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Region

November 2019

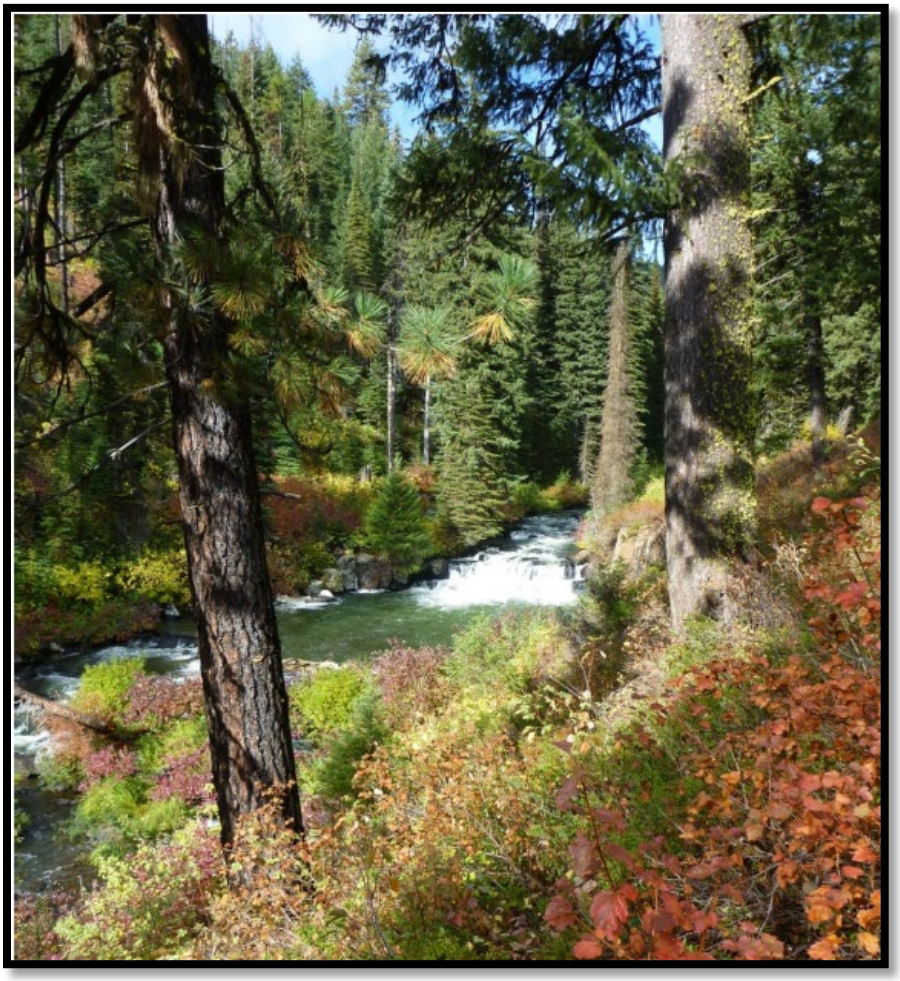
RECORD OF DECISION

LOST CREEK-BOULDER CREEK LANDSCAPE RESTORATION PROJECT

Payette National Forest

New Meadows Ranger District

Adams County, Idaho



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Project Website: https://www.fs.usda.gov/project/?project=33830

Lead Agency:	USDA Forest Service
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INTRODUCTION

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 draft 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).

Initial scoping for this project occurred 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 paper 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 in July, 2012, and scoping letters, project description and other project information were posted on the Payette National Forest public website. Twenty-two responses were received during scoping. The comments were reviewed and the Forest Service's responses are summarized project record.

Five Alternatives were considered in detail in the 2013 Draft Environmental Impact Statement (DEIS) and 2014 FEIS.

- Alternative A is the No Action. Consideration of the no-action alternative is required by the National Environmental Policy Act (NEPA) in any environmental document. This alternative serves as the environmental baseline for analysis of effects. Under Alternative A, current management of the area would continue as directed in the Forest Plan, and activities proposed in this document would not be implemented. No fire and fuels treatment, road or watershed improvements, access closures, fish and wildlife improvements, or vegetation management associated with this project would occur.
- Alternative B is the proposed action. It responds in part to the purpose and need as stated in Chapter 1 of the FEIS, and incorporates the recommendations of the PFC and recreation access concerns expressed in comment letters and public meetings.
- Alternative C addressed comments that requested a more effective watershed restoration effort (especially in Boulder Creek) and is designed move the Boulder Creek sub-watershed toward WCF Condition Class 1 and toward the Forest Plan rating of Functioning Appropriately (FA) for the road density WCI. This alternative emphasizes watershed restoration treatments in all sub-watersheds throughout the project area.
- Alternative D responded to public comments relating to the intensity and benefit of vegetation treatments (species composition, level of vegetation restoration, and spatial arrangement of forested vegetation). The primary differences between Alternative D and the proposed action are additional vegetative treatments have been proposed and the regeneration treatments are more intensive.
- Alternative E responded to comments that question the implementation costs of the project compared to projected economic and restoration benefits. It drops some of the more expensive treatments, while attempting to retain restoration goals of the proposed action. Similar treatments to Alternative D are proposed in Alternative E, although less acres of treatment have been proposed. Approximately 20,500 acres of commercial treatments and approximately 12,000 acres of non-commercial treatments are proposed in Alternative E. Treatments are spatially arranged to create continuous blocks of habitat. In addition, some of the more expensive treatments have been limited in amount to create an alternative that is more cost conscientious than the other alternatives.

A DEIS for the Lost Creek-Boulder Creek Project was released to the public on November 4, 2013 with a Notice of Availability (NOA) in the Federal Register. This NOA began the 45-day public comment period on the DEIS. Two public meetings and one public field trip were hosted by the forest during the comment period. A total of 34 comment letters were received on the DEIS. Appendix A of the FEIS documents those comments and the Forest's response to them.

A FEIS was released to the public on April 4, 2014 with a NOA in the Federal Register. A Notice of Opportunity to Object was filed in the Idaho Statesman, opening a 45 day objection period as provided for in 36 CFR 2018. Five objections were filed and an objection resolution process was led by the Intermountain Regional Office. A

final ROD was signed on September 4, 2014, selecting Alternative B-modified. Documents were made available on the public website.

Following litigation and a decision by Court of Appeals for the Ninth Circuit (see Litigation History below) the Final Environmental Impact Statement (FEIS) for the Lost Creek-Boulder Creek Landscape Restoration Project (Project) with errata was released in June 2019 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). A draft ROD was released in June 2019 for a new objection period. Five objections were filed, and an objection resolution process was lead by the Intermountain Regional Office. None of the objection issues were resolved. A review team was convened by the Regional Office under the direction of Objection Reviewing Officer (ORO) Dave Rosenkrance. The FEIS, errata and draft ROD were reviewed carefully and recommendations were made by the review team to the ORO. The final determination of the ORO was that the Responsible Official's rationale for this project is clear and the reasoning is logical and responsive to direction contained in the Payette National Forest Land and Resource Management Plan (2003). The ORO provided instructions to clarify some issues in the errata or the final ROD. The specific instructions as well as their disposition are detailed in Appendix 3 of this ROD.

Litigation History

In September 2014, the Alliance for the Wild Rockies and Native Ecosystems Council filed a Notice of Intent (NOI) to sue the Payette National Forest under the Endangered Species Act. In June 2015, plaintiffs filed suit challenging the Lost Creek Boulder Creek Record of Decision, alleging violations of the Endangered Species Act (ESA), National Environmental Policy Act (NEPA), National Forest Management Act (NFMA), and Travel Management regulations. The District Court ruled in favor of the Forest Service on all issues. However, on appeal in the Court of Appeals for the Ninth Circuit, the Decision was remanded in October 2018 for violation of NFMA. This updated Record of Decision (ROD) addresses the issues on which the court remanded the 2014 (ROD), including:

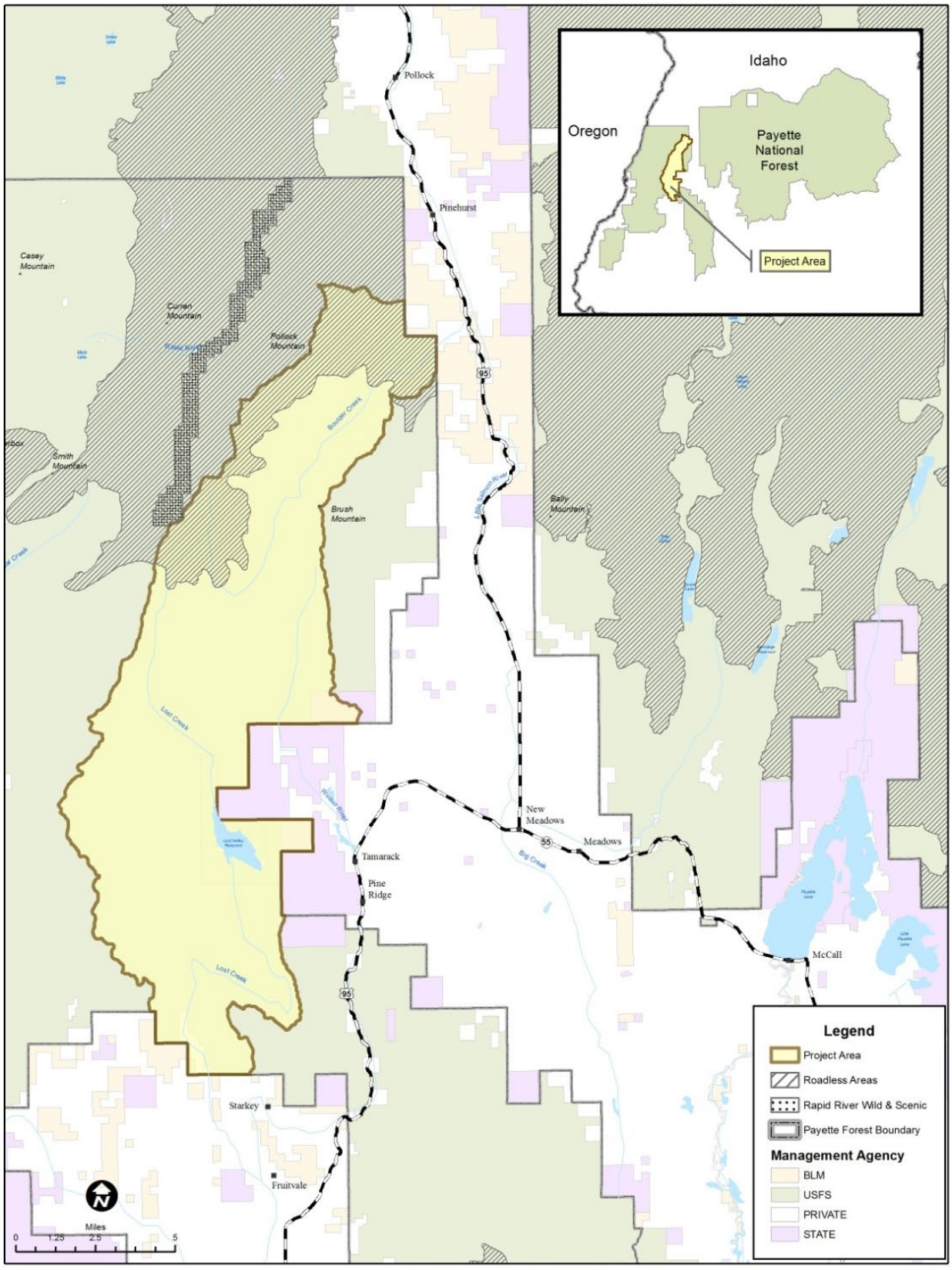
1. Consistency of the Decision with the long term Desired Future Conditions for vegetation in the Forest Plan for Management Prescription Category (MPC) 5.2.
2. Whether the Decision amended the Forest Plan standards and guidelines, in particular Fire Standard 0312, Fire Guideline 0309, Fire Guideline 0313, VEGU01, and WIST01.
3. Whether the use of "old forest", "old forest habitat", and "old growth" in the project analysis was consistent with the Forest Plan.

See section "Consistency with the Forest Plan" below for updates made to the planning record in response to the NFMA issues identified in the court order and mandate.

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 1).

Figure 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 answers 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. I have used the flexibility found in the Forest Plan to incorporate the input from the collaborative work the Forest has done to design a project that enhances forest stand variability to promote wildlife habitat diversity while moving toward the long term desired conditions for vegetation described in the Forest Plan.

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 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 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 miles
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 and discussed our response to them in FEIS Appendix A, Response to Public Comments on the draft Environmental Impact Statement, and the project record. In addition, during the objection period on the Draft Record of Decision, an objector claimed that new published literature on Canada lynx and wolverine since the completion of the 2014 Section 7 consultation for the project indicated a need for re-initiation of consultation. The project's wildlife biologist reviewed the literature and provided the following conclusions (review and conclusions are also located in the project record):

> The Payette National Forest is considered to be in the southern periphery (secondary habitat) of the lynx range and lynx sporadically occur on the PNF when hare densities in southern Canada are at high densities…Because the Lost Creek Boulder Creek project does not propose to modify existing modeled lynx habitat, and any project activities that include thinning/logging, Rx fire, road decommissioning, etc. outside of lynx habitat are designed to enhance habitat for existing Potential Vegetation Groups/habitat types, this newer science only complements and reinforces the existing analysis.
>
> The Payette National Forest recently completed multi-year research on potential effects of winter recreation on wolverine (Heinemeyer, 2014). All captured and monitored wolverines during the study period denned on the east side of the Forest in large boulder, talus slopes, where persistent spring snow exists…Because the Lost Creek Boulder Creek project does not propose to modify existing wolverine denning habitat, and any project activities that include thinning/logging, prescribed fire, road decommissioning, etc. are designed to enhance existing foraging habitat and associated prey base, the existing analysis does not need to be modified or necessitate additional Section 7 Consultation.

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 and the clarifications provided in the Consistency with the Forest Plan section below, 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.

Treatments have been designed utilizing the flexibility found in direction of the 2003 Forest Plan guideline VEGU01 and Appendix A (Forest Plan p.III-31; Forest Plan A-1). VEGU01 states: “During site-project-scale analysis, tradeoffs in the achievement of one or more of the vegetative components described in Appendix A may need to be considered. Current conditions of vegetation may necessitate the need to move one component away from the desired condition in order to move another on toward desired condition. In these situations, decisions should be based not only on which vegetative component is important to emphasize at any point in time to meet resource objectives, but how to effectively move all components toward their desired condition over the long term.”

Appendix A of the 2003 Forest Plan discusses how “achievement of desired conditions, well distributed across the planning unit, is a long-term goal of Forest management.” It goes on to state, “There are many different paths to a common endpoint to meet different management objectives, each with their own set of trade-offs.” It also states, “In some cases there may be exceptions to the vegetative desired conditions. These exceptions may occur as a result of management direction in other resource areas."

In this project, I have determined that it is important to provide for an increase in wildlife habitat for a variety of species. In doing so, I have decided it is appropriate to encourage the growth of more large trees through opening up of the canopy. This does not preclude the achievement of desired conditions in the future.

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 will 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 will 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) shall 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) shall 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 shall 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 will cause mid- to long-term forest health issues,
            - Trees with lower mistletoe ratings will generally be favored over heavily infected trees. When possible, trees with mistletoe ratings of 0-3 will 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).
            - Preference for retention shall 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 will 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 shall 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 will be retained for wildlife and visual objectives. These clumps will consist of 2 to 20 or more trees and shall be designed to enhance spatial variability within each given stand.
    - Skips are defined as portions of units not treated mechanically and shall 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 will 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 will 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 will 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 will be a mosaic of thinned areas, clumps of trees, and small openings. The average canopy cover in these stands after harvest and underburn operations will 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 will be between 20 and 30 percent (10 to 25 foot crown spacing). In PVGs 5 and 6, average post treatment canopy cover will be between 30 and 35 percent (10 to 15 foot crown spacing). Portions of stands with natural openings and heavily thinned areas will have less canopy closure, perhaps as low as 10 percent. These openings will 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 will average approximately 70 to 80 trees per acre (this will 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 will 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 will 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.

