

Appendix D

Restoration Projects

Fishery Habitat Enhancement

Project Objectives

To improve habitat complexity and passage on BLM-administered land for salmon and trout, to mitigate any adverse effects from erosion, and to improve shade and future large wood recruitment in the first 160' from the stream.

Desired Future Conditions

Improved passage through culverts; logs almost parallel to the stream; rock weirs and logs to provide spawning gravel retention and rearing habitat; and trees reestablished in the Riparian Reserve to improve shade and future large wood recruitment to the stream.

Project Design Features

Four culverts will be replaced for trout and potential coho passage to open five miles of habitat.

The use of rock weirs will aid in collecting gravels for spawning and create plunge pools for rearing. Rock weirs will vary from 3 weirs per mile to 10 weirs per mile. Up to 40 cubic yards of gravel will be placed above rock weirs where possible.

Where accessible, large wood (20-24" DBH) will be placed almost parallel to the streambank for adult holding cover. Twenty logs per mile will be placed instream. Smaller diameter trees will be taken from Riparian Reserve thinnings and added to the stream where appropriate. As part of the riparian thinning restoration plan, trees 10 to 80 years old will be thinned within 160' of the stream for instream habitat, provided 40 percent canopy cover is retained.

Instream projects will include the use of an excavator. Any temporary skid trails needed to access the stream will be water-barred and seeded. The excavator will make a 12-foot wide path from the road to the stream, with no more than 10 passes on the path. No blading on the path will occur. Other resources in conflict with the designated sites will be mitigated with buffers. Equipment will avoid archeological and botanical sites. West Branch Elk Creek will include existing logs from the fire with little supplementation of off-site logs needed.

Late-Successional Forest Habitat Restoration

Project Objectives

Accelerate the growth of trees in stands to promote late-successional conditions with a variety of size classes. Maintain species diversity to promote connectivity between owl activity sites and develop late-successional forest characteristics.

Desired Future Conditions

Suitable spotted owl habitat for nesting, roosting, and foraging composed of mature timber stands. Stands contain large conifers (21" DBH or greater), multi-layered structure, and 60 percent or greater canopy closure (USDA and USDI 2001, I-2, 3). Understory should be open between shrub layer and mid-canopy for flight paths. Nest sites include cavities 50 or more feet above the ground in large decadent old growth conifers, large mistletoe clumps, old raptor nests, and platforms formed by whorls of large branches.

Project Design Features

Stands of trees less than 8" DBH (10-29 years old) will be pre-commercially thinned (PCT) to accelerate the growth of reserve trees. Stands of trees greater than 8" DBH (30-80 years old) will be commercially thinned to increase growth on residual trees, retain and promote large branches on select trees, promote the development of variable tree sizes in the residual stand, and retain the variety of species present.

Condition 1: Young conifer plantations generally 10 to 30 years old.

These stands are comprised of conifers of similar size. Conifers will be thinned to a spacing range of 12-15' to increase growth rates, yet allow for crown closure within 10-20 years. This will promote natural shading, mortality, and removal of lower limbs. Retain unthinned patches up to ½ acre in size for every 10 acres thinned. Retain up to 25 percent canopy component in hardwoods. Retain up to 25 trees per acre and remove all surrounding vegetation for approximately 5' beyond the dripline. This will increase growth rates and retain limbs to allow for future large branches as these trees mature and become dominant in the overstory. Slash from operations will be piled and burned.

Condition 2: Young stands with mixed age and size classes, scattered overstory conifers.

These stands also have variable densities of conifers and hardwoods. In areas where predominant conifer size is less than 3" DBH, thin to a spacing of 12-15'. Areas where the predominant conifer size is 3-8" DBH, thin to a spacing of 15-20'. Retain unthinned patches up to ½ acre in size for every 10 acres thinned. Retain hardwood trees unless they constitute greater than 25 percent of the canopy. Reduce hardwood component to 25 percent of canopy in stand being treated. Pile and burn slash from operations.

