

PECOS NATIONAL HISTORICAL PARK
Hazardous Fuel Reduction
PECO Central Pastures Contract Mastication & Hand Site Clearing 2009

SCOPE OF WORK

07/08/08

PURPOSE

The purpose of wildland-urban interface fuels management at Pecos National Historical Park (NHP) is to protect and preserve the cultural and natural resources of the park for the enjoyment of present and future generations. This includes perpetuation of the ecosystem and cultural landscapes in which these resources occur. Wildland-urban interface fuels management also is intended to protect human life and property, both public and private, within and adjacent to National Park Service (NPS) lands.

PROJECT AREA DESCRIPTION

Location: The project area is located in the central section of the Pecos Unit of Pecos NHP in San Miguel County, north-central New Mexico (Figure 1).

Natural Resources: The terrain generally consists of rolling valley bottom that is occasionally cut by a stream or dry arroyos. Work will occur outside of the floodplain of the Pecos River and Glorieta Creek and no wetlands will be involved. Ranch pastures dominate this landscape, and they are being invaded by pinyon-juniper forest. Islands of more established pinyon-juniper forest with an occasional stand of ponderosa pine are also found here. Stand density contributing to wildfire risk ranges from 20 trees per acre to over 600 trees per acre.

Cultural Resources: A 100% intensive cultural resources inventory survey of the Pecos Unit of Pecos NHP was conducted between 1995 and 1997. The surveyors recorded 135 archeological sites 82 isolated occurrences, 77 cultural landscape features in historic pastures of the Forked Lightning Ranch. The pastures and roads are historic features associated with the Forked Lightning Ranch.

PROJECT DESCRIPTION

The goal of the project is to reduce wildland fire fuels on approximately 200 acres of land in the park (Figure 2). Project actions will reestablish open pasture lands with low fuels availability, referred to throughout this document as the “treatment area”, within both interior park lands and between peripheral park lands and adjoining properties. Within the treatment area, there will be a reduced probability that a wildfire, if ignited, would burn uncontrolled within the park and ultimately across the park boundary onto private lands. In addition, the reduced volume of fuels in the treatment area will reduce the intensity of a fire originating outside of the treatment area as the fire approaches the park boundary and will create a “buffer zone” that could increase firefighters’ ability to gain control of a wildfire.

A number of the park’s cultural resources lie within the treatment area. These include specific archeological sites, isolated occurrences, and cultural landscape features where vegetation removal has been recommended and are collectively referred to as “cultural resource locations” for this Scope-of-Work. Approximately 84 acres of land in the treatment area contain fence lines, sensitive resource areas and designated cultural resource locations which requires fuel reduction be done solely by manual (hand) methods to achieve reduction of fuels.

Access to the work areas is over historic ranch roads and by foot travel. Most of the cultural resources to be treated are dominated by coniferous trees, primarily piñon pine and juniper, with

some stands of ponderosa pine and rabbitbrush. A small number of large, mature trees will be left standing in the pastures and/or cultural resource locations if they are not impacting the cultural resource.

COMPLIANCE

Cultural resource locations and other sensitive resource areas have been identified by park staff specialists and measures to avoid causing an adverse impact to these resources will be included in the pre-contract briefing. During periods of extreme fire danger, inclement weather or when ground conditions indicate excessive resource damage may be imminent, the Superintendent may restrict access to the work area (36 CFR 1.5). The Provider will comply with all park regulations. The park will provide a basic list of regulations at the pre-contract briefing.

AVOIDING IMPACTS TO CULTURAL RESOURCES

Identification of cultural resource sites and sensitive resource areas will be provided to the contractor by the National Park Service. The Park shall be available to the Contractor for specific tactics to protect the sites. All personnel will be instructed about the sensitivity and importance of cultural sites and their historic significance prior to implementation of the work. Work crews will be instructed regarding the illegality of collecting artifacts on federal lands to avoid any potential Archeological Resource Protection Act (ARPA) violations. The contractor will immediately notify park staff in the event human remains are discovered. If unidentified cultural resources are encountered, work will be halted in the vicinity of the potential site until notification and consultation with appropriate park staff takes place. Cultural resource location boundary markings will be positioned to include a 10 meter protective buffer zone between the identified site and the placed markings. Driving of vehicles or equipment will not be allowed over the ground within marked cultural resource locations. Work crews will hand carry their tools to and from the sites. Work at cultural resource sites will be routinely checked by park staff during the course of the work.

