



Forest  
Service

Manti-La Sal  
National Forest

Supervisor's Office  
599 West Price River Drive  
Price, UT 84501  
Phone# (435) 637-2817  
Fax# (435) 637-4940

File Code: 1940-5  
Route To:

Date: May 10, 2010

Subject: Medicine Tree Landscape Restoration Project

To: Regional Forester

The Manti-La Sal National Forest is submitting a proposal for the Medicine Tree Landscape Restoration Project. The Medicine Tree project is located on the Wasatch Plateau and encompasses 103,390 acres from Huntington Canyon on the north to Ferron Mountain on the south. The project uses an integrated approach to planning, implementing and monitoring ecological restoration treatments in this area.

Its goals are to (1) reduce the fire regime classification from a 2 to a 1; (2) reintroduce fire into fire-adapted ecosystems (3) reduce or change the arrangement of the fuel bed in the treatment units thus reducing the fire behavior and allowing for a greater margin of safety for suppression crews; (4) to provide increased forage for large herbivores caused by removing encroaching pinyon/juniper in sagebrush steppe ecosystems and subalpine fir in aspen ecosystems; (5) to diversify vegetation age, structure, and composition, resulting in improved habitat for select wildlife species identified in the forest land and resource management plan.

The Forest is requesting \$4,771,900 in Collaborative Forest Landscape Restoration Program funds, and offers \$7,519,000 in matching funds from the Forest and its partners.

The proposal package can be viewed on the Manti-La Sal internal ftp site:  
<ftp://ftp.r4.fs.fed.us/pub/open/MLNF/>

Thank you for your consideration of this proposal.

Sincerely,

Marlene Depietro (acting for)  
PAMELA E. BROWN  
Forest Supervisor

cc: William LeVere





United States  
Department of  
Agriculture



Forest  
Service

May 2010

# Medicine Tree Landscape Restoration Project Proposal

Manti – La Sal National Forest



For Information Contact: Matthew Meccariello  
Price, Utah  
435.636.3509  
FTTP Site: <ftp://ftp.r4.fs.fed.us/pub/open/MLNF/>

## Proposed Treatment

The Medicine Tree Landscape Restoration project occurs on 103,390 acres of which 6,107 are state and private lands. It is located in the western portion of the Ferron/Price Ranger District of the Manti-La Sal National Forest in central Utah (See Maps 1 and 2, Landscape Strategy). The landscape area includes the communities of Reeder Subdivision, Sportsman’s Subdivision, Swasey Subdivision, Olsen Ranch, and upper Joes Valley. All of these communities are incorporated in the Joes Valley Community Wildfire Protection Plan (CWPP).

The project is named for medicine trees, which are found in large numbers in the Joes Valley area. Historically, indigenous people modified ponderosa pine, removing large pieces of bark to use for food and medicine.

The Medicine Tree Landscape Proposal includes thirteen projects on National Forest System land. There are three projects occurring on adjacent private land that are associated with the thirteen Forest Service projects. The thirteen projects include 37,721 acres in the landscape planning area. The Utah Division of Forestry, Fire and State Lands (UDFFSL) has treated or plans to treat 180 acres. The projects are briefly described in the table below. Additional information on each of the projects including a map is provided in the Landscape Strategy.

**Table 1. Prioritized List of Planned Forest Service, State and Private Treatments.**

Treatment Name	Treatment Stage	Treatment Type	Treatment Mechanism	Year Treated
<b>Forest Service Projects</b>				
1. Swasey Wildlife Habitat Improvement/Fuels Reduction	Implementation	Mastication, Cut, Pile, Burn	Force Account	2010-2019
2. User-Created Trail Closures	Implementation	Close/Obliterate user-created OHV trails	Force Acct/UCC/Vols	2009-2019
3. Lake Timber Sale	Implementation	Timber Sale, Prescribed Burn	Service Contract	2010-2016
4. Black Dragon Habitat Imp./ Fuels Reduction Project- Phase II	NEPA Stage	Mastication	Force Account	2016-2019
5. Millers Flat Road Improvement	Implementation	Road Resurfacing and culvert installation	Construction Contract	2010-2011
6. Middle Mountain Fuels Reduction/Prescribed Burn	Implementation	Mastication, Prescribed Burn	Force Account	2009-2011
7. Lowry Water Road	Implementation	Road Maintenance for timber sale, then Decommissioning after sale completion	Construction Contract	2012,2019
8. Millers Flat Recreation Project	NEPA Stage	Recreation Project	Force Acct/Volunteers	2011-2014
9. Mary’s Slide Timber Sale	NEPA Stage	Timber Sale, Prescribed Burn	Contract/ Stewardship	2013-2018
10. Millers Flat Timber Sale	NEPA Stage	Timber Sale, Prescribed Burn	Contract/ Stewardship	2011-2016
11. Rolfson Fuels Treatment	NEPA Stage	Prescribed Burn	Force Account	2014-2017
12. Graben Prescribed Burn	NEPA Stage	Prescribed Burn	Force Account	2011-2015
13. Potter’s North Timber Sale	NEPA Stage	Timber Sale, Prescribed Burn	Contract/ Stewardship	2014-2019
<b>Projects within Landscape Area on Private Land</b>				
Olsen Property	Planned	Mastication	Agreement	2011-2015
Swasey Subdivision	Planned	Mastication	Agreement	2012
Trail Mountain	Planned	Mastication, Cut, Pile, Burn	Agreement	2012

In addition to the projects listed above, the Manti-La Sal National Forest has been actively implementing other management activities within the same landscape area for the past several years, see Table 2 for a partial list.

**Table 2. Management History - Fuels Reduction/Wildlife Habitat Improvement Treatments from 2004-2010.**

Treatment Name	Treatment Type	Accomplishments	Treatment Mechanism	Year(s) Treated
<b>Forest Service</b>				
Joes Valley Wildlife Habitat Improvement Project	Mastication	1,132 acres habitat improvement/hazardous fuel reduction	Service Contract & Force Account	2004
Orange Olsen Habitat Imp./ Fuels Reduction Project	Mastication	180 acres of habitat improvement & hazardous fuel reduction	Force Account	2005
Joes Valley Pinyon/Juniper Retreatment	Mastication, Prescribed Burn	1,312 acres of habitat improvement & hazardous fuel reduction	Force Account	2007-2009
Black Dragon Habitat Imp./ Fuels Reduction Project -Phase I	Mastication	8,168 acres of habitat improvement & hazardous fuel reduction	Force Account	2005-2009
Tamarisk Removal Joes Valley Reservoir	Invasive Species Eradication	660 acres of watershed improvement and invasive species removal	Volunteers	2008
Seasonal Gate at Horn Mountain	Big Game Closure	Protects 12,000 acres of winter range	Force Account	2009
Lake Canyon Recreation Project	Recreation Project	Recreation site improvement, reduced detrimental impacts to wildlife habitat	Force Account	2004-2005
<b>Projects on Private Land</b>				
Reeder Subdivision Fuels Project	Cut, Pile, Pres. Burn	25 acres of fuels reduction	Agreement	2005
<b>Projects with Grazing Permittees on National Forest System Land</b>				
Grazing Improvement Program	Musk Thistle Control	Noxious weed control	Agreement	2010
Grazing Improvement Program	Spring Protection	Watershed Protection	Agreement	2009

The projects have been designed to decrease the threat of catastrophic wildfire to nearby communities, improvements, culinary water sources, crucial sensitive species habitat and archeological sites. Computer models such as Wildland Fire Decision Support System and BEHAVE have been used to aid in placing these treatments.

Though these projects vary in implementation types, they have restoration goals in common such as: (1) reducing the fire regime classification from a 2 to a 1; (2) reintroducing fire into fire-adapted ecosystems and (3) reducing or changing the arrangement of the fuel bed in the treatment units thus reducing the fire behavior and allowing for a greater margin of safety for suppression crews. (4) decreasing likelihood of a catastrophic wildland fire and the resulting protection of nearby culinary water sources; (5) increasing forage for large herbivores caused by removing encroaching pinyon/juniper in sagebrush steppe ecosystems and subalpine fir in aspen ecosystems; (6) diversifying vegetation age, structure, and composition, resulting in improved habitat for select wildlife species identified in the forest land and resource management plan.

The Graben and Rolfson Prescribed Burn Projects encompass 4,436 acres and 1,700 acres, respectively (see Map 13 and 12, Landscape Strategy). These areas are dominated by beetle-killed spruce-fir that has encroached into aspen stands. The projects will reduce down and dead fuels by an average of 50 percent over most of the high priority treatment areas where the fuel loading is approximately 33 tons per acre. Following treatment, fuel loading will be approximately 10 tons per acre. The treatments are designed to stimulate aspen regeneration,

producing approximately 1000 to 2000 aspen stems per acre after the burn. The presence of elderberry and other native forbs and shrubs will increase by 50 percent within the second year after ignition. Re-establishing aspen in these stands is expected to protect water quality for the Reeder Subdivision and other private land and increase forage for large herbivores. Pre- and post-monitoring for this project includes surveys for migratory birds and goshawks, soils monitoring, Brown's transects and stand exams. The NEPA has been started on Graben, and the project is planned for implementation in Fiscal Year (FY) 2011. Rolfson is planned for implementation in FY14.

The UDFFSL has acquired \$115,000 to reduce encroaching pinyon/juniper by mastication, cut, pile and burn on the 28-acre Olsen Property Project (see Map 15, Landscape Strategy). Work is planned from 2011 through 2015 and will enhance adjacent projects in the Reeder Subdivision and will coincide with the Graben Prescribed Burn.

The Millers Flat Timber/Fuels Project proposes to address the fuel concentrations by changing the Condition Class from 2 to 1, regenerate aspen, and harvest approximately 480 acres of dead spruce. Light to moderate intensity broadcast burning is planned for units that contain residual aspen. Mastication may also be used to rearrange fuel loads to a state that exhibits minimal fire behavior (see Map 11, Landscape Strategy). Over time, the treatments in aspen stands will improve foraging habitat for big game, improve nesting habitat for cavity nesting birds, and improve nesting and foraging habitat for goshawks and other raptors.

The Millers Flat Recreation Project will move dispersed camp sites away from riparian habitat and wetlands to reduce erosion, improve water quality, and reduce negative impacts to aquatic and terrestrial species. Road closures will benefit big game by providing security and improving habitat effectiveness. Over five miles of road improvements will occur in 2010 and 2011, including resurfacing, adding new culverts and replacing old ones.

In 2005 the UDFFSL and Manti-La Sal invested \$75,000 to complete the 25-acre Reeder Subdivision Fuels Reduction Project to reduce the threat of catastrophic fire and improve the quality of the culinary water supply. Encroaching pinyon/juniper along Reeder Creek corridor in the Reeder Subdivision was cut, piled, and burned.

The 805-acre Middle Mountain Project will enhance work done by the UDFFSL in the Reeder Subdivision (see Map 8, Landscape Strategy). The Manti-La Sal mechanically treated units with chainsaws (lop and scatter) and mastication in 2009 and will prescribe burn the ponderosa pine stands in 2011. In 2010 \$180,000 was secured from Region 4 to offset project costs. The project area includes shrublands and ponderosa pine encroached on by pinyon/juniper. These stands are conducive to intense stand-replacing fires and present a hazard to fire personnel, private citizens, structures and infrastructure. The treatment will reduce pinyon/juniper encroachment and increase survivability of existing ponderosa by limiting competition and removing ladder fuels, reducing the likelihood of large, intense wildfires. The treatment will also provide a safer access and escape route from the area in the event of a wildland fire. Pre-and post-monitoring consists of photo points, Brown's transects in select stands, vegetation monitoring, surveys of migratory birds, flammulated owls, noxious/invasive weeds, and soils.

The UDFFSL has acquired \$2500 for the 5-acre Trail Mountain Fuels Project to enhance the work the Forest Service has completed in the Middle Mountain area. Treatment is planned for 2012 and will include mastication, cutting, piling and burning pinyon/juniper in the Trail Mountain Subdivision (see Map 17, Landscape Strategy). An additional \$2500 has been acquired for pinyon/juniper mastication on the 130-acre Swasey Private Property which is adjacent to the Swasey Wildlife Improvement and Fuels Reduction Project. The Manti-La Sal National Forest will provide equipment and operators to complete this project (see Map 16, Landscape Strategy).

The 8,100 acre Swasey Wildlife Improvement/Fuels Reduction Project is designed to mechanically reduce encroaching pinyon/juniper using chainsaws and mastication, in sagebrush, cottonwood, and ponderosa pine

stands (see Map 4, Landscape Strategy). Competition in ponderosa and cottonwood stands will be reduced and ladder fuels removed, reducing the likelihood of large, intense wildfires. The treatment will provide a safer access and escape route from the area in the event of a wildland fire. After the pinyon/juniper has been treated, areas with ponderosa pine will be broadcast burned to reduce fine, dead fuels. An increase in perennial plants and forbs is expected, thus increasing the quality of sage grouse habitat and winter/transition range for deer and elk. The sage grouse, a candidate for federal listing under the Endangered Species Act, has recently been found in treated areas on the adjacent Black Dragon Project. Pre-and post-monitoring consists of photo points, Brown's transects, vegetation monitoring, surveys of migratory birds, flammulated owls, noxious/ invasive weeds, and soils.

Black Dragon Phase I was an 8,168-acre mountain brush, pinyon/juniper mastication project completed from 2005-2009 (see Map 6, Landscape Strategy). The project improved habitat for sage grouse and winter range for deer and elk. Utah Partners for Conservation and Development (UPCD) funded \$339,879 of this \$1.2 million project. The Utah Division of Wildlife monitors long-term range trends within the project area. The Forest completes photo points for vegetation monitoring, soils monitoring, and noxious/invasive weed, migratory bird, and sage grouse surveys. Trend studies show that re-treatment will be needed, therefore, Black Dragon Phase II is planned to begin in FY2016. UPCD funding of \$200,000 is anticipated for this project during FY 2016-2019.

Mary's Slide and Potters North are timber sale projects in beetle-killed spruce (see Maps 10 and 14, Landscape Strategy). After the timber has been extracted, broadcast prescribed burning with follow up planting is planned. Both of these projects are in the planning stage to be implemented in FY 2014 and 2015 respectively. The Lowry Road Project will improve 2.3 miles of Level 2 roads before the Potters North Timber Sale and decommission five miles of road after the timber sale is complete. This will occur in 2012. Pre- and post-monitoring for this project includes bird and invasive/noxious weed surveys, soils monitoring, Brown's transects and stand exams.

The Lake Timber Sale consists of removal of beetle-killed spruce to reduce the risk of catastrophic fire and improve culinary water quality for the community of Huntington. Aspen regeneration in certain stands and spruce regeneration by planting are also objectives of this project. Planting will reduce the time needed to regenerate the spruce stands. Pre- and post-monitoring for this project consists of stand exams, goshawk surveys and Brown's transects. The NEPA was signed in 2009 and the timber is expected to be sold in 2010.

There are 42 miles of user-created trails within the Medicine Tree Landscape Area. In 2008-2009 the Utah Conservation Corps (UCC) in an agreement with the Manti-La Sal, closed 11.8 of those miles. The Millers Flat Project will close 13 miles of user-created trails in 2012-2013. The remaining 17 miles are planned for closure by 2019. Monitoring to ensure the trails stay closed will be done by Manti-La Sal employees and the UCC.

During 2010, the Forest and Skyline Cooperative Weed Management Area will conduct a demonstration project to spray 10 acres of musk thistle with an attractant to determine if it can be made more palatable to cattle. In 2009 the Utah Grazing Improvement Program (GIP) and the Forest developed and protected spring sources on South Horn Mountain and Middle Mountain to improve watershed conditions affected by domestic livestock grazing.

The monitoring described in this section will measure the success of each project, determining if the Forest has met the goals and objectives outlined in the landscape strategy, the purpose and need statements for each proposed project, and protected resources at risk.

## Ecological Context

Vegetation types within this landscape area range from climax pinyon/juniper, sage-grass, mountain mahogany, and desert shrub at the lower elevations to aspen-meadow, aspen/mixed conifer, Engelmann spruce and sub-alpine fir at the higher elevations. Throughout this landscape area, much of the spruce-fir and aspen/mixed conifer is found on north-facing slopes, alternating with mountain brush, mountain sage and aspen on south-facing slopes.

Understory tall forb communities in aspen stands appear to be increasing. Pure tall forb communities are present but limited. Tarweed can be found on open dry south slopes; however, native plants are persistent. High elevation mountain brush communities are stable. But lower elevations are decadent and have been encroached on by pinyon/juniper. Overall range condition is stable to increasing.

Contour furrows and trenches implemented from 1960 through 1970 for watershed and range improvement are still visible. They have had a crucial role in stabilizing slopes that were heavily damaged by the turn of the century livestock grazing. The function of the furrows has been compromised by minimal maintenance. Most of the furrows have slumped and rounded over the years; some maintenance of these continues.

### Engelmann Spruce/Sub-alpine Fir Vegetation Type

**Current Condition:** The recent spruce beetle outbreak has affected approximately 100,000 acres of Engelmann spruce on the northern portion of the Manti-La Sal. Approximately 90 percent of the Engelmann spruce over 16 inches in diameter are dead, with very limited mature structure left in the affected stands. Spruce-fir has also encroached into historic aspen communities, a process of natural succession assisted by successful fire suppression. Much of the aspen is at risk from this conifer encroachment. The spruce mortality has not resulted in any significant aspen regeneration response. Untreated stands of dead Engelmann spruce are considered to be a Fire Regime III, Condition Class 2 or moderate. Engelmann spruce/sub-alpine fir stands provide habitat for the northern goshawk, a Forest Service Sensitive species. The spruce beetle outbreak has dramatically decreased habitat quality for the goshawk.

**Desired Condition:** The proposed projects in this vegetation type focus on removing the spruce biomass as a wood product through timber sales. Following harvest the conifer less than 8 inches will be thinned or removed from the scattered aspen pockets. Fuels will be treated by a variety of methods to reduce Condition Class to 1 or low. After the fuels treatments, Engelmann spruce will be planted, subsequent thinning and fuel treatments may be needed every 20 years to maintain flame lengths under 8 feet. Aspen will be managed wherever it exists in the treated stands. These treatments will accelerate recovery of the mature structural component in this vegetation type by about 40 years over untreated stands. Down woody material and soil compaction will meet Forest Plan standards. Water quality will be protected by incorporating Best Management Practices in all treatment activities.

### Aspen Vegetation Type

**Current Condition:** A reduction in anthropogenic burning and increased effectiveness of wildfire suppression since European settlement are thought to be major contributors to the changes in forest cover. Aspens are among the first species to colonize an area after a disturbance such as fire. Many of the seral aspen stands contain too many conifers, which could create heat severe enough to kill root systems, thereby literally killing the aspen clone. In some cases, it will be necessary to physically and mechanically remove conifer trees from within the clone to prevent too much intensity from being generated by either prescribed or wildland fire. A decline in herbaceous cover and species diversity as a result of conifer encroachment is also a major management implication. Aspen stands with a 30 percent conifer component or more (which may also contain a component of dead spruce) are considered to be a Fire Regime III, Condition Class 2 or moderate. Aspen stands provide habitat for an array of wildlife species including the northern goshawk, a Forest Service Sensitive species, and mule deer and Rocky Mountain elk, both Management Indicator Species.

**Desired Condition:** The proposed projects in the Medicine Tree landscape are designed to regenerate aspen in mixed conifer stands previously dominated by aspen. A combination of harvest, mechanical treatments and prescribed fire will be used to stimulate aspen suckering. The regeneration objective is a minimum of 2,000 stems per acre of aspen at five years following treatment. These techniques have been successful in other areas of the Manti-La Sal (D. Cote, 2008, Validation Case Study). Down woody material and soil compaction will meet Forest Plan standards. Water quality will be protected by incorporating Best Management Practices in all treatment activities. Following treatments to regenerate the stands to aspen the Condition Class would be modified to 1 or low.

### **Ponderosa Pine Vegetation Type**

**Current Condition:** Ponderosa pine resides in scattered stands in the southern portion of the Medicine Tree landscape. The amount of ponderosa pine has decreased as a result of harvest during European settlement. The absence of fire or any other disturbance factor has resulted in an increase in stand density due to the in-growth of pinyon/juniper. The ponderosa pine has not self pruned or regenerated, therefore pinyon and juniper has grown up into the crowns of the ponderosa pine resulting in a ladder effect should a fire occur (Bradley et al. 1992). Understory species diversity of the ingrown stands has decreased due to the increasing canopy closure. Ponderosa pine encroached on by Pinyon/juniper are considered to be a Fire Regime I Condition Class 3 or high. Open, park-like ponderosa pine stands provide habitat for the flammulated owl, a Forest Service Sensitive species.

**Desired Condition:** Treatments in this vegetation type have been designed to return the stands to their historic condition (open and park-like) and restore the role of fire. Surface fire often kills interior ponderosa pine seedlings and saplings; however, the effect is dependent upon fire severity and stand structure. Young trees in open canopies acquire fire-resistant traits rapidly, and 6-year-old saplings often survive low-severity surface fire. Fire prepares a favorable seedbed for interior ponderosa pine regeneration. Periodic surface fire removes the heavy litter and duff that accumulate in ponderosa pine forests. Wind-borne seeds falling from the crowns of surviving or fire-killed trees land on a nutrient-enriched mineral seedbed under an open canopy that favors germination and seedling establishment. Seedling-water relations may be enhanced when fire removes competing vegetation (Howard 2003). The treated ponderosa pine stands in this landscape where the pinyon/juniper was removed and the stands under burned are now a Condition Class 1 or low.

### **Pinyon/Juniper Vegetation Type**

**Current Condition:** Reduced fire frequency, along with climate change and introduction of grazing, accounts for the expansion of juniper woodlands into meadows, grasslands, sagebrush communities, and aspen groves that began in the late 1800s. Prior to this time, more frequent fires probably maintained low density in woodlands and often restricted junipers to rocky sites. In general, the species grows in areas that do not burn frequently or intensely (Scher 2002).

Encroaching pinyon/juniper is reducing the quality and quantity of greater sage grouse nesting, brood-rearing and foraging habitat. The greater sage grouse is a Candidate species for Federal Listing under the Endangered Species Act. As pinyon/juniper encroaches in sagebrush, it limits the density and diversity of forbs within the stand that are used by sage grouse and also reduces regeneration of sagebrush.

Pinyon/juniper has also encroached into the mountain brush vegetation type as well. The mountain brush habitat type has also become decadent and many of the shrubs are too overgrown to be utilized by mule deer and Rocky Mountain elk. The limited browse that is available for big game use is often overbrowsed. The landscape area contains important big game winter and transitional habitat. In the 1960's many of the pinyon/juniper-encroached areas were chained to improve wildlife habitat and domestic grazing. Pinyon and juniper have again re-grown in these areas.

The changes to these vegetation types from pinyon/juniper encroachment have increased the severity of the wildfires that could occur in these stands. This has increased the risk to people and to the structures that have been

built in the area. Untreated pinyon/juniper stands have been classified as Fire Regime I Condition Class 2 or moderate.

**Desired Condition:** Projects have been designed and implemented to remove encroaching pinyon/juniper and allow understory vegetation to recover. This creates foraging, nesting and brood rearing habitat for the greater sage grouse. It also creates a mosaic of forested and non-forested areas, to provide foraging and hiding areas for big game and other wildlife. Transition and winter range for deer and elk is improved by reducing the height of browse species and stimulating sprouting. Ground cover is increased, decreasing soil erosion and reducing sedimentation. This will maintain proper stream function and water quality. The mastication treatments in these stands have modified the Condition Class to 1 or low.

### **Riparian/Wetlands**

**Current Condition:** Riparian areas have also been affected by the absence of fire in the landscape. Pinyon/juniper and other conifers have encroached into these zones reducing the abundance and vigor of cottonwood and willow. The shade from the encroaching species has reduced species diversity and understory ground cover, such as grasses and forbs, which help stabilize the soil and stream banks. Wetlands in the Medicine Tree Landscape have been heavily affected by dispersed recreation and user-created routes; water quality is at risk from this unmanaged activity. There are currently 42 miles of user-created routes in the Medicine Tree landscape, 12 miles of which have recently been closed. Riparian areas and wetlands are important to a whole host of terrestrial and aquatic species.

**Desired Condition:** Projects have been designed to remove competing vegetation for cottonwood and willow in riparian areas in the Joes Valley watershed. In addition, areas with decadent cottonwood have been regenerated by cutting the large, rotten cottonwood and building ungulate exclosure fence adjacent to dispersed recreation sites. Tamarisk has been cut and treated with herbicide to encourage re-establishment of willow, cottonwood and other riparian species. Ground cover is expected to increase as a result of the removal of the pinyon/juniper. Projects have been designed to obliterate unauthorized routes, relocate routes, and remove or repair authorized routes that are affecting wetlands.

### **Noxious Weeds**

**Current Condition:** Noxious weed species found in this area include Canada thistle, musk thistle, Scotch thistle and hoary crest. Canada thistle is spreading through riparian areas and is very difficult to control due to its location. Cheatgrass is found along roads entering the Forest. Tamarisk has also been found along stream channels at lower elevations and in isolated locations around the Joes Valley Reservoir.

**Desired Condition:** Increase noxious weed management in funded or authorized actions on the Manti-La Sal National Forest. Aggressively inventory, map, treat and monitor populations as they occur resulting from management or recreation activities. Revegetate disturbed areas and areas where noxious weeds have been eradicated. Cooperate with county, state and federal agencies and private landowners in the management of noxious weeds.

### **Project Objective Summary**

All existing and proposed projects in the Medicine Tree landscape were designed to reduce fire severity, increase ground cover, decrease soil erosion, reduce sedimentation, and maintain proper stream function.

## Collaboration

With recreation use growing on the Manti-La Sal National Forest and numerous resource concerns (increased fuel loading associated with high spruce beetle mortality, soil compaction, wetland protection, sage grouse habitat, grazing and others), the Forest recognized collaboration with partners was vital to the restoration of Forest System Lands, specifically the Medicine Tree Landscape area. During the forest plan revision process in 2003, the Forest began proactively engaging others in discussions about the desired conditions on the Forest. Forest staff have been continually building relationships with the public, state, local, other federal agencies and tribal governments with interest in the future of the Forest.

The following tribes have an interest in management of the Manti-La Sal National Forest: Northern Ute, Ute Mountain Ute, White Mesa Ute, Navajo, Hopi, and Paiute. The Forest continues to meet with each tribe to determine the extent of their interest and involvement and to conduct the meetings necessary to meet their expectations. Meetings are conducted on at least a bi-annual basis with all of the interested tribes. Tribes are concerned about preserving the medicine trees and the health of plant species found in the Medicine Tree Landscape Area. Charmaine Thompson, forest archaeologist, has an excellent working relationship with Utah tribes. Her assistance helps coordinate with Utah tribes to achieve mutual goals.

Local government support is imperative to the successful management of Forest resources. As the Forest began the plan revision process, it initiated cooperating agency agreements with Carbon, Emery, Grand, Juab, San Juan, and Sanpete counties, and the State of Utah Governor's Office of Planning and Budget. These agreements are still in effect and are being used to advance resource work. The purpose of the agreements is to work collaboratively with these entities during the revision process. Four other counties (Sevier, Utah, and Montrose and Mesa, Colorado) with smaller impacts have not entered into cooperating agency agreements. At this point, these counties have chosen to be involved as a member of the public.

Local governments and the Forest have spent years developing working relationships where trust and mutual respect have increased over time. Meetings have been held in the surrounding counties where Forest staff and local officials cooperate to work out the details of desired conditions and uses of the Forest.

The Forest attends and addresses the affected counties' lands and access committees. The missions of the Emery County Public Lands Council and Sanpete Access Committee are to (1) represent the public land interests of Emery and Sanpete counties and its citizens; (2) perform an advocacy role for local users and stakeholders; (3) to work in partnership with the Forest in fashioning management decisions and policies affecting lands within their respective counties; and (4) to participate in the development, coordination and implementation of the planning objectives of federal, state, and local entities.

In 2005 the staff of the Manti-La Sal National Forest determined that a forest-wide assessment of existing conditions was imperative. The need was twofold -- first to begin the forest plan revision process and second to drive project level work by landscape planning.

For each project that has been implemented, the Forest has conducted public outreach and provided information on the goals and objectives that it is seeking to implement. The Forest has conducted field trips for interested parties to show the results from previously implemented projects and how it has learned from those projects. This allows multiple parties to informally monitor project outcomes. Project design has been modified as a direct result of these field trips. Future project work will continue to be discussed with the state, local governments and citizens to seek their input on Forest goals and objectives.

The Utah Department of Wildlife Resources works with the Forest to monitor vegetation transects and bird and small mammal populations, measuring the progress made toward the desired results from specific projects. The monitoring partnership has been ongoing since the 1970's and is anticipated to continue for decades in the future. Utah Partners for Conservation and Development (UPCD) has been a vital partner with the Forest. UPCD is a unique partnership of several natural resource agencies and organizations committed to providing solutions to

conservation issues. Working with federal agency representation, state leadership, and local coordinators, the UPCD members are able to leverage significant resources. Sagebrush enhancement projects, which include implementation and monitoring, have been imperative to the successful removal of pinyon/juniper encroachment in sagebrush habitat. Through the grants program, the Forest has worked with the UPCD to enhance sage grouse habitat and to improve transitional and winter range for deer and elk.

Private in-holdings are scattered throughout the Medicine Tree Landscape Area. As with any private land adjacent to federally owned land, wildfire concerns exist. The Forest is aware of those concerns and cooperates with the Utah Division of Forestry, Fire & State Lands (UDFSSL) to work with the private land owners. The UDFSSL has spearheaded working with private land holders to develop community wildfire protection plans. The plans are vital to reducing the threat of wildfires. The UDFSSL staff has worked tirelessly with the Forest to develop coordinated treatment plans on private land and the surrounding Forest. Public meetings have been held to identify the concerns and needs of the stakeholders and determine a strategy to address them.

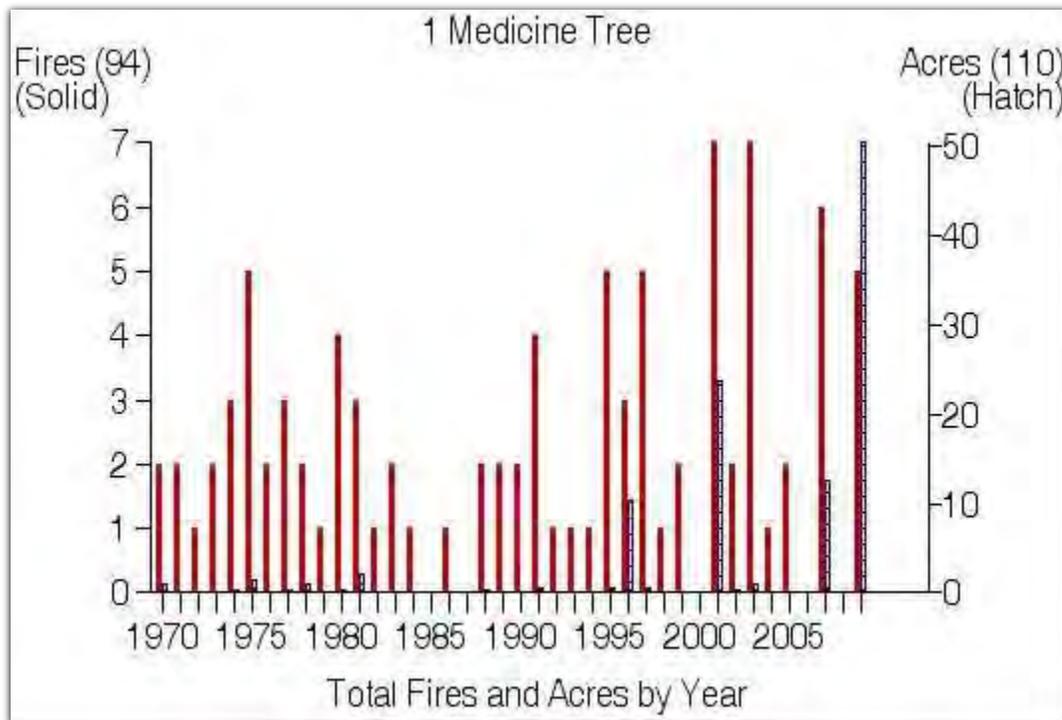
Environmental organizations, i.e. Grand Canyon Trust, Utah Environmental Congress, Utah Chapter of the Sierra Club and others, are helping monitor vegetation treatments that affect fire behavior through the restoration of aspen clones, reduction in the density of pinyon/juniper and sage grouse habitat improvement in the landscape area.

Throughout the past eight years the Forest has developed strong and productive working relationships with many of the Forest's stakeholders. Developing and maintaining relationships with partners will continue to be fostered in the years to come.

## Wildfire

The fire regime and condition class were analyzed at the 6<sup>th</sup> Hydrologic Unit Code (HUC) Level in 2005 across the Manti La Sal National Forest, prior to any treatment in the Landscape Area, (refer to Landscape Strategy FRCC). This analysis indicated that within the Landscape Area most of the fuels were at the Condition Class 2 and 3 levels. The number and size of historical fires in the Landscape Area was extracted from Fire Family Plus. Figure 1 indicates that fires from 1970 to the present have been getting larger and more frequent, especially from 1995 to the present.

Figure 1. Total Fires and Acres by Year

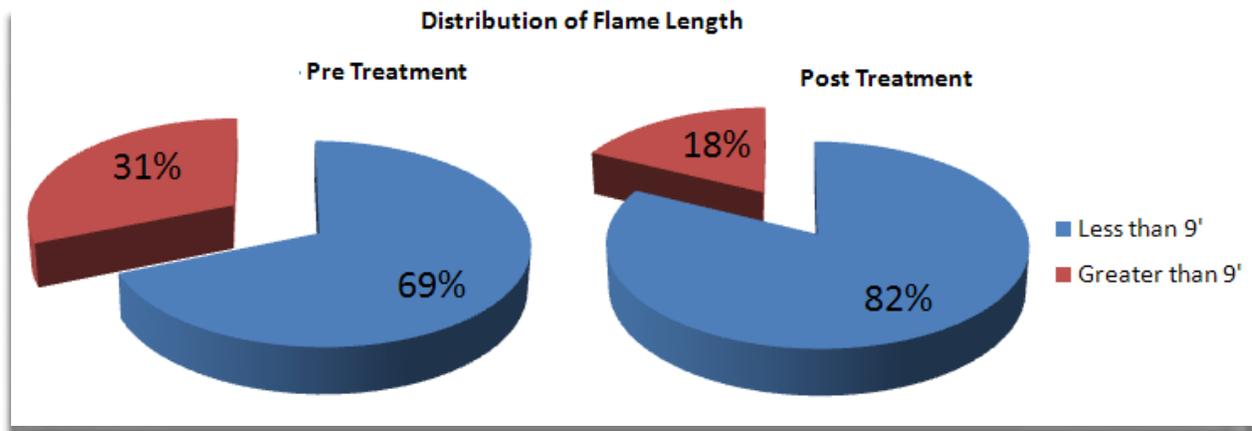


Anticipated wildfire behavior with current conditions was analyzed using Wildland Decision Support System (WFDSS) with Landscape Area data gathered from LandFire and using inputs of 90<sup>th</sup> percentile weather from the Joes Valley RAWS station, within the landscape area. In the event of a wildfire, the analysis showed that 31% of the Landscape Area will experience flame lengths of over nine feet. Fires that display flame lengths greater than nine feet often require the use of aerial resources. Such flame lengths limit the ability of initial attack resources (engines and hand crews < 4' flame length) to effectively suppress unwanted wildfires.

Uncharacteristic wildfire is any fire that may burn at greater intensity or grow larger than would be expected due to heavy and continuous fuel loading. Reducing the percentage of the Landscape Area that will experience flame lengths of over nine feet will allow initial attack resources to successfully manage wildfires and reduce the risk of uncharacteristic wildfire. Treatments to reduce uncharacteristic wildfire in the Landscape Area may include prescribed burning, mechanical treatments, and harvest. Once the fuels in the Landscape Area are successfully treated and the Condition Class is reduced, the natural vegetation will be allowed to regenerate. This will allow the fire return interval to reset to a more historic interval. Prescribed fire and unplanned ignitions will be used to reestablish and promote the natural fire regime across the landscape.

WFDSS analysis indicated that treatment of the Landscape Area would reduce the percentage of the area with flame lengths over nine feet by 13%, as well as reduce the active crown fire by 4%. Treatments would also reduce fireline intensity resulting in smaller, less severe fires. The following graph shows the percent change in flame length.

Figure 2. Percent Change in Flame Length



With the landscape returned to natural, functioning condition with smaller, less severe fires, unplanned ignitions will be managed to allow fire to play a historic role across the landscape.

There are Regional Community Wildfire Protection Plans (RWPP) for Sanpete and Emery counties and a Community Wildfire Protection Plan (CWPP) in place in the Landscape Area called the Joes Valley CWPP. This plan includes the Swasey, Reeder and Trail Mountain subdivisions. It addresses the need for defensible space within the communities and fuel treatments around the communities.

Due to reduced fire behavior, fewer resources will likely be required, resulting in long-term cost reductions to suppress fires. Firefighter exposure would be reduced and soil and water resources would benefit by minimal surface disturbance and erosion. Additionally, fires that display flame lengths greater than nine feet often require the use of aerial resources (heavy helicopters and retardant planes). Such resources can exponentially increase suppression costs, thus any treatment reducing the need for such resources will result in additional long-term cost reductions. Initial fuel treatments are often expensive due to heavy fuel loading. Mechanical treatment is often necessary prior to prescribed burning. Subsequent fuel treatments after the initial treatment will require much less maintenance and effort due to the reduced fuel loading, thus creating a long-term cost reduction as well.

## Utilization

There are four proposed timber sales in the Medicine Tree landscape. Three medium to large wood industry companies have expressed interest or have purchased timber sales on the northern portion of the Manti-La Sal. Two of the mills are located in Sanpete and Utah counties, the other is located in Hamilton, Montana. There is also a pellet plant located in Lindon, Utah and an animal bedding plant in Mt. Pleasant, Utah. Both have expressed interested in biomass from our timber operations.

### Lake Fuels Project

A Healthy Forest Restoration Act Environmental Assessment was completed on the Lake Fuels project in 2009. This project addresses spruce mortality on the National Scenic Byway (SR-31) and will enhance aspen. The project uses both tractor and helicopter logging methods. A Streamside Management Zone was also approved in the NEPA document to reduce the number of dead trees in the riparian zone. The treatment will remove 50 percent of all size classes along Lake Fork. No equipment will operate in the 100 foot buffer. A smaller sale has been identified from the original proposal to address hazard trees surrounding a permitted cabin and corrals. It will have a shorter timeframe than the Lake Fuels Sale.

Timber Sale	Acres	Sale Date	Sale <sup>1</sup> Value	Species	Volume CCF	Product Type	Product Size
Lake Fuels	480	June, 2010	\$81,200	Spruce	6,000	House logs & Sawtimber	>10" DBH
				Subalpine-fir	700	Sawtimber	> 8" DBH
				Aspen	300	Bedding & Sawtimber	> 8" DBH
				Total Volume	7,000		

### Millers Flat Project

In December 2008, an Environmental Assessment was initiated on the Millers Flat Project. This project incorporates fuels treatments, wetland protection, transportation planning, and recreation management. The decision is expected to be published in June, 2010. The proposal is to log approximately 480 acres with ground and aerial systems under a stewardship contract. The stewardship portion of the contract will utilize the value of the timber to harden dispersed recreation sites, construct log and block fences and reroute access to some sites where access is currently through wetlands.

Timber Sale	Acres	Sale Date	Sale Value	Species	Volume CCF	Product Type	Product Size
Millers Flat Stewardship	480	2011	\$37,000	Spruce	3,000	House logs & Sawtimber	>10" DBH
				Sub-alpine fir	200	Sawtimber	> 8" DBH
				Aspen	200	Bedding & Sawtimber	> 8" DBH
				Total Volume	3,400		

<sup>1</sup> Sale value is based on current appraisal values used for the Lake Fuels Timber Sale, these may vary depending on market conditions in the future.

**Mary’s Slide**

The Mary’s Slide project is planned to begin analysis in 2013 with an expected NEPA decision in 2014. The proposed project will remove dead spruce, regenerate aspen, spruce, and Douglas-fir, and reduce fuels. This could be a stewardship contract and offset the cost of fuel treatments with the timber value.

Timber Sale	Acres	Sale Date	Sale Value	Species	Volume CCF	Product Type	Product Size
Mary’s Slide	1,180	2014	\$70,000	Spruce	1,700	House logs & Sawtimber	>10” DBH
				Sub-alpine /Douglas-fir	3,000	Sawtimber	> 8” DBH
				Aspen	800	Bedding & Sawtimber	> 8” DBH
				Total Volume	7,000		

**Potter’s North**

The Potter’s North project is planned to begin analysis in 2014 with an expected NEPA decision in 2015. The proposed project will remove dead spruce, regenerate aspen, spruce, and Douglas-fir, and reduce fuels. This could be a stewardship contract and offset the cost of fuel treatments with the timber value.

Timber Sale	Acres	Sale Date	Sale Value	Species	Volume CCF	Product Type	Product Size
Potter’s North	650	2015	\$36,000	Spruce	1,400	House logs & Sawtimber	>10” DBH
				Sub-alpine fir	1,100	Sawtimber	> 8” DBH
				Aspen	200	Bedding & Sawtimber	> 8” DBH
				Total Volume	2,700		

**Miscellaneous Forest Projects**

The various pinyon/juniper removal projects in the Joe’s Valley area have made post and poles materials available under our Forest Misc. Products program. Other products sold, the estimated quantity, and values within the Medicine Tree landscape are listed in the following table. The landscape contains veratrum, a plant currently being tested for medical use. Veratrum recently sold for \$76,000 for 18 acres. An environmental assessment is underway for possible commercial sales of native seed material in the Landscape Area.

