

1.3 Purpose and Need

The **Purposes** of this proposal are to: 1) Reduce the risk of stand-replacing crown fire within the wildland-urban interface adjacent to Willow Basin private in-holdings (WUI area) which includes approximately 25 private homes and primary access routes; 2) Reduce the risk from wildfire to life (fire fighters and residents); and 3) Reduce the risk of damage to private property from wildfire.

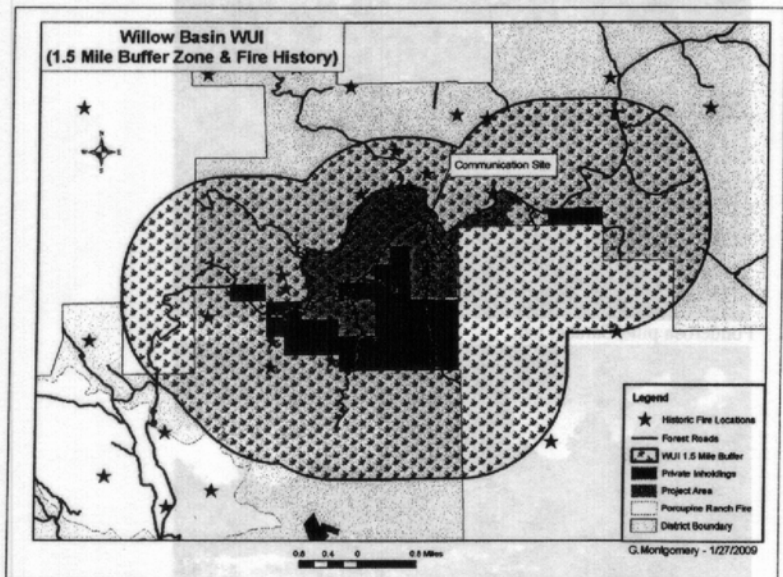
The **Need** for this project is to reduce existing live fuel loads, vertical and horizontal fuel continuity, and ladder fuels within the Willow Basin WUI area. Inherent is the desire to provide a safer environment for both firefighters and residents in the Willow Basin private inholding.

These stands are within a priority area selected during a Forest Rapid Assessment conducted in early 2005 (USDA Forest Service 2005a). We considered a number of resource areas, including the Willow Basin WUI area, to be in need of restoration treatment. Due to the exclusion of fire, these forest and woodland stands have fuel loadings, densities, ladder fuels (shrubs and young trees), and continuous crown canopies that predispose the stands to excessive damage from large fires. The project area is within 1 1/2 miles of an at-risk community as defined by the Healthy Forest Restoration Act of 2003 (HFRA) (see Figure 1 & USDA Forest Service 2009a). Private and public users and developments adjacent to the project area (wildland-urban interface [WUI]) are also potentially at risk from fire.

Vegetation similar to the project area has proven to be susceptible to stand-replacing fire. The watersheds which encompass the project area are representative of Fire Regime I and have been determined to be in an average Condition Class 2 (USDA Forest Service 2005b). This describes an area of frequent historic fire return interval (0-35 years), with a moderate departure from the historic condition and a corresponding risk of ecosystem damage, as well as a serious risk to public safety attached to fires started or burning under extreme fuel and weather conditions.

However, the project area is predominately a shrub type for FRCC and the mixed PIPO/Gambel oak/shrub/PJ component of the project area is in Condition Class 3 with a high departure from historic fire return intervals. A risk of loss of key ecosystem components and high risk of damage to private property or interior improvements exists in lands of this Condition Class. The Placer Creek Watershed which encompassed the Porcupine Ranch Fire (with similar vegetation conditions pre-fire) was rated as the same Fire Regime/Condition Class as the project area (both watershed and shrub component).