Condition 3: Stands dominated by conifers in age classes from 30 to 80 years old.

Conifer and hardwood densities and size classes are variable. Stands will be thinned to a basal area range of 120-140 feet per acre of total overstory basal area, retaining a minimum of 50 percent canopy closure in stand. Retain unthinned patches up to ½ acre in size for every 10 acres thinned. Retain up to 25 percent of canopy component in hardwoods. Reserve trees will be a mix of species present. Variable spacing and reserving both dominant and codominant tree sizes is preferred over even-spacing and even-size distribution of reserve trees. Pile and burn slash from operations.

Pine Habitat Restoration

Project Objectives

Promote pine species regeneration in areas historically inhabited by pines, retaining existing dominant pine in the overstory. Promote pine dominance in stands historically dominated by pines but presently dominated by Douglas-fir and other species.

Desired Future Conditions

Ponderosa and sugar pines dominant in the overstory up to 23 trees per acre (tpa) with a codominant component of pines (<20" DBH) up to 40 tpa. An understory of conifers dominated by pines (<12" DBH) with less than 80 tpa (USDA and USDI 1998, 179). Mix of conifers in the overstory, including Douglas-fir and incense cedar and a component of hardwoods in mid-canopy and understory including madrone and chinquapin.

Project Design Features

Stands with ponderosa or sugar pine present in overstory or understory, or historic presence of pine in overstory will be thinned to promote pine retention and growth. Large overstory pines will have non-pine vegetation in understory removed to promote pine regeneration. Stands with pine less than 80 years old will be thinned to retain pine and promote growth of existing pine in stand.

- **Stands with large (>20" DBH and >80 years old) overstory ponderosa or sugar pines present.**

In areas where pine are not present in the understory, clear around large (>24" DBH) overstory pines for up to 20' beyond dripline to promote pine regeneration. Trees up to 24" may be removed (USDA and USDI 1998, 165). When large overstory trees are within 50' of each other, only one of those trees will receive understory clearing.

Beyond the clearing area, pre-commercial thin (14-20 foot spacing) understory stands (<8" DBH) presently consisting of Douglas-fir, white fir, incense cedar, ponderosa and sugar pine, madrone, and chinquapin to favor dominance of pine species as residual stand.

Beyond the clearing area, commercial thin understory stands (>8" DBH) retaining 100-180 square feet of total basal area retaining the same species preference for pine. Only trees less than 80 years old will be removed. These would generally be less than 18" DBH.

- **Stands with sugar and ponderosa pines present in overstory predominantly less than 18" DBH (30-80 years old).**

Commercial thin these stands favoring all healthy pines for reserve trees retaining 100-180 square feet of total basal area (USDA and USDI 1998, 190).

- **Young stands less than 8" DBH with pine present and without pine in the overstory, but with historic presence of pine in the overstory.**

Pre-commercial thin (14-20 foot spacing) stands presently consisting of Douglas-fir, white fir, incense cedar, ponderosa and sugar pine, madrone, and chinquapin to favor dominance of pine species as residual stand. Retain

unthinned patches up to ½ acre in size for every 10 acres thinned

Introduce prescribed fire into the understory after reducing initial fuel loadings through piling and burning of piles.

Riparian Reserve Thinning

Project Objectives

Improve the habitat and functioning of Riparian Reserves for late-successional dependent terrestrial and aquatic organisms. Accelerate the growth rates and size variability of residual trees in the existing stands and maintain species diversity.