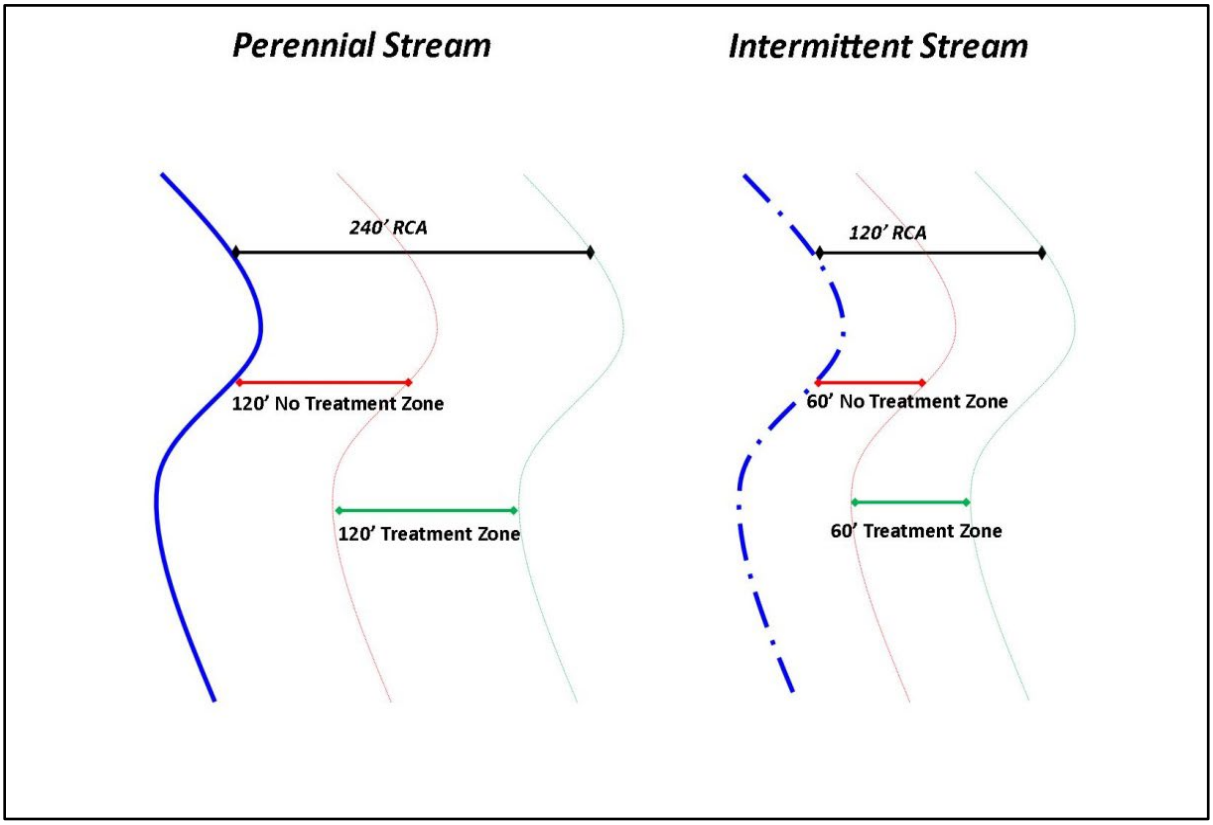
Reserve tree preference includes legacy trees, replacement legacy trees of early seral species, high value wildlife trees (*i.e.* cavities, broken tops with structure for nesting), dominant non-serals and vigorous serals in any crown class. Artificial regeneration (planting trees) will be utilized in areas where the desired species composition will 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 3 below) in these areas to retain adequate stocking to achieve shade and large woody debris recruitment objectives within RCAs (Figure 2, ROD Appendix 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 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 will 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-Appendix 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 will 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 will 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 will 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 will 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-Appendix 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 will 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 will 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.) will be utilized on slopes less than 45 percent slope where road access is available, skyline systems will be used on slopes greater than 45 percent where road access is available, and helicopter systems will be used where ground based or skyline systems are not

feasible or economically viable. Current estimates indicate that helicopter systems will not be economically viable. Actual harvest system in each unit will be determined upon field verification with limitations of the amount of each harvest system that could occur in each subwatershed. Existing skid trails will be reused when practical and new skid trails will be authorized where necessary. All skid trails will be obliterated and recontoured after completion of the treatment unit to mitigate resource concerns.

Brush Disposal- After thinning, slash reduction will 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 will 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 will 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) will 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 4). In stands where commercial activities are proposed the application of fire will generally occur after commercial activities are complete. Re-introducing 500 to 10,000 acres of fire annually for the next 15-20 years will move forested and non-forested vegetation towards conditions that more closely represent historic distribution, structure, and function, and will 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 will 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 will 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) may occur every 5-10 years to maintain suitable NIDGS habitat and areas representative of high frequency fire regimes (see ROD-Appendix 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 will 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 will 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, and 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* will decommission 68 miles of Forest System Road (Figure 7 and Figure 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 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. Under this decision, all roads identified as not open to the public will 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 Figure 7 and Figure 8 and the number of miles by subwatershed are displayed in Table 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 will 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 7). Road construction to connect 51478 to 51482 will re-locate 51479 outside of the RCA. Road construction to connect 51480 to 51483 will relocate 51484 outside of the RCA. One road re-route in the Boulder Creek subwatershed will connect FS 51255 to FS 50079 by reconstructing an existing unauthorized route (512252000). This re-route will 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 will 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

will be completed through culvert replacement (23) or culvert removal (1). PDFs (located in Appendix 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 will 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 will comply with State requirements, approved NOAA screening criteria, and drafting sites will 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-Appendix 1, PDF numbers 46 and 47).

Eleven existing gravel pits (Figure 5 and Figure 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 (Figure 5 and Figure 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-Appendix 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 will be fully obliterated including recontour of the hillslope. Approximately 25 miles of planned temporary roads will be used to access stands for treatment (Table **2**). 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 will be preferentially located on existing roadbeds (unauthorized routes) where possible and receive full obliteration and recontour when logging is completed. Incidental temporary roads will 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 will be utilized and decommissioned after project implementation. Planned temporary roads are defined as routes identified during the planning process and depicted in Figure 5 and Figure 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 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 3. The specifics of these improvements and actions are outlined by subwatershed and displayed in Figure 9 and Figure 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-Appendix 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 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 will 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 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 will be constructed. 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 will 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 will 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 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 resume in late 2019 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 3. Map of *Selected Alternative* vegetation treatments

