Southern Sacramento Mountains

Restoration Project

CFLRP Proposal

Lincoln National Forest

February 2011

Executive Summary:

Dominant forest type(s): Vegetation types found in the Southern Sacramento Mountains Restoration Project area in order of abundance include: Dry Mixed Conifer (46%), Piñon-Juniper (26%), Wet Mixed conifer (12%), Ponderosa Pine (6%), Grassland (8%), Gambel Oak (1%), and shrubland or encroached savannah (1%).

Total acres of the landscape	290,600	**Total acres to receive treatment**	84,000
Total acres NEPA ready	141,250	**Total acres in NEPA process**	11,256

Description of the most significant restoration needs and actions on the landscape
The most significant restoration needs on the landscape exist in the dry mixed conifer and piñon-juniper types, which are the most dominate vegetation types within the project area, have the most potential to impact fire behavior on the landscape and has the most populated wildland urban interface of the project area. Actions include: the reintroduction of fire; reduction of hazardous fuels; restoration of watersheds and soils, protection of private property, and increased potable and irrigation water availability.

Description of the highest priority desired outcomes of the project at the end of the 10 year period: •Resiliency of fire adapted ecosystems •WUI protection •Rural economic development •Restoration of watershed function •Protection of TES habitat •New recreational opportunities

Description of the most significant utilization opportunities linked to this project
Assistance through the development of new rural markets utilizing restoration generated materials (i.e., pellets and biomass), and continued investment in existing markets producing dimensional lumber and fuelwood.

Name of the National Forest, collaborative groups, and other major partner categories involved in project development
Lincoln National Forest, Otero County Working Group, NM State Forestry, Natural Resource Conservation Service, Rocky Mountain Research Station.

Describe the community benefit including number and types of jobs created
Economic activities positively affecting local communities include: harvest during the implementation of restoration treatments; transportation of logs and biomass to processing facilities; utilization of logs and biomass; shipping of byproducts of utilization; along with support and indirect economic activities. The economic analysis indicates over 100 new private sector jobs could be created as a direct effect of this project.

Requested Funding	**FY 2011**	**Life of Project**
Requested CFLRP Funding	$617,400	$7,972,144
Forest Service Match	$540,960	$7,189,218
Partnership Match	$86,100	$881,871
In Kind Partnership Match	$28,000	$286,787

Time frame for the project (from start to finish): **10 years**.

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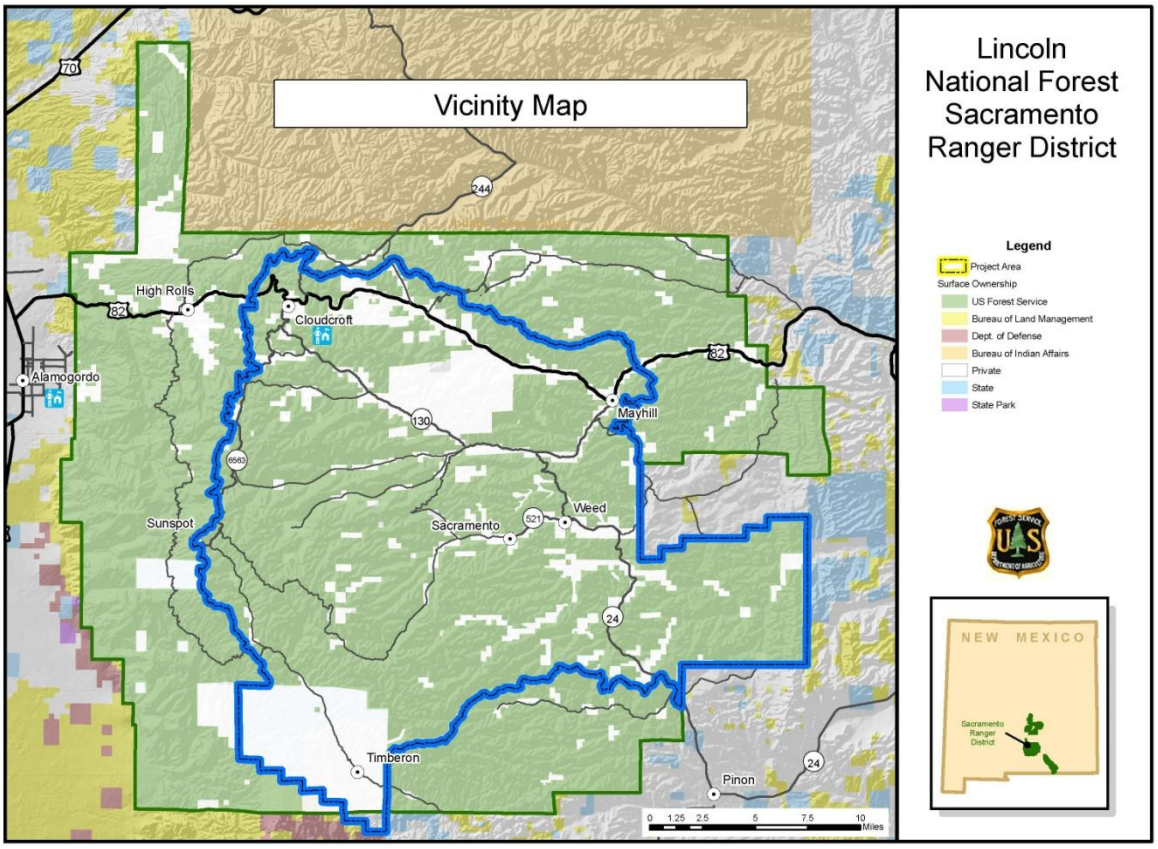
Ecological, Social and Economic Context