Desired Future Conditions

Functioning riparian area that allows for late-successional species movement and stream protection, and maintains species composition and characteristics needed to attain Aquatic Conservation Strategy. Attain 75 percent late seral vegetation in riparian areas. Riparian vegetation would be dominated by large (>24" DBH) conifers with a diverse species composition including riparian hardwoods and mixed conifer species. Conifer species of preference would be Douglas-fir, incense cedar, and pacific yew, with western hemlock and white fir in the upper elevations (above 3,500') and ponderosa and sugar pines in the lower elevations (below 3,000'), particularly on south exposures. Hardwood species to favor include alder, big leaf maple, and Oregon ash. Canopy closures would generally be greater than 70 percent. The stand would be able to supply amounts and distributions of coarse woody debris sufficient to sustain physical stability and complexity (USDI 1995, 22).

Project Design Features

Stands of trees less than 8" DBH (10-30 years old) within Riparian Reserves will be pre-commercially thinned to accelerate the growth of residual trees. Retain unthinned patches up to ½ acre in size for every 10 acres thinned. Stands of trees greater than 8" DBH (30-80 years old) will have up to 12 dominant tpa selected. Competing trees with crowns touching will be felled or girdled. This will be done to increase growth of residual trees, promote large branches on select trees, and develop the recruitment of large woody material for streams. Felling and girdling will occur on trees less than 20" DBH. Thinning will be performed on an irregular spacing with reserve trees selected to aid in the development of future stand characteristics such as variable spacing, multistory canopies, large limbs, and canopy gaps (USFS 2000). Pile and burn slash from treatments in stands <8" DBH. Leave a no-cut buffer zone 50' from streams containing coho salmon and 30' from all other streams.

Oak Woodland and Meadow Restoration

Project Objectives

Maintain or enhance oak woodland and meadow values for wildlife, range, plants, and biological diversity. Protect and improve special habitats within the Elk Creek Watershed.

Desired Future Conditions

Oak woodlands in an open condition that favors large oaks and pines and a diversity of native grasses, forbs, and shrubs and also provides for future regeneration of oaks and pines. Meadows would be in an open condition with healthy native grasses and forbs.

Project Design Features

Management activities could include manually thinning small-diameter white oak; removing competing conifers; clearing around large, healthy pine; manually cutting, piling, and burning older brush patches; and applying frequent low-intensity prescribed fire. Meadow openings will be maintained by removing Douglas-fir and incense cedar from around the edges of meadows.

Inside the fire perimeter, sites will be monitored and treatment applied when vegetative conditions warrant (in 5-15 years). Those conditions are:

- Numerous small conifer seedlings reappearing on a site.
- Large amounts of brush seedlings reoccupying the site.
- Oak resprouting or oak seedlings reoccupying the site.

Outside the fire perimeter, site-specific treatment will include the following:

- Manually thinning small-diameter white oak.
- Manually thinning small competing conifers.
- Clearing around large, healthy pine.
- Manually cutting, piling and burning older brush patches.
- Applying low-intensity fire.
- Stagger treatments over several years so areas are treated at different times and oak woodlands are in different successional stages across the landscape. Treatments will not begin until at least 2004.

Prescribed fire will be applied under conditions when a low intensity, short-duration fire would occur. Flame-length will average 3 feet or less. Fires will need to be prescribed while reestablishing vegetation is small enough to be susceptible to the low flame lengths. Some manual slashing of woody vegetation may be required prior to burning in order to meet resource objectives.

Reforestation

Project Objectives

Reforest areas that supported forest vegetation before the fire. Plant areas with species representative of the plant series existing in those forest stands. Place a stand on a pathway toward a mixed conifer forest that can, more quickly, obtain the attributes of a late-successional forest than would occur naturally.

Desired Future Conditions

Mixed conifer stands at age 20 with a minimum of 70 percent canopy closure and a hardwood component of up to 25 percent of canopy. Retain a residual level of remnant overstory trees, snags, and coarse woody debris as described in stand advisories for late-successional habitat or the LSRA. This is an interim stage. The final condition for stands in this watershed is described in the proposed Late-Successional Forest Habitat Restoration project.

