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Region

March 2014

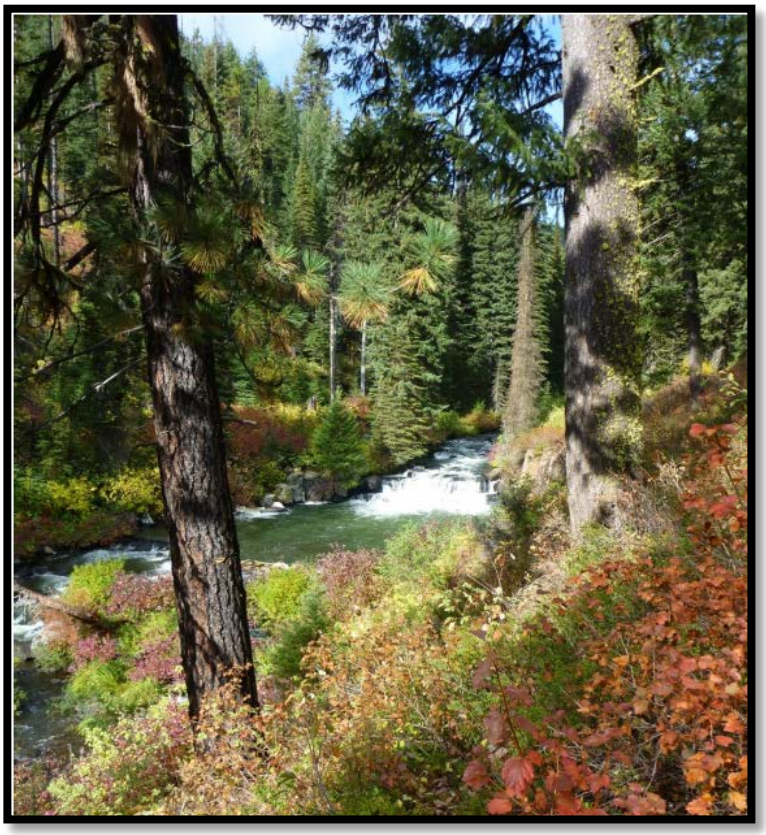
DRAFT
RECORD OF DECISION

LOST CREEK-BOULDER CREEK LANDSCAPE RESTORATION PROJECT

Payette National Forest

New Meadows Ranger District

Adams County, Idaho



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DRAFT Record of Decision

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New Meadows Ranger District

Payette National Forest

Adams County, Idaho

March, 2014

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INTRODUCTION

The Final Environmental Impact Statement (FEIS) for the Lost Creek-Boulder Creek Landscape Restoration Project (Project) has been prepared pursuant to the requirements of the National Environmental Policy Act (NEPA, 40 CFR 1500-1508), the National Forest Management Act and its implementing regulations, and the Payette National Forest Land and Resource Management Plan 2003 (USDA Forest Service 2003).

In 2009, Congress established the Collaborative Forest Landscape Restoration Program (CFLRP) with Title IV of the Omnibus Public Land Management Act. The intent of the CFLRP is to encourage the collaborative, science-based ecosystem restoration of priority forest landscapes. In 2011, the Weiser - Little Salmon Headwaters landscape on the Payette National Forest was selected as one of the twenty priority landscapes across the nation. The Chief of the Forest Service, Tom Tidwell, has asked the CFLRP Forests to accelerate restoration in these priority landscapes. In a 2013 speech to the Senate Committee on Energy and Natural Resources, Chief Tidwell described ecological restoration as "restoring the ability of forest and grassland ecosystems to resist climate-related stresses, recover from climate-related disturbances, and continue to deliver the values and benefits that Americans want and need."

The FEIS analyzed the environmental effects of proposed forest management activities including vegetation treatments (which includes timber harvest), prescribed fire, watershed improvements, and recreation improvements. The project encompasses approximately 80,000 acres on the New Meadows Ranger District of the Payette National Forest. The project is located approximately 10 miles north and west of New Meadows, Idaho in Boulder Creek, a tributary to the Little Salmon River, and in the headwaters of the Weiser River and the West Fork of the Weiser River. This Record of Decision (ROD) documents the decision and rationale for implementing the selected actions in the project area.

Consistent with the CFLRP, the Payette National Forest (Forest) used a collaborative process, working with the Payette Forest Coalition (PFC) in the development of this project. The PFC was formed in June 2009, and is a coalition of citizen stakeholders who have come together to work in partnership with the Forest Service to develop landscape restoration projects within the larger Weiser - Little Salmon Headwaters CFLRP area. Its members represent stakeholders from a broad range of outside interests, including the environmental community, livestock permittees, timber industry, recreational groups, and State and County government. Over a two-year period, the PFC met on a regular basis to gain an understanding of the existing landscape conditions and restoration opportunities within the project area. Forest resource specialists participated in the meetings to provide technical information and data as the PFC developed their recommendations.

In 2013, the proposed action was developed by the New Meadows Ranger District Interdisciplinary Team (IDT) in response to Agency direction and policy, input from interested members of the public, and from recommendations received in comments provided by the PFC to the Forest Supervisor on February 22, 2013. The PFC's objective was to design a project on a landscape scale that would restore dry forest vegetation conditions, improve habitat for wildlife species associated with dry forests (such as white-headed woodpeckers), reduce wildland fire risk, and improve the economic conditions of the local economy. The recommendations also included watershed and recreation improvements. The proposed action was designed to be consistent with Public Law 11-111 (Omnibus Public Land Management Act of 2009, Title IV, Forest Landscape Restoration; hereafter called CFLRP) and was released for public comment (scoping) on February 25, 2013.

Project Area Description

The Lost Creek-Boulder Creek Landscape Restoration Project encompasses approximately 80,000 acres on the New Meadows Ranger District of the Payette National Forest. The project area is located approximately 10 miles north and west of New Meadows, Idaho in Boulder Creek, a tributary to the Little Salmon, and in the headwaters of the Weiser River and the West Fork of the Weiser River. The project area includes the Pony Creek Research Natural Area (RNA) and part of the Rapid River Inventoried Roadless Area (IRA). The project area consists of National Forest System lands located in the western portion of the New Meadows Ranger District in T18N, R1W; T19N, R2W; T20N, R1W; T20N, R2W; T21N, R1W, Boise Meridian surveyed (Figure ROD-1).

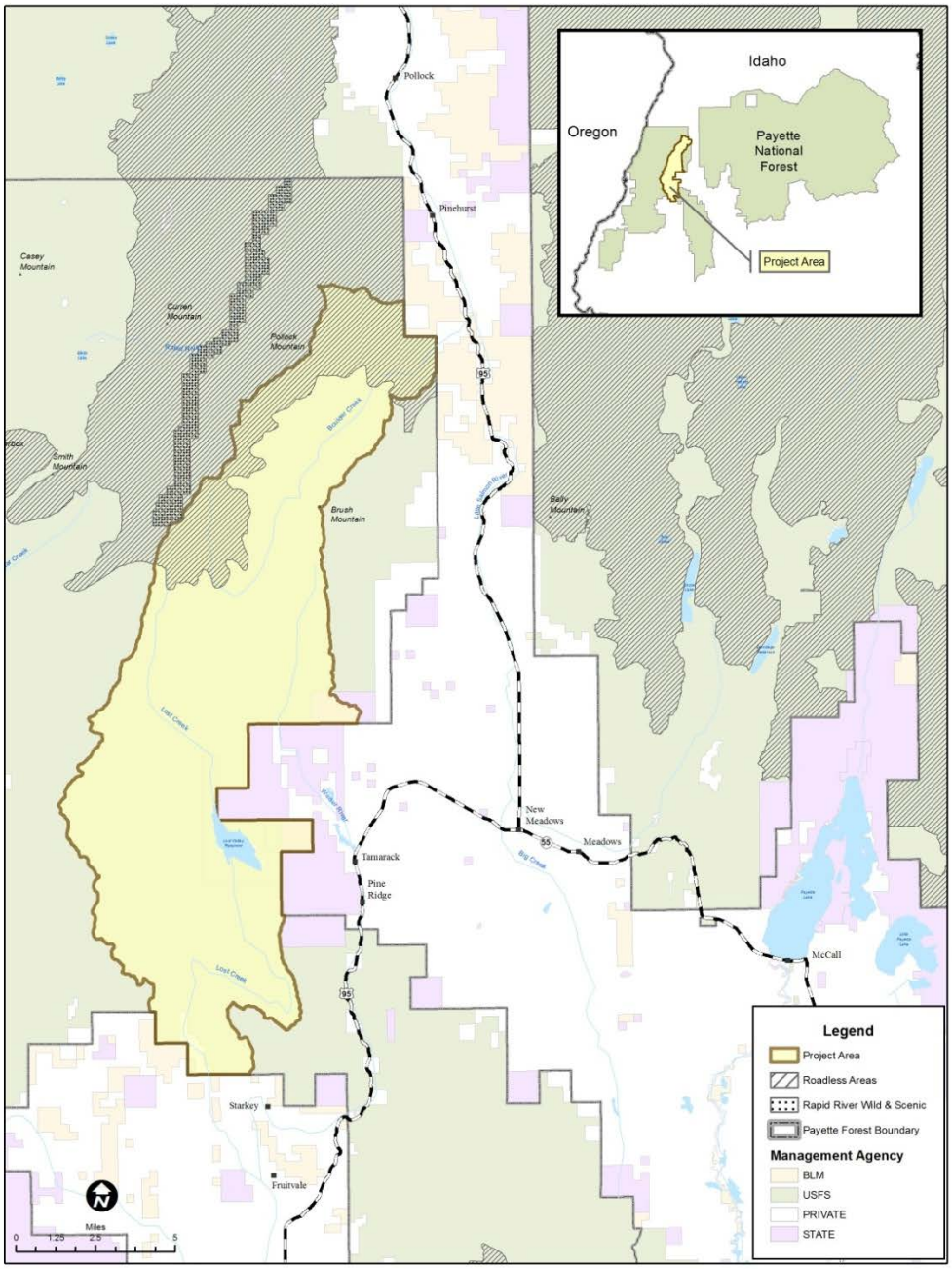

Figure ROD-1. Lost Creek-Boulder Creek Landscape Restoration Project Vicinity Map.

DECISION AND RATIONALE

Decision Authority

Pursuant to the delegation by the Secretary of Agriculture at 7 CFR 2.60 and Chief of the Forest Service at FSM 2402.2 and Exhibit 01 at FSM 2404.28, I have been delegated the authority to make this decision.

My Decision

As disclosed in section 1.9 of the FEIS, this decision will answer the following questions:

Should the Forest Service implement this project, including commercial and non-commercial vegetation treatments, fuels reductions, road management, watershed, wildlife and fish habitat restoration, and recreation improvements at this time?

If so:

- What and how many acres should be treated and by what means?
- Which and how many recreation facilities, trails, and dispersed recreation sites should be approved, and by what means?
- Which, if any, trails, dispersed recreation facilities, and/or sites should be closed and rehabilitated?
- What watershed restoration and fish habitat improvements should be implemented?
- What road management actions should be implemented, and what is the appropriate minimum road system (MRS) for the project area?
- What Project Design Features or mitigation measures are necessary to assure compliance with the Forest Plan?
- What monitoring requirements are appropriate to evaluate project implementation and effectiveness?

Based on my review of the environmental analysis disclosed in the Lost Creek-Boulder Creek Landscape Restoration Project FEIS, the project record, and consideration of public comments received on the draft Environmental Impact Statement (DEIS), I have decided to implement Alternative B-modified, further referred to as the *Selected Alternative*. The *Selected Alternative* includes vegetation management activities, watershed restoration treatments, road management activities and recreation management activities.

The following is a summary of modifications to Alternative B that are incorporated into the *Selected Alternative*:

- Vegetation treatments will be implemented on the number of acres identified in Alternative B with the treatment intensity described in Alternative D for Commercial Thin/Free Thin treatments.
- Treating an additional 27 miles of unauthorized routes across the project area as described in Alternative C, for a total of 117 miles of unauthorized routes treated.
- Designation of seven additional miles of non-motorized trails in the Lost Creek area as described in Alternative C.
- Thirty-six of the 40 fish passage barrier improvements proposed in Alternative B will be implemented.
- Five of the seven vault toilets proposed in Alternative B will be installed.

Table ROD-1 provides a summary of activities that the *Selected Alternative* authorizes for implementation. Many other activities and associated actions are included in this decision. This decision incorporates adherence to all

Forest Plan Management Requirements, Project Design Features, and Monitoring Requirements as described in the FEIS (See FEIS Chapter 2, Tables 2-4, 2-5 and 2-6).

Table ROD-1. Summary of Activities to be Implemented Under this Decision.

Vegetation Management	
Commercial Thin/Free Thin (CT-FT)	12,200 acres
Commercial Thin/Mature Plantations (CT-MP)	8,100 acres
Free Thin/Patch Cut (FT-PC)	1,800 acres
Total Commercial Vegetation Treatments	**22,100** acres
*Commercial Vegetation Treatments within RCAs**	1,530 acres
Total Non-commercial Thinning Treatments	**17,700** acres
Prescribed fire treatments	**45,000** acres
Recreation Management and Travel Management	
Vault toilet installation	5
Pit toilet decommissioning	6
Kiosks installed	3
Minimum Road System (MRS)	401 miles
Change in miles of roads accessible by passenger vehicles	- 10 miles
Change in miles of motorized access	+2.0 miles
Change in miles of motorized trails open to the public**	+15 miles
Change in miles of non-motorized trails***	+6 miles
Change in number of improved dispersed campsites	+ 68
Closure and restoration of undesired dispersed campsites	-12
Trailhead construction and parking expansion	2
Trailhead decommission	1
Trail maintenance	35
Road Management, Watershed Restoration, Fisheries Habitat Improvements	
Road graveling	34 miles
Roads converted to long term closure status	61 miles
System road decommissioning	68 miles
Unauthorized route treatment	117 miles
Road re-routes	0.6 miles
Road relocation	1 miles
Improve and open roads currently closed to public	0.7 miles
Planned temporary roads	**25** miles
New construction and obliterate	10 miles
Use existing roadbed and obliterate	15 miles
Gravel pits utilized	**18**
Existing	11
Potential	7
Roads added to the system for gravel pit access****	0.8 miles
Fish passage improvements (Total)	**36**
Improvement through culvert removal	6
Improvement through culvert replacement	30

** = These are not additional acres they are included in the CT-FT and CT-MP acreages listed above but are listed here to disclose that some of these treatments would occur within RCAs. All commercial vegetation treatments within RCAs are outside of Boulder Creek*
*** = Motorized access includes roads accessible by passenger vehicles and motorized trails intended for OHV use*
**** = Project will implement seven new miles of non-motorized trails (Corral Creek Loop), and decommission one existing mile on Trail #519*
***** = Construction of these gravel pit access roads will not be funded by CFLRP resources*

My decision is based on a review of the project record which includes a thorough review of relevant scientific information, consideration of responsible opposing views, and acknowledgement of incomplete or unavailable

information, scientific uncertainty, and risk. I have considered input from groups and individuals with responsible opposing views and discussed our response to them in FEIS Appendix A, Response to Public Comments on the draft Environmental Impact Statement, and the project record.

I know that my decision will not completely satisfy every group or individual; however, I have concluded that it is an informed choice that provides a reasonable mix of actions and moves the project area toward desired conditions as defined in the Forest Plan.

I firmly believe my decision as defined in this Record of Decision for the Lost Creek -Boulder Creek Landscape Restoration project exemplifies the Chief's and Congress' intentions for accelerating restoration across a large landscape using a collaborative process. For more than two years, members of my staff have worked collaboratively with the Payette Forest Coalition (PFC) which represents a broad range of stakeholders. The PFC gave recommendations for restoration treatments across the 80,000 acre Lost Creek Boulder Creek landscape that were considered in project development. The selected treatments will move forested landscapes towards desired conditions, producing forest products that support the economic viability of the surrounding rural communities, while at the same time improving habitat for wildlife species of concern, particularly the threatened northern Idaho ground squirrel and sensitive white-headed woodpecker. Road and watershed treatments will improve the Watershed Condition Framework class rating in the Boulder Creek subwatershed while reconnecting over 52 miles of aquatic habitat for fish including bull trout, Chinook salmon, and steelhead. Treatments will enhance recreation opportunities around Lost Valley Reservoir while improving forest and watershed health. Through the use of prescribed fire on 45,000 acres we will aid in restoring the natural processes that sustain the desired forest conditions, while reducing hazardous fuels and the risk of uncharacteristic fires.

SELECTED ALTERNATIVE

Based on the effects analysis disclosed in Chapter 3 of the FEIS, I believe that the *Selected Alternative* best meets the Purpose and Need for the project and is consistent with the Forest Plan as well as all laws, regulations and policy governing National Forest System land management.

My decision includes the following landscape restoration treatments: silvicultural treatments, the use of prescribed fire, temporary road construction, road realignments, open road converted to seasonally open, road maintenance, road decommissioning and long-term closures, culvert upgrades and removals, trail construction and trail improvements, vault toilet installation, dispersed camping improvements, Project Design Features / mitigations, and a monitoring plan. The *Selected Alternative* best meets the agency goal to improve soil, water, riparian and aquatic resources, which is accomplished by the decommissioning of roads impeding proper function. Obliteration methods have evolved and slash and other erosion control measures will be used to match conditions adjacent to the road treatment area and are designed to minimize interference to foot, horse and livestock travel.

As disclosed above, the *Selected Alternative* is a modified version of Alternative B that blends in aspects of Alternatives C and D to better meet the purpose and need and respond to issues and public comment. This section describes all aspects of the *Selected Alternative* included in this decision. This description includes all actions, management requirements, project design features and monitoring requirements authorized by this decision.

Vegetation Treatments

As more fully described in the FEIS Chapter 2, p. 42, proposed vegetation treatments were developed using a combination of data derived from aerial photo interpretation and field reconnaissance. Layout of exact boundaries and treatment types would be determined based upon additional on-the-ground surveys and vegetative conditions within each stand. Although all acres proposed for treatment will be evaluated based on the descriptions provided below, based on Project Design Features and the intent of the proposed treatments, it is anticipated that further ground verification may result in a reduction of commercial treatments and a resultant increase in non-commercial treatments. Total acres of commercial treatments are anticipated to be reduced by 10-40 percent from those described below.

Commercial Thin-Free Thin (CT-FT)

The *Selected Alternative* will implement 12,200 acres of commercial thin-free thin treatment treating the acres proposed in Alternative B with the intensity of treatment in Alternative D. Free thinning will allow flexibility to use different thinning methods for varying stand conditions and objectives. For this project, free thinning would be accomplished primarily by low thinning (removing trees from the lower crown classes) with some crown thinning (removing trees from the dominant and co-dominant crown classes) and occasionally sanitation cutting (removing trees to improve stand health, especially mistletoe infections) to improve stand health by reducing the anticipated spread of insects or disease.

These treatments will generally be completed in forested areas dominated by mature, vigorous ponderosa pine, Douglas-fir and / or western larch (*i.e.* - PVG 1, 2, 5 and portions of PVG 6 dominated by early seral species) with canopy cover greater than 35 percent.

The specifications for this treatment include:

- Legacy western larch, ponderosa pine, and Douglas-fir should be retained. See FEIS Appendix H for legacy tree identification guidelines.
- Seral species (aspen, western larch, ponderosa pine, and/or Douglas-fir) should generally be favored for retention over non-seral species (*e.g.* grand fir) and preference given to retention of larger diameter trees;
    - Non-legacy trees greater than 20 inches diameter breast height (DBH) should generally be given preference for retention. When selection of retention/removal of these trees must be made the following guidelines should be utilized:
        - Preference for retention should generally be given to larger diameter, vigorous, early seral trees.
        - Consider the appropriateness of retaining clumps and/or skips as described below.
        - Dwarf mistletoe that cannot be isolated and would cause mid- to long-term forest health issues,
            - Trees with lower mistletoe ratings would generally be favored over heavily infected trees. When possible, trees with mistletoe ratings of 0-3 would be favored over trees with a rating of 4-6. When trees with mistletoe ratings of 4-6 could be isolated (*i.e.* - greater than 40 feet from uninfected host trees) while addressing mid to long term stand objectives these infected trees should be retained to meet wildlife objectives.

        - Give preference to retention of tree(s) exhibiting characteristics of high wildlife value (*i.e.* cavities, stem rot, broken tops with structure for nesting, etc.) even if this results in slightly higher than desired stocking.
        - Consider safety concerns when designating trees for retention/removal. Including hazard trees in and/or adjacent to campgrounds, dispersed campsites, and roads/trails open to the public.
        - Consider operational concerns when designating trees for retention/removal. Including hazard trees, skid trails, skyline corridors, landings, etc.
        - In large tree size class stands (generally stands that currently have eleven or more trees per acre that are 20 inches or greater DBH), retain at least eleven, 20 inch DBH or larger trees per acre. This may require retaining large diameter trees that do not meet the description for preference, above.
    - Retention/removal of non-legacy late seral species should follow the following guidelines:
        - Preference for retention should be given to late seral species when necessary to meet residual structural objectives (*i.e.* large tree size class and/or old forest habitat criteria).
            - Preference for retention should generally be given to vigorous, healthy larger diameter late seral trees. Although, preference to retention of late seral tree(s) exhibiting characteristics of high wildlife value (*i.e.* cavities, stem rot, broken tops with structure for nesting, etc.) should also be given, especially when not common in a stand, even if this results in slightly higher than desired stocking. These would also be good areas to consider skips, see below.
        - Late seral trees greater than 20 inches DBH not meeting merchantability specifications due to damage, poor form, or indicators of rot should generally be retained to meet wildlife objectives.
        - Give preference for removal of late-seral (*e.g.* - grand fir and/or Douglas-fir) trees that are causing direct crown/root competition to large diameter and/or vigorous western larch and ponderosa pine
- Creation of clumps, skips and openings :
    - Throughout the harvest area, clumps of trees, both commercial and non-commercial sized would be retained for wildlife and visual objectives. These clumps would consist of 2 to 20 or more trees and should be designed to enhance spatial variability within each given stand.
    - Skips are defined as portions of units not treated mechanically and should be designed consistent with the principles identified on pages 81 to 87 of the Franklin *et al.* (2013) publication. These skips should not generally exceed 15 percent of a stand.
    - Small openings of less than two acres would be created in areas that are dominated by grand fir, low vigor trees, or diseased trees or in areas with high potential of aspen regeneration. Where aspen are present, conifers could be removed within the aspen stand to improve the integrity of these stands. These openings should not generally exceed 10 percent of a stand.
        - Small openings of up to two acres may be utilized to stimulate aspen regeneration. In aspen patches, non-legacy coniferous trees may be removed within 50 feet of the aspen

patch. To be considered an aspen patch, an area must have an average spacing of less than 20 feet between stems and be larger than 1/10 acre in size.

  - In openings outside of aspen patches, a minimum of 5-10 trees per acre shall be retained, with leave tree preference given to legacy trees, vigorous serals (*i.e.*, – ponderosa pine, western larch, and aspen) in the dominant and co-dominant crown classes and high wildlife value non-legacy/non-serals. Secondary preference would be given to dominant non-seral trees. These openings should rarely be wider than 50 to 100 feet in width and be well distributed across the area. Consideration of whether existing openings and the general thinning and burning prescription would create sufficient openings should be taken prior to intentionally creating additional openings. Artificial regeneration may be prescribed in patches between one and two acres if no suitable seed trees are present.
- Legacy ponderosa pine and western larch should be released by removing younger trees for approximately twice the canopy drip line of the legacy tree(s). As discussed earlier, overlap of other legacy tree crowns is okay and these other legacies should be retained. In addition, retention of replacement trees should be considered if a desirable legacy tree replacement is within this area.

Following treatment, these stands would be a mosaic of thinned areas, clumps of trees, and small openings. The average canopy cover in these stands after harvest and underburn operations would be between 20 and 35 percent. This reflects the intensity of treatment proposed in Alternative D, rather than Alternative B, which recommended thinning to an average canopy cover of 25 to 45 percent. In PVGs 1 and 2, the average canopy cover in these stands after harvest and underburn operations would be between 20 and 30 percent (10 to 25 foot crown spacing). In PVGs 5 and 6, average post treatment canopy cover would be between 30 and 35 percent (10 to 15 foot crown spacing). Portions of stands with natural openings and heavily thinned areas would have less canopy closure, perhaps as low as 10 percent. These openings would eventually develop more canopy closure where seedlings establish and grow. Northern Idaho ground squirrel (NIDGS) – Priority 1 treatment areas may have canopy closure reduced to 15-30 percent. In mature stands, this equates to an average crown spacing of 12 to 30 feet. Goshawk nest stands and replacement stands have been identified and will not receive mechanical vegetative treatment. Stands within goshawk post fledgling areas may have specific requirements that are different from these general guidelines. These stands will be identified prior to marking operations and will be designed to meet *Management recommendations for the northern goshawk in the southwestern United States* (Reynolds *et al.* 1992).

Commercial Thin / Mature Plantations (CT-MP)

The *Selected Alternative* will implement 8,100 acres of the commercial thin-mature plantation treatment in stands that were previously artificially regenerated (plantations) as described in Alternative B. These stands are typically greater than 30 years in age and were planted predominately with ponderosa pine, Douglas-fir, and/or western larch. These mature plantations contain commercial trees with an average diameter at breast height (DBH) greater than eight inches and would average approximately 70 to 80 trees per acre (this would generally result in crown spacing of 10-15 feet) after thinning. Thinning will generally favor the retention of larger, early seral trees and be completed to create stands with variable densities while promoting a mix of desired species. Merchantable material will be removed from the site and utilized as markets allow. Non-commercial material (slash) will be lopped and scattered, mechanically harvested, hand piled, machine piled, and/or broadcast burned to reduce fuel loading. Biomass not retained for other resource objectives may create opportunities for fuelwood collection.

The cost of slash treatment, coarse woody debris, and fuel loading will be considerations in determining the method of non-commercial material treatment.

Free Thin–Patch Cut (FT-PC)

This treatment will be implemented in relatively cool, moist grand fir forest types (i.e. - PVG 6) that have evidence (*i.e.,* - relic early seral trees, stumps, snags, etc.) of previously having an aspen, ponderosa pine, western larch and/or Douglas-fir component, as described in Alternative B. The treatment will occur in stands that still have a component of early seral species (*i.e.,* – 25 to 75 percent of the desired amounts) but not enough to free thin throughout and still leave the desired species composition.

The intent of this treatment is to:

- Re-establish early seral species in areas where they have departed from the desired conditions.
- Establish varying patch sizes consistent with spatial patterns created by historic fire regimes. Retaining portions of stands that historically would not have been dominated by early seral species as skips. Skips are defined as portions of units not treated mechanically and should be designed consistent with the principles identified on pages 81 to 87 of the Franklin *et al*. (2013) publication. These skips would not generally exceed 30 percent of a stand.

Implementation of this treatment will allow for regeneration (patch cut with reserves) in patches ranging from three to ten acres in size, generally on less than 50 percent of a stand. In regenerated areas (patches) approximately four to twelve trees per acre will be retained as reserve trees. The stand will be either naturally or artificially regenerated after treatment.

Reserve tree preference includes legacy trees, replacement legacy trees of early seral species, high value wildlife trees (*i.e.* cavities, broken tops with structure for nesting), dominant non-serals and vigorous serals in any crown class. Artificial regeneration (planting trees) would be utilized in areas where the desired species composition would not be expected to be met with natural regeneration.

In portions of stands with an early seral component still remaining, free thinning will be implemented as described in the CT-FT section, above. Portions of each stand not meeting the criteria for patch cuts or free thinning will not receive commercial treatment during this entry.

Commercial Thin within RCAs

Approximately 1,530 acres of CT-FT and CT-MP treatments will be implemented in areas dominated by drier forest types historically maintained by frequent, low intensity fire regimes to maintain upland vegetation within the historic range of variability. These acres are not additional acres of proposed treatment. These 1,530 acres are included in the total acreage figures described in the CT-FT and CT-MP section, above. No RCA treatments will occur in the Boulder Creek subwatershed. Only areas in the outer half of RCAs will be treated and the CT-FT and CT-MP treatment descriptions will be modified (see Figure ROD-3 below) in these areas to retain adequate stocking to achieve shade and large woody debris recruitment objectives within RCAs (Figure ROD-2, ROD Attachment 1, PDFs 8-14). Riparian conservation area treatments will be evaluated to ensure large woody debris (LWD), ground cover, shade, and other SWRA elements are maintained or improved.

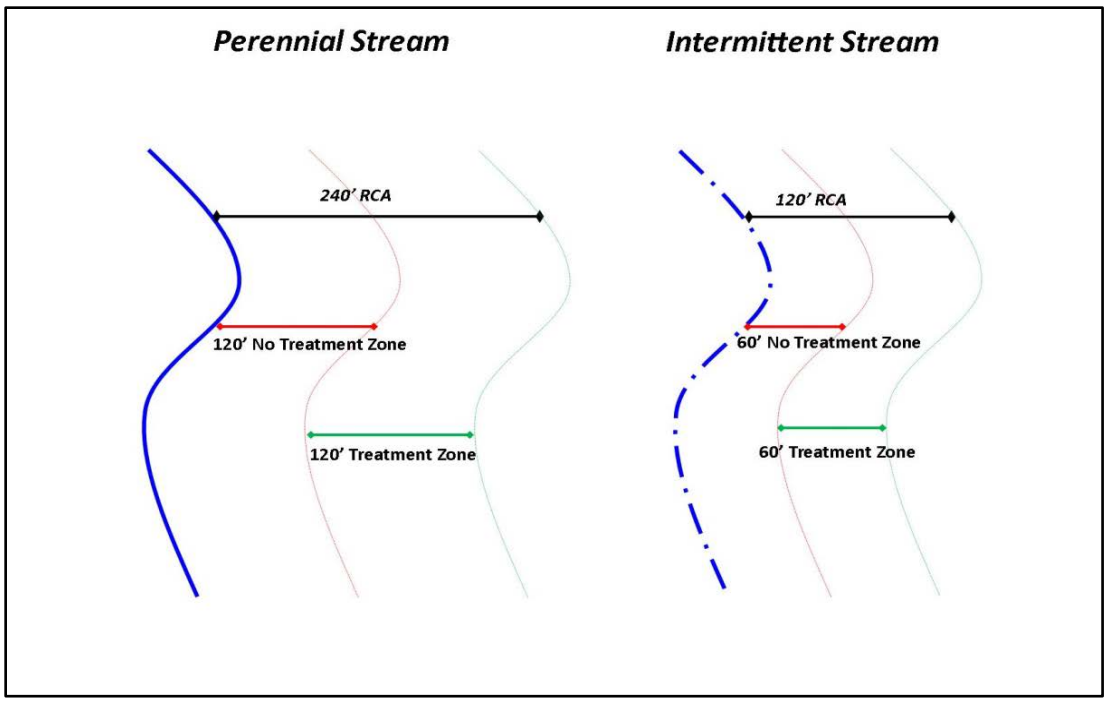

Figure ROD-2. RCA Buffers in RCA Treatment Areas.

Commercial thinning treatments are intended to move upland vegetation within RCAs toward the desired conditions described in the Forest Plan (Forest Plan, pp. III-30, A-15) while maintaining soil, water, riparian and aquatic resources. These treatments have been designed to mitigate potential activities that could degrade current RCA conditions or retard the attainment of SWRA desired conditions. All RCA treatments will be applied only to upland vegetation that occurs within the outer portion of a RCA, and not to riparian vegetation (*i.e.*, – willow, spruce). These actions, based on further site specific analysis, are consistent with direction for upland vegetation desired conditions and RCAs in Forest Plan Appendices A and B (USDA Forest Service 2003).

RCA treatments will remove less than 20 percent canopy cover and will be developed in consultation with the district fish biologist and/or hydrologist to ensure streambank stability and ground cover are considered and riparian functions are maintained.