Forest Product	Annual Volume	Unit of Measure	\$ Value Per Unit	Est. \$ Annual Value	Product Size
Posts	100	CCF	\$15.00	\$1,500	6.9” DBH, 12’ long
Poles	100	CCF	\$30.00	\$3,000	4.9” DBH, any length
Fuelwood	2,000	CCF	\$5.90	\$11,800	Any DBH, 4’ length
Xmas Trees	500	EACH	\$10.00	\$5,000	9’ height
Total Estimated Annual Dollar Value				\$21,300	

## Investments

Over the period of the Medicine Tree Landscape Project, the Manti-La Sal National Forest will invest \$5,635,000 in projects to improve the Landscape Area. Partners will invest \$1,656,000 in funds and in-kind contributions, and \$228,000 in forest product sales will be generated by the projects. The Forest is requesting \$4,771,900 in CFLRP investments in order to complete the projects.

Forest investments include partial costs of personnel who will do monitoring, timber sale preparation, timber sale administration, contract administration, and fuel treatments. The Forest will also provide necessary equipment. Non-federal partners' investments will include volunteer labor to manage recreation sites, assist with trail and road closures, incidental recreation construction, restoration, and wildlife monitoring. Non-federal partners' monetary contributions will pay a portion of costs for contracts and personnel involved in fuel treatments and monitoring. Requested CFLRP investments are needed to pay additional costs of personnel and contracts.

Projects pending implementation from FY 2010 through FY 2019 are shown in the table below with investments shown for both implementation and monitoring.

The Utah Division of Forestry, Fire and State Lands is actively engaging private landowners in developing Community Wildfire Protection Plans, and assisting communities in the wild land urban interface with funding to implement their plans. This effort will reduce fuel loading in lands adjacent to the project area, thus augmenting the Forest's effort to successfully restore the Medicine Tree Landscape.

The Medicine Tree project increases the restoration capacity of the Manti-La Sal National Forest, because it leverages appropriated funding, permanent and trust funds, partner funding, and partner in-kind contributions with CFLRP funds. This leveraging makes possible 37,721 acres of restoration treatments that could not otherwise occur in this accelerated timeframe. As fuels treatments are completed, the restored landscape will require less expensive maintenance due to reduced fuel loading. Reducing fuels will also reduce the incidence of catastrophic wildfire. As fire behavior is reduced, fewer resources will likely be required to suppress fire, resulting in long-term cost savings.

The Medicine Tree Landscape Project will provide direct employment opportunities in federal government and private business through force account and contracting. It will result in indirect employment in state government and nonprofit organizations assisting with monitoring. Local private companies and other small businesses will have the opportunity to bid contracts and supply specialized equipment for the fuel reduction projects.

The projects will utilize youth volunteers such as the Utah Conservation Corps, Boy Scouts, church groups and Utah Dedicated Hunters. Most youth who volunteer are trained to lead, plan projects, implement projects, work with communities, use tools, and work safely.

The table below shows the comparative shares of investment from CFLRP, The Manti-La Sal National Forest, and non-federal partners. More project detail can be found in the Appendix A - Investments Spreadsheet, Landscape Strategy.

<b>Comparative Investment Summary</b>	
<b>For Fiscal Years 2010-2019</b>	
<b>Fiscal Year Funding Type</b>	<b>Total</b>
Total Funding for Implementation	\$10,536,900
Total Funding for Monitoring	\$1,754,000
1. USFS Appropriated Funds	\$5,385,000
2. USFS Permanent & Trust Funds	\$250,000
3. Partnership Funds	\$1,246,000
4. Partnership In-Kind Services Value	\$410,000
5. Estimated Forest Product Value	\$228,000
6. Other (specify)	\$0
Total (total of 1-6 above for matching CFLRP request)	\$7,519,000
Total CFLRP request (must be equal to or less than above total)	\$4,771,900
Funding off NFS lands associated with proposal by Fiscal Year (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
<b>Fiscal Year Funding Type</b>	<b>Dollars Planned</b>
USDI BLM Funds	0
USDI (other) Funds	0
Other Public Funding	\$137,500
Private Funding	

<b>2010</b>	
Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2010 to match funding from the Collaborative Forested Landscape Restoration Fund.	
Fiscal Year 2010 Funding Type	Dollars/Value Planned/Needed
FY 2010 Funding for Implementation	\$1,136,000
FY 2010 Funding for Monitoring	\$160,600
1. USFS Appropriated Funds	\$1,089,600
2. USFS Permanent & Trust Funds	
3. Partnership Funds	\$79,500
4. Partnership In-Kind Services Value	\$35,000
5. Estimated Forest Product Value	
6. Other (specify)	
FY 2010 Total (total of 1-6 above for matching CFLRP request)	\$1,204,100
FY 2010 CFLRP request (must be equal to or less than above total)	\$92,500
Funding off NFS lands associated with proposal in FY 2010 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2010 Funding Type	Dollars Planned
USDI BLM Funds	
USDI (other) Funds	
Other Public Funding	\$17,500
Private Funding	

<b>2011</b>	
Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2011 to match funding from the Collaborative Forested Landscape Restoration Fund.	
Fiscal Year 2011 Funding Type	Dollars/Value Planned/Needed
FY 2011 Funding for Implementation	\$1,728,000
FY 2011 Funding for Monitoring	\$196,000
1. USFS Appropriated Funds	\$945,500
2. USFS Permanent & Trust Funds	\$200,000
3. Partnership Funds	\$150,500
4. Partnership In-Kind Services Value	\$35,000
5. Estimated Forest Product Value	\$122,000
6. Other (specify)	\$0
FY 2011 Total (total of 1-6 above for matching CFLRP request)	\$1,453,000
FY 2011 CFLRP request (must be equal to or less than above total)	\$471,000
Funding off NFS lands associated with proposal in FY 2011 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2011 Funding Type	Dollars Planned
USDI BLM Funds	
USDI (other) Funds	
Other Public Funding	\$25,000
Private Funding	

<b>2012</b>	
Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2012 to match funding from the Collaborative Forested Landscape Restoration Fund.	
Fiscal Year 2012 Funding Type	Dollars/Value Planned/Needed
FY 2012 Funding for Implementation	\$824,000
FY 2012 Funding for Monitoring	\$143,300
1. USFS Appropriated Funds	\$335,800
2. USFS Permanent & Trust Funds	\$50,000
3. Partnership Funds	\$104,500
4. Partnership In-Kind Services Value	\$35,000
5. Estimated Forest Product Value	
6. Other (specify)	
FY 2012 Total (total of 1-6 above for matching CFLRP request)	\$525,300
FY 2012 CFLRP request (must be equal to or less than above total)	\$442,000
Funding off NFS lands associated with proposal in FY 2012 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2012 Funding Type	Dollars Planned
USDI BLM Funds	
USDI (other) Funds	
Other Public Funding	\$5,000
Private Funding	

<b>2013</b>	
Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2013 to match funding from the Collaborative Forested Landscape Restoration Fund.	
Fiscal Year 2013 Funding Type	Dollars/Value Planned/Needed
FY 2013 Funding for Implementation	\$974,500
FY 2013 Funding for Monitoring	\$144,200
1. USFS Appropriated Funds	\$457,500
2. USFS Permanent & Trust Funds	
3. Partnership Funds	\$104,500
4. Partnership In-Kind Services Value	\$35,000
5. Estimated Forest Product Value	
6. Other (specify)	
FY 2013 Total (total of 1-6 above for matching CFLRP request)	\$597,000
FY 2013 CFLRP request (must be equal to or less than above total)	\$521,700
Funding off NFS lands associated with proposal in FY 2013 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2013 Funding Type	Dollars Planned
USDI BLM Funds	
USDI (other) Funds	
Other Public Funding	\$55,000
Private Funding	

<b>2014</b>	
Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2014 to match funding from the Collaborative Forested Landscape Restoration Fund.	
Fiscal Year 2014 Funding Type	Dollars/Value Planned/Needed
FY 2014 Funding for Implementation	\$1,208,500
FY 2014 Funding for Monitoring	\$186,200
1. USFS Appropriated Funds	\$480,500
2. USFS Permanent & Trust Funds	
3. Partnership Funds	\$264,500
4. Partnership In-Kind Services Value	\$35,000
5. Estimated Forest Product Value	\$70,000
6. Other (specify)	
FY 2014 Total (total of 1-6 above for matching CFLRP request)	\$850,000
FY 2014 CFLRP request (must be equal to or less than above total)	\$544,700
Funding off NFS lands associated with proposal in FY 2014 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2014 Funding Type	Dollars Planned
USDI BLM Funds	
USDI (other) Funds	
Other Public Funding	\$25,000
Private Funding	

<b>2015</b>	
Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2015 to match funding from the Collaborative Forested Landscape Restoration Fund.	
Fiscal Year 2015 Funding Type	Dollars/Value Planned/Needed
FY 2015 Funding for Implementation	\$1,004,000
FY 2015 Funding for Monitoring	\$168,200
1. USFS Appropriated Funds	\$454,500
2. USFS Permanent & Trust Funds	
3. Partnership Funds	\$114,500
4. Partnership In-Kind Services Value	\$35,000
5. Estimated Forest Product Value	\$36,000
6. Other (specify)	
FY 2015 Total (total of 1-6 above for matching CFLRP request)	\$640,000
FY 2015 CFLRP request (must be equal to or less than above total)	\$532,200
Funding off NFS lands associated with proposal in FY 2015 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2015 Funding Type	Dollars Planned
USDI BLM Funds	
USDI (other) Funds	
Other Public Funding	\$10,000
Private Funding	

<b>2016</b>	
Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2016 to match funding from the Collaborative Forested Landscape Restoration Fund.	
Fiscal Year 2016 Funding Type	Dollars/Value Planned/Needed
FY 2016 Funding for Implementation	\$828,300
FY 2016 Funding for Monitoring	\$178,500
1. USFS Appropriated Funds	\$356,000
2. USFS Permanent & Trust Funds	
3. Partnership Funds	\$104,500
4. Partnership In-Kind Services Value	\$50,000
5. Estimated Forest Product Value	
6. Other (specify)	
FY 2016 Total (total of 1-6 above for matching CFLRP request)	\$510,500
FY 2016 CFLRP request (must be equal to or less than above total)	\$496,300
Funding off NFS lands associated with proposal in FY 2016 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2016 Funding Type	Dollars Planned
USDI BLM Funds	
USDI (other) Funds	
Other Public Funding	
Private Funding	

<b>2017</b>	
Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2017 to match funding from the Collaborative Forested Landscape Restoration Fund.	
Fiscal Year 2017 Funding Type	Dollars/Value Planned/Needed
FY 2017 Funding for Implementation	\$1,056,200
FY 2017 Funding for Monitoring	\$178,500
1. USFS Appropriated Funds	\$488,600
2. USFS Permanent & Trust Funds	
3. Partnership Funds	\$94,500
4. Partnership In-Kind Services Value	\$50,000
5. Estimated Forest Product Value	
6. Other (specify)	
FY 2017 Total (total of 1-6 above for matching CFLRP request)	\$633,100
FY 2017 CFLRP request (must be equal to or less than above total)	\$601,600
Funding off NFS lands associated with proposal in FY 2017 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2017 Funding Type	Dollars Planned
USDI BLM Funds	
USDI (other) Funds	
Other Public Funding	
Private Funding	

<b>2018</b>	
Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2018 to match funding from the Collaborative Forested Landscape Restoration Fund.	
Fiscal Year 2018 Funding Type	Dollars/Value Planned/Needed
FY 2018 Funding for Implementation	\$973,200
FY 2018 Funding for Monitoring	\$187,500
1. USFS Appropriated Funds	\$433,500
2. USFS Permanent & Trust Funds	
3. Partnership Funds	\$114,500
4. Partnership In-Kind Services Value	\$50,000
5. Estimated Forest Product Value	
6. Other (specify)	
FY 2018 Total (total of 1-6 above for matching CFLRP request)	\$598,000
FY 2018 CFLRP request (must be equal to or less than above total)	\$562,700
Funding off NFS lands associated with proposal in FY 2018 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2018 Funding Type	Dollars Planned
USDI BLM Funds	
USDI (other) Funds	
Other Public Funding	
Private Funding	

<b>2019</b>	
Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2019 to match funding from the Collaborative Forested Landscape Restoration Fund.	
Fiscal Year 2019 Funding Type	Dollars/Value Planned/Needed
FY 2019 Funding for Implementation	\$804,200
FY 2019 Funding for Monitoring	\$211,000
1. USFS Appropriated Funds	\$343,500
2. USFS Permanent & Trust Funds	
3. Partnership Funds	\$114,500
4. Partnership In-Kind Services Value	\$50,000
5. Estimated Forest Product Value	
6. Other (specify)	
FY 2019 Total (total of 1-6 above for matching CFLRP request)	\$508,000
FY 2019 CFLRP request (must be equal to or less than above total)	\$507,200
Funding off NFS lands associated with proposal in FY 2019 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2019 Funding Type	Dollars Planned
USDI BLM Funds	
USDI (other) Funds	
Other Public Funding	
Private Funding	

### 10-Year Funding Summary

<b>Fiscal Year Funding Type</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
Fiscal Year Funding for Implementation	\$1,136,000	\$1,728,000	\$824,000	\$974,500
Fiscal Year Funding for Monitoring	\$160,600	\$196,000	\$143,300	\$144,200
1. USFS Appropriated Funds	\$1,089,600	\$945,500	\$335,800	\$457,500
2. USFS Permanent & Trust Funds	\$0	\$200,000	\$50,000	\$0
3. Partnership Funds	\$79,500	\$150,500	\$104,500	\$104,500
4. Partnership In-Kind Services Value	\$35,000	\$35,000	\$35,000	\$35,000
5. Estimated Forest Product Value	\$0	\$122,000	\$0	\$0
6. Other (specify)	\$0	\$0	\$0	\$0
Fiscal Year Total (total of 1-6 above for matching CFLRP request)	\$1,204,100	\$1,453,000	\$525,300	\$597,000
Fiscal Year CFLRP request (must be equal to or less than above total)	\$92,500	\$471,000	\$442,000	\$521,700
Funding off NFS lands associated with proposal by Fiscal Year (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)				
<b>Fiscal Year Funding Type</b>	<b>Dollars Planned</b>	<b>Dollars Planned</b>	<b>Dollars Planned</b>	<b>Dollars Planned</b>
USDI BLM Funds				
USDI (other) Funds				
Other Public Funding	\$17,500	\$25,000	\$5,000	\$55,000
Private Funding				

(Continued on Page 12)

(Continued from Page 11)

<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>Total</b>
\$1,208,500	\$1,004,000	\$828,300	\$1,056,200	\$973,200	\$804,200	\$10,536,900
\$186,200	\$168,200	\$178,500	\$178,500	\$187,500	\$211,000	\$1,754,000
\$480,500	\$454,500	\$356,000	\$488,600	\$433,500	\$343,500	\$5,385,000
\$0	\$0	\$0	\$0	\$0	\$0	\$250,000
\$264,500	\$114,500	\$104,500	\$94,500	\$114,500	\$114,500	\$1,246,000
\$35,000	\$35,000	\$50,000	\$50,000	\$50,000	\$50,000	\$410,000
\$70,000	\$36,000			\$0	\$0	\$228,000
\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$850,000	\$640,000	\$510,500	\$633,100	\$598,000	\$508,000	\$7,519,000
\$544,700	\$532,200	\$496,300	\$601,600	\$562,700	\$507,200	\$4,771,900
<b>Dollars Planned</b>						
\$25,000	\$10,000	\$0	\$0	\$0	\$0	\$137,500

## Funding Plan

The best measure of the Regional Forester's commitment to use regional funding for planning, implementation and monitoring of ecological restoration treatments on NFS lands is found in the Intermountain Region Business Plan. The region has selected water as its legacy priority, making it a long term, multi-generational priority. The legacy goal is: "Restore high priority watersheds, maintain riparian habitat, improve water quality, and reduce the risk of uncharacteristic or unacceptable wildland fire and restore fire-dependent ecosystems . . ." Among the key targets associated with this priority are four areas of effort addressed in the Medicine Tree Landscape Project: "Number of acres treated to reduce the risk of catastrophic wildland fire; Acres of forestland vegetation improved; Acres of water or soil resources protected, maintained or improved to achieve desired watershed conditions; Miles of road decommissioned."

The Region's commitment to allocate funding for ecological restoration projects is further demonstrated by its appropriation of above-base funding and legacy funding for current projects in the Medicine Tree Landscape area. (For further information see the Regional Forester's cover letter.)

The Forest is not asking for additional funding from the Region in order to complete these projects. Each year as budgets are developed for the Region and the Forest, funds appropriated to the programs (BLIs) associated with this project – fuels, wildlife, timber, vegetation and watershed management, fire, recreation, and range – will be allocated to the implementation of the Medicine Tree Landscape Project (see Funding Plan spreadsheet below). If base funding stays the same, or increases, the Forest will be able to meet its commitment without a special appropriation from the Region.

As indicated earlier, vegetation treatments in the Medicine Tree Landscape are underway and ongoing. The Forest has acquired the majority of the funding for FY 2010 and FY 2011 projects. Only \$92,500 in CFLRP funds has been requested in FY2010. In FY 2011, the Forest has several funding agreements in place with the Utah Partners for Conservation and Development (UPCD). CFLRP funding will supplement those grants. Regional Legacy Funds and Above Base Funds have been committed for the Swasey Subdivision Project. CFLRP funds allocated in FY 2010 and FY 2011 will be used for salaries of employees who will be performing the work on projects that are ready to implement in FY 2010 and FY 2011. These projects include Swasey Subdivision, Middle Mountain, Graben, and Miller's Flat Timber and Recreation projects. They will be completed using force account labor. There will be no need to prepare contracts or meet procurement deadlines.

The Forest has been very successful in competing for funds from the UPCD, Utah Division of Parks and Recreation, the National Wild Turkey Federation and the Rocky Mountain Elk Foundation. We are confident that our partners will continue to help fund implementation of ecological restoration projects.

The Forest must also rely on past experience to predict future commitments from partners to engage in multi-party monitoring. Since 1970, the Forest has joined forces with the Utah Division of Wildlife Resources to perform monitoring of wildlife habitat. There is no reason to suspect this partnership will not continue for 15 years into the future. Less certain is the monitoring being performed by non-governmental environmental groups. However, every effort will be made to continue these partnerships because they help meet the goals of all the parties involved.

## **USDI Funding**

Due to the location of the Medicine Tree Landscape Area, land ownership patterns, and projects identified in the Landscape Area proposal, the Forest Service and Bureau of Land Management (BLM) have no opportunity for jointly funded projects at this time.

Refer to the Landscape Strategy section for an overview of a Tamarisk removal project with the Boy Scouts of America, Order of the Arrow 2008 project, which was completed in collaboration with the BLM.

## **Other Funding**

### **Utah Division of Forestry, Fire and State Lands**

The Utah Division of Forestry, Fire and State Lands (UDFFSL) mission statement is to manage, sustain and strengthen Utah's forests, rangelands, sovereign lands and watersheds for its citizens and visitors.

Collaboration with the State of Utah in the Medicine Tree Landscape Restoration project area has been a win-win vegetation management partnership.

### **Past Funding**

In 2005 the UDFFSL, in conjunction the Manti-La Sal National Forest, completed the 25- acre Reeder-subdivision fuels reduction project at a cost of approximately \$75,000. This entailed cutting, piling and burning encroaching pinyon/ juniper along the Reeder Creek corridor in the center of Reeder Subdivision. It was designed to reduce the threat of catastrophic fire and increase the quality of the culinary water supply.

### **Current Funding**

The UDFFSL has implemented or plans to implement three additional fuels reduction projects known as Olsen Property, Swasey and Reeder subdivision projects and Trail Mountain Resort; totaling 180 acres in the Medicine Tree Landscape Restoration project area .

The UDFFSL has acquired \$115,000 to reduce encroaching pinyon/ juniper by mastication, cut, pile and burn on the 28-acre Olsen project (see Map 15, Landscape Strategy). This is planned for 2011 and will enhance adjacent projects in the Reeder subdivision area as well as the Joes Valley Area. The project will coincide with the Graben prescribed burn. Refer to Proposed Treatment and Landscape Strategy sections for addition information.

UDFFSL has acquired \$2,500 for the 5-acre Trail Mountain fuels project that will enhance the work that the Forest Service has implemented in the Middle Mountain area. They plan to treat this area in 2012. Treatment will include mastication, cutting, piling and burning pinyon/ juniper in the Trail Mountain Subdivision (see Map 17, Landscape Strategy).

The UDFFSL has acquired \$2,500 to reduce encroaching pinyon/juniper by mastication on the 130-acre Swasey private property which is adjacent to the Swasey Wildlife Improvement and Fuels Reduction project. This will be done under an agreement allowing the Manti-La Sal National Forest to provide equipment and operators to complete this project (See Map 16, Landscape Strategy).

### **Utah Grazing Improvement Program**

Through a coordinated effort with various partners, the Utah Grazing Improvement Program (GIP) will expand the number of projects it funds to rehabilitate natural resources, increase productivity and protect the landscape for all Utahns. The benefits include increased water quality and quantity, added wildlife and livestock capacity, and better weed control; all of which will strengthen the local rural economy.

**Past Funding**

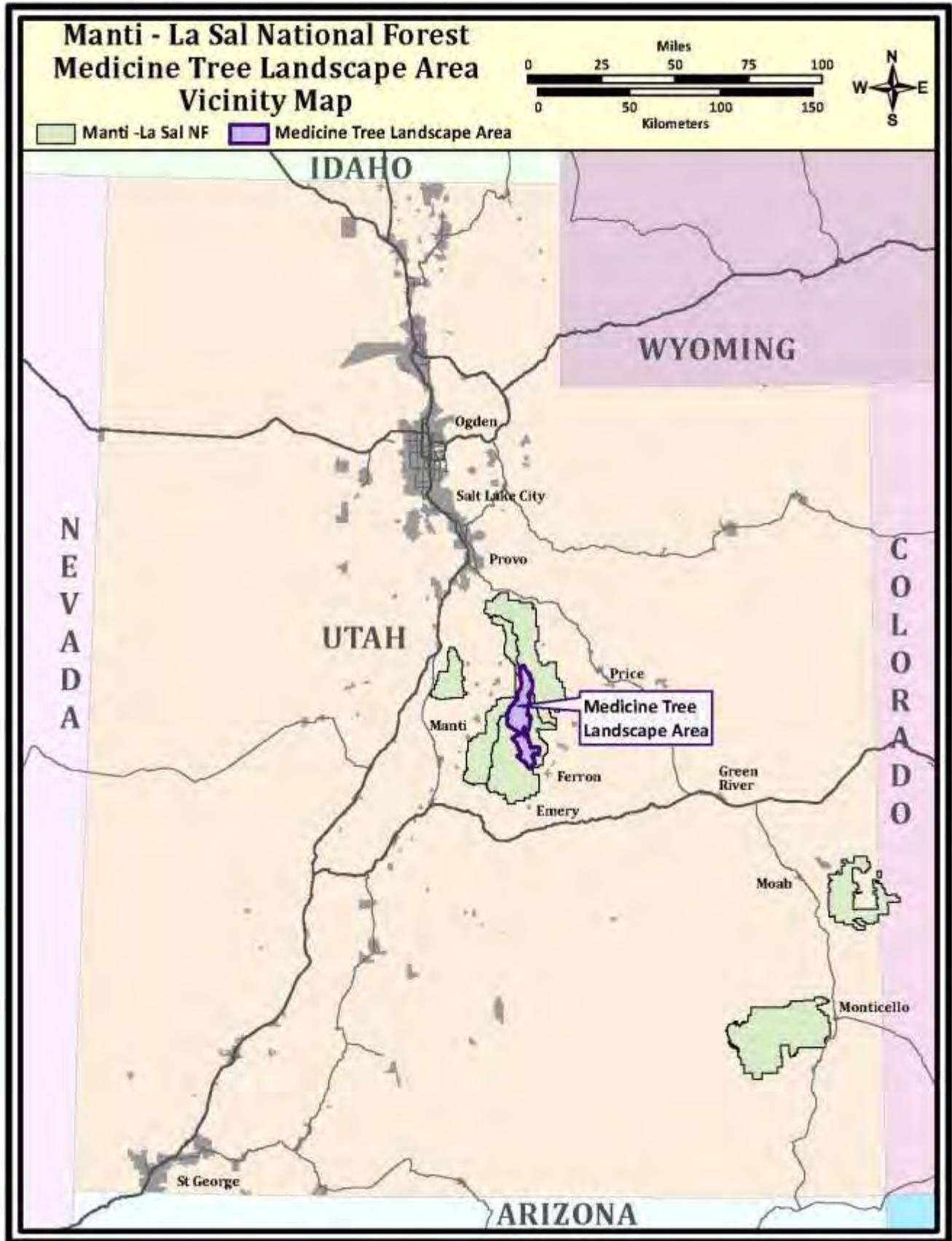
In 2009 GIP, in conjunction with Manti-La Sal National Forest, completed the development and protection of spring sources on South Horn Mountain and Middle Mountain to improve watershed conditions affected by domestic livestock grazing. GIP investment in the Medicine Tree Landscape Area in 2009 was \$98,000.

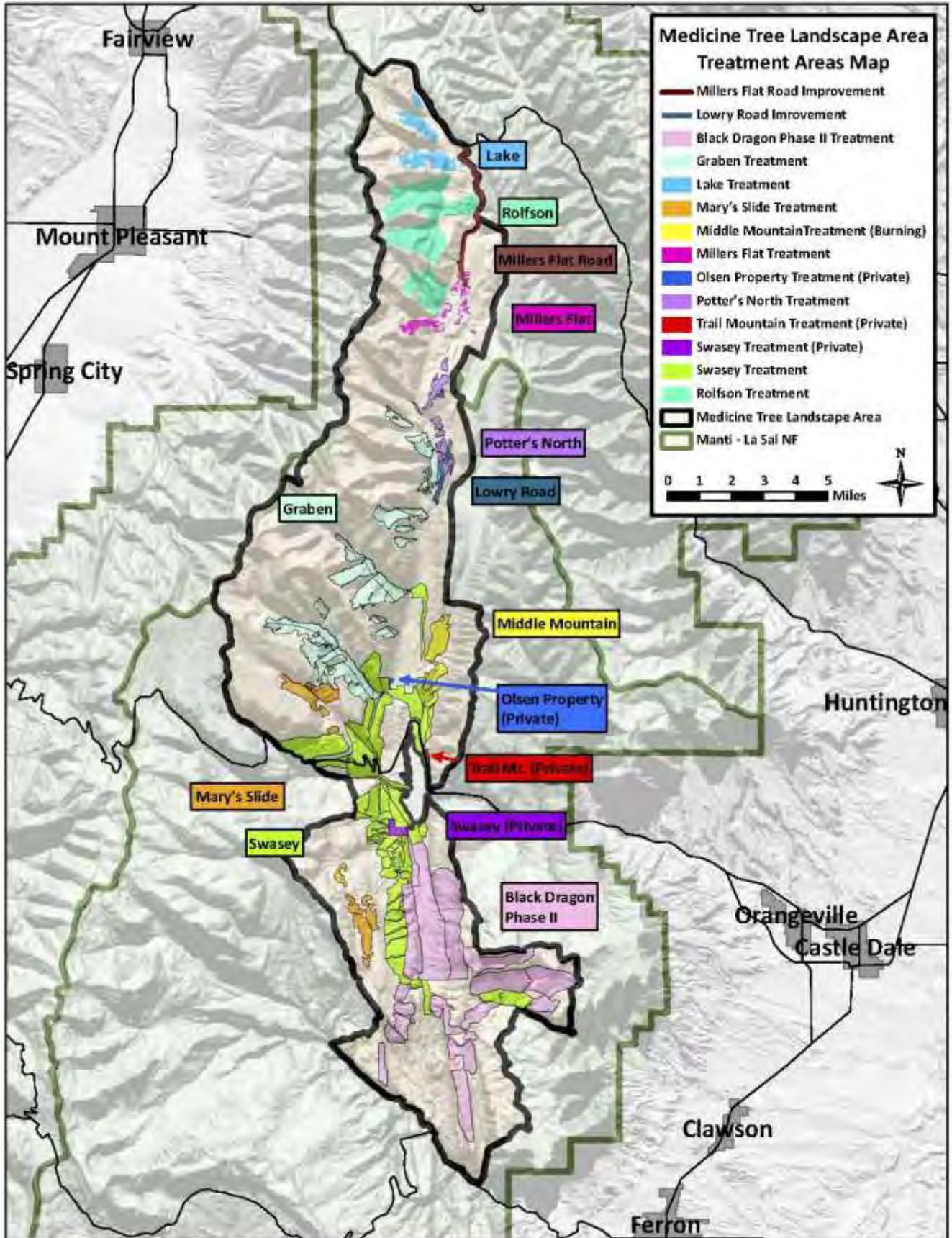
**Current Funding**

GIP is investing in an experimental project to determine if cattle can be conditioned to graze on musk thistle. The project will occur on property adjacent to Scad Valley in the central part of the Medicine Tree Landscape Area and on Horn Mountain in the south part of the Landscape Area. Utah State University Extension Service is also investing in biological control of musk thistle. The two entities are investing \$25,000 in the pilot project, which could vastly improve the ability to control musk thistle on the grazing lands. Collaboration with the UDFFSL and Utah GIP allows the Forest Service to manage a landscape for multiple resources with common goals.

**Table 1 List of planned treatments.**

<b>Treatment Name</b>	<b>Cost</b>	<b>Acres</b>	<b>Treatment Type</b>	<b>Treatment Mechanism</b>	<b>Year Treated</b>
Olsen Property	\$115,000	28	Mastication	Agreement	2012-2015
Swasey Subdivision	\$2,500	130	Mastication	Agreement	2012
Trail Mountain	\$2,500	5	Mastication, Cut, Pile, Burn	Agreement	2012
Johnson Property Biological Control	\$12,500	10	Consumption	Agreement	2012
Horn Mountain Biological Control	\$12,500	10	Consumption	Agreement	2012

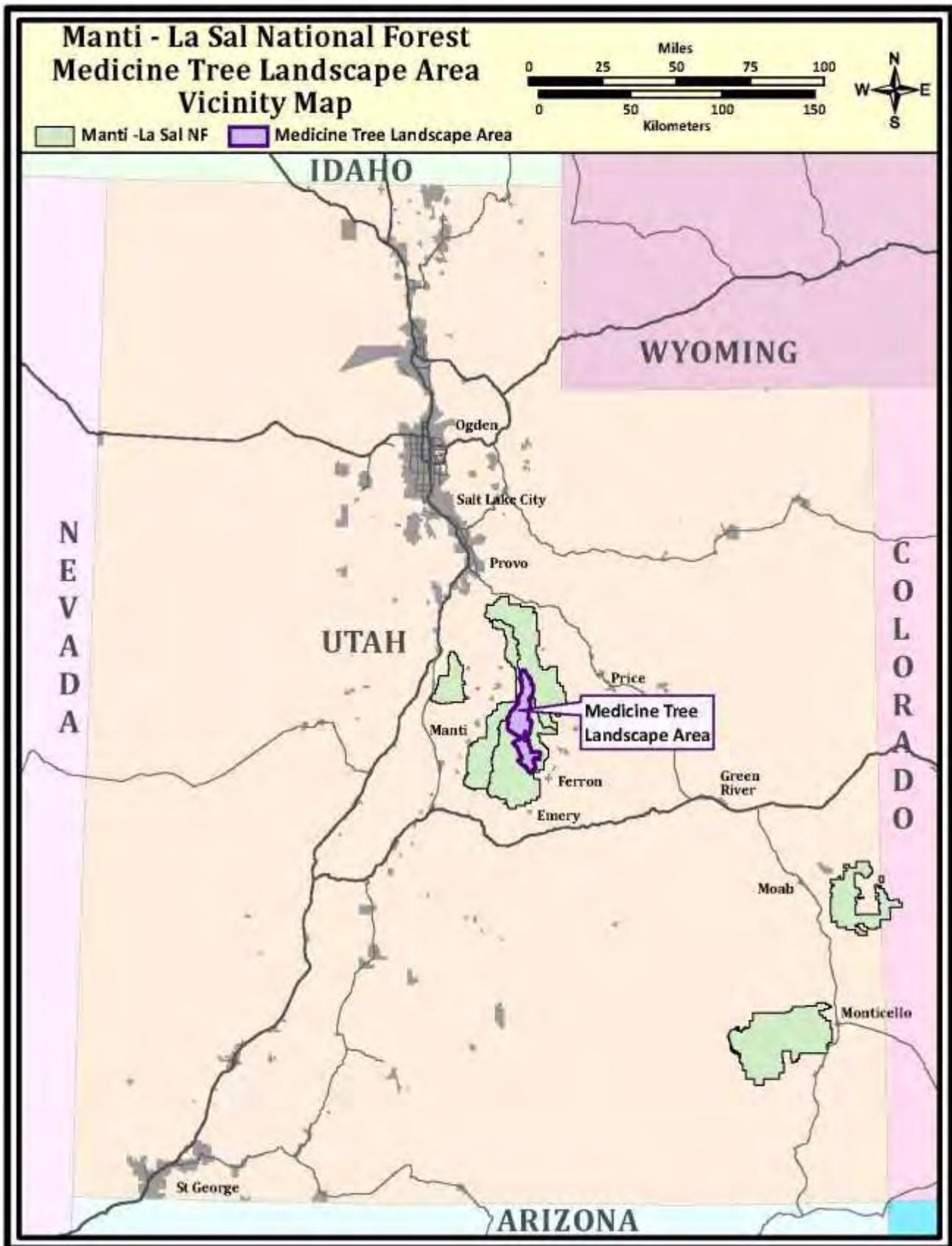




# MEDICINE TREE LANDSCAPE RESTORATION STRATEGY



Map 1. Medicine Tree Landscape Area – Vicinity Map.



## MEDICINE TREE LANDSCAPE RESTORATION AREA

---

The Medicine Tree Landscape Restoration Area consists of the broad valleys of the central and southeastern part of the Wasatch Plateau, including Upper Joes Valley, Miller Flat, the mountain slopes extending westward to Skyline Drive and south to Ferron Mountain (Map 1). This area is characterized by a high concentration of meadows, lakes, and wetlands including peat wetlands; reservoirs; mountain slopes forming long canyons and glacial cirques; and the highest peaks of the Wasatch Plateau.

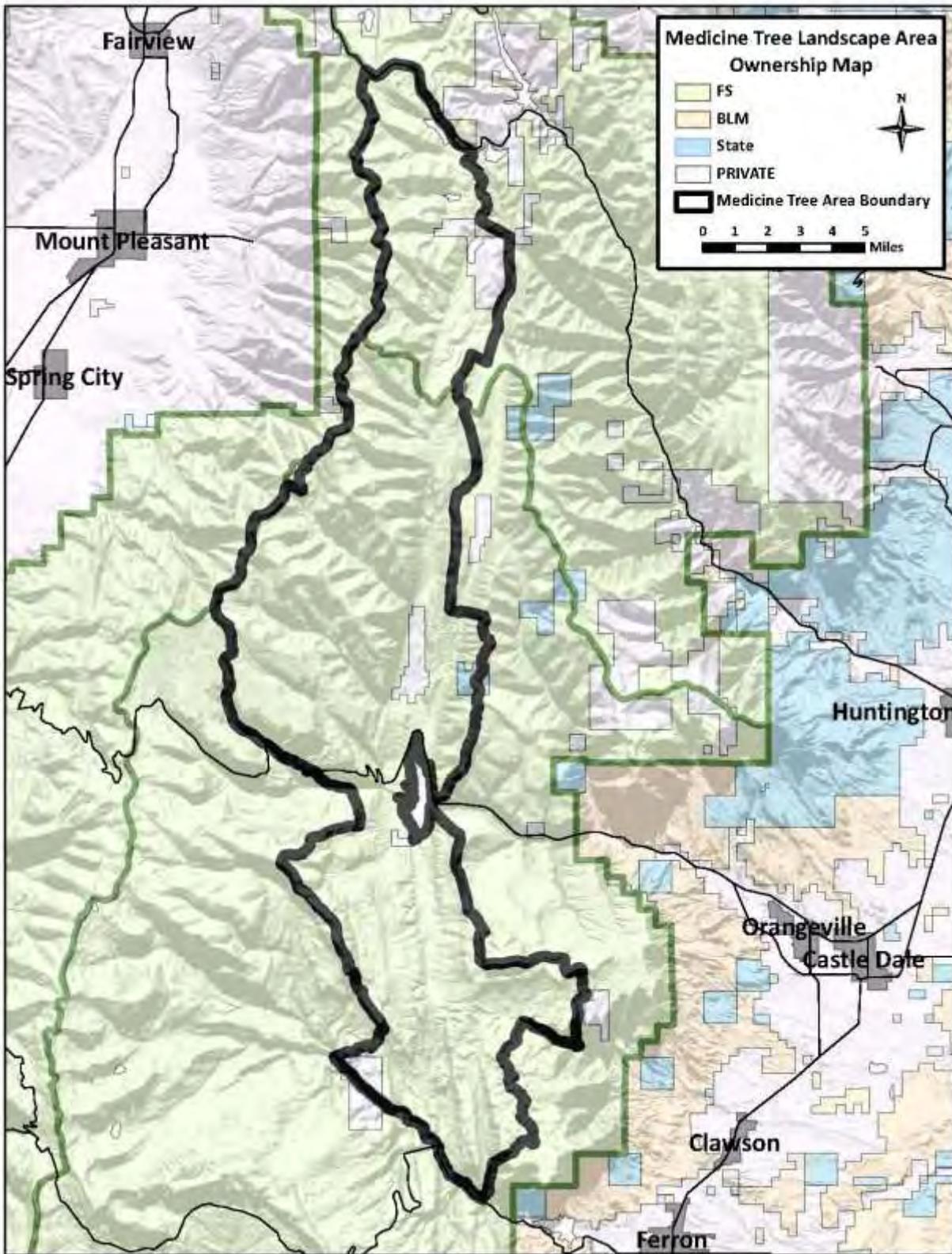
### ATTRIBUTES OF THE LANDSCAPE

- ◆ Ancient and more recent American Indians have used the Medicine Tree Landscape Area since at least 9,500 BC. This landscape area contains some of the most important cultural resource sites on the North Zone of the Manti-La Sal National Forest. The importance of this landscape to ancient people is shown by the high density, uniqueness, and ages of the archaeological sites found here.
- ◆ One of the most important cultural resources within the Medicine Tree Landscape is the large concentrations of medicine trees or “culturally modified trees” (as shown on the cover page of this landscape assessment). Medicine trees are ponderosa pines on which a segment of bark was peeled back to expose the cambium. This was used for food and as medicine, such as for upset stomachs. Among Ute Indians, the cambium was particularly important as an emergency food source. Since ponderosa pines have limited lifespans, most of the medicine trees in the area date to the mid- to late-1800's, a time of tremendous upheaval and stress for Ute Indians. European settlement forced Utes out of both Castle and Sanpete valleys and onto the Uintah Indian Reservation in Northeastern Utah, where hunger and disease were both common. These trees are a rare and very tangible connection back to a pivotal and stressful time in Utah history. As a result, they are of tremendous value to both modern Ute Indians and Forest Service visitors. Archaeological surveys conducted by the Manti-La Sal National Forest suggest that the Joes Valley area has the largest concentration of medicine trees in southeast Utah and quite possibly the highest concentration in all of Utah.
- ◆ Other important cultural resources within the landscape area include:
  - Rock shelters that contain unusually well preserved artifacts from ancient people's lives. One of these, the Joes Valley Alcove, is among the oldest dated archaeological sites in Utah.
  - The Mickelsen Pot is a whole pot found in 2009 in Ferron Canyon. This vessel is a rare Anasazi tradeware pot, brought over 180 miles north to the area from Arizona.
  - The Huntington Mammoth Excavation Site near Huntington Reservoir, where the nearly complete skeleton of a mammoth was discovered and excavated in 1988. It is one of the most complete and well preserved mammoths ever found in North America. It is also one of the youngest, meaning that it was one of the last of its species to survive. The mammoth is one of the centerpiece exhibits at the College of Eastern Utah Museum Prehistoric Museum.
- ◆ Mont E. Lewis Botanical Area in Scad Valley contains over 200 plant species in a relatively small wetland and meadow complex. Three unique plant species found within the botanical area are moss gentian (*Gentiana prostrata*), Arctic meadowrae (*Thalictrum alpinum*), and northern rush (*Juncus alpinus*). Compound kobresia (*Kobresia simpliciuscula*) is a plant species endemic to this site.
- ◆ Six Forest Service designated sensitive plant species are located within this landscape area including Arizona willow (*Salix arizonica*), Creutzfeldt-flower (*Cryptantha creutzfeldtii*), Link Trail columbine, Carrington daisy, Musinea groundsel, and Peterson catchfly.
- ◆ The corn lily (*Veratrum californicum*) is a plant located within this landscape area. This plant contains the substance Cyclopamine. Drug candidates have been derived from Cyclopamine by Infinity Pharmaceuticals, Inc. that demonstrate efficacy in preclinical models of several different cancers. Research has shown that the concentration of Cyclopamine is highest in central northern Utah and parts of southern Idaho. The outlook for Infinity producing a drug that could treat cancer is very positive.