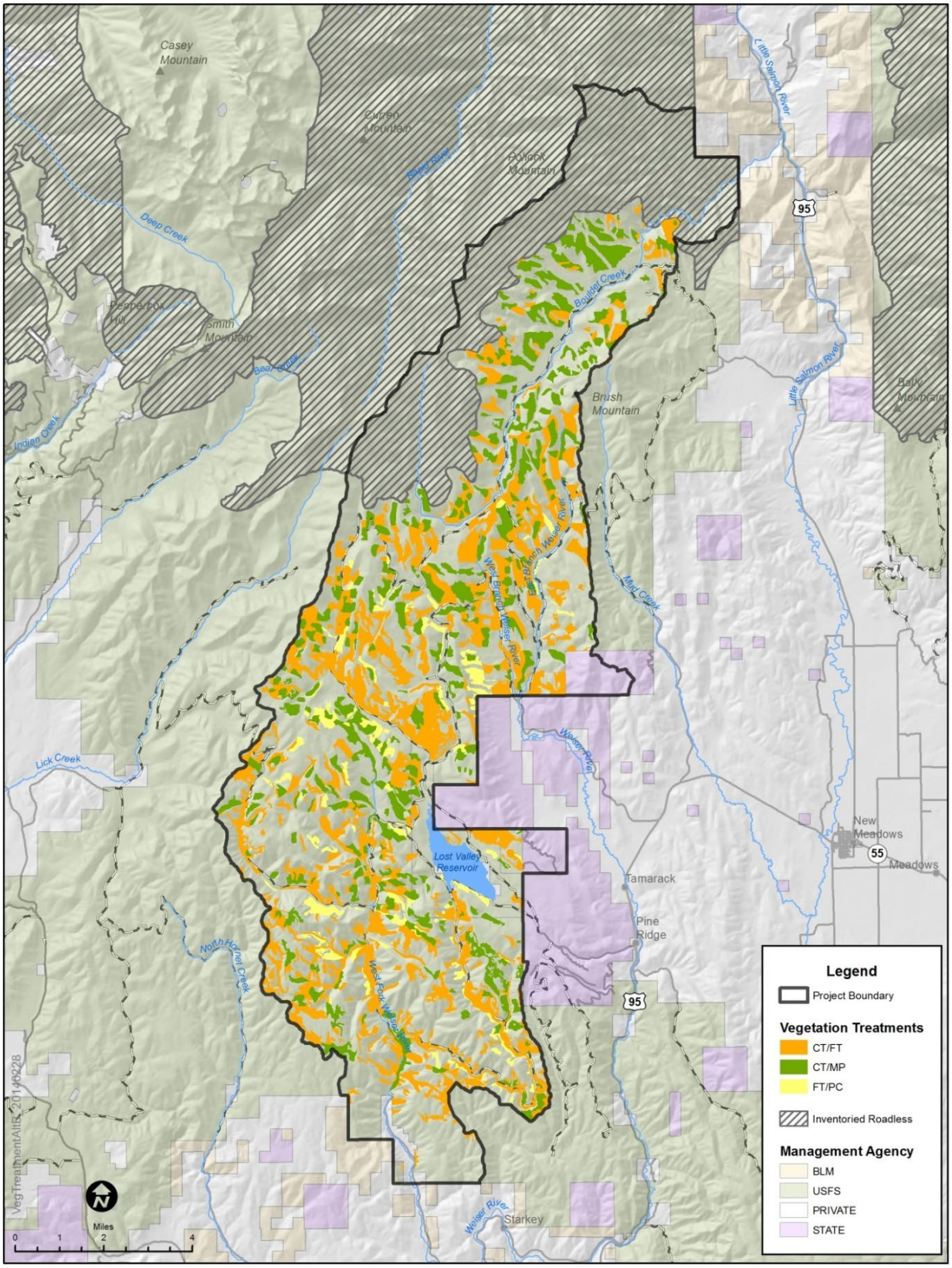


Figure 4. Map of *Selected Alternative* prescribed fire treatments

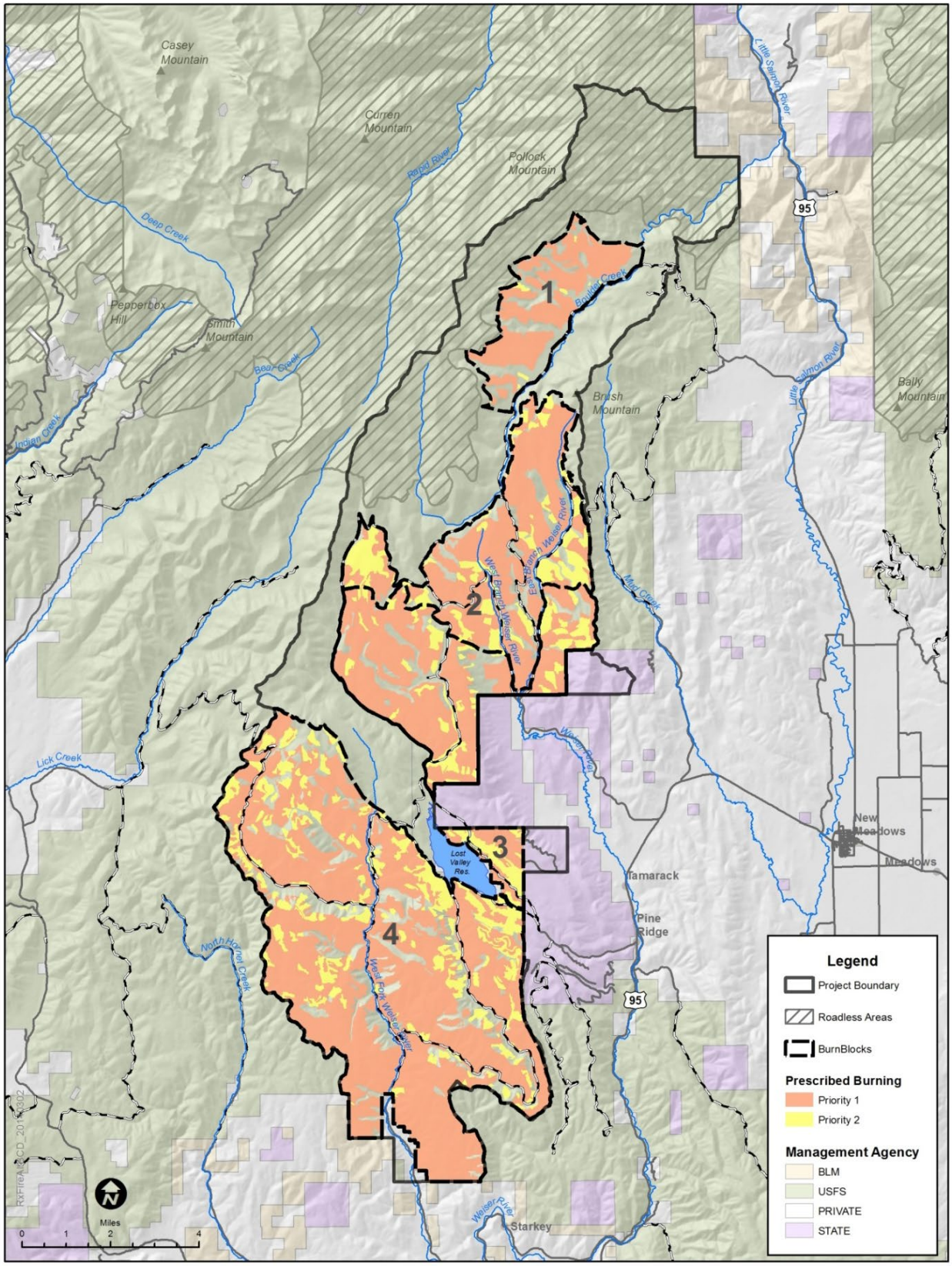


Figure 5. Map of *Selected Alternative* haul routes, planned temporary roads and gravel pits (north)

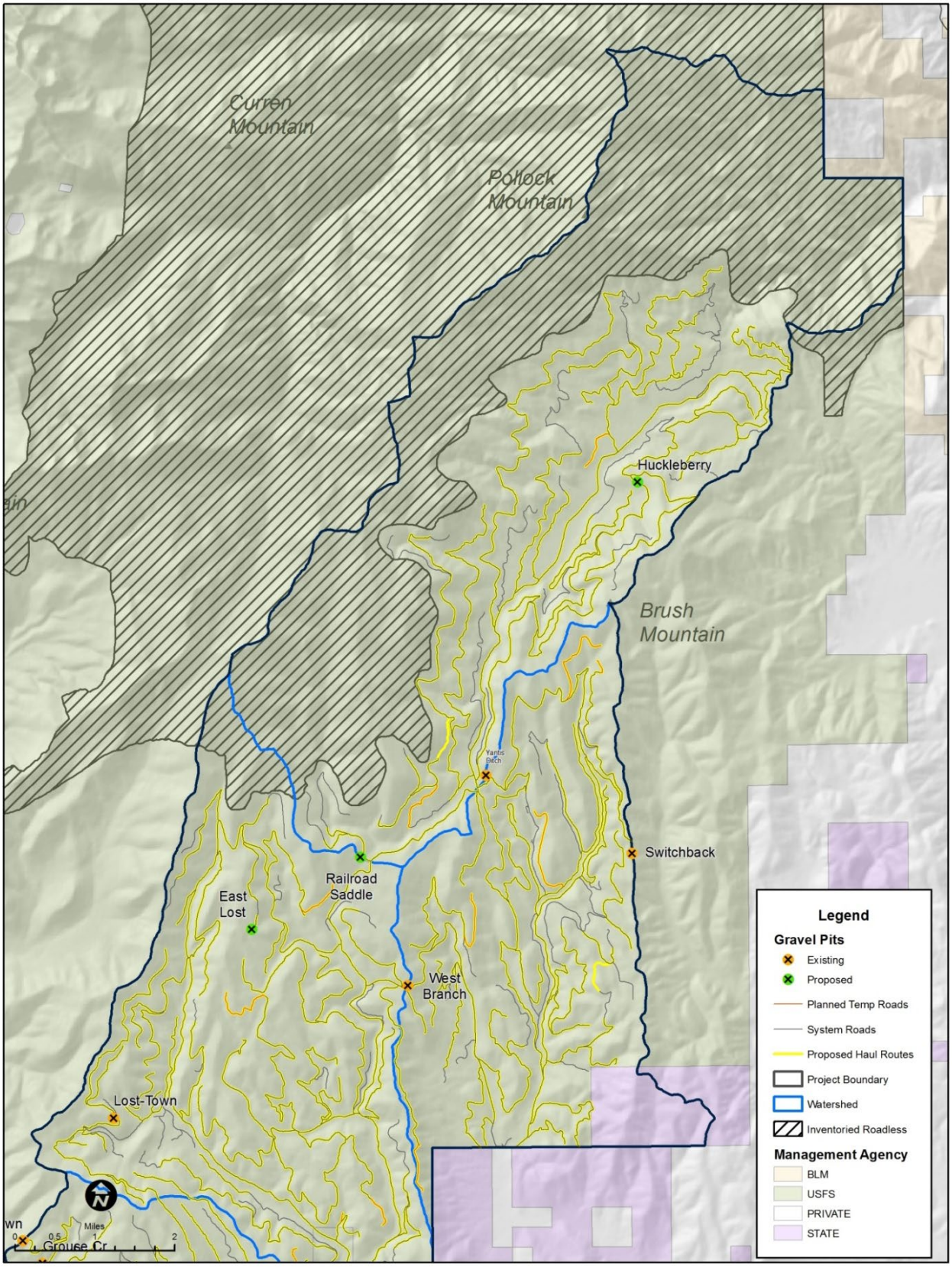


Figure 6. Map of *Selected Alternative* haul routes, planned temporary roads and gravel pits (south)