In portions of RCAs where commercial thinning treatments would not be feasible or deleterious effects to riparian functions and ecological processes (described in the Forest Plan, page B-37) are anticipated, the unit (or portion(s) thereof) will be excluded from treatment.

Due to the site-specificity of each proposed RCA treatment unit, a map and description of the layout of the RCA portion of the unit will be provided to the District fisheries biologist and, hydrologist,(or qualified designees) for field verification. A site-specific plan will be approved by a District hydrologist and fisheries biologist prior to implementation. See Project Design Features (ROD-Attachment 1 and FEIS Table 2-6) for more detailed descriptions of mitigation measures.

Non-commercial Treatments

The *Selected Alternative* allows for implementation of approximately 18,000 acres of non-commercial thinning. Non-commercial thinning will be completed on 1,700 acres in plantations that currently have density-related

stress occurring. These plantations are generally less than 30 years old and have an average DBH of less than eight inches. Within these plantations, thinning would be completed to improve wildlife habitat, increase growth rates and tree vigor, improve stand resiliency to natural disturbance, and reduce density-related competition. Post treatment, these stands would retain approximately 80 to 100 trees per acre. Thinning will favor early seral species but will retain a mixture of species and variable densities depending upon site specific objectives. Non-commercial thinning will generally cut trees less than eight inches DBH and prune residual trees, when practical, up to six feet in height. Where reserve trees within plantations receiving this treatment are causing forest health problems (primarily due to mistletoe) trees may be killed by girdling. Girdled trees will be marked with wildlife tags as necessary to meet desired snag numbers and sizes.

Ladder fuel thinning will occur on 16,000 acres. All acres targeted for the application of fire would be evaluated for ladder fuel thinning in order to minimize mortality from prescribed fire and aid in moving towards restored conditions. This ladder fuel thinning may occur within plantations to minimize prescribed fire-related mortality.

Ladder fuel thinning will be permitted within RCAs where active ignition is anticipated. All ladder fuel treatments in RCAs will be completed by hand and would not cut trees larger than eight inches DBH. Slash produced from ladder fuel treatments will be lopped and scattered or hand piled. See Project Design Features (ROD-Attachment 1, FEIS Table 2-6 PDF 11).

Northern Idaho Ground Squirrel Habitat Improvement Treatments

The *Selected Alternative* will contribute to the implementation of the Northern Idaho Ground Squirrel Recovery Plan using the following approach, applied within the CT-FT and CT-MP treatment areas described above.

NIDGS – Priority #1 Areas – Occupied or within ¼ mile of occupied habitat, use understory thinning and prescribed fire at frequent intervals to improve foraging conditions to achieve 15-30 percent canopy closure and high quality forage. The frequency of prescribed fire will depend on the success of the initial application but would likely occur at approximately 5-10 year intervals. Lower canopy cover will occur where trees have encroached into meadow-habitat and scablands preferred by the NIDGS and in PVG 2 vegetation stands. Higher canopies will be maintained in PVGs 5 and 6 when these stands are within ¼ mile of an occupied site

NIDGS – Priority #2 Areas – In ground-verified unoccupied, potential, modeled NIDGS habitat outside of occupied areas, treat same as above, but later in time. Since there are no occupied sites, in Priority #2 areas, it is anticipated that the ground-verified habitat would be treated similar to that described in the selected alternative for general vegetation treatments. Potential movement corridors selected by the FS wildlife biologist with help from the NIDGS Technical Team may be treated to help link occupied sites. See Project Design Features numbers 57 and 51-54 where applicable.

Associated Actions

Harvest Systems- Merchantable trees will typically be cut with feller-bunchers on slopes less than 45 percent, or by personnel with chainsaws on slopes greater than 45 percent. Harvest systems may include ground based, skyline, and helicopter. Generally, ground based systems (tractor, jammer, etc.) would be utilized on slopes less than 45 percent slope where road access is available, skyline systems would be used on slopes greater than 45 percent where road access is available, and helicopter systems would be used where ground based or skyline systems are not feasible or economically viable. Current estimates indicate that helicopter systems would not be economically viable. Actual harvest system in each unit would be determined upon field verification with

limitations of the amount of each harvest system that could occur in each subwatershed. Existing skid trails would be reused when practical and new skid trails would be authorized where necessary. All skid trails would be obliterated and recontoured after completion of the treatment unit to mitigate resource concerns.

Brush Disposal- After thinning, slash reduction would include machine piling and burning, hand piling and burning, lop and scatter, broadcast/underburning, or removal. This applies within and outside of areas designated for prescribed fire treatments. Opportunities would be sought for removing and utilizing the biomass for energy production, fuelwood collection, or other uses when practical.

Site Preparation for Planting – After harvest activities are completed and prior to planting in regeneration units, site preparation may be completed either by prescribed burning, hand scalping or mechanical scalping (exposing mineral soil, generally from one to three square feet) with heavy equipment. This would be completed to reduce competition to seedlings from brush, grass, and noxious weeds. This applies within and outside of areas designated for prescribed fire treatments

Planting – Planting of ponderosa pine, western larch and/or Douglas-fir seedlings on all acres that receive artificial regeneration treatments (i.e. FT-PC units) would be completed as necessary to meet desired stocking levels. Artificial regeneration may also occur in portions of CT-FT units if needed to promote early seral species, although this is expected to be a rare occurrence.

Prescribed Fire Treatments

Under the *Selected Alternative*, approximately 45,000 acres will be targeted for prescribed burning over the next 15-20 years (Figure ROD-4). In stands where commercial activities are proposed the application of fire would generally occur after commercial activities are complete. Re-introducing 500 to 10,000 acres of fire annually for the next 15-20 years would move forested and non-forested vegetation towards conditions that more closely represent historic distribution, structure, and function, and would move the project area towards desired conditions as described in Appendix A of the Forest Plan.

A mosaic-like application of fire will re-introduce fire to approximately 75 percent of primary targeted acres, and 50 percent of secondary targeted acres.

- Primary target acres for treatment consist of stands with historically high fire frequencies and lower severities (grasslands and stands dominated by seral species such as ponderosa pine, Douglas-fir, and western larch);
- Secondary target acres include stands with historically moderate fire frequency and mixed severities stands composed of both seral and non-seral species (*i.e.*, grand fir);
- Fire will not be directly applied to non-target areas. These stands are composed of young plantations, stands of historically low frequency and high severities, and stands set aside for other resource concerns or objectives (e.g., wildlife cover). Approximately 20 percent of non-target acres within the project area can be expected to receive fire, through backing (low intensity fire spread, without additional lighting). This minimal fire spread would not alter overall stand conditions within the non-target areas.

Existing barriers to fire spread (natural and human-caused, from streams and barren ridgelines to roads and trails) will be used where possible to contain prescribed burns within specified boundaries. In areas where existing barriers are insufficient to control fire spread, fireline will be constructed. Hand-constructed fireline will be limited to use only where necessary. The integrity of existing trails and roads will be considered in the

application of fire and damage caused by these actions would be repaired. Constructed fireline will be rehabilitated after use.

Ignitions will be by hand or helicopter. Prescribed burning operations could occur at any time of the year, depending on favorable weather conditions. Fire may be applied to tree wells in winter or early spring to reduce fuel accumulation and reduce the potential for tree mortality during regular broadcast burning. Maintenance burning (burning after initial application of fire) would occur every 5-10 years to maintain suitable NIDGS habitat and areas representative of high frequency fire regimes (see ROD-Attachment 1, PDF numbers 51-58). Prescription parameters (wind speed, fuel moisture, smoke dispersion, and other resource area objectives) influence burn opportunities. Ignitions within some RCAs would be permitted, with some restrictions and approval by district resource specialists. Prescribed fire operations will also include water drafting (for engines and hoselays), although site-specific locations will not be determined until the project is implemented. Water withdrawal locations will be located and approved by a fisheries biologist or hydrologist, and comply with previous consultation for fire suppression.

No direct ignitions of prescribed fire will occur within RCAs in the Boulder Creek subwatershed; however, fire will be allowed to back into any RCAs within the burn blocks, including Boulder Creek. In the remaining portions of the project area, ignition operations within RCAs will be implemented to maintain RCA function and processes by creating a mosaic of burned and unburned areas, minimizing severity and intensity; maintaining stream-shading vegetation; retaining adequate ground cover and sediment filtering capacity; and maintaining current and recruitable large and coarse woody debris. In RCAs identified for treatment, no ignitions within 120 feet of perennial stream channels or within 60 feet of intermittent stream channels will occur. Direct ignitions could occur anywhere within RCAs, including Boulder Creek, if needed to contain fire spread; however, these suppression tactics will only be performed to minimize unacceptable fire impacts to the RCA. Ignition operations should generally occur in the outer portions of RCAs in the drier PVGs where fuels reduction is needed to increase the resiliency of the RCA and reduce the potential for high intensity/severity wildfire. If any areas are not capable of carrying fire or maintaining RCA function and processes (as described above) at the time of fire application, fire would not be applied.

Watershed Improvement and Restoration Treatments

System Road Treatments

Road treatments proposed for this project were developed using the Travel Analysis Process (TAP) conducted by the New Meadows Ranger District in 2012 (USDA Forest Service 2013, available in the project record). The TAP documents a risk/benefit assessment of system roads and identified any unauthorized routes which needed to be retained. All other unauthorized routes were recommended for treatment. An inter-disciplinary process was used to rate the risks or benefits of each road according to various resource criteria. The result is a risk/benefit matrix (USDA Forest Service 2013, available in the project record). Unauthorized routes were mapped and prioritized for restoration treatments in the 2013 field season.

Within the TAP process, and also as a result of recommendations received during the 45-day public comment period, the following criteria were considered in determining which roads would receive restoration treatments:

- Watershed status and condition:
    - High Risk- listed fish habitat
    - Medium Risk- 303d listed stream(s)

  - Low Risk- no listings or special designations
- Road location within watershed:
  - High Risk- within the RCA
  - Medium Risk- mid-slope
  - Low Risk- upper-slope/ridgetop
- Topography/Geology:
  - High Risk- steep slope w/ erosive or unstable soils
  - Medium Risk- moderate slope w/ erosive or unstable soils
  - Low Risk- moderate to low slope with stable soils
- Existing vegetation :
  - High Risk- grass or bare ground in roadbed as well as on cut and fill slopes
  - Medium Risk- saplings and shrubs on cut and fill slopes but grass and bare ground in roadbed
  - Low Risk- saplings and shrubs in roadbed and on cut and fill slopes

The objective for road decommissioning is the restoration of hillslope hydrologic processes and long-term soil productivity. Treatments include the re-contour of the road prism where practicable to match the natural slope contour, restoration of stream crossings to match natural channel dimensions, placement of natural woody debris as represented in the adjacent forest, and the establishment of native vegetative ground cover.

In some cases, full obliteration of a road may be unattainable under various conditions found during the implementation process. These conditions may include excessive cuts and fills, (*i.e.* 25 feet of cut), rock cuts, excessive rock in the treadway (*i.e.* bedrock), wetlands, lack of fill material, or through cuts (a cut slope on both sides of road, without a fill slope).

Where full re-contour is not attainable, sufficient outsloping and revegetation will occur to best achieve objectives. It is anticipated that the majority of roads identified for decommissioning will be fully obliterated to accomplish the watershed restoration objectives of the project.

The *Selected Alternative* would decommission 68 miles of Forest System Road (Figure ROD-7 and ROD-8). These system routes are described in the FEIS, Chapter 2 under Alternative B. Nearly all of the system roads proposed for treatment are not currently open to the public. Currently 265 miles of road are accessible by passenger vehicles within the project area (Maintenance Levels 2, 3 and 4). The *Selected Alternative* will reduce the miles accessible by passenger vehicles to 255 miles, due to the conversion of seasonally open road to seasonally open OHV trail. All Maintenance Level 1 Forest System (closed to the public) roads would receive appropriate long-term closure treatments including culvert removal, installation of drainage features, and establishment of vegetation to reduce erosion to make them self-maintaining. Under this decision, all roads identified as not open to the public would have an effective closure device (such as a gate, berm, or other closure device) installed.

Unauthorized Route Treatments

The *Selected Alternative* will treat 117 miles of unauthorized routes across the project area. The locations of the unauthorized route treatments are shown in Figures ROD-7 and ROD-8 and the number of miles by subwatershed are displayed in Table ROD-2. The criteria described under System Road Treatments (above) were also used in determining which routes would receive restoration treatments.

Additionally, the following were used to determine which unauthorized routes would receive treatments.

- Treat any unauthorized routes that are utilized as temporary roads for vegetation management activities.
- Treat all unauthorized routes that are collectors to system roads identified for decommissioning or long term closure.
- Treat all unauthorized routes where there is evidence of unauthorized motorized use.
- Treat all unauthorized routes categorized as High or Moderate Priority. High Priority indicates adverse soil, water, aquatic, and/or terrestrial resource impacts.
- Treat all unauthorized routes where stream crossing culverts or fills have not been removed from past actions.
- Treat all unauthorized routes where a large percentage of the route is within a riparian or landslide prone area.

Road relocation and Re-routes

PL 111-11, Omnibus Public Land Management Act of 2009, Title IV--Forest Landscape Restoration, Sec. 4003 (b) (1) (F) requires that the CFLR projects not include the establishment of permanent roads. Newly constructed temporary roads used for restoration treatments would be fully obliterated including recontour of the hillslope. Existing unauthorized routes used for restoration treatments may be maintained, and re-constructed (including minor re-routes) where the purpose of the activity is to reduce ecological impacts from the road and to facilitate achievement of landscape strategy objectives, and decommissioned after use.

The two road relocations (total of 1.5 miles) in the Upper Weiser River subwatershed involve new road construction where there is not a current roadbed (Figure ROD-7). Road construction to connect 51478 to 51482 would re-locate 51479 outside of the RCA. Road construction to connect 51480 to 51483 would relocate 51484 outside of the RCA. One road re-route in the Boulder Creek subwatershed would connect FS 51255 to FS 50079 by reconstructing an existing unauthorized route (512252000). This re-route would allow decommissioning of FS 50131 and eliminate the need to construct new road to connect an incomplete portion of FS 50662, while providing road access to the area for vegetation management. This is a re-route of an existing system road, and will remain on the Forest transportation plan as a system road, placed into long-term closure once vegetation treatments are completed.

Long-Term Closure

Approximately 61 miles of Forest System road would move from closed Maintenance Level 2 and placed in closed Maintenance Level 1. All closed maintenance Level 1 Forest System roads will receive appropriate long-term closure treatments including culvert removal, installation of drainage features, and establishment of vegetation to reduce erosion to make them self-maintaining. All roads identified as not open to the public will receive an effective closure device (such as a gate, berm, or other closure device).

Fish Passage/Habitat Connectivity

The *Selected Alternative* will provide for 36 fish passage improvements through culvert replacements and culvert removals. In Boulder Creek, crossings have been identified as important fish passage barriers in streams occupied by ESA listed fishes or Designated Critical Habitat (DCH). As such, seven fish barriers will be improved by replacing culverts with appropriate structures and five fish barriers will be improved through road

decommissioning and culvert removal. In subwatersheds outside of Boulder Creek, 24 fish passage improvements would be completed through culvert replacement (23) or culvert removal (1). PDFs (located in Attachment 1) will be implemented for all culvert replacements.

Road Maintenance and Travel Management

National Forest system (NFS) roads will be used and maintained throughout the project area during project implementation. These roads may be currently classified as open to the public or closed to the public. Approximately 265 miles of open (or seasonally open) system roads and an additional 205 miles of closed system roads are located within the project area. Road maintenance on these NFS roads may include, but would not be limited to, blading, installation of drainage features (*i.e.* – rolling dips), hardening soft spots (*i.e.* - utilizing pit run), installing or improving water passage (*i.e.* – culverts), realignment of small segments of roads to minimize impacts to resources, and brushing roads to improve visibility and safety. Road maintenance may also include water drafting (for road work such as dust abatement and road re-surfacing). Specific sites and amount of use have not been determined, however, water drafting would comply with State requirements, approved NOAA screening criteria, and drafting sites would be located and approved by a fisheries biologist or hydrologist.

Road Surfacing and Material Sources

Road surfacing totals about 34 miles in RCAs. Road surfacing may be completed by using crushed gravel or pit run sources to improve the road surface and reduce watershed and fisheries impacts from sediment transport. In addition, spot graveling of roads will occur at crossings, dips, and soft spots (see ROD-Attachment 1, PDF numbers 46 and 47).

Eleven existing gravel pits (Figures ROD-5 and ROD-6) within the project area will be utilized to provide gravel for resurfacing roads (see FEIS Appendix E for full description of gravel pits). All of the gravel pits have suitable rock for present and foreseeable future expansion needs. Activities in the pits will be coordinated with the Wildlife Biologist for any restrictions or constraints for protection of wildlife. Expansion of the gravel pits outside of the existing disturbed area will require additional coordination with Level 1 and resource specialists such as heritage, botany, and wildlife. Less than one mile of short road sections to access gravel pits may be constructed and added to the National Forest System (NFS) and are authorized under this decision. The additions will not be paid for by CFLRP funds.

Alternate pit locations were analyzed and may be considered when the impacts of developing a new rock source would be less or equal to using an existing source. Seven potential gravel pit sites (Figures ROD-5 and ROD-6) have been analyzed for use. The sites were selected based on: basalt geology, shallow rocky soils with surface rock showing, outside of RCAs, and located in strategic areas without nearby rock pits to reduce haul costs. This decision and associated analysis would allow for development of these pits up to three acres in size depending on the amount of gravel needed. Potential gravel pits are described FEIS Appendix E, Project Area Road Management.

Log Haul

Log haul routes associated with this project are displayed in Figures ROD-5 and ROD-6 (maximum 410 miles), and road maintenance and temporary roads are discussed above under sections *Road Maintenance and Travel Management* and *Temporary Roads*. Project Design Features that apply to log haul can be found in ROD-Attachment 1 (PDF numbers 54, 55, 56, 78, 79, and 80).

Temporary roads

As stated above, CFLR projects may not include the establishment of permanent roads. Newly constructed temporary roads used for restoration treatments would be fully obliterated including recontour of the hillslope. Approximately 25 miles of planned temporary roads will be used to access stands for treatment. Temporary roads are defined as: roads authorized by contract, permit, lease, other written authorization, or emergency operation that are not intended to be part of the forest transportation system, that are not necessary for long-term resource management, and that are not forest roads or forest trails and are not included in a forest transportation atlas. Incidental temporary roads are defined as: roads that are needed to complete vegetative treatments but cannot yet be identified due to the level of site-specificity necessary. These incidental temporary roads would be preferentially located on existing roadbeds (unauthorized routes) where possible and receive full obliteration and recontour when logging is completed. Incidental temporary roads would require approval by resource specialists prior to construction as described in FEIS, Chapter 2. Less than one mile of new incidental roads will be authorized per subwatershed.

Both planned and incidental temporary roads would be utilized and decommissioned after project implementation. Planned temporary roads are defined as routes identified during the planning process and depicted in Figures ROD-5 and ROD-6. Some of the planned temporary roads will be newly constructed; however, most of the planned temporary roads have existing roadbeds (unauthorized routes) in place.

Table ROD-2. *Selected Alternative* Summary of Road Treatments.

Road Treatments by Subwatershed	Subwatershed					Total
	Boulder Creek	Lost Creek	Lower West Fork Weiser	Upper West Fork Weiser	Upper Weiser River	
Existing National Forest System Road	93	183	7	115	72	**470 miles**
Mapped Unauthorized Routes	19	91	<1	33	39	**183 miles**
System Road Decommissioning	29	20	<1	9	9	**68 miles**
Move to Long Term Closure *(Currently closed to the public)*	1	37	0	10	13	**61 miles**
Fish Passage Barrier Improvement	12	11	0	7	6	**36 improvements**
Seasonal Road to Seasonal OHV Trail Conversion	0	15	0	0	0	**15 miles**
Treatment of Unauthorized Routes	15	51	<1	23	28	**117 miles**
Treatment of Unauthorized Routes Used as Temporary Roads	3	5	0.5	4.5	2	**15 miles**

Road Relocation (*New Construction*)	0	0	0	0	1.5	**1.5 miles**
Road re-route *(Existing Roadbed)*	0.6	0	0	0	0	**0.6 miles**
Change in Overall Motorized Access	-1.0	+3.8	-0.4	-0.5	+0.1	**+2.0 miles**

Recreation Improvements

The recreation improvements and actions of the *Selected Alternative* are summarized in Table ROD-3. The specifics of these improvements and actions are outlined by subwatershed and displayed in Figures ROD-9 and ROD-10. Project Design Features for all recreation improvements and specifically those concerning northern Idaho ground squirrels (PDF numbers 51-58) are found in FEIS Table 2-6 and ROD-Attachment 1.

Boulder Creek

The *Selected Alternative* includes heavy maintenance on all existing Forest Service system trails within the Boulder Creek subwatershed to improve them to Forest Service Trail standards. The *Selected Alternative* includes the following recreation improvements (Figure ROD-9) in Boulder Creek Subwatershed:

1. Improving the Pollock Trail #179 trail tread where it intersects and crosses any FS roads to better define the trail location; install new trail signs at all trail junctions and where the trail crosses roads; remove the deteriorated horse ramp from the Chokecherry Flat junction (Road 50158/Trail #179 junction); complete a non-motorized, approximately 550 foot trail re-route between Chokecherry Flat and the #178 Rapid Ridge Trail junction to avoid steep and rocky terrain.

2. On Indian Springs Trail #184, install a trail sign and construct a 2-3 vehicle pull-out for parking along FS Road 50074 (which is not in a RCA) and complete reconstruction work on the switchbacks located below the Chokecherry Flat Road 50158.

3. On Rapid Ridge Trail #178, complete heavy trail maintenance, and focus on work needed to repair damage to the trail tread caused by the 2012 Wesley Fire.

4. Decommission the Ant Basin #324 trailhead and 0.9 miles of Trail #324 (non-motorized trail) that accesses Trail #178 trail. Close and decommission a short segment of Forest Road 50079 that access the trailhead and would no longer be needed. Relocate all trail use to the larger, better located Ant Basin South #519 trail; improve FS Road 51254 (which accesses the Ant Basin South Trailhead and #519 motorized trail); construct trailhead parking at the Ant Basin South trailhead to accommodate up to four horse trailers/trucks and an additional two passenger vehicles at one time; provide a turn-around for trucks with trailers and install a single vault restroom, and two metal hitch rails for stock. Unauthorized route 51254000, which extends from FS Road 51254, closure device installed to prevent unauthorized motorized use.

5. Decommission and remove five unusable wooden pit outhouses located along FS Road 50074 road in the Boulder Creek subwatershed and rehabilitate the sites.

Lost Creek

The *Selected Alternative* includes the following recreation improvements (Figure ROD-10) in Lost Creek Subwatershed:

1. Install three, tri-panel entrance/information kiosks at the primary entry points to the reservoir.

2. Install four single vault toilets around the reservoir in the most popular dispersed camping areas; remove and decommission one remaining unusable wooden pit toilet located adjacent to the dam.

3. Identify and sign one main access road into the larger dispersed sites located along the west side of the reservoir, improving the entrance roads where needed to bring them up to road standards for Maintenance Level 2 roads; close and rehabilitate the multiple unauthorized access routes into these dispersed camping sites.

4. Improve approximately 68 desired dispersed campsites around Lost Valley Reservoir with signing, barrier rock and pole fencing; harden (gravel) and install barrier rock and fencing to define the boundaries of the larger sites to avoid perpetual and continued growth of the camping sites/areas; sign the access into these sites from main roads and sign individual dispersed campsites; add fire rings to some of the larger identified dispersed camping sites.

5. Dispersed camping using a motorized vehicle will be restricted to designated sites only on Forest Road 089 road surrounding the Lost Valley Reservoir.

6. Complete closure and restoration of approximately 12 undesired camping sites too close to the reservoir and/or those with poor access or near riparian areas.

7. Perform road to OHV trail conversion on approximately 15 miles of unauthorized, closed roads and open seasonal roads. A short segment (approximately 500 feet of new trail) from Cold Springs Campground to the OHV loop system would be constructed. The OHV trails would be open to vehicles 70 and less in width and designed to meet Trail Class 2 standards for four-wheel drive vehicles greater than 50 inches in width, as defined in FSH 2309.18 – Trails Management Handbook, Chapter 20. These trails would be closed from October 1 through November 6 to maintain elk security during hunting season.

8. In Corral Creek, seven miles of non-motorized, Class 1 Trail (minimally developed) (FSH 2353.142, Exhibit 01) with a managed and designed use for Pack and Saddle Stock use would be added to the trail system and will be open to other non-motorized uses, including hiking and mountain biking. The trail is located primarily on an existing road prism (road 50950) but will require approximately 0.3 miles of new trail construction.

Table ROD-3. *Selected Alternative* Summary of Recreation Improvements.

Recreation Improvements	Unit
Trailhead construction (Ant Basin South Trailhead #519)	1
Trail parking area construction (Junction of FS #184 and FS 50079)	1
Decommission trailhead (Ant Basin #324)	1
Decommission non-motorized trail (trail #324)	0.9 miles
Reconstruction of FS 51254 to access Ant Basin trailhead	1.1 miles
Seasonal road and unauthorized route to non-motorized trail conversion (Corral Creek)	7 miles
Seasonal road to seasonal OHV (Trails open to vehicles 70 inches or less) trail conversion and designation	15 miles
Improved dispersed campsites	68
Closure and restoration of undesired campsites	12
Vault toilet installation (1 at New Ant Basin Trailhead, 4 at Lost Valley Reservoir)	5
Pit toilet Decommissioning	6
Kiosks installed	3

Project Activity Sequencing

Implementation of the project is expected to begin in 2014 and last approximately 10 years, with the exception of prescribed fire activities, which are anticipated to be implemented over approximately 20 years. In general terms, activities associated with vegetation management will be completed first, followed by prescribed burning and road decommissioning and/or closures. Activities not associated with vegetation treatments, such fish passage barrier improvements and recreation improvements could take place as soon as late summer or early fall of 2014.

