Redondo Canyon Forest Management Project

Proposed Stewardship Action

Redondo Canyon Forest Management Project

Background

On December 10, 2008, the Valles Caldera Trust (Trust) Board of Trustees authorized Trust staff to continue planning forest management activities within Redondo Canyon on the west side of the Valles Caldera National Preserve.

From the entrance to the Preserve through Redondo Gate, VC03 travels through a corridor of dense ponderosa pine trees as shown in Figure 1. These trees average 9-16 inches in DBH (tree diameter measured at a height of 4.5 feet above the ground), inventory plots averaged over 300 trees per acre and stand attributes show that the canopy cover generally exceeds 50%. Forests comprised of dense, small trees can more easily support a crown fire than open forests or forests of larger, taller trees. Smaller trees can be more easily ignited from a surface fire burning below them. When tree canopies are close or layered, fire can move from tree to tree, especially when the wind is blowing.

The project area includes steep topography and is aligned to the west and southwest. This topography and alignment further contributes to the fire danger. The west and southwest exposure offer the fuels to longer exposure to heating and drying by the summer sun and direct alignment to the prevailing winds.

Human caused fire occurrence along the corridor of NM 4 is quite high due to the amount of recreational use as well as the presence of several residential communities. Lightning caused fires are also frequent.

High fire occurrence, fuels, topography, and the alignment with wind and weather combine to create a high risk to crown fire or other fire behavior likely to exceed initial attack resource capabilities.

Besides the fire hazard, the current condition of the forest affects the ecosystem processes and services. The dense forest canopy intercepts snow and rain allowing the moisture to sublimate into the atmosphere; never reaching the forest floor, penetrating into the soil, or feeding the streams of the watershed.

Historic logging and the elimination of natural fire perpetuated this condition. Historic logging removed nearly all the large mature trees and scarified the land, encouraging tree seedlings to germinate and establish in the openings. Without fire the seedlings that germinated and established, survived in unprecedented numbers.

Figure 1 – Redondo Entrance

Proposed Action

The Trust is proposing to thin the forest from the western boundary of the Preserve, east and northeast into Redondo Canyon towards the "Union Building" (see attached map). The Trust is proposing to follow the initial mechanical treatment with prescribed fire (a controlled burn). Treatment activities are being proposed on about 600 acres within a 1650 acre project area.

We are also proposing a series of monitoring activities to measure the effectiveness of thinning in reducing hazardous fuels and increasing ecosystem services including water and carbon cycles. Monitoring and evaluation will be completed in partnership with SAHRA (Sustainability of semi-Arid Hydrology and Riparian Areas), a National Science Foundation Project whose purpose includes informing and supporting water professionals by conducting stakeholder-relevant research, education, and knowledge transfer activities. SARHA has had instrumentation measuring water and carbon processes within the project area for two years. Students participating in PEEC (Pajarito Environmental Education Council) have completed forest inventories and established monitoring points within the Project area and New Mexico Forest and Watershed Restoration Institute will assist the Trust by developing thinning prescriptions to meet multiple objectives including reducing wildlfire hazard, enhancing the ability of the forest to capture and store water, and increasing the forest health and vigor by reducing competition for moisture, sunlight

and nutrients and improving habitat by increasing the diversity of forest structure and understory species cover, composition and diversity.

We are considering the use of a "stewardship contract" to implement the mechanical treatments being considered. A stewardship contract will permit the operator to remove and utilize wood products from the thinning as payment for some or all of the service work implemented. If possible, the Trust will collaborate with the Santa Fe National Forest and local operators to accomplish the work.

Purpose and Need

The Redondo Canyon Stewardship project is being proposed to meet the purposes and goals identified in the Valles Caldera Preservation Act including the protection and preservation of resources and values, benefitting local communities and businesses, enhancing objectives on surrounding National Forest System land, and providing cost savings to the Trust through the exchange of goods for services.

The proposed stewardship action is needed to address the present risk of wildfire created by the condition of the forest, the topographical alignment of the project area, and the current level of fire occurrence in the vicinity.

In addition, information regarding changes in ecosystem services as a result of forest thinning is needed to support long term forest management on the Preserve. The condition of the forest in the project area is not unique on the Preserve. As the Trust develops long term plans to manage the Preserve's forests, there is a need to quantify how (and if) our actions can increase or improve ecosystem services including watershed processes and carbon cycling and sequestration.

To address forest management on a larger, Preserve-wide scale, the Trust needs to have viable local enterprises that can utilize small diameter material. The Trust also needs to collaborate with neighboring land managers, especially the Santa Fe National Forest.

Performance Requirements

The following requirements will mitigate or eliminate any potential adverse effects that my result from the proposed activities.

- **Cultural Resources**
  - Cultural resource inventories will be completed prior to any ground disturbance activities.
  - The Trust's Cultural Resource Clearance Process will be completed prior to implementing any ground disturbing activities.
  - Specific mitigations to protect cultural resources will include:
  - Cultural resource sites will be clearly marked and identified to the contractor for avoidance.
  - Disclosure of site locations will be limited to the level necessary to ensure protection.
  - Thinning by hand crews with chainsaws may be permitted within sites where materials can be removed by hand.
  - Other specific protections may be identified for site specific activities.

- Heavy fuels will be removed from sites prior to prescribed fire use when features may be vulnerable to the effects of fire.
- Wooden features will be protected from fire by the removal of fuels, construction of control lines, use of foam, water, shelters or other barriers, and or management of ignitions.