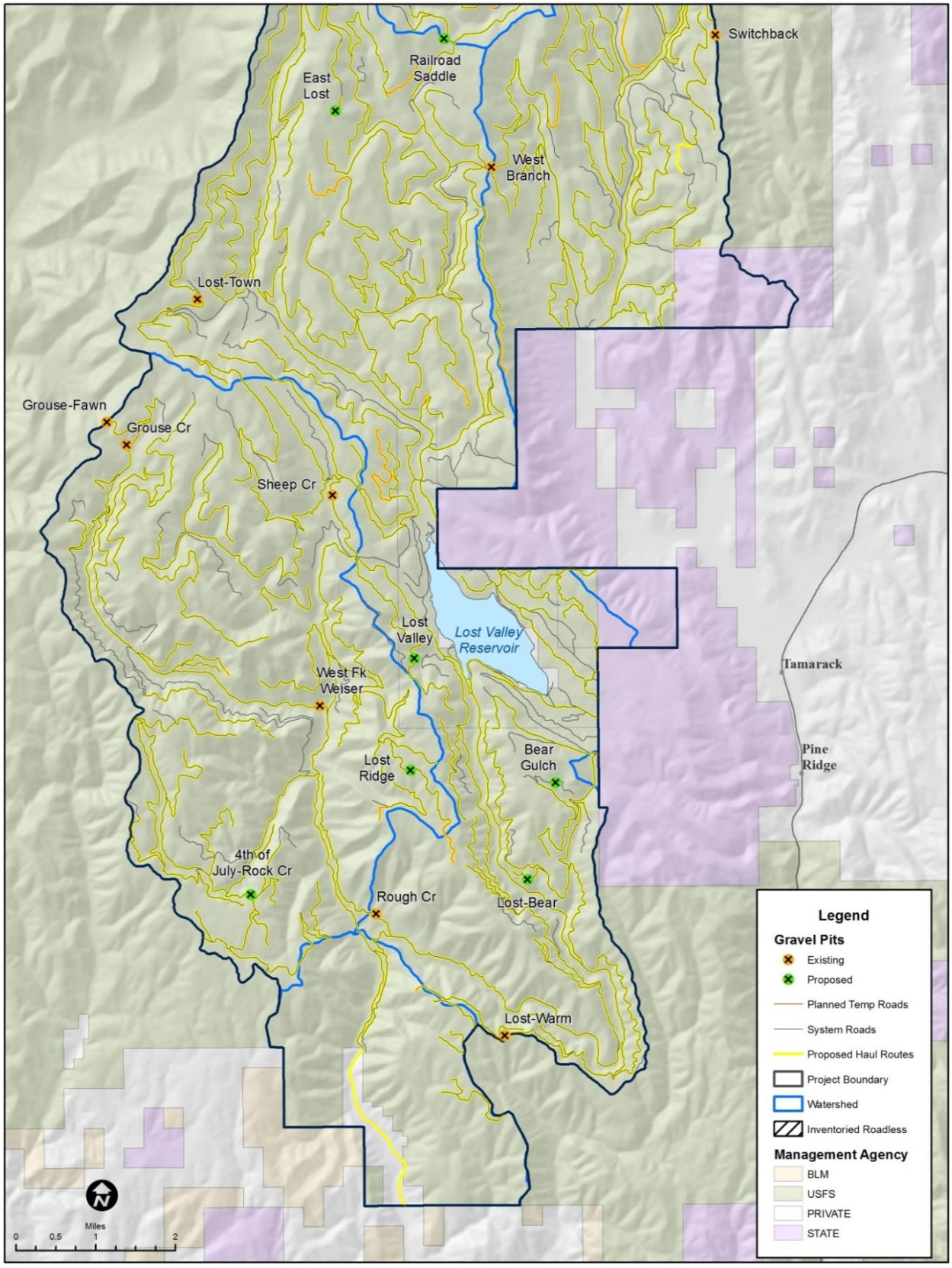


Figure 7. Map of *Selected Alternative* watershed restoration treatments (north)

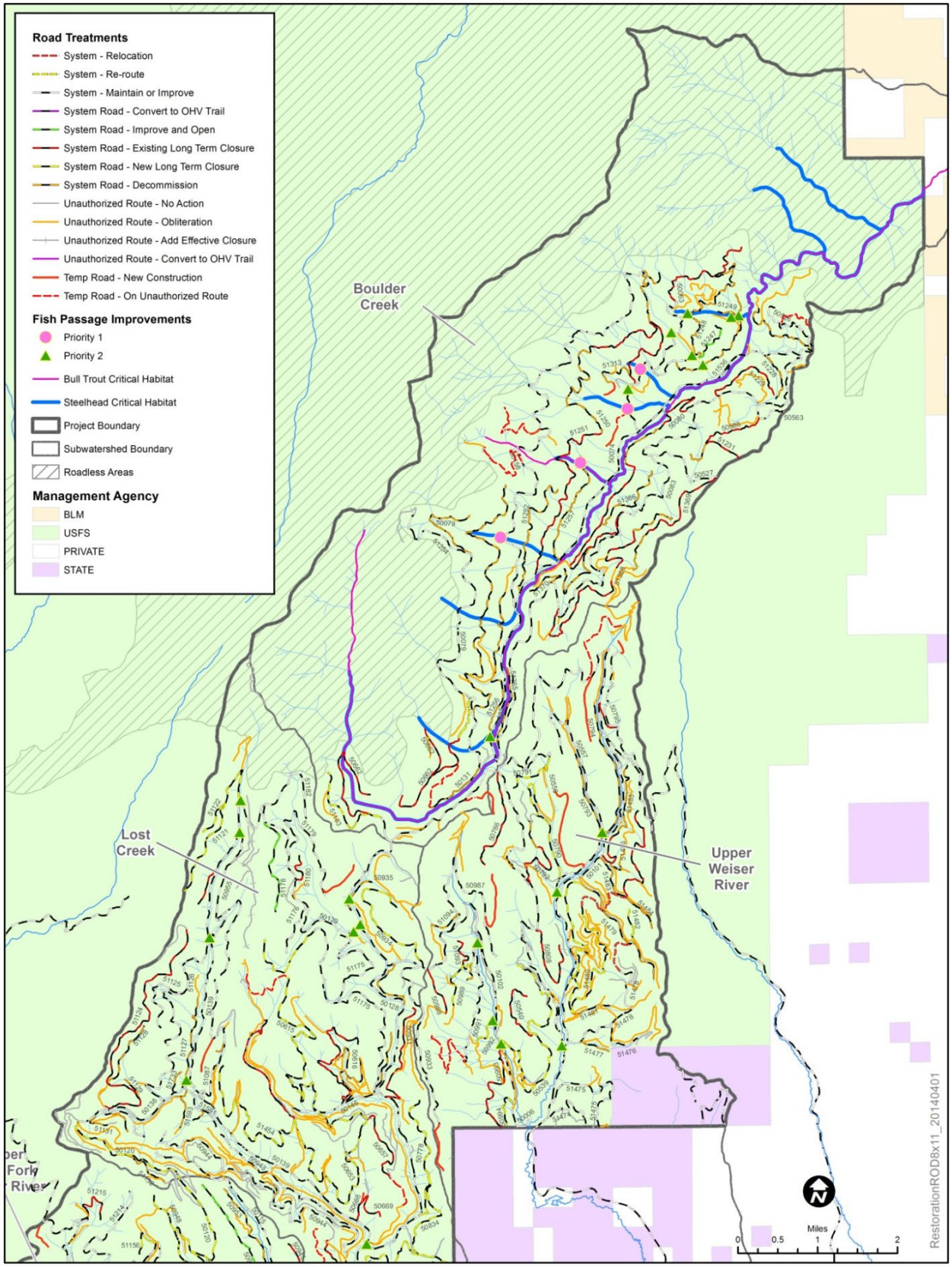


Figure 8. Map of *Selected Alternative* watershed restoration treatments (south)