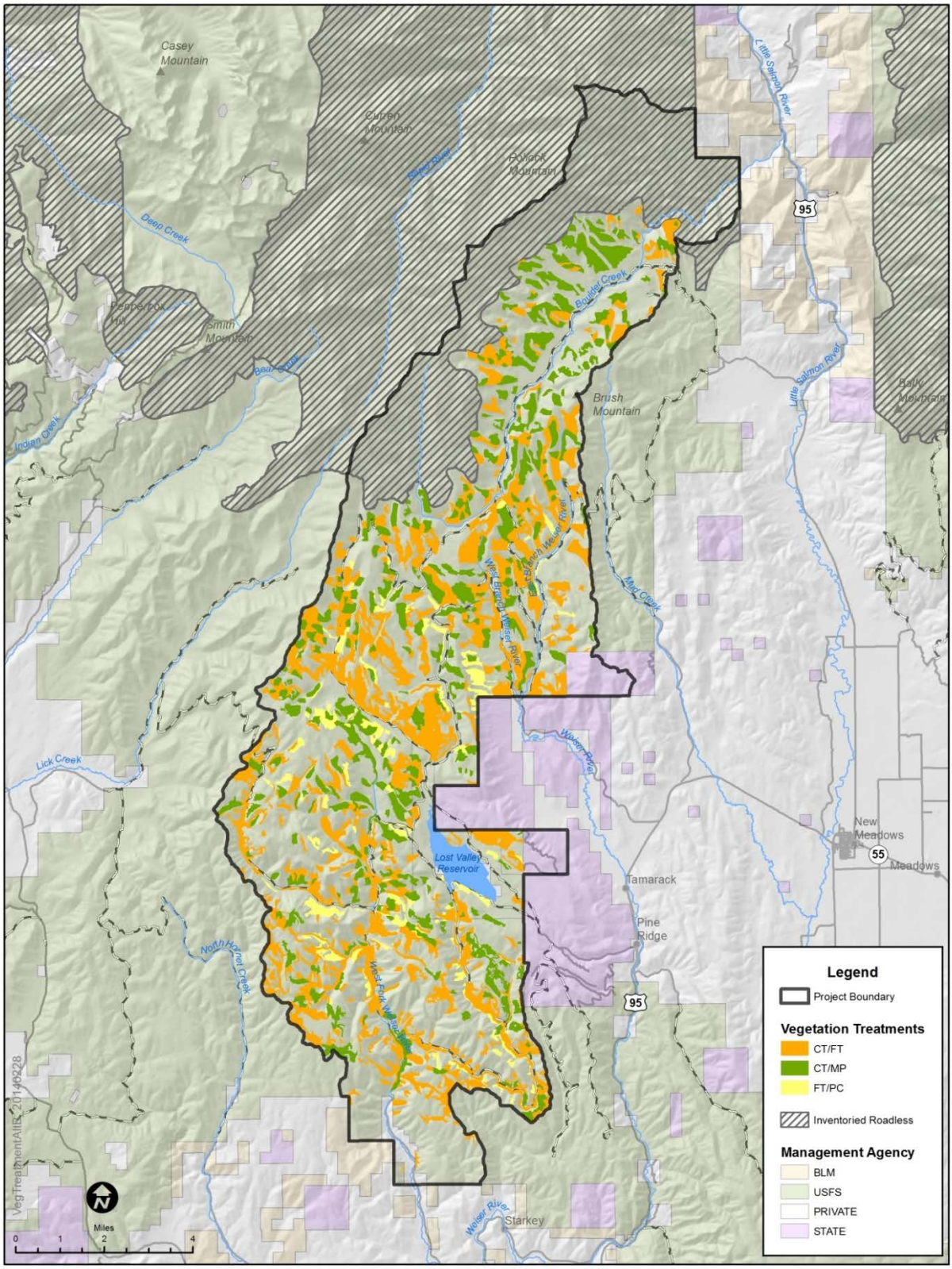

Figure ROD-3. ***Selected Alternative*** **Vegetation Treatments.**

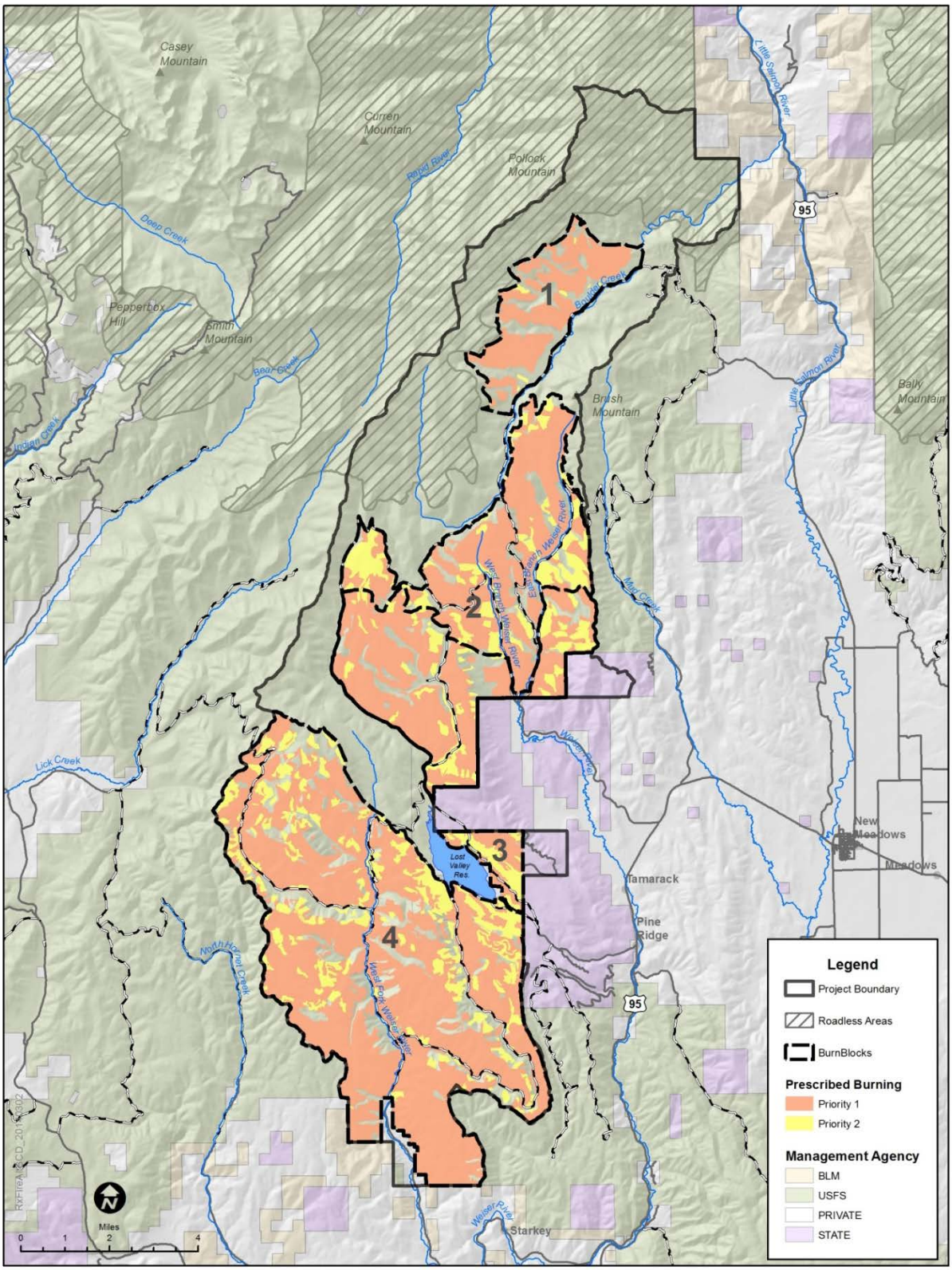

Figure ROD-4. ***Selected Alternative*** **Prescribed Fire Treatments.**

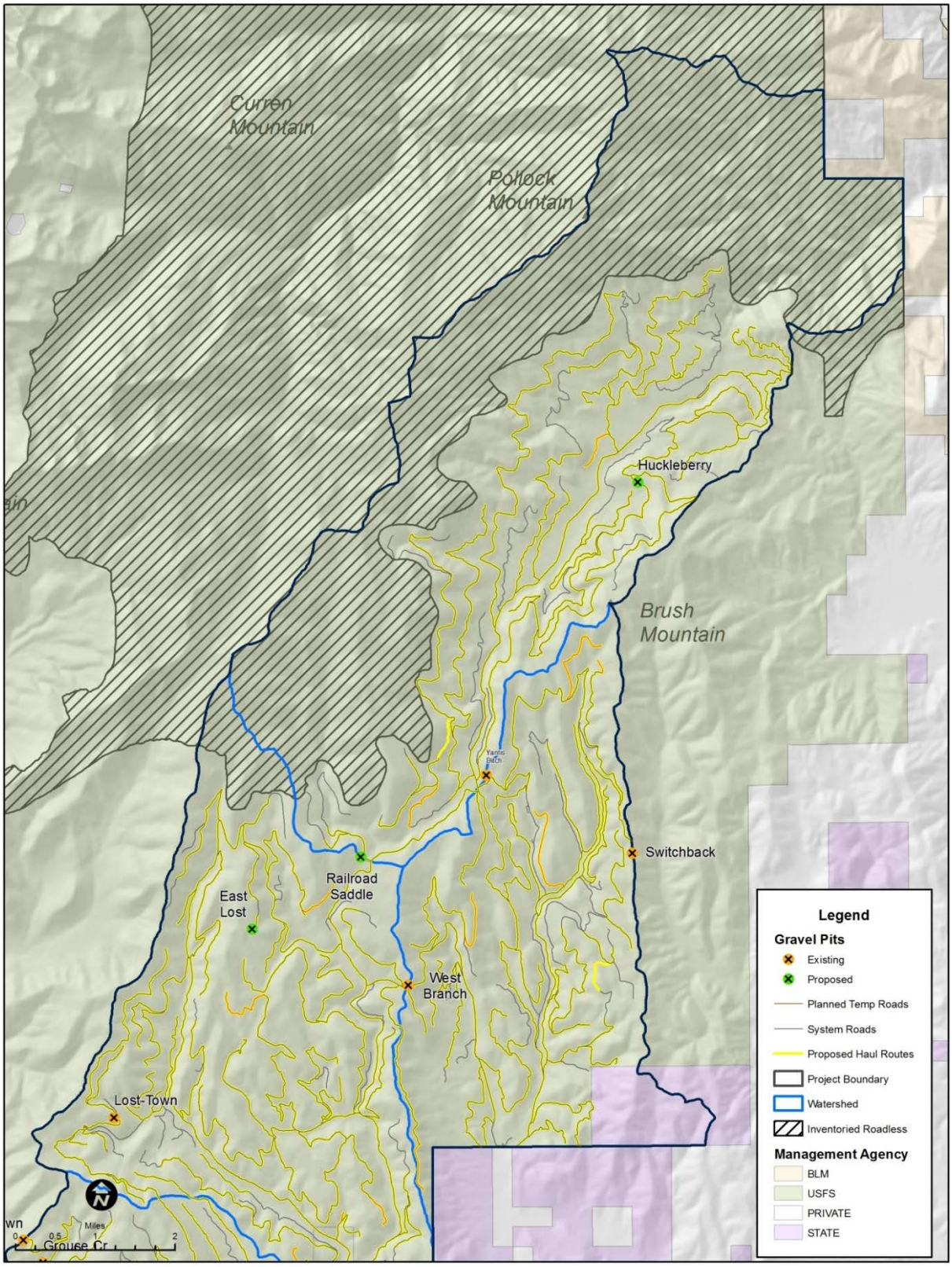

Figure ROD-5. ***Selected Alternative*** **Haul Routes, Planned Temporary Roads and Gravel Pits (North).**

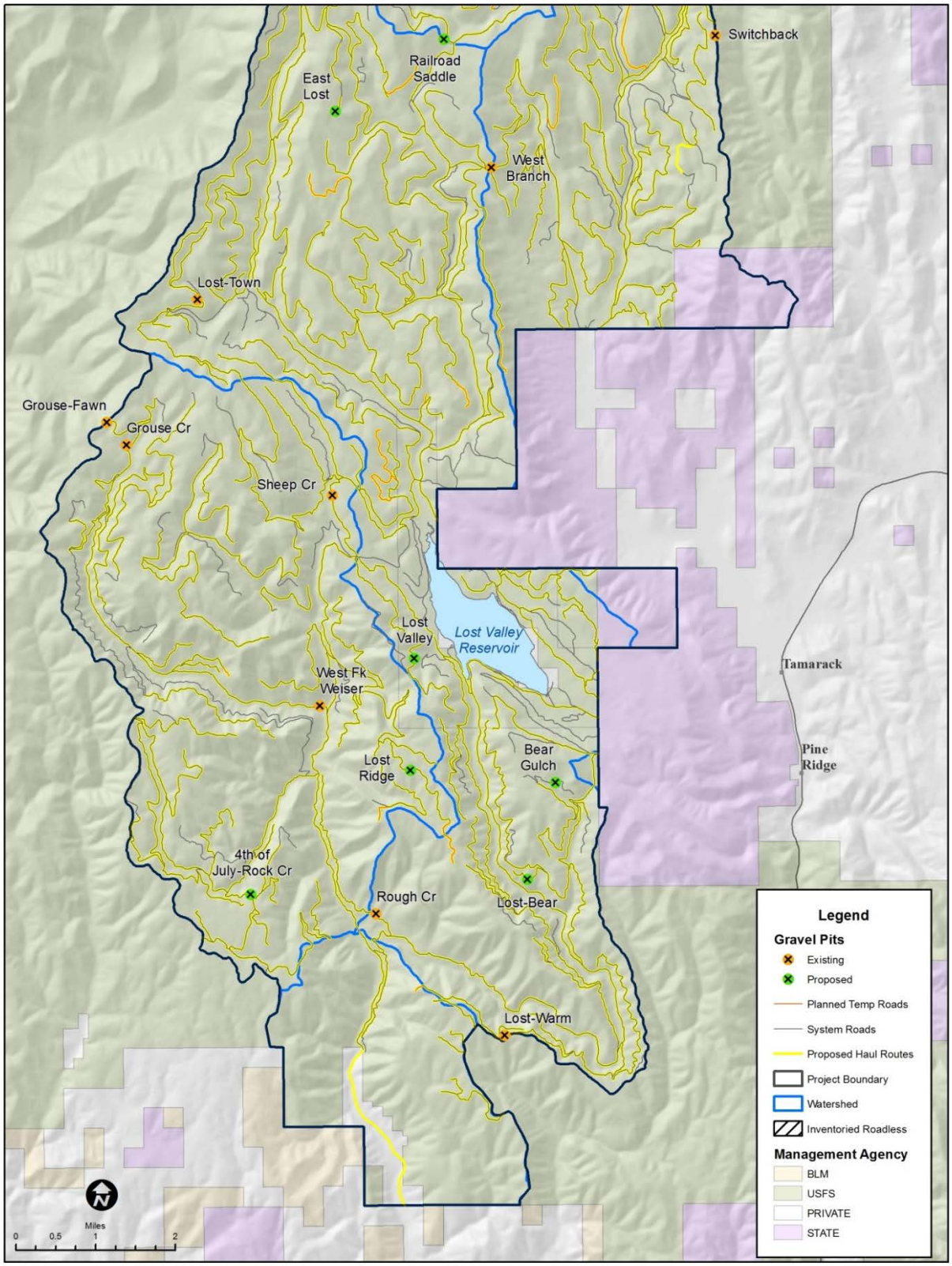

Figure ROD-6. ***Selected Alternative*** **Haul Routes, Planned Temporary Roads and Gravel Pits (South).**

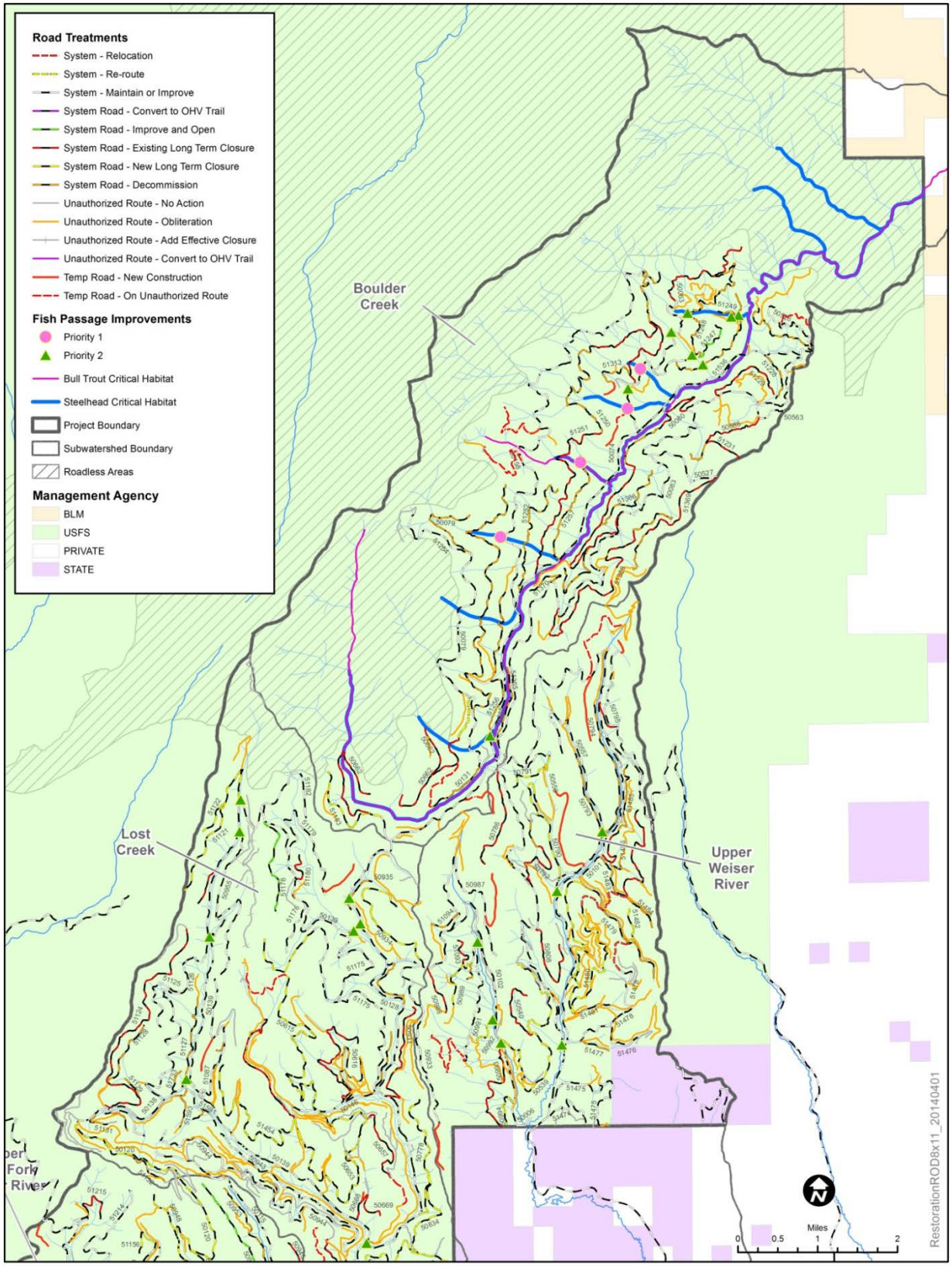

Figure ROD-7. ***Selected Alternative*** **Watershed Restoration Treatments (North).**

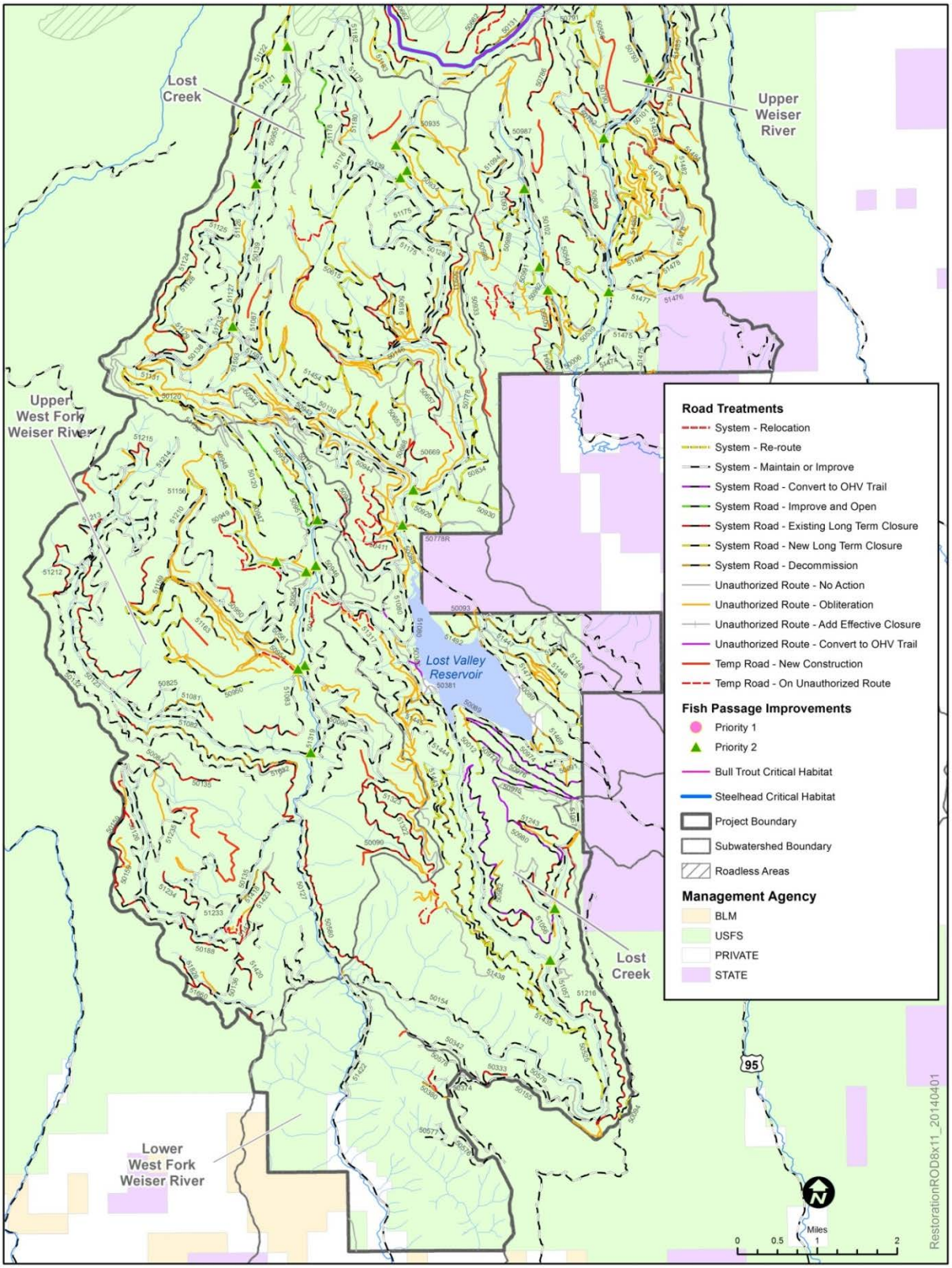

Figure ROD-8. ***Selected Alternative*** **Watershed Restoration Treatments (South).**

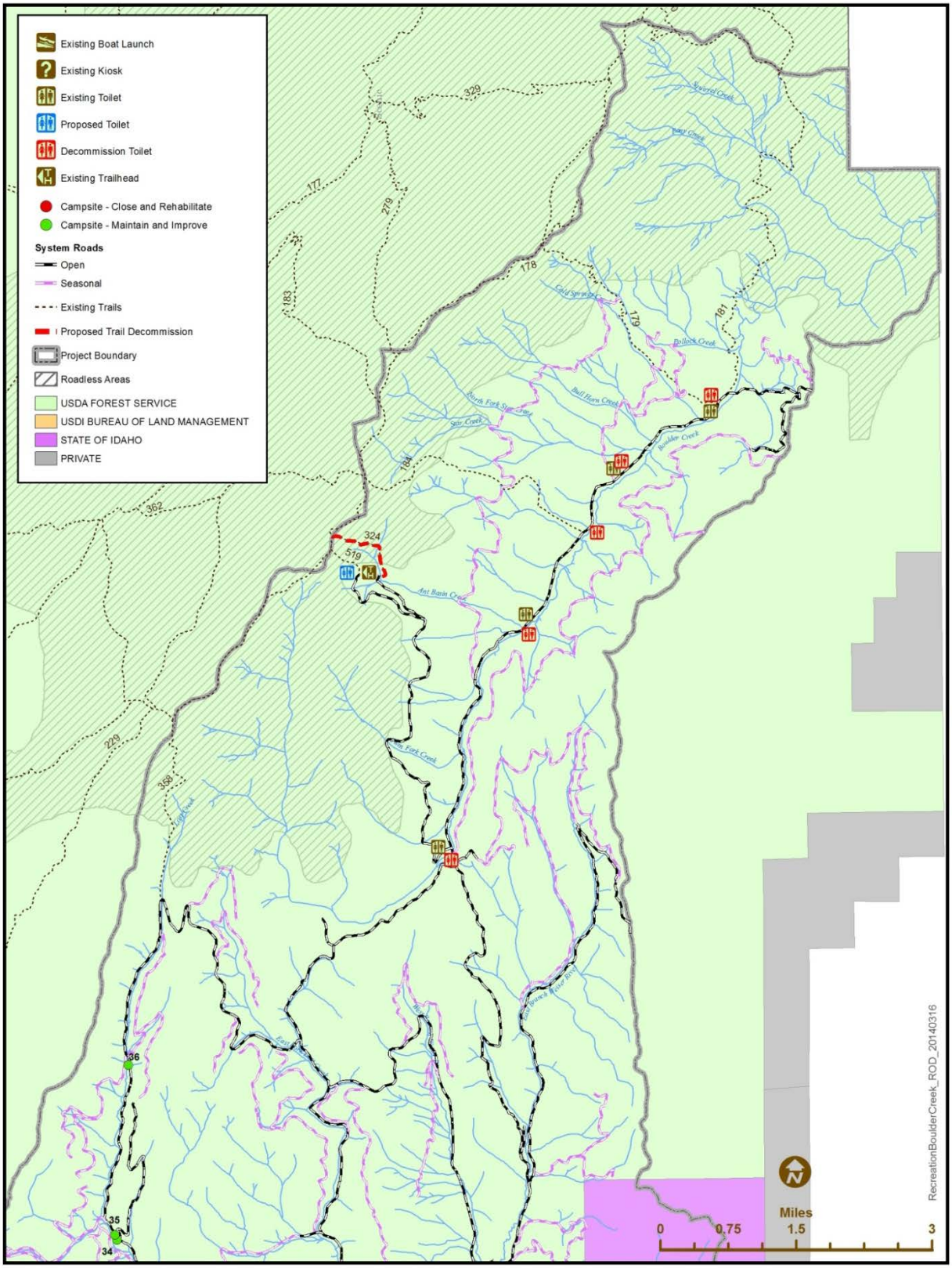

Figure ROD-9. ***Selected Alternative*** **Recreation Improvements (North).**

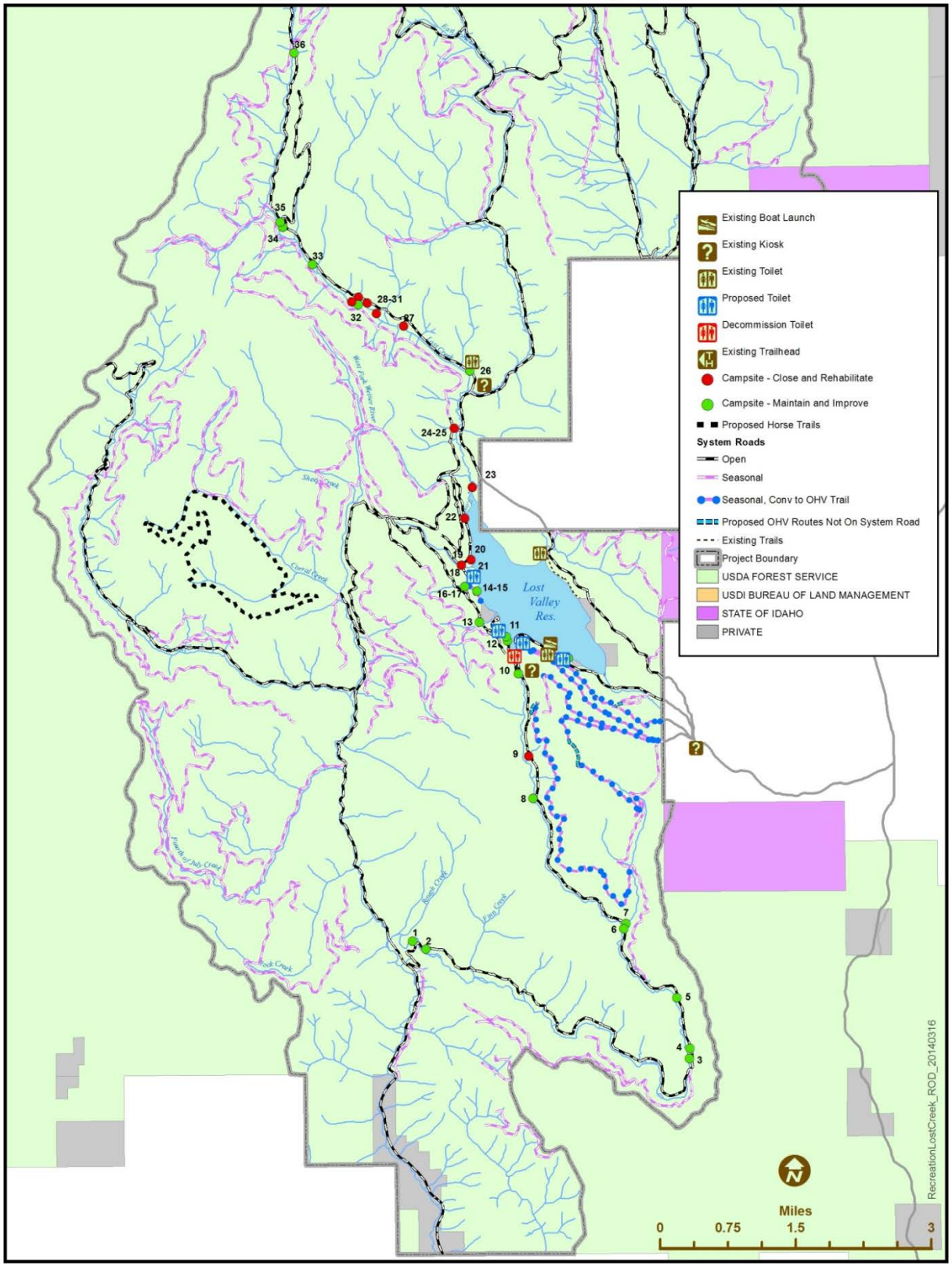

Figure ROD-10. ***Selected Alternative*** **Recreation Improvements (South).**

CHANGES BETWEEN THE DRAFT AND FINAL EIS

In addition to minor edits and corrections, a number of changes were made to the draft Environmental Impact Statement (DEIS) in preparing the FEIS and are disclosed in a list at the beginning of each chapter in the FEIS. Most changes were provided in response to comments requesting additional information, or in finalizing analyses. In general, these additions did not identify any substantial impacts beyond those disclosed in the DEIS. I do not believe that the edits, corrections, and/or additional analysis necessitate issuance of a supplemental DEIS. The updated information disclosed in the FEIS falls within the scope of the analysis depicted in the DEIS and in most cases simply provides additional explanation. The following is a summary of several changes I felt were important to my decision making process.

Due to more refined analyses between DEIS and FEIS, information on the number of miles of roads existing in the project area were updated to more accurately reflect conditions within the project area. The DEIS defined 473 total miles of existing National Forest System roads in the project area. The FEIS has been changed to reflect the correct number, which is 470 miles. Additionally, the DEIS defined 167 miles of unauthorized routes in the project area. The FEIS has been changed to reflect a more accurate value, which is 183 miles. The discrepancy between miles of mapped unauthorized routes in the project area is primarily due to field verification that took place in the fall of 2013. These changes also resulted in slight differences in the road density numbers reported in the DEIS. Because road management is an integral aspect of this project, I felt it was important to clarify the miles analyzed in my decision.

Several changes took place in the proposed recreation improvements between draft and final EIS. First, the FEIS better defined the type of use desired on the new proposed road to OHV trail conversions in Alternative B, by better defining the OHV trail width. In the FEIS the proposed OHV trails be open to vehicles 70 inches or less in width, which would provide for the use of ATVs, and most UTVs, but would restrict the use of full size vehicles. This 70 inch restriction better meets the recreation opportunity the Forest wants to provide to the OHV riding community, which was to separate use between full size vehicles and the trail riding vehicles (ATVs and UTVs). Trails under this 70 inch use category would be identified on the MVUM with a Special Designation category. The second, change is with regard to the number of OHV miles proposed. In the DEIS, the Forest proposed to identify an additional seven miles of OHV routes prior to the FEIS under Alternative B. This would have provided a total of 20 new miles of OHV routes in the Lost Creek area. However, only two additional miles of OHV routes were identified, changing the total miles of proposed OHV routes in Alternative B to 15 miles.

The last change in recreation between the DEIS and FEIS is with regard to ½ mile of new trail construction that was proposed from the Pollock Trailhead to Cow Camp Trail #181 in the Boulder Creek subwatershed. This trail construction project was dropped due to concerns that potential increased use could bring undesired resource effects to the Pony Creek Research Natural Area. Because an integral aspect of this project was to improve recreation infrastructure and opportunities, I felt it was important to clarify these changes in my decision.

RATIONALE FOR DECISION

Why was the *Selected Alternative* Chosen?

Based on a review of the FEIS and project record, I have decided to implement the *Selected Alternative* because it best meets the project objectives while remaining sensitive to the issues and concerns identified in the FEIS. The

Selected Alternative addresses the purpose and need for the project by balancing the need for restoration of vegetation towards desired conditions, improvement of wildlife habitat particularly for northern Idaho ground squirrel (NIDGS) and species associated with dry ponderosa pine forests, such as the white-headed woodpecker, in concert with the need for watershed and fisheries restoration activities. In addition, the *Selected Alternative* best reduces the risk of uncharacteristic and undesirable wildfire, implements restoration activities in all subwatersheds that will move the soil, water, riparian and aquatic (SWRA) conditions towards desired conditions, and authorizes recreation management activities that improve recreational opportunities while providing for improved safety, sanitation and public health. The *Selected Alternative* will also contribute to the economic vitality of the communities adjacent to the Payette National Forest.

I chose to modify Alternative B with proposed activities from both Alternatives C and D to better meet the purpose and need of the project, while balancing concerns raised by the public.

I have confidence that my decision to implement the *Selected Alternative* affirmatively addresses and fulfills the purpose and need for action, is responsive to the comments received on the DEIS and is consistent with the Forest Plan.

I have considered the ongoing analysis being conducted for the Wildlife Conservation Strategy (WCS) (USDA 2011b) and possible amendments to the Forest Plan resulting from the WCS. A key finding of the science on which the WCS is based is the need to conserve remaining large tree and old forest stands and promote development of these conditions in the future. My decision will maintain or promote large tree size class on nearly 15,000 acres, and emphasizes improving habitat for wildlife species of concern such as the northern Idaho ground squirrel and white-headed woodpecker, while maintaining habitat for other sensitive and listed species.

My decision will improve conditions for soil, water, riparian and aquatic (SWRA) resources. Road densities decrease across all subwatersheds. In Boulder Creek, an ACS priority subwatershed, the total road density (including Forest system roads and unauthorized routes) will be 1.7 miles per square mile, moving to the "*Functioning at Risk*" (FR) condition from the "*Impaired*" category as described in the Watershed Condition Framework.

My decision also took into consideration cumulative effects. The project area is used by many recreationists, and contains valuable resources including the ESA-listed northern Idaho ground squirrel, bull trout, salmon, and steelhead; habitat for other wildlife and fish species; soil and watershed resources; and other natural resources. A number of past, present and future projects as described in Appendix D and Chapter 3 of the FEIS were considered while developing this project, in the design of Project Design Features and mitigation measures, and in making this decision.

How the *Selected Alternative* responds to the purpose and need

The purpose and need for the project is disclosed in section 1.7 of the FEIS. The FEIS provided detailed objectives in section 1.8 that were elements of the purpose and need that the project was designed to address. The ID team developed quantifiable measurements for each objective. These measurements are discussed below to demonstrate how the *Selected Alternative* responds to each purpose and need statement.

PURPOSE AND NEED 1: *Move vegetation toward the desired conditions defined in the Forest Plan and consistent with the science in the Forest's draft Wildlife Conservation Strategy (WCS).*

The Lost Creek-Boulder Creek Project area is composed primarily of forest types that were historically maintained by relatively frequent, low to mixed severity fire. Historically, a significant portion of the forest in the project area was composed of stands with medium and large tree structure, as well as old forest habitat characteristics. Species composition in much of the project area was historically dominated by early seral species, such as ponderosa pine, western larch and aspen, and canopy closures were relatively open. Spatial patterns in these forest types varied but were historically more heterogeneous than existing conditions.