- ◆ Fifty percent of the Forest's wetland acreage is found within this landscape area. These wetlands form interconnected complexes of wetlands and grasslands. The complexes are connected by surface and/or ground water.
- ◆ This landscape area provides habitat for mule deer (*Odocoileus hemionus*) and Rocky Mountain elk (*Cervus canadensis*), which are both Management Indicator Species, and many bird species including Cooper's hawks (*Accipiter cooperii*), sharp-shinned hawks (*Accipiter striatus*), great-horned owls (*Bubo virginianus*), and red-tailed hawks (*Buteo jamaicensis*). Habitat is provided for three raptors on the Forest Service Sensitive Species list including: peregrine falcons (*Falco peregrinus*), northern goshawks (*Accipiter gentilis*) and flammulated owls (*Otus flammeolus*). There are a large number of northern goshawk nest territories located within the Medicine Tree Landscape Area.
- ◆ The wetlands, riparian areas, aspen, aspen/mixed conifer, and spruce-fir provide suitable primary and breeding habitat for the broad-tailed hummingbird (*Selasphorus platycercus*), western tanager (*Piranga ludoviciana*), three-toed woodpecker (*Picooides tridactylus*) – a Forest Service Sensitive Species, northern flicker (*Colaptes auratus*), belted kingfisher (*Megaceryle alcyon*), brown creeper (*Certhia americana*), spotted sandpiper (*Actitis macularia*), and a host of waterfowl species.
- ◆ The ponderosa pine stands provide important habitat for migratory bird species such as flammulated owls, mountain bluebird, and pygmy nuthatches.
- ◆ The sagebrush-steppe, pinyon-juniper, and mountain brush located in the lower elevations of this landscape area provide suitable habitat for the greater sage grouse (*Centrocercus urophasianus*), which is a candidate species for Federal listing and Brewer's sparrow (*Spizella breweri*), sage sparrow (*Amphispiza belli*), and sage thrasher (*Oreoscoptes montanus*), all three of which are bird species of interest.
- ◆ Historical greater sage grouse habitat is found within this landscape area. A portion of the landscape area is approximately 4 miles from an active sage grouse lek and some areas are considered to be sage grouse brood rearing and winter habitat. The quality of the sagebrush habitat has declined over time due to pinyon and juniper encroachment and in some areas with high densities of pinyon and juniper, there is very little to no sage grouse use. Sage grouse have been found in increasing numbers in areas recently treated to restore the sagebrush habitat.
- ◆ The Medicine Tree Landscape Area is one of the most popular areas on the Forest for big game hunting. The sagebrush-steppe, high-mountain brush, aspen, and aspen/mixed conifer vegetation provide Rocky Mountain elk summer range and important mule deer fawning habitat. In addition, this landscape area contains some of the most important Key and General Big Game Winter/Transition Range on the Forest as well as a large percentage of the wintering deer and elk.
- ◆ Scad Valley Creek supports a core population of Colorado River cutthroat trout (*Oncorhynchus clarki pleuriticus*), a Forest Service Sensitive Species. Native Colorado River cutthroat trout are limited in distribution and number in southeastern Utah. Pure Colorado River cutthroat trout are rare throughout their historic range; only a few populations remain.
- ◆ The Energy Loop: Huntington & Eccles Canyon National Scenic Byway (SR-264 and SR-31) crosses through the northern end of the landscape area and is an important route for recreational, commercial, and private traffic. Skyline Drive Scenic Backway provides access along the western edge of the landscape area.
- ◆ This landscape area has a highly developed, regulated water system with numerous diversions and impoundments. The drainages of this landscape area provide water for culinary, agricultural, and industrial uses in Emery County.
- ◆ Numerous lakes and reservoirs occur within this landscape area including: Miller Flat Reservoir, Huntington Reservoir, Rolfson Reservoir and Potters Ponds. The landscape area also surrounds Joes Valley Reservoir.
- ◆ Dispersed camping occurs throughout the area, particularly around lakes and reservoirs and during fall hunts.

- ◆ The Medicine Tree Landscape Area is one of the most popular destinations on the Forest for year-round recreation. Miller's Flat provides a rustic setting for activities including hunting, fishing, camping, picnicking, hiking, horseback riding, sightseeing, limited boating, cross-country skiing, and snowmobiling. The Arapeen Off-Highway Vehicle Trail System features 119 miles of routes within this landscape area. The Lake Canyon Dispersed Recreation Area is a popular recreation destination within this area.
- ◆ The livestock industry in this area is important to Sanpete, Emery, and Carbon counties. This landscape area supports the following sheep grazing allotments: Booths Canyon, Black Canyon, Clay Banks, Crandall Canyon, Fly Boulger, Horse Creek, Olsen Bench, Potters Canyon, Reeder Canyon, South Skyline, and Spring Lake. A total of 10,200 ewe/lamb pairs are permitted on these allotments. This landscape area also supports three cattle grazing allotments: Horn Mountain, Lowery Water, and Trail Mountain, which permit 1800 cow/calf pairs.
- ◆ The coal seams of the Wasatch Plateau Coal Field occur throughout this area; however, only the coal seams east of the Joes Valley Fault are accessible for mining. The coal seams west of the Joes Valley Fault are deeply buried and inaccessible for mining considering current underground mining technology. Currently only the western portion of the permit area for the Crandall Canyon Coal Mine extends into this landscape area. The North Horn Tract, both federal and Utah School and Institutional Trust Lands Administration (SITLA) lands, contains adequate recoverable reserves to support a new mine.
- ◆ A variety of activities are authorized under special use permits within this landscape area including organizations camps, recreation residences, ditches, reservoirs, access roads, and water monitoring and telemetry sites. A 345 KV powerline, the Huntington-Mona Powerline, runs from the Huntington Power Plant to Mount Pleasant. A natural gas pipeline corridor with two major pipelines extends across the north end of the landscape area.
- ◆ The Medicine Tree Landscape Area includes the communities of Reeder Subdivision, Sportsman's Subdivision, Swasey Subdivision, Olsen Ranch and upper Joes Valley. All of these communities are incorporated in the Joes Valley Community Wildfire Protection Plan (CWPP).

Map 2. Medicine Tree Landscape Area – Location of National Forest System and Non-federal Land.



**Table 1. Medicine Tree Landscape Area Statistics.**

<b>MEDICINE TREE LANDSCAPE RESTORATION AREA</b>		
<b>Total Acres</b>	103,390	
<b>Ranger District</b>	Ferron-Price	
<b>Elevation Range (feet)</b>	6,400 - 11,285	
<b>Land Ownership (acres)*</b>	National Forest System	97,283
	Non-Federal	6,107
<b>Forest Roads (miles)</b>	169	
<b>Forest Trails (miles)</b>	Includes motorized and non-motorized	69
<b>Unauthorized Trails (miles)</b>		42
<b>Dominant Vegetation<sup>+</sup></b>	Aspen, Mixed Conifer, Sagebrush, and Mountain Brush	

\*See Map 2 for the location of NFS and non-federal land

<sup>+</sup>See Figure 1 for the percentage of vegetation types across the landscape area

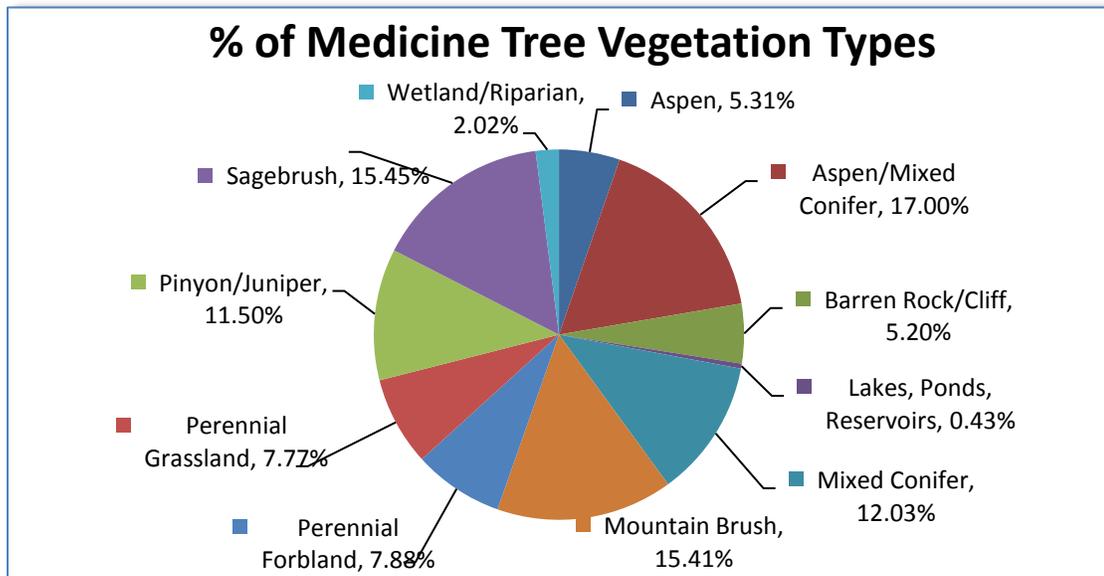
### **Access**

Primary Forest road access into the area from the north is provided by the Miller Flat Road (FR 50014), Spoon Creek Road (FR 50017), Lowery Water Road (FR 50038), Potters Canyon Road (FR 50271), Skyline Drive (FR 50150), and Gooseberry Reservoir Road (FR 50124). The Miller Flat Road (FR 50014), which connects SR-29 at Joes Valley with SR-31 in Huntington Canyon, is one of the most heavily used Forest roads. This aggregate surfaced road provides access to private land and recreational access to hunting, camping, fishing, and trail opportunities. The Lake Canyon recreation area, Miller Flat Reservoir, Indian Creek Campground, and Potters Pond are visitor destinations accessed by the Miller Flat Road. Access is provided to the southern portion of this landscape area from the Ferron Canyon Road (Forest Route-50022), which proceeds from Ferron west past Millsite Reservoir.

## **EXISTING RESOURCE CONDITIONS ON THE MEDICINE TREE LANDSCAPE AREA FOR VEGETATION AND FIRE/FUELS**

### **Vegetation Resources**

Vegetation types within this landscape area ranges from climax pinyon-juniper, sage/grass, mountain mahogany, and desert shrub at lower elevations to aspen-meadow, white fir, subalpine fir, and spruce on north-facing slopes and canyon bottoms. Mountain sagebrush is found on south-facing slopes. Scattered aspen and grass/forb communities are found throughout the area, mixed within higher elevation spruce-fir communities as well as valley bottom communities. Figure 1 illustrates the composition of the major cover types in the landscape area.

**Figure 1. Major Vegetation Types Found in the Medicine Tree Landscape Area.**

## **Forest Vegetation**

### **Engelmann Spruce/Sub-alpine Fir Vegetation Type**

The spruce beetle (*Dendroctonus rufipennis*, Kirby Engelmann Coleoptera: Scolytidae) is the most important biotic disturbance agent affecting spruce-fir forests in the Intermountain region (Baker and Veblen, 1990, Veblen et al. 1994, Jenkins et al. 1998). Engelmann spruce (*Picea engelmannii* Parry ex. Engelmann) serves as the principle host for the spruce beetle.

The spruce beetle has changed the stand structure of the spruce fir types within the Medicine Tree Landscape and across the entire Wasatch Plateau. During the early 1980's a small outbreak of spruce beetle was observed in the spruce-fir stands on the southern portion of the Sanpete Ranger District, approximately 50 miles to the south of the project area. A sanitation/thinning project was proposed and analyzed. Just prior to implementation an approximately 1000-acre landslide occurred within 2 to 3 miles of the spruce beetle infested stands. This slide caused extensive damage to the Engelmann spruce in the affected area and eliminated the main road access to the proposed treatment area. During the time it took to relocate the access road the spruce beetle population infested the damaged and down trees in the slide area. The population grew and expanded to the surrounding spruce stands and has achieved epidemic status.

The recent spruce beetle outbreak has affected approximately 100,000 acres of Engelmann spruce on the northern portion of the Manti-La Sal. Approximately 90 percent of the Engelmann spruce over 16 inches in diameter are dead, there is very limited mature structure left in the affected stands. Spruce-fir has also encroached into historic aspen communities, a process of natural succession assisted by successful fire suppression. Much of the aspen is at risk from this conifer encroachment. The spruce mortality has not resulted in any significant aspen regeneration response.

Untreated stands of dead Engelmann spruce are considered to be a Fire Regime III, with a Condition Class of 2 or moderate. This vegetation type can be the most problematic for fire managers. Flame lengths can exceed 100 feet, rates of spread and active crowning potential can be high, which are consistent with on-the-ground observations as well as the attached FSPRO pre and post-treatment flame length and crown potential models (See Fire Effects Section Post-treatment). Many of these stands have a sub-alpine fir component. Sub-alpine fir is notorious for long-range spotting. BEHAVE, the fire behavior modeling program, suggests that spotting can be up to 0.9 miles, which is also consistent with what has been observed on the Manti-La Sal National Forest.

Engelmann spruce/sub-alpine fir stands provide habitat for the northern goshawk, a Forest Service Sensitive species. The spruce beetle outbreak has dramatically decreased habitat quality for this species.

## Photos of Englemann Spruce



### Aspen Vegetation Type

Quaking aspen (*Populus tremuloides* Michx.) is widely distributed throughout the Manti-La Sal National Forest. Root suckering is the predominant mechanism by which aspen regenerates in the central Rocky Mountains of the western United States (Sheppard and Smith 1993). This form of vegetative propagation gives rise to a stand of genetically identical trees, referred to as a “clone”. Disturbances have different effects and responses from clone to clone because of inherent genetic differences (Williams 2008).

Aspen is adapted to a much broader range of environments than most associated species. Aspen is considered an early seral species on most sites but may become climax on others. Fire has been the most important disturbance factor influencing changes in structural stages, stand composition and minimizing dominance by conifer species. The fire return interval is less frequent today compared to historical averages. Aspen is considered a fire-resistant vegetation type that seldom burns during most fire seasons. Evidence of spring and fall fire scars in historical studies suggests that native burning was likely a key ignition source of many historical fires. In the absence of historical disturbance, much of this type is at risk and is being displaced by other vegetation types (Williams 2008). Southern Utah contains some of the most productive and extensive aspen forests in the western United States. Generally, aspen tree ages vary from 60 to 150 years.

Historically, it is estimated that 160,400 acres of seral (temporary or intermediate stage in forest succession) aspen existed on the Manti-LaSal National Forest (USDA Forest Service 1998). There is now estimated to be only 104,200 acres of seral aspen on the Forest. The lost acres have converted to ponderosa pine, Engelmann spruce-sub-alpine fir, Douglas-fir, or white fir forest types.

Aspen forest communities across the forest have declined 34 percent between the timber inventories completed in 1915 and 1965 (USDA Forest Service 1986). A comparison of the acres typed as aspen in the 1993 timber inventory indicates that aspen has declined an additional 15 percent since the 1965 inventory.

There is a high risk that aspen in the aspen-mixed conifer types will continue to be lost from lack of disturbance. Without disturbance to remove the conifers and stimulate the aspen suckering response in these stands, conifers will gain dominance over the aspen. A decline in herbaceous cover and species diversity are a direct result of conifer encroachment. A decline in available forage as a result of conifer encroachment is also a major management implication.

Aspen stands with a 30 percent conifer component or more (and may also contain a component of dead spruce) are considered to be a Fire Regime III, Condition Class 2 or moderate. If these stands contain more than 50 percent

Engelmann spruce and sub-alpine firs, which many of them do, fire behavior and subsequent fire management challenges are the same as in the previously mentioned Engelmann spruce/sub-alpine fir vegetation type. Many of the seral aspen stands contain too many conifers, which could create heat severe enough to kill root systems, and thereby literally killing the aspen clone. In some cases, it will be necessary to physically and mechanically remove conifer trees from within the clone to prevent too much heat from being generated by either prescribed or wildland fire. Fire behavior in pure aspen stands is virtually non-existent. Fire spread is limited to large down woody debris for most of the year with flame lengths and rates of spread being very low. In the fall of the year, after leaf fall, this vegetation type is conducive to burning with moderate to low fire behavior characteristics.

Aspen stands provide habitat for an array of wildlife species including the northern goshawk, a Forest Service Sensitive species, and mule deer and Rocky Mountain elk, both Management Indicator Species.

### Photos of Aspen and Aspen/Mixed Conifer



Aspen with conifer encroachment



Aspen prior to leaf-out and conifer encroachment



Aspen regeneration following a prescribed burn

## **Ponderosa Pine Vegetation Type**

The absence of fire or any other disturbance factor has resulted in an increase in stand density due to the in-growth of pinyon-juniper. The ponderosa pine has not self-pruned, pinyon and juniper has grown up into the crowns of the ponderosa pine resulting in a ladder effect should a fire occur.

Fire has historically played an important role in Utah's ponderosa pine forests; fire exposes mineral soil, reduces seedling-damaging cutworm populations, reduces competing vegetation and increases nutrient availability. Periodic fires can create uneven-aged stands comprised of various even-aged groups. A severe fire would result in a predominantly even-aged stand (Bradley et al. 1992).

Interior ponderosa pine is rated "very resistant" to fire. No other conifer within its range is better adapted to survive surface fires, which often char but usually do not kill mature trees. Adaptations to survive surface fires include open crowns; self-pruning branches; thick, insulative, relatively inflammable bark; thick bud scales; tight needle bunches that enclose and protect meristems, then open into a loose arrangement that does not favor combustion or propagation of flames; high foliar moisture; and a deep rooting habit. Trees in widely spaced stands are typically better equipped to survive surface fire than trees in denser stands because they develop thicker bark. Ponderosa pine cannot survive crown fire, but mature trees can survive a considerable amount of scorching.

Surface fire often kills interior ponderosa pine seedlings and saplings; however, the effect is dependent upon fire severity and stand structure. Young trees in open canopies acquire fire-resistant traits rapidly, and 6-year-old saplings often survive low-severity surface fire. Fire is especially damaging in overcrowded young stands: the relatively denser foliage and thinner bark of trees in thick stands reduce resistance to surface fire. Such stands are also prone to crown fire.

Fire prepares a favorable seedbed for interior ponderosa pine regeneration. Periodic surface fire removes the heavy litter and duff that accumulate in ponderosa pine forests. Wind-borne seeds falling from the crowns of surviving or fire-killed trees land on a nutrient-enriched mineral seedbed under an open canopy that favors germination and seedling establishment. Seedling-water relations may be enhanced when fire removes competing vegetation (Howard 2003).

Ponderosa pine resides in scatter stands in the southern portion of the Medicine Tree landscape. The amount of ponderosa pine has decreased as a result of harvest during European settlement. The absence of fire or any other disturbance factor has resulted in an increase in stand density due to the in growth of pinyon/juniper. Understory species diversity of the ingrown stands has decreased due to the increasing canopy closure. Pinyon/juniper encroached stands of ponderosa pine are considered to be a Fire Regime I Condition Class 3 or high. Open, park-like ponderosa pine stands provide habitat for the flammulated owl, a Forest Service Sensitive species.

Within the Medicine Tree Landscape Area several locations have been treated in the last 7 years to enhance ponderosa pine stands. Some of the project areas are called Joes Valley, Middle Mountain, and Swasey (Refer to the Management History section for additional information about these projects).

Photos of Ponderosa Pine - See the photos for the Joes Valley Retreatment and Orange Olsen projects for photos of ponderosa pine following treatment.

## **Pinyon-Juniper Vegetation Type**

Rocky Mountain juniper communities in the northern Great Plains are often restricted to steep, north-facing slopes. Individuals may be scattered across other areas in mountains and canyons throughout the Rocky Mountain region, such as rocky outcrops, butte tops, draws, and floodplains. Rocky Mountain juniper forms open woodland with sagebrush and grasses, and it is often found mixed with Douglas-fir (*Pseudotsuga menziesii*), Gambel oak (*Quercus gambelii*), or ponderosa pine (*Pinus ponderosa*). It is also found along waterways in pure stands or as understory in the cottonwood (*Populus* spp.)-willow (*Salix* spp.) habitat type. It forms pure stands at middle and low elevations in the northern part of its range. Pinyon-juniper has increased in density due to the lack of disturbance, primarily fire, and this has resulted in a decrease in diversity of vegetation species.

Fire is a major factor controlling the distribution of Rocky Mountain juniper. Reduced fire frequency, along with climate change and introduction of grazing, accounts for the expansion of juniper woodlands into meadows, grasslands, sagebrush communities, and aspen groves that began in the late 1800s. Prior to this time, more frequent fires probably maintained low density in woodlands and often restricted junipers to rocky sites. In general, the species grows in areas that do not burn frequently or intensely (Scher 2002).

Across the West, junipers have expanded their historical range during the years since European settlement, especially into sagebrush-grass communities below areas of traditional pinyon-juniper. Overgrazing, fire suppression, and climatic change have been identified as potential causes of juniper invasion. In the absence of fire or other disturbances, trees eventually dominate the site and crowd out herbaceous and shrub species. Juniper litter has an allelopathic effect on some understory species, especially Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass, and blue grama. This effect is particularly evident on heavy, poorly drained clay soils. Cheatgrass does not appear to suffer from allelopathic effects, and fourwing saltbush (*Atriplex canescens*) growth increases under juniper canopies. As pinyon-juniper has increased the amount of ground cover has decreased resulting in more exposed mineral and increasing the potential for soil erosion (Zlatnik 1999).

Encroaching pinyon/juniper is reducing the quality and quantity of greater sage grouse nesting, brood-rearing and foraging habitat. The greater sage grouse is a Candidate species for Federal Listing under the Endangered Species Act. As pinyon/juniper encroaches in sagebrush, it limits the density and diversity of forbs within the stand that are used by sage grouse and also reduces regeneration of sagebrush.

Pinyon/juniper has also encroached into the mountain brush vegetation type as well. The mountain brush habitat type has also become decadent and many of the shrubs are too overgrown to be utilized by mule deer and Rocky Mountain elk. The limited browse that is available for big game use is often overbrowsed. The landscape area contains important big game winter and transitional habitat. In the 1960's many of the pinyon/juniper-encroached areas were chained to improve wildlife habitat and domestic grazing. Pinyon and juniper have again re-grown in these areas.

The changes to these vegetation types from pinyon/juniper encroachment have increased the severity of the wildfires that could occur in these stands. This has increased the risk to people and to the structures that have been built in the area. Flame lengths and rates of spread have been modeled and observed to be in the high category (See flame length/crowning potential models in the Fire Effects section). Untreated pinyon/juniper stands have been classified as Fire Regime I Condition Class 2 or moderate.

Within the Medicine Tree Landscape Area several locations have been treated in the last six years to remove pinyon/juniper encroachment and restore sagebrush-steppe, mountain brush and ponderosa stands. Some of the project areas are called Black Dragon, Joes Valley, Middle Mountain, and Swasey (Refer to the Management History section for additional information on these projects).

Photos of Pinyon/Juniper Encroachment

Refer to the Management History section for photos of pinyon/juniper encroachment pre- and post-treatment.

### Medicine Tree Landscape Area



Joes Valley Area Prior To Treatment February 1963



Joes Valley Area Post Treatment 1965

Pinyon/juniper treatment – Focus on the pinyon/juniper on the hillside in the distance. In 1967 the hillside was untreated, notice how the density is reduced post-treatment in the 1976 photo. Twenty-seven years later in the 2003 photo the stand of pinyon/juniper is nearly the same density as in the 1967 photo.



1967 – North Dragon (Medicine Tree Landscape)

1976



2003

### **Non-Forest Vegetation**

Contour furrows and trenches implemented from 1960 through 1970 for watershed and range improvement are still visible. They have had a crucial role in stabilizing slopes that were heavily damaged by the turn of the century livestock grazing. The function of the furrows has been compromised by minimal maintenance. Most of the furrows have slumped and rounded out over the years; maintenance continues. Many of these areas were sown with crested wheat and smooth broom. These introduced species still persist within the ripped contours; however they have not spread beyond seeded areas. Native species (e.g., needle and thread grass, slender wheat, June grass, Salina wild rye) are recolonizing these areas. Pinyon-juniper control activities (chaining) of the same era are being revisited to reduce tree density, increase ground cover, improve browse for wildlife, retard conifer encroachment, reduce fuel loads, and encourage diversity in the plant communities.

Understory tall forb communities in aspen appear to be increasing. Pure tall forb communities are present but limited. Tarweed is present on open dry south slopes; however, native grasses are persistent. Mountain brush communities are stable. Overall range condition is stable to increasing.

### **Noxious Weeds and Invasive Species**

Noxious weed species found in this area include Canada thistle, musk thistle, and Scotch thistle. Canada thistle, spreading through riparian areas, is very difficult to control due to its location. Musk thistle has spread along Middle Mountain and Bald Ridge. Scotch thistle has been eliminated but requires close monitoring. Cheatgrass is found along roads entering the Forest. Tamarisk is also being found along stream channels at lower elevations. Within the Medicine Tree Landscape Area a project was completed in 2008 with the Boys Scouts to remove tamarisk from the area around Joes Valley Reservoir (Refer to the Management History section for additional information about this project).

### **Fire/Fuels**

The entire Landscape area is covered by either a Regional Wildfire Protection Plan (RWPP) or a Community Wildfire Protection Plan (CWPP). There is an RWPP for Sanpete and Emery counties, and a CWPP in place called the Joes Valley CWPP. This plan includes the Swasey, Reeder and Trail Mountain subdivisions. It addresses the need for defensible space within the communities and fuel treatments around the communities. Private landowners within these communities have been actively involved with the Utah Division of Forestry, Fire and State Lands and the Forest Service in reducing fuels in and around their property (Refer to the Management History and Proposed Treatments sections of this document for additional information about these projects).

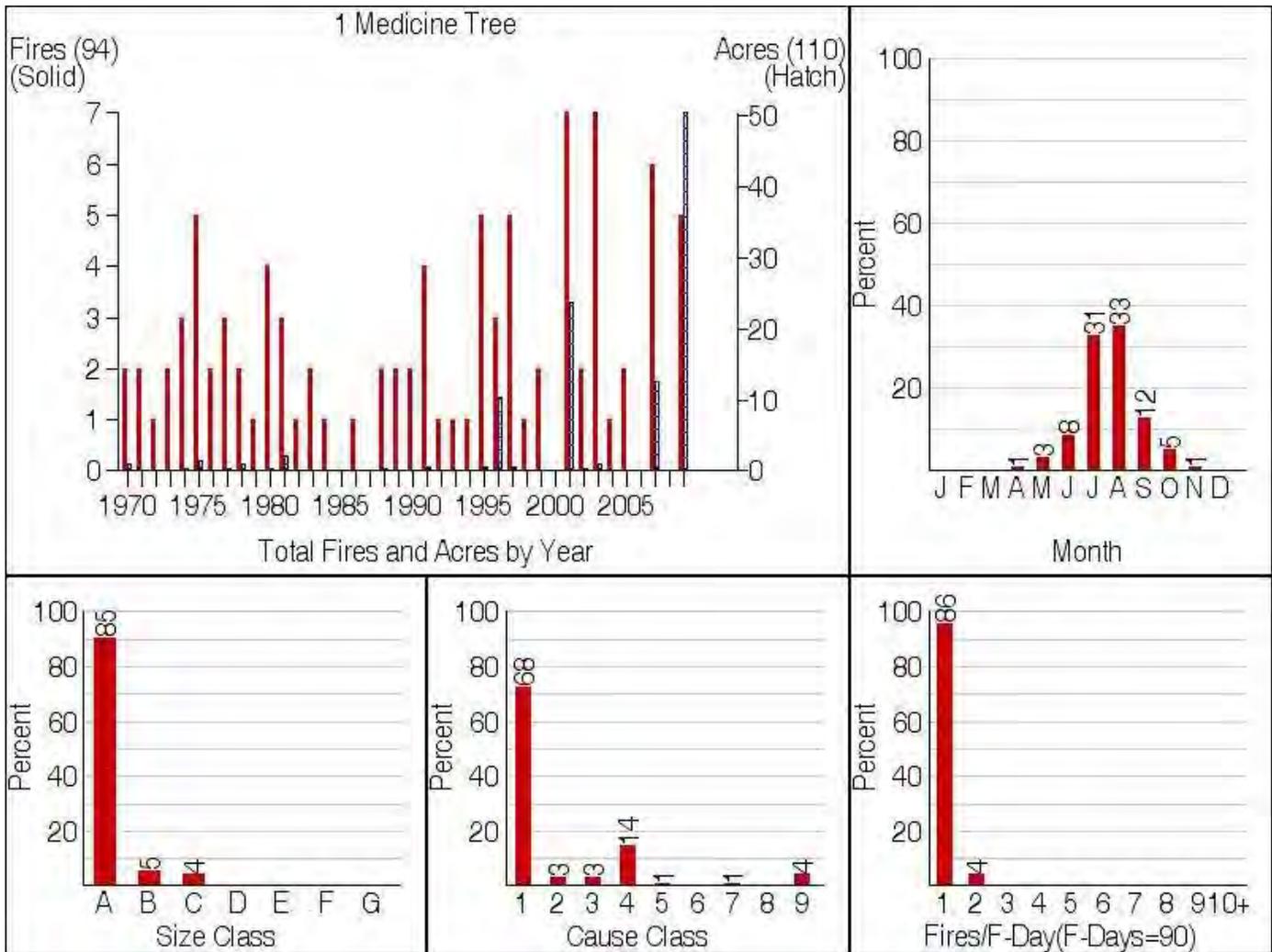
The Forest has a current and comprehensive Fire Management Plan in place, which was completed in conjunction with the State of Utah ([http://fsweb.manti-lasal.r4.fs.fed.us/fire/mlf\\_fmp.shtml](http://fsweb.manti-lasal.r4.fs.fed.us/fire/mlf_fmp.shtml)). The majority of the Medicine Tree Landscape Area falls within the East Manti Fire Management Unit (FMU). The Coarse Scale Fire Assessment for the East Manti FMU includes fire regime categories III through V with fire frequency ranging from 35 years in the brush component to 200+ years in the spruce-fir vegetation types. Most of the Landscape Area would fall into condition class II where there has been a moderate departure from historic fire regimes.

**Table 2. Fire Regime and Condition Class Information by Vegetation Type for the East Manti FMU**

<b>Vegetation Type</b>	<b>Percentage Of Area in FMU</b>	<b>Fire Regime</b>	<b>Current Condition Class</b>	<b>Desired Condition Class</b>
Ponderosa Pine	0.21%	I	1, 2 and 3	1
Sagebrush/Grassland	32.62%	II	1 and 2	1
Pinyon/Juniper	9.56%	III	1 and 2	1
Mixed Conifer	16.21%	III	1, 2 and 3	2
Aspen	14.00%	IV	1, 2 and 3	1
Spruce / Fir	23.22%	IV	1, 2 and 3	2

The Manti-La Sal National Forest has compiled historical fire data back to the early 1900's. The data show that fires from 1970 to the present have been getting larger and more frequent, especially from 1995 to the present.

**Figure 2. Historical Fire Occurrence 1970-2008.**



Trend data suggests that in the past decade the Forest along with most of the West has experienced uncharacteristic wildfire, which is any fire that may burn at greater intensity or grow larger than would be expected due to heavy and continuous fuel loading. Currently thirty-one percent of the Landscape Area is anticipated to experience flame lengths in excess of nine feet. Reducing this percentage will allow initial attack resources to successfully manage wildfires and reduce the risk of uncharacteristic wildfire. Treatments to reduce uncharacteristic wildfire in the Landscape Area can include prescribed burning, mechanical treatments, and harvest.

Once the fuels in the Landscape Area are successfully treated and the Condition Class is reduced, the natural vegetation will be allowed to regenerate. This will allow the fire return interval to reset to a more historic interval. Prescribed fire and unplanned ignitions will be used to reestablish and promote the natural fire regime across the landscape.

## MANAGEMENT CHALLENGES

This landscape restoration area is almost wholly within two priority areas selected as a result of a Forest Rapid Assessment (USDA Forest Service 2005a). Conditions of a number of resource areas were judged to be in need of immediate restoration treatments and further assessment. In particular the resources that had existing challenges in this landscape area include: Fire/Fuels, Wildlife, Vegetation, and Soils Resources; in some sub-watersheds Recreation, Water and Range Resources also had important issues (Refer to Appendix B for a discussion on the Rapid Assessment Process on the Manti-La Sal National Forest).

The fire regime and condition class were analyzed at the 6th Hydrologic Unit Code (HUC) Level in 2005 across the Manti-La Sal National Forest, prior to any treatment in the Landscape Area (USDA Forest Service 2005b). This analysis indicated that within the Landscape Area most of the fuels were at the Condition Class 2 and 3 levels. In addition, based on information extracted from Fire Family Plus, fires on the Manti-La Sal National Forest from 1970 to the present have been getting larger and more frequent, especially from 1995 to the present (Refer to Appendix C for a discussion on the Fire Regime Condition Class Assessment on the Manti-La Sal National Forest).

Much of the aspen in the area is at risk due to conifer encroachment. The large-scale conversion of aspen to conifer that has occurred and is continuing to occur reduces habitat suitability for many wildlife species. Aspen stands have numerous important ecological attributes including providing habitat for a large array of wildlife species and diversifying vegetation across the landscape. Land managers have challenges associated with vegetation treatments within aspen stands. Burns can be difficult to implement due to burn windows and control issues. Burns need to be of an intensity to regenerate sufficient aspen seedlings, but not so severe that they result in soil damage. Burns also need to be of sufficient size to disperse ungulate browsing (livestock and big game), to ensure sufficient regeneration remains within the stands. Following prescribed burning noxious weeds and invasive plants might grow in the stands, which requires monitoring and treatment over time to alleviate this problem.

Pinyon-juniper has increased in density within the landscape area due to the lack of disturbance, primarily fire, and this has resulted in a decrease in diversity of vegetation species, since pinyon and juniper dominate the site and crowd out herbaceous and shrub species. In addition as pinyon-juniper has increased, the amount of ground cover has also decreased, resulting in more exposed mineral soils and increasing the potential for soil erosion. Pinyon-juniper encroachment has also increased the severity of the wildfires that could occur in these stands. This has increased the risk to people, infrastructure, and structures. Pinyon-juniper will continue to encroach within these landscapes without additional treatments at 12-20 year intervals.

The recent spruce beetle outbreak has killed over 100,000 acres of Engelmann spruce. The stage has been set for a large build-up of surface fuels and potentially, uncharacteristic wildfire. The spruce beetle has killed an average of 90 percent of the Engelmann spruce from the original infestation to the northern extent of the spruce fir type on the Wasatch Plateau. Following salvage harvesting of the dead Engelmann spruce, land managers generally plant tree seedlings to reestablish Engelmann spruce more rapidly than if natural regeneration were allowed to occur. There is an added expense associated with tree planting.

Fire has historically played an important role in Utah's ponderosa pine forests; however, fire has been excluded from many of the ponderosa pine stands within this landscape area for many decades. The absence of fire or any other disturbance has resulted in an increase in stand density due to the in-growth of pinyon-juniper. The ponderosa pine has not self-pruned, and pinyon and juniper have grown up into the crowns of the ponderosa pine resulting in a ladder effect should a fire occur. In addition, needle cast has built up over time due to fire exclusion. When conducting prescribed burns, fire managers need to plan burns accordingly, so burns are not so severe in these areas that tree roots are killed.

Medicine Trees are located in ponderosa pine stands within the landscape area. These trees are so rare in Utah and of great value to modern Indian people. These trees are at risk of being lost to catastrophic wildfire due to the exclusion of fire and encroachment of other conifers. Vegetation treatments are needed within the project area to protect many of these sites from catastrophic wildfire. This is an important component of the long-term management of the Medicine Tree Landscape Area.

Encroaching pinyon-juniper is reducing the quality and quantity of greater sage grouse nesting, brood-rearing and foraging habitat as well as habitat for other sage-steppe associated species, such as the sage thrasher and sage sparrow.

Pinyon/juniper has also encroached into the mountain brush vegetation type as well. The mountain brush habitat type has become decadent over time and many of the shrubs are too overgrown to be utilized by mule deer and Rocky Mountain elk. The limited browse that is available for big game use is often overbrowsed. The landscape area contains some of the most important Key and General Big Game Winter/Transition Range on the Forest.

Riparian areas have been affected by the absence of fire in the landscape. Pinyon, juniper and other conifers have encroached in these zones reducing the abundance and vigor of cottonwood and willow. The shade from the encroaching species has reduced understory ground cover and species diversity. Wetlands in the Medicine Tree Landscape have been heavily affected by dispersed recreation and user-created routes; water quality is at risk from this unmanaged activity.

There are noxious weeds and invasive species located within the landscape area including species such as: Canada thistle, musk thistle, Scotch thistle and hoary crest. Canada thistle is spreading through riparian areas and is very difficult to control due to its location. Cheatgrass is found along roads entering the Forest. Tamarisk has also been found along stream channels at lower elevations and around Joes Valley Reservoir.

Scad Valley Creek is infected with whirling disease, an aquatic invasive species. Most salmonids, including trout, are susceptible to whirling disease infection, which can cause high mortality rates, particularly in young fish. Recreational activities such as boating and fishing contribute to the spread of these aquatic invasive species.

Growing numbers of Forest users view wildlife and collect antlers (cast off during the early spring period) within this area even though road closures are in place. Using motorized vehicles behind the closed gates to collect antlers is an illegal activity causing watershed and road damage and wildlife disturbance.

Fifty percent of the Forest's wetland acreage is found within this landscape area. The popularity of motorized recreation and the proliferation of unauthorized off-highway vehicle (OHV) trails put these wetlands at risk.

Increased dispersed recreation is reducing available rangelands. Unauthorized off-highway vehicle trails disturb livestock and make herding more difficult.

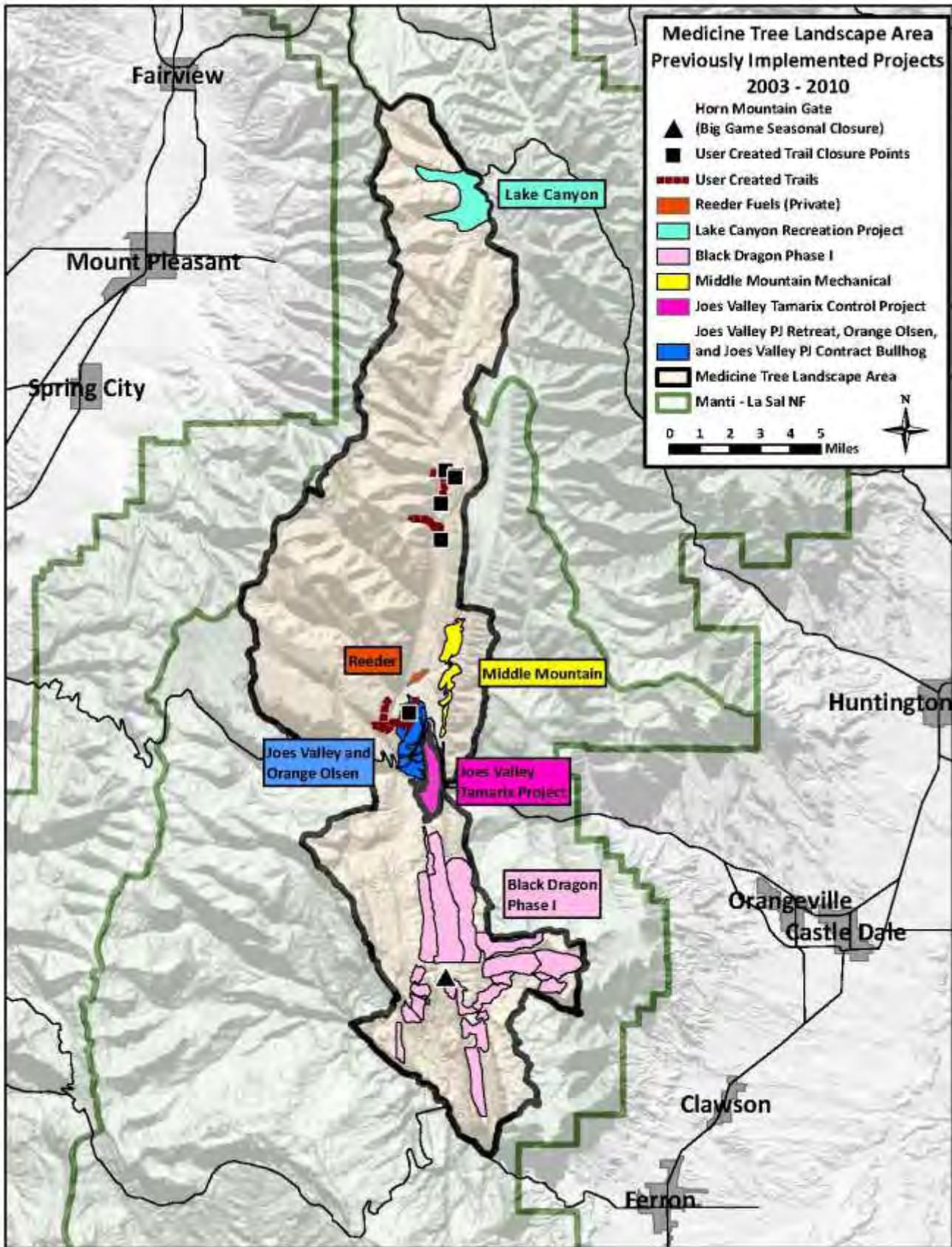
### Management History - Fuels Reduction and Wildlife Habitat Improvement Treatments

In response to several of the management challenges listed in the previous section, the Manti-La Sal National Forest has been actively implementing projects in the Medicine Tree Landscape Area. The table below highlights some of the management activities that have occurred since 2004.