Project Design Features

Areas burned at high or moderate severity levels will be planted with tree seedlings to a species mix consistent with those species present in those locations before the fire. Priority for planting will be in past plantations, areas with slopes greater than 65 percent, riparian areas, and remaining areas of high or moderate burn intensity, including spotted owl activity centers.

Reforestation Research Project

Project Objectives

To evaluate mixed-species reforestation plantings, to identify and characterize temporal patterns of vegetation structural development and species diversity, to assess temporal dynamics of fuels loading and fire risk, and to determine impacts of snag retention on survival and growth of planted trees.

For the initial phases of stand development, there are six specific research objectives to determine the effects of:

1. snag retention on the survival and establishment of planted seedlings by species,
2. planted seedling versus natural regeneration on tree survival and growth,
3. monoculture versus mixed-species plantings on planted seedling survival and growth,
4. planting density on survival and growth of planted seedlings by species, and site occupancy by planted and naturally regenerating trees, shrubs, and herbs,
5. weed control on planted seedling establishment and growth of trees, shrubs, and herbs, and
6. physiographic site conditions on planted seedling survival and growth of trees, shrubs, and herbs

Desired Future Conditions

Forest stands having a high degree of species and structural diversity (relative to monospecific plantations) in which Douglas-fir, white fir, and incense cedar contribute to the main overstory canopy as codominants; dispersed sugar pine and ponderosa pine having complex canopy structure and large diameter stems and branches as dominants; and sub-canopy hardwood trees providing structural continuity between understory shrubs and the overstory.

Project Design Features

This planting is a research project designed to provide a rigorous basis for evaluating the efficacy of snag retention,

mixed-species plantings, variable planting density, and woody vegetation removal as means for regulating the development of biologically and structurally complex forest stands, and for varying the temporal dynamics of fuels profiles and fire risk.

Six species composition, planting density, and vegetation removal treatments (weeding) would be established:

1. Unplanted, woody vegetation not removed
2. Douglas-fir, planted at 435 tpa, woody vegetation removed
3. Mixed species planting, 435 tpa, woody vegetation removed
4. Mixed species planting, 435 tpa, woody vegetation not removed
5. Mixed species planting, 190 tpa, woody vegetation removed
6. Mixed species planting, 190 tpa, woody vegetation not removed

Woody vegetation removal on designated treatment plots will be completed manually prior to planting, in year 1 and in year 3; and in year 5 if necessary, following planting.

Species mixes will consist of the following:

- Sites 3500'+ elevation – Douglas-fir, 20%; White fir, 20%; sugar pine, 20%; incense cedar and ponderosa pine, 20%; hardwood sprouts (Pacific madrone and/or chinquapin oak) 20%.
- Sites <3500' elevation – Douglas-fir, 40%; sugar pine, 20%; incense cedar and ponderosa pine, 20%; hardwood sprouts (Pacific madrone and/or chinquapin oak) 20%.

Where specified, hardwood densities will be obtained by retaining hardwood sprouts, thinned to a single stem per clump, at the 20 percent proportion prescribed.

The treatments will be implemented on both unsalvaged and salvaged sites to evaluate effect of residual snags as microsite modifiers on seedling establishment. Some treatments will be replicated on moderate and harsh planting sites as defined predominantly by aspect (northerly vs. southerly), but also taking into account soil depth (shallow vs. deep) and slope position (mid vs. upper).

A total of 56, 1.5-acre plots will be established and allocated by treatment condition as outlined in Table B-7 below.

Plots will be located, planted and treated in FY04 following salvage. Vegetation monitoring measurements (trees, shrubs, herbaceous) and fuels evaluations will be made in years 1, 2, 3, and 5 following planting. Annual reports will be delivered to the BLM with additional in-depth summaries and interpretations after the third and fifth growing seasons.

It is anticipated that these plots will be maintained and monitored for several decades to achieve project objectives. Beyond the fifth year, sampling frequency and reporting will be dictated by observed vegetation dynamics, continued BLM interest and support, and funding availability.