Figure 1 - HFRA WUI Zone Map

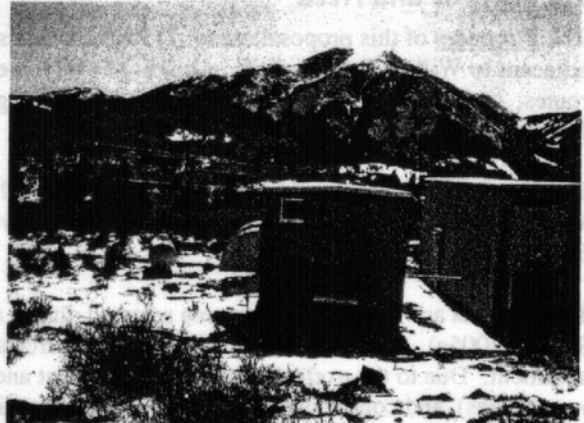


Ponderosa pine stands with dense areas of closed canopy pinyon-juniper, Gambel oak and mountain shrub woodlands have proven susceptible to fast moving and intense fire due to live fuel layers (gambel oak and other shrub species) that have increased with lack of natural fire activity. The shrub/oak, pinyon-juniper, and ponderosa pine of this area are representative of Fire Regime I in a Condition Class 3 that is descriptive of an area of frequent historic fire return interval, with a significant departure from the historic condition, and a corresponding high risk of ecosystem damage. There is a serious risk to public safety attached to fires started or burning under extreme fuel and weather conditions in these areas. A risk of loss of key ecosystem components and high risk of damage to private property or interior improvements exists in Condition Class 3 lands. Therefore, a need was identified to implement practices that will reduce fuel hazard and associated fire risk in order to protect life, property, and associated values within the WUI area.

Figure 2 - Project Area Vegetation



View from parking lot - southeast corner of project area



Willow Basin Communication Site



Ponderosa pine/Gambel oak



Roadside view



Ponderosa pine/Gambel oak from Grass/Sage opening and road



Roadside aspen clone

The 2008 Porcupine Ranch Fire (about 3,450 acres in size) burned as a crown fire in vegetation similar to the project area (see Figure 1 and

Figure 3); it was predominately stand-replacing in intensity and severity (USDA Forest Service 2009a). Willow Basin shares similar vegetation conditions and types, topography and weather patterns that promoted the Porcupine Ranch Fire into a fast moving, high-intensity, crown fire. The post-fire effects on the Placer Creek watershed have yet to be realized, however, such an event is known to have detrimental short-term effects on water quality and quantity. A lightning or man-caused fire event of a similar nature in Willow Basin area would place lives, property, watershed, and scenic values at risk.



Placer Creek Watershed

Willow Basin

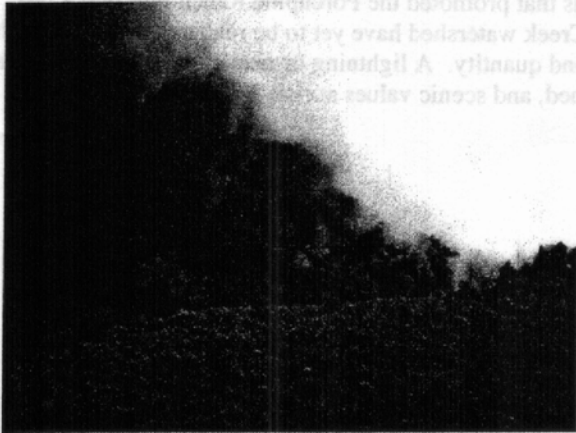
Fire effects - mixed Douglas fir, ponderosa pine, & aspen with Gambel oak understory

The State of Utah, Grand County, and Castle Valley have identified this as an area of high-risk to fire with recommendations to manage vegetation and fuels in the area to reduce risk to life, property, watershed, and other resource values in qualifying Community Wildfire Protection Plans (CWPP) (Utah Division of Forestry, Fire & State Lands 2007 and 2008a).