The Southern Sacramento Mountains Restoration Project (SSMRP) is comprised of 290,600 acres in Southern New Mexico (NM). The area is predominantly (75%) forested National Forest System (NFS) lands that are managed by the Sacramento Ranger District of the Lincoln National Forest. The remainder is owned by private landowners (21%) and the State of NM (4%). This landscape is vital to the lively hood of the communities of Cloudcroft, Timberon, Weed, Piñon, and Alamogordo, among others. (Refer to the vicinity map in Figure 1 which shows the SSMRP area and land jurisdictions).

Figure 1. Southern Sacramento Mountains Restoration Project area.



The SSMRP area, primarily composed of the Upper Rio Peñasco, Agua Chiquita, Cuevo Creek, Sacramento River Watersheds (Hydrological Unit Code - HUC 5) and some additional lands and has been consistently identified as a top priority for ecological restoration treatments in a variety of assessments, including the Ecological Restoration Institute (ERI), Otero County Wildfire Protection Plan (OWCPP), NM Statewide Natural Resources Assessments (NM State Forestry 2010), among others. (Documents available on the SSMRP website)

The SSMRP area is made up of a wide range of vegetation types with the majority of the mixed conifer being dry mixed conifer due to the elevation and drier sites, resulting in the absence of Engelmann spruce. The pine constituent, particularly ponderosa pine, is reduced or absent in these mixed conifer stands, which is contrary to historical conditions (Kaufmann et al.) Based

on a report by the ERI (Brewer and Denton, 2008) on the historical (pre-Euro-American settlement) stand structure of the project area, many stands observed were outside their natural range of variability based on the field measurements and other historical evidence. A need to decrease stand density, improve forest structure and composition and, where appropriate, increase forage production and soil productivity was indentified. In many of the mixed conifer stands, white fir is the major regeneration species, due in part to the dense canopy closure and lack of disturbance.

The land use history for the project area includes natural and human caused wildfires which have been a major factor. It is known that wildfires burned large portions of this mountain range, playing an important role in the appearance of large, connected natural areas, and maintaining a mix of tree species in various successional stages. Current forest conditions also exist as a result of the managed harvests from the late 1800's to the 1980's as well as a lack of managed thinnings from the 1950's to about the turn of this century.

The amount and species composition of regeneration in ponderosa stands varies, which is a function of specific site conditions, the composition of the overstory and/or past management practices. The major regeneration species in some stands is ponderosa pine while others have juniper species, Douglas-fir, southwestern white pine or a combination of these as the species. There are also some ponderosa stands with an oak understory composition. Currently, there is a significant amount of dwarf mistletoe in the ponderosa pine stands especially in those stands that have not been treated recently. There is also dwarf mistletoe present in Douglas-fir and white pine blister rust in the southwestern white pine. There are pockets of bark beetle activity in the ponderosa pine and fir engraver (*Scolytus ventralis*) activity in individual white fir and Douglas-fir trees.

The piñon-juniper stands vary from a sparse overstory with a mainly oak brush understory to a denser overstory of junipers interspersed with piñon or ponderosa pines, with an understory comprised of grasses, oak brush, juniper, piñon and ponderosa pines and combinations thereof. Many of the juniper stands were destroyed by wildfires and have only a few remnant large junipers in the stands (Brewer and Denton, 2008).

The desired condition for the SSMRP is to restore the ecological functionality of fire to the fire adapted ecosystems by implementing the correct vegetation treatments on the landscape that reduce fuel loadings (natural and activity created) as well as reduce vegetation density through fuels reduction thinning, prescribed fire, and other restoration treatments. These activities will reduce the risk and intensity of stand-replacing wildfire, beginning with treatments in the wildland urban interface and other at-risk areas.

This project responds to goals and objectives outlined in the Forest plan (USDA Forest Service, 1986) and the Region 3 Central Priority. The need for this project is to: 1) Reduce horizontal and vertical fuel loading, and continuity of hazardous fuels to reduce the risk of catastrophic wildfire, and 2) Restoration of functionality of a fire adapted ecosystem with the goal of improving sustainability. 3) Improve forest health, restore proper watershed function, improve water quality and quantity, improve native plant communities and biodiversity, and TES species abundance and diversity.

While a large focus of this project is on hazardous fuel reduction and forest restoration, aesthetic and recreational values will also be restored helping important recreation, tourism and seasonal home sectors of the local economy to return to positive trajectories. The project will produce jobs and economic activity in the area.

The longer term restoration of the project area to a less susceptible to severe wildfire, insect infestations, and other disturbances will provide a more stable base for the local economy and society. Furthermore, vegetation treatments to improve wildlife habitat for game and non game species within the vicinity will improve both quality of the hunters' experience and success rate of these hunts. This will be instrumental in being a positive influence on whether hunters return to the area in subsequent years. The benefits of the project will help to sustain vitality and integrity of the local communities' economies in the Southern Sacramento Mountains for decades to come.