Fuel Management Zone (FMZ)

Project Objectives

Create FMZs to assist in future wildfire suppression activities, to provide for firefighter safety, and to provide anchor points for control lines. To meet the LSRA recommendation for breaking the watershed into 5,000- to 7,000-acre blocks. Construction of FMZs would also meet intent of National Fire Plan by providing protection to Communities at Risk and Wildland Urban Interface areas.

Desired Future Conditions

A series of FMZs on the ridgelines, on the perimeter and within the LSR. Anchor points for fire lines, burnout operations, and possible safety zones for firefighters. LSR divided by FMZs into blocks of 5,000- to 7,000-acres to reduce future fire size.

Project Design Features

Within the burn perimeter, stand-replacement areas less than 10 acres will be salvaged to reduce fuel loadings and reduce spotting potential. Proposed units will be located within an identified FMZ and cover between 50-70 acres. A target of six snags per acre will be left standing on or near the ridge top. The preferred leave snags would be the shorter snags. The understory vegetation will be cut, piled, and burned.

In FMZs proposed in the unburned portion of the watershed, the understory conifers and hardwoods will be thinned and slash will be hand-piled. Hand-cutting, hand-piling, and burning of brush will occur. The majority of the conifers cut will be 6" DBH and less. In some cases, small diameter commercial conifers will be cut and removed as needed to reduce crown bulk density to a level that will not perpetuate crown fires. After ladder fuel loadings are reduced, an underburn will be conducted to further reduce ground fuels. This treatment will occur two to five years after the initial entry. A second underburn will occur 10-15 years later. At that time, initial treatment will be finished and any further treatments will be considered maintenance.

Removal of brush and sub-merchantable timber will be accomplished through hazardous fuel reductions contracts. Merchantable timber will be removed through a timber sale contract, where feasible. Approximately 35 acres located in T33S, R1W, Sections 14 and 15 will be proposed for commercial thinning.

The West Branch Fire of 1972, located in T32S, R2W, was reforested and pre-commercially thinned. This area burned again in the Timbered Rock Fire. Stand diameters range from 3-8 inches. Young conifers in this area killed in the Timbered Rock Fire will be cut, piled, and burned. This will aid in reforestation efforts and reduce fuel loads to help reduce future fire severity.

Owl Activity Center Underburns

Project Objectives

The short-term objective is to reintroduce fire to maintain existing reduced fuel loadings and current fuel profiles created by the Timbered Rock Fire, and to simulate the historic natural disturbance process. The long-term objective is to increase the resiliency of sites during future high intensity fire events by reducing fire severity while maintaining owl habitat in late-successional forest conditions.

Desired Future Conditions

Multi-storied stands with low ground fuel loadings. These stands would have a break in the ladder fuels from the ground to the overstory canopy layer.

Project Design Features

This action will capitalize on the natural fuel reduction created by the Timbered Rock Fire. Underburning will occur when fuel moistures for the larger, 6-inch or greater (1000-hour) fuels are at a level too moist for total consumption. The primary carrier of the prescribed fire is the 0 to 3-inch (1- to 100-hour) fuels, litter layer, and any small brush the fire will consume. These treatments will occur on a limited scale to demonstrate effectiveness and ability to meet prescription requirements. The units will be configured using logical topographic breaks and may include all or portions of the owl activity centers and some adjacent areas. In addition, some burning outside the activity centers will be proposed using logical topographic breaks. Burning will occur outside of nesting season.

Initial entry will be in the next 2-3 years or later, if site conditions warrant. The need for follow up treatments will be evaluated and treatment proposed when fuel buildups approach the mid- to high-range of Fuel Model 11, or prior to reaching the mid-range of Fuel Model 10 (see Appendix M, FEIS for fuel model descriptions). The second treatment will occur in 5-10 years and further treatments will occur in the 10- to 20-year range. All treatments will be based on actual conditions and time frames are approximate. Seasonal restrictions will be implemented to avoid disturbing spotted owl nesting activities.