2.2.3 Alternative B - Proposed Action

This alternative is designed to address the identified Purpose and Need. The project area is approximately 1,722 acres (see Error! Reference source not found.). Within this area, about 1,000 acres of mechanical fuels treatment would occur. Thinning would break up the fuel continuity and ladder fuels in the Gambel oak, piñon-juniper and other mountain shrub communities that surround private lands and critical access routes utilized by private residents, firefighters and suppression equipment. These mechanical treatments utilize a combination of mechanized rubber-tired or track-type tractor with a Fecora head type attachment (bulldozer - chipper/shredder) or hand (chainsaw) thinning. Thinning will create crown separation between individual trees or groups of trees, or groups of hardwood shrubs to provide a more open, savannah-like appearance with reduced crown and fuel continuity. Some small openings or meadow areas would be widened to restore/increase the opening size and additional openings would be created. This will create desirable shaded fuel breaks and natural appearing openings in the landscape. Generally, large overstory ponderosa pine, Douglas-fir, and large snags will not be cut, unless they are identified as hazard trees. Some smaller (less than 9 inches DBH) ponderosa pine or Douglas-fir may be cut (thinned from below) to reduce ladder fuels that would promote torching and crown fire potential. Follow-up of pile/stack burning would occur in the thinned areas to reduce activity fuels.

Figure 3 – Porcupine Ranch Fire



Fire severity (8/8/27) – pinyon-juniper/Gambel oak



Pinhook Battleground Cemetery



Fire effects - mixed Douglas-fir, ponderosa pine, & aspen with Gambel oak understory



The State of Utah, Grand County, and Castle Valley have identified this as an area of high-risk to fire with recommendations to manage vegetation and fuels in the area to reduce risk to life, property, watershed, and other resource values in qualifying Community Wildfire Protection Plans (CWPP) (Utah Division of Forestry, Fire & State Lands 2007 and 2008a).

2.2.3 Alternative B - Proposed Action

This alternative is designed to address the identified Purpose and Need. The project area is approximately 1,725 acres (see **Error! Reference source not found.**). Within this area, about 1,000 acres of mechanical fuels treatment would occur. Thinning would break up the fuel continuity and ladder fuels in the Gambel oak, pinyon-juniper and other mountain shrub communities that surround private lands and critical access routes utilized by private residents, firefighters and suppression equipment. These mechanical treatments utilize a combination of mechanized rubber-tired or track-type tractor with a Fecon head type attachment (bullhog – chipper/shredder) or hand (chainsaw) thinning. Thinning will create crown separation between individual trees, groups of trees, or groups of hardwood shrubs to provide a more open, savannah-like appearance with reduced crown and fuel continuity. Some small openings or meadow areas would be widened to restore/increase the opening size and additional openings would be created. This will create defensible shaded fuel breaks and natural appearing openings in the landscape.

Generally, large overstory ponderosa pine, Douglas-fir, and large snags will not be cut, unless they are identified as hazard trees. Some smaller (less than 9 inches DBH) ponderosa pine or Douglas-fir may be cut (thinned from below) to reduce ladder fuels that would promote torching and crown fire potential. Follow-up of pile/jackpot burning would occur in the thinned areas to reduce activity fuels.

Periodic maintenance treatments of similar nature or using prescribed fire to reduce litter, breakup fuel continuity, and reduce fuel accumulation would be required in the future to maintain fuels at post-treatment levels. Future treatments would begin about 3 to 5 years after the initial mechanical and associated burn treatments and then continue on intervals of approximately 3 to 7 years. One maintenance treatment would be authorized in this alternative. The maintenance treatment would include limited mechanical treatment to maintain openings and reduce ladder fuels and prescribed burning beneath ponderosa pine and within Gambel oak/shrub openings to reduce sprouting of shrubby hardwoods and other vegetation accumulation.

Treatments will be implemented through service contract or force account (Forest Service) crew. No commercial timber harvest is proposed.

The following actions would occur during initial treatment activities:



- About 600 acres will be treated utilizing mechanized rubber-tired or track-type tractor with a fecon head or similar attachment (bullhog – chipper/shredder). Some hand (chainsaw) thinning or pruning may be utilized in conjunction with mechanized tractor treatments in order to protect high value trees/sites from equipment damage, to reinforce fuelbreaks or firelines, and to reduce torching/crowning potential in all treatment units. Of the 600 acres, about 120 acres are identified as a machine and hand thin/hand pile combination due to the proximity to the main road corridor and the extent of ponderosa pine in some areas of the unit.
- About 400 acres will be treated by hand (chainsaw). Within the hand treatment units in accessible areas, cut Gambel oak that can be used for firewood would be scattered or concentrated in openings away from leave trees or groups for firewood collection under authorized permit until prescribed burning is completed.
- Gambel oak (less than 6 inches DBH), pinyon-juniper, and mountain shrub areas would be cut or masticated (bullhog) to reduce ladder fuels and decrease vertical and horizontal fuel continuity.
- Treatments in ponderosa pine or Douglas-fir would focus on masticating or cutting the ladder fuels (shrubby hardwoods and small trees) that are growing directly under and 10 feet beyond the dripline of larger overstory trees. Individual trees, small groups, or stands of ponderosa pine may be underburned to reduce surface and ladder fuels. Generally, bullhog treated openings will create a compact scattered fuel bed of small size material that will not require additional treatments during the initial entry.
- Woodland (Gambel oak and pinyon-juniper) treatments will focus on removal of smaller diameter trees in a mosaic of small openings, thinned areas, and dense clumps that mimic natural vegetation patterns. Openings will be ½ acre to 3 acres in size; about 30% (20-40%) of treatment areas of this type will be converted to openings. Gambel oak greater than 6 inches DBH will not be treated. Larger mature pinyon pine and juniper will not be felled/masticated; branches may be pruned to reduce crowning potential.
- Existing/historic sagebrush openings or meadow areas will be widened to restore or increase the opening size. This treatment is in addition to the created openings and may exceed the 3-acre opening size limit stated above.
- Mechanized tractor (bullhog) treatments are limited to 25% or less slopes where machinery can be utilized safely and effectively.
- Thinning treatments will follow Forest Plan guidelines for management of northern goshawk and Abert squirrel, as well as other standards and guidelines applicable to this area. Large snags or ponderosa pine greater than 9 inches DBH will not be felled unless they are identified as a hazard and approved for felling during mechanical treatments by the District Silviculturist, Silviculture (Forestry) Technician, Recreation Staff, or District Ranger.
- Slash Treatment: Within hand treatment areas adjacent to property lines and access roads (within 300 feet), cut vegetation (tops, limbs, and sapling size material) will be placed in piles that are at least 10 feet away from the dripline of overstory trees or residual Gambel oak clumps. In areas over 300 feet from property lines and roads, heavy fuel concentrations will be piled and lighter fuel concentrations will be pulled back (at least 10 feet from the dripline or clump edge) from residual trees or clumps of Gambel oak and concentrated into openings where they will be jackpot burned to reduce heating of soils. Burning will occur when soils are moist and fuel and weather conditions are such that fire creep (spread) is minimized. Individual or groups of ponderosa pine may be underburned to reduce litter.
- Mechanical treatments and prescribed burning will be completed in accordance with an approved Silviculture Prescription and Burn Plan.
- Existing roads will be used and no new roads will be created.
- Design features (**Appendix A - Design Features & Monitoring**) will be incorporated that include Forest Plan standards and guidelines, best management practices, and monitoring measures designed to reduce the impacts of access, thinning, and other treatments.

The following actions would occur during maintenance treatment activities:

- Limited mechanical treatments similar to those prescribed above will be utilized to treat sapling size material that grows following initial treatments beneath ponderosa pine and Douglas-fir, within created openings, and adjacent to access roads and property lines.
- Fuel concentrations (branches, stems, & tops) should be pulled from beneath larger Gambel oak or pinyon-juniper along the edge of openings for jackpot burning. This will limit spread of fire beyond openings as well as promote the survival of larger trees if fire spreads beneath these woodland trees.
- Prescribed burning will be implemented in ponderosa pine areas and within created openings to reduce natural and activity fuels to continue to maintain reduced susceptibility of the area surrounding the private lands to stand-replacing fire.

Appendix A - Design Features & Monitoring

DESIGN FEATURES

The Willow Basin Wildland-Urban Interface Fuel Treatment Project includes the following features designed for better implementation of the project. All applicable Forest-wide and Management Unit direction identified in the Forest Plan are hereby incorporated by reference unless otherwise stated.