- **Soils**
  - The use of tracked equipment will be limited to slopes less than 30%.
  - Equipment use will be limited during periods when soils are saturated and therefore vulnerable to damage or compaction for equipment.
  - Prescriptions will be developed to reduce the likelihood of hydrophobic conditions to minor or localized levels.
  - Prescriptions parameters will be developed to reduce the consumption of large down woody debris and organic material.
- **Wildlife**
  - Roost trees for Merriam turkey will be protected from prescribed fire activities by the removal of fuels from the base of the trees and managing ignition patterns.
  - Activities within mixed conifer habitat (40 percent slope, mixed conifer forest) would occur outside the breeding season for the Mexican spotted owl unless current surveys indicate that no owls are present.
  - Prescription parameters will be developed to minimize consumption of large woody debris.
  - Do not disrupt fractured rhyolitic rock outcrops, large woody debris piles, or large decomposing Douglas-fir logs during thinning activities.
  - Protect the same habitat components (as above) from prescribed fire by managing ignitions, creating control lines or reducing fuel loading.
- **Air Quality**
  - Follow New Mexico Environment Department Guidelines for managing prescribed fire.

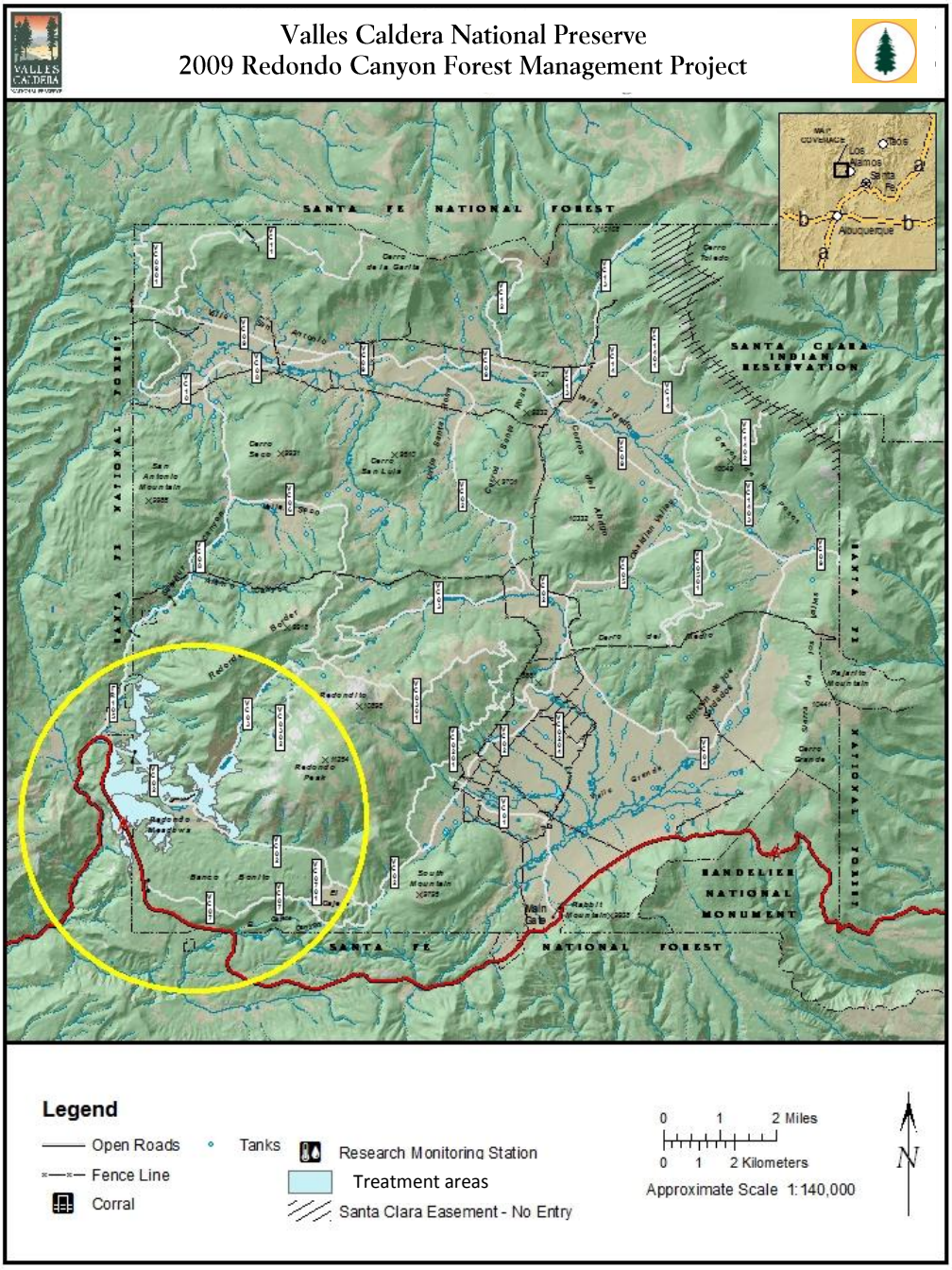
Decision(s) to be Made

The Preserve Manager as governed by the Executive Director for the Valles Caldera Trust is the Responsible Official for the proposed stewardship action. The Preserve Manager will decide whether or not to thin the forest and use prescribed fire within the Redondo Canyon Forest Management Project area. The Responsible Official will also select the appropriate contracting instrument to use in implementation.

Scope of the Analysis

- Environmental Documentation:

  This action falls under a category of actions, which can normally be excluded from documentation in an Environmental Assessment (EA) or Environmental Impact Statement (EIS).


Valles Caldera National Preserve
2009 Redondo Canyon Forest Management Project
SANTA FE NATIONAL FOREST
SANTA CLARA INDIAN RESERVATION
BANDELIER NATIONAL MONUMENT
Legend
Open Roads
Fence Line
Corral
Tanks
Research Monitoring Station
Treatment areas
Santa Clara Easement - No Entry
0 1 2 Miles
0 1 2 Kilometers
Approximate Scale 1:140,000
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