Eagle Nesting Habitat Enhancement

Project Objectives

To promote growth and future development of large overstory trees into trees with large limbs or broken tops suitable for nesting eagles.

Desired Future Conditions

Scattered individuals and groups of large overstory ponderosa pine, sugar pine, and Douglas-fir trees with large limbs suitable for supporting eagle nests and with openings between branching whorls. The trees would have an open or broken canopy or would be located near the edge of the stand so the eagles would have an unrestricted flyway. Tall perch trees would be present at the edges of the stand. These nest stands would be located on the ridge between Lost Creek Lake and Elk Creek.

Project Design Features

Younger stands will be treated to promote growth of large overstory ponderosa pine, sugar pine, and Douglas-fir with large boles and thick limbs, strong enough to support the large stick nests built by bald eagles and golden eagles. Smaller trees around the meadow edges will be thinned. A residual conifer spacing of 12-20' will be implemented in stands less than 30 years old to promote the development of large trees with the desired habitat attributes, such as large limbs and whorls.

Stands with existing large overstory trees, treatments will improve the vigor of large overstory sugar pine, ponderosa pine, and Douglas-fir. Removing competing vegetation around selected trees will increase resistance to mortality from fire. Vegetation will be removed around the reserved large trees by clearing 10-15' out from the drip line of the pine. Codominant trees with crowns touching the selected trees will be removed unless the removal would harm reserve trees. Projects will be coordinated with proposed fuel management projects.

Two areas will be treated:

- T33S, R1E, Section 15 - Around the meadows in the north central part of the section and the NWSW part of the section. The project will occur along the west side of the meadow and extend 300 feet into the stand. Two areas extend outside the project boundary into the Lost Creek Watershed; approximately 200 feet in one area and 100 feet in the second area.
- T33S, R1E, Section 21 - Located within a proposed pine restoration project area. The project will occur along the north and west edge and extend 300 feet into the stand.

Maintain or Create Log Piles for Wildlife Habitat

Project Objectives

To provide denning/hiding/resting/foraging/escape sites for animals, including larger mammals such as American martin, fisher, bobcat, cougar, and bear.

Desired Future Conditions

Scattered piles of large wood with spaces to provide denning, hiding, resting, foraging, or escape sites for animals, including larger mammals such as American martin, fisher, bobcat, cougar, and bear.

Project Design Features

During salvage operations, piles of fallen logs will be left in the selected areas where trees were cut to clear the right-of-way for the Pacific Power powerline in T32S, R1E, Section 5. Selected piles will be located near the east and west borders of section and one in the middle, away from the road.

Three additional piles of larger wood will be left between West Branch Elk Creek and Flat Creek. These will be at or near the end of a road that will be closed either with a permanent block, earthen berm, or gate. This will be completed as part of the roadside salvage. Piles will be located in areas where roads identified for decommissioning are closed to traffic.

Piles should be approximately 20' x 20' and 4-6' high and provide space to allow animals access within the piles. Larger logs (>16" DBH) will be stacked in a loose, crisscross/haphazard pile in a way that will create spaces beneath the wood. The logs could be smaller lengths, broken tops, and boles large enough to stack with spaces between.

Logs will be obtained from salvage operations. Broken parts and whole logs will be hauled to location and piled. Piles should be located in the largest accumulation of trees. Pile locations can be moved to a different site if adjacent land owners object to specific road closures, or if there are inadequate snags in the area near the selected location.

Road Reconstruction

Project Objectives

Stabilize roads to reduce the risk of road failure.

Desired Future Conditions

Roads in a stable condition with a low risk of failure.

Project Design Features

Drainage structures, such as culverts and armored drain dips, will be added to reduce the chance of the road becoming saturated by water and failing. Unstable material will be removed from shoulders of roads and large rocks will be placed on the face to armor the surface and hold the fill in place. It is anticipated there will be a greater need for maintenance on roads within the fire area over the next few years.