Forest & Woodland Vegetation

General

- A certified Silviculturist will prepare a Vegetation Prescription for this project that provides specific objectives and guidance for thinning and prescribed burn treatments utilizing the Decision Notice/FONSI, EA, Forest Plan, and guidance included in specialist reports. A project Burn Plan will be prepared utilizing project specific direction provided in the Silviculture (Vegetation) Prescription and applicable NEPA documentation prior to burning.
- Little to no seeding is anticipated, however, if seeding is warranted on firelines or other disturbed areas to minimize erosion or limit off-road access, use native plant species to the degree feasible.
- Slash piles will be generally small, about 8 ft. in diameter and 8 ft. tall, to localize soil damage in small-scattered pockets, with minimal potential for introduction of noxious and invasive plants. Piles will be in openings, not located under or next to trees or woodland leave groups, to minimize scorch damage to live trees and desirable vegetation identified for retention.
- Inform the public about planned burn activities prior to implementation through signing, newspaper notification, or appropriate personal contact with community leaders or individuals in the subdivision.
- As appropriate, use flaggers or temporary road and area closures to restrict public access for public safety reasons during the implementation.
- Firewood gathering will be allowed within the project area. Collection will be controlled through authorization and administration of appropriate permits utilizing existing Forest System Roads for access.
- Leave screening vegetation along the edges of collector roads to the degree feasible to prevent a short-term increase in illegal off-road travel. Monitor off-road vehicle use. When necessary to reduce impacts, rehabilitate mechanized access trails or firelines that intersect Forest Service Roads 50207, 54622, 54658, 54659, 54662, and 54663.
- It is preferred that burning take place outside the primary hunting season (October/November) and the nesting, calving, and fawning season. However, these restrictions cover a wide range of time that often includes the only feasible times to burn. Consult with the wildlife biologist on the timing of each burn. Make multi-media attempts to notify hunters prior to the burn.
- Limbs (live and dead) will be pruned (severed flush with bole of tree) for a height of 5 feet around the base of live trees 2 inches DBH to 8 inches DBH to minimize the potential spread of fire into tree canopies. This will be required in ponderosa pine stands treated; thinned areas of ponderosa pine, Douglas-fir, pinyon pine, or juniper in other areas; for a distance of about 15 feet around the edge of pockets or groups of un-thinned trees left in woodland areas; for 300 feet on the edge of property boundaries and along access roads.

Fuels & Fire Behavior

- Firefighter and public safety is the most important factor in implementation of prescribed fires.
- Prescribed fire used for management purposes has an element of risk from unpredictable changes in burning conditions. If the fire should exceed the prescribed conditions and exhibit problem fire behavior, it would be contained and extinguished.
- Natural and existing constructed barriers (rock, road and trails, other clear areas, streams, or fire resistant vegetation) will be utilized for fuel breaks during prescribed burning where appropriate. In areas where these barriers are not

available, fireline will be constructed to deter fire spread outside the prescription area. Fireline would be constructed by the method (hand or small machine – e.g. Bobcat) appropriate to the slope, soils, visual sensitivity, and archaeological clearance of the area. As a general guideline, width of machine constructed fireline (bare soil) should not exceed one blade-width of the Bobcat. Fireline will receive appropriate drainage and seeding to minimize erosion. Fireline adjacent to roads or campsites will be obliterated or blocked following burning if its presence/appearance would encourage unauthorized OHV use.

- Use techniques to minimize smoke production and impacts from slash burning:
 - Follow the procedures and requirements in the State Smoke Management Plan (Utah Division of Air Quality 2006).
 - Follow guidance in Manti-La Sal National Forest Fire Management Plan (USDA Forest Service 2008).
 - Burn when conditions are good for rapid dispersion.
 - Burn under favorable moisture conditions.
 - Keep soil out of burn piles.
- Burning will generally, be slow, controlled burning when fuel condition are dry but soil conditions are moist, to protect soils and reduce heat penetration below the ground. Patches of intense fire that kills trees will be allowed depending on the vegetation community, fuel type, and objectives. Burn patch size will not exceed a natural range appearance.
- Do not directly ignite scattered old rotten logs, old stumps, standing snags, or large (> 6" DRC) gambel oak. Where necessary, place fireline around large (> 12 inch diameter) rotten logs, large (> 18 inches DBH) standing snags, or along the edge of large diameter Gambel oak clones to avoid burning. Utilize ignition patterns, firelines, or other appropriate measures that discourage burning of these materials during prescribed burning.
- Ignition will not occur in sagebrush openings, except in pockets where there are individual or small groups of older ponderosa pine where it would be beneficial to underburn the trees to reduce needle and duff layers through spot ignition. Fire may creep into meadow areas from outside ignition sources or from internal tree areas, but should not be encouraged to run through the sagebrush stand.
- Larger trees (18"+ DBH) and old character ponderosa pine trees with deep, undisturbed needle layers should be raked (stirred up) under the canopy of the tree if not disturbed during bullhog or fuel rearrangement treatments the season prior to burning; intent is not to remove needle layers, but to disturb continuity and force fine roots out of the upper organic layers. This, combined with burning while soils are somewhat moist should reduce tree mortality from prescribed fire.
- Clear debris and deep needle/duff layers away from the base of large (18"+ DBH) snags for a 4 feet radius prior to burning.
- In ponderosa pine stands, prescribed underburning should result in 20-80% effective burn, low intensity and severity surface fire, consumption of generally fine and small diameter fuels (< 3 inches DBH), duff consumption of 30-50%, and minimal overstory mortality. Mortality of occasional single trees or small-scattered groups [2-10 trees] is preferred, but up to 1 acre size openings are permissible if total fire-created openings are less than 5 per 100 acres).