As disclosed in the FEIS Chapter 3 (sections 3.1.2 and 3.1.3), the current vegetative conditions are departed from the desired conditions. Within the project area, the primary differences between the current and desired conditions for vegetation include: less large tree size class than desired, especially in drier forest types; higher stand densities than desired; and an underrepresentation of early seral species, especially western larch, aspen and ponderosa pine.

The *Selected Alternative* addresses the discrepancies between the existing and desired conditions by proposing treatments that reduce stand densities and emphasize the retention of tree species and sizes that will aid in moving toward the desired conditions. My decision allows for manipulation of vegetation by thinning (both commercial and non-commercial) on 38,000 acres, regeneration treatments on up to 1,800 acres, and prescribed burning on 45,000 acres. The design of these treatments and associated Project Design Features took into consideration the desired conditions, ecological functions and processes, other resource concerns, and are consistent with the underlying philosophy and science regarding conservation of wildlife species and habitats for species of greatest concern, as disclosed in the draft WCS report and DEIS for the WCS (WCS DEIS).

I have decided to include the acres proposed for treatment in Alternative B in the *Selected Alternative* because this alternative emphasizes treatments in areas where early seral species were historically prevalent and/or abundant. While Alternative D identified more acres that could be treated, our best information indicates that the acreage identified for mechanical treatment in Alternative B better meets other objectives for quality treatment. Those objectives included having the appropriate vegetation type (PVG) with a sufficient composition of seral species to allow for thinning (as opposed to increased regeneration harvest as proposed in Alternative D). The proposed treatments for Alternative B also take into account location (such as access across steep slopes), and spatial arrangement (more discussion is provided in FEIS Chapter 2, section 3.1.2 o). As noted in the description of the *Selected Alternative*, I anticipate that additional ground verification and application of necessary Project Design Features (such as protection of nest sites) may reduce commercial treatments by 10-40 percent from the amount estimated. By selecting the acreage of commercial treatment associated with Alternative B, I believe I am selecting the areas that will benefit the most from vegetation treatments.

Based on public comments, I reconsidered the *intensity* of treatments used in the areas to be commercially thinned/free thinned (CT-FT) and decided that reduction of the canopy cover to 20-35% (identified in Alternative D) would better meet our goals in the short and long term, when compared with the proposed canopy cover reduction in Alternative B (reduced to 30-45%). These benefits include:

- A higher proportion early seral species in the stand;
- A higher tree growth rate, hence medium-aged stands will become large tree stands more quickly;
- Potential for greater economic return per unit effort;
- These more intensive treatments create an overabundance of the low canopy cover class in PVGs 5 and 6 in the short term, however forested stands will move closer to the desired canopy cover class distributions

in the mid-term and the treatments are consistent with Forest Plan direction (*e.g.*, VEGU01, Forest Plan page III-31). Including the treatment intensities of Alternative D promotes the development of the large tree size class and seral tree species throughout the landscape that are important to providing habitat for wildlife species of greatest concern in the project area.

My decision not to implement the additional acres proposed in Alternative D was also based on the effects these additional acres could have on wildlife habitat and species which are dependent on denser mixed-conifer forests with multi-layer structural characteristics where the ecological uncertainty of treatment benefits is higher. My decision has been made with the recognition that there are conflicting opinions, uncertainty and opposing scientific views regarding some of the restoration strategies included in the *Selected Alternative*. While I recognize that the vegetation treatments in the *Selected Alternative* will not satisfy all interested parties, I feel they provide a balance between achievement of the project purpose and need with issues and concerns. Indeed, if no treatments were implemented the project area would continue to diverge from desired conditions.

I also believe that treatment of the acreage identified in Alternative B better responds to the issues and balances the restoration opportunities with the uncertainty regarding historic fire regimes in mixed conifer forests (Kennedy and Fontaine 2009; Stine *et al*. 2013).

I acknowledge that the science regarding vegetative treatments in RCAs is still developing and that a level of uncertainty exists with such treatments. The FEIS analysis indicated that more than 12,000 acres of RCA treatments would be needed in the project area to move vegetation conditions within these RCAs towards desired conditions as defined in Appendix A of the Forest Plan. I fully considered all of the views balanced with the need for treatment when determining vegetative RCA treatments and associated mitigations in the *Selected Alternative.* As a result, my decision includes the placement of RCA treatment units in drier forest types, incorporation of Project Design Features to protect all riparian resource values, and monitoring requirements associated with these vegetative treatments in RCAs.

My decision also considers the variety of views and opinions regarding which old trees and large trees to retain along with the best method(s) to achieve these conditions. I believe that the incorporation of Project Design Features and clarification of treatment specifications provided between the DEIS and FEIS, in Appendix H, and included in the *Selected Alternative*, will successfully retain adequate old trees, large trees and stocking levels necessary to move toward the desired conditions.

PURPOSE AND NEED 1a: *Emphasize improving habitat for specific wildlife species of concern such as the ESA-listed northern Idaho ground squirrel (NIDGS) and species dependent on dry coniferous forests (for example white-headed woodpecker), while maintaining habitat for other sensitive and listed species.*

The Wildlife objective (FEIS Chapter 1, section 1.8.4) for the project was to improve habitat for ESA-listed northern Idaho ground squirrel (NIDGS) and Family 1 wildlife species, as represented by the white-headed woodpecker, a Region 4 Sensitive Species (USDA Forest Service 2011) and Forest Management Indicator Species (MIS), by restoring forest conditions that contribute to source habitat for these species. Forested stands providing these source habitats should be restored to conditions within the Historical Range of Variability (HRV).The measurements for the Wildlife objective include: quantity and quality of Family 1 - white-headed woodpecker habitat restored to conditions within HRV and acres treated adjacent to occupied NIDGS sites to expand suitable habitat in the most key areas.

The *Selected Alternative* benefits Family 1 species, including white-headed woodpecker, through vegetation treatments that restore source habitat. As disclosed in the FEIS (section 3.6.4) under the No Action alternative, only 1,735 acres of source habitat for white-headed woodpecker currently exists in the project area (see FEIS Table WL-12). The quantity of Family 1 habitat is modeled by acres of PVG 2, 5, and portions of 6 in the large tree size class and low (but not less than 25 percent) canopy cover class. The *Selected Alternative* will increase source habitat for white-headed woodpeckers up to approximately 12,000 acres immediately post-harvest. Although the source habitat model for white-headed woodpeckers focuses on the large tree size class, treatments in the medium tree size class will allow these stands to grow more rapidly into the large tree size class, with the low canopy cover preferred by this species. This will result in greater increases in habitat for the species in the longer term (15-25 years). Modeled habitat changes could allow for 16 white-headed woodpecker home ranges in the near term and up to 38 home ranges in the long term. Treatments will also improve the size and distribution of source habitat patches compared to current conditions. Forest treatments should include clumps of trees, as well as small openings that mimic the heterogeneity of historical conditions. Use of prescribed fire will help maintain forest conditions and natural processes within and outside the harvested areas. If the predicted home ranges become occupied, white-headed woodpecker population trends would increase (FEIS section 3.6.4).

My decision balances the need to maintain habitat for other species. Family 2 species use mixed conifer forests in medium and large tree size classes and generally moderate canopy cover classes. Habitat for Family 2 species will decrease as forests are thinned to restore open canopy, seral large-tree habitats, but is still predicted to remain widespread. For example, about 13,000 acres of habitat for the pileated woodpecker (a Family 2 focal species and a Forest MIS) will remain in the project area following treatments. Habitat for Family 2 species is expected to increase over time as many medium-size forests grow larger and denser. Species viability across the Forest will be maintained as disclosed in the analysis for the WCS DEIS.

An important element of my decision is that the *Selected Alternative* will treat nearly 14,000 acres of NIDGS habitat (5,141 acres of NIDGS Priority 1 habitat and 8,824 acres of NIDGS Priority 2 habitat) in the project area. Modeled NIDGS habitat within ¼ mile of existing known colonies was considered Priority 1 Habitat, while modeled habitat more than a ¼ mile from existing populations became Priority 2 Habitat. The *Selected Alternative* will implement treatments that provide for population expansion and interchange to make the species more resilient over a larger, landscape scale. Project design features included in the *Selected Alternative* will mitigate any potential negative effects from project implementation activities (i.e., thinning, prescribed fire, road decommissioning, and log haul). In making my decision, I was guided by Forest Plan standards 0339, 0529 that state: "*The northern Idaho ground squirrel will receive priority consideration for all management activities that occur within their known occupied habitat. The intent of this standard is not to exclude all other activities within this habitat, but rather to reduce or minimize potential impacts to this species while emphasizing habitat improvement within and adjacent to known sites*." For this reason, I chose not to include designation of a non-motorized trail through occupied NIDGS habitat (see discussion of recreation on ROD pages 39 and 44).

I believe my decision will also benefit elk and numerous other wildlife species by including the additional road closures and removals identified in Alternative C. The *Selected Alternative* will effectively close or decommission closed Forest Service system roads and treat unauthorized routes, which will benefit elk and numerous other wildlife species. Prescribed fire will improve the nutritional value of winter range and foraging areas near calving habitat.

While my decision to improve wildlife habitat to conditions within HRV refers to the science used in the WCS DEIS, it also complies with direction in the 2003 Forest Plan: Guidelines 0341, 4442 state "*An increase in the*

white-headed woodpecker or flammulated owl habitat may be achieved by the following methods: a) Reducing tree densities and ladder fuels under and around existing large ponderosa trees and snags to reduce the risk of tree-replacing fire and to restore more open canopy conditions."

PURPOSE AND NEED 1b: *Emphasize maintaining and promoting large tree forest structure, early seral species composition (for example aspen, western larch, ponderosa pine, and Douglas-fir) and forest resiliency*

The Lost Creek –Boulder Creek Project area is currently lacking desired amounts of large tree forest structure, has less early seral tree species than desired, is more densely stocked than desired, and has departed from the desired spatial patterns as disclosed in sections 1.5 and 3.1 of the FEIS. To remedy these current conditions, I believe that management actions that maintain and promote resilient large tree size class, including old forest, with the desired species compositions, densities, spatial patterns and other characteristics are necessary.

As such, the *Selected Alternative* is designed to maintain existing large tree size class in that size class in resilient conditions and promote the development of resilient medium and small tree stands into the next larger tree size class. I believe these treatments will maintain and promote the numbers, sizes and types of trees necessary to move toward the desired large tree size class and promote old forest characteristics (*e.g.*, species compositions, densities, legacy trees, snags, coarse woody debris and spatial pattern). Within areas proposed for treatment, implementation of the treatment intensities in my decision will provide for increased resilience to ecological disturbance by improving vigor and increasing growth rates of residual trees for a longer period of time than any of the other treatment intensities proposed in other alternatives. This improved vigor will increase stand resistance to disease. Increased growth will foster development of the large tree component in a shorter period of time. Treatments will also reduce fuel loadings and thus decrease fire intensity which will aid maintenance of early seral species composition.

Thus implementation of the *Selected Alternative* will maintain existing, as well as develop new, large tree size class stands with low to moderate canopy cover classes dominated by early seral species. I am confident that including the treatment intensities of Alternative D will result in more efficient movement toward the desired conditions in the long term than the less intensive treatments proposed in other alternatives. Also, the non-commercial and prescribed fire treatments included in my decision will aid in maintaining and promoting landscape conditions that are ecologically resilient to anticipated disturbances (*e.g.* wildfire, insects, climate change). Lastly, implementation of this decision will create landscape conditions more consistent with Forest Plan desired conditions.

PURPOSE AND NEED 1c: *Emphasize reducing the risk of uncharacteristic and undesirable wildland fire, with an emphasis on restoring and maintaining desirable plant community attributes including fuel levels, fire regimes, and other ecological processes.*

The *Selected Alternative* will restore fire regimes within the project area that would alter predicted fire types from conditional /active crown fires to primarily surface fires with passive crown fires. Additionally, my decision will restore vegetative structure and composition as well the managed use of fire, and will improve the integrity of the landscape and its resilience to wildland fires.

The objective for Fire and Fuels (FEIS section 1.8.2) includes restoring and maintaining desirable fuels levels, fire regimes, and ecological processes as measured by the amount of departure from historic fire regimes. The

Selected Alternative would substantially improve fire regimes conditions across approximately 31,800 acres where both thinning and fire are prescribed, and improve an additional 13,200 acres with burning only and 8,300 acres of thinning only (FEIS section 3.2.4). As such, 49% of the project area will have significant improvement in the fire regimes post implementation.

Where stand structure and species composition would be altered mechanically or by hand to restore historic conditions and where fire is reintroduced, fire regimes would are expected to move towards historic conditions at the greatest rate.

PURPOSE AND NEED #2: *Move all subwatersheds within the project area toward the desired condition for soil, water, riparian, and aquatic resources and improve the Boulder Creek subwatershed from the "Impaired" category to the "Functioning at Risk" category as described in the Watershed Condition Framework.*

The *Selected Alternative* will move all subwatersheds within the project area toward the desired condition for SWRA resources. Across the project area, the *Selected Alternative* will improve 157 miles of stream. Miles of stream improved includes miles of restored stream connectivity, miles of RCA road decommissioning and road improvements (graveling) in RCAs. These improvements are described in detail in the next section.

The *Selected Alternative* reduces road-related accelerated sediment and other road-related impacts through road improvements, fish passage improvements, and reduction of road densities through road decommissioning across the project area. The Boulder Creek subwatershed will improve from Watershed Condition Framework "Class 3" (Impaired Function) to the "Class 2" (Functioning at Risk) because of road decommissioning, long-term closures, road graveling and restoration of fish passage. The other subwatersheds in the project area will all move towards the desired conditions, but will not achieve a Watershed Condition Framework class change.

Boulder Creek- By decommissioning 29 miles of system road, and treating a total of 18 miles of unauthorized routes (including those used as temporary roads) in Boulder Creek, the project will effectively reduce overall road density to 1.7 miles per square mile. Approximately one mile of Maintenance Level 2 system road would be moved to Maintenance Level 1 and receive long-term closure treatments. Approximately 4.9 miles of road graveling would occur in RCA's (see Table ROD-6 below), contributing to the reduction of road-related sediment impacts in the Boulder Creek subwatershed. The *Selected Alternative* will also alleviate the remaining known 12 fish barriers in Boulder Creek. These achievements move the Boulder Creek subwatershed to the "Class 2" category (Functioning at Risk) from the "Class 3" category (Impaired) as described in the Watershed Condition Framework. My decision to implement this combination of activities will result in 28.1 miles of stream improved (as described below) in the ACS priority Boulder Creek subwatershed, benefitting ESA-listed bull trout, steelhead, and Chinook salmon.

Other project area subwatersheds-By decommissioning 39 miles of system road throughout the project area outside of Boulder Creek, and treating a total of 113 miles of unauthorized routes (including those used as temporary roads) outside of Boulder Creek, overall road densities will be reduced (see Table ROD-5 below) Approximately 58 miles of system roads would be placed in long-term closure status, and 28.6 miles of road graveling would occur in RCA's (see Table ROD-6 below), contributing to the reduction of road-related sediment impacts outside of the Boulder Creek subwatershed. Twenty-four fish passage barriers would be alleviated outside of Boulder Creek. These achievements contribute to moving these subwatersheds towards desired conditions and

results in 128.9 miles of stream improved for the benefit if native and non-ESA listed fish species outside of the Boulder Creek subwatershed.

PURPOSE AND NEED 2a: *Emphasize restoring habitat connectivity, especially in streams occupied by Endangered Species Act (ESA) - listed fishes (Chinook salmon, steelhead and bull trout) and their respective Designated Critical Habitat.*

The objective for soil, water, riparian, and aquatic resources (FEIS section 1.8.3) includes restoring fish habitat connectivity especially in streams occupied by ESA listed fishes and in Critical Habitat as measured by the number of crossing removed or placed to specifically improve fish passage. The *Selected Alternative* will alleviate a project area total of 36 fish passage barriers which re-connects 52.1 miles of fish habitat.

Boulder Creek- ESA listed species only occur in the Boulder Creek subwatershed and the *Selected Alternative* alleviates the 12 remaining known fish barriers in this subwatershed either through replacements (seven crossings) or removal (five crossings). Replacement or removal of these 12 crossings will benefit bull trout, Chinook salmon, steelhead and their Critical Habitats by reconnecting 10.1 miles of historically accessible habitat (Table ROD-4). By treating the remaining barriers, the Forest Plan WCI (as described in Forest Plan Appendix B) for barriers moves to the "Functioning Appropriately" rating from the "Functioning at unacceptable Risk" rating. Addressing these barriers also contributes to moving the subwatershed to the "Class-2" category (Functioning at Risk) for the Watershed Condition Framework. Additionally, including these crossings implements Action #3 in the *Draft* Salmon and Steelhead Recovery Plan (NMFS 2011) and a recommendation in the *Draft* Bull Trout Recovery Plan (USFWS 2002) to remove existing man-made barriers.

Other project area subwatersheds- Across the remainder of the project area, 24 barriers will be improved (23 crossings replaced with appropriate structures and one removed). This alleviates barriers for native, non-ESA listed fish species and reconnects 42 miles of historically accessible habitat (Table ROD-4). This specifically addresses Forest Plan Objective 0322 in MA 3 and by treating these barriers, the Forest Plan WCI for barriers in these subwatersheds are improved but remain functioning at unacceptable risk. Addressing these barriers also contributes to improving the subwatersheds according to the Watershed Condition Framework, although they would remain at their existing ratings.

Table ROD-4. Number of Proposed Crossing Improvements Included in the *Selected Alternative* and Miles of Stream Connectivity Restored in Each Project Area Subwatershed.

	Selected Alternative	
Subwatershed	Number of Crossing Improvements	Stream Connectivity Restored (miles)
Boulder Creek	12	10.1
Upper Weiser River	6	10.7
Lost Creek	11	23.6
Upper West Fork Weiser River	7	7.7
Lower West Fork Weiser River	0	0
Totals	**36**	**52.1**

PURPOSE AND NEED 2b: *Emphasize reducing road-related accelerated sediment and other road related impacts.*

The objective for SWRA resources (FEIS section 1.8.3) includes reducing road-related accelerated sediment and other road related impacts as measured by road density/location in each subwatershed and stream miles improved (including miles of fish habitat re-connected and miles of stream enhanced through road decommissioning and other road improvements (road graveling)). My decision will implement road decommissioning/unauthorized route treatment (68/117 miles), roads converted to long-term closure (61 miles), road graveling (34 miles), and fish passage improvements (36) discussed above. These four activities will reduce road-related accelerated sediment and other road related impacts as summarized below.

Road decommissioning and unauthorized route treatments- These treatments will reduce road-related sediment and other road related impacts (*i.e.* stream shading, LWD recruitment, sediment delivery) in the long-term by restoring soil productivity and hillslope hydrologic connectivity. Measurable reductions in road density and RCA road density will occur in all subwatersheds (Table ROD-5).

Boulder Creek - In the Boulder Creek subwatershed, implementation of the *Selected Alternative* will reduce road density through decommissioning and/or treatment of 47.6 miles of road (29 miles of system road, 15 miles of unauthorized routes, and 3.2 miles of unauthorized routes that are used as temporary roads). When compared to the Forest Plan WCI for road density, the functional rating changes from *"Functioning at Unacceptable Risk"* to *"Functioning at Risk"* for the Boulder Creek subwatershed. Forty percent of all roads, including unauthorized routes will be decommissioned in this subwatershed. The resulting overall road density in the Boulder Creek subwatershed will be 1.7 miles per square mile moving the road density/location WCI to "*Functioning at Risk*" (FR) condition from the "*Functioning at Unacceptable Risk"*(FUR) category as described in Appendix B of the Forest Plan. The "FR" condition is a road density between 0.7 and 1.7 miles per square mile, with few roads in RCAs. My decision to implement the *Selected Alternative* will substantially improve the RCA road density in the Boulder Creek subwatershed from 3.4 to 1.9 miles per square mile, which is a 44 percent reduction attributed to the decommissioning/treatment of 14.5 miles of RCA road (10.5 miles of RCA system road and 4.0 miles of RCA unauthorized routes).

Other project area subwatersheds- Measureable reductions in overall and RCA road density will occur across the remainder of the project area with implementation of the *Selected Alternative* (Table ROD-5), however existing functional ratings will be retained. Approximately 153 miles of system roads and unauthorized routes will be decommissioned and treated (total includes system road decommissioning, unauthorized route treatments, and obliteration of unauthorized routes used as temporary roads). *Selected Alternative* total road densities will vary by subwatershed, but will range from 1.3 to 6.5 miles per square mile (outside of Boulder Creek); RCA road densities also vary by subwatershed but will range from 1.9 to 6.9 under the *Selected Alternative* (outside of Boulder Creek).

Table ROD-5. Road density and RCA road density resulting from implementation of the Selected Alternative.

Subwatershed	Total Road Density (mi/mi^2 mile)		Routes Decommissioned (miles)*	RCA Road Density (mi/mi^2 mile)		Routes Decommissioned in RCAs (miles)*
	Existing Condition	***Selected Alternative***	***Selected Alternative***	**Existing Condition**	***Selected Alternative***	***Selected Alternative***
Boulder Creek	3.0	1.7	47.6	3.4	1.9	14.5
Lost Creek	7.4	5.3	75.7	9.9	6.5	27.3
Lower West Fork Weiser River	1.4	1.3	1	2.7	2.4	0.9
Upper Weiser River	4.7	3.1	39.2	12.5	7.1	20.5
Upper West Fork Weiser River	8.6	6.5	35.7	10.3	6.9	15.8
Total			**199.2**			**79**

**Includes system roads decommissioned, unauthorized route treatments, and obliteration of unauthorized routes used as temporary roads*

Road graveling- In addition to road decommissioning, road-related sediment production will also be reduced through road improvements, such as RCA road graveling on roads used as haul routes. Graveling can substantially reduce sediment production from roadways (Burroughs and King 1989, Seyedbagheri 1996) contributing to improved stream sediment conditions. Across the project area, approximately 34 miles of roads (4.9 miles in Boulder Creek, and 28.6 miles in subwatersheds outside Boulder Creek) within RCAs would receive graveling under the *Selected Alternative* (Table ROD-6).

Long-term closures- The *Selected Alternative* also contributes to additional reductions in road-related sediment issues through the implementation of over 61 miles of new long-term closures on system roads. Only one mile of road will be treated as long-term closure in Boulder Creek. Because of the ACS priority of Boulder Creek, the focus in that subwatershed was on decommissioning. Approximately 60 of these miles of long-term closure treatment are outside the Boulder Creek subwatershed.

Roads converting to Maintenance Level 1 status, any existing Maintenance Level 1 roads needing treatment, and any Maintenance Level 1 roads temporarily utilized as haul routes will receive long-term closure treatments after use as described below. Roads converting to Maintenance Level 1 roads under my decision are currently closed to the public (Maintenance Level 2) system roads that have generally not been maintained and where road surveys show many erosion issues are present. Long-term closure treatments would move them to Maintenance Level 1, and perform stabilization treatments such as; removal of culverts, outsloping, waterbarring, and scarification/seeding of travelways to provide groundcover. They would remain on the landscape as a part of the Minimum Road System (MRS) as access for potential future vegetation management. These treatments will contribute to the reduction of road-related sediment and the miles of stream improved in subwatersheds outside of Boulder Creek.

Table ROD-6. RCA System Road Improvements (graveling and long-term closure treatments).

Subwatershed	*Selected Alternative*	
	RCA Road Graveling	**Long-term Closure Treatment**
Boulder Creek	4.9	1
Upper Weiser River	7.3	13
Lost Creek	8.8	37
Upper West Fork Weiser River	11.8	10
Lower West Fork Weiser River	0.7	0
Total	**33.5**	**61**

Stream miles improved- As discussed above, miles of stream improved includes miles of restored stream connectivity (described in the proceeding section), miles of RCA road decommissioning and road improvements (graveling) in RCAs. Graveling can substantially reduce sediment production from roadways (Burroughs and King 1989, Seyedbagheri 1996) contributing to improved stream sediment conditions. My decision results in approximately 157 miles of stream improved (Table ROD-7).

Table ROD-7. Stream Miles Improved.

Subwatershed	*Selected Alternative*
	Miles of Stream Improved*
Boulder Creek	28.1
Upper Weiser River	35.7
Lost Creek	57.5
Upper West Fork Weiser River	34.4
Lower West Fork Weiser River	1.3
Total	**157.0**

**Includes miles of stream connectivity (Table ROD-4) and RCA system road graveling and RCA road decommissioning from Table ROD-6 (above).*

PURPOSE AND NEED 3: *Manage recreation use in Boulder Creek and in the vicinity of Lost Creek with an emphasis on providing sanitation facilities, identifying and hardening dispersed recreation areas, and developing new trail opportunities.*

The objective for recreation resources (FEIS section 1.8.5) includes managing recreation use as stated in the purpose and need as measured by miles of open motorized trail by vehicle class for motorized trails, miles of open and managed non-motorized trails, and open road; and the change to dispersed recreation sites measured by sites provided and facilities provided in the sites.

The *Selected Alternative* includes recreation improvements within the Boulder Creek and Lost Creek areas. I considered the needs of the various types of recreation users, associated facilities, and recreation needs balanced with the existing need for resource improvement, species habitat conditions, and opportunity types provided.

My decision allows for improvements in the Boulder Creek trail system and will improve the existing recreational use experience for both motorized and non-motorized trail users. By developing more trailhead parking, trail users will be benefited by providing for parking to stage out of for motorcycle riding on the motorized trails, and for hiking and horse-back riding on the non-motorized trails. I believe the parking lot improvements proposed for the Ant Basin South #519 trailhead will benefit horse-trail riders by giving them a good location to park and turn

around the large horse trailers. In addition proposed hitch rails and a new restroom will make a good staging area to begin a back-country trip. Trail damage that occurred during the 2012 Wesley Fire will be repaired, bringing those trails back up to standard, and providing an improved recreational trail experience.

My decision to decommission the current Ant Basin trailhead and non-motorized trail #324 that accesses the #178 trail, and to relocating all trail use to the larger – better located Ant Basin South #519 trail, will improve access to the higher Rapid Ridge trail system, and also provide for needed parking for larger horse trailers. Decommissioning the seldom used #324 trail will save future trail maintenance dollars, and road maintenance dollars along the approximately ½ mile section of Road 50079 that would be closed to the old trailhead. My decision to improve the road access on FS Road 51254 (which accesses the Ant Basin South trailhead and #519 motorized trail) will better facilitate access by both horse trailers and passenger cars.

My decision to designated OHV trails in the Lost Creek vicinity is based upon the comments received from users and the consideration for safety of the public that accesses and recreates in this area. The *Selected Alternative* will designate 15 miles of OHV trails open to all vehicles 70 inches or less. This OHV route system would be located south and west of Lost Valley Reservoir and would provide desired trails for the numerous OHV riders that use the area. I believe that the OHV route system will encourage riders to avoid the use of the main road system and will provide opportunities to ride a separate trail loop away from passenger car higher speed traffic.

Under the *Selected Alternative*, in the Lost Valley reservoir area, 68 dispersed sites will be improved, and 12 will be closed and rehabilitated back to their natural condition. I believe that my decision will only marginally reduce the number of dispersed campsites available to the public but will still provide an adequate number of sites that will be in a better condition for recreation opportunities while providing for improved resource conditions. My decision will restrict dispersed camping using a motorized vehicle to “designated sites only” on the 50089 road surrounding the Lost Valley Reservoir.

The *Selected Alternative* will implement new facilities for Lost Creek including four single vault restrooms in the most highly used dispersed camping areas around the reservoir, up to 25 fire rings, barrier rock, designated camping signs, fencing in some areas, road access improvements to larger dispersed sites, graveling at major dispersed sites and three large three-panel information sign kiosks at major road junctions. My decision to add these facilities to the Lost Creek area will improve the recreational users’ experience by providing vital information on the location of the new trails, and dispersed and developed campgrounds. The *Selected Alternative* drops two additional toilets within this area because of the cost and the moderate use expected in these proposed installation sites.

In the Lost Creek area, the *Selected Alternative* will add approximately seven miles of non-motorized, Class 1 Trail with a managed and designed use for Pack and Saddle Stock to the trail system as described in Alternative C. This new trail would also be open to other non-motorized uses, including hiking and mountain biking. The added trail is primarily located on existing road and would need approximately 0.3 miles of new trail construction.

PURPOSE AND NEED 4: *Contribute to the economic vitality of the communities adjacent to the Payette National Forest.*

Ecological benefits and economic impacts from the *Selected Alternative* would accrue over the life of the project. As shown in FEIS Table EC-13, the commercial forest products, recreation related improvements, restoration activities, and road work associated with Alternative B would support a total of 637 jobs and more than $18.6

million in local labor income over the 10 years activities will be implemented. The *Selected Alternative* is expected to provide additional economic benefit by incorporating aspects of Alternatives C and D.

HOW THE SELECTED ALTERNATIVE RESPONDS TO THE ISSUES

Issues were used to develop alternatives and/or appropriate mitigation measures or Project Design Features to address the effects of proposed activities. Each issue was tracked using indicators, which compare the effects of the proposed activities by alternative. Issues and indicators identified are discussed in the FEIS section 1.9.1. The *Selected Alternative* responds to these issues as discussed below.

Forested Vegetation- Issue 1: *The intensity of the vegetation treatments will affect how well the desired conditions for vegetation and wildlife are achieved.*

My decision to implement treatment intensities of Alternative D in the *Selected Alternative* was based on the recognition that tradeoffs in the achievement of desired vegetative conditions must be considered. My decision was based not only on the consideration that tree growth and early seral species is important but that creating an overabundance of the low canopy cover class in PVGs 5 and 6 in the short term will more quickly and effectively move all vegetative components toward the desired conditions over the long term. Less intensive treatments would not be as effective at moving the landscape toward these desired conditions over the long term.

I recognize that some commenters expressed concern regarding the cost of implementing non-revenue generating vegetation treatments, such as non-commercial thinning, CT-MP treatments, and prescribed burning, which are included in the *Selected Alternative*. My decision to include the acres of non-commercial thinning, CT-MP and prescribed burning from Alternative B in the *Selected Alternative* is based on the purpose and need of the project. Without treatment, these stands will continue to grow and eventually stagnate which could make desired conditions, such as resiliency, species compositions, and old forest conditions difficult to achieve in both the short and long term. In addition, the *Selected Alternative* has been designed with the flexibility to implement treatments that will move toward the desired conditions while considering costs associated with the various methods. This flexibility allows for uncertainties of markets and costs of implementation to be considered when developing silvicultural prescriptions and contracts associated with this decision. I have intentionally allowed for flexibility in treatment methods, while considering costs, to address the purpose and need, including the how well the desired conditions for vegetation and wildlife are achieved. I believe that treating small and medium size tree size class stands is imperative to attaining desired conditions (including promoting large tree size class) in both the short and long term.

Watershed Resources and Fish Habitat Issues-

Issue 2: *Watershed conditions and sediment rates may be altered due to the proposed activities for roads, vegetative treatments, and prescribed fire within the analysis area.*

Issue 3: *The number of roads selected for the Minimum Road System (MRS) and their maintenance level and location could affect sediment rates and long term watershed functionality.*

Issue 4: *Proposed activities may change timing and duration of peak runoff and increase bank instability in sensitive stream channels.*

Issue 5: *Treatments that propose thinning of vegetation in RCAs may negatively affect sediment delivery, stream temperatures and large woody debris (LWD).*

Sediment

At the subwatershed scale, the *Selected Alternative is* predicted to result in a temporary to short-term increase in sediment with short- and -long term improvement towards the desired conditions. Because my decision includes the unauthorized route treatments from Alternative C, the *Selected Alternative* is expected to result in additional long-term reduction to sediment production in all subwatersheds across the project area. The *Selected Alternative* is expected to benefit water quality, fish and fish habitat across the project area by reducing overall sediment production at the subwatershed scale.