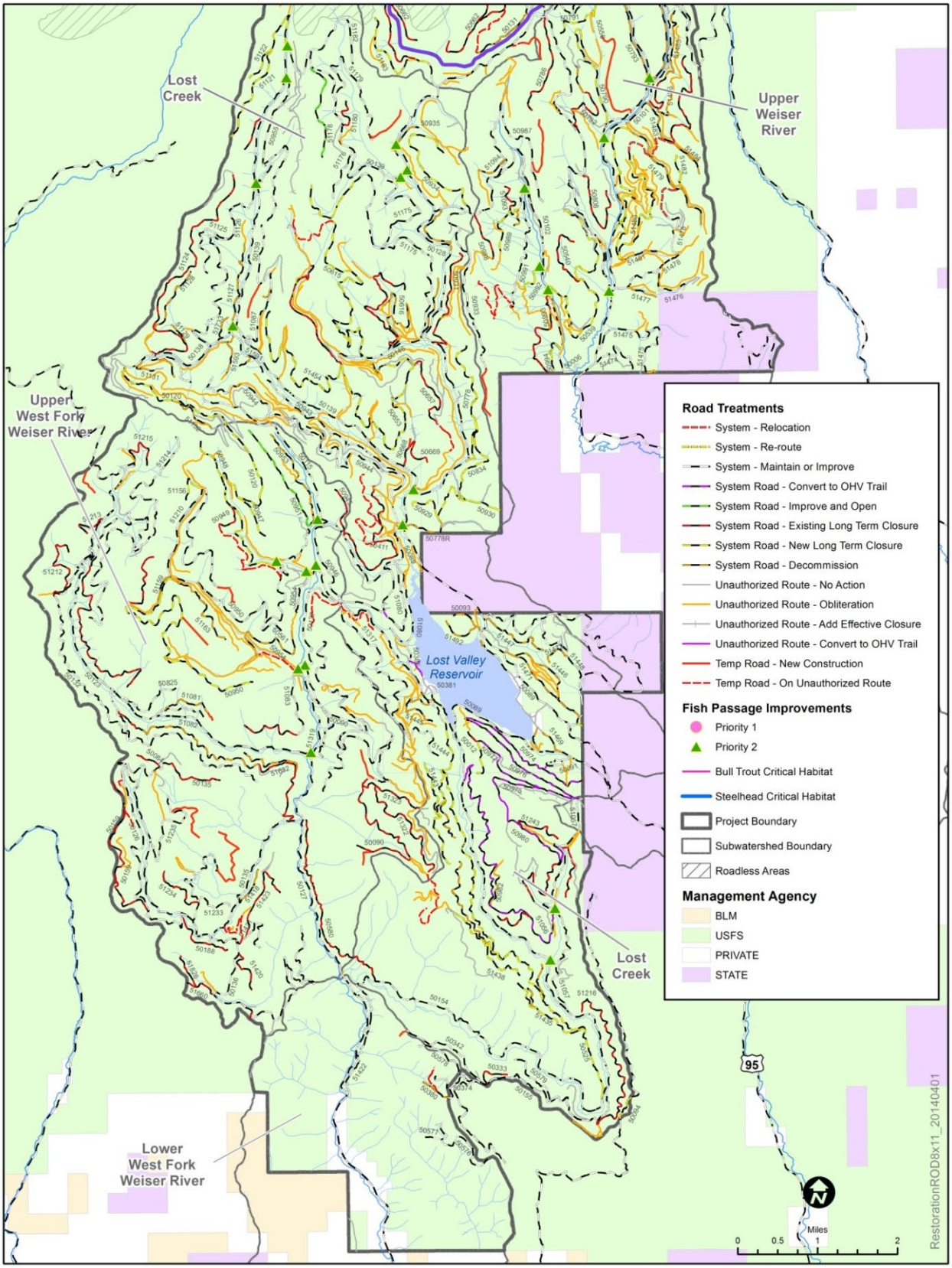


Figure 9. Map of *Selected Alternative* recreation improvements (north)

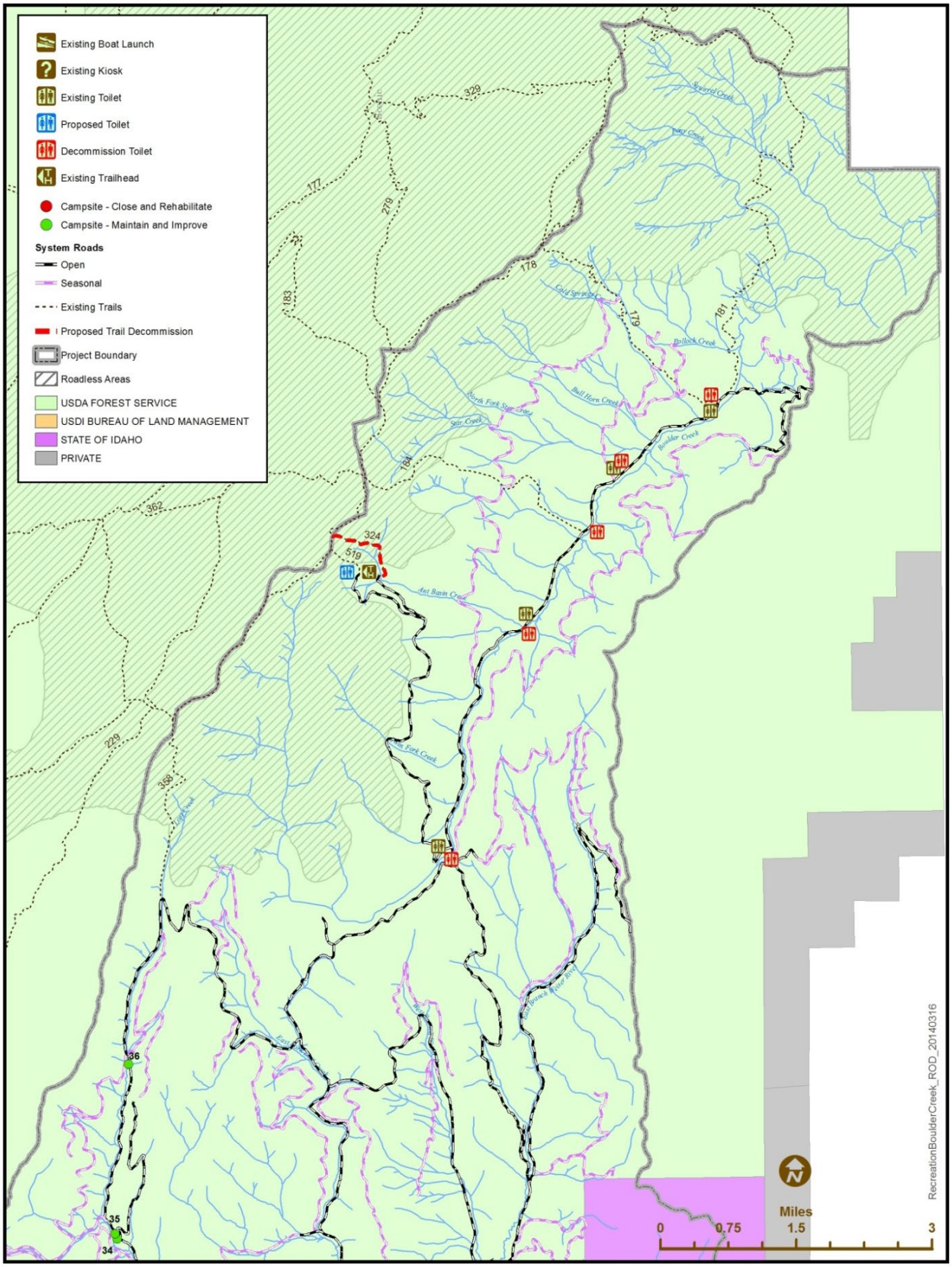
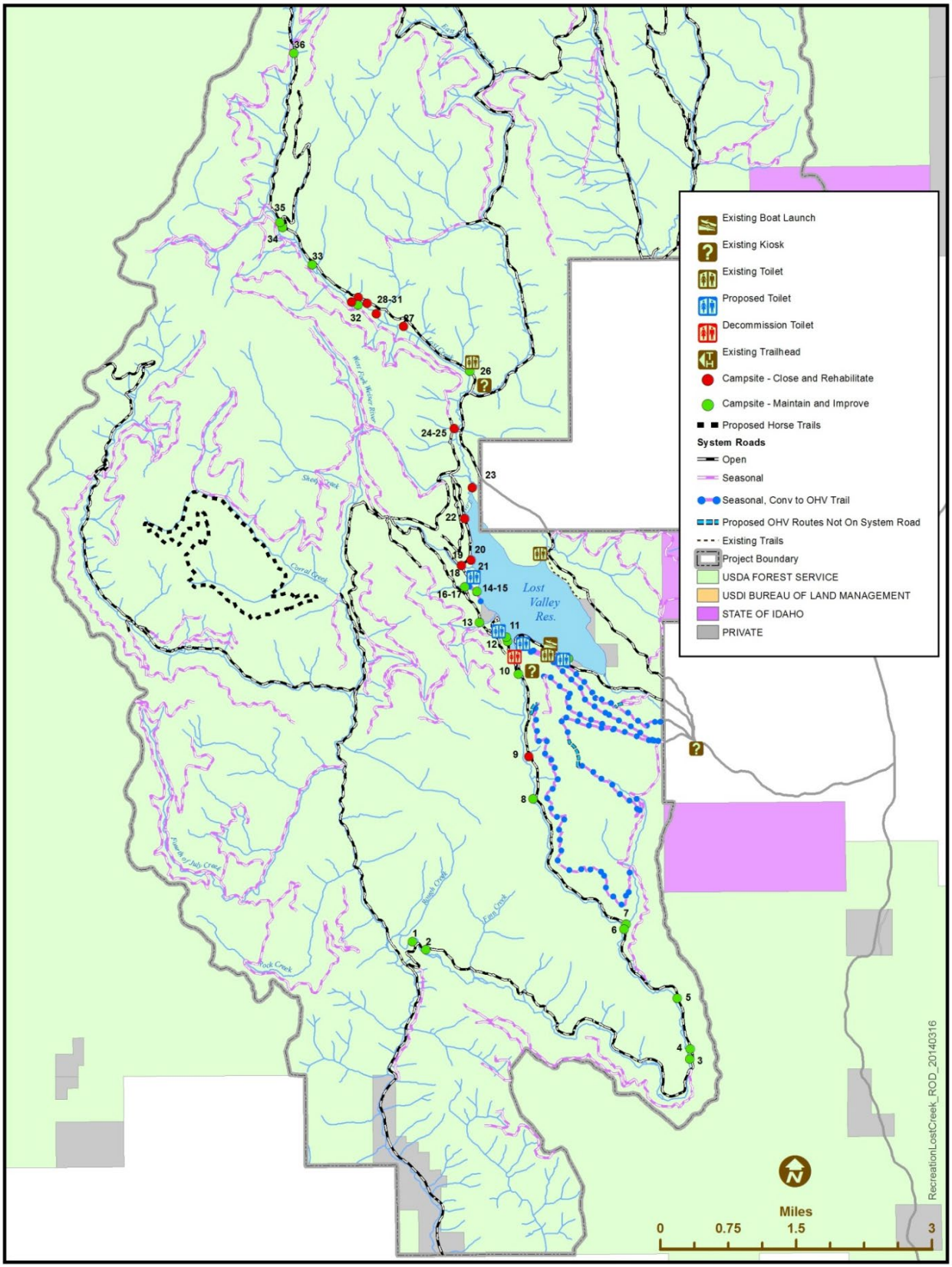