The jobs and labor income associated with timber harvest, restoration, and reforestation activities in the project, will contribute to stability of the local economy during the life of the project. A number of local and regional businesses have become reliant for their existence on the implementation of projects on the forest (e.g., Rio Peñasco II). The project will help in providing a consistent and reliable flow of Forest Service commodity and service contracts from the project area which makes it much more feasible for dependent local and regional industries to stay competitive and remain in business.

Accelerating the return to desired forest conditions and forest restoration through the SSMRP will rejuvenate recreation and tourism businesses and seasonal home property values, thus reinvigorating local economy and encouraging a more optimistic outlook for these communities. To the extent that jobs and economic activity generated by the project can be captured in the local area, there will be at least a short term economic stimulus to help sustain these communities while recreation, tourism, and seasonal home industries recover and resume their central role in the economy.

Lastly, SSMRP as has a unique component of restoring the historic Carrisa fire lookout as it has been identified as being at risk from wildfire and a lack of maintenance. As identified in the forest plan, historical resources are to be protected and managed, and cultural resources listed in the National Register of Historic Places should be monitored for maintenance of their historic characteristics. Although the Lookout is not a physical component of the landscape its historical context in the overall management of this area is one that ties the human element to the management of the resources in the area. Once restored the lookout will be available to the ca bin rental program which not only provides additional recreation opportunities in the project area it also increase the economic opportunities.

Summary of Landscape Strategy

The SSMRP strategy will implement treatments through guidance and collaboration with the Otero Working Group (OWG) following direction as laid out by the LNF's Landscape Strategy. The strategy will proposes a wide variety of coordinated and integrated treatments including forest thinning, prescribed fire, watershed restoration, wildlife habitat improvement, and develop economic opportunities for local communities. Past treatments in the project area were more

narrowly focused on hazardous fuel reduction or single resource needs, and conducted on small, disconnected parcels of land by each land jurisdiction. This SSMRP treatment strategy identifies, prioritizes, and integrates multiple ecosystem restoration needs across a large, complex landscape and different administrative boundaries.

The proposed area is significant socially, ecologically, and economically. Socially, it represents one of the largest contiguous blocks of Wildland Urban Interface found in southern New Mexico. Ecologically, the area contains the largest number of Threatened and Endangered species (namely, Mexican Spotted Owl or *Strix occidentalis lucida*) per acre within the Southwestern Region. Economically, the area provides a wide range of jobs, natural resources, and revenue for the surrounding community. Biomass utilization products from the area include firewood, wood pallets, mulch, wood pellets, shavings, poles, and saw logs to mills. The area also provides unique recreational opportunities for all four seasons which brings in visitors from over 200 miles away.

The SSMRP will create a landscape more resilient to climate change, and will provide local opportunities for non-traditional markets for climate mitigation and biomass energy while continuing to recognize traditional uses of forest resources. Collaborative work through the OWG will restore the project area forest ecosystems, particularly by reintroducing fire and manipulating vegetation through mastication and removal. The OWG will work across all property boundaries fulfilling the 'all-lands approach'. Information about the project area dates back to the 1880's when European settlement began. This historic information comes from a variety of sources and will provide a foundation for treating the landscape.

Proposed Treatment

The SSMRP landscape is comprised of 219,069 acres of LNF lands, 10,464 acres of State lands, and 61,050 acres of private, including the entire 12,800 acres of the Village of Timberon. This project area was selected through an internal and external collaborative process. (see Landscape Strategy) This process involved discussions driven by the OWG's stakeholder meetings and careful consideration was given to numerous values and issues.

Analysis and selection criteria settled on identifying areas in need of rehabilitation and restoration to insure watershed resiliency; reduced catastrophic wildfire risk through hazardous fuel treatments (therefore, directly addressing the OCWPP) and potential capacity for biomass and low-value forest product markets; protection of tribal and rural communities; forest health projects; community assistance and job creation; limitation of new and existing invasive weeds populations; and potable and irrigation water rights issues. In addition, careful consideration was given to ownerships, treatment effectiveness, and current and proposed planning efforts (e.g., NEPA), divergence from the historical range of variability, fuel loading and wildfire risk, commercial and non-commercial forest product market capacity, and historical and current wildfire activity.

Activities will take place in vegetation types ranging from grasslands and low elevation piñon-juniper woodlands to upper montane coniferous, sub-alpine and alpine forests, as well as high-elevation meadows. The SSMRP treatment strategy will integrate multiple ecosystem restoration needs across a large, multijurisdictional and complex landscape. Specific prescriptions and direction for overstory and understory treatments, restoration of openings, transition zones, and

restoration of watershed functions and riparian areas will be taken from the LNF Forest Plan (USDA Forest Service 1986), existing NEPA decisions, and any new NEPA completed for the project area. Table one displays the project's proposed treatments, desired conditions and brief strategies for achieving desired conditions.

Table 1. Proposed treatments, desired conditions and strategies for achieving these conditions.