The *Selected Alternative* includes approximately 1,530 acres of RCA treatments (in subwatersheds excluding Boulder Creek and high risk drainages). Where RCA treatments are not proposed, stream buffers with no vegetation treatment of 240 feet and 120 feet on perennial and intermittent streams respectively would be applied. Temporary, localized increases in sediment production are expected from road activities (including road maintenance and reconstruction, and decommissioning).

The current functional level of the Sediment/Turbidity WCI is "*Functioning at Unacceptable Risk* (FUR)" in the Boulder Creek subwatershed, which is expected to be maintained in the short and long-term timeframe with anticipated incremental improvements in the short to long-term timeframes related to road decommissioning. Temporary localized increases in sediment associated with fish passage improvements and road decommissioning, and other road activities are expected in bull trout and steelhead CH. Effects to ESA listed species and their respective CH are analyzed in the Biological Assessment prepared for this project (located in the Project Record).Temporary adverse effects to listed species and their respective CH are outweighed by improvements (in all three timeframes) in fish habitat connectivity.

Stream Temperature

The *Selected Alternative* is expected to maintain current stream temperatures at the subwatershed scale and would not retard the attainment of a properly functioning temperature conditions. Where RCA treatments are proposed, thinning treatments would not occur within 120 feet of perennial streams or within 60 feet of intermittent streams, which are expected to maintain stream shading based on literature reviewed (Steinblums 1977, Brazier and Brown 1973, FEMAT 1993 and DeWalle 2010). RCA treatments also represent a low percentage of the total RCA acres in the project area (and in each subwatershed) (see FEIS Chapter 3, Table FH-20). Low intensity prescribed fire in RCAs is expected to produce a mosaic of low intensity fire effects and not expected to reduce the canopy and shade providing vegetation to the extent that stream temperatures would be affected. Rapid regeneration of burned riparian areas is also expected (Halfosky and Hibbs 2009). Actions associated with roads, including culvert activities and road re-construction in RCAs is expected to incrementally reduce stream shading but no measureable effects to stream temperatures are expected. Road decommissioning is expected to result in an incremental improvement to stream shading in the short and long term timeframes as vegetation becomes re-established on streambanks and in RCAs. Recreation improvements proposed in all of the action alternatives are also expected to maintain the current temperature conditions.

Within Boulder Creek, which is an ACS priority for restoration and contains ESA-listed fish species and their respective CH, stream temperatures are expected to be maintained in the temporary and short term across the subwatershed with an incremental increase in stream shading in the short-and long term as roads are decommissioned. The current functional level of "*Functioning at Risk* " (FR), would be maintained in all three

timeframes. Long-term incremental improvements in stream shading are not expected to result in any measurable changes to stream temperatures in streams that contain listed species or are CH.

Large Woody Debris

Removal of trees from RCAs has the potential to affect recruitable LWD. Forest Plan standard SWST10 states that "trees or snags that are felled within RCAs must be left in place unless determined not to be necessary for achieving soil, water riparian and aquatic desired conditions." All subwatersheds where RCA treatments are proposed are *"Functioning Appropriately"* (FA) with respect to LWD except for the Lower West Fork Weiser River, which is *"Functioning as Risk"* (FR). Design of RCA treatments and Project Design Features are expected to maintain the current and recruitable LWD conditions. The *Selected Alternative* is expected to maintain the current and recruitable LWD at the subwatershed scale and would not retard the attainment of properly functioning LWD.

In the Boulder Creek subwatershed, which is an ACS priority for restoration and contains ESA-listed fish species and their respective CH, LWD is expected to be maintained with project activities in the temporary and short-term. In the long-term timeframe, an incremental increase in recruitable LWD is expected as trees become established on decommissioned roads. The currently functional level of *"Functioning Appropriately"* (FA) would be maintained in the long-term timeframe. No measureable effects to LWD in streams that contain listed fishes or are CH are expected from the *Selected Alternative*.

Changes to Peak Flows

Based on internal review and external comments between the DEIS and the FEIS, concerns for the high existing level of Equivalent Clearcut Area (ECA) and proposed increases to ECA by proposed vegetation management in sensitive drainages was addressed. For the *Selected Alternative*, the 10 high risk drainages (identified as having an increase to ECA, where ECA and channel condition risk (CCR) are within, or moved into, the high category, as defined in FEIS, Chapter 3, p. 181), are limited to a 1 percent increase to ECA (see ROD-Attachment 1, PDF #29). Additionally, no RCA treatments would occur in these ten high risk drainages (resulting in the removal of 270 acres in the *Selected Alternative* from the original 2,000 acres proposed in Alternative B).

In making my decision, I considered the increases in ECA and the intent of the WCIs in Forest Plan Appendix B. Increases at the drainage scale would only occur in drainages not identified as high risk and the miles of road restoration both within the high risk drainages and at the subwatershed scale, in the *Selected Alternative* would offset the effects of increases in ECA to some degree, due to the reduction in drainage network and flow routing due to roads. The increase in ECA at the 6th field subwatershed scale (Upper Weiser, Lost Creek and the UWFWR subwatersheds) is a tradeoff for achieving vegetation management goals within the project area as defined in Appendix A of the Forest Plan. I believe that choosing to implement the *Selected Alternative* including Project Design Feature number 29 will result in overall watershed improvements at the 6th field subwatershed scale, and contribute to achieving the goals of the Aquatic Conservation Strategy across the project area, despite having some drainages and subwatersheds in the *Functioning at Risk* or *Functioning at Unacceptable Risk* category for the disturbance history WCI.

Minimum Road System

The *Selected Alternative* results in a total of 401 miles of National Forest System road in the project area, a reduction of 68 miles from the existing system road system. The BOISED model estimates reductions for all subwatersheds over the long-term for annual percent over natural sediment due to the reduction in system road

miles. As discussed above, the reduction of road density in the project area is expected to contribute to road-related sediment reduction across the project area in the long-term.

Soils Productivity- Issue 6*- Proposed activities may decrease long-term soil productivity and impair soil-hydrologic function.*

The *Selected Alternative* results in a reduction from 6.3 percent to 5.9 percent TSRC for the project area due to the decommissioning of roads and treatment of unauthorized routes. Any new TSRC (landings and constructed skid trails) that is produced by the project would also be fully obliterated. Additional reductions in TSRC would be realized if existing landings or unauthorized roads are used as temporary roads or skid trails and then obliterated.

Site specific Project Design Features, mitigation measures, and Best Management Practices (BMPs) are utilized to reduce the potential for additional detrimental disturbance (DD) to be produced. If surveys indicate that some units have detrimental disturbance (DD) levels at or in excess of, 15 percent, it is required that a net reduction in DD be accomplished with the implementation of the project (see ROD-Attachment 1, PDF #18).

The Forest Plan standards for TSRC and DD would be met as TSRC is reduced toward 5 percent of the project area (Forest Plan Standard SWST03) and DD is reduced to 15 percent of individual activity area where in excess of 15 percent (Forest Plan Standard SWST02). FEIS section 3.4 describes in more detail the effects to this issue for the *Selected Alternative*.

Wildlife Resources Issues **–**

Issue 7: *Restoration treatments, while a benefit to white-headed woodpeckers, may adversely affect source habitat for other wildlife species, such as pileated woodpecker, northern goshawk, elk, and lynx, which are dependent on denser mixed-conifer forests with multi-layer structural characteristics*.

The effects and relative trade-offs of the *Selected Alternative* to various wildlife species is discussed under "Purpose and Need 1a" above. The FEIS (p. 294) notes that "*Careful implementation of vegetation management should allow us to restore source habitat conditions for white-headed woodpeckers, while maintaining suitable habitat for pileated woodpeckers. Because the pileated woodpecker is a MIS, Forest managers should be able to assess habitat management tradeoffs between retaining departed landscapes to meet the short-term habitat needs of one species (pileated woodpecker) and restoring departed landscapes toward the HRV to address the short- and long-term habitat needs of another species (white-headed woodpecker)*."

While habitat for Family 2 wildlife species, such as the pileated woodpecker and northern goshawk will decrease, loss of habitat is likely to be less than predicted due to Project Design Features and vegetation treatment measures. Many Family 2 species use PVG 6. Measures ensure that we treat the most appropriate PVG 6 stands as described in the FEIS, chapter 2: "*portions of PVG 6 dominated by early seral species with canopy cover greater than 35 percent*." Additional measures require that we "give preference to retention of tree(s) exhibiting characteristics of high wildlife value (*i.e.* cavities, stem rot, broken tops with structure for nesting, etc.) even if this results in slightly higher than desired stocking" and retain "clumps of trees" and "skips" for wildlife. Skips are defined as portions of units not treated mechanically (Franklin *et al*. 2013).

Commercial thinning of mature plantations (CT-MP) on up to 8,100 acres will begin the process to restore these stands to more varied and natural conditions that will benefit a wide array of wildlife species.

This decision includes Forest Plan direction and Project Design Features to protect important habitat components for wildlife species. For example, goshawk nest stands most often occur in denser PVG 6 stands and those nest stands and portions of the associated post-fledging areas will not receive mechanical treatment. These stands will be identified prior to tree marking operations and will be managed to meet Forest Plan direction. Another design feature ensures protection of great gray owl nesting areas.

Wildlife monitoring will continue throughout project implementation. The Forest has partnered with the Rocky Mountain Research Station (RMRS), USGS, and universities to monitor the effectiveness of treatments for white-headed woodpeckers and NIDGS. District wildlife staff will continue monitoring for flammulated owls, great gray owls, and northern goshawks to identify nest sites and implement Project Design Features for nest site protection, if necessary.

Issue 8: *Road densities affect wildlife (i.e., elk) security and can lead to the removal of important habitat components (snags) for cavity dependent wildlife.*

My decision to include the unauthorized route treatments identified in Alternative C in the *Selected Alternative* provides the best response to this issue when compared with the other action alternatives. *The Selected Alternative* will effectively close or decommission system roads and treat unauthorized routes which will benefit elk and numerous other wildlife species. The density of closed system roads and unauthorized routes in the Boulder LAU will be reduced which may benefit connectivity of lynx habitat.

Issue 9: *Project activities (logging, log haul, prescribed burning, and temporary road construction) may affect other wildlife species of concern, such as northern Idaho ground squirrel (NIDGS) and Canada lynx.*

My decision to include the additional road closures and removals identified in Alternative C in the *Selected Alternative* provides the best response to this issue when compared with the other action alternatives. Although the density of open roads and motorized trails will not measurably decrease, the *Selected Alternative* will effectively close or decommission closed Forest Service roads and unauthorized routes, which will benefit elk and many other wildlife species. The density of closed system roads and unauthorized routes in the Boulder LAU will be reduced which may benefit connectivity of lynx habitat.

Transportation- Issue 10: **-** *Proposed activities to the road system (i.e. road closures and decommissioning) may reduce the amount of access to the areas identified in the Forest Plan for active management. Road access is needed for economical active management activities, including timber and biomass harvest, thinning, and fuels treatments.*

The Travel Analysis Process (TAP) completed by the New Meadows Ranger District in 2013 (located in the project record), determined the risk and benefit of each road in the project area. The *Selected Alternative* will retain 401 miles of system road on the landscape for potential future use for active management activities. This Minimum Road System (MRS) has been determined to be sufficient for current and future expected access.

Table ROD-8. *Selected Alternative* Minimum Road System.

Subwatershed	Existing Condition			*Selected Alternative*		
	Maintenance Level			Maintenance Level		
	1	2	3/4	1	2	3/4
Boulder Creek	49	23	20	22	20	20
Lost Creek	39	102	43	69	52	43
Upper Weiser River	14	42	17	23	24	17
Upper WFWR	31	70	13	35	57	13
Lower WFWR	0	5	2	0	4	2
Totals	133	242	95	149	157	95
Total System Roads (MRS)	470			401		

Recreation Issues **–**

Issue 11: *Project may change the existing recreational road and trail access in the Lost Creek and Boulder Creek watersheds.*

Issue 12: *Project activities may change the existing recreational dispersed camping opportunities in the Lost Creek and Boulder Creek subwatersheds.*

The *Selected Alternative* will increase overall motorized access for the public by 2 miles with the addition of the new OHV trail. While 10 miles of roads currently open to the public will be closed and/or decommissioned, 15 new miles of OHV trails will be designated. Additionally, seven miles of non-motorized trails in the Lost Creek area will be designated. These new trails will provide Forest users with a more diverse recreation experience in the Lost Creek area.

The *Selected Alternative* would change dispersed camping opportunities by implementing designated dispersed sites around the Lost Valley Reservoir. Camping, using a motorized vehicle, around the reservoir on road 50089 will be allowed only in the designated sites. This is a change from current condition where dispersed camping is allowed within 300 feet along 19 miles of road using a motorized vehicle within the project area. These sites will be available for use free of charge to the public and will not require a reservation. Many of the designated dispersed sites will have additional facilities including new vault toilets, fire rings, and graveled parking pads that are currently not afforded the user. The *Selected Alternative* will be closing and rehabilitating 12 of dispersed campsites that are too close to Lost Valley Reservoir, or are located in areas where resource damage is occurring due to use. My decision will only marginally reduce the number of dispersed campsites available to the public and will still provide an adequate number of sites. The improved recreation sites will provide a better recreation experience while also allowing improved resource conditions in and around the sites.

Economics- Issue 13*: Costs associated with restoration activities under the proposed action are anticipated to exceed potential revenue generated over the life of the project. Although the proposed action would improve ecological health and function within the project area, the project may be perceived as economically inefficient from an accounting standpoint.*

Although contributing to the economic vitality of local communities was identified as one of the project's objectives, forest restoration activities were primarily designed to meet non-commodity objectives. Restoration activities under the *Selected Alternative* are intended to improve the ecological health and function of the project area while supporting economic development in rural communities adjacent to the Payette National Forest. The *Selected Alternative* will provide for restoration activities and commercial utilization of restoration by-products and will have a positive effect on employment and income within the planning area.

Restoration activities under the *Selected Alternative* are anticipated to have a positive effect on the natural and economic environment surrounding the project area. I recognize that such benefits may be perceived as inefficient from an accounting standpoint. Generally efficiency analyses examine total costs over the life of a project alongside total benefits to determine the ratio of benefits to costs. While this type of analysis is relatively straightforward for standard construction and public infrastructure projects, costs and benefits associated with landscape restoration projects do not fit as neatly within the net present value framework of this kind of analysis. When costs associated with implementing and monitoring selected activities to restore the project area landscape are compared to the monetary benefits anticipated from these activities, project costs exceed potential revenue. While benefits of restoration by-products can be assessed based on the market value of timber products, many of the ecological benefits which will be realized from improving the condition and function of soil, water, riparian, and aquatic (SWRA) resources cannot be monetized due to uncertainty and data limitations.

Cumulative Effects

My decision also took into consideration cumulative effects. The Lost Creek-Boulder Creek Project area is used by many recreationists, and contains valuable resources including NIDGS, bull trout, salmon, steelhead, wildlife habitat (i.e., MIS species, elk, northern goshawk, among others detailed in Chapter 3 of the FEIS), soil and watershed resources, and other natural resources. A number of past, present and future projects as described in Appendix 3 and Chapter 3 of the FEIS were considered while developing this project, in the design of mitigation measures, and in making this decision.

HOW THE *SELECTED ALTERNATIVE* RESPONDS TO PUBLIC COMMENTS

Public Involvement

Opportunities for the public to participate in and help shape this project prior to issuing this FEIS and Draft ROD have been considerable.

The Council on Environmental Quality (CEQ) defines scoping as, "…an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action" (40 CFR 1501.7)

Among other things, the scoping process is used to invite public participation, help identify public issues, and obtain public comment during the EIS process. Scoping should begin early and continue until a decision is made. The public was invited to participate in the project in various ways, as described below.

Initial scoping for this project began on February 22, 2013. Letters requesting comments were sent to approximately 312 local, state, and federal agencies, individuals and organizations. The complete mailing list is in the project record. Legal notices were published in *The Idaho Statesman* (the legal newspaper of record) on February 27, 2013, *The Adams County Record* on February 27, 2013, and the McCall *Star-News* on March 7, 2013. A Notice of Intent (NOI) was published in the Federal Register on February 25, 2013. In addition, the New Meadows Ranger District hosted a public meeting to gather input on the project on March 20, 2013. This project was first listed on the Payette National Forest's Schedule of Proposed Actions (SOPA) in July, 2012, and scoping letters, project description and other project information have been continually posted on the Payette National Forest public website at www.fs.fed.us/nepa/fs-usda pop.php/?project=33830 . Twenty-two responses were received during scoping. The comments were reviewed and the Forest Service's responses are summarized project record.

The 45-day comment period on the DEIS took place in November and December of 2013. The Forest received 34 letters from Federal and state agencies, county government, organizations and individuals. The full text of these comments and the Forest's responses to them are located in FEIS Appendix A.

The Forest held a public meeting on November 18, and one on December 5, 2013 to answer questions and provide further information on the project. The Forest also hosted a public field trip on November 4, 2013.

Concerns Raised During the DEIS Public Comment Period

The DEIS was released for public comment on November 4, 2013 with a Notice of Availability in the *Federal Register*. The DEIS was mailed to 312 individuals, agencies, and/or groups prior to the publishing of the Notice of Availability in the appropriate format requested. In addition, the entire DEIS was posted on the Forest's website, with paper and electronic (CD) copies available upon request.

A total of 34 comment letters on the DEIS were received. Appendix A of the FEIS includes the full text of these comment letters and the Forest Service responses to them. I fully considered all public comments received and the Agency responses in my decision-making process.

Tribal Consultation

Tribal governments have a special and unique legal and political relationship with the United States government as reflected in the United States Constitution, treaties, statutes, court decisions, executive orders, and memoranda. This relationship imparts a duty on all federal agencies to consult, coordinate, and communicate with American Indian Tribes on a government-to-government basis. Because Indian Tribes can be affected by the policies and actions of the Forest Service in managing the lands and resources under its jurisdiction, the Forest Service has a duty to consult with them on matters affecting their interests. Because of this government-to-government relationship, efforts were made to involve local tribal governments and to solicit their input regarding the proposed action.

The Forest Service introduced this project to the Shoshone-Paiute leaders during Wings and Roots Program meeting (government to government consultation) on April 12, 2012. Updates were provided to the Shoshone-Paiute leaders during Wings and Roots Program meetings on December 13, 2012, February 14, 2013, April 11,

2013, June 14, 2013, August 14, 2013, November 14, 2013, and December 12, 2013. The Forest received a letter of support for the project from the Shoshone-Paiute Tribe on January 7, 2014.

The Forest Service presented the proposed action to the Nez Perce Staff on March 6, 2013. Updates were provided to the Nez Perce Staff on June 5, 2013, September 4, 2013, and December 4, 2013. Formal Consultation with the Nez Perce Tribal Executive Committee was conducted on March 11, 2014.

The proposed action was also presented to the Shoshone-Bannock Tribe on September 11, 2013.

ALTERNATIVES CONSIDERED BUT NOT SELECTED

The Lost Creek Boulder Creek Landscape Restoration Project FEIS considered seven alternatives. Five alternatives were considered in detail and two were considered and eliminated from detailed study for reasons stated in the FEIS section 2.2.1. A detailed description of the five alternatives analyzed in detail can be found in FEIS Chapter 2, pages 40– 81. A comparison of these alternatives by activity can be found in the FEIS Chapter 2, section 2.12.

The following table is a summary comparison of the alternatives considered in detail for this project (see FEIS Chapter 2 for additional information):

Table ROD-9. Comparison of Alternatives.

Proposed Actions	Unit	Alt A	Alt B	Alt C	Alt D	Alt E
Vegetation, Prescribed Fire and Associated Actions						
Commercial Thin-Free Thin	Acres	0	12,200	8,500	14,500	13,200
Free Thin-Patch Cut	Acres	0	1,800	0	0	0
Commercial Thin-Mature Plantation	Acres	0	8,100	6,000	8,100	5,400
Shelterwood with Reserves	Acres	0	0	0	2,600	1,900
Commercial Treatments in Riparian Conservation Areas[1]	Acres	0	1,800	0	2,000	1,600
Non-commercial thinning	Acres	0	18,000	22,000	18,000	12,000
Planned temporary road (Total)	Miles	0	25	11	31	15
New temporary road construction	Miles	0	10	5	13	7
Reconstruction of existing unauthorized route road prism used as temporary road	Miles	0	15	6	18	8
Prescribed burning	Acres	0	45,000	45,000	45,000	31,500
Watershed and Fisheries Improvements						
Total fish passage barrier improvements	Number	0	40	40	40	16

[1] Riparian Conservation Area treatment acres are not additional acres. These acres are included in commercial thin/non-commercial thin acres.

Proposed Actions	Unit	Alt A	Alt B	Alt C	Alt D	Alt E
System road decommissioning	Miles	0	68	132	68	51
Unauthorized route treatments	Miles	0	90	117	90	90
New long-term closures	Miles	0	61	1	12	12
Road reroutes (to existing roadbed)	Miles	0	.6	4.6	.6	.6
Road relocations (new construction)	Miles	0	1.5	0	1.5	0
Recreation Improvements						
Roads open to the public in project area	Miles	265	255	224	255	255
Non-motorized trail	Miles	18	17	37	17	17
2-wheel motorized (single-track)	Miles	18	18	18	18	18
OHV trail (ATV and/or UTV)	Miles	0	15[2]	11	15	15
Conversion of seasonally open road to seasonal OHV trail	Miles	0	12	12	12	12
Designate and/or improved dispersed campsites	Number	0	68	200	68	68
Decommission outhouses	Number	0	6	6	6	6
Install new vault toilets	Number	0	7	7	7	7

Listed below are the four alternatives I did not select and my rationale for not selecting them:

Reasons for Not Selecting Alternative A

Alternative A does not move the environmental conditions towards Forest Plan Desired Conditions as they relate to the project's Purpose and Need. Since no new forest vegetation activities would occur under this alternative, it would not provide an opportunity to address tree size class distributions, canopy cover class, tree species composition, and spatial patterns that are either over-represented or under-represented (FEIS, Chapter 3). There would be no area treated to reduce potential fire behavior thus increasing the risk to the public, private property, and values within and adjacent to the project area. There would be no acres of white-headed woodpecker habitat restored to conditions within the HRV and the quality of white-headed woodpecker habitat restored to HRV as represented by old forest conditions would decrease over time and as represented by snag conditions would be maintained. The condition class for Boulder Creek would remain at *Functioning at Unacceptable Risk* and no restoration action in the ACS priority watershed would be realized. There would be no employment or income contribution to local economies, and there would be no biomass removed. I find that the no action alternative falls

[2] The DEIS identified 13 miles of proposed OHV trail and stated that an additional 7 miles would be identified over the remainder of the analysis process for a total of 20 miles. Only an additional 2 miles were identified, therefore Alternatives B, D and E now propose 15 miles of OHV trail.

far short of addressing the purpose and need for this project, specifically in providing more resilient stands, promoting forest health, restoring watershed health, and contributing to the economic vitality of local communities.

Reasons for Not Selecting Alternative C

The *Selected Alternative* includes the proposed unauthorized route treatments from Alternative C.

The combination of less intensive vegetative treatments with fewer acres proposed for treatment makes Alternative C the least beneficial action alternative for tree size class in the mid to long term when compared to other action alternatives. This alternative would also leave portions of the project area more susceptible, and less resilient to insects, and less resilient to wildfire. Fewer acres would be restored for NIDGS and Family 1 wildlife species, as represented by the white-headed woodpecker, but more acres would remain for Family 2 wildlife species.

Alternative C included a proposal to re-locate two segments of FS 50127 along the West Fork of the Weiser River from near the Forest boundary, upstream to approximately the confluence with 4th of July Creek. The proposal would have relocated FS 50127 upslope to the existing (closed) FS 50580 and the existing (seasonal) FS 51422. Reconstruction of these roads would have occurred to bring them up to Maintenance Level 3. This would have removed (fully obliterated) FS 50127 from the RCA along the West Fork of the Weiser River, where the fill slope is eroding into the stream and trees have been removed along the right of way that provide shade to this water body with a downstream TMDL for temperature. The DEIS stated that implementing this road re-location would bring the Lower West Fork Weiser River to the *Functioning Appropriately (FA)* category under the Watershed Condition Framework.

Further analysis completed in the FEIS revealed that this road re-location alone was not enough to bring this subwatershed to the FA category. This is mainly due to the presence of a county road in the RCA outside of the Forest boundary (see FEIS, page 195). In making my decision, I considered that this extensive road work proposed under Alternative C would not achieve a change in the functional class of the Lower West Fork Weiser River, therefore I chose not to include it in the *Selected Alternative.*

Reasons for Not Selecting Alternative D

Alternative D increased the intensity and amount of vegetation treatments when compared to the proposed action. I retained the intensity of treatment found in this alternative in the *Selected Alternative* for the Commercial Thin-Free Thin treatments, but kept vegetative treatment acre amounts as found in Alternative B. Although implementation of all acres of vegetation treatments proposed in Alternative D would have moved furthest toward the desired vegetative conditions in the project area, my decision not to implement the additional acres proposed in Alternative D was based on the effects these additional acres would have had on other resources, including the effects on wildlife habitat and species which are dependent on denser mixed-conifer forests with multi-layer structural characteristics where the ecological uncertainty is highest.

Reasons for Not Selecting Alternative E

Alternative E did not best respond to the purpose and need of the project. Excluding non-commercial thinning, Commercial Thin-Mature Plantation (CT-MP), and prescribed fire treatment areas would have resulted in less resilient conditions that do not move as far toward the desired vegetative conditions. I recognize that some interested parties are concerned regarding the costs of implementing these vegetative treatments and would like to

emphasize commercial treatment over non-revenue generating treatments. Consideration of implementation costs are designed into vegetation treatments in the *Selected Alternative.* Although flexibility has been incorporated into the methods of non-revenue generating vegetation treatments, the most expensive method would not always be utilized. Uncertainties in markets and costs for implementation make determining the most efficient method difficult to identify until bids are received on contracts.

Alternative E would have treated many less acres of small and medium tree stands. To meet the purpose and need of the project, non-revenue generating treatments (e.g., non-commercial treatments, CT-MP, and prescribed burning are necessary and, at times, the most efficient method. The lack of these non-revenue generating treatments in Alternative E would preclude movement toward resilient large tree size class stands with the desired species compositions and spatial patterns, and therefore were not incorporated in the *Selected Alternative*.

ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

Section 2.2.1 in the FEIS discusses two other alternatives to the Proposed Action we considered but eliminated from detailed analysis and the reasons for not considering them further. These alternatives were suggested in internal and external scoping. Briefly, these alternatives considered but eliminated from detailed study were:

1) An alternative that would combine more extensive watershed restoration actions with more intensive vegetation treatments;
2) An alternative that would maximize commodity production.

CONSISTENCY WITH THE FOREST PLAN

My decision to implement the *Selected Alternative* is consistent with Forest Plan goals and objectives, and standards and guidelines as documented in the resource sections in Chapter 3 of the Project FEIS, in the Rationale Section of this ROD, and the Forest Plan Consistency Checklist in the project record. No Forest Plan amendments are needed to implement this project.

CONSISTENCY WITH OTHER LAWS AND REGULATIONS

A partial list of Federal laws and Executive Orders pertaining to project-specific planning and environmental analysis on Federal lands follows. A full description of consistency with other laws and regulations is available in FEIS Appendix G.

Archaeological Resources Protection Act of 1979

The purpose of the Archaeological Resources Protection Act (ARPA) is to protect irreplaceable archaeological resources on federal and tribal lands. Cultural resource surveys have been completed for the Project area. The project is designed to avoid impacts to all cultural resources and requires that newly discovered sites be protected. This management requirement is listed in FEIS, Chapter 2 section 2.9. Additional information can be found under “Other Concerns Evaluated, Cultural Resources,” Chapter 1, section 1.11 in the FEIS.

Clean Air Act, as amended in 1990

The purposes of the Clean Air Act are, "…to protect and enhance the quality of the nation's air resources so as to promote the public health and welfare and the productive capacity of its population; to initiate and accelerate a national research and development program to achieve the prevention and control of air pollution; to provide technical and financial assistance to State and local governments in connection with the development and execution of their air pollution prevention and control programs; and to encourage and assist the development and operation of regional air pollution prevention and control programs. This is addressed in FEIS Chapter 1, section 1.13.4, and Appendix G.

Clean Water Act, as amended in 1977 and 1982

The primary objective of the Clean Water Act (CWA) is to restore and maintain the integrity of the nation's waters. This objective translates into two fundamental national goals: (1) eliminate the discharge of pollutants into the nation's waters and (2) achieve water quality levels that are fishable and swimmable. This Act establishes a non-degradation policy for all proposed federal projects.

The CWA is addressed through Project Design Features and mitigation measures and monitoring (FEIS sections 2.9, 2.10, and 2.11, and Appendix G). For more information, see FEIS Chapter 3, section 3.3, Watershed Resources.

Civil Rights, Consumers, Minorities, and Women

All Forest Service actions have the potential to impact, positively or negatively, the civil rights of individuals or groups, including minorities and women. The need to analyze these potential impacts is required by the Forest Service Manual and Forest Service Handbook (see FEIS, Appendix G). This project would not affect civil rights, consumers, or minorities or women.

Endangered Species Act of 1973, as amended

The purpose of the Endangered Species Act (ESA) is to, "…provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth in subsection (a) of this section." The ESA also states, "It is further declared to be the policy of Congress that all federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act." The ESA is addressed in the FEIS in section 1.13.1, Threatened, Endangered and Sensitive Plants and sections 3.5, Fisheries Resources, and 3.6, Wildlife Resources.

The Forest has submitted an agreed upon Biological Assessment (BA) to the US Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). The BA was prepared for effects to listed fish and wildlife species for the *Selected Alternative*. Table ROD-10 displays the species analyzed and determinations.

Table ROD-10. Species Analyzed in Project Biological Assessment and ESA Determinations.

Species	Scientific Name	Status	Determination[1]
Bull Trout	*Salvelinus confluentus*	Threatened Designated Critical Habitat	Likely to Adversely Affect (Boulder Creek subwatershed only) No Effect (Project area outside Boulder Creek Subwatershed)
Spring/Summer Chinook Salmon	*Oncorhynchus tshawytscha*	Threatened Designated Critical Habitat	Likely to Adversely Affect (Boulder Creek subwatershed only) No Effect (Project Area Outside Boulder Creek subwatershed)
Steelhead	*Oncorhynchus mykiss*	Threatened Designated Critical Habitat	Likely to Adversely Affect (Boulder Creek subwatershed only) No Effect (Project area outside Boulder Creek subwatershed)
Canada Lynx	*Lynx canadensis*	Threatened	May Affect, Not Likely to Adversely Affect
Northern Idaho Ground Squirrel	*Spermophilus brunneus brunneus*	Threatened	Likely to Adversely Affect
Wolverine	*Gulo gulo luscus*	Proposed	May Affect, Not Likely to Jeopardize
Yellow-billed cuckoo	*Coccyzus americanus*	Proposed Little Salmon River and Weiser River	No Effect

Biological Opinions (BOs) from both agencies is anticipated in April, 2014. At this time, the USFWS and NMFS have indicated that they will determine that the action does not jeopardize the continued existence of any listed species nor will it determine that the action will result in destruction or adverse modification of critical habitat. When the final BOs are received, I will compare and update the Record of Decision if necessary.

Executive Order 11990—Protection of Wetlands

Executive Order (EO) 11990 provides direction to federal agencies to protect the nation's wetlands when undertaking all activities. The order is addressed through Project Design Features and in FEIS Appendix G.

Executive Order 11988—Floodplain Management

EO 11988 requires that proposed activities must not increase flood hazards and must preserve the resource benefit of floodplains (the ability to dissipate flood flows and moderate flood peaks). This requirement is addressed through Project Design Features (ROD-Appendix 1) and in FEIS Appendix G.