Noxious and Invasive Plants

- Equipment shall be cleaned of soils, seeds, vegetative matter, or other debris that could contain or hold noxious seeds prior to entering the area. Contract operators will certify in writing that off-road equipment is free of noxious weeds prior to start up of operations.
- Noxious weed free certification will be required for all straw or hay bales used for erosion control, any mulch, and seed applied in reclamation.
- Control noxious weeds as appropriate under existing decisions and agreements.

Rangeland Allotment

- Protect all structural improvements in the treatment area, including fence lines and water troughs. If damaged during mechanical treatments or prescribed fire, improvements will be repaired or replaced as appropriate.
- Coordinate prescribed burning with the permittee. Pasture deferment of grazing until the late summer following prescribed burning should allow adequate growth and recovery. The pasture may be rested from grazing for 1-2 seasons if post-treatment monitoring indicates it is needed for recovery of the vegetation.

Wildlife Resources

- All threatened, endangered, proposed, or sensitive plant and animal species and any nesting birds discovered during project implementation will be protected by avoiding their area as determined by the Forest Plan Standards and

Guidelines, as well as others applicable to the area. Consult with a Biologist to ensure compliance prior to implementation.

- To avoid disturbance that might cause abandonment of an active golden eagle nest, work on the eastern bullhog unit (64 acres) would take place outside the nesting period (1/1-8/31), if the nest is active.
- Large snags (18 inches DBH and greater) and live replacement trees not identified as a hazard to public safety, property, or improvements will be protected. No live ponderosa pine or Douglas-fir greater than 9 inches DBH will be cut or masticated.
- Treatment units will be re-surveyed for appropriate threatened, endangered, or sensitive species prior to mechanized treatment implementation.

Recreation, Lands, & Special Uses

- Operation of bullhog equipment on weekends (from Memorial Day to Labor Day), federal holidays, the 24th of July Utah State holiday, and opening weekends of general deer and elk rifle seasons are prohibited.
- Treatment of structures and areas authorized for Special use activities will be coordinated with District Recreation Forester and Lands Specialist prior to treatment. Appropriate measures will be implemented to protect power lines, buildings, propane tanks, and other equipment on federal lands within the project area.
- Scatter logs and debris along unauthorized routes and firelines (emphasizing the first 200' to 300' entry points along roads) to discourage off-road motorized access.
- Protect survey and other land location markers from damage during mechanical or prescribed fire treatments.

Visual Landscape

- Stumps of trees or hardwood shrubs cut or masticated within these areas should be 6 inches high or less.
- Woody slash debris should be spread into openings or hand piled in areas treated by hand.
- Created openings should conform with natural openings and terrain so that they blend with natural vegetation patterns.