**Table 3. List of Projects Implemented in the Landscape Area from 2004-2010.**

Treatment Name	Treatment Type	Accomplishments	Treatment Mechanism	Year(s) Treated
<b>Forest Service</b>				
User-Created Trail Closures	Close and/or Obliterate user-created OHV trails	In 2009 11.8 miles of user-created trail were closed.	Force Account/UCC/volunteers	2009-2010
Middle Mountain Fuels Reduction	Mastication, Prescribed Burn	805 acres of hazardous fuel reduction and wildlife habitat improvement	Force Account	2009-2010
Joes Valley Wildlife Habitat Improvement Project	Mastication	1,132 of wildlife habitat improvement and hazardous fuel reduction	Service Contract and Force Account	2004
Orange Olsen Wildlife Habitat Improvement/Fuels Reduction Project	Mastication	180 acres of wildlife habitat improvement and hazardous fuel reduction	Force Account	2005
Joes Valley Pinyon/Juniper Retreatment	Mastication, Prescribed Burn	1,312 acres of wildlife habitat improvement and hazardous fuel reduction	Force Account	2007-2009
Black Dragon Wildlife Habitat Improvement/Fuels Reduction Project -Phase I	Mastication	8,168 acres of wildlife habitat improvement and hazardous fuel reduction	Force Account	2005-2009
Tamarisk Removal Joes Valley Reservoir	Invasive Species Eradication	660 acres of watershed improvement and invasive species removal	Volunteers	2008
Gate at Horn Mountain	Seasonal Closure for Big Game Winter Range	Protects 12,000 acres of big game winter range	Force Account	2009
Lake Canyon Recreation Project	Improve Camping Facilities, Obliterate user-created OHV trails, improve OHV trails	Recreation site improvement and reduces detrimental impacts to wildlife habitat	Force Account	2004-2005
<b>Projects on Private Land</b>				
Reeder Subdivision Fuels Reduction Project	Cut, Pile, Prescribed Burn	25 acres of fuels reduction	Agreement	2005
<b>Projects with Grazing Permittees on National Forest System Land</b>				
Johnson Property/Horn Mountain Biological Control Grazing Improvement Program	Bio-control of Musk Thistle	Noxious weed control	Agreement	2010
Grazing Improvement Program Spring Protection	Installation of Trough	Watershed Protection	Agreement	2009

Map 3. Map of Projects that have occurred within the Medicine Tree Landscape Area since 2004.



User-created Trail Closures - There are numerous areas across the Landscape Area that are severely impacted by illegal Off Highway Vehicle (OHV) use, including some wetlands. There currently are 42 miles of known user-created OHV trails within the landscape area. In 2009 11.8 miles of these trails were closed and/or obliterated using the Utah Conservation Corps, volunteers and Forest employees (Refer to the Project Priorities Section for additional information about the User-Created Trail Closures Project Proposed in the Landscape Strategy.).



An example of wetland damage from illegal OHV use.



Debris piled in illegal OHV trail to close access.  
Work completed in 2009.



Example of a blocked illegal OHV trail and scattered debris.  
Utah Conservation Corps crew member in photo from 2009.

The Middle Mountain Project was designed to enhance the work done by the Utah Division of Forestry, Fire and State Lands in the Reeder Subdivision. The National Forest mechanically treated 805 acres with chainsaws (lop and scatter) and mastication in 2009 and will finish prescribed burning in ponderosa pine stands in 2011. The project area consists of sagebrush-steppe, mountain shrub, and ponderosa pine stands that have been encroached on by pinyon/juniper. A portion of the project was chained to remove pinyon/juniper in the mid 1960's. The succession of pinyon/juniper in the ponderosa vegetation type has occurred over time due to the exclusion of fire. The condition of this vegetation type is conducive to intense stand-replacing fires and presents a hazard to fire personnel, private citizens, structures and infrastructure (Refer to the Project Priorities Section for additional information about the Middle Mountain Project proposed in the Landscape Strategy).



Middle Mountain Fuels Reduction Project – Pre-treatment. Note how pinyon and juniper have encroached on the sagebrush and ponderosa pine.



Middle Mountain Fuels Reduction Project following the completion of the mechanical work.

Middle Mountain Fuels Reduction Project - mechanical treatment is completed and a prescribed burn is in progress.

Joes Valley Wildlife Habitat Improvement Project – The National Forest mechanically treated a total of 1,132 acres, approximately 220 of those were with chainsaws (cut, pile and burn) and approximately 912 acres were masticated with a Bullhog in 2004. The project area consists of sagebrush-steppe, mountain shrub, and ponderosa pine stands that have been encroached on by pinyon/juniper. A portion of the project was chained to remove pinyon/juniper in the mid 1960’s. The succession of pinyon/juniper in the ponderosa vegetation type has occurred over time due to the exclusion of fire.



Joes Valley Wildlife Habitat Improvement Project –  
Pre-treatment

Joes Valley Wildlife Habitat Improvement Project –  
Post-treatment

Orange Olsen Wildlife Habitat Improvement/Fuels Reduction Project - The National Forest masticated 180 acres with a Bobcat Skidsteer with a Fecon head. Following treatment the project area was prescribed burned. The treatment occurred in 2005. The project area consists of sagebrush-steppe, mountain shrub, and ponderosa pine stands that have been encroached on by pinyon/juniper. A portion of the project was chained to remove pinyon/juniper in the mid 1960’s. The succession of pinyon/juniper in the ponderosa vegetation type has occurred over time due to the exclusion of fire.



Orange Olsen Area post treatment – The encroachment around ponderosa pine has been removed. Note the mulch pile in foreground resulting from mastication. The hill in the background is untreated.

Joes Valley Pinyon/Juniper Retreatment – The Manti-La Sal National Forest retreated the Joes Valley Wildlife Habitat Improvement Project Area and Orange Olsen Project Area from 2007-2009. Monitoring within these project areas after the initial treatments in 2004 and 2005 showed that in many locations, the density of pinyon and juniper left within the stands was too thick. Beginning in 2007 the area was masticated with a Bobcat Skidsteer with a Fecon head, followed by a prescribed burn.



Joes Valley Retreatment – Treated area in the foreground, and untreated units on the hillside in the background.

Joes Valley Retreatment Post-treatment -Ponderosa pine trees are released from encroachment. Mulch pile in foreground.



Joes Valley Retreatment during prescribed burn.

Joes Valley Retreatment following prescribed burn. Notice the medicine tree in the center of photograph.

Black Dragon Wildlife Habitat Improvement/Fuels Reduction Project - Phase I was an 8,168-acre mountain brush, pinyon and juniper mastication project completed from 2005-2009. It was designed to improve winter range for mule deer and Rocky Mountain elk and improve habitat for greater sage grouse. The Utah Partnership for Conservation Development (UPCD) funded \$339,879 of this \$1.2 million project. The Manti-La Sal has an agreement with the State of Utah Division of Wildlife Resources to complete monitoring of long-term range trends and vegetation within the project area. (Refer to the Project Priorities Section for additional information about the Black Dragon Wildlife Habitat Improvement/Fuels Reduction Project - Phase II proposed in the Landscape Strategy).



Black Dragon Project – Pre-treatment

Black Dragon Project – Post-treatment



Mountain brush response two years post-treatment

Vegetation response within mulch piles from mastication



Sagebrush seedling that established following treatment

**Tamarisk Removal Joes Valley Reservoir**



Two Scouts cut a large Tamarisk in Buckhorn Wash (above). Photo courtesy of Castleland RC&D Council

**Keys to Success**

- Long-term planning  
(four years)
- Commitment from all partners
- Bold vision and goals
- Utilization of Incident Command System
- Highly functioning Cooperative Weed Management Area
- Commitment to safety
- Public information and education
- Spirit of service and volunteerism

**Massive Tamarisk Removal**

In less than five days in June 2008, a group of Boy Scouts and other volunteers eradicated over 46 linear miles of tamarisk from lands in Central Utah.

The project was one of five across the United States completed by the Boy Scouts of America Order of the Arrow members, a elite group of experienced Scouts including adults. When combined, the five projects represent the largest national service project ever to take place on the nation's public lands. The work is in celebration of the Boy Scouts of America's upcoming centennial.

About 400 Arrowmen, members of ArrowCorps5, and their leaders from throughout the United States joined efforts with volunteers and employees of local, state and federal agencies to clear tamarisk, or salt cedar, from three drainages in the Manti-La Sal National Forest and on Bureau of Land Management lands that feed into the Colorado River.

They worked in Joe's Valley, Dry Wash and Buckhorn Wash, all in Emery County. Scouts used pruners and handsaws to lop limbs from the tamarisk. They were followed by agency employees who used chainsaws on the trunks and sprayed stumps with herbicide. They used a mixture of Garlon 4 Ultra, which appears to have been successful. Crews treated an area, and a quality control crew followed behind to treat any missed plants. A survey two months later showed an estimated 95 percent kill rate. Follow-up surveys and treatment are planned for the summer of 2009.

The group far exceeded their goal of 25 linear miles even though they were working with only 40 percent of the number of Scouts expected for the project.

They were honored by visits from Undersecretary Mark Rey, of the U.S. Department of Agriculture, and Utah Lt. Gov. Gary Herbert, who expressed their appreciation for the service provided to America's public lands.



A Scout Arrowman attacks a thicket of Tamarisk (above). Photo courtesy of Emery County Progress.



Skyline Cooperative Weed Management Area

UtahPCD is a partnership committed to providing conservation solutions

# SCOUTS TACKLE TAMARISK



A Scout removes Tamarisk limbs from the banks of the San Rafael River (left). Photo courtesy of the Castleland RC&D Council. A BLM employee sprays a herbicide on remaining stumps (below). Photo courtesy of the Emery County Progress

## The Statistics:

- Number of supporting agency hours: 6200
- Gallons of herbicide: 600
- Number of spray cans: 50
- Number of chainsaws: 30
- Number of boats: 2
- State, city, county and federal supporting agencies: 22
- Number of U.S. Forest Service acres treated:
  - Joe's Valley 660 acres 13.65 miles
  - Dry Wash 265 acres 6.04 miles
- Number of BLM acres treated:
  - Buckhorn Wash 12,925 acres 26.55 miles
- Total Treatment: 13,850 acres  
46.24 miles
- Number of supporting agency personnel: 110
- Number of neoprene gloves: 500 pair
- Chainsaw cleaned: 30 per day  
150 total cleanings
- Number of chains sharpened: 75 per day, 375 total
- Feet of saw chain used: 150 feet
- Number of chainsaw hours: 480



## Partners:

- Bureau of Land Management Utah State Office
- Bureau of Land Management Price Field Office
- Carbon County Weed Department
- Castle Dale City
- Castleland Resource Conservation & Development Council, Inc.
- Dedicated Hunters
- Dow Chemical
- Emery Water Conservancy District
- Emery County Parks and Recreation
- Emery County School District
- Emery County Sheriff's Department & Emergency Medical Services
- Emery County Weed Department
- Environmental Protection Agency
- Huntington Cattlemen's Association
- Huntington City
- Individual volunteers
- Intermountain Region Forest Service
- Manti-La Sal National Forest
- National Fish and Wildlife Foundation
- National Park Service
- Natural Resources Conservation Service
- Order of the Arrow, Boy Scouts of America
- San Rafael Conservation District
- Skyline Cooperative Weed Management Area
- Utah Backcountry Volunteers
- Utah Department of Agriculture and Food
- Utah Division of Forestry, Fire and State Lands
- Utah Division of Water Quality
- Utah Division of Wildlife Resources
- Utah Legislature
- Utah Partners for Conservation and Development
- Utah State Institutional Trust Lands
- Utah State University Extension Service

Produced by the Bureau of Land Management, Utah Association of Conservation Districts, Utah Weed Supervisors Association and USU Extension  
Utah State University is an equal opportunity/affirmative action institution.

Gate at Horn Mountain Project – A gate, fencing and sign were installed to protect mule deer and Rocky Mountain elk crucial winter range from motorized disturbance during a stressful time period. The work was accomplished in 2009.



## Protect Big Game Winter Range

**BIG GAME AT REST**

*This gate was constructed to protect wintering big game.*

Elk and mule deer run low on fat reserves in winter. Causing them to run or overeat burns precious calories. Don't get too close if you encounter them in winter.

Areas with large herds of wintering elk and deer should be avoided if possible.

Observe seasonal closures to protect wintering big game.

Please report unauthorized use and violation of seasonal closures.

**Habitat Restoration**

Over 4,500 acres of big game habitat have been restored in the Jose Valley Corridor. Shredding, riparian pine and juniper have been thinned to make way for the growth of sagebrush, mountain brush and perennial grasses.

These plants provide valuable forage for big game throughout the winter months.

In the future, habitat managers plan to treat 15,000 additional acres in the area.

**WHAT'S FOR DINNER?**

In late spring and summer deer and elk dine on lush grasses, forbs and sedges.

In fall, it's mature leaves and stems.

But then comes winter. Big game are on a starvation diet of twigs, branches and bark with little nutritional value.

Monte-Lis National Forest  
*Caring for the land, and serving people*

### Lake Recreation Project

The Lake Canyon Project was initiated to mitigate impact from heavy dispersed camping adjacent to Utah Highway 31 along the Miller Flat Road. Over 50 dispersed campsites were contained and hardened. Forest access roads in the project area were re-constructed, while user-created roads were closed and reclaimed. Over eleven miles of user-created OHV trail were closed and rehabilitated, and ten miles of new trail constructed to link campsites with nearby fisheries.



Tree planting in areas damaged by recreation use.

Reeder Subdivision Fuels Reduction Project - In 2005 the Utah Division of Forestry, Fire and State Lands and the Manti-La Sal National Forest completed the 25-acre Reeder Subdivision Fuels Reduction Project at a cost of approximately \$75,000. This entailed cutting, piling and burning encroaching pinyon/ juniper along the Reeder Creek corridor in the center of the Reeder Subdivision. It was designed to reduce the threat of catastrophic fire and increase the quality of the culinary water supply.

Grazing Improvement Program Spring Protection - In 2009 the Utah Grazing Improvement Program (GIP) and the Forest developed and protected spring sources on South Horn Mountain and Middle Mountain to improve watershed conditions affected by domestic livestock grazing.

Johnson Property/Horn Mountain Biological Control Grazing Improvement Program - During 2010, the Forest and Skyline Cooperative Weed Management Agency will conduct a demonstration project to spray 10 acres of musk thistle with an attractant to determine if it can be made more palatable to cattle. This project was funding through Utah's Grazing Improvement Program.

## MANAGEMENT PRIORITIES

- Design and implement fuels reduction projects to decrease the threat of catastrophic wildfire to nearby communities, improvements, culinary water sources, crucial sensitive species habitat and archeological sites.
- In fire-adapted ecosystems and vegetation types, reintroduce fire into these ecosystems and move vegetation from Condition Classes 2 and 3 towards Condition Class 1.
- Reduce or change the arrangement of the fuel bed within treatment units to reduce fire behavior and allow for a greater margin of safety for suppression crews.
- Restore high priority watersheds as identified in the Manti-La Sal Rapid Assessment Process.
- Continue collaboration efforts with private land owners and coordination with state agencies, such as Division of Wildlife Resources and Division of Forestry, Fire and State Lands, on management activities and monitoring within the Medicine Tree Landscape Area.
- Treat aspen stands using a variety of techniques such as harvest, mechanical treatments and prescribed fire, to reduce conifer encroachment, stimulate aspen clones to encourage suckering, improve wildlife habitat, and increase forage. The objective is to regenerate and retain a minimum of 2,000 aspen stems per acre five years following treatment.
- Treat ponderosa pine stands to restore the role of fire and return the stands to their historic condition (open and park lot). Prescribed burning will prepare a favorable seedbed for ponderosa pine regeneration and will result in the removal of heavy litter and duff accumulations.
- Medicine Trees located in the landscape area will be protected from catastrophic wildfire by removing encroaching vegetation in the vicinity of these important cultural resources. Prescribed burning in the vicinity of the trees will be closely managed and monitored to ensure that fire is returned to the stands without damaging the Medicine Trees. Coordination with forest archaeologists will occur when Medicine Trees are located within a treatment unit.
- Diversify vegetation age, structure and composition across the landscape to increase habitat resiliency and improve habitat for a variety of wildlife species.
- Improve fuel condition class, age class and species diversity, and aesthetics of Engelmann spruce on 5-10% of the area affected by the Engelmann spruce beetle outbreak. Planting spruce seedlings following timber harvest will accelerate the recovery of the mature structural component in the Engelmann spruce vegetation type as compared to untreated stands.
- Provide wood products from the Medicine Tree Landscape Area for consumptive uses, including utilizing spruce biomass as a wood product through timber sales and providing posts and poles from pinyon/juniper removal projects for public use.
- A significant amount of the Forest's greater sage grouse habitat occurs within the Medicine Tree landscape, therefore, habitat improvement projects to enhance sagebrush habitat are a priority. Increasing sagebrush age class distribution, as well as grass and forb diversity and abundance will provide habitat for other sagebrush-steppe associated species such as the sage sparrow, Brewer's sparrow, and mule deer.
- Increase forage for large herbivores by removing encroaching pinyon and juniper in sagebrush-steppe and mountain brush ecosystems and removing subalpine fir in aspen ecosystems.
- Improve browse abundance and palatability for mule deer and Rocky Mountain elk in Key and General Big Game Winter/Transition Range by reducing the height of the brush species to make them more accessible to big game animals and stimulating decadent mountain brush, such as serviceberry, mountain mahogany, snowberry, and bitterbrush to increase leader growth and sprouting.

- Within sagebrush-steppe, mountain brush, ponderosa and riparian habitat reduce the pinyon/juniper overstory to increase ground cover, thereby decreasing soil erosion and stream sedimentation, which will result in the maintenance of proper stream function and water quality.
- Maintain a mature structural and age class component within treatment areas to ensure that a variety of structural stages are present following treatment. These mature components provide habitat for an array of wildlife species, including the Virginia's warbler, which utilizes mature pinyon/juniper trees. Retaining a mature component coincides with moving towards a more natural structural stage distribution across the landscape.
- In riparian areas cut and treat with herbicides any tamarisk that is present to encourage re-establishment of willow, cottonwood and other riparian species.
- Design projects to obliterate unauthorized OHV routes, relocate routes, and remove or repair authorized routes that are affecting wetlands, riparian areas or causing soils or watershed impacts within project areas.
- Close all unauthorized OHV trails impacting Key and General Winter/Transition Range and other important habitats for wildlife, wetlands, or aquatic ecosystems.
- Complete restoration projects designed to mitigate or minimize the effects of recreation or other activities on wetlands and riparian areas or other ecosystem impacts.
- Aggressively inventory, map, treat and monitor noxious weed and invasive species populations within the Medicine Tree Landscape Area. Revegetate disturbed areas and areas where noxious weeds have been eradicated. Cooperate with county, state and federal agencies and private landowners in the management of noxious weeds and invasive plant species.

## PROJECT PRIORITIES

### Collaborative Forest Landscape Restoration Program Proposal

The Manti-La Sal National Forest is submitting a Collaborative Forest Landscape Restoration Program proposal for the Medicine Tree Landscape Project Area. The Medicine Tree Landscape Restoration Project includes thirteen projects on National Forest System land. There are three projects occurring on adjacent private land that are associated with the thirteen Forest Service projects. The projects are briefly described in the table below. Additional information including a map for each project is provided on the subsequent pages.

**Table 4. Prioritized List of Planned Forest Service, State and Private Treatments.**

Treatment Name	Treatment Stage	Treatment Type	Treatment Mechanism	Year Treated
<b>Forest Service Projects</b>				
1. Swasey Wildlife Habitat Improvement/Fuels Reduction	Implementation	Mastication, Cut, Pile, Burn	Force Account	2010-2019
2. User-Created Trail Closures	Implementation	Close and/or Obliterate user-created OHV trails	Force Account/UCC/volunteers	2009-2019
3. Lake Timber Sale	Implementation	Timber Sale, Prescribed Burn	Service Contract	2010-2016
4. Black Dragon Wildlife Habitat Improvement/Fuels Reduction Project - Phase II	NEPA Stage	Mastication	Force Account	2016-2019
5. Millers Flat Road Improvement Project	Implementation	Road Resurfacing and culvert installation	Construction Contract	2010-2011
6. Middle Mountain Prescribed Burn	Implementation	Mastication, Prescribed Burn	Force Account	2009-2011
7. Lowry Water Road	Implementation	Road Maintenance for timber sale, then Decommissioning after sale completion	Construction Contract	2012, 2019
8. Millers Flat Recreation Project	NEPA Stage	Recreation Project	Force Account/Volunteers	2011-2014
9. Mary's Slide Timber Sale	NEPA Stage	Timber Sale, Prescribed Burn	Contract/Stewardship	2013-2018
10. Millers Flat Timber Sale	NEPA Stage	Timber Sale, Prescribed Burn	Contract/Stewardship	2011-2016
11. Rolfson Fuels Treatment	NEPA Stage	Prescribed Burn	Force Account	2014-2017
12. Graben Prescribed Burn	NEPA Stage	Prescribed Burn	Force Account	2011-2015
13. Potter's North Timber Sale	NEPA Stage	Timber Sale, Prescribed Burn	Contract/Stewardship	2014-2019
<b>Projects within Landscape Area on Private Land</b>				
Olsen Property	Planned	Mastication	Agreement	2011-2015
Swasey Subdivision	Planned	Mastication	Agreement	2012
Trail Mountain	Planned	Mastication, Cut, Pile, Burn	Agreement	2012

The total Forest Service acres planned for treatment as part of the Medicine Tree Landscape Restoration Project is 37,721 acres. The Utah Division of Forestry, Fire and State Lands (UDFFSL) will treat an additional 180 acres on private land. These projects have been designed to decrease the threat of catastrophic wildfire to nearby communities, improvements,

culinary water sources, crucial sensitive species habitat and archeological sites. Computer models such as FSPro and BEHAVE have been used to aid in placing these treatments.

Though these projects vary in implementation types, they all have restoration goals in common such as:

- (1) reducing the fire regime classification from a 2 to a 1;
  - (2) reintroducing fire into fire-adapted ecosystems, and
  - (3) reducing or changing the arrangement of the fuel bed in the treatment units,
- thus reducing the fire behavior and allowing for a greater margin of safety for suppression crews.

Expected outcomes from these projects include:

- (1) decreased likelihood of a catastrophic wildland fire and the resulting protection of nearby culinary water sources;
- (2) increased forage for large herbivores caused by removing encroaching pinyon and juniper in sagebrush-steppe ecosystems and subalpine fir in aspen ecosystems;
- (3) vegetation age, structure and composition will be more diversified resulting in improved habitat for select wildlife species, including the greater sage grouse a Candidate species for Federal listing on the Endangered Species List.

The thirteen projects included in the Medicine Tree Landscape Restoration Project are listed by priority. Priorities were determined by NEPA status, whether or not there were partners involved or anticipated to be involved in project implementation and/or monitoring, the probability of success for project completion, whether or not a forest product would be generated by the project, and the type of treatment, i.e. mechanical project or prescribed burning. The ranking scores are located in Appendix A in the Investment Spreadsheet.

## 1. Swasey Wildlife Habitat Improvement and Fuels Reduction Project – Map 4

**Acreage** – Approximately 8,000

**Project Type** – Mechanical Fuels Reduction (using chainsaws and mastication) and Prescribed Burning

**Vegetation Type** – Sagebrush-steppe, ponderosa pine and cottonwood with pinyon/juniper encroachment

**Existing Condition** – Pinyon/juniper has encroached into sagebrush-steppe, ponderosa pine and cottonwood stands.

**Purpose and Need for Project** –

- A need to restore winter and transition range for mule deer and Rocky Mountain elk.
- A need to restore traditional as well as current sage grouse habitat in the Joes Valley municipal supply watershed.
- A need to restore cottonwood within the Joes Valley watershed area.
- A need to reduce the fire regime condition class from moderate (2) to low (1).
- A need to restore the role of fire in the ponderosa pine stands.

**Proposed Action** - Project is designed to reduce the encroachment of pinyon/juniper by mechanical means such as chainsaws and mastication in sagebrush-steppe, cottonwood and ponderosa pine ecosystems. Doing this would increase the survivability of the existing ponderosa and cottonwood stands by limiting competition and removing ladder fuels, which will reduce the likelihood of large intense wildfires. The treatment will provide a safer access and escape route from the area in the event of a wildland fire. After the pinyon/juniper has been treated mechanically, areas with ponderosa pine will be broadcast burned to reduce the fine dead fuels in and around the ponderosa pine stands. An increase in perennial plants and forbs that are more palatable to deer, elk and greater sage grouse would be expected, thus increasing the total quantity and quality of winter and transition range for big game and sage grouse habitat. In several instances greater sage grouse, a candidate for federal listing under the Endangered Species Act, have been witnessed using treated areas on the recently completed Black Dragon Project adjacent to this project.

**NEPA Stage** – The NEPA is complete for this project.

**Time Frame for Implementation** – Implementation began in Fiscal Year (FY) 2010 and will continue through FY19.

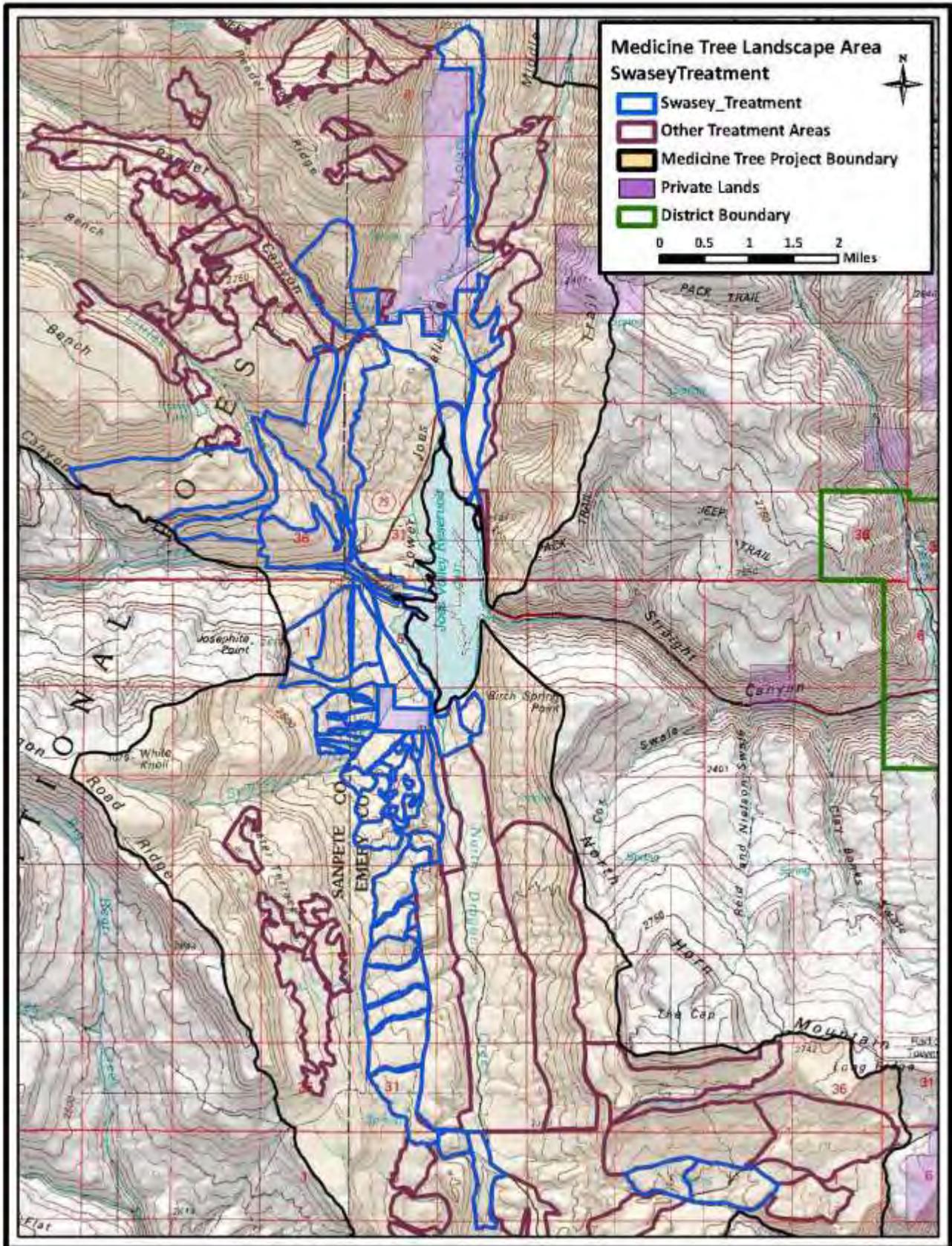
**Forest Products** – Posts and poles from the pinyon/juniper removal.

**Proposed Monitoring** – Pre- and post-monitoring for this project includes Fuels Monitoring - photo point establishment and revisits and Brown's transects; Vegetation monitoring: herbaceous vegetation monitoring and range trend/watershed improvement monitoring conducted by the Utah Division of Wildlife Resources; Wildlife Monitoring: Neotropical migratory bird surveys and flammulated owl surveys conducted by the Forest Service and bird and small mammal monitoring conducted by the Utah Division of Wildlife Resources; Stream monitoring; Soils monitoring; and Noxious weed and invasive species monitoring. Monitoring will continue for 15 years following project implementation commencement or through Fiscal Year 2025.

**Costs Associated with the Project** – \$4,367,000 for project implementation and \$63,800 for project monitoring for a total project cost of \$4,430,800. This project has \$706,000 in partnership contributions for implementation and monitoring. See Appendix A for specific information about the costs associated with this project.

**Partnerships** – For Implementation - Utah Partners for Conservation and Development FY10 - \$75,000, FY11- \$146,000; FY12-FY19 \$470,000 anticipated. For Monitoring – Utah Division of Wildlife Resources \$1,500 annually to complete monitoring for a total of \$15,000.

Map 4. Swasey Wildlife Habitat Improvement and Fuels Reduction Project Map



## 2. User-Created Trail Closures

**Accomplishments** – Wildlife habitat improvement and watershed improvement estimated at 8,000 acres annually based on buffering of illegal off-highway vehicle (OHV) trails that are anticipated to be closed; Stream habitat and Wetland improvements due to obliteration of trails in riparian and wetland habitats.

**Project Type** – User-created OHV trail closure.

**Vegetation Type** – Trails are located in all habitat types including riparian and wetlands.

**Existing Condition** – There are numerous areas across the Landscape Area that are severely impacted by illegal OHV use, including the Millers Flat area, which contains the largest percentage of wetlands on the Forest and has been heavily damaged. There are approximately 42 miles of user-created trails within the Medicine Tree Landscape project.

**Purpose and Need for Project** – The Manti-La Sal National Forest has taken a pro-active approach to dealing with illegal OHV activity that is occurring on the Forest. The Forest has been actively closing trails using work days and funding from multiple funding sources, since virtually all resource areas are detrimentally impacted by illegal OHV activity. In addition, the Forest established an agreement in 2009 and continued that agreement in 2010 with the Utah Conservation Corps (UCC) to fund a summer crew to focus solely on closing illegal OHV trails. This crew completed 11.8 miles of road closures within the Landscape Area in 2009 and monitored those closures to ensure that they remained in place. The illegal OHV trails continue to be an issue and the Forest intends to continue funding the UCC crew over the long-term to continue to address this problem. The Forest also actively educates the public about legal areas to ride OHVs and patrols the Landscape Area with Forest Protection Officers to help enforce rules and regulations.

**Proposed Action** - Continue to fund the UCC crew, Forest Protection Officers, and Forest employees and utilize volunteers to close trails, conduct law enforcement, and educate the public regarding OHV activities. The Millers Flat Project (see Project #8) will close approximately 13 miles of user-created trails in 2012-2013. The remaining 25 miles is planned to be closed by 2019 by the UCC and Forest Service personnel.

**NEPA Stage** – NEPA is not needed to close illegal user-created trails.

**Time Frame for Implementation** – Implementation began in FY 2009 and will continue through FY 2019.

**Proposed Monitoring** – Pre- and post-monitoring for this project includes locating and mapping all user-created trails within the Landscape Area. Creating and maintaining a database documenting closures. Monitoring the effectiveness of the closures and whether or not they have been compromised. Monitoring also includes law enforcement activities in the area using Forest Protection Officers (FPOs). These FPOs educate the public about legal areas where the public can use OHVs, patrol for illegal activities and demonstrate a Forest Service presence within the Landscape Area to encourage the public to follow the rules. Monitoring will continue for 15 years following project implementation commencement or through Fiscal Year 2025.

**Costs Associated with the Project** – \$6,500 for project implementation and \$1,115,000 for project monitoring for a total project cost of \$1,121,500. This project has \$15,000 in partnership contributions for implementation and monitoring and \$170,000 in in-kind contributions. See Appendix A for specific information about the costs associated with this project.

**Partnerships** – For Implementation and Monitoring - Utah Conservation Corps approximately \$1,500 annually. For In-Kind contributions for monitoring and implementation - Volunteer partners including Dedicated Hunters, campground hosts, OHV groups, and individuals at an average value of \$17,500 annually.

### 3. Lake Timber Sale/Fuels Reduction Project – Map 5

**Acreage** – 820 acres

**Project Type** – Timber Sale

**Vegetation Type** – Spruce-fir and aspen

**Existing Condition** - Area is dominated by beetle-killed spruce-fir with some aspen present.

**Purpose and Need for Project** – Project is a fuels reduction project under the Healthy Forest Restoration Act (HFRA). The area has been identified in the Regional Wildfire Protection Plan for Emery County and the Utah Central Region Wildfire Protection Plan.

- There is a need to reduce the Fire Regime Condition Class (FRCC) from Moderate to Low at the stand level. Fuel loadings have increased in recent years as a result of Engelmann spruce mortality from a spruce beetle.
  - The stands in the Lake Fuels Treatment Project have been classified as Fire Regime III, characterized by 35 to 100 year average fire frequency and mixed severity (less than 75 percent of the dominant overstory vegetation replaced). The Fire Regime Condition Class (amount of departure from the natural regime) is moderate (FRCC 2) (Fire Regime Condition Class Analysis, February 28, 2005).
  - The project is located in the Huntington Creek Drainage which provides municipal water to the town of Huntington.
  - The project is adjacent to the heavily used Lake Canyon Campground that is considered a wildland urban interface because of its level of development and intensity of public use.

**Proposed Action** - The intent of the project is reduce down and dead fuels by an average of 50 percent (ranging 20 to 80 percent) over 50 to 80 percent of the high priority treatment areas where the fuel loading is approximately 33 tons per acre. Immediately after treatment, fuel loading is expected to be approximately 10 tons per acre. The project is designed to stimulate aspen regeneration, producing approximately 1000 to 2000 aspen stems per acre within 5 years after the burn. The project uses both tractor and helicopter logging methods. A Streamside Management Zone was also approved in the NEPA document to reduce the number of dead trees in the riparian zone. The treatment will remove 50 percent of all size classes along Lake Fork. The project will increase the presence of elderberry and other native forbs and shrubs by 50 percent within the second year following ignition. Re-establishing aspen in these stands is expected to protect the water quality for the Reeder Subdivision and increase forage for large herbivores.

**NEPA Stage** – NEPA is complete. Timber is to be sold in June 2010 with implementation to begin in FY 2011.

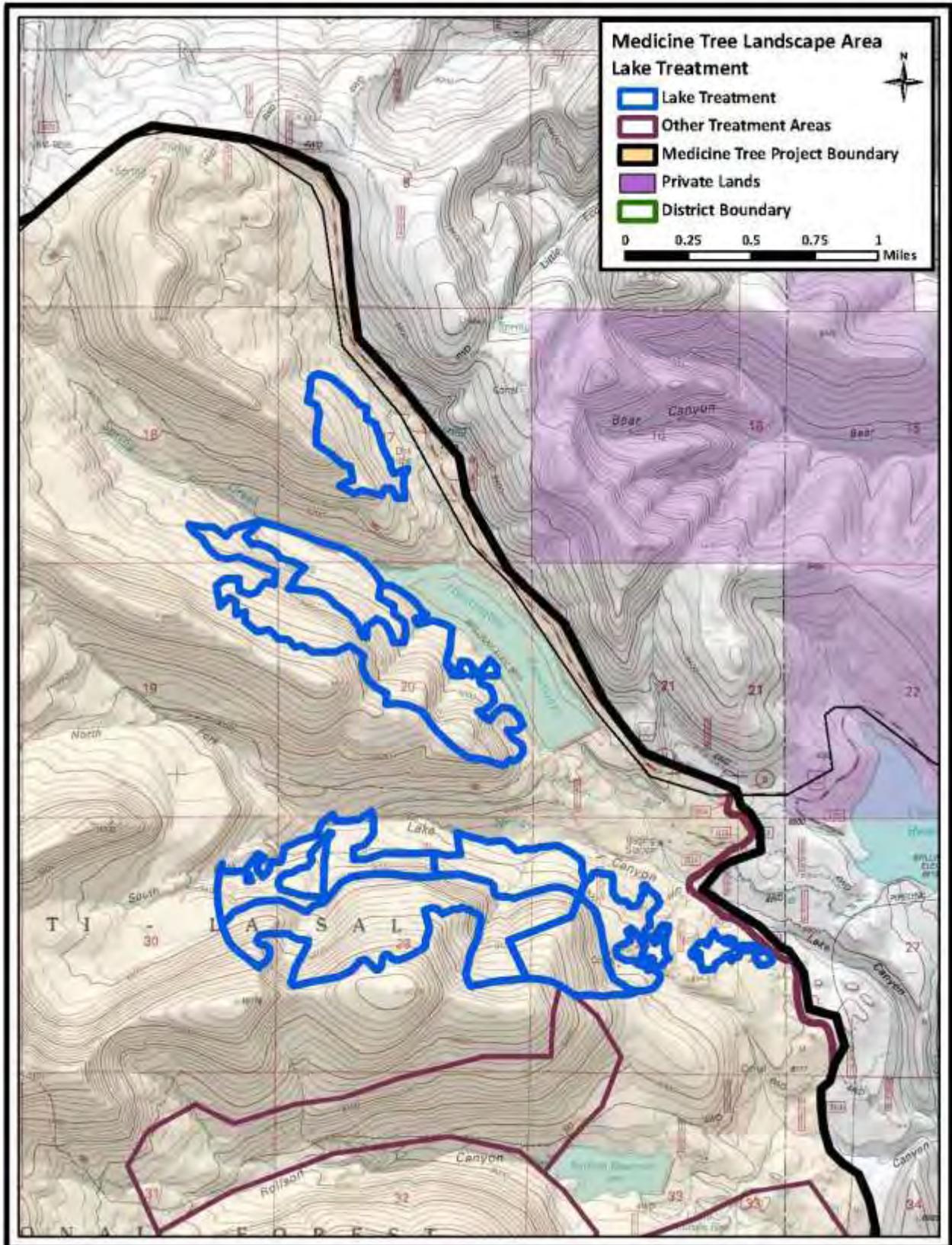
**Time Frame for Implementation** – Implementation is planned to begin in Fiscal Year 2010 with the sale of the timber and will continue through Fiscal Year 2016. The final implementation stage will be the planting of tree seedlings.

**Forest Products** – House logs, sawtimber and bedding – total volume removed 7000 CCF.

**Proposed Monitoring** – Pre- and post-monitoring for this project includes Fuels Monitoring - photo point establishment and revisits and Brown's transects; Vegetation monitoring: stocking surveys and herbaceous vegetation monitoring; Wildlife Monitoring: Neotropical migratory bird surveys and northern goshawk surveys; Soils monitoring; and Noxious weed and invasive species monitoring. Monitoring will continue for 15 years following project implementation commencement or through Fiscal Year 2025.

**Costs Associated with the Project** – \$428,000 for project implementation and \$41,000 for project monitoring for a total project cost of \$469,000. The value of the timber is estimated at \$40,000. See Appendix A for specific information about the costs associated with this project.

Map 5. Lake Timber Sale/Fuels Reduction Project Map



## 4. Black Dragon Wildlife Habitat Improvement/Fuels Reduction Project – Map 6

**Acreage** – 8,168 acres of fuels reduction and wildlife habitat improvement

**Project Type** – Mechanical Fuels Reduction (using chainsaws and mastication) and Prescribed Burning

**Vegetation Type** – Sagebrush-steppe and mountain brush with pinyon/juniper encroachment

**Existing Condition** – This area was treated during Black Dragon Phase I from 2005-2009. In 2016 pinyon and juniper will have begun to encroach in the units. Treating stands when the encroachment is small in height and diameter is more cost effective than treating large diameter trees.

**Purpose and Need for Project** –

- A need to restore traditional as well as current greater sage grouse habitat in the Joes Valley municipal supply watershed.
- A need to restore winter and transition range for mule deer and Rocky Mountain elk.
- A need to reduce the fire regime condition class from moderate (2) to low (1).

**Proposed Action** - Project is designed to reduce the encroachment of pinyon/juniper by mechanical means such as chainsaws and mastication in sagebrush-steppe and mountain brush ecosystems, which allows the understory vegetation to recover. This creates foraging, nesting and brood rearing habitat for the greater sage grouse. It also creates a mosaic of forested and non-forested areas, to provide foraging and hiding areas for big game and other wildlife. Transition and winter range for deer and elk is improved by reducing the height of browse species and stimulating sprouting. Ground cover is increased, decreasing soil erosion and reducing sedimentation.

**NEPA Stage** – NEPA was completed for Black Dragon Phase I. A NEPA adequacy review would be completed for Black Dragon Phase II and the NEPA analysis and supporting resource specialist information would be revised as necessary.