Executive Order 12875—Enhancing the Intergovernmental Partnership

EO 12875 clarifies government-to-government relations with American Indian governments. In accordance with this order, the Forest Service introduced this project to the Shoshone-Paiute leaders during Wings and Roots Program meeting (government to government consultation) on April 12, 2012. Updates were provided to the Shoshone-Paiute leaders during Wings and Roots Program meetings on December 13, 2012, February 14, 2013,

April 11, 2013, June 14, 2013, August 14, 2013, November 14th, 2013, and December 12, 2013. The Forest received a letter of support for the project from the Shoshone-Paiute Tribe on January 7, 2014.

The Forest Service presented the proposed action to the Nez Perce Staff on March 6, 2013. Updates were provided to the Nez Perce Staff on June 5, 2013, September 4, 2013, and December 4, 2013. Formal Consultation with the Nez Perce Tribal Executive Committee was conducted on March 11, 2014.

The proposed action was presented to the Shoshone-Bannock Tribe on September 11, 2013. The Shoshone-Bannock have not requested formal consultation.

See FEIS Chapter 1, section 1.11 and Appendix G.

Executive Order 12898—Environmental Justice

EO 12898 directs each federal agency to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations. The President also signed a memorandum emphasizing the need to consider these types of effects during NEPA analysis. On March 24, 1995, the Department of Agriculture completed an implementation strategy for EO 12898. Where Forest Service proposals have the potential to adversely affect minority or low-income populations disproportionately, effects must be considered and disclosed (and mitigated to the degree possible) through NEPA analysis and documentation. This issue is addressed in Appendix G of the FEIS.

Executive Order 13007—Indian Sacred Sites

EO 13007 requires that federal agencies accommodate American Indian and Hawaiian access to or ceremonial use of sacred sites. Federal agencies must avoid adversely affecting the physical integrity of these sacred sites.

The Forest Archeologist and the Nez Perce, Shoshone-Paiute, and Shoshone-Bannock Tribes will coordinate to identify any sacred sites that may be within the project area. Any sacred sites identified during project implementation would be protected.

Executive Order 13112—Invasive Species

EO 13112 requires federal agencies, whose actions may affect the status of invasive species, to identify such actions, prevent the introduction of invasive species, detect and respond rapidly to and control populations of such species, provide for restoration of native species and habitat conditions, and promote public education on invasive species. Additionally, federal agencies are directed to not carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species.

Activities proposed under the Project are not anticipated to substantially cause or promote the introduction or spread of invasive species due to implementation of management requirements (FEIS Table 2-5) and Project Design Features (Table 2-6). Information on noxious weeds can be found in the FEIS section 1.10.4, “Other Concerns Evaluated, Noxious Weeds.”

Executive Order 13443, Facilitation of Hunting Heritage and Wildlife Conservation

The project area provides habitat for several game species, including deer (*Odocoileus* spp.), elk (*Cervus canadensis*), black bear (*Ursus americanus*), mountain lion (*Felix concolor*), wolf (*Canis lupus*), and forest

grouse. The effects to elk are presented in FEIS, effects to wolves are disclosed in the Wildlife Specialist Report. The project was designed to benefit elk and minimize impacts so that habitat is provided in support of Idaho Department of Fish and Game's population objectives.

Black bears are habitat generalists. While they prefer mixed deciduous-coniferous forests with thick understories, they will utilize a variety of habitats. Special habitat features include fallen logs and debris and standing hollow trees that provide denning sites for bears. Snag and coarse wood desired conditions apply to all management activity areas and provide for these components on the landscape in amounts, distribution, and sizes that were historically expected to exist within each of the PVGs.

Dusky grouse (*Dendragapus obscurus*) and ruffed grouse (*Bonasa umbellus*) are present in the project area. Both grouse species are associated with forested habitats. Habitat use and needs vary between the species. Dusky grouse are found in open coniferous forests, often with a fir component. Douglas-fir provides day roosts and the buds and needles are an important winter food. Subalpine fir (*Abies lasiocarpa*), with its dense foliage, is often selected as a night roost. Ruffed grouse utilize dense forests with some deciduous trees or shrubs. Aspen is an important component of habitat. Young forests provide optimum habitat for the species. My decision will reduce tree densities and canopy cover within dense stands, thus, improving conditions for the dusky grouse. There will likely be no change to ruffed grouse habitat from this project. See also FEIS Appendix G.

Federal Noxious Weed Act of 1974

The Federal Noxious Weed Act provides for the control and management of non-indigenous weeds that injure or have the potential to injure the interests of agriculture and commerce, wildlife resources, or the public health. Noxious weed treatment would be conducted according to Federal and State law if implemented in conjunction with this project. See also FEIS Appendix G.

Idaho Forest Practices Act

The purpose of the Idaho Forest Practices Act (IFPA) is to ensure the continuous growth and harvest of forest trees and to maintain forest soil, air, water, vegetation, wildlife, and aquatic habitat. The IFPA requires consistency with forest practice rules for federal, State, and private lands in order to protect, maintain, and enhance the state's natural resources. Best Management Practices and contract provisions would be used to meet specific IFPA regulations. Site-specific Project Design Features and mitigation measures are listed in the FEIS Table 2-6. See also FEIS Appendix G.

Migratory Bird Treaty Act and Executive Order 13186—Responsibilities of Federal Agencies to Protect Migratory Birds

The Migratory Bird Treaty Act (MBTA) protects all migratory birds and their parts (including eggs, nests, and feathers) from "take". Take is defined in the MBTA to include by any means or in any manner, any attempt at hunting, pursuing, wounding, killing, possessing, or transporting any migratory bird, nest, egg, or part thereof. A migratory bird is any species or family of birds that live, reproduce, or migrate within or across international borders at some point during their annual life cycle. Under the MBTA, taking, killing, or possessing migratory birds is unlawful. The original intent was to put an end to the commercial trade in birds and their feathers that had wreaked havoc on the populations of many native bird species. On January 10, 2001, President William Clinton signed Executive Order (EO) 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, directing executive departments and agencies to take certain actions to further implement the MBTA. The Bald and Golden

Eagle Protection Act affords additional protection to all bald (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos canadensis*)

The Forest Service and USFWS have entered into a memorandum of understanding (MOU) to promote the conservation of migratory birds as a direct response to EO 13186 (USDA Forest Service and USFWS 2008). One of the steps outlined for the Forest Service is applicable to this analysis, "Within the NEPA process, evaluate the effects of agency actions on migratory birds, focusing first on species of management concern along with their priority habitats and key risk factors." The Forest Service additionally agreed, to the extent practicable, to evaluate and balance benefits against adverse effects, pursue opportunities to restore or enhance migratory bird habitat, and consider approaches for minimizing take that is incidental to otherwise lawful activities. The analysis of effects to migratory birds is included in the Wildlife Specialist Report.

Implementation of my decision will comply with the MBTA but may result in an "unintentional take" of individuals during proposed activities. However the project complies with the USFWS Director's Order No. 131 related to the applicability of the MBTA to Federal agencies and requirements for permits for "take". In addition, this project complies with EO 13186 because the analysis meets agency obligations as defined under the 2008, MOU between the Forest Service and USFWS designed to complement EO 13186. EO 13186 requires federal agencies to evaluate the effects of federal actions and agency plans on migratory birds with an emphasis on species of concern. No interagency determinations are to be made for migratory birds as with federally listed species. This information is reviewed with the USFWS; no mechanism is in place for the USFWS to consult on project effects. If new requirements or direction result from subsequent interagency MOUs pursuant to EO 13186, this project will be reevaluated to ensure that it is consistent (refer to the Wildlife Specialist Report in the Project Record). See also FEIS Appendix G.

National Environmental Policy Act of 1969, as Amended

The purposes of the National Environmental Policy Act (NEPA) are, "To declare a national policy which will encourage productive and enjoyable harmony between man and his environment, to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality" (42 U.S.C. Sec. 4321). The law further states "...it is the continuing policy of the federal government, in cooperation with State and local governments, and other concerned public and private organizations, to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans" (42 U.S.C. Sec. 4331(a)). NEPA establishes the format and content requirements of environmental analysis and documentation. See FEIS Appendix G.

National Forest Management Act of 1976

The NFMA guides development and revision of National Forest Land Management Plans and has several sections ranging from required reporting the Agriculture Secretary must submit annually to Congress to preparation requirements for timber sale contracts. There are several important sections within the NFMA, including Section 1 (purpose and principles), Section 19 (fish and wildlife resource), Section 23 (water and soil resource), and Section 27 (management requirements). See FEIS Chapter 3 and Appendix G.

National Historic Preservation Act of 1966, as Amended

The National Historic Preservation Act requires federal agencies to consult with the SHPO and American Indian tribes when nonrenewable cultural resources, such as archaeological sites and historic structures, may be affected by a federal undertaking. Section 106 of this act requires federal agencies to review the effects proposed projects may have on cultural resources in the Project area.

The Idaho SHPO and interested Tribes have been consulted concerning proposed activities in the project area. The FEIS, section 1.11, "Tribal Rights and Interests" describes tribal consultation and consultation with Idaho SHPO.

The Forest has negotiated a Memorandum of Agreement with Idaho SHPO in December 2013 (MOA PY-2912-2605). If stipulations within MOA followed the project will have "No Adverse Effect" to Historic Properties.

Implementation of the Project will occur over several years. As project implementation planning occurs, consultation will continue with the SHPO and appropriate THPO in compliance with the National Historic Preservation Act. All consultation will be completed prior to on-the-ground implementation.

All cultural resources would be avoided during Project implementation. This management requirement is listed in FEIS section 2.10, "Project Design Features/Mitigation Measures". Additional information can be found under FEIS section 1.11 Tribal Rights and Interests.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The environmentally preferable alternative "…is the alternative that will best promote the national environmental policy as expressed in NEPA's section 101 (42 USC 4321). Ordinarily, the environmentally preferable alternative is that which causes the least harm to the biological and physical environment; it also is the alternative which best protects and preserves historic, cultural, and natural resources. In some situations, there may be more than one environmentally preferable alternative (36 CFR 220.3)" (FSH 1909.15). Social and economic factors are not considered when identifying the environmentally preferable alternative. Identification of the environmentally preferable alternative is required by 40 CFR 1505.2(b) in a record of decision.

Alternative C is the environmentally preferable alternative. This alternative moves the vegetation conditions toward Historical Range of Variability as defined in the Forest Plan, Appendix A, with 34,500 acres of commercial and non-commercial vegetation treatments, and 45,000 acres of prescribed burning proposed. This alternative has the greatest improvement to SWRA resources and greatest benefit to endangered species critical habitat where identified, and addresses resource concerns in the Boulder Creek high priority Aquatic Conservation Strategy watershed, as defined in the Forest Plan, Appendix B. Based on the description of the alternatives considered in detail in the FEIS and this ROD, Alternative C best meets the goals of Section 101 of the National Environmental Policy Act and is therefore the environmentally preferable alternative for this proposed federal action.

IMPLEMENTATION

Implementation is tentatively scheduled to begin immediately following the conclusion of the objection resolution period and signing of this Record of Decision pursuant 36 CFR 218.12.

CONTACT PERSON

Keith Lannom, Forest Supervisor for the Payette National Forest is the decision maker for this project. Detailed records of the environmental analysis are available for public review at the New Meadows Ranger District, New Meadows, Idaho. For further information on this decision contact:

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Or

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LITERATURE CITED

See FEIS Appendix I for all references cited in the ROD.

ATTACHMENT 1- PROJECT DESIGN FEATURES

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
FORESTED VEGETATION				
1	In each treatment unit, coarse woody debris (tons per acre) will be evaluated to ensure desired ranges based on PVG. If necessary, material will be left behind of the appropriate size classes to meet standards. When coarse woody debris in the larger size classes is not available for retention in an activity area, smaller size classes may be utilized to meet desired conditions described in Forest Plan Appendix A. These smaller size classes should only be utilized when the resulting fire hazard risk will remain within defined fuels management objectives. Fire hazard risk as it relates to both the activity unit and adjacent areas should be considered.	Forest Plan consistency	Moderate to High: Experience	Silviculturist Contract Administrator Fire Management Specialist Silvicultural Prescription Contract Burn Plan
2	Management activities shall emphasize: Leave all dead standing trees (snags), unless falling is necessary for safety. Retention of snags away from roads to reduce the potential for removal.	Maintain snags for long-term site productivity and wildlife species	High: Experience	Silviculturist Contract Administrator Fire Management Specialist Silvicultural Prescription Contract Burn Plan
3	Sufficient live trees of appropriate size should be retained for future CWD and snag recruitment where CWD or snag levels are below desired ranges (to meet Appendix A, Forest Plan).	Move toward desired CWD and snag levels	Moderate to High: Experience	Silviculturist Fire Management Specialist Silvicultural Prescription Burn Plan
4	Retain forest stands that meet the definition of large tree size class. Management actions are permitted in such stands as long as they will continue to meet the definition of a large tree size class stand.	Ensure movement toward desired tree size objectives defined in the Forest Plan.	High: Experience	Silviculturist Contract Administrator Fire Management Specialist Silvicultural Prescription Contract Burn Plan
5	Prior to decommissioning routes or completing long-term closure activities, approval by the District TMA or silviculturist shall be obtained to ensure that utilization of these routes for access, haul and/or skid trail is not necessary to complete any planned or proposed vegetation treatments.	Utilize existing routes to complete vegetation treatments.	Moderate to High: Experience	Hydrologist / Soil Scientist/ District Timber Management Assistant
6	All acres treated with mechanical or prescribed fire treatments require a silvicultural prescription. (Forest Service Manual/Handbook Direction)	Ensure movement toward desired	Moderate: Experience	Silviculturist Fire Management Specialist Silvicultural

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
		conditions to meet stand objectives.		Prescription Burn Plan
7	The Lost Valley and Boulder Creek progeny sites will have treatments designed to continue the use of the stands for research and for the Regional Tree Improvement Program.	Protect the integrity of long-term inventory plots, and high-value tree improvement trees.	High: Experience	Silviculturist Silvicultural Prescription
SOIL, WATER, RIPARIAN AND AQUATIC RESOURCES				
SWRA - Vegetation Treatments				
8	The project has selected Option 2 (Appendix B of the Forest Plan) in the step-down process to delineate RCAs associated with a Forested fish-bearing stream. Further field verification of RCAs will be completed utilizing the following RCA criteria. <u>Perennial Streams</u> – flood-prone width or two site-potential tree heights (240 feet), whichever is greatest. <u>Intermittent Streams</u> – flood-prone width or one site-potential tree height (120 feet), whichever is greatest. Flood-prone width or one site-potential tree height (120 feet), whichever is greatest would be applied to intermittent streams (not providing seasonal fish habitat). Buffers (RCAs) would also be applied to any unmapped streams, springs, or wetlands discovered during implementation.	Maintain riparian function (including Bull Trout, Steelhead and Chinook salmon critical habitat where applicable).	High: experience, logic, Belt *et al.* 1992, McDade *et al.* 1990. Gregory *et al.* 1991.	Contract Administrator, Contract, Fisheries Biologist or Hydrologist.
9	No harvest or related equipment operations (unless on a system road prism) would occur within 240 feet of perennial stream channels (and intermittent channels providing seasonal fish habitat) or within 120 feet of intermittent stream channels unless identified as an area for RCA vegetation treatments outside of the Boulder Creek subwatershed. Standard RCA Buffers would also be applied to any unmapped RCAs discovered during implementation. If activities in RCAs are necessary for implementation of vegetation treatments (such as existing unauthorized roads, temporary roads to connect harvest units to existing roads, skyline anchors, new skid trails or landings within RCAs) those actions would be evaluated and approved by a SWRA specialist. If approved the specialist may provide site specific mitigation or design feature(s) to minimize or mitigate effects to riparian resources.	Maintain riparian function (including Bull Trout, Steelhead and Chinook salmon critical habitat where applicable).	High: experience, logic, Belt *et al.* 1992, McDade *et al.* 1990. Gregory *et al.* 1991.	Contract Administrator, Contract, Fisheries Biologist or Hydrologist.
10	The following guidelines and restrictions would generally be used for RCA treatment layout and implementation: 1. Only upland vegetation in the outer portion of the	Maintain riparian processes and function. (	High: experience, logic, Belt *et al.* 1992,	Contract Administrator, Contract, Fisheries Biologist or

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	RCA would be treated with intermediate silvicultural treatments. 2. Along intermittent streams, thinning and limited equipment use could only occur in the outer 60 feet of the RCA. Generally, no cutting of vegetation would occur within 60 feet of the stream. 3. Along perennial streams, thinning and limited equipment use could only occur in the outer 120 feet of the RCA. Generally, no cutting of vegetation would occur within 120 feet of the stream. No ground-based harvest is allowed in RCAs unless otherwise approved by aquatics or soils specialist. Jammer or skyline yarding would be completed from existing roads or from outside the RCA, unless otherwise approved. 4. No harvesting would be allowed in the no-cut zones. Cutting of individual trees within the no-cut zone may potentially be approved on a case-by-case basis but no removal of that material would be permitted. 5. RCA treatments would create a transition zone between harvest units and the "no cut" zone. Transition zones would maintain adequate recruitable LWD and shading to stream channels. 6. RCA treatments would not reduce canopy cover more than 20 percent from existing condition and would maintain adequate recruitable LWD and shading to stream channels. Site specific prescriptions would be developed in consultation with the SWRA specialists to ensure that, adequate LWD is available, adequate ground cover exists or would be improved by treatment, floodplains and riparian dependent vegetation/topographic slope breaks are utilized, LSP areas are not put at added risk for failure, and other riparian functions are maintained. 7. RCAs discovered during layout may be considered for treatment if: 1) they meet the intent of RCA treatments; 2) all Project Design Features and restrictions can be adhered to; and 3) They are outside of the Boulder Creek subwatershed. 8. Based on field data collected for the site, inputs to the Disturbed WEPP model should not result in sediment delivery to the stream channel. Generally following restrictions for slopes and groundcover a) Less than 20% slope; ground cover should be 30% or greater; b) More than 20% slope; ground cover should be 70% or greater.		McDade *et al.* 1990. Gregory *et al.* 1991.	Hydrologist.

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
11	No prescribed fire treatments (direct ignition or ladder fuel treatments) would occur within RCAs in the Boulder Creek subwatershed. In the remaining portions of the project area, ignition operations within RCAs shall be implemented to maintain RCA function and processes by creating a mosaic of burned and unburned areas, minimizing severity and intensity; maintaining stream-shading vegetation; retaining adequate ground cover and sediment filtering capacity; and maintaining current and recruitable large and coarse woody debris. In RCAs identified for treatment, no ignitions within 120 feet of perennial stream channels or within 60 feet of intermittent stream channels will occur. Ignition operations should generally only occur in the outer portions of RCAs in the drier PVGs where fuels reduction is needed to increase the resiliency of the RCA and reduce the potential for high intensity/severity wildfire. If any areas are not capable of carrying fire or maintaining RCA function and processes (as described above) at the time of fire application, fire will not be applied. Ladder fuel treatments conducted as part of prescribed burning activities may be implemented to protect the overstory from effects of prescribed fire and to meet prescribed fire objectives. Ladder fuel treatments- would only occur in RCAs where active ignition is anticipated and would not occur within riparian vegetation, within 60 feet of intermittent channels or within 120 feet of perennial stream channels. All ladder fuel treatments in RCAs will be completed by hand and would not cut trees larger than 8 inches DBH. Slash produced from ladder fuel treatments will be lopped and scattered. Piling of slash will not occur within RCAs. No construction of mechanical (heavy equipment) fireline shall occur in RCAs and handline should be minimized in RCAs through the use of existing roads, natural vegetation features and the use of hose lays where appropriate as an alternative to fireline construction. Promptly (as soon as perimeter control is no longer necessary) reclaim all fireline following all burn activities. Reclamation activities will include, but is not limited to, placing waterbars as necessary, pulling material removed including mineral soil for fireline construction back onto fireline, pulling slash as available onto the surface All burn plans and anticipated ladder fuel treatments will be annually reviewed by District Resource Specialists (fisheries biologist and hydrologist). Additional site-specific concerns regarding	Maintain riparian function (including Bull Trout, Steelhead and Chinook salmon critical habitat where applicable).	High: experience, logic, Belt *et al.* 1992, McDade *et al.* 1990. Gregory *et al.* 1991.	Contract Administrator, Contract, Fisheries Biologist or Hydrologist, Fire Management Specialist, Burn Plan

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	prescribed fire treatments (including RCA treatments) will be addressed at that time.			
12	No refueling or storage of fuel or other toxicants within RCAs unless approved by a fisheries biologist and/or hydrologist. Unattended equipment should not be parked in RCAs unless no other practical options are available. Timber sale contract provisions (as well as other service contracts) require a spill response plan be included in the contract to meet Idaho state BMPs.	Minimize potential for fuel spill in stream.	High: Logic	Contract Administrator, contract provision, Fisheries Biologist, Hydrologist.
13	Additional mitigation (*e. g*. water bars, slash filter windrows, straw bales) will be applied to temporary road and skid trails left open over the winter to stabilize the soil and minimize erosion during spring runoff.	Minimize sediment delivery to stream channels	High, Logic, Experience	Contract Administrator, Timber Sale Contract.
14	Locate and approve water drafting sites prior to use. The project fisheries biologist or hydrologist must approve the sites. No vehicles would be allowed in stream courses at any time for the purpose of withdrawing water. Drafting hoses would be required to be fitted with screens with a 3/32 inch mesh and the appropriate surface area for the pump to achieve a maximum water velocity of 0.4 ft. /sec at the screen surface, consistent with NOAA guidelines.	Minimize impacts to stream channels and RCAs	High: Experience, Logic	Contract Administrator, Fisheries Biologist, Hydrologist.
15	If snow conditions allow, use snow bridges as an alternative to road construction and culvert placement. Where a culvert is needed on temporary road, it would be removed in the same field season as installed unless approved by the fisheries biologist, hydrologist or qualified designee.	Minimize sediment delivery to channels and rehabilitate riparian areas. Reduce levels of TSRC	High: Experience, Logic, Burroughs And King 1989, Foltz 2007, Local Monitoring.	Contract/Administrator
16	On slopes greater than 45% utilize cable, skyline or helicopter harvest systems and limit heavy equipment operations to roads (temporary or permanent) and landings.	Reduce soil impacts and levels of DD by utilizing lower impact harvest systems.	High: Seyedbagheri 1996, Megahan 1987, Experience	Silviculturist / TMA Contract Administrator Silvicultural prescription Contract
17	On slopes less than 45%, ground based mechanical logging equipment (*e.g.* – feller bunchers, skidders, loaders, processors) must be kept on roads, landings and designated skidtrails at all times unless agreed in writing. Equipment operation off of designated roads, trails and landings will be considered in the following situations: • When soil moisture is below 20 percent. This can be determined when soil is dry to the touch and does not form a ball when pressure is applied by hand. OR When the	Limit detrimental disturbance (*e.g.* soil compaction, displacement and rutting) to soils.	High: Literature, USDA Forest Service 2002, USDA Forest Service 1981, Garland 1983, Froehlich *et. al.* 1981 Froehlich *et.*	Soil Scientist Silviculturist / TMA Contract Administrator Silvicultural prescription Contract

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	ground is snow covered and/or frozen sufficiently so that soils will not be unacceptably rutted, displaced or compacted. • Use of mechanized equipment (*e.g.* – feller-buncher, excavator for machine piling) off of designated skid trails on slopes between 35 and 45% slope should only be considered when existing DD is less than or equal to 10 percent and requires approval of a Forest Service Soil Scientist. The Forest Service will determine when the soils are too wet to operate on designated skidtrails.		*al.* 1983	
18	If surveys indicate that some units have detrimental disturbance (DD) levels at or in excess of, 15 percent, it is required that a net reduction in DD be accomplished with the implementation of the project (Forest Plan Standard SWST02). The units may require an alternative method of site preparation (*i.e.* broadcast burning). Units that may exceed 15 percent after logging or brush disposal will need to be evaluated prior to brush disposal to determine if piling or broadcast burning will be implemented.	Limit detrimental disturbance (*e.g.* soil compaction, displacement and rutting) to soils.	High: Literature, USDA Forest Service 2002, USDA Forest Service 1981, Garland 1983, Froehlich *et. al.* 1981 Froehlich *et. al.* 1983	Soil Scientist Silviculturist / TMA Contract Administrator Silvicultural prescription Contract
19	Maintain spacing of approximately 200 feet or greater for constructed skid trail routes except where converging at landings. Keep excavations of constructed skid trails to a minimum. Maintain spacing of 100 feet for designated lateral trails. Closer spacing due to complex terrain must be approved in advance by the Timber Sale Administrator. Give preference to reutilizing and decommissioning existing skid trails.	Reduce soil impacts by restricting the amount of surface area covered with skid trails.	High: Literature, Froehlich *et al.* 1981, Garland 1983	Silvicultural Prescription, Contract, Silviculturist, Contract Administrator
20	Constructed skid trails will not exceed a 30% road grade except for short pitches, should be kept to a minimum, unless otherwise agreed in writing.	Minimize potential for detrimental disturbance.	High; logic, experience, local monitoring, Froehlich *et al.* 1983; Garland 1983.	Contract Administrator, Timber sale contract
21	Maintain long-term rooting strength on identified landslide prone (LSP) areas. Favor deep rooted species such as ponderosa pine and Douglas Fir. Avoid loss of ground cover and road and skid trail construction on LSP areas and concentrating water onto LSP areas from road drainage.	Reduce potential for landslides by retaining rooting strength.	Moderate: Burroughs and Thomas 1977	Contract Administrator Soil Scientist Hydrologist
22	Reclaim disturbed skyline/cable corridors by pulling soil berms back to original configuration and scattering slash on all areas of soil disturbance to provide for a 50 to 80 percent effective cover.	Reduce potential for erosion/rutting/DD in	High; experience, local monitoring.	Contract Administrator Soil Scientist Hydrologist

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	Ensure runoff is not channelized into skyline corridors from landing areas.	corridors and facilitate revegetation.		
23	Trails for excavator slash piling are limited to one equipment pass and must be spaced at least 100 feet apart. For placement of slash piles, favor previously disturbed areas.	Reduce displacement and compaction damage to soils.	Moderate: Experience	Silvicultural Prescription, Contract, Silviculturist, Contract Administrator
24	Construct slash filter windrows at the toe of fill slopes on newly constructed landings and temporary roads within contributing areas, concurrent with construction. Limit the height of windrows to less than three feet; dispose of excess material as necessary. Provide breaks (every 100-300 feet) and limit length of windrows to allow easy passage of wildlife and recreationists.	Minimize the extent of sediment routing to stream channels.	Moderate: Literature, Burroughs and King 1989, Cook and King 1983, Forest Service Handbook 2509.22, p. 15.02-2.	Silvicultural Prescription Contract, Transportation Plan Silviculturist, Contract Administrator, Engineering Representative
25	Decommission all landings, skid trails, and firelines used in project implementation activities. Rip (loosen) compacted soils to a maximum 16 inches, or depth of compaction with a maximum of three foot spacing between rips. Where physically possible, recontour to the natural slope profile for decommissioning of roads, constructed skid trails and temp roads and waterbar as needed to prevent erosion. Hydromulch or pull slash over the surface to achieve 50 percent ground cover prior to seasonal runoff events. Range and recreational access should be maintained where needed.	Restore and stabilize committed soils back to productive condition.	High: Literature, Johnson 1995, Luce 1997, USDA Forest Service 1981	Silvicultural Prescription, Contract, Silviculturist, Contract Administrator
26	Apply a high level of mitigation to areas where land-disturbing activities may deliver sediment to stream channels or RCAs, or where activities increase detrimental disturbance or total soil resource commitment (TSRC). Mitigation measures can include, but are not limited to, water control devices such as silt fence or straw bales, erosion control matting, seed, hydromulch, fertilizer, placement of woody debris, and breaking up compacted soils. Maintain or modify mitigation structures to keep them in a fully functioning condition. Remove silt fence and stabilize disturbed areas post-implementation.	Minimize sediment delivery.	Low to Moderate: Experience; Literature, Burroughs and King 1989	Contract, Contact Administrator, Engineering Representative
27	Fuel storage greater than 200 gallons will be located within a containment area lined with material sufficiently impervious to contain spilled fuel. Portable pumps and associated fuel tanks will be placed in fuel spill containment berms.	Reduce potential for fuel spills that could affect fish or	Moderate: Experience.	Contract Contract Administrator

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
		fish habitat. 40 CFR 112		
28	Approved oil-absorbing mats would be available and used as necessary to clean up spills that occur during refueling and to catch or clean up fuel/oil drips under stationary equipment.	Minimize contaminatio n of soil and water resources.	High: Experience.	Contract Contract Administrator
29	For drainages identified as high for Channel Condition Risk, where planned vegetation treatments increase the ECA into or within the High category for ECA , limit ECA increase to 1 percent within the drainage during layout and implementation by reducing acres or reducing crown cover removed.	Limit ECA increase	High: Experience.	Contract Contract Administrator
SWRA - Prescribed Fire				
30	Avoid tree mortality and high soil burn severity from prescribed fire operations in identified landslide prone (LSP) areas.	Reduce potential for landslides by retaining rooting strength.	Moderate: Burroughs and Thomas 1977	Burn Boss Soil Scientist, Hydrologist
31	Implement prescribed burning operations when adequate soil moisture exists, and fuel loading and residence time will result in low soil severity.	Reduce the potential for severely burned soil.	Moderate; Experience	Silviculturist, Burn Boss
Culvert Replacement/Removal				
32	Culvert removals and installations (including those implemented to improve fish passage and crossings on closed roads re-constructed for vegetation management) will follow the mitigation measures outlined in the Project BA, located in the Project Record (adapted from Scaife and Hoefer, 2011) which are incorporated into these design features. Culverts or other crossing structures would be installed at low flows. For permanent culverts, incorporate elements of the natural channel, such as substrate size and gradient, when reconstructing channels where fish habitat or potential fish habitat exists. The following permits will be acquired prior to project implementation: variance letter to exceed turbidity levels from Idaho department of Environmental Quality, stream channel alteration permit from Idaho department of Water Resources. In addition, a 404 dredge and fill permit will be obtained from the USACE. All re-constructed crossings in the Boulder Creek subwatershed on fish-bearing streams will be submitted to, and approved by the Level 1 team prior to implementation. For the Boulder Creek Subwatershed pre- and post-project	Minimize sedimentatio n and effects to listed fishes and critical habitat.	High; logic, experience	Contract Administrator, Fisheries biologist (or qualified designee) Hydrologist, Wildlife Biologist Engineer