Cultural Resources

- Evaluate, protect, and monitor all National Register eligible sites. These sites will be avoided.
- Discovery of previously unknown sites, on either the surface or subsurface, may occur during project implementation and shall be protected in accordance with the service contract and Federal Laws as cited below.
- Where project activities cannot be modified to protect sites in-place, develop plans to recover scientific data in accordance with the National Historic Preservation Act of 1966 (as amended), Archaeological Resources Protection Act, and the Native American Graves Protection and Repatriation Act. Consult with appropriate Native American entities as necessary.
- Equipment (such as bobcats and bull hogs) is permitted only in areas identified in the Willow Basin Hazardous Fuels Reduction project file. This is important since equipment can damage valued cultural and heritage resources. Firelines may be needed for prescribed burning and will require review with the District Archeologist to ensure no archaeology site disturbance. Identified sites may be treated by hand (chainsaw) as approved by the District Archeologist. Debris burn piles will not be located on top of archeology sites. Concentrations of brush and fuel will not be located on sites.

Transportation System

- County and National Forest System Roads will be protected improvements.
- Install warning signs and devices on roads commensurate with project and public safety. When necessary, traffic controllers (flaggers) will be used.
- Vehicle traffic and equipment operation will be restricted during wet periods to prevent rutting in excess of one inch on gravel roads and 2 inches on native surface roads. Vehicle traffic and equipment operation may also be restricted during dry periods if native surface roads become powdered.

Watershed/Soils

- Implement the Soil and Water Conservation Practices and State Best Management Practices identified in the *Willow Basin Wildland-Urban Interface Fuels Treatment Project Technical Report – Watershed and Soils* (USDA Forest Service 2009).
- If identified as needed by our soil or watershed specialist, heavily compacted areas shall be ripped and reclaimed after use to a depth of 8-12 inches; scarify other compacted areas (access trails) to a depth of 2-4 inches to prepare a seedbed after mechanized treatment is completed. If needed to reduce erosion or limit off-road access, disturbed areas shall be seeded with a native grass mixture.

- Seed mixtures for erosion control on firelines shall include the following certified weed free mixtures and amounts unless otherwise approved through the District Range Management Specialist and District Silviculturist:

SPECIES	POUNDS/ACRE
Western Wheatgrass or Bluestem (<i>Agropyron smithii</i>)	2.0
<i>Poa fendleriana</i>	1.0
Bluebunch Wheatgrass (<i>Agropyron spicatum</i>)	1.5
Indian Ricegrass (<i>Oryzopsis hymenoides</i>)	.5
<i>Lupinus argenteus</i>	.5
Bitterbrush (<i>Purshia tridentate</i>)	.5
Total Pounds	6

- Large woody slash debris should be spread over access trails, unauthorized roads, and equipment parking areas.
- Avoid soils with depths of less than 10 inches.
- Equipment may include bull hogs, chippers, or other equipment that has low ground pressure and would not subject soils to severe compaction. Operate equipment on contour, where possible. Do not use equipment on very moist or wet soils, or on slopes steeper than 40%. Ensure the equipment does not sink into the soil 4 inches or deeper. If there is such occurrence, rehabilitate the area. Limit crossing streams with equipment, and cross perpendicular to the stream channel.
- Limit the cumulative area of burn piles to a maximum of 15% of the treatment area. Rake and/or seed if appropriate.
- Limit the removal of ground cover to less than 50% of the existing level.
- Establish non-treatment (ignition or mechanical treatment) buffers to a minimum of 50 feet around the ephemeral streams in Unit 1, and any other stream channels found in the treatment areas. Flag the location of these buffers. Consult with a Hydrologist for assistance locating and flagging buffers, or if treatment is needed within a buffer.
- No debris generated by treatments will be left within the high water area of any channel to avoid both impacts to channel stability and down stream transportation of material.
- Any surface disturbance caused by equipment shall be restored within the Regional Soil Quality direction of no more than 15% of an activity area with detrimental soil conditions. Monitoring shall be performed during operations to limit soil disturbance. Rehabilitate treatment units with more than 15% of the unit detrimentally disturbed, including high fire severity, by re-vegetation with native species, slope erosion control measures, and/ or other appropriate rehabilitation treatments.
- Rehabilitate any constructed firelines to minimize erosion. Use waterbars and/or slash, or seeding as appropriate.
- Refuel and service equipment at least 300 feet from any water source or dry stream channel.