SAFETY

The contractor will adhere to all OSHA safety regulations and will equip employees with personal protective equipment such as hard hats, gloves, chaps, safety glasses, hearing protection, etc. The contractor will also ensure that employees are qualified to safely perform their work and present such qualifications if requested by park staff. Standards of qualifications will include documentation of training and/or use of needed equipment. In addition:

- All chainsaws will be equipped with an approved spark arrestor.
- Vehicles used in the project must submit to a pre-contract inspection to insure that safety devices and equipment are in place and in serviceable condition.
- All motorized equipment will be maintained in such a manner to ensure that no gas, oil or other contaminants are leaking or spilled onto the ground. The contractor will provide ground protection barriers in fueling areas. Ground contamination will require the contractor to rehabilitate the contaminated area to its original condition.
- The contractor will ensure that an ABC type fire extinguisher and shovel are present during fueling operations.
- Working areas will be maintained in a clean and orderly manner.
- All trash created by the contractor or its employees will be removed by contractor and/or its employees. No food is to be thrown or fed to wildlife.
- The Provider shall conduct and maintain daily safety briefings and logs. Safety walk-through will be conducted on a daily basis prior to beginning work to identify potential hazards at the work location.

PROJECT PHASE CRLC - CULTURAL RESOURCE LOCATION CLEARING

In the CRLC Phase of the project, crews will use hand tools and chain saws to remove woody vegetation from cultural resource locations and fence lines within and adjacent to the treatment area and from other identified sensitive resource areas. Woody vegetation (slash) removed from these areas will be hand carried off site where it will be shredded with machinery and spread widely across the landscape. Approximately 84 acres of land will be affected during this phase of this project.

Treatment Area

- Work will take place in identified cultural resource locations, along general treatment area fence lines and within other identified sensitive resource areas being impacted by woody growth.
- The project manager from the Park will note any exceptions and will provide the contractor with a map of, mark or otherwise identify these exceptions in the field.
- The treatment area boundaries will be clearly marked in the field using blue colored flagging or pin flags and will be shown on the contractor's map.
- Specific areas within the treatment area to be avoided or individual plants to be saved may be marked using red colored flagging or pin flags or otherwise identify in the field by park staff.

Type of Work

- Up to 100% of live and/or dead trees/shrubs will be removed using gasoline powered saws, handsaws and/or pruners only.
- All slash will be moved a minimum of 20 feet away from marked cultural resource location boundaries, fence lines or other sensitive resource areas and disposed of by the contractor (see "Disposal" section below).

Vegetation Removal

- Remove up to 100% of the woody vegetation within marked cultural resource locations. Generally, large, mature ponderosa pine and old growth pinion and juniper trees will be saved. Most other trees within the treatment area will be cut and shred. Guidance on which trees to save will be provided by NPS personnel.
- Remove all woody vegetation from within and up to 6 feet on both sides of fence lines located on treatment area boundaries or wholly within the treatment area.
- Remove all woody vegetation from within and up to 6 feet on the park side of fence lines located on park boundaries. Physical park boundaries generally lie one foot outside park fence lines.
- Selectively remove up to 100% of the woody vegetation from other identified sensitive resource areas as directed by the park representative on site.
- Remove all woody vegetation growing at the base of trees within the treatment area that have been designated or marked to be saved. Remove all vegetation that occurs beneath the drip-line of the tree's crown plus 10 feet.
- All treatment areas within cottonwood groves will be considered sensitive resource areas and will be hand cleared. Slash will be chipped and spread on site. Unless otherwise directed, live willow and cottonwood will not be cut. Approximately 23 acres of cottonwood groves exist within the treatment area.
- Flush-cut stumps as close to the ground as possible. Cuts will be parallel to the ground.

- Industry approved felling techniques will be utilized to ensure the safety of contractor and Park employees.
- No partially cut trees will be left standing.

Pruning/Limbing

- All trees left standing in the treatment area will be limbed to a maximum height above the ground of 50% of the crown height of the tree or 6 feet (whichever is less). Slash will be chipped, shredded or mulched.
- Limbs will be cut approximately 1" from the trunk of the tree and result in no damage to the trunk.
- Every effort will be made to minimize scarring to the trunks of trees left standing.

Disposal of Material

- All slash must be *carried* from cultural resource locations and sensitive resource areas and not dragged on the ground.
- All slash will be moved a minimum of 20 feet away from marked cultural resource location boundaries, fence lines and/or sensitive resource areas and placed for disposal.
- Pinyon tree slash placed for disposal will be located no less than 50 feet from any living Pinyon tree that is *not* slated for removal.
- All slash will be shredded, chipped, or mulched and spread on location (outside of cultural resource locations, fence lines and sensitive resource areas) and shall not exceed 2 inches in depth once dispersal is complete.
- Chips, shreds or mulch pieces shall generally be no greater than 1-2 inches in diameter once disposal and spreading is complete.
- All slash must be mulched, chipped or shredded within 21 days of cutting. Contractor will be required to keep track of cutting dates to assure mulching timeframes. This is to prevent possible infestation by the Ips Pine Bark Beetle.
- Provider shall demonstrate the capability and access to adequate/acceptable equipment to chip, shred, and/or mulch wood products of various sizes.