**Time Frame for Implementation** – Implementation is planned to begin in FY 2016 and will continue through FY 2019.

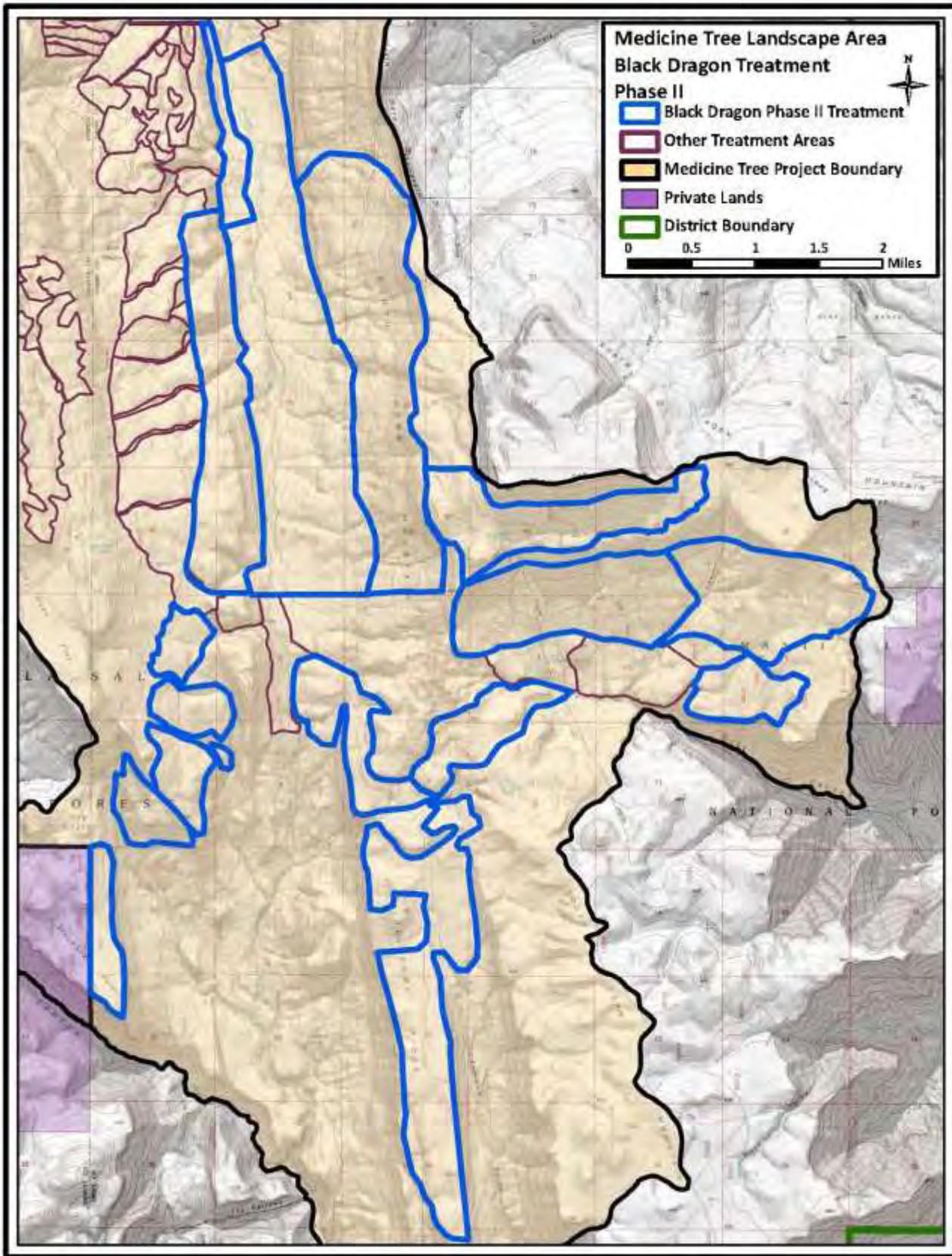
**Forest Products** – Posts and poles from the pinyon/juniper removal.

**Proposed Monitoring** – Pre- and post-monitoring for this project includes Fuels Monitoring - photo point establishment and revisits and Brown's transects; Vegetation monitoring: herbaceous vegetation monitoring and range trend/watershed improvement monitoring conducted by the Utah Division of Wildlife Resources; Wildlife Monitoring: Neotropical migratory bird surveys conducted by the Forest Service and bird and small mammal monitoring conducted by the Utah Division of Wildlife Resources; Stream monitoring; Soils monitoring; and Noxious weed and invasive species monitoring. Monitoring will continue for 15 years following project implementation commencement or through Fiscal Year 2031.

**Costs Associated with the Project** – \$1,883,700 for project implementation and \$33,500 for project monitoring for a total project cost of \$1,917,200. This project has conservatively estimated \$200,000 in partnership contributions for implementation. See Appendix A for specific information about the costs associated with this project.

**Partnerships** – For Implementation - Utah Partners for Conservation and Development FY16-FY19 - \$200,000 is anticipated.

Map 6. Black Dragon II Wildlife Habitat Improvement/Fuels Reduction Project Map



## **5. Millers Flat Road Improvement – Map 7**

**Mileage** – 5.5 miles of road improvements will occur in 2010 and 2011, including resurfacing, adding new and replacing old culverts.

**Project Type** – Road Improvement

**Existing Condition** – Old culverts are failing and new culverts are needed to alleviate erosion and watershed impacts.

**Proposed Action** – Road will be resurfaced, old culverts will be replaced, and new culverts will be installed where watershed impacts are occurring.

**NEPA Stage** – Work is road maintenance.

**Time Frame for Implementation** – Implementation will begin in Fiscal Year 2010 and will be completed in FY11.

**Costs Associated with the Project** – \$890,000 for project implementation and \$81,200 for project monitoring for a total project cost of \$971,200. See Appendix A for specific information about the costs associated with this project.



## 6. Middle Mountain Prescribed Burn – Map 8

**Acreage** – 805

**Project Type** – Prescribed Burn

**Vegetation Type** – Ponderosa pine, pinyon/juniper, mountain shrub and sagebrush

**Existing Condition** - The Middle Mountain area, in the eastern portion of the Ferron District is bordered by the Reeder Subdivision on the Northwest end and the Sportsman’s Subdivision on the South end. The area is dominated by pinyon/juniper that has encroached in ponderosa pine, mountain shrub and sagebrush stands. A portion of the project was chained to remove pinyon/juniper in the mid 1960’s. The succession of pinyon/juniper in the ponderosa vegetation type has occurred over time due to the exclusion of fire. The condition of this vegetation type is conducive to intense stand-replacing fires and presents a hazard to fire personnel, private citizens, structures and infrastructure.

**Purpose and Need for Project** –

- A need to restore winter and transition range by removing the existing pinyon and juniper encroachment, thus increasing browse for mule deer and Rocky Mountain elk.
- A need to reduce the Fire Regime Condition Class from Moderate to Low (within the natural or historical range of variability of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated characteristics) at the stand level.
- A need to restore low severity and low intensity ground fire within the ponderosa pine cover types which in turn will decrease the probability of a catastrophic fire.

**Proposed Action** - The Middle Mountain Project is designed to enhance the work done by the Utah Division of Forestry, Fire, and State Lands (UDFFSL) in the Reeder Subdivision. The treatment is designed to reduce the encroachment of pinyon/juniper to increase the survivability of existing ponderosa by limiting competition and removing ladder fuels, reducing the likelihood of large, intense wildfires. The treatment will also provide a safer access and escape route from the area in the event of a wild land fire.

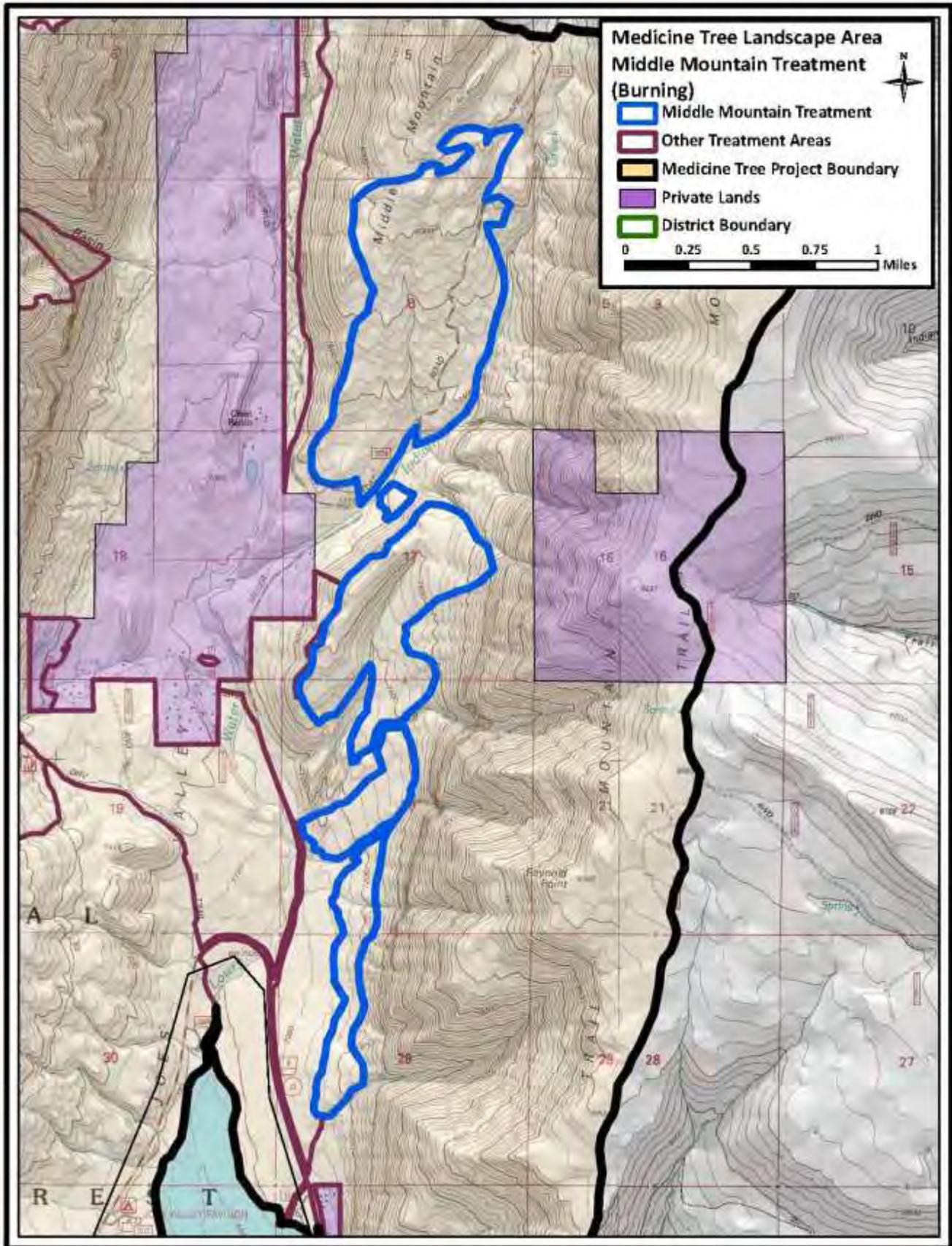
**NEPA Stage** – NEPA is complete.

**Time Frame for Implementation** – Mechanical treatments, including mastication and chainsaw work (lop and scatter) occurred in 2009 and 2010. The prescribed burning within the ponderosa pine stands started in FY2010 and will continue in FY2011 and FY2017.

**Proposed Monitoring** – Pre- and post-monitoring for this project includes Fuels Monitoring - photo point establishment and revisits and Brown’s transects in select stands; Vegetation monitoring: herbaceous vegetation monitoring, aspen regeneration monitoring and pre- and post-vegetation monitoring completed in cooperation with the State of Utah Division of Wildlife Resources; Wildlife Monitoring: Neotropical migratory bird surveys and flammulated owl surveys; Soils monitoring; and Noxious weed and invasive species monitoring. Monitoring will continue for 15 years following project implementation commencement or through Fiscal Year 2024.

**Costs Associated with the Project** – \$349,000 for project implementation and \$39,500 for project monitoring for a total project cost of \$388,500. In 2010 the Forest received \$180,000 in above base funding from Region 4 to offset some of the cost of this project. There is \$15,000 in partnership monitoring funding associated with this project from vegetation monitoring conducted by the Utah Division of Wildlife Resources. See Appendix A for specific information about the costs associated with this project.

Map 8. Middle Mountain Prescribed Burn Map



## 7. Lowry Road – Map 9

**Mileage** – 2.3 miles of road improvements will occur in Fiscal Year 2012, and decommissioning of 5 miles of road in FY 2019 following the Potters North Timber Sale/Fuels Reduction Project.

**Project Type** – Temporary road improvement followed by decommissioning.

**Existing Condition** – Road is currently unusable.

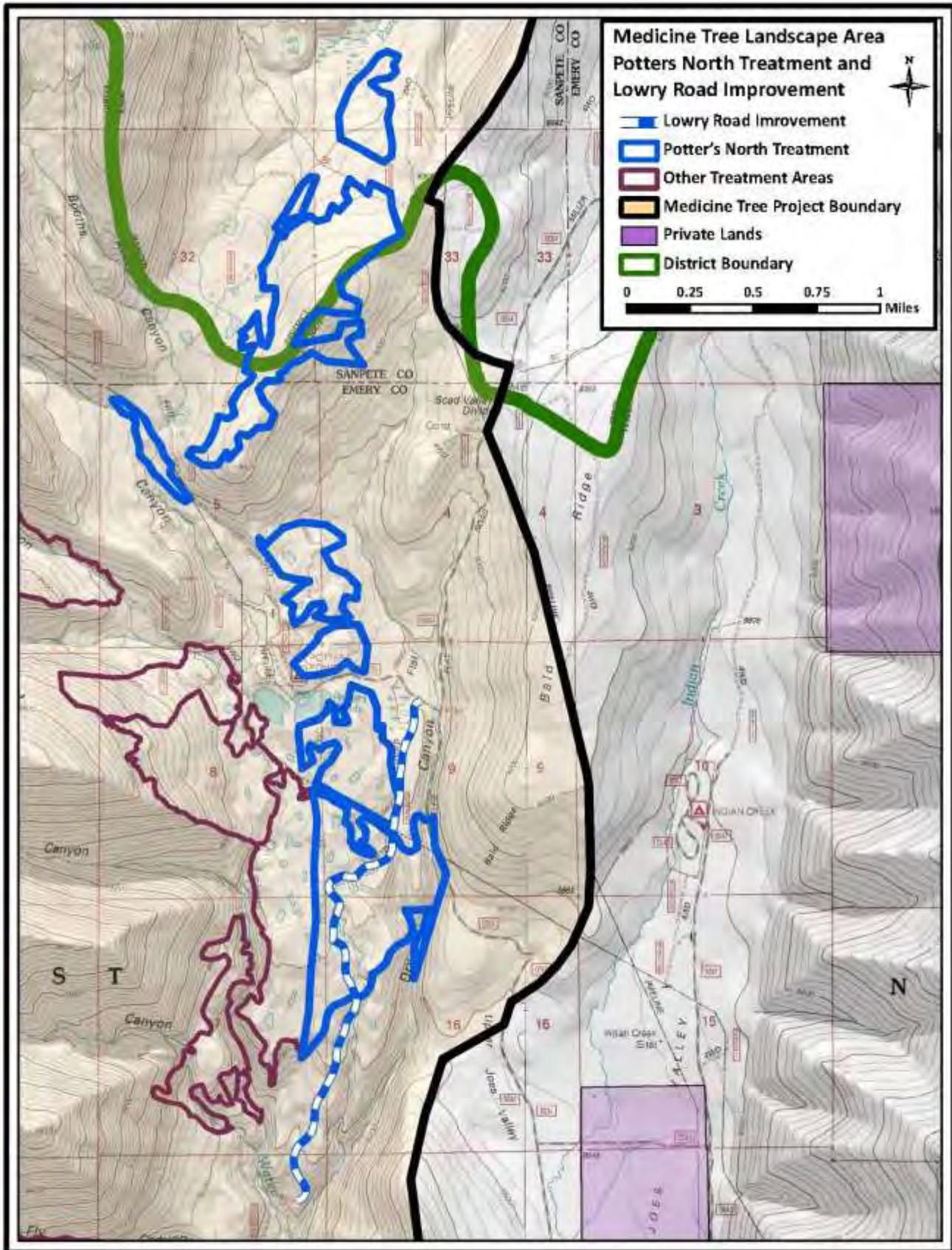
**Proposed Action** – A portion of the road (2.3 miles) will be fixed up as a temporary road to allow access to the Potters North Timber Sale/Fuels Reduction Project (see Project #13). After the timber sale and fuels reduction work are completed, then the entire road (5 miles) will be decommissioned and obliterated .

**NEPA Stage** – The Potter’s North/Lowry Road project analysis is planned to begin in 2014 with an expected NEPA decision in 2015. This analysis would include the road decommissioning portion of the project.

**Time Frame for Implementation** – 2.3 miles of road improvements will occur in Fiscal Year 2012, and decommissioning of 5 miles of road in FY 2019 following the Potters North Timber Sale/Fuels Reduction Project.

**Costs Associated with the Project** – \$110,000 for project implementation and \$3,000 for project monitoring for a total project cost of \$113,000. See Appendix A for specific information about the costs associated with this project.

Map 9. Lowry Road Map



## 8. Millers Flat Recreation

**Accomplishments** – Wildlife habitat improvement and watershed improvements due to trail closures; Stream habitat and Wetland improvements due to obliteration of trails in riparian and wetland habitats.

**Project Type** – Recreation improvements and user-created OHV trail closures.

**Existing Condition** – Millers Flat is one of the most popular destinations on the Forest for year-round recreation, providing a rustic setting for activities including hunting, fishing, camping, picnicking, hiking, horseback riding, sightseeing, limited boating, cross-country skiing, and snowmobiling. Field evaluations by Forest Service personnel identified numerous wetlands that are being damaged by the existing roads and unauthorized user-created roads and trails, especially on the recently acquired state land.

**Purpose and Need for Project** – This project incorporates fuels treatments, wetland protection, transportation planning, and recreation management. There is a need to contain motorized use at several dispersed campsites, modify some campsites to alleviate impacts, and close some campsites to protect wetlands.

**Proposed Action** - The Millers Flat Recreation Project will move dispersed camp sites away from riparian habitat and wetlands to reduce erosion, improve water quality, and reduce the negative impacts to all aquatic species and terrestrial species found in those habitat types.

**Table 5. Summary of planned Recreation and route activities under the Millers Flat EA.**

<b>Millers Flat Recreation &amp; Route Summary</b>	<b>Value</b>
Dispersed Sites Closed	5
Dispersed Sites Modified	6
Improved Natural Sites	9
Unimproved Natural Sites	27
Log and Block Fence – Feet	1,200
Total Sites Available	43
Trailheads Constructed	1
Non-Motorized Trail Constructed – Miles	.3
Spur Roads Where Access is Hardened – Miles	4
User-created Routes Closed – Miles	13
Authorized Routes Closed to Protect Wetlands	3.4

**NEPA Stage** – The decision for the Environmental Assessment for the Millers Flat Project is expected to be published in June 2010.

**Time Frame for Implementation** – Implementation began in Fiscal Year 2011 and will continue through FY2014.

**Proposed Monitoring** – Pre- and post-monitoring for this project includes locating and mapping all user-created trails within the Landscape Area. Creating and maintaining a database documenting closures. Monitoring the effectiveness of the closures and whether or not they have been compromised. In addition, soils and hydrologic monitoring will occur. Monitoring will continue for 15 years following project implementation commencement or through Fiscal Year 2026.

**Costs Associated with the Project** – \$450,000 for project implementation and \$47,000 for project monitoring for a total project cost of \$497,000. This project has \$100,000 in partnership contributions for implementation and \$240,000 in in-kind contributions. See Appendix A for specific information about the costs associated with this project.

**Partnerships** – For Implementation - Utah Partners for Conservation and Development FY14- \$100,000 is anticipated. For In-Kind contributions for monitoring and implementation - Volunteer partners including Dedicated Hunters, campground hosts, OHV groups, and individuals at an average value of \$24,000 annually.

## 9. Mary's Slide – Map 10

**Acreage** – 1,180 acres

**Project Type** – Timber Sale, mastication, broadcast prescribed burning

**Vegetation Type** – Spruce-fir and aspen

**Existing Condition** - Area is dominated by beetle-killed spruce-fir with some aspen present.

**Purpose and Need for Project** –

- There is a need to reduce the Fire Regime Condition Class (FRCC) from Moderate to Low at the stand level. Fuel loadings have increased in recent years as a result of Engelmann spruce mortality from a spruce beetle.
- Treat aspen stands with prescribed fire to reduce conifer encroachment, stimulate aspen clones to encourage suckering, improve wildlife habitat and increase forage.

**Proposed Action** - The proposed project will remove dead spruce, regenerate aspen, spruce, and Douglas-fir, and reduce fuels.

**NEPA Stage** – The Mary's Slide project is planned to begin analysis in 2013 with an expected NEPA decision in 2014, following by implementation in 2014.

**Time Frame for Implementation** – Implementation is planned to begin in FY2014 with the sale of the timber and will continue through Fiscal Year 2018. The final implementation stage will be the planting of tree seedlings.

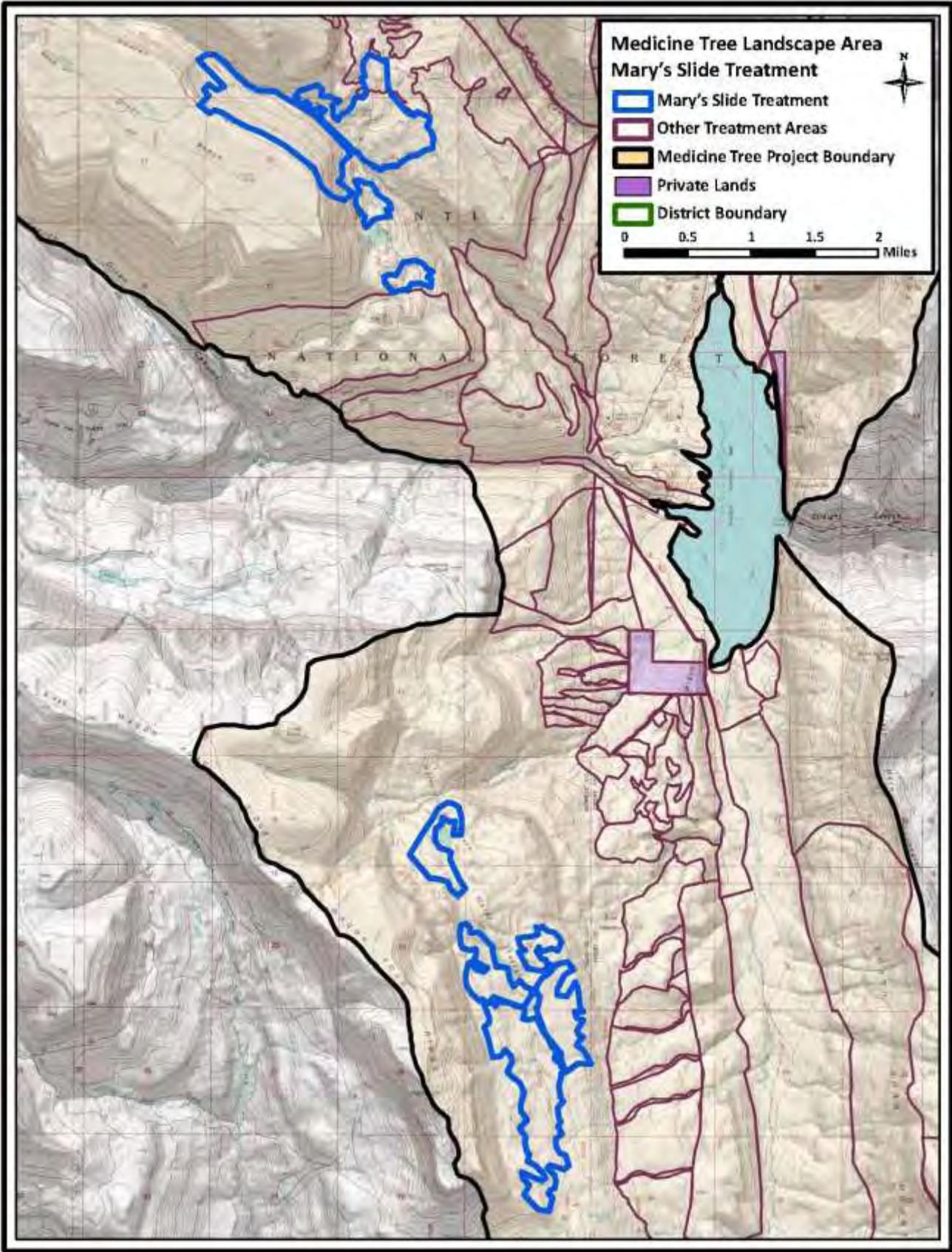
**Forest Products** – House logs, sawtimber and bedding – total volume removed 7000 CCF. This could be a stewardship contract, where the cost of the fuel treatments could be offset with the timber value.

**Proposed Monitoring** – Pre- and post-monitoring for this project includes Fuels Monitoring - photo point establishment and revisits and Brown's transects; Vegetation monitoring: sale monitoring, stocking surveys and herbaceous vegetation monitoring; Wildlife Monitoring: Neotropical migratory bird surveys and northern goshawk surveys; Soils monitoring; and Noxious weed and invasive species monitoring. Monitoring will continue for 15 years following project implementation commencement or through Fiscal Year 2029.

**Costs Associated with the Project** – \$636,500 for project implementation and \$59,000 for project monitoring for a total project cost of \$695,500. The value of the timber is estimated at \$70,000. This project has conservatively estimated \$50,000 in partnership contributions for implementation. See Appendix A for specific information about the costs associated with this project.

**Partnerships** – For Implementation - Utah Partners for Conservation and Development FY16 - \$50,000 is anticipated.

Map 10. Mary's Slide Map



## 10. Millers Flat (Timber/Fuels) - Map 11

**Acreage** – 480 acres

**Project Type** – Timber Sale, mastication, broadcast prescribed burning

**Vegetation Type** – Spruce-fir and aspen

**Existing Condition** - Area is dominated by beetle-killed spruce-fir with some aspen present.

**Purpose and Need for Project** –

- There is a need to reduce the Fire Regime Condition Class (FRCC) from Moderate to Low in selected spruce stands adjacent to private lands and structures and the gas pipeline. Fuel loadings have increased in recent years as a result of Engelmann spruce mortality from a spruce beetle.
- There is a need to regenerate aspen and Engelmann spruce within selected stands to improve and maintain the component within the ecosystem.
- Treat aspen stands with prescribed fire to reduce conifer encroachment, stimulate aspen clones to encourage suckering, improve wildlife habitat and increase forage.

**Proposed Action** - The Millers Flat Project proposes to address the fuel concentrations by changing the Condition Class from 2 to 1, regenerate aspen, and harvest approximately 480 acres of dead spruce. Light to moderate intensity broadcast burning is planned for units that contain residual aspen. Mastication may also be used to rearrange fuel loads to a state that exhibits minimal fire behavior. This project incorporates fuels treatments, wetland protection, transportation planning, and recreation management.

**NEPA Stage** – The decision for the Environmental Assessment for the Millers Flat Project is expected to be published in June 2010.

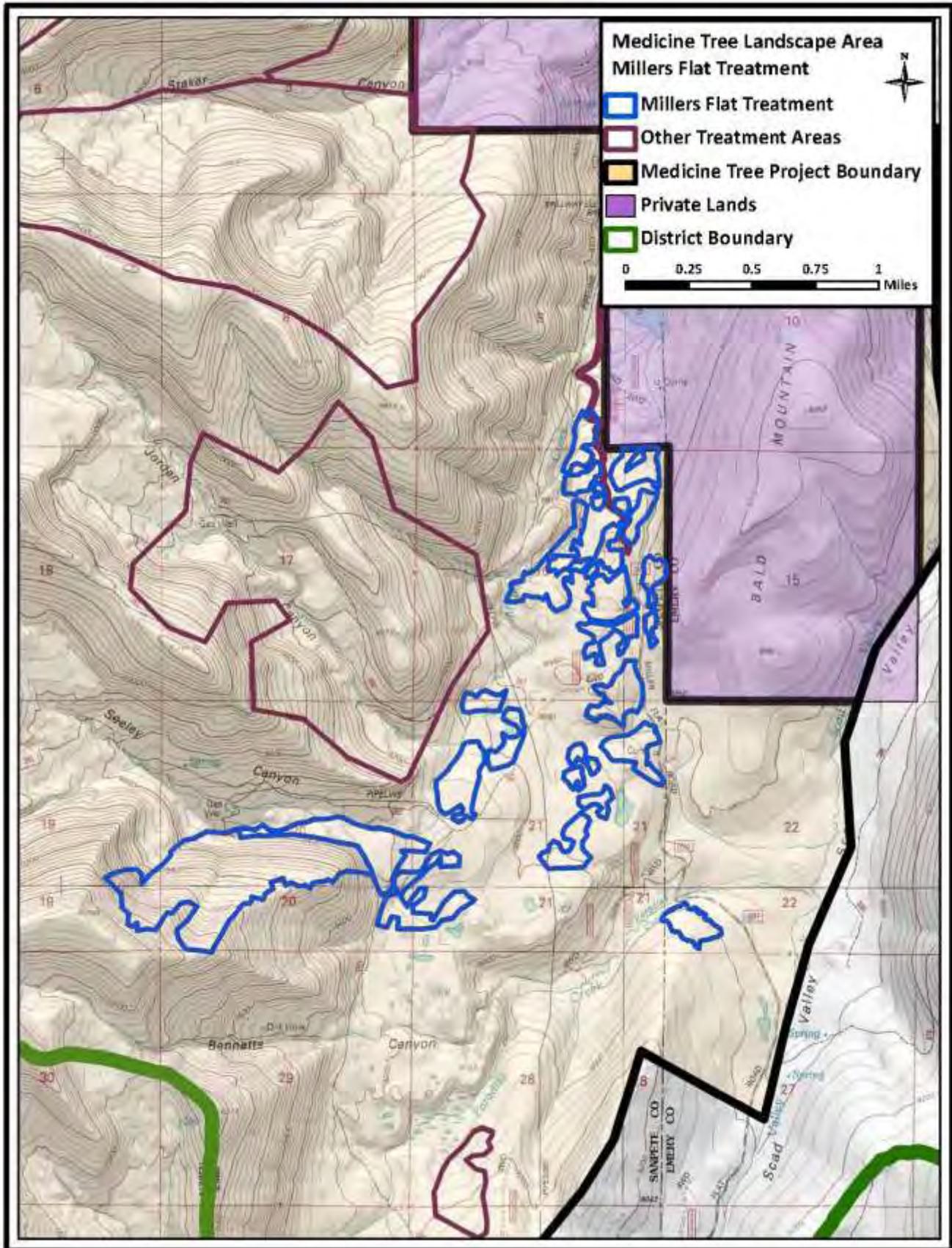
**Time Frame for Implementation** – Implementation is planned to begin in FY2011 with the sale of the timber and will continue through Fiscal Year 2016. The final implementation stage will be the planting of tree seedlings.

**Forest Products** – House logs, sawtimber and bedding – total volume removed 3400 CCF. This could be a stewardship contract, where the cost of the fuel treatments could be offset with the timber value. The proposal is to log approximately 480 acres with ground and aerial systems under a stewardship contract. The stewardship portion of the contract will utilize the value of the timber to harden dispersed recreation sites, construct log and block fences and reroute access to some sites where access is currently through wetlands.

**Proposed Monitoring** – Pre- and post-monitoring for this project includes Fuels Monitoring - photo point establishment and revisits and Brown's transects; Vegetation monitoring: sale monitoring, stocking surveys and herbaceous vegetation monitoring; Wildlife Monitoring: Neotropical migratory bird surveys and northern goshawk surveys; Soils monitoring; and Noxious weed and invasive species monitoring. Monitoring will continue for 15 years following project implementation commencement or through Fiscal Year 2026.

**Costs Associated with the Project** – \$327,000 for project implementation and \$52,000 for project monitoring for a total project cost of \$377,000. The value of the timber is estimated at \$37,000. See Appendix A for specific information about the costs associated with this project.

Map 11. Millers Flat (Timber/Fuels) Map



## 11. Rolfson Fuels - Map 12

**Acreage** – 1,700

**Project Type** – Prescribed Burning and mastication

**Vegetation Type** – Spruce-fir and aspen

**Existing Condition** - Area is dominated by beetle-killed spruce-fir that has encroached into aspen stands.

**Purpose and Need for Project** –

- Reduce the Fire Regime Condition Class from Moderate to Low at the stand level. Fuel loadings have increased in recent years as a result of Engelmann spruce mortality from spruce beetles.
- Treat aspen stands with prescribed fire to reduce conifer encroachment, stimulate aspen clones to encourage suckering, improve wildlife habitat and increase forage.
- Reduce the threat of catastrophic wildfire to nearby private land.

**Proposed Action** - The intent of the project is reduce down and dead fuels by an average of 50 percent (ranging 20 to 80 percent) over 50 to 80 percent of the high priority treatment areas where the fuel loading is approximately 33 tons per acre. Immediately after treatment, fuel loading is expected to be approximately 10 tons per acre. The units adjacent to private land will be treated mechanically prior to underburning. The project is designed to stimulate aspen regeneration, producing approximately 1000 to 2000 aspen stems per acre within 5 years after the burn. The project will increase the presence of elderberry and other native forbs and shrubs by 50 percent within the second year following ignition. Re-establishing aspen in these stands is expected to protect the water quality for the adjacent private land and increase forage for large herbivores.

**NEPA Stage** – The NEPA is planned for completion in FY13; with implementation to begin in FY14.

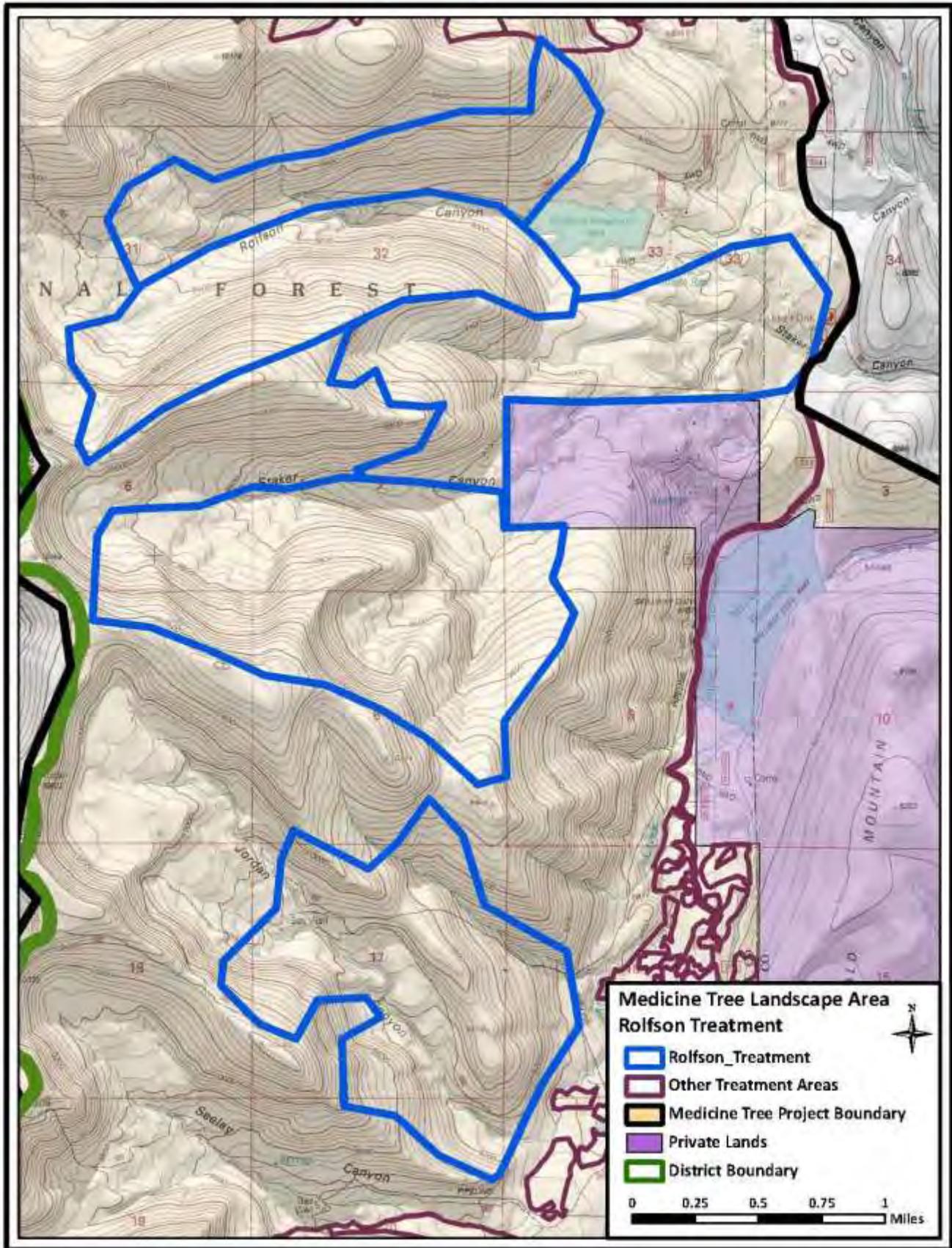
**Time Frame for Implementation** – Implementation is planned to begin in FY 2014 and continue FY 2017.

**Proposed Monitoring** – Pre- and post-monitoring for this project includes Fuels Monitoring - photo point establishment and revisits and Brown's transects; Vegetation monitoring: stocking surveys and herbaceous vegetation monitoring; Wildlife Monitoring: Neotropical migratory bird surveys and northern goshawk surveys; Soils monitoring; and Noxious weed and invasive species monitoring. Monitoring will continue for 15 years following project implementation commencement or through Fiscal Year 2029.

**Costs Associated with the Project** – \$575,500 for project implementation and \$60,500 for project monitoring for a total project cost of \$636,000. This project has conservatively estimated \$160,000 in partnership contributions for implementation. See Appendix A for specific information about the costs associated with this project.

**Partnerships** – For Implementation - Utah Partners for Conservation and Development FY14-FY17 - \$160,000 is anticipated.

Map 12. Rolfson Fuels Map



## 12. Graben Prescribed Burn – Map 13

**Acreage** – 4,436

**Project Type** – Prescribed Burn

**Vegetation Type** – Spruce-fir and aspen

**Existing Condition** - Area is dominated by beetle-killed spruce-fir that has encroached into aspen stands.

**Purpose and Need for Project** –

- Reduce the Fire Regime Condition Class from Moderate to Low at the stand level. Fuel loadings have increased in recent years as a result of Engelmann spruce mortality from spruce beetles.
- Treat aspen stands with prescribed fire to reduce conifer encroachment, stimulate aspen clones to encourage suckering, improve wildlife habitat and increase forage.
- Reduce the threat of catastrophic wildfire to nearby private land.

**Proposed Action** - The intent of the project is reduce down and dead fuels by an average of 50 percent (ranging 20 to 80 percent) over 50 to 80 percent of the high priority treatment areas where the fuel loading is approximately 33 tons per acre. Immediately after treatment, fuel loading is expected to be approximately 10 tons per acre. The project is designed to stimulate aspen regeneration, producing approximately 1000 to 2000 aspen stems per acre within 5 years after the burn. The project will increase the presence of elderberry and other native forbs and shrubs by 50 percent within the second year following ignition. Re-establishing aspen in these stands is expected to protect the water quality for the Reeder Subdivision and increase forage for large herbivores.

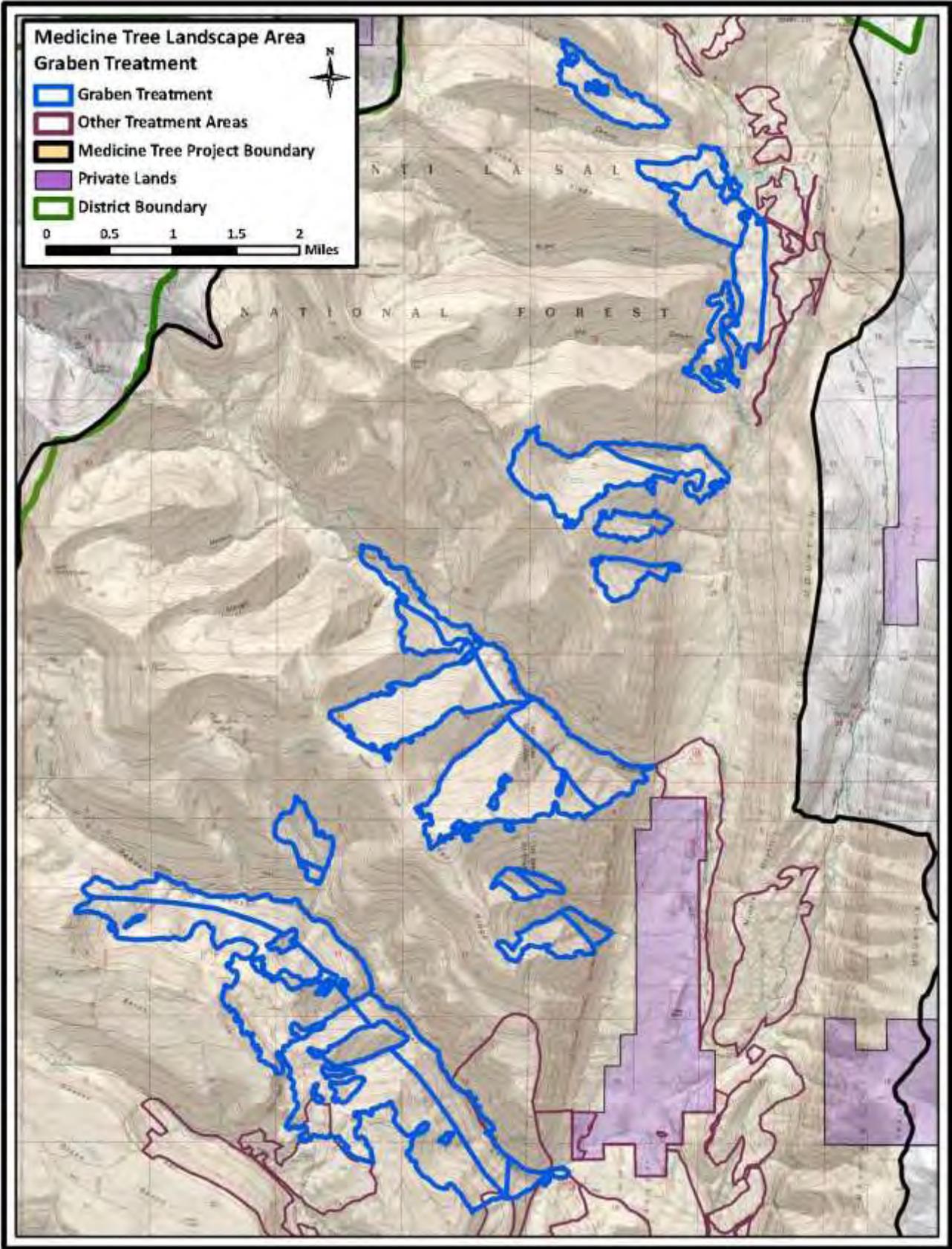
**NEPA Stage** – Surveys are complete for this project (wildlife, vegetation, and archaeology). The NEPA has been started and is planned to be completed in FY10 planned for implementation in fiscal year 2011.