MONITORING

The general objective of monitoring is to determine if land management activities are being implemented correctly and if the implementation requirements are effective. This is accomplished through project supervision or implementation monitoring and post-project monitoring. Post-project monitoring is defined in the Forest Plan (USDA Forest Service 1986 as amended). In addition, the following will be accomplished during and following project implementation:

- Day-to-day monitoring of mechanized (bullhog) contract operations will be completed by a designated Contracting Officer's Representative (COR) and designated Contract Inspectors.
- Precommercial thinning, pruning, fuel rearrangement, and hand piling treatments will be monitored by a designated COR (contract operations) or Forestry Technician (force account) to ensure that implementation is completed in accordance with NEPA and prescription specifications.
- Prescribed burning will be supervised by a qualified Burn Boss to ensure that implementation is completed in accordance with NEPA, Silvicultural Prescription, and Burn Plan.
- Range Management personnel will review the area prior to operations to identify any weed pockets that should be treated or avoided. The area will be inspected the season following initial project completion and following

maintenance treatment to identify any new incursions of weeds. Existing or new weed populations will be treated in accordance with existing noxious weed management decisions.

- An ID Team review will be conducted following initial treatment and following the maintenance treatment to determine if project and Forest Plan objectives have been met.

Species	Quantity
Western Whitebark	2.0
Blackburnian (Atriplex canescens)	1.0
Pod (Atriplex canescens)	1.3
Indian Ricegrass (Oryzopsis)	2
(Atriplex canescens)	2
Indian Ricegrass (Oryzopsis)	2
Blackburnian (Atriplex canescens)	2
Total Pounds	6

- Large woody slash debris should be spread over access trails, unauthorized roads, and equipment parking areas.
- Avoid soils with depths of less than 10 inches.
- Equipment may include bull dozers, chippers, or other equipment that has low ground pressure and would not subject soils to severe compaction. Operate equipment on contour, where possible. Do not use equipment on very moist or wet soils or on slopes steeper than 40%. Ensure the equipment does not sink into the soil 4 inches or deeper. If there is such occurrence, rehabilitate the area. Limit crossing streams with equipment, and cross perpendicular to the stream channel.
- Limit the cumulative area of burn piles to a maximum of 12% of the treatment area. Rate and/or seed if appropriate.
- Limit the removal of ground cover to less than 50% of the existing level.
- Establish non-treatment (ignition or mechanical treatment) buffers to a minimum of 50 feet around the ephemeral streams in Unit 1 and any other stream channels found in the treatment areas. Flag the location of these buffers. Consult with a hydrologist for assistance locating and flagging buffers, or if treatment is needed within a buffer.
- No debris generated by treatments will be left within the high water area of any channel to avoid both impacts to channel stability and down stream transportation of material.
- Any surface disturbance caused by equipment shall be restored within the Regional Soil Quality direction of no more than 12% of an activity area with detrimental soil conditions. Monitoring shall be performed during operations to limit soil disturbance. Rehabilitate treatment units with more than 12% of the unit detrimentally disturbed, including high fire severity, by re-vegetation with native species, slope erosion control measures, and/or other appropriate rehabilitation treatments.
- Rehabilitate any constructed firelines to minimize erosion. Use waterbars and/or slash, or seeding as appropriate.
- Route and service equipment at least 300 feet from any water source or dry stream channel.

MONITORING

The general objective of monitoring is to determine if land management activities are being implemented correctly and if the implementation requirements are effective. This is accomplished through project supervision or implementation monitoring and post-project monitoring. Post-project monitoring is defined in the Forest Plan (USDA Forest Service 1986 as amended). In addition, the following will be accomplished during and following project implementation:

- Day-to-day monitoring of mechanized (billion) contract operations will be completed by a designated Contracting Officer's Representative (COR) and designated Contract Inspector.
- Precommercial thinning, pruning, fuel treatment, and hand piling treatments will be monitored by a designated COR (contract operations) or Forestry Technician (force account) to ensure that implementation is completed in accordance with NEPA and prescription specifications.
- Prescribed burning will be supervised by a qualified Burn Boss to ensure that implementation is completed in accordance with NEPA, Silvicultural Prescription, and Burn Plan.
- Range Management personnel will review the area prior to operations to identify any weed pockets that should be treated or avoided. The area will be inspected the season following initial project completion and following