Proposed Treatments	Desired Conditions and Strategies for Achieving Conditions
Fish, wildlife, and/or T&E species	The restored landscape will be significantly more diverse, dominated by a mosaic of different forest age-classes and densities. The forest types will be dominated by large fire-adapted species, variable-size canopy openings (with consideration of both large and small opening size), and an understory of herbaceous vegetation. The combination of mechanical thinning and burning will restore resiliency to ecosystems over the landscape. Restoration actions will locate and prioritize actions in riparian areas. Desired outcomes of the habitat restoration will involve activities that improve: native plant communities and biodiversity; productivity and water quality; natural moisture regimes and water availability; stream stability and pool formation; properly functioning aquatic and riparian habitat characteristics; and TES species abundance and diversity.
Water quality/watershed function	Overall the project area watershed is impaired and is functioning at an unacceptable risk. The watershed has low geomorphic, hydrologic and biotic integrity relative to its natural potential. The aquatic biological and physical is impaired. This is due to poor riparian conditions impacting water quality and aquatic life. Impaired streams within the project area include Aqua Chiquita, Rio Peñasco, Sacramento River and Scott Able. The lack of riparian vegetation has lead to increase in sedimentation and siltation, increase in water temperature, lack of woody debris and shade has cause the lack of aquatic life potential in the watershed. Streams lack connectivity to floodplain s which has left many wetlands impaired or lacking. By improving the riparian and wetland conditions it will improve water quality and create habitat for jumping mouse, cut throat trout and Sacramento thistle. Terrestrial biological and physical are functioning at risk. The project area has open and closed roads with a density over 2.4 mi/mi^2 which directly impairs flow regime and increasing sedimentation into the project area. Improvements can be made by re-establishing riparian habitat, restoring and creating wetlands, improving aquatic habitat, decommissioning roads and trails and improving drainage on the road and trail network, fuel treatments, treating noxious weeds, awareness programs on invasive spread, creating incentives for hunting of wild pigs and working with New Mexico Game and Fish for the removal of aquatic invasives.
Invasive species	Desired Conditions for weeds ensures the health, diversity, and productivity of native plant communities are not threatened by new and existing noxious weed populations. Efforts will be made to ensure that noxious weeds do not affect areas that provide unique biodiversity and wildlife habitat and that new noxious weed populations do not become established within currently un-infested areas. Where establishment is inevitable, new populations of noxious weeds will not be allowed to flourish to the point where controlling the infestations pose a severe management problem. The strategy to achieve desired conditions for noxious weeds employ a combination of methods including: herbicide application, biological (insect or ungulate grazing) control agent introduction, manual and/or mechanical treatment, controlled grazing, and prescribed burning.
Insect and disease concerns	Desired conditions focus on a reduction of insect and disease outbreak. Reductions in risk of insect and disease attack can be achieved by reducing the density of forested

	areas. By reducing the density, the residual trees have less competition for moisture, nutrients and sunlight, which it will result in healthier, more vigorous and resilient conditions, making them more able to resist attacks by insects and diseases. For stands infested with dwarf mistletoe, the strategy will be to control the amount of infestation, through the use of sanitation thinning and/or prescribed fire. For invasive pests, such as white pine blister rust, the strategy will be to identify and prefer white pine trees that are resistant to blister rust, through selection and genetic testing.
Roads and trails	Road issues on National Forest System Roads (NFSR) will be addressed through decommissioning, closing, and relocating roads. At least five miles of road will be relocated, at least five miles of road will be closed, and at least fourteen miles of road will be decommissioned. The closed roads will be available to administrative use. The existing closed roads were evaluated by their proximity to streams which determined which roads will be decommissioned. There are over 150 miles of trails in the project area that have not had basic trail maintenance for the past 20 years due to declining budgets which has made it difficult to perform the basic maintenance and improvement to the trail system. The desired condition of the trail system within the SSMRP will be a system of trails managed to standards that are user friendly and do not contribute to erosion and avoids seeps and riparian area. The trail system needs to facilitate maintenance and improvements any time of year. It will be ideal to be able to perform improvements and maintenance projects such as pruning, brush removal and installing water bars during the summer season while seasonal employees are hired. Another desired condition includes decommissioning of unnecessary or damaging (often user created) trails within the SSMRP area, eliminating much of the erosion, water quality, TES species habitat, and natural resource damage issues. Over 80% of the trails in the project area are designated for motorized travel, so the project area receives a high level of use by ATV's. There are several trails in the project area that the user will ride to the end of the trail just to turn around and ride out on the same trail. The desired condition to accommodate the ATV use to construct connector trails to existing trails to create loops. This also includes trailheads that will accommodate loading and unloading of the ATV's and an informational kiosk. The scoping information and public involvement used for the MVUM and travel management rule will be used to prioritize trail work. There has been a public need to have short, looped trails close to the Village of Cloudcroft. The Sleepy Grass Campground area has been analyzed in the 2005 NEPA to create a fitness trail in the area of the campground that was decommissioned. This includes a trailhead that will start within Village limits. Instead of decommissioning the road it was decided there will be less damage to the Sacramento Checkerspot butterfly if the road will be converted to a trail and the pullouts will be the location of several fitness stations such as a pull-up bar or a balance beam.
Old growth stands and large tree maintenance and recruitment	The LNF Forest Plan requires that 20% of the project area be targeted to develop old growth conditions as defined by the 1996 Forest Plan amendment. Due to logging history in the SSMRP area most likely none of the forested areas meet old growth characteristics. However, within mixed conifer stands, all trees greater than 24" dbh have to be retained, regardless of condition which helps achieve the minimum diameter requirement, but not necessarily the age or the number of trees per acre requirement. Areas within the SSMRP currently designated as Mexican Spotted Owl protected activity areas, or northern goshawk nest areas can also be de facto old growth target areas. Within the SSMRP area, Jim Lewis and Rio Peñasco II area have stands