**Time Frame for Implementation** – Implementation is planned to begin in FY 2011 and continue FY 2015.

**Proposed Monitoring** – Pre- and post-monitoring for this project includes Fuels Monitoring - photo point establishment and revisits; Vegetation monitoring: Brown's transects, stand exams, stocking surveys and herbaceous vegetation monitoring; Wildlife Monitoring: Neotropical migratory bird surveys and northern goshawk surveys; Soils monitoring; and Noxious weed and invasive species monitoring. Monitoring will continue for 15 years following project implementation commencement or through Fiscal Year 2026.

**Costs Associated with the Project** – \$153,000 for project implementation and \$119,000 for project monitoring for a total project cost of \$272,000. See Appendix A for specific information about the costs associated with this project.

Map 13. Graben Prescribed Burn Map



### 13. Potter's North Timber Sale/Fuels Reduction Project – Map 14

**Acreage** – 650 acres

**Project Type** – Timber Sale, mastication, broadcast prescribed burning

**Vegetation Type** – Spruce-fir and aspen

**Existing Condition** - Area is dominated by beetle-killed spruce-fir with some aspen present.

**Purpose and Need for Project** –

- There is a need to reduce the Fire Regime Condition Class (FRCC) from Moderate to Low at the stand level. Fuel loadings have increased in recent years as a result of Engelmann spruce mortality from a spruce beetle.
- Treat aspen stands with prescribed fire to reduce conifer encroachment, stimulate aspen clones to encourage suckering, improve wildlife habitat and increase forage.

**Proposed Action** - The proposed project will remove dead spruce, regenerate aspen, spruce, and Douglas-fir, and reduce fuels. The Lowry Road Project is connected to this project (see Project #7). The road would be improved to allow access to get the timber out, and then the road would be decommissioned after the timber sale is complete.

**NEPA Stage** – The Potter's North project is planned to begin analysis in 2014 with an expected NEPA decision in 2015, following by implementation in 2015.

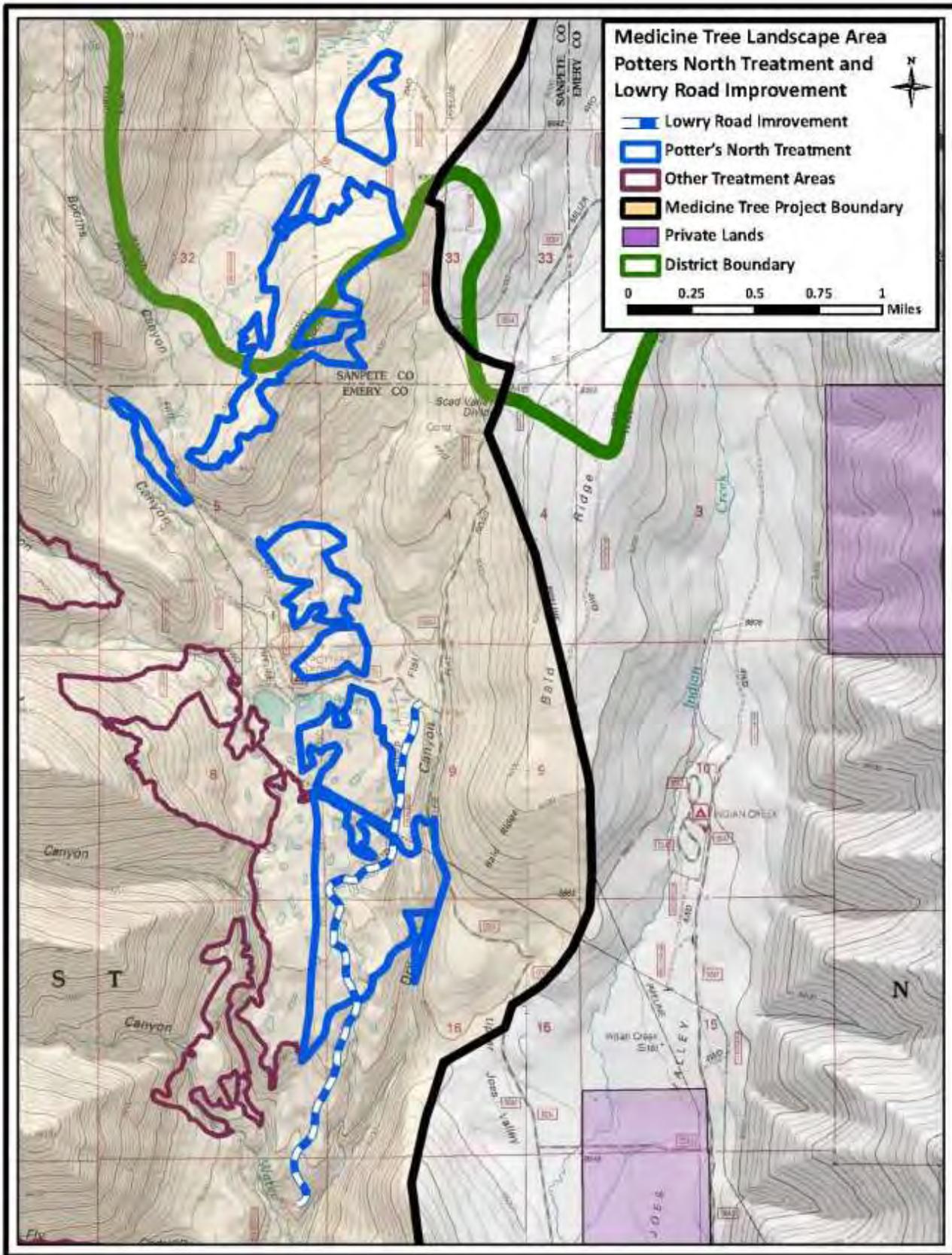
**Time Frame for Implementation** – Implementation is planned to begin in FY2015 with the sale of the timber and will continue through Fiscal Year 2019. The final implementation stage will be the planting of tree seedlings.

**Forest Products** – House logs, sawtimber and bedding – total volume removed 2700 CCF. This could be a stewardship contract, where the cost of the fuel treatments could be offset with the timber value.

**Proposed Monitoring** – Pre- and post-monitoring for this project includes Fuels Monitoring - photo point establishment and revisits and Brown's transects; Vegetation monitoring: stocking surveys and herbaceous vegetation monitoring; Wildlife Monitoring: Neotropical migratory bird surveys and northern goshawk surveys; Soils monitoring; and Noxious weed and invasive species monitoring. Monitoring will continue for 15 years following project implementation commencement or through Fiscal Year 2030.

**Costs Associated with the Project** – \$360,700 for project implementation and \$39,500 for project monitoring for a total project cost of \$436,200. The value of the timber is estimated at \$36,000. See Appendix A for specific information about the costs associated with this project.

Map 14. Potter's North Timber Sale/Fuels Reduction Project Map

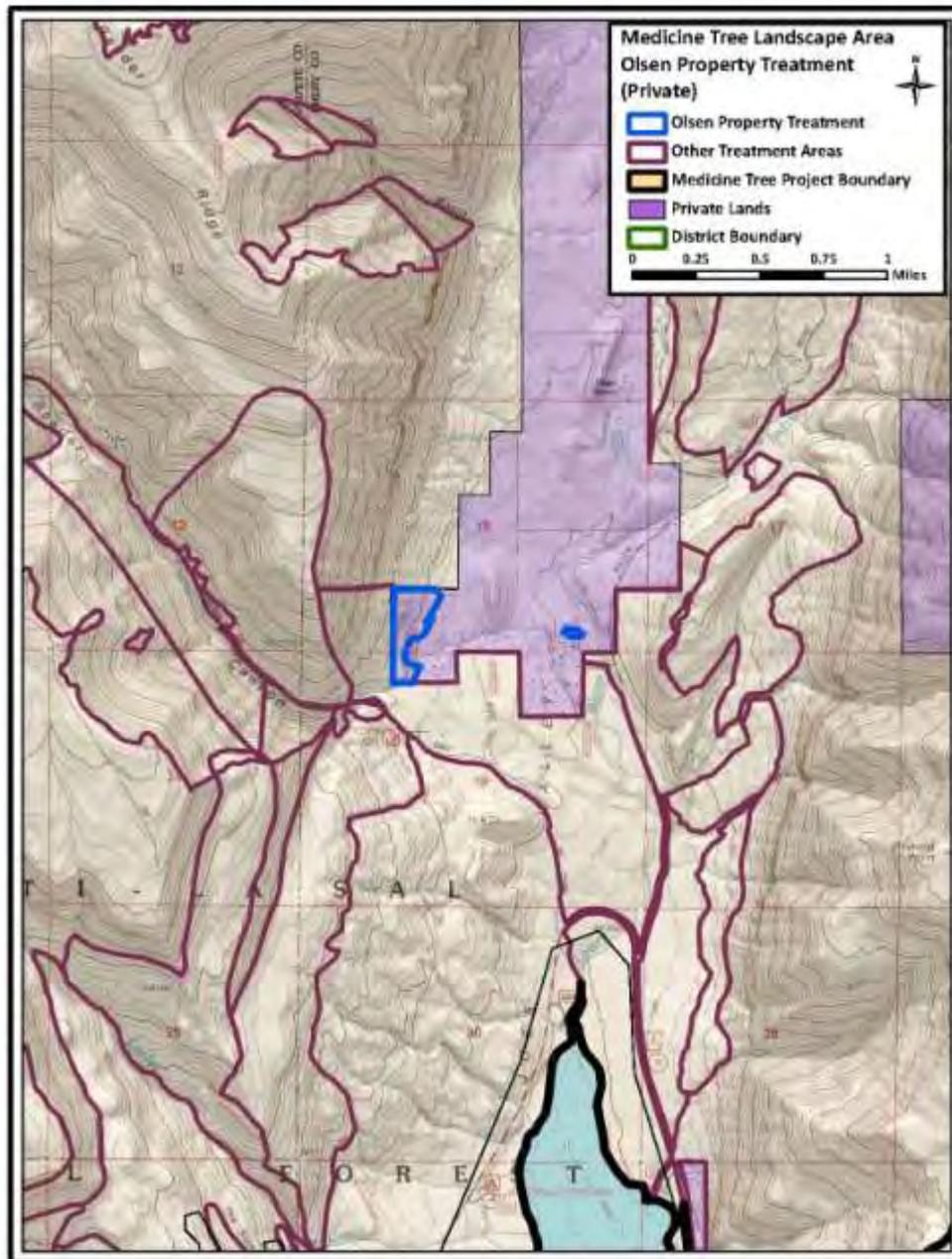


## Private Land Projects Planned for Completion using Funding from the Utah Division of Forestry, Fires, and State Lands

### 1. Olsen Property Project

The Utah Division of Forestry, Fire, and State Lands has acquired \$115,000 for fuels reduction work on the 28-acre Olsen Property Project. The purpose of the work is to reduce encroaching pinyon/juniper by mastication and cutting with chainsaws on the Olsen property. The pinyon and juniper cut with chainsaws will then be piled and burned. The work is planned for completion over several years from 2011 through 2015. This fuel reduction work will enhance adjacent projects in the Reeder Subdivision and Joes Valley areas and will coincide with the Graben Prescribed Burn on National Forest System land.

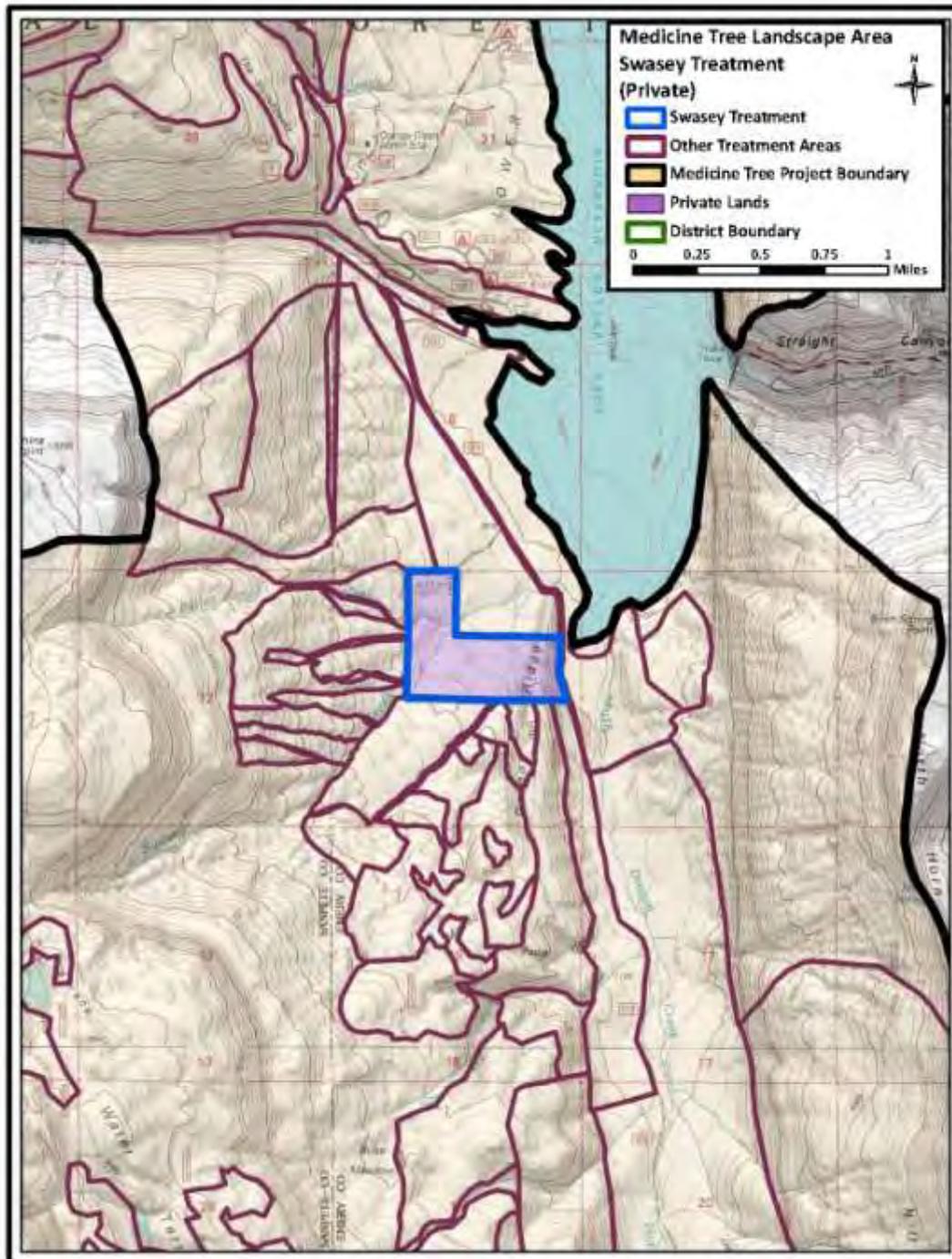
Map 15. Olsen Property Map



## 2. Swasey Subdivision

The Utah Division of Forestry, Fire, and State Lands has acquired \$2500 for fuels reduction work within the Swasey Subdivision, a 130-acre private property parcel of land. The purpose of the fuels reduction work is to reduce encroaching pinyon/juniper by mastication on the private parcel. This subdivision is surrounded by the Swasey Wildlife Habitat Improvement and Fuels Reduction Project. The fuels reduction work will be completed under an agreement with the Forest Service. This agreement allows the Manti-La Sal National Forest to provide equipment and operators to complete the work on private land. The work is planned for completion in 2012.

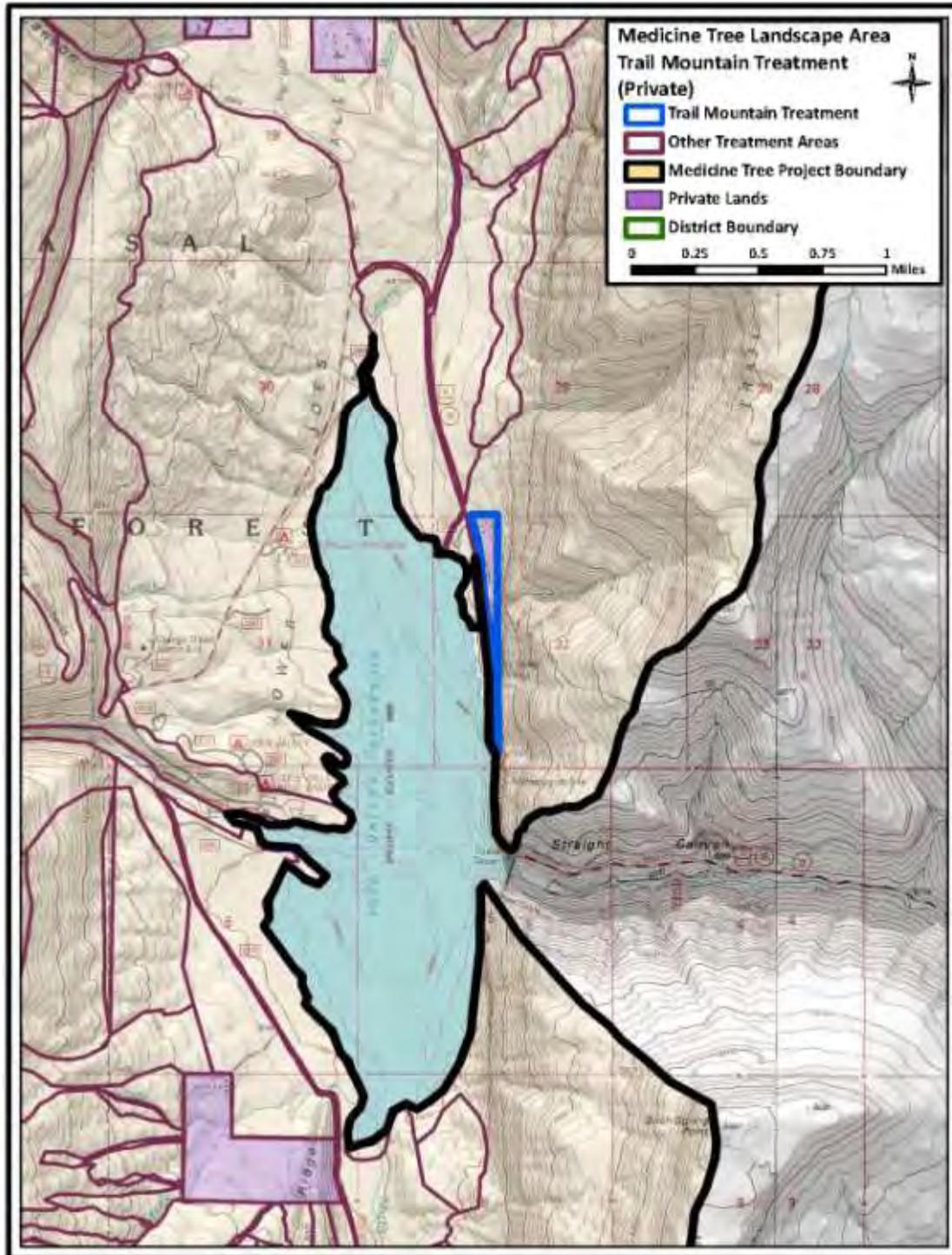
Map 16. Swasey Subdivision Map



### 3. Trail Mountain Fuels Project

The Utah Division of Forestry, Fire, and State Lands has acquired \$2500 for the 5-acre Trail Mountain Fuels Project that will enhance the work the Forest Service has implemented in the Middle Mountain area, located to the north of the Trail Mountain area. Treatments in this area are planned for implementation in 2012. Treatment will include mastication, cutting, piling and burning pinyon and juniper in the Trail Mountain Subdivision.

**Map 17. Trail Mountain Fuels Project Map**



Success for all projects on federal land will be measured through the monitoring efforts described above to determine if the Forest has met the goals and objectives in the landscape strategy and the purpose and need statements for each project included in this proposal.

## **Fire and Fuels Comparison Pre- and Post-Treatment**

The thirteen projects proposed for the Collaborative Forest Landscape Restoration Program within the Medicine Tree Landscape Area encompass 37,721 acres. These projects have been designed to decrease the threat of catastrophic wildfire to nearby communities, improvements, culinary water sources, crucial sensitive species habitat and archeological sites. These projects all have common restoration goals for reducing the fire regime condition classification from a 2 to a 1, reintroducing fire into fire-adapted ecosystems, and reducing or changing the arrangement of the fuel bed in the treatment units, thus reducing the fire behavior and allowing for a greater margin of safety for suppression crews.

These projects and expected outcomes were analyzed to compare several fire and fuels factors pre- and post-treatment.

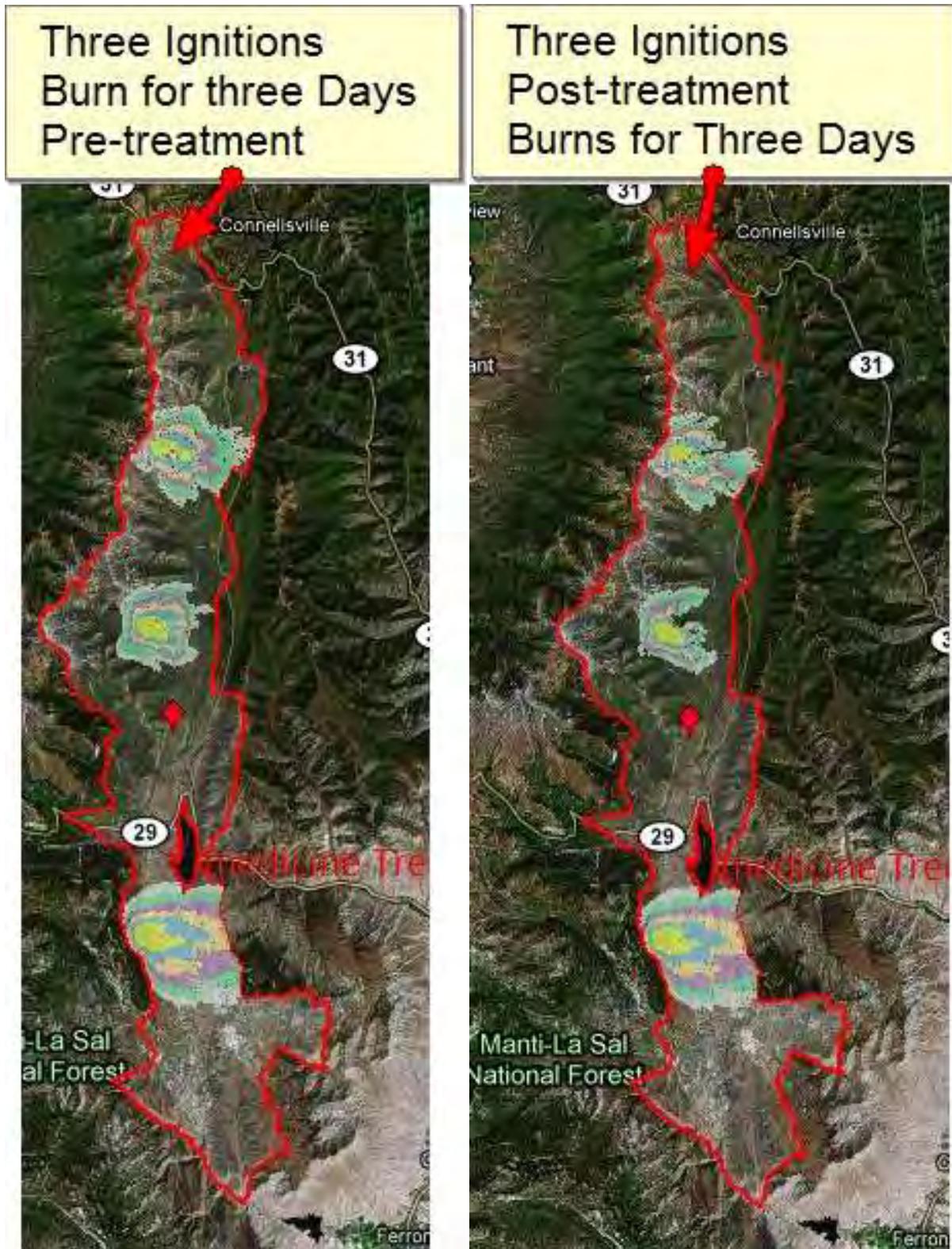
## **Medicine Tree Wildland Fire Decision Support System Analysis**

Wildland Fire Decision Support System (WFDSS) was used to present a methodology for assessing the effectiveness of landscape fuel treatments on fire growth and behavior within the Medicine Tree Project Area. Treatment areas were selected by fire and fuel managers on the Forest based on the threat of wildfire to nearby communities and the need for timber, range, clean water and wildlife habitat. The Forest's fire history Geographic Information System (GIS) layer was used to identify historical fires. FireFamily Plus was used to summarize and analyze historical weather, and 90<sup>th</sup> percentile weather information. FireFamily was used in WFDSS to model pre- and post fuel treatments. WFDSS spatially displays fire growth, fireline intensity, flame length, and the occurrence of crown fire. This model uses 30-meter LANDFIRE data, meaning that one fuel model is used for that 30-meter pixel. Fuel models were determined with existing fuel data; collected by using Brown's transect protocol, in conjunction with ocular estimates and past fire behavior observations. Fuel models were changed to what the expected post-treatment outcome will be in the treated areas only. The model suggests and observations have reaffirmed, that flame length, active crown fire potential and fire line intensity have been substantially reduced following the fuels reduction treatments. This procedure provides managers with a quantitative measure of treatment effectiveness as well as spatial output that can be used for analyzing fuel treatment effectiveness, burn plan development, National Environmental Policy Act (NEPA) documentation, and public education as well as other uses. This data is stored on the internet where individuals with a user-account can readily assess the information.

Map 18. Medicine Tree Project Area and treatment units to be analyzed in WFDSS

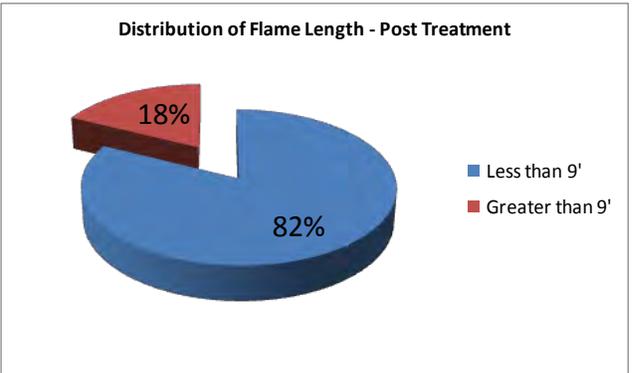
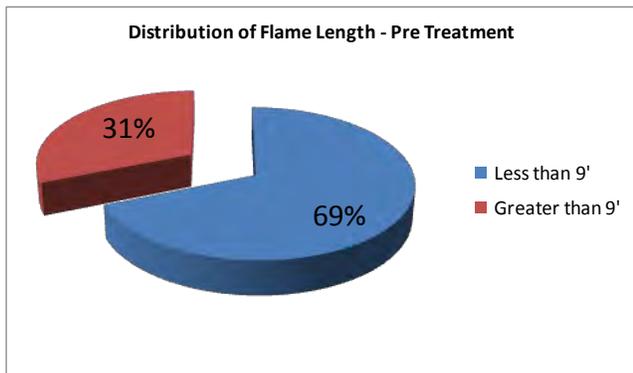
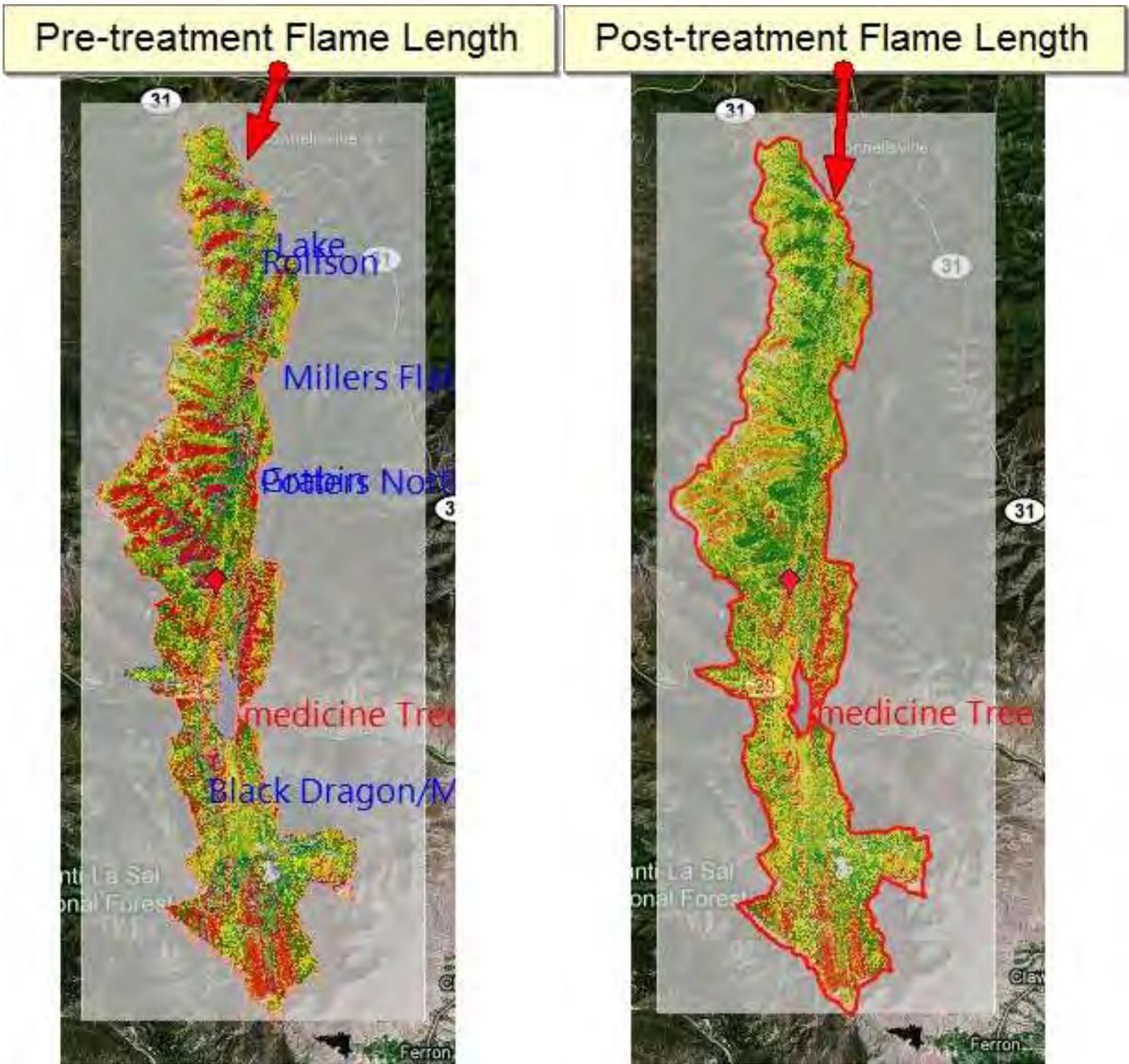


Map 19. Burn Behavior Comparison Pre- and Post-treatment



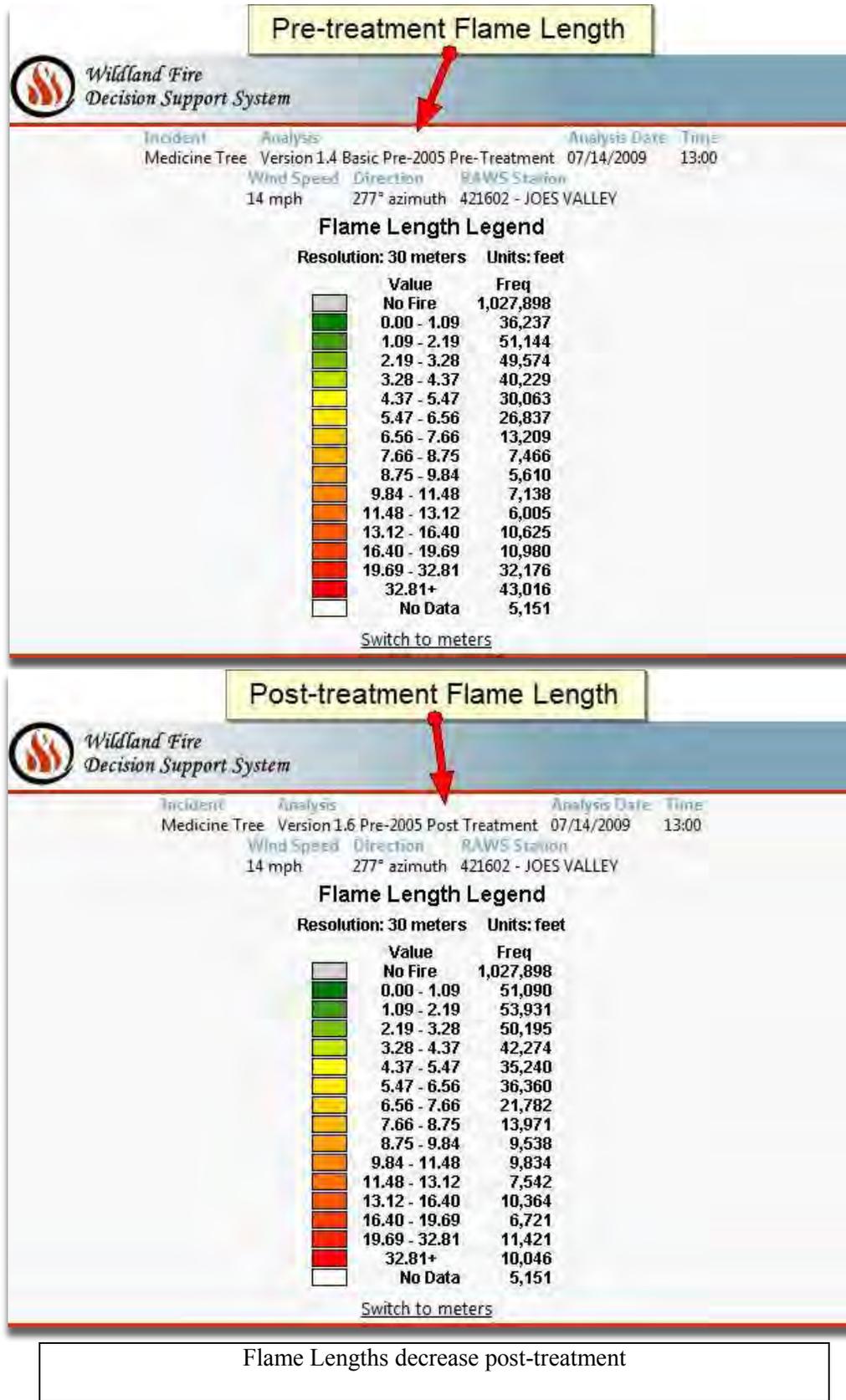
Three ignitions that burn for three days under 90<sup>th</sup> percentile weather conditions, the pre-treatment fire sizes are slightly larger.

**Map 20. Flame Length Comparison Pre- and Post-treatment**

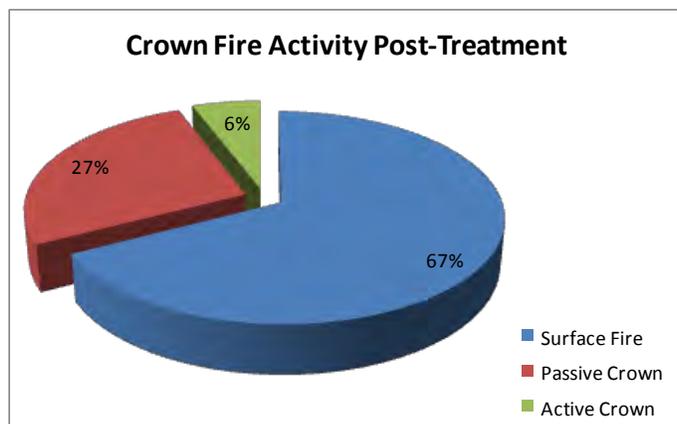
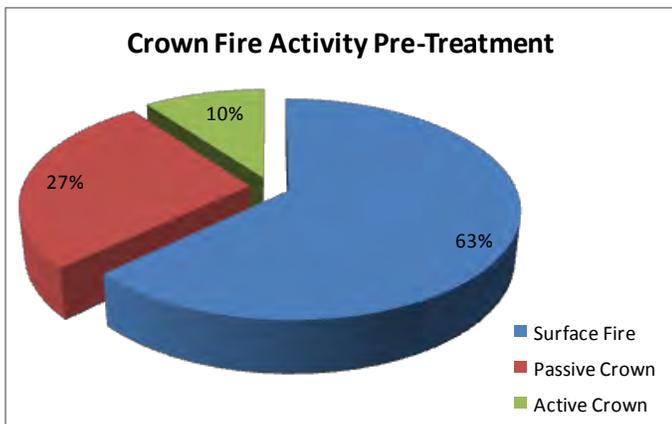
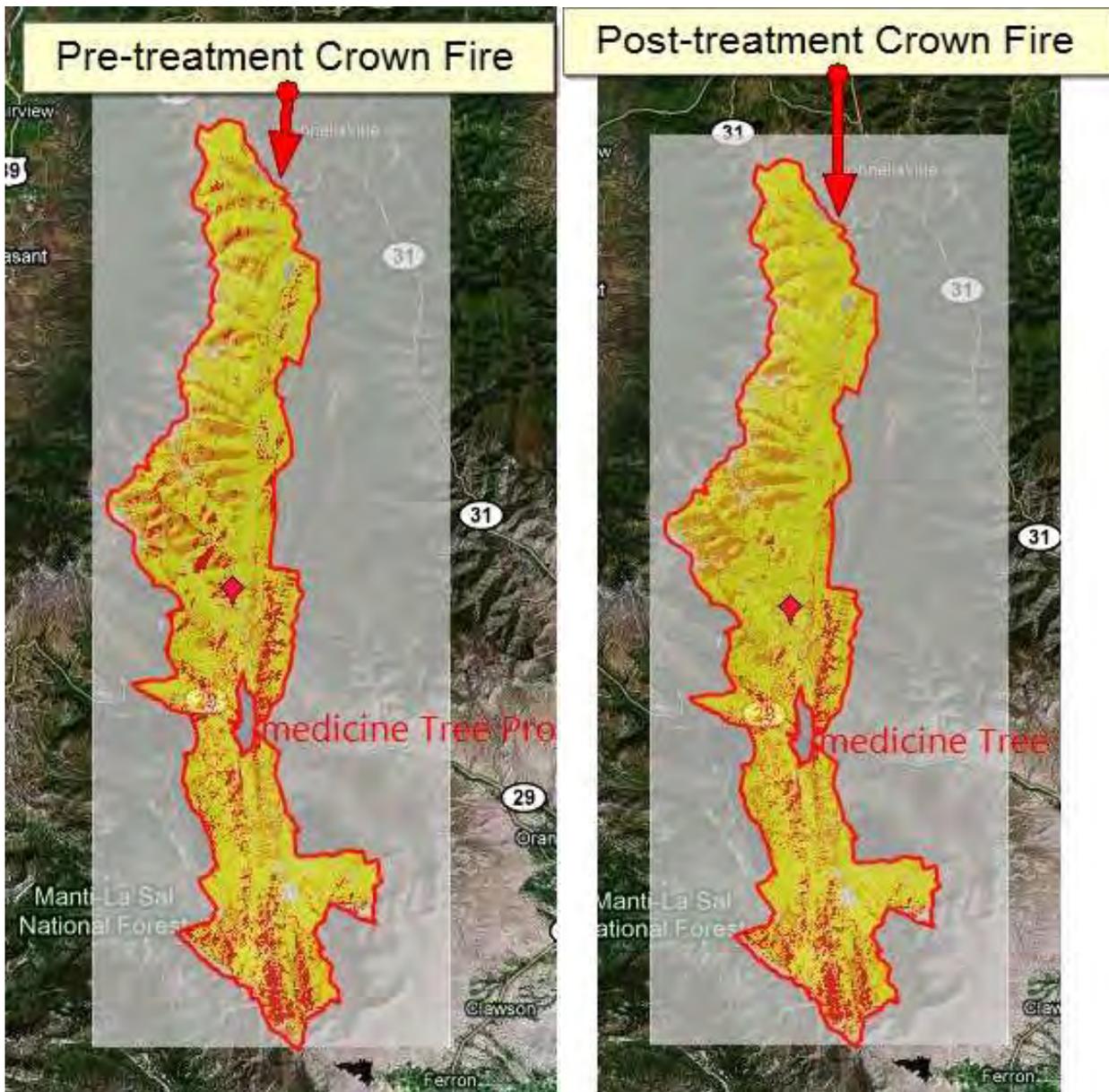


Flame lengths greater than nine feet in height (height at which aerial suppression is needed) have been reduced by 13 percent following the proposed project implementation. Post-treatment 82 percent of the fires can be controlled by initial attack resources.