Figure 10. Map of *Selected Alternative* recreation improvements (south)



CHANGES BETWEEN THE DEIS, FEIS AND FEIS WITH ERRATA

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 will be open to vehicles 70 inches or less in width, which will provide for the use of ATVs, and most UTVs, but will 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 will 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 in 2014 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.

The Final Environmental Impact Statement (FEIS) was previously released with a final Record of Decision (ROD) in September 2014. Based on subsequent litigation, the final ROD was vacated in 2018. The Forest Service re-examined the 2014 FEIS and determined that the effects analysis and alternatives were valid but additional clarification was warranted in the form of errata. The errata is now Appendix K of the FEIS, Appendices pages 406-417. The errata clarifies interpretation of the Payette National Forest Land and Resource Management Plan (Forest Plan). The flexibility found in the Forest Plan was used to incorporate the input from the collaborative work the Forest has done to design a project that will enhance forest stand variability to promote

wildlife habitat diversity while moving toward the long term desired conditions for vegetation described in the Forest Plan. The errata also includes minor editorial corrections.

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 best available science, including science related to conservation of the Payette National Forest focal species for terrestrial wildlife and the Idaho Comprehensive Wildlife Conservation Strategy (Idaho CWCS, IDFG 2005). A key finding of the best available science related to conservation of focal species is the need to conserve remaining large tree and old forest stands, and to promote the development of these components 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. My decision also maintains habitat for other sensitive and listed species.

I have considered the short-term tradeoffs of conserving large tree stands and old forest characteristics on the achievement of the desired future conditions for the vegetative components described in Appendix A of the Forest Plan. In addition to the long-term desired conditions for vegetation found in Appendix A of the Forest Plan, I have considered other resource areas management direction provided in the Forest Plan (i.e. goals, objectives, standards, and guideline) that are dependent upon forested vegetation conditions.

As discussed on page A-1 of the Forest Plan, "…, there may be exceptions to the vegetative desired conditions. These exceptions may occur as a result of management direction in other resource areas …". I have determined that in the case of this project, within areas where there is a commodity emphasis in forested landscapes (i.e. within MPC 5.2), there is management direction contained in the Forest Plan that emphasizes conservation of habitat for wildlife species of greatest conservation concern in these same areas. Management direction regarding northern Idaho ground squirrel and white-headed woodpeckers are examples for which the Forest Plan provides management direction (Forest Plan p. III-25, III-132, & III-133: Goals WIGO01, WIGO03-06, & 0331;

Objectives WIOB01-03, WIOB08-09, & 0332; Standard 0336; & Guideline 0341) that was considered in concert with the forested vegetation desired conditions for this project. After a thorough review of the FEIS and the project record, I have determined that the achievement of Forest Plan management objectives related to wildlife and their habitat override achievement of the desired conditions for vegetation in the short-term, but that the long-term desired conditions for vegetation found in the Forest Plan will still be achieved within these areas.

In addition, I have reviewed the project record and have included supporting rationale in Appendix 5 of this document regarding why I believe the *Selected Alternative* will not preclude the attainment of the desired conditions for forested vegetation in the long-term. In short, the *Selected Alternative* allows opportunities for effective movement of all of the vegetative components toward the long-term desired conditions described in Appendix A of the Forest Plan. By retaining habitat/vegetative components (e.g. large tree forest structure and old forest characteristics which include legacy trees, large snags, and desired tree species compositions) in the short-term, benefits to wildlife species of greatest conservation concern are expected. The *Selected Alternative* will retain and promote the development of these important habitat components which, if removed, will take relatively long time periods (e.g. 60 to greater than 200 years) to reacquire.

The two vegetative components (i.e. tree size class and canopy cover class) affected by this short-term strategy, in MPC 5.2 areas within the project area, are affected by the *Selected Alternative* in the following ways:

TREE SIZE CLASS

- In the short-term, there are no immediate effects to the large tree size class distributions as the *Selected Alternative* has been designed to maintain the current tree size class distributions (see Project Design Feature 4 in Appendix 1 of this document). Some growth into the next larger size class categories will be expected as diameter growth occurs on residual trees.
- In the long-term:
  - an overabundance of the large tree size class will be created, perpetuated, and/or increased in all PVG/MPC combinations, except for PVG 2/"outside of MPC 5.2", where the large tree size class is currently deficit, which will eventually move into the desired ranges specified in the Forest Plan.
  - A deficit of the smallest tree size classes (e.g. GFSS, sapling, & small) will be perpetuated in all PVG/MPC combinations.
- Future projects/management activities, implemented through future NEPA decisions, could be necessary to remedy an overabundance of the large tree size class and deficit of smaller tree size classes (e.g. GFSS, sapling, small) by allowing for the implementation of silvicultural treatments (e.g. stand replacing prescribed burns, clearcuts, seed tree/shelterwood regeneration treatments, etc.) that reduce the abundance of the large tree size class and shift these areas into a smaller tree size class. This decision does not preclude the effectiveness of future management activities in moving the area toward desired conditions related to tree size class and distribution in the Forest Plan.

CANOPY COVER CLASS

- At all time scales, in all PVG/MPC combinations, there will be an overabundance of the high canopy cover class. This is due primarily to other resource areas management direction found in the Forest Plan (e.g. soils, hydrology, and wildlife). The overabundance is estimated to be 2-70% (31 to 6,900 acres) depending on which time scale/MPC/PVG combination is being considered.
- In the short-term:

  - an overabundance of the low canopy cover class will be created in five of the six PVG/MPC combinations.
  - PVG 2/outside of MPC 5.2 will remain deficit in the low canopy cover class; and
- In the mid to long-term, due to the dynamic nature of forested vegetation,
  - the overabundance of the low canopy cover class in the other four PVG/MPC combinations is expected to relatively rapidly decrease and move into the desired ranges and eventually into a condition where the low canopy cover class will be deficit.
  - In PVG2/outside of MPC 5.2, the low canopy cover class deficit is expected to increase.
- Future projects/management will be necessary, implemented through future NEPA decisions, to manage canopy cover class distributions closer to the desired ranges specified in the Forest Plan in the long-term. Based on projections of canopy cover class distributions in the large tree size class, future projects will be necessary to reduce canopy cover in a number of stands. This could be achieved by implementing various silvicultural treatments (e.g. prescribed burning, thinning) that will be intended to manage ingrowth and residual tree growth.

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 while considering the best available science tied to wildlife conservation.*

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 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 most current philosophy and science regarding conservation of wildlife species and habitats for species of greatest concern (referenced in the project record).

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). 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) will 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 will 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 will 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 will 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 clarification for the white-headed woodpecker analysis (Project Record).

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.

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.

My decision to improve wildlife habitat to conditions within HRV refers to the most current science and 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 characteristics, 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 insects and 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, and climate change). Lastly, implementation of this decision will create landscape conditions more consistent with Forest Plan desired conditions in the long term.