	designated to develop old growth conditions. Additional acres will be targeted to develop old growth characteristics, either through identifying stands for each forest type which are in the development stage of old growth characteristics, or by additional treatments which will promote the development of larger, older trees.
NEPA Decisions	There are NEPA decisions for 141,250 acres including; the Jim Lewis Central Priority Project (37,333 acres), Rio Peñasco II (87,655 acres for thinning and timber harvest) and Sacramento Mountains Defoliation Projects (42,190 acres - which has overlapping boundaries with Rio Peñasco II). The LNF is also working on a Weed EIS which will allow for more extensive weed treatments across the entire Forest. Remaining NEPA decisions will be needed for 77,756 acres will be needed in three separate areas, including 35,973 acres, 30,658 acres, and 11,256 acres in Eastern Cuevo Creek, Agua Chiquita, and Sacramento River (NEPA process started) watersheds, respectively. A fourth area will be for approximately half (40,000) of the Rio Peñasco II area for prescribed fire and meadow maintenance only.
Fire and Fuels	
Anticipated wildfire behavior in restored conditions	Vegetation and surface fuels will be within the natural range (historic range) for the high frequency low severity fires across much of the landscape.
Reduction of uncharacteristic wildfire	Over much of the project area, fire behavior during extreme weather will be moderated. Fire intensity will be dependent on the fine fuels, grasses, needle cast and small down wood which will vary across the landscape. Fire will remain primarily as a surface fire, with high rates of spread but exhibiting low severity to the larger fire dependent trees and soils. Fires will have short spotting distances and will show much less resistance to control.
Reestablishment and maintenance of natural fire regimes	The natural fire regimes will be established through the initial fuels reduction treatments and maintained through the management of fire. Surface, ground and crown fuels (fuel profile) can be altered in several different ways to affect their size, arrangement (both horizontal and vertical), and loading to affect potential fire behavior. The risk of uncharacteristic wildfire will be reduced through a combination of mechanical treatments such as thinning and mastication in combination with the management of fire, both prescribed and natural.
Wildfire managed for multiple objectives	Unplanned Ignition for resource benefit will be implemented on a case by case basis. Up to 89,000 acres.
Prescribed fire	Pile and broadcast burning will occur in phases to address activity generated slash as well as re-introduce fire to fire adapted ecosystem. Up to 40,000 acres. Pile burning will occur three to five years after the initial thinning treatments. Broadcast burning could then be used every seven to twenty years in those ecosystems that historically had the frequent low intensity fire regimes.
Meadow Restoration	Removal of woody vegetation such as Piñon-Juniper, mixed conifer, and ponderosa pine which is encroaching into meadows through various methods such as thinning, harvesting, and burning. Up to 4,000 acres.
Wildlife Habitat Improvement	Creation of up to 5 acre openings (none in goshawk habitat) through various activities such as thinning, burning, roller chopping, or other mastication type activities. Up to 9,800 acres.
Forest Structure	
Thinning and Harvest	Thinning up to 45,000 acres NFS land in irregularly-spaced patterns based on forest type, fire regime, aspect, habitat needs, and other factors. Within the project area, merchantable wood can be harvested from 12,000 acres of NFS land. Harvestable acreage includes forested slopes with less than 40% grade within prioritized forest areas. Forest road networks are extensive, so no new specified road construction is

	needed, although some roads will need improvement prior to hauling and there will be a need for temporary roads which will be closed following harvest operations. **Piñon-Juniper** Up to 9,600 acres fuelwood **Ponderosa Pine** Up to 2,700 acres commercial Up to 8,000 acres precommercial Up to 800 acres fuelwood **Mixed Conifer** Up to 9,300 acres commercial Up to 45,000 acres precommercial Up to 4,200 acres fuelwood
Example Prescriptions	Restoration treatments will include a variety of silviculture and other treatments including but not limited to: Group selection and individual tree selection methods, targeting site specific reference conditions Thinning throughout all size classes where possible targeting un-even aged structure Sanitation thinning where the dwarf mistletoe rating is ≥ .4, as determined by utilizing the Forest Vegetation Simulator program Restoration thinning in piñon-juniper to achieve savannah conditions. Group selection with reserves in piñon-juniper to improve wildlife and range habitat Mechanical treatment, utilizing mastication and prescribed burning of oak brush, particularly in the old wildfire scars for habitat improvement
Oak Management through Prescription Goat Grazing	Focus on specific areas of Scrub Oak vegetation with a prescribed goat grazing. Up to 700 acres.
Oak Regeneration/Conifer Reforestation	Involves roller chopping, mowing, burning, or removal of small diameter oak brush to encourage new regeneration. This may include planting of conifer seedlings in selected areas. Up to 4,300 acres.
Carrisa Lookout Restoration	Restoration of lookout tower, cabin, flagpole, and shed to its 1930s historic character.
Aspen Restoration	Opening up the dense canopy through thinning, harvest and burning, and protection of seedlings from wildlife with fencing or other barriers. Aspen stands provide scenic, aesthetic, and economic values for to the project area from visitors. Up to 1,000 acres

Pre Euro-American settlement (Circa 1886) fire regimes in or near the project area were generally found to be frequent, low intensity surface fire (see figure 2 from Brown, et. al, 2001). Higher elevations (mixed conifer) had a mean fire interval (MFI) equal to 6 to 11 years. Douglas-fir and ponderosa pine forest types at lower elevations had a MFI equal to 3 to 5 years (Kaufmann et al., 1998). This indicates that the majority of the project area can be classified as a Fire Regime I with a 0-35 year frequency and low (surface fires most common) to mixed severity (less than 75percent of the dominant overstory vegetation replaced).