Road Stream-Crossing Upgrades

Project Objectives

Reduce the risk of road damage from debris torrents plugging culverts and diverting stream flows down roads.

Desired Future Conditions

Road fills constructed of rock, rather than mixed soil and rock fills at stream crossings in high risk locations. Road segments below the pipe would be protected from water or debris torrents diverting from the channel and eroding a gully in the roadbed.

Project Design Features

Road fills constructed out of soil and rock fill material at high risk stream crossings will be replaced with rock fills. These fills will be designed with a dip over the culvert to keep the stream flow in the channel in case the culvert plugs. Culverts will be upsized to pass 100-year storm events and allow movement of water, gravels, and debris through the culvert.

Road Maintenance

Project Objectives

To restore or improve road segments identified in the Transportation Management Objectives (TMO) process to the desired standard.

Desired Future Conditions

To maintain road access through BLM-administered lands while minimizing erosion and sedimentation from these roads and protecting water quality.

Project Design Features

Roads will be maintained and improved, as needed. Maintenance may include: blading and shaping the road surface, adding rock to the road surface, brushing the roadsides, cleaning the ditches, cleaning culvert catch basins, cleaning or replacing culverts, and adding drainage structures such as culverts and drain dips

Road Decommissioning

Project Objectives

To reduce the road density in the Key Watershed by decommissioning road segments identified in the TMO process. In addition, identify road segments for closure to reduce wildlife harassment, degradation to the road surface, and trash dumping.

Desired Future Conditions

Appropriate access to provide for administrative needs and public use. Most roads out of the riparian areas, and few with native surfaces. Access across public lands through reciprocal rights agreements will be maintained.

Project Design Features

Roads will be decommissioned or closed as identified from the TMO process.

Seasonal Road Closures

Project Objectives

Reduce damage to road surface during the wet season and protect sensitive fish species from surface road erosion; protect wildlife from poaching and harassment; and reduce trash dumping.

Desired Future Conditions

Year-round vehicle access would be restricted to mainline roads. Secondary and non-surfaced roads would be seasonally closed to motorized vehicles from mid-October through April 30. Only foot and non-motorized traffic would be allowed on closed roads during the wet season. All roads would be available for motorized vehicle traffic (unless fire restrictions are in place) from May 1 through mid-October. Roads would remain open to administrative access for landowners, BLM employees, and BLM contractors and permittees.

Project Design Features

Roads will be seasonally closed to motor vehicles from mid-October through April 30. Roads across private lands may or may not be closed by the landowner.

Pump Chance Restoration

Project Objectives

To restore existing pump chances and helicopter dip ponds for future fire suppression needs.

Desired Future Conditions

To have pump chances and helicopter dip ponds that will hold adequate pools of water, about 500 gallons, to be used primarily for initial attack fire suppression.

Project Design Features

Restoration work will include cleaning pump chance pools by excavating gravels, soil, and vegetation that have built up. Excavated materials will be moved to an appropriate disposal site. Water inlets and outlets will be cleaned or repaired and rock will be added to access ramps as needed. Access ramps will have an adequate rock surface and be brushed to accommodate up to 4,000 gallon water tenders. Cascade Frogs will be protected by a seasonal restriction with no restoration occurring from mid-March to August 31.

Rock Quarry Closure and Rehabilitation

Project Objectives

To close and rehabilitate rock quarries where the usable rock has been depleted and to minimize erosion from steep side slopes and lack of vegetation.

Desired Future Conditions

Abandoned rock quarries with vegetation growing in them and blended into the landscape.

Project Design Features

Rock quarries that are no longer viable will have benches sloped, soil imported (if necessary), and vegetation planted. Any oversized or usable material will be stored at the quarry or moved to another location where it will be stored until needed.

