flat and Antelope Flat

In the event that new cultural materials are discovered during project activities, project work shall be suspended and the Zone Archaeologist or Forest Archaeologist shall be immediately contacted.

Monitoring Requirements
Cultural resources need to be protected because they are finite. Once sites are damaged or destroyed, the next generation will not have an opportunity to see or learn from them. Ground disturbing undertakings can degrade site integrity, reducing and/or confusing the information that is contained in them. Like the “Flag-n-Avoid” method, monitoring is a tool that helps protect cultural resources from potential impacts brought on by ground disturbing activities.

However, under the design criteria, sites would be avoided during ground disturbing activities, thus monitoring would only be required for temporary road construction/road decommissioning on a case by case basis and the grazing trough improvements.
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