Figure 3. Pre- and Post-treatment Flame Lengths

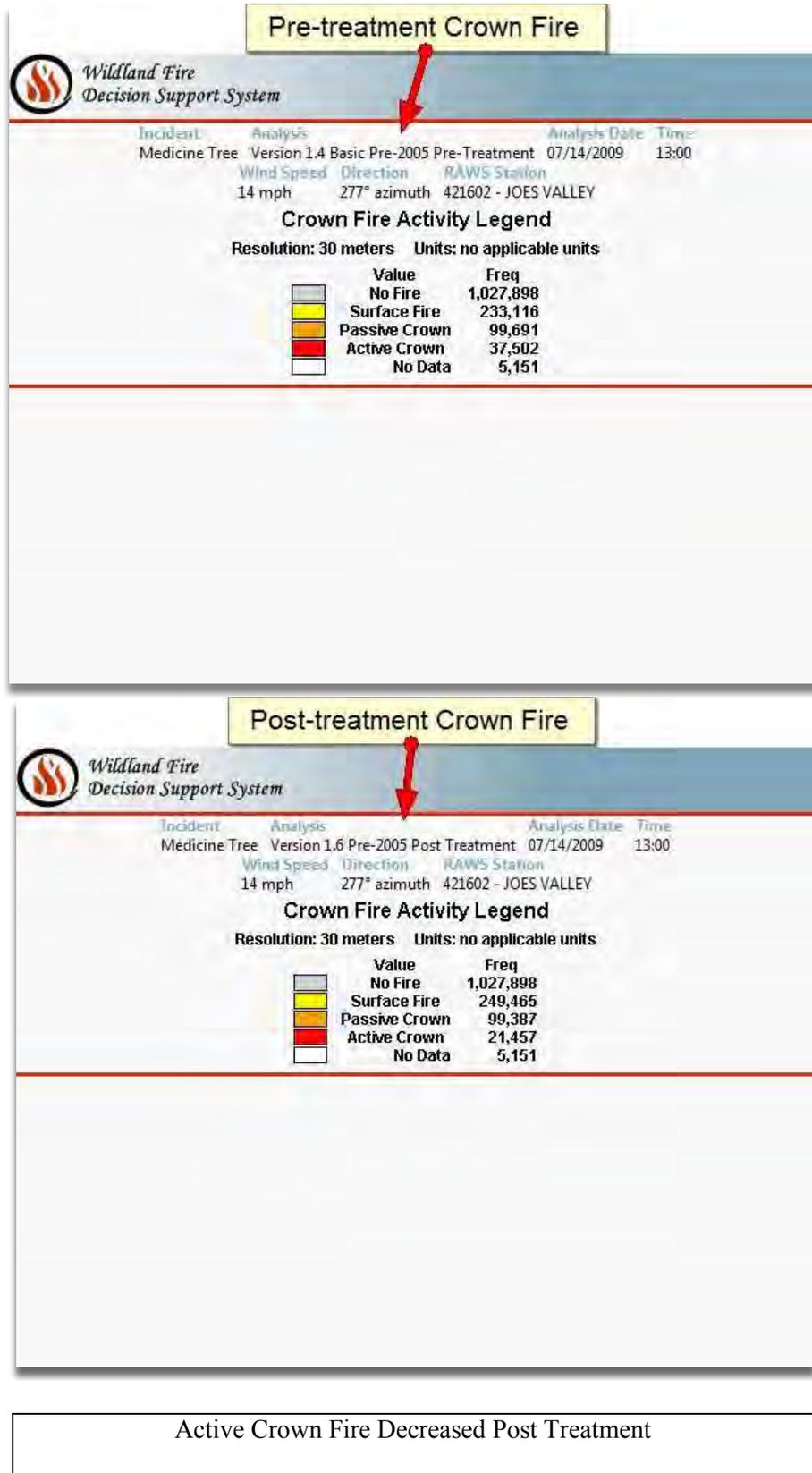


**Map 21. Crown Fire Comparison Pre- and Post-treatment**

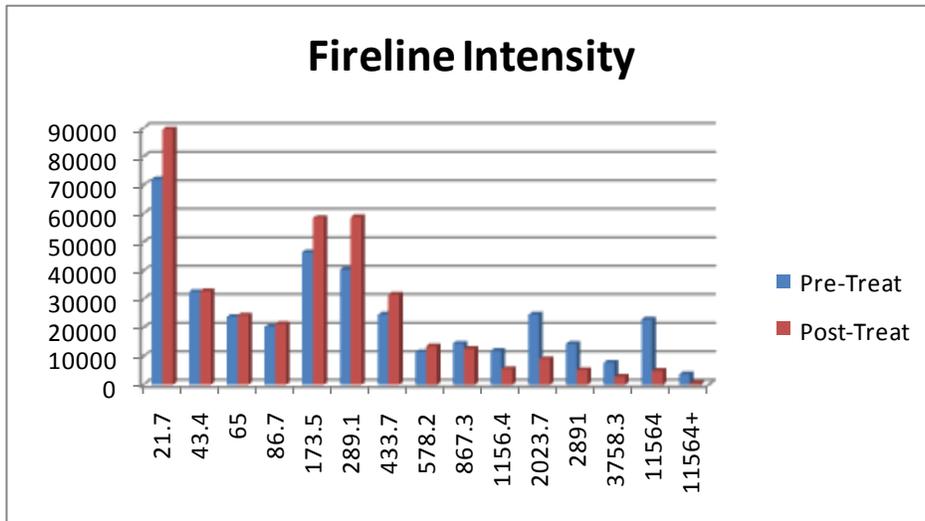


Following treatment, there is a 4 percent reduction in active crown fire activity.

Figure 4. Pre- and Post-treatment Crown Fire



**Figure 5. Pre- and Post-Treatment Fireline Intensity**



Following treatment, there is a decrease in fireline intensity

## **Appendix A. Financial Summary Information by Priority Project**

### **Financial Information by Project**

**Appendix A – See following Figures 1-12, Spreadsheets showing costs associated with projects by implementation, monitoring, partnership contribution, and in-kind contributions for Fiscal Year 10-Fiscal Year 19.**

Medicine Tree Landscape CFLR Project									
Investments Projected and To Date for Implementation and Monitoring									
Project Status	Project Name	Ranking	Timber Sale Appraised Value	FY 10					
				Implementation			Matching	Monitoring	
				Federal	Non-Federal	Partnership in kind	FS Contribution	Federal	Non-Federal
Projects Pending Implementation	Lake (Timber/Fuels)	3	\$ 82,000	\$ 50,000			\$ 16,300	\$ 3,300	
	Millers Flat (Timber/Fuels)	10	\$ 40,000	\$ 37,000			\$ 38,500	\$ 1,500	
	Millers Flat (Recreation)	8	\$ -			\$ 20,000			
	Millers Flat (Road Improvement)	5	\$ -	\$ 250,000			\$ 280,000	\$ 30,000	
	User Created Trail Closures	2	\$ -	\$ 6,500	\$ 1,500	\$ 15,000	\$ 51,500	\$ 110,000	
	Olsen Property Fuels Reduction (State)		\$ -						
	Trail Mountain Fuels Reduction (State)		\$ -						
	Swasey Subdivision Fuels Reduction (State)		\$ -						
	Swasey Fuels	1	\$ -	\$ 526,000	\$ 75,000		\$ 428,300	\$ 7,300	\$ 1,500
	Graben Fuels	12	\$ -						
	Middle Mountain Fuels	6	\$ -	\$ 266,500			\$ 275,000	\$ 8,500	\$ 1,500
	Mary's Slide (Timber/Fuels)	9	\$ 70,000						
	Rolfson Fuels	11	\$ -						
	Potters North/Lowery Road	7	\$ -						
	Potters North (Timber/Fuels)	13	\$ 36,000						
Black Dragon Fuels Phase II	4	\$ -							
Total Dollars Investment				\$ 1,136,000	\$ 76,500	\$ 35,000	\$ 1,089,600	\$ 160,600	\$ 3,000

Medicine Tree Landscape CFLR Project										
Investments Projected and To Date for Implementation and Monitoring										
Project Status	Project Name	Ranking	Timber Sale Appraised Value	FY 11						
				Implementation			Matching	Monitoring		
				Federal	Non-Federal	Partnership in kind	FS Contribution	Federal	Non-Federal	
Projects Pending Implementation	Lake (Timber/Fuels)	3	\$ 82,000	\$ 10,000			\$ 2,300	\$ 2,300		
	Millers Flat (Timber/Fuels)	10	\$ 40,000	\$ 23,000			\$ 30,500	\$ 7,500		
	Millers Flat (Recreation)	8	\$ -	\$ 200,000		\$ 20,000	\$ 221,000	\$ 21,000		
	Millers Flat (Road Improvement)	5	\$ -	\$ 640,000			\$ 691,200	\$ 51,200		
	User Created Trail Closures	2	\$ -			\$ 15,000	\$ 31,500	\$ 96,000	\$ 1,500	
	Olsen Property Fuels Reduction (State)		\$ -							
	Trail Mountain Fuels Reduction (State)		\$ -							
	Swasey Subdivision Fuels Reduction (State)		\$ -							
	Swasey Fuels	1	\$ -	\$ 790,000	\$ 146,000		\$ 156,500	\$ 5,500	\$ 1,500	
	Graben Fuels	12	\$ -	\$ 45,000			\$ 9,000	\$ 9,000		
	Middle Mountain Fuels	6	\$ -	\$ 20,000			\$ 3,500	\$ 3,500	\$ 1,500	
	Mary's Slide (Timber/Fuels)	9	\$ 70,000							
	Rolfson Fuels	11	\$ -							
	Potters North/Lowery Road	7	\$ -							
	Potters North (Timber/Fuels)	13	\$ 36,000							
Black Dragon Fuels Phase II	4	\$ -								
Total Dollars Investment				\$ 1,728,000	\$ 146,000	\$ 35,000	\$ 1,145,500	\$ 196,000	\$ 4,500	

Medicine Tree Landscape CFLR Project									
Investments Projected and To Date for Implementation and Monitoring									
Project Status	Project Name	Ranking	Timber Sale Appraised Value	FY 12					
				Implementation			Matching	Monitoring	
				Federal	Non-Federal	Partnership in kind	FS Contribution	Federal	Non-Federal
Projects Pending Implementation	Lake (Timber/Fuels)	3	\$ 82,000	\$ 10,000			\$ 4,300	\$ 4,300	
	Millers Flat (Timber/Fuels)	10	\$ 40,000	\$ 10,000			\$ 3,500	\$ 3,500	
	Millers Flat (Recreation)	8	\$ -	\$ 50,000		\$ 20,000	\$ 56,000	\$ 6,000	
	Millers Flat (Road Improvement)	5	\$ -						
	User Created Trail Closures	2	\$ -			\$ 15,000	\$ 46,500	\$ 113,000	\$ 1,500
	Olsen Property Fuels Reduction (State)		\$ -						
	Trail Mountain Fuels Reduction (State)		\$ -						
	Swasey Subdivision Fuels Reduction (State)		\$ -						
	Swasey Fuels	1	\$ -	\$ 709,000	\$ 100,000		\$ 264,500	\$ 5,500	\$ 1,500
	Graben Fuels	12	\$ -				\$ 8,000	\$ 8,000	
	Middle Mountain Fuels	6	\$ -				\$ 3,000	\$ 3,000	\$ 1,500
	Mary's Slide (Timber/Fuels)	9	\$ 70,000						
	Rolfson Fuels	11	\$ -						
	Potters North/Lowery Road	7	\$ -	\$ 45,000					
	Potters North (Timber/Fuels)	13	\$ 36,000						
	Black Dragon Fuels Phase II	4	\$ -						
			Total Dollars Investment	\$ 824,000	\$ 100,000	\$ 35,000	\$ 385,800	\$ 143,300	\$ 4,500

Medicine Tree Landscape CFLR Project									
Investments Projected and To Date for Implementation and Monitoring									
Project Status	Project Name	Ranking	Timber Sale Appraised Value	FY 13					
				Implementation			Matching	Monitoring	
				Federal	Non-Federal	Partnership in kind	FS Contribution	Federal	Non-Federal
Projects Pending Implementation	Lake (Timber/Fuels)	3	\$ 82,000	\$ 60,000			\$ 27,600	\$ 4,200	
	Millers Flat (Timber/Fuels)	10	\$ 40,000	\$ 57,500			\$ 29,400	\$ 6,000	
	Millers Flat (Recreation)	8	\$ -			\$ 20,000			
	Millers Flat (Road Improvement)	5	\$ -						
	User Created Trail Closures	2	\$ -			\$ 15,000	\$ 51,500	\$ 112,000	\$ 1,500
	Olsen Property Fuels Reduction (State)		\$ -						
	Trail Mountain Fuels Reduction (State)		\$ -						
	Swasey Subdivision Fuels Reduction (State)		\$ -						
	Swasey Fuels	1	\$ -	\$ 759,000	\$ 100,000		\$ 264,500	\$ 5,500	\$ 1,500
	Graben Fuels	12	\$ -	\$ 30,000			\$ 14,000	\$ 14,000	
	Middle Mountain Fuels	6	\$ -				\$ 2,500	\$ 2,500	\$ 1,500
	Mary's Slide (Timber/Fuels)	9	\$ 70,000	\$ 68,000			\$ 68,000		
	Rolfson Fuels	11	\$ -						
	Potters North/Lowery Road	7	\$ -						
	Potters North (Timber/Fuels)	13	\$ 36,000						
	Black Dragon Fuels Phase II	4	\$ -						
Total Dollars Investment				\$ 974,500	\$ 100,000	\$ 35,000	\$ 457,500	\$ 144,200	\$ 4,500

Medicine Tree Landscape CFLR Project									
Investments Projected and To Date for Implementation and Monitoring									
Project Status	Project Name	Ranking	Timber Sale Appraised Value	FY 14					
				Implementation			Matching	Monitoring	
				Federal	Non-Federal	Partnership in kind	FS Contribution	Federal	Non-Federal
Projects Pending Implementation	Lake (Timber/Fuels)	3	\$ 82,000	\$ 65,000			\$ 27,600	\$ 4,200	
	Millers Flat (Timber/Fuels)	10	\$ 40,000	\$ 59,500			\$ 29,400	\$ 6,000	
	Millers Flat (Recreation)	8	\$ -	\$ 200,000	\$ 100,000	\$ 20,000	\$ 20,000	\$ 20,000	
	Millers Flat (Road Improvement)	5	\$ -						
	User Created Trail Closures	2	\$ -			\$ 15,000	\$ 51,500	\$ 110,000	\$ 1,500
	Olsen Property Fuels Reduction (State)		\$ -						
	Trail Mountain Fuels Reduction (State)		\$ -						
	Swasey Subdivision Fuels Reduction (State)		\$ -						
	Swasey Fuels	1	\$ -	\$ 709,000	\$ 100,000		\$ 269,500	\$ 9,500	\$ 1,500
	Graben Fuels	12	\$ -	\$ -			\$ 8,000	\$ 8,000	
	Middle Mountain Fuels	6	\$ -				\$ 2,500	\$ 2,500	\$ 1,500
	Mary's Slide (Timber/Fuels)	9	\$ 70,000	\$ 10,000			\$ 10,000	\$ 10,000	
	Rolfson Fuels	11	\$ -	\$ 119,000	\$ 60,000		\$ 10,000	\$ 10,000	
	Potters North/Lowery Road	7	\$ -						
Potters North (Timber/Fuels)	13	\$ 36,000	\$ 46,000			\$ 52,000	\$ 6,000		
Black Dragon Fuels Phase II	4	\$ -							
Total Dollars Investment				\$ 1,208,500	\$ 260,000	\$ 35,000	\$ 480,500	\$ 186,200	\$ 4,500

Medicine Tree Landscape CFLR Project									
Investments Projected and To Date for Implementation and Monitoring									
Project Status	Project Name	Ranking	Timber Sale Appraised Value	FY 15					
				Implementation			Matching	Monitoring	
				Federal	Non-Federal	Partnership in kind	FS Contribution	Federal	Non-Federal
Projects Pending Implementation	Lake (Timber/Fuels)	3	\$ 82,000	\$ 18,000			\$ 6,200	\$ 6,200	
	Millers Flat (Timber/Fuels)	10	\$ 40,000	\$ 56,000			\$ 26,900	\$ 3,500	
	Millers Flat (Recreation)	8	\$ -			\$ 20,000			
	Millers Flat (Road Improvement)	5	\$ -						
	User Created Trail Closures	2	\$ -			\$ 15,000	\$ 51,500	\$ 110,000	\$ 1,500
	Olsen Property Fuels Reduction (State)		\$ -						
	Trail Mountain Fuels Reduction (State)		\$ -						
	Swasey Subdivision Fuels Reduction (State)		\$ -						
	Swasey Fuels	1	\$ -	\$ 574,000	\$ 50,000		\$ 265,500	\$ 6,500	\$ 1,500
	Graben Fuels	12	\$ -	\$ 78,000			\$ 19,000	\$ 19,000	
	Middle Mountain Fuels	6	\$ -				\$ 2,500	\$ 2,500	\$ 1,500
	Mary's Slide (Timber/Fuels)	9	\$ 70,000	\$ 147,000			\$ 67,900	\$ 5,500	
	Rolfson Fuels	11	\$ -	\$ 119,000	\$ 60,000		\$ 11,000	\$ 11,000	
	Potters North/Lowery Road	7	\$ -						
Potters North (Timber/Fuels)	13	\$ 36,000	\$ 12,000			\$ 4,000	\$ 4,000		
Black Dragon Fuels Phase II	4	\$ -							
Total Dollars Investment				\$ 1,004,000	\$ 110,000	\$ 35,000	\$ 454,500	\$ 168,200	\$ 4,500

Medicine Tree Landscape CFLR Project									
Investments Projected and To Date for Implementation and Monitoring									
Project Status	Project Name	Ranking	Timber Sale Appraised Value	FY 16					
				Implementation			Matching	Monitoring	
				Federal	Non-Federal	Partnership in kind	FS Contribution	Federal	Non-Federal
Projects Pending Implementation	Lake (Timber/Fuels)	3	\$ 82,000	\$ 215,000			\$ 7,000	\$ 7,000	
	Millers Flat (Timber/Fuels)	10	\$ 40,000	\$ 84,000			\$ 8,000	\$ 8,000	
	Millers Flat (Recreation)	8	\$ -			\$ 30,000			
	Millers Flat (Road Improvement)	5	\$ -						
	User Created Trail Closures	2	\$ -			\$ 20,000	\$ 51,500	\$ 110,000	\$ 1,500
	Olsen Property Fuels Reduction (State)		\$ -						
	Trail Mountain Fuels Reduction (State)		\$ -						
	Swasey Subdivision Fuels Reduction (State)		\$ -						
	Swasey Fuels	1	\$ -	\$ 50,000			\$ 29,500	\$ 4,500	\$ 1,500
	Graben Fuels	12	\$ -				\$ 10,000	\$ 10,000	
	Middle Mountain Fuels	6	\$ -				\$ 8,500	\$ 8,500	\$ 1,500
	Mary's Slide (Timber/Fuels)	9	\$ 70,000	\$ 147,000	\$ 50,000		\$ 67,900	\$ 5,500	
	Rolfson Fuels	11	\$ -	\$ 125,000			\$ 60,500	\$ 5,500	
	Potters North/Lowery Road	7	\$ -						
	Potters North (Timber/Fuels)	13	\$ 36,000	\$ 1,200			\$ 5,500	\$ 5,500	
	Black Dragon Fuels Phase II	4	\$ -	\$ 206,100	\$ 50,000		\$ 107,600	\$ 14,000	
Total Dollars Investment				\$ 828,300	\$ 100,000	\$ 50,000	\$ 356,000	\$ 178,500	\$ 4,500

Medicine Tree Landscape CFLR Project										
Investments Projected and To Date for Implementation and Monitoring										
Project Status	Project Name	Ranking	Timber Sale Appraised Value	FY 17						
				Implementation			Matching	Monitoring		
				Federal	Non-Federal	Partnership in kind	FS Contribution	Federal	Non-Federal	
Projects Pending Implementation	Lake (Timber/Fuels)	3	\$ 82,000							
	Millers Flat (Timber/Fuels)	10	\$ 40,000				\$ 2,000	\$ 2,000		
	Millers Flat (Recreation)	8	\$ -			\$ 30,000				
	Millers Flat (Road Improvement)	5	\$ -							
	User Created Trail Closures	2	\$ -			\$ 20,000	\$ 51,500	\$ 118,000	\$ 1,500	
	Olsen Property Fuels Reduction (State)		\$ -							
	Trail Mountain Fuels Reduction (State)		\$ -							
	Swasey Subdivision Fuels Reduction (State)		\$ -							
	Swasey Fuels	1	\$ -				\$ 4,500	\$ 4,500	\$ 1,500	
	Graben Fuels	12	\$ -				\$ 18,000	\$ 18,000		
	Middle Mountain Fuels	6	\$ -	\$ 62,500	\$ 62,500		\$ 3,500	\$ 3,500	\$ 1,500	
	Mary's Slide (Timber/Fuels)	9	\$ 70,000	\$ 37,500	\$ 37,500		\$ 10,500	\$ 10,500		
	Rolfson Fuels	11	\$ -	\$ 212,500	\$ 212,500	\$ 40,000	\$ 65,000	\$ 10,000		
	Potters North/Lowery Road	7	\$ -							
	Potters North (Timber/Fuels)	13	\$ 36,000	\$ 147,000	\$ 147,000		\$ 67,900	\$ 5,500		
Black Dragon Fuels Phase II	4	\$ -	\$ 596,700	\$ 596,700	\$ 50,000	\$ 265,700	\$ 6,500			
Total Dollars Investment				\$ 1,056,200	\$ 90,000	\$ 50,000	\$ 488,600	\$ 178,500	\$ 4,500	

Medicine Tree Landscape CFLR Project									
Investments Projected and To Date for Implementation and Monitoring									
Project Status	Project Name	Ranking	Timber Sale Appraised Value	FY 18					
				Implementation			Matching	Monitoring	
				Federal	Non-Federal	Partnership in kind	FS Contribution	Federal	Non-Federal
Projects Pending Implementation	Lake (Timber/Fuels)	3	\$ 82,000				\$ 5,500	\$ 5,500	
	Millers Flat (Timber/Fuels)	10	\$ 40,000				\$ 6,000	\$ 6,000	
	Millers Flat (Recreation)	8	\$ -			\$ 30,000			
	Millers Flat (Road Improvement)	5	\$ -						
	User Created Trail Closures	2	\$ -			\$ 20,000	\$ 51,500	\$ 118,000	\$ 1,500
	Olsen Property Fuels Reduction (State)		\$ -						
	Trail Mountain Fuels Reduction (State)		\$ -						
	Swasey Subdivision Fuels Reduction (State)		\$ -						
	Swasey Fuels	1	\$ -	\$ 125,000	\$ 60,000		\$ 69,500	\$ 4,500	\$ 1,500
	Graben Fuels	12	\$ -				\$ 14,000	\$ 14,000	
	Middle Mountain Fuels	6	\$ -				\$ 2,500	\$ 2,500	\$ 1,500
	Mary's Slide (Timber/Fuels)	9	\$ 70,000	\$ 227,000			\$ 1,300	\$ 13,000	
	Rolfson Fuels	11	\$ -				\$ 12,000	\$ 12,000	
	Potters North/Lowery Road	7	\$ -						
	Potters North (Timber/Fuels)	13	\$ 36,000	\$ 24,500			\$ 5,500	\$ 5,500	
	Black Dragon Fuels Phase II	4	\$ -	\$ 596,700	\$ 50,000		\$ 265,700	\$ 6,500	
Total Dollars Investment				\$ 973,200	\$ 110,000	\$ 50,000	\$ 433,500	\$ 187,500	\$ 4,500

Medicine Tree Landscape CFLR Project									
Investments Projected and To Date for Implementation and Monitoring									
Project Status	Project Name	Ranking	Timber Sale Appraised Value	FY 19					
				Implementation			Matching	Monitoring	
				Federal	Non-Federal	Partnership in kind	FS Contribution	Federal	Non-Federal
Projects Pending Implementation	Lake (Timber/Fuels)	3	\$ 82,000				\$ 4,000	\$ 4,000	
	Millers Flat (Timber/Fuels)	10	\$ 40,000				\$ 8,000	\$ 8,000	
	Millers Flat (Recreation)	8	\$ -			\$ 30,000			
	Millers Flat (Road Improvement)	5	\$ -						
	User Created Trail Closures	2	\$ -			\$ 20,000	\$ 51,500	\$ 118,000	\$ 1,500
	Olsen Property Fuels Reduction (State)		\$ -						
	Trail Mountain Fuels Reduction (State)		\$ -						
	Swasey Subdivision Fuels Reduction (State)		\$ -						
	Swasey Fuels	1	\$ -	\$ 125,000	\$ 60,000		\$ 30,500	\$ 10,500	\$ 1,500
	Graben Fuels	12	\$ -				\$ 19,000	\$ 19,000	
	Middle Mountain Fuels	6	\$ -				\$ 2,500	\$ 2,500	\$ 1,500
	Mary's Slide (Timber/Fuels)	9	\$ 70,000				\$ 14,500	\$ 14,500	
	Rolfson Fuels	11	\$ -				\$ 12,000	\$ 12,000	
	Potters North/Lowery Road	7	\$ -	\$ 65,000			\$ 3,000	\$ 3,000	
	Potters North (Timber/Fuels)	13	\$ 36,000	\$ 130,000			\$ 13,000	\$ 13,000	
	Black Dragon Fuels Phase II	4	\$ -	\$ 484,200	\$ 50,000		\$ 185,500	\$ 6,500	
			Total Dollars Investment	\$ 804,200	\$ 110,000	\$ 50,000	\$ 343,500	\$ 211,000	\$ 4,500

Medicine Tree Landscape CFLR Project										
Investments Projected and To Date for Implementation and Monitoring										
Project Status	Project Name	Ranking	Timber Sale Appraised Value	Total Investment by Project						
				Implementation			Matching	Monitoring*		Grand total
				Federal	Non-Federal	Partnership in kind	FS Contribution	Non-Federal	Non-Federal	With Timber Value
Projects Pending Implementation	Lake (Timber/Fuels)	3	\$ 82,000	\$ 428,000	\$ -	\$ -	\$ 100,800	\$ 41,000	\$ -	\$ 551,000
	Millers Flat (Timber/Fuels)	10	\$ 40,000	\$ 327,000	\$ -	\$ -	\$ 182,200	\$ 52,000	\$ -	\$ 419,000
	Millers Flat (Recreation)	8	\$ -	\$ 450,000	\$ 100,000	\$ 240,000	\$ 297,000	\$ 47,000	\$ -	\$ 497,000
	Millers Flat (Road Improvement)	5	\$ -	\$ 890,000	\$ -	\$ -	\$ 971,200	\$ 81,200	\$ -	\$ 971,200
	User Created Trail Closures	2	\$ -	\$ 6,500	\$ 1,500	\$ 170,000	\$ 490,000	\$ 1,115,000	\$ 13,500	\$ 1,121,500
	Olsen Property Fuels Reduction (State)		\$ -							\$ -
	Trail Mountain Fuels Reduction (State)		\$ -							\$ -
	Swasey Subdivision Fuels Reduction (State)		\$ -							\$ -
	Swasey Fuels	1	\$ -	\$ 4,367,000	\$ 691,000	\$ -	\$ 1,782,800	\$ 63,800	\$ 15,000	\$ 4,430,800
	Graben Fuels	12	\$ -	\$ 153,000	\$ -	\$ -	\$ 119,000	\$ 119,000	\$ -	\$ 272,000
	Middle Mountain Fuels	6	\$ -	\$ 349,000	\$ -	\$ -	\$ 306,000	\$ 39,500	\$ 15,000	\$ 388,500
	Mary's Slide (Timber/Fuels)	9	\$ 70,000	\$ 636,500	\$ 50,000	\$ -	\$ 240,100	\$ 59,000	\$ -	\$ 765,500
	Rolfson Fuels	11	\$ -	\$ 575,500	\$ 160,000	\$ -	\$ 170,500	\$ 60,500	\$ -	\$ 636,000
	Potters North/Lowery Road	7	\$ -	\$ 110,000	\$ -	\$ -	\$ 3,000	\$ 3,000	\$ -	\$ 113,000
	Potters North (Timber/Fuels)	13	\$ 36,000	\$ 360,700	\$ -	\$ -	\$ 147,900	\$ 39,500	\$ -	\$ 436,200
	Black Dragon Fuels Phase II	4	\$ -	\$ 1,883,700	\$ 200,000	\$ -	\$ 824,500	\$ 33,500	\$ -	\$ 1,917,200
Total Dollars Investment				\$ 10,536,900	\$ 1,202,500	\$ 410,000	\$ 5,635,000	\$ 1,754,000	\$ 43,500	\$ 12,518,900

\* Monitoring will continue from FY 20 to FY 24, Photo Points every 5 years, Vegetation Data every 10 years, Wildlife (Terrestrial and Aquatic) as per Forest Plan Direction, Noxious Weeds each year in Perpetuity, Soil Monitoring after implementation and 10 years later, Utah Department of Wildlife Resources Range Trend Studies every 5 years.

Project Name	Nepa Complete = 1, Partially = 2, NFMA = 3	Partners Yes = 1 No = 3	Probability of Success Non-Appealable = 1 Appealable = 3	Product Yes = 1 No = 3	Treatment Type Mechanical = 1 Both = 2 Burning = 3	Total Rank (Lower the Number the Higher the Ranking)	Overall Ranking
Lake (Timber/Fuels)	1	3	1	1	2	8	3
Millers Flat (Timber/Fuels)	2	3	3	1	2	11	10
Millers Flat (Recreation)	2	1	3	3	1	10	8
Millers Flat (Road Improvement)	1	3	1	3	1	9	5
User Created Trail Closures	1	1	1	3	1	7	2
Swasey Fuels	1	1	1	1	2	6	1
Graben Fuels	2	3	1	3	3	12	12
Middle Mountain Fuels - RX Burn	1	1	1	3	3	9	6
Mary's Slide (Timber/Fuels)	3	1	3	1	2	10	9
Rolfson Fuels	3	1	1	3	3	11	11
Potters North/Lowery Road*,***	2	1	3	2	1	9	7
Potters North (Timber/Fuels)	3	3	3	1	2	12	13
Black Dragon Phase II**	2	1	1	3	1	8	4

\*NEPA not needed for improvement but needed for reclamation

\*\* Adequacy review needed

\*\*\* Road needed to extract product

## Appendix A. List of Items Included In the Cost Calculations for Each Project by Fiscal Year.

### Lake

#### FY10 –

Timber will be sold, but no cost

\*Appraised Value \$82,000

Layout and sale prep - \$50,000

Monitoring Photo Points - \$3000

Ecological Monitoring - \$3000

Bird Monitoring \$300

\*Our Contribution is \$16,300

\*Requesting \$37,000 for salvage

#### FY11 –

\$10K sale admin

\$1K Sale monitoring

\$300 Bird monitoring

Soil Monitoring \$1000

\*Our Contribution is \$2300

#### FY12 –

\$10K sale admin

\$2K Sale monitoring

\$300 Bird monitoring

Weed Monitoring - \$1000

Soil Monitoring \$1000

\*Our Contribution is \$4200

#### FY13 -

Mastication Equipment \$12,000/month x 1.5 months (2 machines) - \$18,000

Transport 3600/month x 3 = \$5400

Fuels trt 125 acres - \$25,000

\$10K sale admin

\$2K Sale monitoring

\$500 Bird monitoring

Weed Monitoring - \$1000

Soil Monitoring \$1000

\*Our Contribution is \$23,400 equipment and \$4200 for monitoring = \$27600

#### FY14 -

Mastication Equipment \$12,000/month x 1.5 months (2 machines) - \$18,000

Transport 3600/month x 3 = \$5400

Fuels treatment 125 acres - \$30,000

\$10K sale admin

\$2K Sale monitoring

\$500 Bird monitoring

Weed Monitoring - \$1000

Soil Monitoring \$1000

\*Our Contribution is \$23,400 equipment and \$4200 for monitoring = \$27600

#### FY15 -

Burning 130 acres \$60/acre - \$8000

\$10K sale admin

\$1K Sale monitoring

\$500 Bird monitoring

5-year photo plots - \$3000

Weed Monitoring - \$1000

Soil Monitoring \$1000

\*Our contribution is \$6200

#### FY16 -

Planting \$650/acre x 400 acres = \$215,000

Stocking Surveys and aspen \$5000

Weed Monitoring - \$1000

Soil Monitoring \$1000

\*Our contribution is \$7000

#### FY17 –

No Costs

#### FY18 -

Stocking Surveys 3<sup>rd</sup> year and aspen \$5500

\*Our contribution is \$5500

#### FY19 –

No Costs

Herbaceous Monitoring 10-year - \$4000

\*Our contribution is \$4000

Total - \$412,700

Total Monitoring - \$34,700

Total Implementation - \$378,000

Includes equipment costs

Our Contribution Machinery and Monitoring

**Millers Flat (Timber/Fuels)**

**FY10 –**

Layout and sale prep - \$37,000  
 Bird Monitoring \$1200  
 Goshawk Monitoring - \$300

**\*Our contribution is \$38500**

**FY11 –**

Timber will be sold  
 Monitoring Photo Points - \$3000  
 Ecological Monitoring - \$3000

**\*Appraised Value \$40,000 (FY10 figures)**

Bird Monitoring \$1200  
 Goshawk Monitoring - \$300  
 Sale Layout and Prep- \$23,000

**\*Our contribution is \$30500**

**FY12 –**

\$10K sale admin  
 \$2K Sale monitoring  
 Bird Monitoring \$1200  
 Goshawk Monitoring - \$300

**\*Our contribution is \$3500**

**FY13 –**

Mastication Equipment \$12,000/month x 1.5 months (2 machines) - \$18,000  
 Transport 3600/month x 3 = \$5400  
 Fuels trt 100 mastication acres x \$225 - \$22,500  
 \$10K sale admin

\$2500 Sale monitoring  
 Bird Monitoring \$1500  
 Goshawk Monitoring - \$500  
 Weed Monitoring - \$1500

**\*Our contribution is \$23400 is equipment and monitoring is \$6000= \$29400**

**FY14 -**

Mastication Equipment \$12,000/month x 1.5 months (2 machines) - \$18,000  
 Transport 3600/month x 3 = \$5400  
 Fuels trt 100 mastication acres x \$225 - \$22,500  
 \$12K sale admin  
 \$2500 Sale monitoring

Bird Monitoring \$1500  
 Goshawk Monitoring - \$500  
 Weed Monitoring - \$1500

**\*Our contribution is \$23400 is equipment and monitoring is \$6000= \$29400**

**FY15 -**

Mastication Equipment \$12,000/month x 1.5 months (2 machines) - \$18,000  
 Transport 3600/month x 3 = \$5400  
 Fuels trt 105 mastication acres x \$225 - \$22,500  
 Burning 130 acres \$60/acre - \$8000

Bird Monitoring \$1500  
 Goshawk Monitoring - \$500  
 Weed Monitoring - \$1500

**\*Our contribution is \$23400 is equipment and monitoring is \$3500= \$26900**

**FY16 -**

Planting \$650/acre x 130 acres = \$84,500  
 Stocking Surveys and aspen \$5000

Bird Monitoring \$1500  
 Goshawk Monitoring - \$500  
 Weed Monitoring - \$1000

**\*Our contribution is \$8000**

**FY17 –**

Goshawk Monitoring - \$500  
 Weed Monitoring - \$1500

**\*Our contribution is \$2000**

**FY18 -**

Stocking Surveys 3<sup>rd</sup> year and aspen \$5500  
 Goshawk Monitoring - \$500

**\*Our contribution is \$6000**

**FY19 –**

Goshawk Monitoring - \$500  
 Herbaceous Monitoring 10-year - \$4000  
 Photo points - \$3500

**\*Our contribution is \$8000**

Total - \$379,000  
 Total Monitoring - \$52,000  
 Total Implementation - \$327,000  
 Includes equipment costs

## **Millers Flat (Recreation)**

### **FY10 -**

No Costs

**\*In-Kind Volunteer Labor \$35,000**

### **FY11 -**

Implementation - Legacy Funds from RO - \$200,000 (Protecting wetland, barriers ...)

Monitoring

Soils Monitoring \$1000

Recreation Monitoring \$20,000

\*Our contribution \$221,000

**\*In-Kind Volunteer Labor \$35,000**

### **FY12 -**

Implementation - Legacy Funds from RO - \$50,000 (Protecting wetland, barriers ...)

Soils Monitoring \$1000

Recreation Monitoring \$5,000

\*Our contribution \$56,000

**\*In-Kind Volunteer Labor \$35,000**

### **FY13 -**

**\*In-Kind Volunteer Labor \$35,000**

### **FY14 -**

Recreation sites protecting wetlands \$200,000 following timber sale.