Figure 2. Project area landscape fire and time spans of fire chronologies.

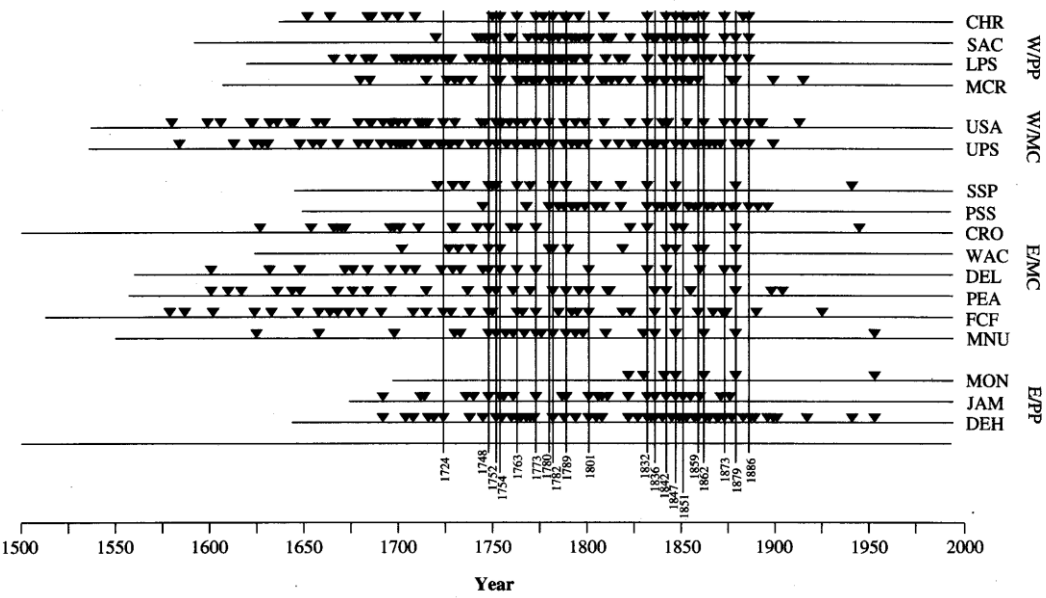


FIGURE 5. Landscape fire years (vertical lines) recorded by trees in ≥ 25% of the 17 ponderosa pine (PP) and mixed-conifer (MC) sites on the west (W) and east (E) sides. Time spans of fire chronologies are represented by horizontal lines with fire dates represented by inverted triangles.

While approximately 55,000 acres (approximately 20 percent) within the landscape have received treatment within the past decade in the form of timber sales, thinning wildlife treatment, and prescribed fires, few acres can be considered restored to reference conditions based on Kaufmann et al. (1998). This is evidenced by the fact that there have been five large wildfires fires (>10,000 acres) within the project area, Allen Canyon in 1951, Circle Cross in 1953, Spring in 1974, Scott Able in 2000, and the Peñasco in 2002. In order to continue restoration targeting desired conditions within the historical range of variability, implementation of the proposed treatments across the SSMRP landscape project area would be ideal.

These fires have created a mosaic of existing conditions, leaving patches or small stands of the original ecosystems and large burned areas predominately occupied by juniper and oak shrub fields. Although oak has always been a component of the historic natural areas of the Sacramento Mountains, the exception has been in the higher mixed conifer stands where aspen and locust were standard components. The large wildfires have also converted many of these once mixed conifer dominated stands to ones now dominated by juniper and oak.

The project area is a complex wildland urban interface (approximately 275, 000 or 95% of the project area), in great need of forest restoration activities and falls completely within the boundaries and scope of the Otero County Community Wildfire Protection Plan (CWPP). According to the cost reduction in management of uncharacteristic wildfire analysis that was done in association with this proposal using R-CAT, the expected wildfire cost savings and discounted net change in wildfire management program costs are estimated to be $19,750,765 if the proposed projects are implemented as planned.

Collaboration and Multi-party Monitoring

The collaborative group, best described at the Otero Working Group (OWG), has been meeting officially for at least 5 years. It was originally tasked with the development of the Otero Community Wildfire Protection Plan (CWPP). As a consensus oriented decision making process, they have been very successful in working together to achieve common goals. In general, the group meets once a month to one every other month. During these meetings, previous decisions are analyzed, group field trips are planned to verify results, and future goals/treatment areas are identified.

The OWG has successfully completed projects to reduce fire hazard to communities and strategically identified a future condition. In addition, they have transformed themselves from a fire centric prioritization to a landscape restoration emphasis. With this new emphasis, they hope to accomplish projects with connectivity to have a much greater impact on the landscape. This impact can only be achieved with the open communication exhibited by the collaborative group. The OWG will build upon its early success by leveraging its partnership to implement a landscape proposal and monitoring strategy.

As the landscape concept takes form, more collaborators to the OWG may be needed. All key collaborators are currently engaged, but the OWG hope to have a greater influence beyond the proposed area. Future partners, such as Department of Defense, will be necessary as the multi-party monitoring (MPM) framework takes shape. Initial letters and phone calls were used to form the OWG and the continued support has been mostly accomplished through word of mouth. The OWG will continue to seek participation from land owners and stakeholders because it desires to be the open forum for discussion and implementation.