PROJECT PHASE – PASTURE CLEARING

In the Pasture Clearing Phase of the project, the contractor will remove up to 100 percent of the coniferous trees and other woody vegetation from the remaining general treatment area (does not include cultural resource locations, fence lines and other sensitive resource areas). Approximately 116 acres of park land will be treated in the Pasture Clearing Phase of this project. Woody vegetation will be removed by hand (crews using hand tools and chain saws) and/or by using heavy equipment and machinery. Trees and shrubs will be chipped, shredded, or mulched and spread on location by hand or by using appropriate machinery. Provider's activities shall be timed and performed to minimize erosion and sedimentation and to protect soil productivity resulting from vegetation removal, disturbance, and compaction.

Treatment Area

- Work will take place *outside* of identified cultural resource locations, fence lines and other sensitive resource locations but within the general treatment area being impacted by woody growth.
- The project manager from the Park will note any exceptions and will provide the contractor with a map of, mark or otherwise identify these exceptions in the field.
- The treatment area boundaries will be clearly marked in the field using pink colored flagging or pin flags and will be shown on the contractor's map.

- Specific areas in the general treatment area to be avoided will be marked using red colored flagging or pin flags or otherwise identified in the field by park staff.
- Machinery and/or other mechanized equipment will not enter cultural resource locations or other sensitive resource areas (marked by blue flagging or pin flags or otherwise identified).

Type of Work

- Woody vegetation may be removed using gasoline powered saws, handsaws, pruners and/or by using heavy equipment and machinery.
- All slash will be moved a minimum of 20 feet away from cultural resource location boundaries, fence lines and other sensitive resource areas and disposed of by the contractor (see "Disposal" section below).

Vegetation Removal

- Removal of woody vegetation will require hand felling and/or mechanized cutting or shredding.
- Generally, large, mature ponderosa pine and old growth piñon and juniper trees will be saved. Most other trees within the treatment area will be cut and shred. General guidance on which trees to save will be provided by NPS personnel.
- Remove all woody vegetation growing at the base of trees within the treatment area that have been designated or marked to be saved. Remove all vegetation that occurs beneath the drip-line of the tree's crown plus 10 feet.
- Diseased, malformed, and insect infested trees may be preferentially removed.
- Stumps will be cut as close to ground level as possible without causing ground disturbance. If operational restrictions prevent the Provider from cutting stumps down to ground level, then stump heights shall be cut as close to the ground as possible, but no more than 3 inches above ground level, and approved by onsite NPS personnel.
- All treatment areas within cottonwood groves will be considered sensitive resource areas and will be hand cleared. Slash may be chipped and spread on site. Unless otherwise directed, live willow and cottonwood will not be cut. Approximately 10 acres of cottonwood groves exist within the treatment area.

Pruning/Limbing

- All trees left standing in the treatment area will be limbed to a maximum height above the ground of 50% of the crown height of the tree or 6 feet (whichever is less). Slash will be chipped, shredded or mulched.
- Limbs will be cut approximately 1" from the trunk of the tree and result in no damage to the trunk.
- Every effort will be made to minimize scarring to the trunks of trees left standing.

Disposal of Material

- All slash will be moved a minimum of 20 feet away from marked cultural resource location boundaries, fence lines and/or sensitive resource areas and placed for disposal.
- Pinyon tree slash placed for disposal will be located no less than 50 feet from any living Pinyon tree that is *not* slated for removal.
- All slash will be shredded, chipped, or mulched and spread on location (outside of cultural resource locations, fence lines and sensitive resource areas) and shall not exceed 2 inches in depth once dispersal is complete.
- Chips, shreds or mulch pieces shall generally be no greater than 1-2 inches in diameter once disposal and spreading is complete.

- All slash must be mulched within 21 days of cutting. Contractor will be required to keep track of cutting dates to assure mulching timeframes. This is to prevent possible infestation by the Ips Pine Bark Beetle.
- Provider shall demonstrate the capability and access to adequate/acceptable equipment to chip, shred, and/or mulch wood products of various sizes.