Implementation Costs \$200,000

**\*Non-federal UPCD \$100,000 (anticipated)**

Recreation Monitoring – \$20,000

\*Our contribution \$20,000

**\*In-Kind Volunteer Labor \$35,000**

### **FY15 -**

**\*In-Kind Volunteer Labor \$35,000**

### **FY16 -**

Add 15,000 partnership in-kind to make \$50,000

**\*In-Kind Volunteer Labor \$50,000**

### **FY17 -**

**\*In-Kind Volunteer Labor \$50,000**

### **FY18 -**

**\*In-Kind Volunteer Labor \$50,000**

### **FY19 -**

**\*In-Kind Volunteer Labor \$50,000**

Includes wetland monitoring

## **Millers Flat (Road Improvement)**

### **FY10 –**

Maintenance of Millers Flat includes gravelling; 5.5 miles; \$250,000

Monitoring (12% of cost) - \$30,000

**\*Our Contribution \$280,000**

### **FY11 -**

Maintenance of Millers Flat includes gravelling; 4.5 miles; \$640,000

Monitoring (8% of cost) - \$51,200

**\*Our Contribution \$691,200**

### **FY12 -**

### **FY13 -**

### **FY14 -**

### **FY15 -**

### **FY16 -**

### **FY17 -**

### **FY18 -**

### **FY19 -**

Total - \$379,000

Total Monitoring - \$52,000

Total Implementation - \$327,000

**Swasey**

**FY10 –**

Implementation (mastication) 1400 acres \$277,000

Includes above base

**Non-federal UPCD \$75,000**

Mastication Equipment \$18000/month x 12 months  
(3 machines) - \$216,000

Transport 3600/month x 12 = \$43,000

Monitoring Bird \$2000

Flammulated Owl - \$500

Plant Monitoring - \$1000

Soils Monitoring - \$2000

Stream Monitoring - \$1300

Fuels Monitoring - \$500

**Non-federal UDWR - \$1500**

**\*Our Contribution \$428,300**

**FY11 –**

**Non-federal UPCD \$146,000 (anticipated)**

Implementation (mastication) 686 acres \$130,000

Above base - \$151,000

Mastication Equipment \$18000/month x 12 months  
(3 machines) – \$216,000

Transport 3600/month x 12 = \$43,000

Purchase Fecon Equipment - \$250,000

Monitoring Bird \$2000

Flammulated Owl - \$500

Soils Monitoring - \$500

Fuels Monitoring - \$500

Veg Monitoring - \$500

Weed Monitoring - \$1000

**Non-federal UDWR - \$1500**

**\*Our Contribution Above base \$ and monitoring  
- \$156,500**

**FY12 –**

**Non-federal UPCD \$100,000 (anticipated)**

Implementation (mastication) 1000 acres Rx  
burned; 3000 acres mechanical \$450,000

Mastication Equipment \$18000/month x 12 months  
(3 machines) - \$216,000

Transport 3600/month x 12 = \$43,000

Monitoring Bird \$2000

Flammulated Owl - \$500

Soils Monitoring - \$500

Fuels Monitoring - \$500

Veg Monitoring - \$500

Weed Monitoring - \$1000

**Non-federal UDWR - \$1500**

**\*Our Contribution Equipment Costs and  
monitoring - \$259,000 + \$5500 = \$264,500**

**FY13 –**

**Non-federal UPCD \$100,000 (anticipated)**

Implementation (mastication) 1500 acres Rx  
burned; 3000 acres mechanical \$500,000

Mastication Equipment \$18000/month x 12 months  
(3 machines) - \$216,000

Transport 3600/month x 12 = \$43,000

Monitoring Bird \$2000

Flammulated Owl - \$500

Soils Monitoring - \$500

Fuels Monitoring - \$500

Veg Monitoring - \$500

Weed Monitoring - \$1000

**Non-federal UDWR - \$1500**

**\*Our Contribution Equipment Costs and  
monitoring - \$259,000 + \$5500 = \$264,500  
FY14 –**

**Non-federal UPCD \$100,000 (anticipated)**

Implementation (mastication) 1000 acres Rx  
burned; 3000 acres mechanical \$450,000

Mastication Equipment \$18000/month x 12 months  
(3 machines) - \$216,000

Transport 3600/month x 12 = \$43,000

Monitoring Bird \$2000

Flammulated Owl - \$500

Soils Monitoring - \$500

Fuels Monitoring - \$500

Plant Monitoring - \$3000

Weed Monitoring - \$2000

Veg Monitoring - \$1000

**Non-federal UDWR - \$1500**

**\*Our Contribution Equipment Costs and  
monitoring - \$259,000 + \$9500 = \$269,500  
FY15 –**

**Non-federal UPCD \$50,000 (anticipated)**

Implementation 1000 acres Rx burned \$100,000

Implementation (mastication) 1000 acres  
mechanical \$115,000

Mastication Equipment \$18000/month x 12 months  
(3 machines) - \$216,000

Transport 3600/month x 12 = \$43,000

Monitoring Bird \$2000

Flammulated Owl - \$500

Soils Monitoring - \$500

Fuels Monitoring - \$500

Weed Monitoring - \$2000

Veg Monitoring - \$1000

**Non-federal UDWR - \$1500**

**\*Our Contribution Equipment Costs and  
monitoring - \$259,000 + \$6500 = \$265,500  
FY16 -**

Implementation 500 acres Rx burned \$50,000

Monitoring Bird \$2000

Flammulated Owl - \$500

Weed Monitoring - \$2000

**Non-federal UDWR - \$1500**

**\*Our Contribution monitoring \$4500 +  
implementation \$25,000 – \$29500**

**FY17 -**

Monitoring Bird \$2000

Flammulated Owl - \$500

Weed Monitoring - \$2000

**Non-federal UDWR - \$1500**

**\*Our Contribution monitoring – \$4500**

**FY18 -**

**Non-federal UPCD \$60,000 (anticipated)**

1000 acres Rx burned x \$125 = \$125,000

Monitoring Bird \$2000

Flammulated Owl - \$500

Weed Monitoring - \$2000

**Non-federal UDWR - \$1500**

**\*Our Contribution monitoring plus \$65,000 for  
Rx burn – \$69500**

**FY19 -**

**Non-federal UPCD \$60,000 (anticipated)**

1000 acres Rx burned x \$125 = \$125,000

Monitoring Bird \$2000

Flammulated Owl - \$500

Fuels Monitoring (photo points) - \$3000

Weed Monitoring - \$2000

Herbaceous monitoring - \$3000

**Non-federal UDWR - \$1500**

**\*Our Contribution monitoring – \$10,500 plus  
\$20,000 = \$30500**

Total - \$4,430,800

Total Monitoring - \$63,800

Total Implementation - \$4,367,000

**Non-federal UDWR Monitoring - \$15,000**

**Non-federal Implementation -**

Includes equipment costs

**Graben Prescribed Burn**

**FY10 –**

No Costs

**FY11 –**

Implementation 800 x \$55 = \$45,000

Photo Points - \$3000

Herbaceous Veg Monitoring - \$3000

Monitoring Bird \$2000

Soils Monitoring - \$1000

**\*Our Contribution monitoring – \$9000**

**FY12 –**

Monitoring Bird \$2000

Weed Monitoring - \$6000

**\*Our Contribution monitoring – \$8000**

**FY13 –**

Implementation 500 x \$60 = \$30,000

Monitoring Bird \$2000

Soils Monitoring - \$1000

Veg Monitoring - \$5000

Weed Monitoring - \$6000

**\*Our Contribution monitoring – \$14000**

**FY14 –**

Monitoring Bird - \$2000

Weed Monitoring - \$6000

**\*Our Contribution monitoring – \$8000**

**FY15 -**

Implementation 1300 x \$60 = \$78,000

Veg Monitoring - \$10000

Monitoring Bird \$2000

Soils Monitoring - \$1000

Weed Monitoring - \$6000

**\*Our Contribution monitoring – \$19000**

**FY16 –**

Monitoring Bird \$2000

Soils Monitoring - \$2000

Weed Monitoring - \$6000

**\*Our Contribution monitoring – \$10000**

**FY17 –**

Veg Monitoring - \$10000

Monitoring Bird \$2000

Weed Monitoring - \$6000

**\*Our Contribution monitoring – \$18000**

**FY18 –**

Monitoring Bird \$2000

Photo Points - \$3000

Herbaceous Veg Monitoring - \$3000

Weed Monitoring - \$6000

**\*Our Contribution monitoring – \$14000**

**FY19 -**

Veg Monitoring - \$5000

Monitoring Bird \$2000

Photo Points - \$3000

Herbaceous Veg Monitoring - \$3000

Weed Monitoring - \$6000

**\*Our Contribution monitoring – \$19000**

Total - \$272,000

Total Monitoring - \$119,000

Total Implementation - \$153,000

**Monitoring will continue for 15 years following project implementation commencement or through FY26.**

**Middle Mountain Prescribed Burn**

**FY10 -**

Implementation (mechanical and burning) 1000 acres x \$\$\$ = \$158,500  
 Mastication Equipment \$18000/month x 5 months (3 machines) - \$90,000  
 Transport 3600/month x 5 = \$18,000  
 Herbaceous Veg Monitoring - \$3000  
 Monitoring Bird \$1000  
 Flammulated Owl - \$500  
 Veg Monitoring - \$500  
 Soils Monitoring - \$500  
 Photo Points - \$3000

**Non-federal UDWR - \$1500**

**\*Our Contribution all – \$275,000**

**FY11 -**

Implementation (burning) 300 acres x \$\$\$ = \$20,000  
 Monitoring Bird \$1000  
 Flammulated Owl - \$500  
 Veg Monitoring - \$500  
 Soils Monitoring - \$500  
 Weed Monitoring - \$1000

**Non-federal UDWR - \$1500**

**\*Our Contribution monitoring – \$3500**

**FY12 -**

Monitoring Bird \$1000  
 Flammulated Owl - \$500  
 Veg Monitoring - \$500  
 Weed Monitoring - \$1000

**Non-federal UDWR - \$1500**

**\*Our Contribution monitoring – \$3,000**

**FY13 -**

Monitoring Bird \$1000  
 Flammulated Owl - \$500  
 Weed Monitoring - \$1000

**Non-federal UDWR - \$1500**

**\*Our Contribution monitoring – \$2500**

**FY14 -**

Monitoring Bird \$1000  
 Flammulated Owl - \$500  
 Weed Monitoring - \$1000

**Non-federal UDWR - \$1500**

**\*Our Contribution monitoring – \$2500**

**FY15 -**

Monitoring Bird \$1000  
 Flammulated Owl - \$500  
 Weed Monitoring - \$1000

**Non-federal UDWR - \$1500**

**\*Our Contribution monitoring – \$2500**

**FY16 -**

Monitoring Bird \$1000  
 Flammulated Owl - \$500  
 Photo Points (pre-burn) - \$3000  
 Herbaceous Veg Monitoring (pre-burn) - \$3000  
 Weed Monitoring - \$1000

**Non-federal UDWR - \$1500**

**\*Our Contribution monitoring – \$8500**

**FY17 -**

Implementation (burning) 500 acres x 125 = \$62,500  
 Monitoring Bird \$1000  
 Flammulated Owl - \$500  
 Veg Monitoring - \$500  
 Soils Monitoring - \$500  
 Weed Monitoring - \$1000

**Non-federal UDWR - \$1500**

**\*Our Contribution monitoring – \$3500**

**FY18 -**

Monitoring Bird \$1000  
 Flammulated Owl - \$500  
 Weed Monitoring - \$1000

**Non-federal UDWR - \$1500**

**\*Our Contribution monitoring – \$2500**

**FY19 -**

Monitoring Bird \$1000  
 Flammulated Owl - \$500  
 Weed Monitoring - \$1000

**Non-federal UDWR - \$1500**

**\*Our Contribution monitoring – \$2500**

Total - \$356,000

Total Monitoring - \$39,500

Total Implementation - \$316,500

**Total Non-federal UDWR - \$15,000**

**Mary’s Slide (NEPA not completed)**

**FY10 –**

No Cost

**FY11 –**

No Cost

**FY12 –**

No Cost

**FY13 –**

Sale Layout and Prep- \$68,000

**\*Our Contribution all – \$68000**

**FY14 -**

**\*Appraised Value \$70,000 (FY10 figures)**

\$10,000 sale admin

Timber will be sold

\$2500 Sale monitoring

Monitoring Photo Points - \$3000

Ecological Monitoring - \$3000

Bird Monitoring \$1000

Goshawk Monitoring - \$500

**\*Our Contribution monitoring – \$10,000**

**FY15 -**

Fuels Treatment mastication – 300 acres x \$240 -

\$72000

Mastication Equipment \$12000/month x 4 months

(2machines) - \$48,000

Transport 3600/month x 4 = \$14,400

\$12,000 sale admin

\$2500 Sale monitoring

Bird Monitoring \$1000

Goshawk Monitoring - \$500

Weed Monitoring - \$1500

**\*Our Contribution equipment and monitoring –**

**\$62,400 + \$5500 = \$67,900**

**FY16 –**

**Add \$50,000 partnership for RX burning on Mary’s slide**

Fuels Treatment mastication – 300 acres x \$240 -

\$72000

Mastication Equipment \$12000/month x 4 months

(2machines) - \$48,000

Transport 3600/month x 4 = \$14,400

\$12,000 sale admin

Sale monitoring \$2500

Bird Monitoring \$1000

Goshawk Monitoring - \$500

Weed Monitoring - \$1500

**\*Our Contribution equipment and monitoring –**

**\$62,400 + \$5500 = \$67,900**

**FY17 –**

Fuels Treatment concentration burning – 300 acres

x \$125 - \$37,500

\$12,000 sale admin

Stocking Surveys 3<sup>rd</sup> year - \$5000

Sale monitoring \$2500

Bird Monitoring \$1000

Goshawk Monitoring - \$500

Weed Monitoring - \$1500

**\*Our Contribution monitoring –\$10,500**

**FY18 -**

Planting 300 acres x \$650 = 195,000

Fuels Treatment concentration burning – 280 acres

x \$70 - \$19600

Stocking Surveys 1180 acres- \$10000

Bird Monitoring \$1000

Goshawk Monitoring - \$500

Weed Monitoring - \$1500

**\*Our Contribution monitoring –\$13,000**

**FY19 –**

Goshawk Monitoring - \$500

Stocking Survey Monitoring -- \$5000

Weed Monitoring - \$1500

Herbaceous Monitoring 10-year - \$4000

Photo points - \$3500

**\*Our Contribution monitoring –\$14,500**

**Total - \$565,000**

Total Monitoring - \$59,000

**Total Implementation - \$506,000**

Includes equipment costs

**Rolfson Prescribed Burn Fuels (NEPA not completed)**

**FY10 -**

No Costs

**FY11 -**

No Costs

**FY12 -**

No Costs

**FY13 -**

No Costs

**FY14 -**

**Non-federal UPCD \$60,000 (anticipated)**

Implementation (mastication) 250 acres - \$56,200

Mastication Equipment \$12,000/month x 4 months (2 machines) - \$48,000

Transport 3600/month x 4 = \$14,400

Photo Points (pre-treatment) - \$3000

Herbaceous Veg Monitoring (pre-burn) - \$3000

Monitoring Bird \$3000

Goshawks - \$500

Soils Monitoring - \$500

**\*Our Contribution monitoring –\$10,000**

**FY15 -**

**Non-federal UPCD \$60,000 (anticipated)**

Implementation (mastication) 250 acres - \$56,200

Mastication Equipment \$12,000/month x 4 months (2 machines) - \$48,000

Transport 3600/month x 4 = \$14,400

Monitoring Bird \$3000

Goshawks - \$500

Soils Monitoring - \$500

Weed Monitoring - \$1000

**\*Our Contribution monitoring –\$11,000**

**FY16 -**

Fuels Treatment concentration burning – 1000 acres x \$125 - \$125,000

Monitoring Bird \$3000

Goshawks - \$500

Soils Monitoring - \$500

Veg Monitoring - \$500

Weed Monitoring - \$1000

**\*Our Contribution monitoring –\$5,500 + ½ burning costs \$55,000 = \$60,500**

**FY17 -**

**Non-federal UPCD \$40,000 (anticipated)**

Fuels Treatment concentration burning – 1700 acres x \$125 - \$212,500

Monitoring Bird \$3000

Goshawks - \$500

Soils Monitoring - \$500

Veg Monitoring - \$5000

Weed Monitoring - \$1000

**\*Our Contribution monitoring –\$10,000 +burning costs \$55,000 = \$65,000**

**FY18 -**

Monitoring Bird \$3000

Goshawks - \$500

Soils Monitoring - \$500

Veg Monitoring - \$5000

Weed Monitoring - \$3000

**\*Our Contribution monitoring –\$12,000**

**FY19 -**

Monitoring Bird \$3000

Goshawks - \$500

Soils Monitoring - \$500

Veg Monitoring - \$5000

Weed Monitoring - \$3000

**\*Our Contribution monitoring –\$12,000**

Total Non-federal Implementation - \$238,000

Total - \$487,500

Total Monitoring - \$60,500

Total Implementation - \$427,000

Includes equipment costs

**Potter’s North (NEPA not completed)**

**FY10 –**

No Cost

**FY11 –**

No Cost

**FY12 –**

No Cost

**FY13 –**

No Cost

**FY14 -**

Monitoring Photo Points - \$3000

Ecological Monitoring - \$3000

Sale Layout and Prep- \$46,000

**\*Our Contribution all –\$52,000**

**FY15 -**

Appraised Value \$36,000 (FY10 figures)

\$12,000 sale admin

Timber will be sold

Sale monitoring \$2500

Bird Monitoring \$1000

Goshawk Monitoring - \$500

**\*Our Contribution monitoring –\$4,000**

**FY16 -**

\$12,000 sale admin

\$2500 Sale monitoring

Bird Monitoring \$1000

Goshawk Monitoring - \$500

Weed Monitoring - \$1500

**\*Our Contribution monitoring –\$5,500**

**FY17 -**

Fuels Treatment mastication – 300 acres x \$240 -

\$72000

Mastication Equipment \$12000/month x 4 months  
(2machines) - \$48,000

Transport 3600/month x 4 = \$14,400

\$12,000 sale admin

Sale monitoring \$2500

Bird Monitoring \$1000

Goshawk Monitoring - \$500

Weed Monitoring - \$1500

**\*Our Contribution monitoring and equipment**

**62,400 + \$5,500 –\$67,900**

**FY18 –**

Fuels Treatment concentration burning – 350 acres  
x \$70 - \$24,500

\$12,000 sale admin

Sale monitoring \$2500

Bird Monitoring \$1000

Goshawk Monitoring - \$500

Weed Monitoring - \$1500

**\*Our Contribution monitoring –\$5,500**

**FY19 -**

Planting 200 acres x \$650 = 130,000

Stocking Surveys 650 acres- \$10000

Bird Monitoring \$1000

Goshawk Monitoring - \$500

Weed Monitoring - \$1500

**\*Our Contribution monitoring –\$13,000**

Total - **\$337,200**

Total Monitoring - \$39,500

Total Implementation - **\$297,700**

Includes equipment costs

**User-created OHV Trail Closures****FY10 –**

Requesting - Monitoring 3 seasons for 2 months (August/September) monitoring of OHV compliance - \$42,000 + per diem \$24 x 55= \$2640 = \$45,000

Match - Monitoring 3 seasons for 2 months (June/July) monitoring of OHV compliance - \$42,000 + per diem \$24 x 55= \$2640 = \$45,000  
Monitoring UCC Crew (2600/crew x 3 weeks) plus vehicle – \$8000 (\$6500 FS, \$1500 UCC)

**\*In-Kind Volunteer Labor - \$15,000**

**\*Our Contribution \$51,500**

**FY11 -**

Requesting - Monitoring 3 seasons for 2 months (August/September) monitoring of OHV compliance - \$42,000 + per diem \$24 x 55= \$2640 = \$45,000

Match - Monitoring 3 seasons for 2 months (June/July) monitoring of OHV compliance - \$42,000 + per diem \$24 x 55= \$2640 = \$45,000 (subtracting \$20,000 and putting towards Miller's Flat Rec) \$25,000  
Monitoring UCC Crew (2600/crew x 3 weeks) plus vehicle – \$8000 (\$6500 FS, \$1500 UCC)

ATV purchase - \$6000

**\*In-Kind Volunteer Labor - \$15,000**

**\*Our Contribution \$31,500**

**FY12 -**

Requesting - Monitoring 3 seasons for 2 months (August/September) monitoring of OHV compliance - \$42,000 + per diem \$24 x 55= \$2640 = \$45,000 - \$5000 for Miller's Flat recreation monitoring = \$40000

Match - Monitoring 3 seasons for 2 months (June/July) monitoring of OHV compliance - \$42,000 + per diem \$24 x 55= \$2640 = \$45,000  
Monitoring UCC Crew (2600/crew x 3 weeks) plus vehicle – \$8000 (\$6500 FS, \$1500 UCC)

ATV purchase - \$6000

King Radio \$1200

**\*In-Kind Volunteer Labor - \$15,000**

**\*Our Contribution \$46,500**

**FY13 -**

Requesting - Monitoring 3 seasons for 2 months (August/September) monitoring of OHV compliance - \$42,000 + per diem \$24 x 55= \$2640 = \$45,000

Match - Monitoring 3 seasons for 2 months (June/July) monitoring of OHV compliance - \$42,000 + per diem \$24 x 55= \$2640 = \$45,000

Monitoring UCC Crew (2600/crew x 3 weeks) plus vehicle – \$8000 (\$6500 FS, \$1500 UCC)

King Radio \$1200

**\*In-Kind Volunteer Labor - \$15,000**

**\*Our Contribution \$51,500**

**FY14 -**

Requesting - Monitoring 3 seasons for 2 months (August/September) monitoring of OHV compliance - \$42,000 + per diem \$24 x 55= \$2640 = \$45,000

Match - Monitoring 3 seasons for 2 months (June/July) monitoring of OHV compliance - \$42,000 + per diem \$24 x 55= \$2640 = \$45,000  
Monitoring UCC Crew (2600/crew x 3 weeks) plus vehicle – \$8000 (\$6500 FS, \$1500 UCC)

**\*In-Kind Volunteer Labor - \$15,000**

**\*Our Contribution \$51,500**

**FY15 -**

Requesting - Monitoring 3 seasons for 2 months (August/September) monitoring of OHV compliance - \$42,000 + per diem \$24 x 55= \$2640 = \$45,000

Match - Monitoring 3 seasons for 2 months (June/July) monitoring of OHV compliance - \$42,000 + per diem \$24 x 55= \$2640 = \$45,000  
Monitoring UCC Crew (2600/crew x 3 weeks) plus vehicle – \$8000 (\$6500 FS, \$1500 UCC)

**\*In-Kind Volunteer Labor - \$15,000**

**\*Our Contribution \$51,500**

**FY16 -**

Requesting - Monitoring 3 seasons for 2 months (August/September) monitoring of OHV compliance - \$42,000 + per diem \$24 x 55= \$2640 = \$45,000

Match - Monitoring 3 seasons for 2 months (June/July) monitoring of OHV compliance - \$42,000 + per diem \$24 x 55= \$2640 = \$45,000  
Monitoring UCC Crew (2600/crew x 3 weeks) plus vehicle – \$8000 (\$6500 FS, \$1500 UCC)

**\*In-Kind Volunteer Labor - \$20,000**

**\*Our Contribution \$51,500**

**FY17 -**

Requesting - Monitoring 3 seasons for 2 months (August/September) monitoring of OHV compliance - \$42,000 + per diem \$24 x 55= \$2640 = \$45,000

Match - Monitoring 3 seasons for 2 months (June/July) monitoring of OHV compliance - \$42,000 + per diem \$24 x 55= \$2640 = \$45,000  
Monitoring UCC Crew (2600/crew x 3 weeks) plus vehicle – \$8000 (\$6500 FS, \$1500 UCC)

ATV purchase - \$8000

**\*In-Kind Volunteer Labor - \$20,000**

**\*Our Contribution \$51,500**

**FY18 -**

Requesting - Monitoring 3 seasons for 2 months (August/September) monitoring of OHV compliance - \$42,000 + per diem \$24 x 55= \$2640 = \$45,000

Match - Monitoring 3 seasons for 2 months (June/July) monitoring of OHV compliance - \$42,000 + per diem \$24 x 55= \$2640 = \$45,000  
Monitoring UCC Crew (2600/crew x 3 weeks) plus vehicle – \$8000 (\$6500 FS, \$1500 UCC)

ATV purchase - \$8000

**\*In-Kind Volunteer Labor - \$20,000**

**\*Our Contribution \$51,500**

**FY19 -**

Requesting - Monitoring 3 seasons for 2 months (August/September) monitoring of OHV compliance - \$42,000 + per diem \$24 x 55= \$2640 = \$45,000

Match - Monitoring 3 seasons for 2 months (June/July) monitoring of OHV compliance - \$42,000 + per diem \$24 x 55= \$2640 = \$45,000  
Monitoring UCC Crew (2600/crew x 3 weeks) plus vehicle – \$8000 (\$6500 FS, \$1500 UCC)

**\*In-Kind Volunteer Labor - \$20,000**

**\*Our Contribution \$51,500**

Total - \$1,121,500

Total Monitoring - \$1,115,000

Total Implementation - \$6500

**\*In-Kind Volunteer Labor - \$170,000**

**UCC Partnership Contribution for implementation and monitoring - \$15,000**

**Lowry Water Road – fix up road as a temporary road for Potter’s (approx 2.3 miles), then decommission 5 miles of road following timber sale (NEPA not complete)**

**FY10 –**

No Costs

**FY11 -**

No Costs

**FY12 -**

Rehab \$45,000

**\*Our Contribution monitoring –\$0**

**FY13 -**

**FY14 -**

**FY15 -**

**FY16 -**

**FY17 -**

**FY18 -**

**FY19 -**

Road Closure \$65,000

Photo Points – \$2000

Soils Monitoring \$1000

**\*Our Contribution monitoring –\$3,000**

**Black Dragon Phase II**

**FY10 –**

**FY11-**

**FY12**

**FY13**

**FY14**

**FY15**

**FY16**

**Non-federal UPCD \$50,000 (anticipated)**

Fuels Treatment mastication – 500 acres x \$225 - \$112,500

Mastication Equipment \$12000/month x 6 months (2 machines) - \$72000

Transport 3600/month x 6 = \$21,600

Monitoring Bird \$2000

Flammulated Owl - \$1000

Plant Monitoring - \$1000

Soils Monitoring - \$2000

Fuels Monitoring - \$500

Photo Points – \$3500

Herbaceous Monitoring - \$4000

**\*Our Contribution monitoring + equipment – \$93600 + \$14,000 = \$107600**

**FY17**

**Non-federal UPCD \$50,000 (anticipated)**

Fuels Treatment mastication – 1500 acres x \$225 - \$337,500

Mastication Equipment \$18000/month x 12 months (3machines) - \$216,000

Transport 3600/month x 12 = \$43,200

Monitoring Bird \$2000

Flammulated Owl - \$1000

Plant Monitoring - \$1000

Soils Monitoring - \$2000

Fuels Monitoring - \$500

**\*Our Contribution monitoring + equipment +\$259,200 + \$6500 = \$265700**

**FY18**

**Non-federal UPCD \$50,000 (anticipated)**

Fuels Treatment mastication – 1500 acres x \$225 - \$337,500

Mastication Equipment \$18000/month x 12 months (3machines) - \$216,000

Transport 3600/month x 12 = \$43,200

Monitoring Bird \$2000

Flammulated Owl - \$1000

Plant Monitoring - \$1000

Soils Monitoring - \$2000

Fuels Monitoring - \$500

**\*Our Contribution monitoring + equipment +\$259,200 + \$6500 = \$265700**

**FY19**

**Non-federal UPCD \$50,000 (anticipated)**

Fuels Treatment mastication – 1000 acres x \$225 - \$225,000

Mastication Equipment \$18000/month x 12 months (3machines) - \$216,000

Transport 3600/month x 12 = \$43,200

Monitoring Bird \$2000

Flammulated Owl - \$1000

Plant Monitoring - \$1000

Soils Monitoring - \$2000

Fuels Monitoring - \$500

**\*Our Contribution monitoring + 3 machines equipment +\$179,000 + \$6,500 = \$185,500**

**Swasey Sub-division (State)**

**FY12 - \$2500**

**Trail Mountain Resort Fuels Reduction (State)**

**FY12 - \$2500**

**Olsen Property Fuels Reduction (State)**

**FY11 \$25,000**

**FY13 - \$55,000**

**FY14-\$25000**

**FY15 - \$10,000**

**Total \$125,000**

**GIP \$ for Musk Thistle Work in Scad Valley Private land – training cows to eat musk thistle**

**FY10-\$9500**

**Other GIP funding**

**GIP Utah State Extension on Horn Mountain cattle conditioning to eat weeds**

**FY10-\$8000**

## Appendix B. Rapid Assessment Summary

# Rapid Landscape Assessment Process Manti – La Sal National Forest

Rev5-Mar-20005

### **THE OBJECTIVE:**

The Manti - La Sal National Forest Rapid Landscape Assessment is a formal process to identify where we as a Forest Stewardship Team (all Manti - La Sal National Forest personnel) should direct our investments of time, resources and limited dollars to implement our Forest Plan in the future. By rapidly assessing the entire Manti - La Sal National Forest, we will apply resource evaluation criteria to each and every acre of our Forest landbase in order to determine those areas where we can be most effective in the use of our limited resources. We will care for the land and serve the people by making the most efficient use of the taxpayer's dollars while at the same time making the most beneficial impacts on the ground. The Rapid Landscape Assessment Process will ask the questions: "Where on the landscape will we make our investment?" and "Why will we invest here?" We will answer these questions by applying the following guiding principles:

- We will concentrate our efforts on the **restoration and enhancement of healthy soil, water and vegetation**.
- We will implement a Forest Program of Work (POW) that is driven by **integrated** resource needs.
- We will utilize the Chief's Guiding Principles and the Intermountain Region Program Goals as the foundation for our development of the Manti - La Sal National Forest POW.
- We will continue the MLF tradition of getting quality work done on the ground.
- We will use timber harvest, prescribed fire, wildland fire use, fire suppression and other vegetation manipulation practices as tools to accomplish resource objectives and desired conditions.
- We will use this assessment to prioritize the areas where we need to make investments to accomplish integrated desired conditions and resource needs. We will answer the question of where to make investments in time and money to implement the Forest Plan.
- We want all resources to drive proposed actions; we don't want them to be used only as mitigation measures. **Be proactive, not reactive.**
- We will answer two questions once areas are prioritized: What will we do to implement our Forest Plan? How will we incorporate Ecosystem Management principles into the implementation of our Forest Plan?
- When we pool resources from the various program areas we will accomplish more on the ground.
- When we treat vegetation, **we will: establish priorities, concentrate on restoration, identify different tools to get the job done, and focus on what we leave on the land rather than what we will take off the land.**
- We will do **better** with less...not **more** with less. With limited dollars, where will we go to do the most

good?

- We will be good stewards of the land by remembering that the greatest gifts the National Forests can give to the American people are properly functioning streams and clear, clean water. The National Forests are the headwaters and watersheds for America's rivers and streams.
- We will recognize that it is critical to get some level of public support for our programs. The best science in the world can't be implemented without some level of public support.

## **THE PROCESS:**

*We will determine through the rapid assessment process where the Manti - La Sal National Forest should concentrate our efforts and resources for out-year programs of work. This will involve the analysis of 6<sup>th</sup> Code sub-watershed (HUC 6) areas to determine resource and activity values and potential for restoration. Nine resource areas will be the primary drivers for the first level of this assessment: soil, water, range/grassland-shrub vegetation, fisheries habitat, wildlife habitat, forest vegetation/health, fire/fuels, recreation, and heritage. Each resource area will identify their respective resource value and restoration potential rating for each sub-watershed area. Individual HUC 6 sub-watershed areas will be grouped together as common sense dictates to better facilitate the implementation process.*

A total of 146 sub-watersheds will be evaluated. Some of these areas have a portion located on the Forest, while others are located entirely within the Forest boundary. Each sub-watershed to be analyzed will be assigned a numerical rating using the criteria developed for each resource/activity area. Ratings of high (5), moderate (3), and low (1) will be assigned for each individual resource criteria. The average rating for the three criteria will be recorded for each HUC 6. The maximum number of points possible for an assessment area will be 50 points [10 (resource areas) multiplied by 5 (highest rating)]. Should several sub-watersheds be joined together, the average rating will be determined by totaling the number of points assigned divided by the number of watersheds combined. In the case of a tie, the Forest Leadership Team will determine the highest priority through evaluation and consensus.

Following this initial broad-scale view of the Forest by resource areas we will evaluate all of the HUC 6's again based on how much opportunity we see to address one or more of the Chief's 4 Threats. Initially, let's plan to score them as: 1 for inclusion of 1 of the threats, 3 for 2 of the threats, and 5 for 3 or more of the threats.

After these two stages have been completed we'll compare the results and then combine "**up**" to the HUC 5 level, identifying and highlighting the HUC 5s involved. We'll then rank the HUC 5s with another numerical, priority score.

Following selection of the highest priority area(s), a rapid assessment of existing conditions vs. desired conditions will lead to the identification of opportunities. These opportunities will result in proposed projects that will focus on the need for moving the areas toward the identified desired conditions. These project proposals will drive our implementation of the Forest Plan, revision of the Forest Plan, and will be the top priorities in future budget execution efforts (i.e. Level II project approval and funding).

By Thursday afternoon we should have a lot of information available as a result of our evaluations. Alice wants me (and a core group of ID Team members) to present our findings in a report-out Friday from 1300 to 1500. At this point our work will be completed, and the information will be available to the Leadership Team and others to use in formulating and proposing future projects to implement our Forest Plan.

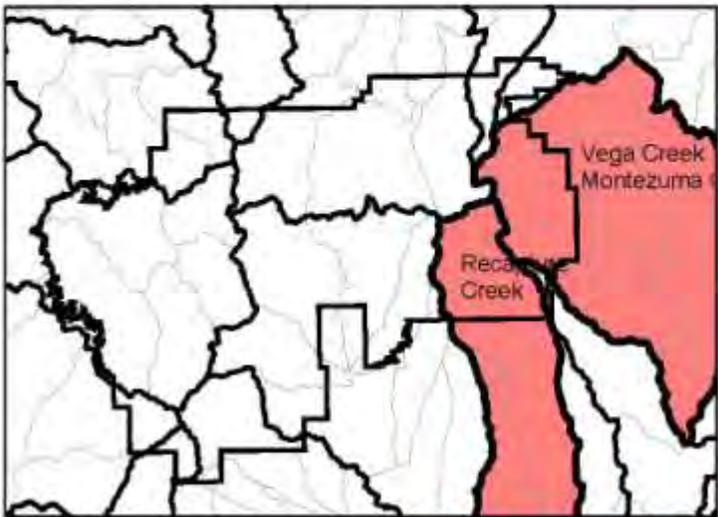
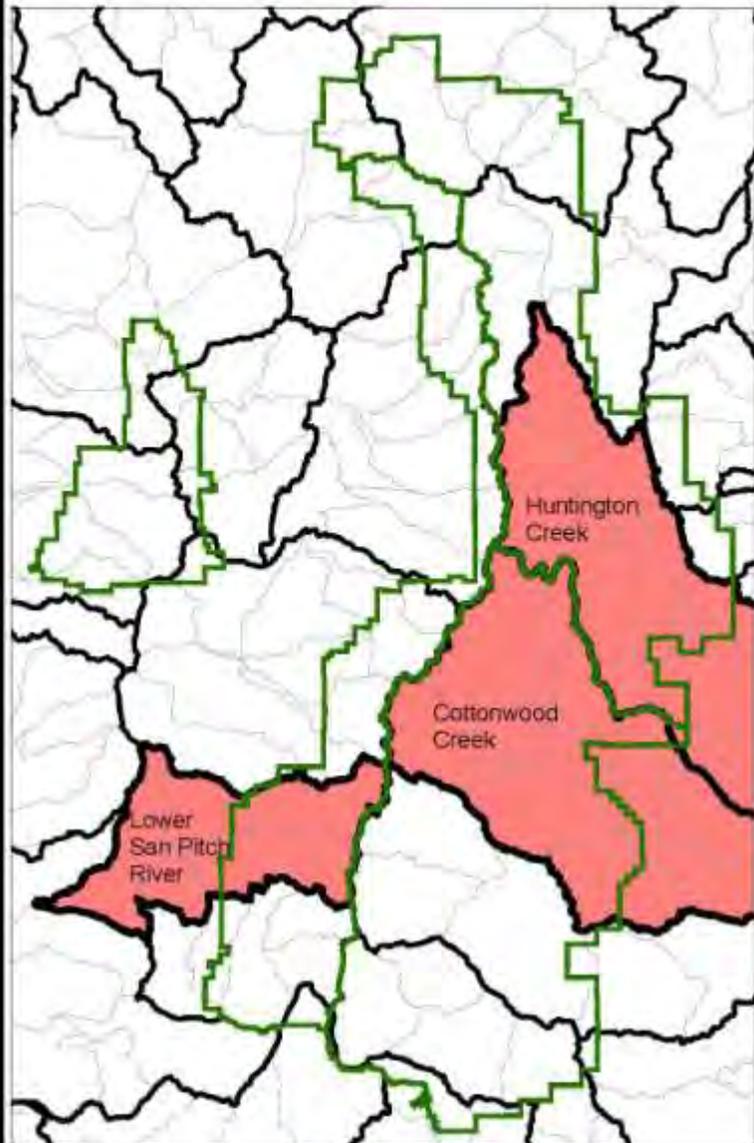
**THE ID TEAM:**

Team Leader	Mike Crawley
Soils	Pete Kilbourne/Katherine Foster/Julie Gott
Water	Katherine Foster/Julie Gott
Rangeland Vegetation	Bob Thompson/Maggie Marston/John Healy/Ed Schoppe
Fisheries Habitat	Pam Jewkes
Wildlife Habitat	Kelle Reynolds/Heather Musclow/Jeff Jewkes/Barb Smith/Kevin Albrecht
Forestland Vegetation	Greg Montgomery/Diane Cote
Fuels/Fire	Stewart Gore/Brandon Hoffman/Tomas Gonzalez/Kim Soper
Recreation/Visuals	Heber Williams/Brent Hanchett/Bill Broadbear
Heritage	Bruce Ellis/Don Irwin
GIS Support	Michelle Hawks

**THE TIMELINE:**

- March 7<sup>th</sup> – Opening remarks, process, instructions, work on evaluation criteria by resource area. Identify “groups” for Wednesday.
- March 8<sup>th</sup> – Each resource group evaluate all HUC 6s using criteria developed Monday. There will be meeting space available so teams can work without being crowded.
- March 9<sup>th</sup> – Rate each sub-watershed area again using the 4 Threats as criteria. These ratings will be completed in fewer, larger groups. Groups will be represented by resource areas that have similarities.
- March 10<sup>th</sup> – Develop final assessment areas HUC 5s and determine rankings. A smaller core IDT may remain through Friday afternoon to complete assessing the results and putting report together. We will discuss as a group how many and who can remain – and who is interested in helping.
- March 11<sup>th</sup> – Meeting to review and discuss results of sub-watershed rankings and put results into format for Leadership Team briefing. – Core ID Team
- March 11<sup>th</sup> – 1300 to 1500. Report results to Forest Leadership Team – Core ID Team
- March 11<sup>th</sup> – 1500 – Depart for home units.

### Recommended Watersheds



## Appendix C. Fire Regime Condition Class Summary

### Fire Regime Condition Class Summary

#### Fire Regimes

A natural fire regime is a general classification of the role fire would play across a landscape in the absence of modern human mechanical intervention, but including the influence of aboriginal burning. Coarse scale definitions for natural (historical) fire regimes have been developed) and interpreted for fire and fuels management. The five natural (historical) fire regimes are classified based on average number of years between fires (fire frequency) combined with the severity (amount of replacement) of the fire on the dominant overstory vegetation (Hann et al, 2004, Interagency Fire Regime Condition Class Guidebook). These five regimes include:

I – 0-35 year frequency and low (surface fires most common) to mixed severity (less than 75% of the dominant overstory vegetation replaced);

II – 0-35 year frequency and high (stand replacement) severity (greater than 75% of the dominant overstory vegetation replaced);

III – 35-100+ year frequency and mixed severity (less than 75% of the dominant overstory vegetation replaced);

IV – 35-100+ year frequency and high (stand replacement) severity (greater than 75% of the dominant overstory vegetation replaced);

V – 200+ year frequency and high (stand replacement) severity.

As scale of application becomes finer these five classes may be defined with more detail, or any one class may be split into finer classes, but the hierarchy to the coarse scale definitions should be retained.

A fire regime condition class (FRCC) is a classification of the amount of departure from the natural regime. Coarse-scale FRCC classes have been defined and mapped. They include three condition classes for each fire regime. The classification is based on a relative measure describing the degree of departure from the historical natural fire regime. This departure results in changes to one (or more) of the following ecological components: vegetation characteristics (species composition, structural stages, stand age, canopy closure, and mosaic pattern); fuel composition; fire frequency, severity, and pattern; and other associated disturbances (e.g. insect and disease mortality, grazing, and drought). There are no wildland vegetation and fuel conditions or wildland fire situations that do not fit within one of the three classes.

The three classes are based on low (FRCC 1), moderate (FRCC 2), and high (FRCC 3) departure from the central tendency of the natural (historical) regime. The central tendency is a composite estimate of vegetation characteristics (species composition, structural stages, stand age, canopy closure, and mosaic pattern); fuel composition; fire frequency, severity, and pattern; and other associated natural disturbances. Low departure is considered to be within the natural (historical) range of variability, while moderate and high departures are outside.

Characteristic vegetation and fuel conditions are considered to be those that occurred within the natural (historical) fire regime. Uncharacteristic conditions are considered to be those that did not occur within the natural (historical) fire regime, such as invasive species (e.g. weeds, insects, and diseases), “high graded” forest composition and structure (e.g. large trees removed in a frequent surface fire regime), or repeated annual grazing that maintains grassy fuels across relatively large areas at levels that will not carry a surface fire.

Determination of amount of departure is based on comparison of a composite measure of fire regime attributes (vegetation characteristics; fuel composition; fire frequency, severity and pattern) to the central tendency of the natural (historical) fire regime. The amount of departure is then classified to determine the fire regime condition class. A simplified description of the fire regime condition classes and associated potential risks follow (Hann et al, 2004, Interagency Fire Regime Condition Class Guidebook).

**Table 1. Existing Fire Regime Condition Class for the Medicine Tree Landscape Area.**

<b>VEGETATION TYPES</b>	<b>EXISTING FIRE REGIME CONDITION CLASS</b>
Engelmann spruce-subalpine fir	Fire Regime III Condition Class 2
Aspen-Mixed Conifer Vegetation Types with greater than 30 percent conifer content.	Fire Regime III Condition Class 2
Aspen-Mixed Conifer Vegetation Types with less than 30 percent conifer content.	Fire Regime III Condition Class 1
Aspen with less than 10 percent conifer content	Fire Regime III Condition Class 1
Untreated Ponderosa pine stands	Fire Regime I Condition Class 3

## Reference Section

- Baker, W. L. and Veblen, T. T., 1990. Spruce Beetles and Fires in the Nineteenth- Century Subalpine Forests of Western Colorado, USA.
- Cote, Diane. 2008. Validation Case Study. Treatment Effectiveness in Aspen Vegetation Type: A Comparison of Two Types of Treatments on the Manti-La Sal National Forest
- Howard, Janet L. 2003. *Pinus ponderosa* var. *scopulorum*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: <http://www.fs.fed.us/database/feis/> [ 2008, October 20].
- Jenkins, M. J., 1998. Post fire succession and disturbance interactions on an Intermountain sub-alpine spruce-fir forest
- Scher, Janette S. 2002, *Juniperus scopulorum*. In: Fire Effects Information System, U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory
- Shepperd, Wayne D. and E.W. Smith. 1993. The Role of Near-Surface Lateral Roots in the Life Cycle of Aspen in the Central Rocky Mountains. *Forest Ecology and Management* 61: 157-160.
- USDA Forest Service. 2005a. Process Paper for Completing the Rapid Assessment on the Manti-La Sal National Forest. 23pp.
- USDA Forest Service. 2005b. Process for Assessing Fire Regime Condition Class for the Manti-La Sal National Forest. Price, Utah. 13pp.
- USDA Forest Service. 1998. Draft Manti-LaSal National Forest, Properly Functioning Condition Analysis, July 1998
- USDA Forest Service, 1992. Bradley Anne F., Nonan V. Noste, and William C. Fischer. Fire Ecology of Forests and Woodlands in Utah. Intermountain Research Station, General Technical Report INT-287. June 1992 (Page 48).
- USDA Forest Service. 1986. Manti-La Sal National Forest Land and Management Plan, page II-12, 1986
- Veblen, T.T., K.S. Hadley, E.M. Nel, T. Kitzberger, M. Reid, and R. Villalba. 1994. Disturbance Regime and Disturbance Interactions in a Rocky Mountain Subalpine Forest. *Journal of Ecology* 82:125-135
- Zlatnik, Elena. 1999. *Juniperus osteosperma*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: <http://www.fs.fed.us/database/feis>