The OWG is poised to implement a MPM framework due to the monitoring program designed by the Lincoln National Forest. Considerable investment has been made in acquiring up-to-date data in the surrounding area. Once agreed upon, the MPM (as illustrated in Figure 3) could be implemented across all lands. The MPM framework has ecological, social, and economic dimensions. For specific details of the MPM please see Attachment H. The effectiveness of the monitoring will have to be assessed by the OWG as implementation proceeds. Using all known methods, the MPM framework seeks to track indicators, produce trends, validate effectiveness, and quantify results. A yearly summary of measured results will be presented to the OWG for consideration. The OWG could make suggested modifications based on scientifically recorded outcomes thereby making the landscape restoration adaptable and fluid enough to respond to change.

Figure 3. Multi-party monitoring session and field work.

Utilization

Numerous existing proprietor-owned businesses in and immediately around the SSMRP area currently produce a variety of wood products utilized primarily in southern New Mexico and west Texas, including: dimensional lumber (e.g., Figure 4) and cants utilized by the oil drilling industry; custom crates and pallets utilized in internationally; and wood shavings used by the extensive horse racing and breeding community. In addition to these more traditional wood products, both commercial and household firewood is an important use of woody material in the region. It provides a cost savings in the form of reduced heating expenses, and is an economic opportunity for local entrepreneurs.

While timber sales in the region have been offered and sold at base rates or gone "no bid", the Lincoln National Forest's timber program has continued to be competitive, resulting in most sales closing well above base rates. While still having value in timber sales, the objectives of such sales have shifted from strict monetary gain to offsets for ecological-based treatments. The following annual volume and value estimates are expected during project implementation:

- 12,000 CCF per year merchantable material valued at:
  - $24,400 in Mixed conifer
  - $11,800 in Ponderosa pine
- 1,460 CCF per year in commercial and personal use fuelwood valued at:
  - $420 in Mixed conifer
  - $80 in Ponderosa pine
  - $960 in Piñon-Juniper

Figure 4. Potential wood product merchandising.

One potential biomass utilization market is Premiere Pellets, LLC whose business plan is based on the procurement of material for wood products and biomass from the Lincoln National Forest, among other sources (namely the pecan industry of Las Cruces). While they currently only produce wood shavings, they plan produce wood pellets for energy and heat, have a woody biomass burner, and have begun the process for becoming Biomass Crop Assistance Program (BCAP) certified. Premiere Pellets is interested in smaller, lower-value roundwood, slash, and other wood waste from current and future forest restoration operations in all forest types and started to explore stewardship possibilities, with the a goal of producing both commercial and residential pellets in less than two years. Premiere Pellets, LLC estimates their minimum biomass needs to be approximately 12,800 green tons/year valued at around $3,200/year.

Another potential utilization market is the nearby Mescalero Apache Forest Products sawmill. The mill closed in January 2009 but was the recipient of American Recovery and Reinvestment Act (ARRA) funds to re-open, and is the last remaining large scale infrastructure to process woody biomass in southern New Mexico. Upon re-opening, it is likely that the Mescalero sawmill will be a major competitor for timber sales within the SSMRP area, ensuring stability to local economies and returning laid-off workers to employment. ARRA funds are being used to re-engineer the mill to process small diameter material, develop and improve business management systems and capabilities, improving workforce skills, and improve worker safety through facility modernization. Furthermore, the Mescalero Tribe is developing a wood pellet production plant and a six mega-watt power generation facility in conjunction with the Mescalero's sawmill to enhance the tribe's ability to fully utilize biomass material.

Benefits to Local Economies

Recreational and tourism businesses in the Southern Sacramento Mountains and surrounding areas are critical to the local and regional economy. The economy of communities within the Sacramento Mountains, such as Cloudcroft and Timberon, and surrounding areas in Otero County have historically been highly dependent on recreation and tourism and more recently on rapidly growing amenity/seasonal home developments. Surveys reveal that the second highest motivation for recreationists and tourists visiting the Sacramento Mountains is viewing forest scenery (Crown, 1996).

Key to economic success is the rapid restoration of natural and aesthetic forest conditions valued by residents and expected by recreationists and tourists. In addition to the production of wood products, the SSMRP can help to restore confidence of area recreation and tourism-based businesses and encourage continued patronage of their clients. The benefits of this project (examples pictured in Figure 5) on recreation and tourism businesses will be multiplied through other sectors of the local economy. Furthermore, a return to historic natural conditions in the forest will restore and sustain recreational and aesthetic qualities that have long made the Southern Sacramento Mountains attractive to visitors.

Wood product-based commodities driven by ecological restoration will provide economically viable business opportunities for existing and new wood utilization businesses in the region (e.g., Mescalero and Premiere Pellets). The SSMRP provides an important opportunity to help meet public demand and improve economic trends in New Mexico by providing a reliable supply from a central, contiguously forested landscape, in additional to supplies from neighboring land. Supply estimates in this proposal can help the industry consider new investment opportunities and business strategies. Overall, it is reasonable to anticipate that new wood products businesses will emerge in this area as a result of the SSMRP strategy and added treatments on surrounding lands, along with the heightened focus on forest restoration and biomass utilization, and hopeful future increases in wood product prices and demand. In addition, Attachment B illustrates there will be significant cost avoidance for needed wildfire risk mitigation (e.g., fuel reduction, suppression facilities, and activities) and hazard tree management.