SPECIAL CONSIDERATIONS

- All slash must be chipped, shredded or mulched within 21 days of cutting. Contractor will be required to keep track of cutting dates to assure mulching timeframes. This is to prevent possible infestation by the Ips Pine Bark Beetle.
- Tree removal may be conducted by 1) hand and power saws, 2) saws mounted on small all-terrain type vehicles with rubber tires such as a Bobcat, or 3) tree mulching equipment mounted on articulated frontend loaders with rubber tires (weight 40,000 lbs or less).
- All treatment areas within cottonwood groves will be considered sensitive resource areas and will be hand cleared. Slash may be chipped and spread on site. Unless otherwise directed, live willow and cottonwood will not be cut.
- Approximately 70 acres of the treatment area lie on the east side of the Pecos River. Pecos River crossing areas are limited and crossing is restricted to low water timeframes. These timeframes generally occur prior to or after spring run off (approximately April 15 – July 4th, weather and snow pack depending). All work on the east side of the Pecos River must be coordinated with spring run off to allow for safe crossing of the river.
- Heavy thunderstorm activity can increase Pecos River levels dramatically over a short period of time and make river crossing unsafe or impractical.
- Access to fields east of the Pecos River (approximately 70 acres) is by unimproved primitive roads and trails. Contractor must be thoroughly familiar with access to these areas before project planning and activities proceed.

ON-SITE CONSIDERATIONS AND REQUIREMENTS

- All required Personal Protective Equipment (PPE) shall be worn during all thinning operations.
- First-aid kits, fire extinguishers and spill kits shall be required on site.
- Fuel and oil shall be in approved containers only.
- Equipment shall be checked for leaks or damage prior to operation each day.
- Equipment failures should be anticipated, and spare parts should be on site to aid in the quick repair of equipment.
- In the occurrence of a spill due to breaking hydraulic hoses, etc. the Provider will cover the cleanup costs. The spill must be immediately reported. NPS personnel may be provided to assist in clean-up efforts.

ASSUMPTIONS AND EXCLUSIONS

It is required that a complete site visit to project area be performed. The site visit will allow the Provider to view terrain, access, tree densities, and assess any additional issues prior to submitting a proposal. This will enable the Provider to make a more accurate price proposal on the task.

PROTECTION OF INFORMATION:

All information and documentation gathered or produced by the Provider during the course of this work shall be held in strictest confidence and shall be fully protected from access by unauthorized persons.

DELIVERABLES

Provider shall complete the entire project no later than November 21, 2008. The completed acreage will include woody vegetation removal, thinning, shredding, chipping, mulching, and dispersal as described.

PROJECT SCHEDULE:

The project will require approximately four (4) work weeks to complete. 35% of the total acreage to be treated lies east of the Pecos River. Machine access to these areas depends on safely crossing the Pecos River. Foot access is possible at all times with a 45 – 60 minute hike over mostly flat terrain.

*Project start date: September 28, 2008

*Project completion date: November 21, 2008

Prior to Initiating Field Activities

1. Meet with park staff and review project information and requirements.
2. Meet with the cultural resources monitoring contractor and review and coordinate work schedules.

**Start/completion dates should be as early as possible within this timeframe depending on expected Pecos River water levels which will allow for safe river crossing of machinery. Safe river levels for crossing are expected to be approximately 100-120 cfs. Average date for Pecos River levels of 120 cfs is July 1st.*