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	checklists will be submitted to Level 1 for each of the culverts that are removed or replaced.			
33	Culvert installation or removal in live streams would occur after spring peak flows and prior to August 15 (in the Boulder Creek subwatershed) to avoid the bull trout spawning period). Stream channels will be de-watered prior to in-stream work with heavy machinery. Streams would be diverted for a period consistent with the programmatic stream crossing consultation. Streams would likely be diverted using a corrugated plastic pipe or a plastic-lined channel and a temporary cofferdam. If water drafting is necessary, screen opening size would be the standard 3/32 inch or smaller (as required by the Forest Plan). The culvert design team will specify stockpiling and staging areas and access to the site will be on an established roadway. Some trees may have to be felled within the RCA to complete construction, however, the number of trees cut will be minimized to the extent possible.	Minimize sedimentatio n and effects to listed fishes and critical habitat.	High: logic, experience, Scaife and Hoefer 2011.	Contract Administrator, Fisheries Biologist
34	Prior to culvert installation or removal activities, a pre-work survey will be conducted by the District Fisheries biologist and/or qualified designee. Passive movement of fish from the construction area will be achieved by slow dewatering of the site, which will consist of an initial 80% flow reduction to allow volitional movement of fish from the worksite (Culvert Replacement BO, NOAA 2012) If this method is insufficient, then block nets will be installed, and fish observed in the project area will be removed from the area using dipping, seining, and/or electrofishing methods. Fish would be transported to an unaffected portion of the creek above the in-stream work and released. Block nets would be removed after fish removal. A fish biologist will oversee all fish handling operations.	Minimize effects of in-stream construction on Listed Fishes.	High; logic, experience	Contract Administrator, Fisheries Biologist
35	During culvert installation or removal activities, a spill containment kit will be available on-site and able to accommodate potential spills for the equipment used during implementation. No fuels would be stored in RCAs, unless there is no other alternative. Refueling or servicing of vehicle or equipment would not take place in RCAs. All equipment will be in good repair and free of leakage of lubricants, fuels, coolants and hydraulic fluid. In-stream work with heavy machinery would be minimized to the extent possible. Detectable sheens will be reported to the EPA and any spills over 25 gallons will be reported to the IDEQ.	Minimize effects to water quality.	High: logic, experience	Contract Administrator
36	During culvert installation, Sedimat® or similar product would be placed within the channel to collect released fine sediments and minimize effects to	Minimize sedimentatio n and effects	High: Logic, Experience	Contract Administrator, Fisheries Biologist

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	downstream segments. These would be removed from the channel at the conclusion of activities. Sediment control measures may also include silt fences, erosion control matting, mulch, straw wattles, and/or slash. The culvert/bridge installation or removal and associated activities would be conducted in a manner that would minimize the potential for inputting addition fine sediments or affecting riparian habitat. Stream simulation material would be washed, *i.e.* sprayed with water using a pump and hose, to settle fine material into the streambed to minimize loss of downstream surface water and to minimize turbidity. Sedimat® will be placed downstream to capture sediment and will be removed when construction is complete. It is not anticipated that explosives would be used because the culverts/bridges are designed with a relatively shallow foundation system.	to listed fishes and critical habitat.		
37	Culvert replacement/removal site rehabilitation will includes seeding and mulching the disturbed area. Straw wattles may also be used to stabilize the road fill. All project related materials and waste will be removed from the site when construction is complete.	Minimize sedimentatio n and effects to listed fishes and critical habitat.	High: logic, experience	Contract Administrator, Fisheries Biologist
Road Reconstruction				
38	When constructing or re-constructing roads in RCAs or installing culverts, use sediment fences, wood straw, jute matting or other erosion control measures deemed necessary by a fisheries biologist and/or hydrologist (or designee). Gravel road stream crossings and armor ditch lines where necessary to inhibit erosion. Gravel road sections for the full extent of the contributing road surface, or within the RCA, whichever is greater.	Reduce sediment input to stream channels, maintain aquatic organism passage.	High: logic, experience	Contract Administrator, Hydrologist, Fisheries Biologist or qualified designees.
39	All new stream crossings (including temporary stream crossings on closed roads opened for vegetation management) would be required to provide fish passage at all fish-bearing streams. SWST08 states "Fish passage shall be provided at all proposed and reconstructed stream crossings of existing and potential fish-bearing streams unless protection of pure-strain native fish enclaves from competition, genetic contamination, or predation by exotic fishes is determined to be an overriding management concern." Fish bearing streams will be determined by pre-construction fish surveys. Culvert installations will follow the mitigation measures described above and in the Project BA (located in the Project Record).	Reduce sediment input to stream channels, maintain aquatic organism passage.	High: logic, experience	Contract Administrator, Hydrologist, Fisheries Biologist or qualified designees.
40	Any roads not identified as haul routes that will be	Minimize	High: logic,	Contract

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	used as such will need approval by the fish biologist or hydrologist. Adequate reconstruction to mitigate erosion concerns must occur before use.	sediment delivery to stream channels.	experience	Administrator, Hydrologist, Fisheries Biologist or qualified designees.
41	Temporary stream crossings (on closed roads opened for vegetation management that will be closed or decommissioned post-project) would be provided by temporary bridges or partially buried culverts. The use of temporary bridges instead of culvert installations should be considered on streams occupied with Listed fishes and/or CH.	Reduce sediment input to stream channels, maintain aquatic organism passage.	High: logic, experience	Contract Administrator, Hydrologist, Fisheries Biologist or qualified designees.
42	PDFs for culvert replacements would be applied to culvert installations and post-treatment culvert removal on re-constructed closed Maintenance Level 1 roads (described above and in the Project BA, located in the Project Record). Closed Maintenance Level 1 roads temporarily opened for vegetation management that are proposed to return to level 1 closure would have: crossings removed, cut and fill recontoured at stream crossings, drainage features installed and scarifying and reseeding to promote re-vegetation when vegetation management actions are completed. Closed Maintenance Level 1 roads temporarily opened for vegetation management that are proposed for decommissioning would have all crossings removed when decommissioning treatments take place.	Reduce sediment input to stream channels; retain aquatic organism passage and hydrologic function.	High: Logic, experience, Local Monitoring, Folt and Maillard 2003.	Contract Administrator, Fisheries biologist, Hydrologist or qualified designee(s).
43	Closed system roads that are opened for vegetation management activities and scheduled for long-term closure would be prepared for closure by physically closing to prohibit motorized use, scarifying the driving surface, seeding or hydro-mulching the surface, cut slopes and fills slopes where necessary, installing waterbars as needed and pulling culverts where necessary. All culverts installed to facilitate use of the road would be removed, using the PDFs for culvert replacement and removal in the Project BA (located in the Project Record).	Reduce long-term sediment production, retain aquatic organism passage and hydrologic function	High, logic, experience, local monitoring, Folt and Maillard 2003.	Fisheries Biologist, Soil Scientist, Hydrologist.
Road Decommissioning/Obliteration				
44	Permanent and temporary roads identified for obliteration would be decompacted a depth of 16” or the extent possible, recontoured, seeded with native seeds (where need is identified), and provided with a minimum of 50% to maximum of 80% ground cover (vegetation transplants at a rate of 15 per 100 linear feet, natural mulch, CWD, or wood straw, in that order of preference) to an extent deemed necessary by a fisheries biologist, soil scientist and/or	Minimize sediment delivery to stream channels and rehabilitate riparian areas. Reduce levels	High: experience, logic. Burroughs and King 1989, Foltz 2007, local monitoring	contract provisions, Hydrologist, Fisheries Biologist

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	hydrologist. In addition to the above treatment, stream crossings would receive planted vegetation plugs and additional ground cover to an extent deemed necessary by a soil scientist and/or hydrologist, to reduce erosion, facilitate recovery of soil biological function and stabilize streambanks. Temporary roads will be fully obliterated within 3 years of the conclusion of harvest activities, unless otherwise agreed in writing.	of TSRC		
45	Removal of crossings on perennial streams will follow the mitigation measures outlined above and in the Project BA, located in the Project Record.	Minimize sedimentation and effects to listed fishes and critical habitat.	High; Experience, logic	Contract provisions, Contract Administrator, Fisheries biologist
Road Maintenance				
46	All road maintenance activities in the Boulder Creek subwatershed shall be done in a manner that will prevent or minimize resource damage according the road maintenance mitigation measures described in the Project BA, located in the Project Record (adapted from programmatic consultation mitigations). Gravel road stream crossings and armor ditch lines where necessary to inhibit erosion. Gravel road sections for the full extent of the contributing road surface, or within the RCA, whichever is greater. Roads that will be used as haul routes then decommissioned or placed into long-term closure should have BMPs applied where identified as delivering sediment to stream channels. Mitigation measures may include, but are not limited to, graveling of road prism in RCAs, armoring ditch lines with pit run, and placing obstructions or constructing catch basins below culverts.	Minimize effects to listed fishes and fish habitat	High: Experience, logic	Contract provisions, Contract Administrator, Fisheries biologist, Hydrologist
47	All roads identified as haul routes (including roads that will remain open and those identified to be decommissioned or placed in long-term closure) that cross streams occupied with Listed species or CH (Boulder Creek subwatershed) should have BMPs applied to minimize sediment delivery to occupied and CH. BMPs may include graveling stream crossings and armoring ditch lines up to the entire extent of the RCA if necessary, placing obstructions and/or rolling dips, installing silt fence, applying mulch and/or slash and seed to exposed soil, installation of silt fence and constructing catch basins below culverts. All silt fencing and other non-biodegradable materials should be removed when hauling is complete.	Minimize effects to listed fishes and fish habitat	High: Experience, logic	

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
48	New gravel pits and expansion of existing gravel pits will not occur within RCAs.	Minimize effects to riparian areas and fish habitat	High, Experience, Logic	Contract provisions, Contract Administrator, Fisheries biologist, Hydrologist
49	Utilize all applicable Best Management Practices (BMPs) and Soil Water Conservation Practices (SWCPs) for harvest, road and ground disturbing activities.	Reduce levels of soil disturbance, erosion and potential sedimentatio n, meet requirements of the State of Idaho non-point source pollution Management Plan, Maintain, water quality and associated beneficial uses.	High: FSH 2509.22, Local Monitoring.	Contract provisions, Contract Administrator, Fisheries biologist, Hydrologist
Threatened, Endangered, Proposed and Candidate Species, and Region 4 Sensitive Species				
50	Ground disturbing activities would be stopped in any areas where previously unknown listed or sensitive fish, wildlife, or botanical species are discovered until a Fisheries Biologist, Wildlife Biologist, or Botanist, respectively reviews the affected area and prescribes appropriate mitigation to ensure protection of the species (including any consultation requirements with USFWS and/or NOAA Fisheries).	Provide protection to threatened, endangered and sensitive species.	Moderate: Logic	WIGU07 Fisheries Biologist, Wildlife Biologist, Botanist, Sale Administrator, Burn Plan, Fire Management Officer
WILDLIFE				
51	The following activities are prohibited by logging personnel at all times in occupied NIDGS habitat, unless approved in writing by the wildlife biologist: - camping, - piling of slash (outside of approved landings).	Mitigate potential effects to NIDGS from habitat restoration associated management activities		Contracts, Wildlife Biologist, Contract Administrator, Burn Plan, FMO

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
52	In and within ¼ mile of occupied NIDGS habitat from approximately[3] April 1 to August 31management activities that may cause unacceptable disturbance to active NIDGS are prohibited unless approved by a FS wildlife biologist following appropriate consultation and/or communications with the USFWS. This includes, but is not limited to: off-road parking, thinning, skidding, decking logs, creation of landings and landing piles, loading/unloading equipment off of the road, construction of fireline, trail construction and reconstruction, road maintenance and decommissioning/obliteration activities, prescribed burning and any CXT® type restroom placement. These dates may change depending on the emergence or torpor of NIDGS as determined by the wildlife biologist. Approval to complete these and other activities during this period in occupied habitat require written permission a FS wildlife biologist and may require approval by the USFWS.	Mitigate potential effects to NIDGS from habitat restoration activities	Moderate-High: Research, literature, Forest Plan, agency direction, logic	Contracts, Wildlife Biologist, , Contract Administrator, Burn Plan, FMO
53	In occupied NIDGS habitat: - Construction and obliteration of skid trails and temporary roads must be approved prior to implementation. - Require only outsloping, scarification and spreading organic material when concerns regarding obliteration and burrows conflict.	Mitigate potential effects to NIDGS from skid trails and temp roads	Moderate-High: Research, literature, Forest Plan, agency direction, logic	Contracts, Wildlife Biologist, , Contract Administrator, Burn Plan, FMO
54	In occupied NIDGS habitat, management activities with the potential to affect inactive NIDGS (hibernating in burrows) shall occur between approximately May 1 and August 31, unless otherwise approved by a wildlife biologist. These activities include ground disturbing activities that could potentially affect greater than 6 inches to one foot in depth and include activities such as: decommissioning of roads or trails, skid trail construction / obliteration and mechanical fireline construction. These activities are likely to disturb NIDGS while hibernating in burrows, therefore, operations will not be allowed until pups have emerged from hibernation in spring and must cease prior to NIDGS entering into hibernation in late summer, as determined by the wildlife biologist.	Mitigate potential effects to hibernating (below ground) NIDGS from ground disturbing activities	Moderate-High: Research, literature, Forest Plan, agency direction, logic	Contracts, Wildlife Biologist, , Contract Administrator, Burn Plan, FMO
55	Hauling of logs and other forest products in occupied	Mitigate	Moderate-	Timber Sale

[3] Approximately is used before all dates associated with NIDGS hibernation and active periods, since dates may vary based on location of the NIDGS population.

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	NIDGS habitat will occur: 1) With no restrictions from approximately September 1 through March 30. 2) With written approval of the wildlife biologist between approximately April 1 and August 31 and only after site specific evaluation and mitigation is applied. The following are potential mitigation measures that may be applied to allow haul during this time period: a) Reduced speed limits; and/or b) Limiting the time of day for haul to when squirrels are inactive; and/or c) Other mitigation as recommended by the Forest Service and approved through consultation with the USFWS. Roads associated with the project will be monitored by qualified FS personnel to determine hazards and compliance. If mitigations are determined to be ineffective at protecting squirrel populations, commercial product haul would be limited to the inactive period (approximately September 1 through March 30).	potential effects to NIDGS from commercial product haul	High: Research, literature, Forest Plan, agency direction, logic	Contract, Wildlife Biologist, TMA, Sale Administrator, Burn Plan, FMO
56	In occupied NIDGS habitat when NIDGS are inactive (typically September 1 through March 30), management activities requiring the use of heavy equipment off the road surface (*i.e.* – skidders, dozers, feller-buncher) shall comply with the following requirements, unless otherwise approved by a FS wildlife biologist. This includes, but is not limited to, activities such as: logging, mechanized harvest, parking of heavy equipment, skidding, decking, landing slash piling is allowed between if the following conditions are met: 1) Notification to Forest Service by the contractor is made prior to August 1 that winter logging will occur (skid trail and landing locations must be flagged by the contractor); AND Potential skid trail locations shall be surveyed and approved by the wildlife biologist (or their designee) prior to logging to avoid damage to burrows. OR 2) When squirrels are known to be present but surveys were unable to identify burrows locations, biologist may require frozen/over snow logging, which is defined as: at least 18 inches of snow and/or 4 inches of frozen soil.	Mitigate potential effects to NIDGS habitat restoration activities Compliance with Section 7 consultation	Moderate-High: Research, literature, Forest Plan, agency direction, logic	Timber Sale Contract, Wildlife Biologist, TMA, Sale Administrator, Burn Plan, FMO

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
57	In modeled potential NIDGS habitat, unless modeled potential habitat has been field verified as non-suitable or surveys have been completed and no squirrels documented, mitigations 51-54, from this table shall apply. Seasonally, the wildlife staff will conduct on-site surveys approximately three times within a 7 day period to identify the presence of NIDGS. In potential habitat when the wildlife biologist deems potential habitat unsuitable or surveys are completed and NIDGS are not documented, project restrictions for NIDGS will not apply.	Mitigate potential effects to NIDGS in potential habitat.	Moderate-High: Research, literature, Forest Plan, agency direction, logic	Timber Sale Contract, Wildlife Biologist, TMA, Sale Administrator, Burn Plan, FMO
58	In occupied habitat and potential habitat within ¼ mile of occupied sites, unless otherwise agreed in writing: - No slash piles will be built within ¼ mile of occupied NIDGS habitat unless they are to be chipped and hauled away. - Chipping will take place after NIDGS are inactive when soil moisture is less than 20 percent or frozen. - Care shall be taken not to disturb soil when removing chip material even if it means leaving some material on the landing. - All slash outside of approved piles, within occupied habitat shall be uniformly distributed (lopped and scattered) to a depth of less than two feet to reduce heat transfer to soil.	Mitigate potential effects to NIDGS in from slash treatment		
Northern Goshawk and Great Gray Owl				
59	Known northern goshawk (NOGO) nests will be protected within a 30-acre forested nest stand as determined by the wildlife biologist in coordination with the sale administrator and/or timber staff. During vegetation management operations, if a new NOGO nest is located, onsite activities will cease until a survey can determine if the nest is active. If the nest is active, operations in those 30 acres will be halted until the end of the nesting season (March 1 to Sept. 30). Operations may resume earlier than Sept. 30 if it is determined that the birds are no longer present. As per Forest Plan direction, nest stands will have a Post-Fledging Area (PFA) established. Refer to the Project Record for nest site locations, PFA protocol and associated units.	Compliance with Forest Plan direction	High: Research, literature, Forest Plan, agency direction, logic	Timber Sale Contract, Wildlife Biologist, TMA, Sale Administrator, Burn Plan, Fuels Specialist
60	Great gray owl nesting sites that have not been identified prior to vegetation or Rx fire treatments, may require protected activity centers (PACs) to retain nesting and rearing habitat that is sufficient to rear fledgling great gray owls *e.g.* PVG 6 clumps w/in 300 ft. of meadow habitat specifically near Lost Valley Reservoir, Price Valley and Bear Wallow	Minimize negative effects on wildlife primarily during nesting	Moderate: Research, Literature, Administrative studies, Logic	Timber Sale Contract, Wildlife Biologist, TMA, Sale Administrator, Burn Plan, Fuels Specialist

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	areas.			
General Big Game				
61	In areas closed to public motorized access, motorized access by contractors shall be only for purposes of implementing the contract. Use of restricted roads and unauthorized equipment for activities such as personal use firewood collection and big-game hunting are prohibited. Apply periodic management activity restrictions between May 1 and July 15 in active fawning/calving areas to protect big game during these periods.	Minimize negative effects on wildlife; ensure contractors do not have an unfair advantage during hunting season	High: Research, literature, Forest Plan, agency direction, logic	Timber Sale Contract, Wildlife Biologist, TMA, Sale Administrator, Burn Plan, Fuels Specialist
Elk				
62	As per Forest Plan direction (WIGU08), provide a radius of 2 elk sight distances (total of 400 feet) of vegetation to protect mineral licks and elk wallows. No harvest or prescribed burning will be allowed in these sites, without approval by the wildlife biologist.	Minimize vulnerability to hunting mortality and provide habitat security	High: Research, literature, Forest Plan, agency direction, logic	Timber Sale Contract, Wildlife Biologist, TMA, Contract Administrator, Burn Plan, Fuels Specialist
TEPC/MIS/Migratory Birds and Executive Order 13186				
63	Prior to any forest management activity, including, but not limited to, the construction of log landings, skid trails, road construction or maintenance, and prescribed fire, the wildlife biologist, must conduct onsite surveys to identify TEPC, MIS, nesting migratory birds or Sensitive species presence. Project activities may be altered to protect the wildlife species, as practicable.	Minimize negative effects on wildlife primarily during nesting/den periods. MBTA.	Moderate: Research, Literature, Administrative studies, Logic	Layout, contract, Administrators, Wildlife Biologist, burn plan
64	During all activities, retain existing snags unless deemed a safety hazard. Felled trees, deemed as hazard trees, will be left on site. Where deficient, live trees may be treated to improve snag recruitment.	Ensure adequate habitat for snag dependent species	Moderate: Research, Literature, Administrative studies, Logic	Layout, contract, Administrators, Wildlife Biologist, burn plan
Legacy Tree/Old Forest				
65	Ponderosa Pine, western larch and Douglas-fir that fit the definition of legacy trees should be retained during harvest. See Appendix H of this document for legacy tree guidelines for the Lost Creek-Boulder Creek project.	Retain early seral legacy trees for ecological function, diversity and wildlife habitat.	Unknown	Timber Sale Contract, Wildlife Biologist, TMA, Contract Administrator, Burn Plan, Fuels Specialist
66	Retain forest stands that meet the definition of old forest as defined in the Forest Plan, Appendix A. Management actions are permitted in such stands as long as they will continue to meet the desired	Retain old forest characteristic, such as	Unknown	Silvicultural prescription Silviculturist, Wildlife Biologist

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	conditions	legacy trees, snags, and coarse woody debris, appropriate for the forest type.		
Cultural Resources				
67	Avoid all cultural resource sites during project implementation. All known sites will be monitored and flagged prior to implementation to ensure avoidance. If existing surveys are determined to be inadequate, inventories will be conducted according to the Secretary of the Interiors standards and a secondary consultation with Idaho SHPO and appropriate THPO will be required for: 1) Log and biomass landing construction 2) Proposed Timber Harvest Units 3) Prescribed fire line construction 4) Newly constructed temporary roads 5) Road decommissioning 6) Proposed recreation actions 7) Fish passage barrier improvements and associated road rehabilitation	Prevent damage to cultural resource site.	High; Experience	Timber Sale Contract Burn Plans Forest Archaeologist Burn Boss Contract Administrators
Invasive And Noxious Weeds				
68	Annually assess all known and new invasive weed sites associated with this project for five years. Prioritize the sites where treatment will occur.	Detect new and prevent known manageable noxious weeds sites from spreading	High: Experience	Range Management Specialist
69	Coordinate ground disturbing activities with Payette Noxious Weed Program Manager annually to address invasive plants management. Best management practices from Guide to Noxious Weed Prevention Practices (USDA Forest Service 2001) provides principles and concepts that should be considered for utilization during coordination of project activities	To minimize impacts to native vegetation around known invasive weed sites.	High; Experience	Burn Plan Range Specialist Fuels Specialist
Rare Plants				
70	Any rare plant populations identified in the botanical survey will be protected from soil disturbing mechanical treatment, jackpot/pile burning, and decommissioning activities and weed spraying activities.	To minimize impacts to rare plants.	High; Experience	Burn Plan, Timber Sale Contract, Range Specialist Fuels Specialist
Livestock Management				
71	All burn plans and anticipated ladder fuel treatments	Minimize	High;	Burn plan

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	will be annually reviewed by range program manager. Additional site-specific concerns regarding prescribed fire treatments will be addressed at that time. Ensure that permittees are informed of prescribed burning plans and areas prior to implementation	impacts to permitted livestock activities	experience	Range specialist, fuels specialist
72	Protect range improvements within project area. Replace or reconstruct any damaged range improvements to pre-implementation conditions.	Protect investment	High; experience	Timber sale contract/map Burn plan TSA/COR
73	Ensure a passable route (approximately 24 inches wide) is maintained on decommissioned routes to allow for livestock herding and movement within range allotments.	Minimize impacts to permitted livestock grazing activities.	HIGH past experience / professional judgment	Forest Plan standards and guidelines: Contract specifications Range Management Specialist, Contract Administrator
Recreation/Trails				
74	All burn plans and anticipated ladder fuel treatments will be annually reviewed by recreation specialists. Additional site-specific concerns regarding prescribed fire treatments (including RCA treatments) will be addressed at that time.	Minimize effects to recreation resource and infrastructure .	High: experience, logic	Contract Administrator, Recreation Specialist, Engineering, Hydrologist, Fisheries biologist.
75	Trails damaged by vegetative treatments (thinning and prescribed burning) or other activities during project implementation will be repaired by the party inflicting the damage.			
76	All trail maintenance work done during project implementation will abide by the trails "Trail Management Objective" as outlined in the trails database. Trails will be maintained to their proper trail class and trail design features.			
77	Install adequate drainage structures in new trail construction and ensure sediment transport is minimized where trails are located within RCAs, as per FS Trail Construction Specification.			
78	Where necessary, restrict log hauling during periods of high recreation use, such as the opening day of big game hunting season.			
79	On authorized over-snow groomed routes, the contractor would be required to leave a 6 inch snow floor during snow plowing operations and leave the berms far enough apart for passage with a snow groomer. No hauling on over-snow groomed routes would be allowed on weekends or holidays between December 15 and April 1. In addition, no hauling would be allowed on over-snow groomed routes between Christmas and New Year's Day.			
80	The over-snow groomed routes would be signed with information about the logging operations and the			

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	information would be posted to the Payette National Forest web page.			
81	Trail maintenance in Boulder Creek subwatershed will follow mitigation measures in the Project BA (located in the Project Record).	Minimize erosion and effects to RCAs	High: experience, logic	Recreation Specialist, Fisheries biologist, Hydrologist
82	BMPs (2012 National Core Technical Guide) would be implemented for all ground disturbing activities including installation of vault toilets, hardening dispersed campsites, construction of the trailhead at Ant Basin and installation of kiosks and other recreation related infrastructure.	Reduce/limit levels of soil disturbance, erosion and potential sedimentatio n	High: FSH 2509.22, local monitoring	Contract Administrator, Recreation Specialist, Engineering, Hydrologist, Fisheries biologist.
83	Installation of vault toilets and removal of existing pit toilets should follow consultation guidelines in the Project BA (located in the Project Record) if located in RCAs in the Boulder Creek subwatershed.	Minimize effects to RCAs	High: experience, logic	Contract Administrator, Recreation Specialist, Engineering, Hydrologist, Fisheries biologist.
Scenic/Visuals:				
84	Ridgeline silhouettes in middleground Partial Retention should not have unnatural-appearing breaks along them.	Meet visual quality objectives	Moderate; logic	Contract Administrator, Recreation Specialist,
85	Duration of visual impacts from ground disturbing and vegetation removal activities to allow for herbaceous vegetative recovery of ground cover may extend to three years in foreground Partial Retention and middleground Partial Retention. Consider timely initiation of reseeding in areas where natural recovery is questionable.			
Special Uses				
86	Special uses should be identified on the ground (flagged) and protected during implementation.	Protect Special Uses	Moderate; logic	Contract Administrator

ATTACHMENT 2 – LEGACY TREE GUIDELINES

Lost Creek-Boulder Creek Project - Legacy Tree Guidelines

Ponderosa Pine, Western Larch, and Douglas-fir

February 20, 2014

Perry and Amaranthus (1997) defined forest legacies as "anything handed down from a pre-disturbance ecosystem". In simplest terms, legacy trees are those that survived the previous stand initiating disturbance event in lethal fire regimes, or survived numerous low to moderate intensity disturbance events in the other fire regimes. Legacy trees tend to emerge above younger trees in some homogenous stand conditions but this can be variable depending on the topography and the time that has elapsed since the last disturbance event.

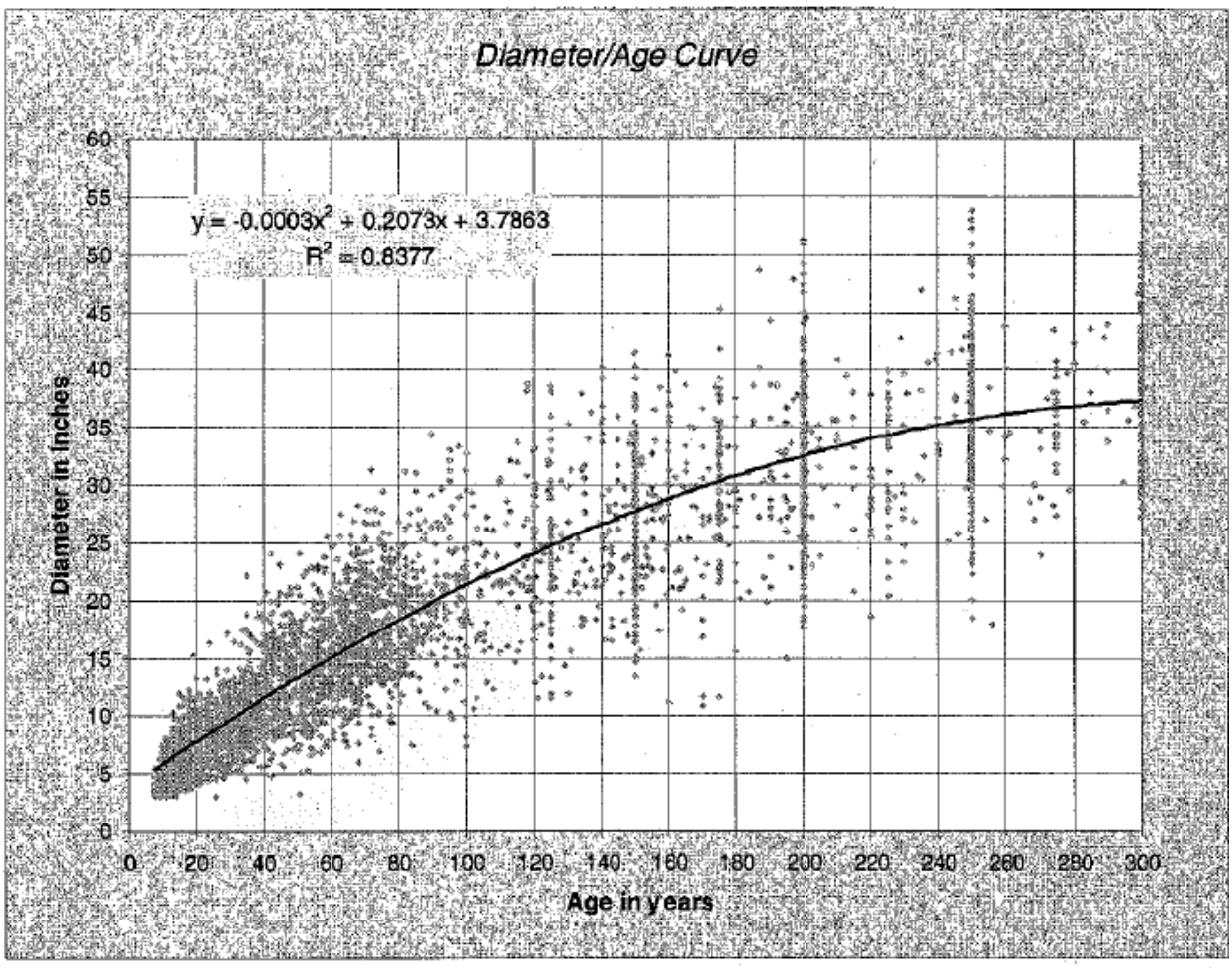
The remainder of this document outlines a process for identifying legacy ponderosa pine, western larch, and Douglas-fir for the Lost Creek-Boulder Creek project on the Payette National Forest. For the purposes of this exercise, it was assumed that all legacy trees should exceed 150 years of age. Based on sampling within the project area, most trees that meet the criteria for legacy trees in this guide are at least 150 years old. This is a good indicator that the guide does identify trees that were resilient enough to survive previous disturbance events.

The basis for this guide is *Identifying Old Trees and Forests in Eastern Washington* (Van Pelt 2008). Modifications have been made, based on professional judgment, inventory data on the Payette National Forest (USDA 2004), and sampling conducted in the Lost Creek-Boulder Creek project area, to provide a simple process to identify legacy trees. As with all field guides, the scoring system provided in this document will not address every situation and application of both professional judgment and common sense will be necessary and is encouraged.

The intent of this guide is to aid in identification of trees that are greater than approximately 150-200 years in age and have survived previous disturbance events.

It is well documented that diameter is a poor indicator of the age of individual trees (VanPelt 2008, Johnston 2014). Payette National Inventory data (USDA Forest Service 2004) also appear to support this conclusion. The chart on the following page (from the Payette National Forest inventory data (USDA 2004)) indicates that the average DBH of a 150 year old tree is approximately 27 inches but could range in DBH from approximately 13 to 42 inches while the average DBH of a 200 year old tree is approximately 33 inches with DBHs ranging from 17 to 52 inches. The table also indicates that it is rare for trees greater than 40 inches DBH to be less than 150 years in age and for trees greater than 50 inches DBH to be less than 200 years in age.

Based on this information the following indicators will be utilized to identify legacy trees in the Lost Creek-Boulder Creek project:



This graph displays the average progression of diameter as trees age. It is not specific to any particular species, as it includes all species from all strata and all working groups.

Data source: individual tree measurements from the 1979, 1991, and 2001 forest inventories. Also included is data from permanent growth plots for young trees. No cull or suppressed trees are included; only trees designated as live, crop, or site trees in the database were used for this graph. Age groupings are apparent around 150, 175, 200, and 250 years because stand exams rarely require exact age measurements beyond a certain age (often around 120-150), and are therefore estimated to the nearest 25 or 50 years.