Stewardship contracting will be the primary contract tool used for the thinning, wood removal and transport of raw material, and the contractor will also be required to lop-scatter, pile, masticate, or remove the slash (tree tops and limbs). While there are no guarantees that

stewardship contracts will be awarded to local operators, there are several local wood utilization companies who have expressed interest in bidding on contracts to be offered from the project area. Other types of contracts along with various types of agreements may be offered as well. Furthermore, there will be numerous opportunities for local and regional businesses to compete for service contracts with the collaborators for non-commodity work such as fuels reduction thinning, mastication, and other restoration or reforestation activities in the SSMRP area.

The increase in jobs will last for at least the 10-year duration of the project, and probably longer due to creation of jobs and training of forest workers in the local area, and additional restoration activities that will be on-going on the surrounding multi-jurisdictional forested lands. Therefore, it is anticipated that jobs created, including local private, nonprofit, cooperative, youth-based, small business, and under-represented (minority) volunteer groups, will be present for many years.

Numerous entities have expressed interest in training to help implementation and monitoring of the SSMRP. Training opportunities include how to develop business plans and apply for grants, navigate FedBizOpps, conduct resource inventories and/or monitoring work, among other training programs. These programs will support jobs while improving the capacity of the labor force and allowing more jobs to remain local.

Figure 5. Benefits to the local economy are vast and include recreation, wildlife watching, wood products, and scenic opportunities to name a few.

The Lincoln National Forest partners with Ecoservants and the Sierra Blanca Service Corps, Student Conservation Association, New Mexico Youth Conservation Corps, and other youth groups, exposing our young people to their natural resources and engaging them in caring for those resources. The LNF is in the process of building internship programs with NMSU-

Alamogordo and ENMU-Ruidoso that will allow future resource professionals to earn college credit while getting real life experience in natural resource management.

The Forest is also in the process of creating a Children's Forest which will consist of several programs that get local students active, into the woods, and learning about natural resources. This will include getting information and activities to school classes and childcare groups, and getting those groups out into the woods where they can experience nature directly. Classes may also assist LNF by collecting data and implementing service projects.

Funding Plan

The majority of federal funds will be utilized to implement proposed treatments to obtain restoration objectives on federal lands. Additional restoration treatments will likely occur on some private land in-holdings, through our partnerships with willing landowners, State Forestry, National Resource Conservation Service (NRCS), and the Soil and Water Conservation District (SWCD). Other complementary restoration treatments that support this strategy are planned on adjacent forest lands, including treatments planned by interagency groups on Bureau of Land Management, Mescalero Apache Tribal, and Otero County lands in the adjacent larger landscape.

Past and on-going restoration treatments conducted in this area complement the SSMRP strategy and demonstrate a high potential for continued success. These include around 1.7 million in NM State Forestry and Game & Fish funds for thinning and burning on over 10,000 acres, fuel reduction projects on private properties (extensively throughout the village of Timberon) through State Forestry/Firewise programs, wildlife habitat improvement- Habitat Stamp projects, and management of recreation and cattle grazing activities to reduce impacts to water, riparian, wildlife and fish. For example, partner funding that compliment SSMRP proposed treatments include cost-share fuels reduction funds provided by the National Fire Plan. These are flow-through grant funds, administered by the State of New Mexico, which reimburses landowners up to 70% of the cost of clearing hazardous fuels on their land. State of New Mexico plans 300+ acres of treatments annually in heavily forested private lands within or adjacent to the SSMRP area. Treatments typically include defensible space creation around structures via tree removal, thinning, pruning, and litter removal around structures as per NFPA and Firewise standards.

Thinning will primarily be conducted through stewardship contracts and partnership agreements and force account crews will conduct the burning on NFS land. The majority of federal funds will be utilized to implement proposed treatments to obtain restoration objectives. The funding plan detailed in Attachment F was completed by estimating the cost or value per acre of implementing the different proposed treatment types using recent local treatment costs or values.

A multi-party monitoring and adaptive management plan was collaboratively developed and will be collaboratively implemented by numerous partners (see Attachment H). Using well-established and state-of-the-art approaches for restoration monitoring, restoration partners will measure and evaluate the extent and rate to which restoration treatments are reducing the risk of uncharacteristic wildfire and restoring natural fire regimes, reducing invasive exotic species, improving wildlife and fish habitat, restoring water quality and watershed functions, maintaining or promoting old growth conditions, mitigating climate change impacts, and utilizing woody by-products.

Results from monitoring will be used to modify treatment prescriptions as needed, and analyze cumulative effects at the landscape level. Success will be measured by determining the change in conditions and trends for each monitoring element, tied to each restoration objective. Changes can be gauged in consideration of the extensive data available on historic fire regimes, distributions of plants and wildlife species, long term water quality and availability, and other ecosystem conditions. Success will be measured through a carefully-designed network of replicated monitoring plots, untreated control areas, and other experimental design methods to evaluate the restoration strategy as a whole across the landscape.

Funding for the Carrisa Lookout restoration is being sought from the Southern New Mexico Secure Rural Schools Resource Advisory Committee (RAC) in the amount of $20,000. This funding has received promising feedback from the Otero County Commission and is anticipated to be a front runner for selection by the RAC in 2011.

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