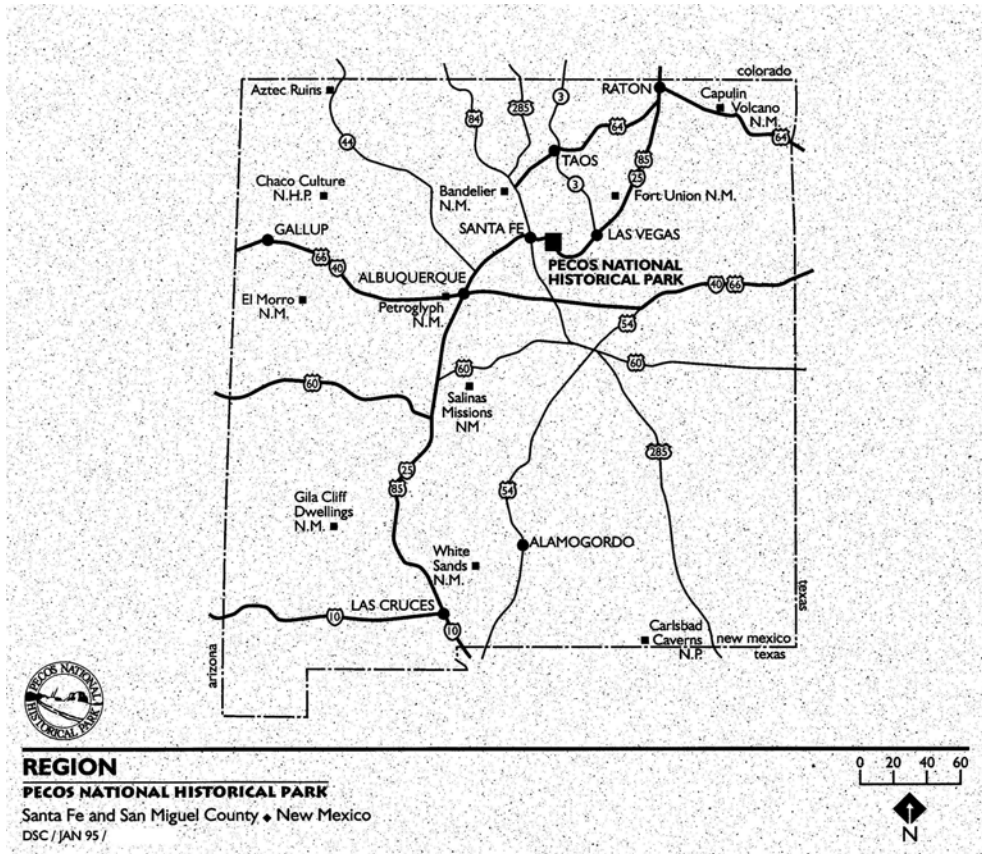
PAYMENT SCHEDULE:

Partial payments will be made upon successful completion of each successive phase of the work, as outlined below:

Completion of all work west of the Pecos River	60% of project budget
Completion of all work east of the Pecos River	30% of project budget
Final Inspection and acceptance of work	10% of project budget

Figure 1

PECOS NATIONAL HISTORICAL PARK - VICINITY MAP



PECOS NATIONAL HISTORICAL PARK – Park Units

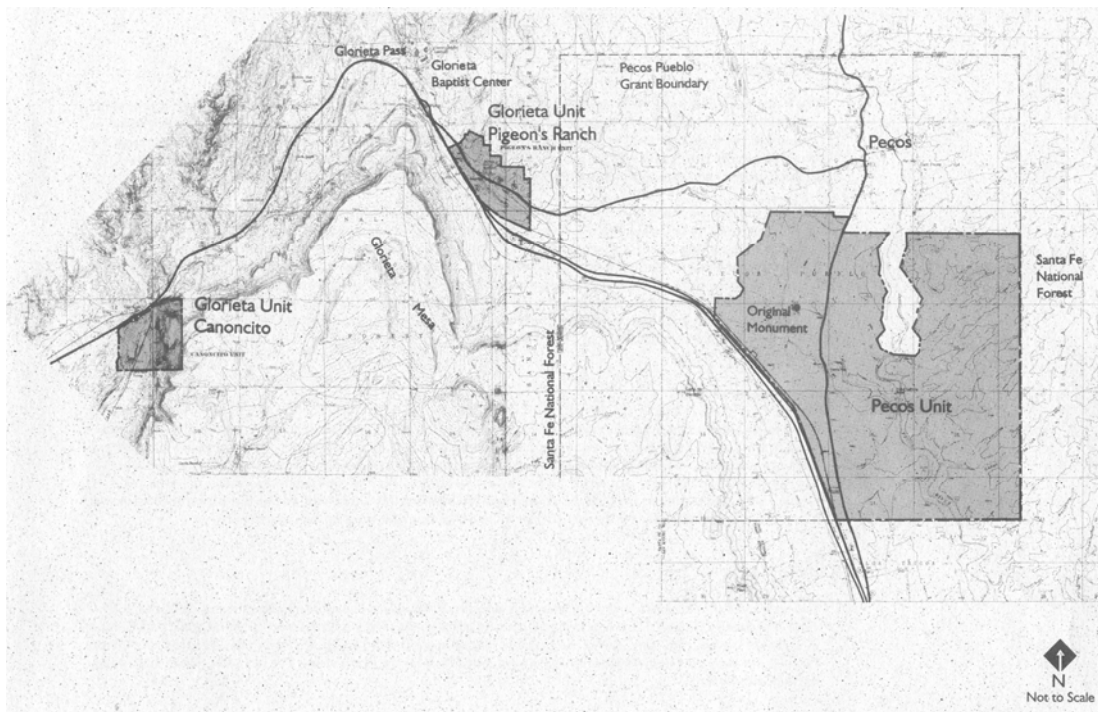


Figure 2