Ponderosa Pine

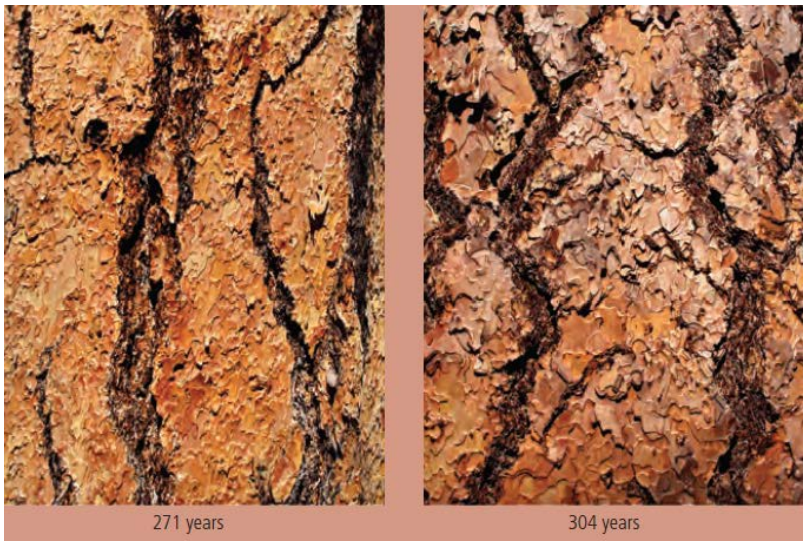
Legacy ponderosa pine tend to have little terminal leader growth, the top of the crown is generally flattened as the lateral branches reach the same height as the terminal, branches throughout the bole become larger in diameter, and lower branches tend to droop. Huckaby et al. (2003) noted that the majority of trees with large fire scarred cat-faces are legacies since most trees established more recently have not been subjected to the same fire regimes as occurred historically.

As with many tree species with wide distributions and ecological amplitudes, age and size of ponderosa pine are not closely correlated (Van Pelt 2008, pg. 75). Because ponderosa pine can grow in vegetation zones ranging from rocky cliffs to riparian zones, the size of the tree reveals little about its age (Van Pelt 2008, pg. 75). However the color and condition of the bark, knot indicators on the main trunk of the tree, and the overall form of the tree's crown do provide an indication of the tree's age.

Unlike trunk diameter, maximum plate width of the bark is well correlated with tree age (Van Pelt 2008, pg. 79). As the tree ages, the outermost bark continues to flake off, causing the colorful plates of outer bark to get wider, while the width of the dark fissures in between those plates remain relatively constant (Figure 1) (Van Pelt 2008, pg. 78). Bark plates substantially wider than the fissures is an indication of old age (Figure 2) (Van Pelt 2008, p. 79).

Figure 1. Bark patterns on mature ponderosa pine. Note residual charcoal in the center photo (Van Pelt 2008, pg. 79).

Figure 2. Bark patterns on old ponderosa pine. The colorful bark plates are generally more than three times wider than the darker fissures that separate them (Van Pelt 2008, pg. 79).



Ponderosa pine growth is whorl-based, like many members of the pine family (Van Pelt 2008, pg. 80). This pattern repeats every year, so that over time the tree will consist of a series of branch whorls, separated by short sections of trunk (Figure 3) (Van Pelt 2008, pg. 80). Over time, branches in the lower crown die due to shading and the lower crown lifts as the tree grows taller (Figure 4) (Van Pelt 2008, pg. 80).

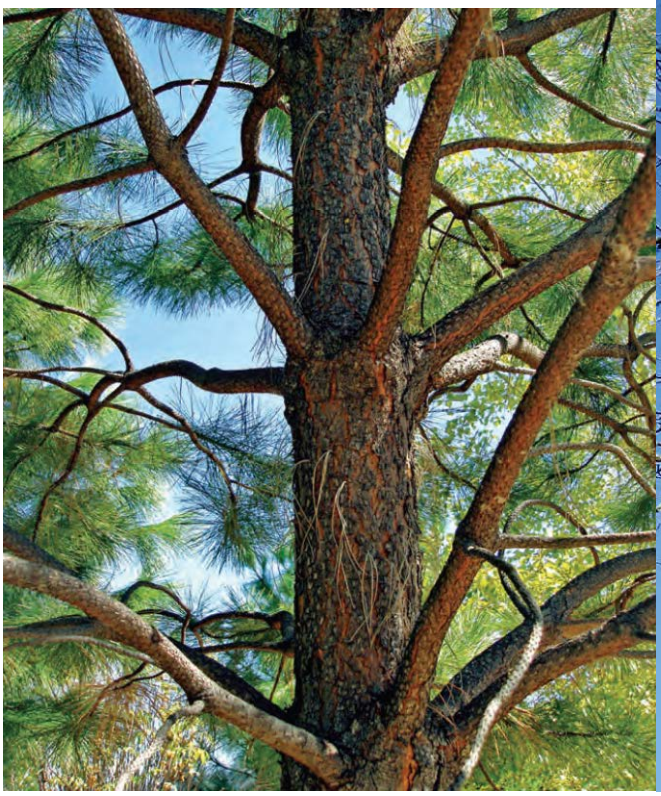


Figure 3. Whorl-based branch growth on a young ponderosa pine (Van Pelt 2008, pg. 81).

Figure 4. The whorl-based branch growth is clearly visible below the receding crown of this ponderosa pine (Van Pelt 2008, pg. 82).

Dead branches are usually present in the lower crowns of 100 year old trees, but eventually fall off, leaving tell-tale signs of where the branches once were (Figure 5) (Van Pelt 2008, pg. 80 and 81). As the tree grows, the bark begins to cover up the locations of these former branches – however, residual evidence may be visible on trees older than 200 years (Figure 6) (Van Pelt 2008, pg. 81). Only in old age are the scars of original branches completely covered (Figure 7) (Van Pelt 2008, pg. 81).

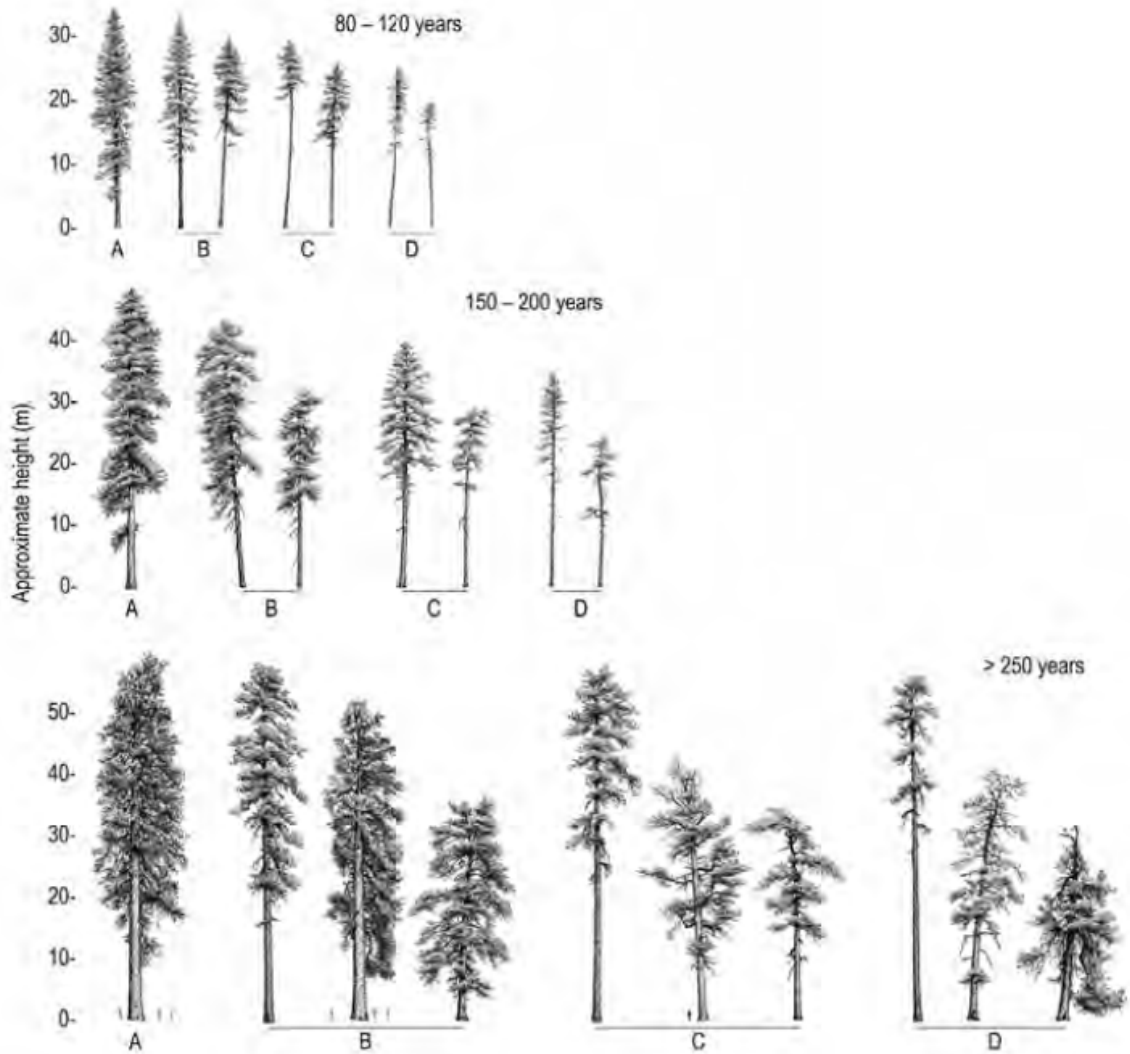
Figure 5. Old branch whorls are still visible decades after the branches have fallen off (Van Pelt 2008, pg. 83).

Figure 6. A century may pass before bark growth completely obscures old branch locations (Van Pelt 2008, pg. 84).

Figure 7. The rough and deeply furrowed bark of old trees shows no indication of where the original branches were located when the tree was younger (Van Pelt 2008, pg. 85).

The appearance of a tree of a given age is affected by a number of factors, including site productivity and overall tree vigor. In general, differences become accentuated with age (Van Pelt 2008, pg. 83). To aid in their identification, a series of crown profiles of trees has been prepared that represent trees of different ages and degrees of vigor (Figure 8) (Van Pelt 2008, pg. 83 and 84).

Figure 8. Ponderosa pine crown form and tree vigor on the Payette National Forest. Idealized forms represent three age and four vigor classes (A-high vigor to D-low vigor). Vigor is a function of site productivity and response to disturbance and environmental stress. More than one individual is shown for vigor classes B through D to illustrate possible variations. Competition-based mortality usually ensures that most trees in vigor classes C and D do not survive to the next age class. The trees depicted are the same scale in the image below.



Rating System for Determining Ponderosa Pine Legacy Trees

Lower Trunk Bark Condition*	**Score**
Dark Bark with Small Fissures	0
Outmost Bark Ridge Flakes Reddish, Fissures Small	1
Colorful Plates, Width About Equal to Fissure Widths	2
Maximum Fissure to Fissure Plate Width ≥6 inches and <10 inches	3
Maximum Fissure to Fissure Plate Width ≥10 inches	5
Knot Indicators on Main Trunk Below Crown	**Score**
Dead Branches Below Main Crown, Whorl Indicators Extending Nearly to Tree Base	0
Old Knot/Whorl Indicators Visible Below Main Crown	1
No Knot/Whorl Indicators Visible	3
Crown Form (Refer to Figure 8)	**Score**
Similar to a Tree in Top Row	0
Similar to a Tree in Middle Row	3
Similar to a Tree in Bottom Row	5
Scoring Key**	
<2	Young Tree
2 - 5	Mature Tree
≥6	Legacy Tree

* Determine bark conditions on the uphill side of tree near dbh.

** Choose one score from each category and sum scores to determine developmental stage.

Western Larch

In some ways, western larch fills the niche occupied by ponderosa pine in environments too cold for the pine to tolerate (Van Pelt 2008, pg. 99). Old, but slender trees can be found rising above canopies of Engelmann spruce and subalpine fir at the upper elevations, elsewhere under more favorable conditions, the larch can dominate forest stands with subordinate mixtures of grand fir, lodgepole pine, and Douglas-fir (Van Pelt 2008, pg. 99 and 101).

Like ponderosa pine, western larch develops very thick bark with age. Mature trees often have the rugged, grayish-brown bark of a Douglas-fir (Figure 9) (Van Pelt 2008, pg. 101). Old trees, greater than 250 years, often develop the richly colored bark of a ponderosa pine (Figure 10) (Van Pelt 2008, pg. 101). However, the bark transformation from young to mature to old is not as consistent, nor as predictable, as that of ponderosa pine (Van Pelt 2008, pg. 101). Ultimately, bark characteristics must be used with other characteristics to determine approximate tree age (Van Pelt 2008, pg. 103)

Figure 9. Mature western larch (left) will often have bark that is difficult to distinguish from Douglas-fir (right) (Van Pelt 2008, pg. 102).

Figure 10. The bark of very old western larches (left) is often a mimic for ponderosa pine bark (right) (Van Pelt 2008, pg. 102).

While larch branches do not grow in a whorl-based manner, young trees still develop tiers of original branches. As the stand develops, lower branches are shed as they become shaded (Van Pelt 2008, pg. 106). Depending on the stand's density, the crown base often will recede at a rate comparable to the height growth of the stand (Van Pelt 2008, pg. 106). Similar to ponderosa pine, as the tree grows, bark begins to cover up the locations of these former branches.

As the maturing stand thins, light is able to penetrate below the living crown (Van Pelt 2008, pg. 106). Larches often respond by producing epicormic branches below the base of the live crown (Van Pelt 2008, pg. 106). Epicormic branches, which start from the cambium and not from terminal buds, often occur at the axils of branches and twigs, the sites of old branch wounds, or other locations where the bark is thin (Figure 11) (Van Pelt 2008, pg. 106). The crowns of mature western larch are often a combination of original and epicormic branches, a pattern that becomes accentuated as trees age (Van Pelt 2008, pg. 106). Because epicormic branches form on the outside of the trunk, they can grow in any direction, even tangential to the trunk. Original branches, in contrast, always form perpendicular (radially oriented) to the trunk. If many epicormic branches start from a common locus, a fan-shaped system of branches will result (Figure 12) (Van Pelt 2008, pg. 108).

Figure 11. Epicormic branches developing below the main crown in a maturing western larch (Van Pelt 2008, pg. 105).

Figure 12. Mature western larch. The graceful crown consists of original branches and an unmistakable radiating fan of epicormic branches adorning the base of the crown (Van Pelt 2008, pg. 106).

Crown complexity, arising from damage due to prolonged mistletoe infections or physical events, can assist in determining tree age (Figure 13) (Van Pelt 2008, pg. 109). In a manner similar to the production of epicormic branches, larches have the ability to produce reiterated trunks following crown damage (Figure 14) (Van Pelt 2008, pg. 109). A series of profiles have been prepared to illustrate the crown structures that can occur in western larch during its lifetime, including the variations imposed by site productivity and elevation (Figure 15).

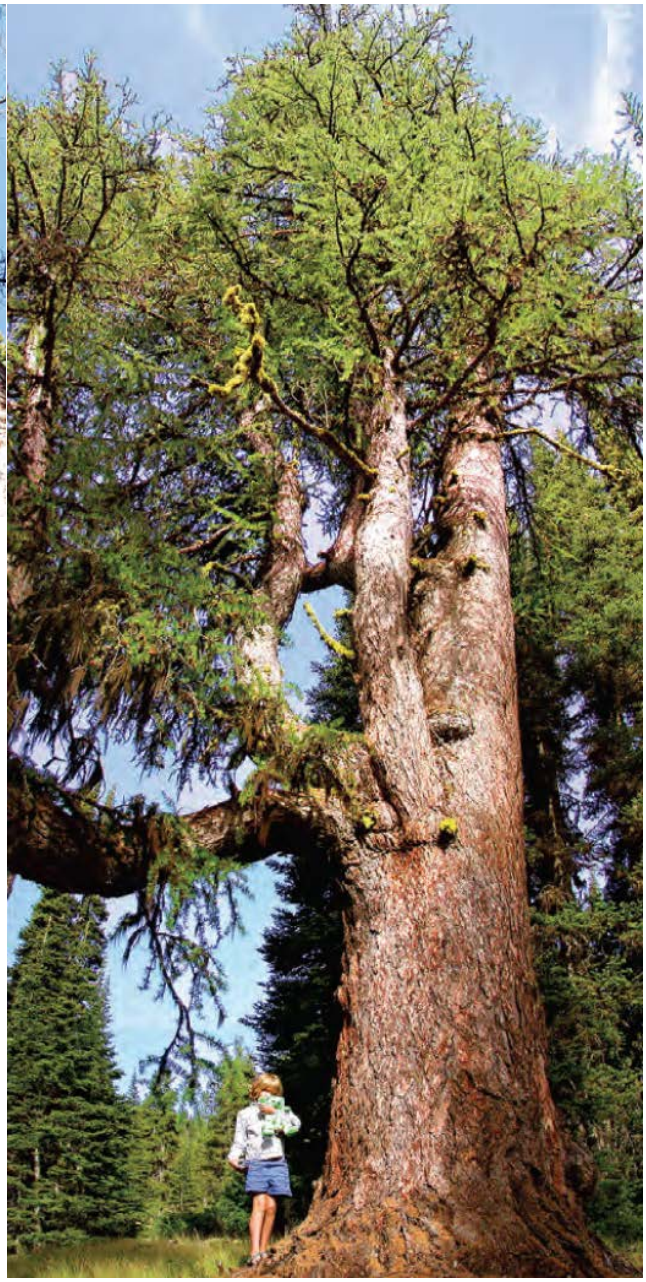
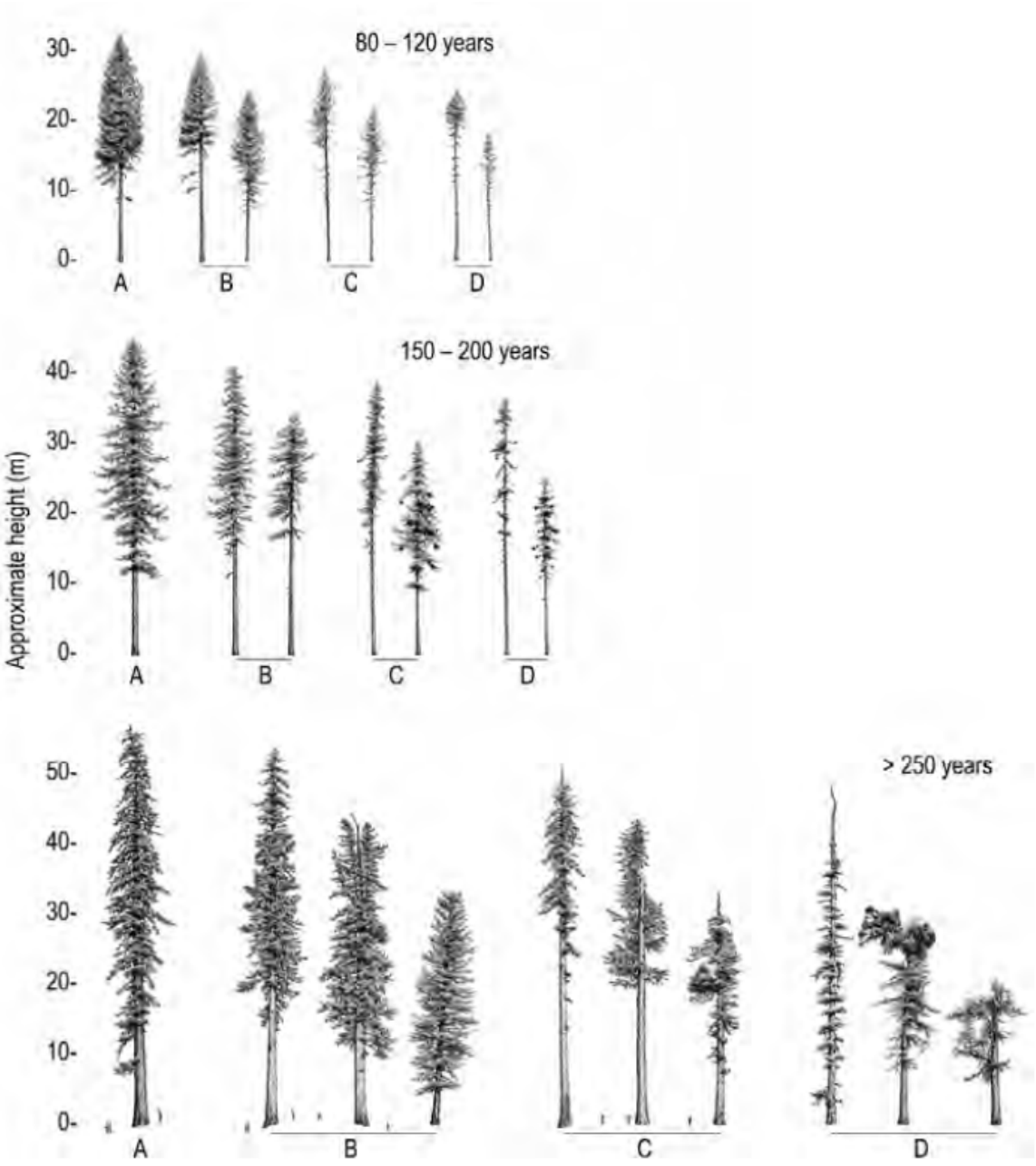


Figure 13. Large limbs with mature bark are a sign of an old tree. In this case, the twisted shape resulted from an old mistletoe infection (Van Pelt 2008, pg. 109).

Figure 14. Reiterated trunk formation in western larches. Old trees can recover from crown damage by producing secondary trunks, as illustrated here (Van Pelt 2008, pg. 110).

Figure 15. Western larch crown form and tree vigor on the Payette National Forest. Idealized forms represent three age and four vigor classes (A-high vigor to D-low vigor). Vigor is a function of site productivity and response to disturbance and environmental stress. More than one individual is shown for vigor classes B through D to illustrate possible variations. Competition-based mortality usually ensures that most trees in vigor classes C and D do not survive to the next age class. The trees depicted are the same scale in the image below.



Rating System for Determining Western Larch Legacy Trees

Lower Trunk Bark Condition*	**Score**
Hard, Bony Bark with Small Fissures	0
Hard Bark with Moderately Deep Fissures (2 to 4 inches)	1
Deep Fissures Present (>4 inches)	3
Maximum Fissure to Fissure Plate Width ≥6 inches	3
Knot Indicators on Lower One-third of Tree	**Score**
Branch Stubs Present	0
Old Knot/Whorl Indicators Visible	1
No Knot/Whorl Indicators Visible	2
Lower Crown Indicators	**Score**
No Epicormic Branches	0
Small Epicormic Branches Present	1
Large and/or Gnarly Epicormic Branches Present	2
Crown Form (Refer to Figure 15)	**Score**
Similar to a Tree in Top Row	0
Similar to a Tree in Middle Row	3
Similar to a Tree in Bottom Row	5
Scoring Key**	
<3	Young Tree
3 - 6	Mature Tree
≥7	Legacy Tree

* Determine bark conditions on the uphill side of tree near dbh.

** Choose one score from each category and sum scores to determine developmental stage.

Douglas-fir

This species shares many features with ponderosa pine and western larch; namely, very thick bark at maturity and the ability to withstand moderate to high-intensity fires (Van Pelt 2008, pg. 121). Old Douglas-firs are very fire-resistant, due largely to the protective bark that develops with age (Van Pelt 2008, pg. 123). In contrast, the thin bark of young trees offers little protection, even with low-intensity fires (Van Pelt 2008, pg. 123). The thin bark begins to thicken and develop vertical fissures as trees mature (Van Pelt 2008, pg. 123). For the first 100 to 200 years, the bark is hard and bony, and usually brown to gray (Figure 16) (Van Pelt 2008, pg. 123).

Figure 16. The hard, bony bark of mature trees. Depending on environmental conditions, Douglas-fir bark is either brown or gray. In this case the gray is caused by lichens (Van Pelt 2008, pg. 123).

Bark development in Douglas-fir reflects the wide range of conditions within which it occurs. In the drier parts of its range, particularly within the grand fir and Douglas-fir vegetation zones, the appearance of old trees can be quite different (Figure 17) from what may be seen in much wetter forests in its range. As a general rule, bark thickness in Douglas-fir is a more consistent feature than either the color of the bark on old trees or the physical characteristics of the outer bark.

Douglas-fir growth is whorl-based, like that of ponderosa pine (Van Pelt 2008, pg. 124). In Douglas-fir, the lower crown begins to recede once a stand has achieved canopy closure (Van Pelt 2008, pg. 124). The lower branches die when they become too heavily shaded. Once dead, they often rot at their base and drop off the tree, leaving just a small scar in the otherwise unblemished bark (Figure 18) (Van Pelt 2008, pg. 124).

Figure 17. Hard, but thick bark is common on old Douglas-fir in the drier parts of its range (Van Pelt 2008, pg. 125).

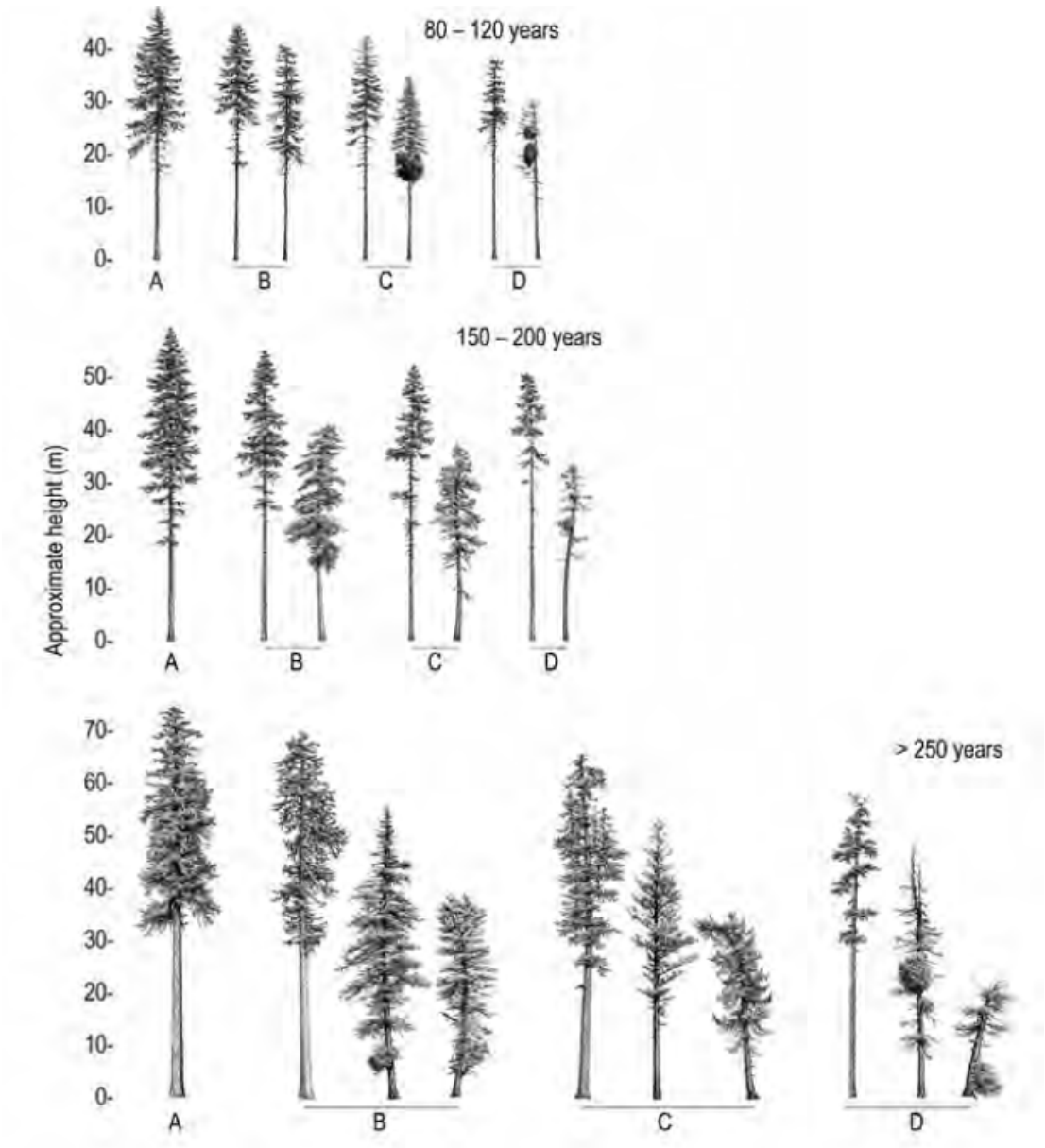
Figure 18. Branch scars on a mature Douglas-fir. The locations of original branches that have since died and fallen off are still evident. One original live branch and some epicormic branches are still visible in this photograph (Van Pelt 2008, pg. 126).

Ultimately, branch scars are hidden by the continually expanding trunk after a period of several decades to more than a century (Van Pelt 2008, pg. 124). During that interval, the bark will be thinner at these spots than in the surrounding areas (Van Pelt 2008, pg. 125). If changes in the surrounding forest occur, such as the opening up of the canopy or the death of a neighboring tree, epicormic branches begin to form at some of these old wounds (Van Pelt 2008, pg. 125). Old Douglas-fir trees often have an upper crown of original branches and a lower crown composed of the dead remnants of original branches surrounded by younger epicormic branches and fan-shaped epicormic systems (Figure 19) (Van Pelt 2008, pg. 125).

Figure 19. Epicormic branches. A fan of epicormic branches (visible at the base of the Douglas-fir crown) often indicates a tree in late maturity (Van Pelt 2008, pg. 126).

Crown profiles of Douglas-fir at three age classes and four vigor classes (A-D) are presented in Figure 20 (Van Pelt 2008, pg. 125). As with ponderosa pine and western larch, variation in crown structure is a function of age, productivity, and crown damage (Van Pelt 2008, pg. 125). Naturally, not all of the trees in one series will advance to the next (Van Pelt 2008, pg. 125). For example, competition-based mortality will ensure that most of the trees in classes 1C and 1D do not make it to the next stage (Van Pelt 2008, pg. 125).

Figure 20. Douglas-fir crown form and tree vigor on the Payette National Forest. Idealized forms represent three age and four vigor classes (A-high vigor to D-low vigor). Vigor is a function of site productivity and response to disturbance and environmental stress. More than one individual is shown for vigor classes B through D to illustrate possible variations. Competition-based mortality usually ensures that most trees in vigor classes C and D do not survive to the next age class. The trees depicted are the same scale in the image below.



Rating System for Determining Douglas-fir Legacy Trees

Bark Condition, Lower One-third of Tree*	**Score**
Hard, Bony Bark with Small Fissures	0
Hard Bark with Moderately Deep Fissures (2 to 4 inches)	1
Deep Fissures Present (>4 inches)	3
Knot Indicators on Lower One-third of Tree	**Score**
Branch Stubs Present	0
Old Knot/Whorl Indicators Visible	1
No Knot/Whorl Indicators Visible	3
Lower Crown Indicators	**Score**
No Epicormic Branches	0
Small Epicormic Branches Present	1
Large and/or Gnarly Epicormic Branches Present	3
Crown Form (Refer to Figure 20)	**Score**
Similar to a Tree in Top Row	0
Similar to a Tree in Middle Row	3
Similar to a Tree in Bottom Row	5
Scoring Key**	
<3	Young Tree
3 - 6	Mature Tree
≥7	Legacy Tree

* Determine bark conditions on the uphill side of tree near dbh.

** Choose one score from each category and sum scores to determine developmental stage.