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 will 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* will 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 will be altered mechanically or by hand to restore historic conditions and where fire is reintroduced, fire regimes 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 will be moved to Maintenance Level 1 and receive long-term closure treatments. Approximately 4.9 miles of road graveling will occur in RCA's (Table 6), 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 (Table 5) Approximately 58 miles of system roads will be placed in long-term closure status, and 28.6 miles of road graveling will occur in RCA's (Table 6), contributing to the reduction of road-related sediment impacts outside of the Boulder Creek subwatershed. Twenty-four fish passage barriers will 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 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 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 will remain at their existing ratings.

Table 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 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 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 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 will receive graveling under the *Selected Alternative* (Table 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 will 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 will 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 6. RCA system road improvements (graveling and long-term closure treatments)

	Selected Alternative	
Subwatershed	**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 7).

Table 7. Stream miles improved

	Selected Alternative
Subwatershed	**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 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 will 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 designate 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 will be located south and west of Lost Valley Reservoir and will 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 will also be open to other non-motorized uses, including hiking and mountain biking. The added trail is primarily located on existing road and will 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* will 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 will 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. See Project Record – Comparison of Alternatives – Meeting Project Objectives & Effects – Tracked by Issue

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.

I recognize that the FEIS created some confusion regarding project specific management objectives and short-term desired conditions versus the Forest Plan long-term desired conditions for forested vegetation. This confusion was created because the FEIS displayed desired conditions for “outside of MPC 5.2” for the entire project area, even though approximately 32, 000 acres of the project area are allocated as MPC 5.2 in the Forest Plan. Areas “within MPC 5.2” do have a different set of long-term desired conditions specified in Appendix A of the Forest Plan (see Forest Plan pp A-1 to A-6), and the Decision is consistent with those long-term desired conditions for MPC 5.2 as clarified below.

While project specific management objectives, or short-term desired conditions were utilized in the FEIS for forested vegetation discussion, the long-term desired conditions identified in the Forest Plan still apply in the long-term, and the project is consistent with those long-term desired conditions. I am clarifying and reinforcing the fact that this decision in no way modifies the long-term desired conditions for forested vegetation that are specified in the Forest Plan for this project by MPC. As described in the Forest Plan on page GL-9, *desired conditions*, also called desired future conditions, are "a portrayal of the land, resource, or social and economic conditions that are expected in 50-100 years if management goals and objectives are achieved. A vision of the long-term conditions of the land."

The use of the desired conditions for "outside of MPC 5.2" on portions of the project area that are allocated as MPC 5.2 in the Forest Plan created the following questions:

1) Is using project specific management objectives and short-term desired conditions with a restoration emphasis, such as what is used for the long-term desired condition for "outside of MPC 5.2" inconsistent with the desired condition for MPC 5.2 for a commodity production emphasis?

2) Does it modify the long-term Forest Plan desired condition for MPC 5.2?

3) Does it preclude the ability of the Forest Service to achieve the desired conditions in areas allocated as MPC 5.2 in the Forest Plan?

While the project record contained information to answer these questions, the appellate court found that the information was not summarized well enough to understand the forested vegetation specialist's conclusions. Appendix 5 of this document provides a summary of information that I have considered related to the desired conditions for forested vegetation, and the expectation that the *Selected Alternative* will set conditions on a long-term trajectory that provides for achievement of the Forest Plan desired conditions in the long-term. This attachment also provides a more detailed explanation of why I believe the *Selected Alternative* allows future managers the ability to effectively attain the desired conditions, in the long-term, for the desired conditions specified in Appendix A of the Forest Plan that are applicable to this project area, including the Forest Plan desired conditions for MPC 5.2.

In summary, this short-term strategy of managing projects to emphasize restoration to meet short-term resource objectives:

1) does not modify the long-term Forest Plan desired conditions for MPC 5.2;

2) is intended to emphasize conservation of wildlife species of the greatest conservation concern as supported by management direction for other resource areas in the Forest Plan; and

3) allows for the achievement of the vegetative desired conditions, both within and outside of MPC 5.2, in the long-term as specified in Appendix A of the Forest Plan.

I am confident that prioritizing the maintenance and promotion of the large tree size class, old forest characteristics, and the desired tree species composition over the canopy cover class distributions in the short-term will aid in conserving important wildlife habitat in the short-term, while allowing for opportunities to achieve all of the vegetative components specified in the desired conditions in the Forest Plan in the long-term both "within MPC 5.2" and "outside of MPC 5.2".

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 will 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 will not retard the attainment of a properly functioning temperature conditions. Where RCA treatments are proposed, thinning treatments will 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), will 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 will 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) will 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-Appendix 1, PDF #29). Additionally, no RCA treatments will 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 will 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* will 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 will also be fully obliterated. Additional reductions in TSRC will 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-Appendix 1, PDF #18).

The Forest Plan standards for TSRC and DD will 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. See also the clarification for the white-headed woodpecker analysis (Project Record).

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 **8**).

Table 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* will 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 D 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 the 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 https://www.fs.usda.gov/project/?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.

2019 Pre-decisional Administrative Review

Following the decision by Court of Appeals for the Ninth Circuit in 2018, which vacated the 2014 ROD, a Notice of Availability for the FEIS with errata was published in the Federal Register on June 21, 2019 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).

A draft ROD was released in June 2019 for a new 45-day objection period. Notication of the availability of both the FEIS with errata and the draft ROD were emailed to the GovDelivery self-subscriped list, hardcopy mailed to the current baselist for the Forest, the required FEIS distribution list from EPA, and everyone who previously commented or objected on the LCBC 2013-14 project. Copies of both lists are located in the project record.

On June 20, 2019, a legal notice of the opportunity to object, initiating the 45-day pre-decisional objection period, was published in *The Idaho Statesman* (the legal newspaper of record). A courtesy copy of the legal notice published in the Adams County Register on June 19, 2019 and in the McCall Star News on June 19, 2019.

A Deputy Regional Forester for Region 4 of the National Forest System was assigned as the "Objection Reviewing Officer" having the delegated authority and responsibility to review objections filed under 36 CFR Part 218. The Reviewing Officer received timely and eligible objection letters from the following groups and individuals:

1. Alliance for the Wild Rockies
2. Jean Public
3. Native Ecosystems Council
4. Idaho Sporting Congress
5. Payette Forest Coalition

2019 Reviewing Officer's Response to Objections

The Deputy Regional Forester extended the objection resolution period to October 18, 2019, and sent letters to all five objectors providing notification of the extension. All objecting parties declined the offer to meet to discuss a resolution, with the exception of Payette Forest Coalition, which had filed a "supportive objection."

As required by 36 CFR §§ 218.11(b) and 218.32(b), the Reviewing Officer sent written responses to all eligible objectors on October 17, 2019, describing the results of his review of the objection issues. The review determined that the FEIS and the actions analyzed are consistent with all applicable laws, regulations, and policies (36 CFR § 218.8(d)(5)).

I have addressed the Reviewing Officer's instructions prior to issuing this Record of Decision. Appendix 3 of this ROD outlines the detailed recommendations provided by the Objection Reviewing Officer, the location of where the recommendations were addressed within the project record, and the documentation that all recommendations were fully addressed.

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.

Letters with hardcopies/CD of the FEIS with errata and draft ROD were mailed to tribal governments on June 19, 2019.

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.

Table **9** is a summary comparison of the alternatives considered in detail for this project (see FEIS Chapter 2 and see Comparison of Alternatives Meeting Project Objectives and Effects – Tracked by Issue (Project Record) for additional information).

Table 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
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:

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

[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.

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; also see Comparison of Alternatives Meeting Project Objectives and Effects – Tracked by Issue (Project Record)). 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 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. (FEIS, Chapter 3; also see Comparison of Alternatives Meeting Project Objectives and Effects – Tracked by Issue (Project Record)).

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. (FEIS, Chapter 3; also see Comparison of Alternatives Meeting Project Objectives and Effects – Tracked by Issue (Project Record)).

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*. (FEIS, Chapter 3; also see Comparison of Alternatives Meeting Project Objectives and Effects – Tracked by Issue (Project Record)).

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 management direction, including the goals and objectives, desired conditions, 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 in the Forest Plan Consistency Checklist and in the project record. No Forest Plan amendments are needed to implement this project. See also Appendix 5.

Forest Plan Management Prescription Categories

The project area is allocated to the following six Management Prescription Categories (MPCs) in the Forest Plan: MPCs - 2.2, 3.1, 4.1c, 5.1, 5.2, and 6.1.

Compliance with Forest Plan Desired Conditions

The desired conditions in the Forest Plan differ for two of the vegetative components (i.e. tree size class and canopy cover class) between areas allocated to "within MPC 5.2" and areas allocated to "outside MPC 5.2", and for the tree size class component, there is also a "Forestwide" set of desired conditions. For all of the other vegetative components the desired conditions are identical regardless of the MPC assigned.

The desired conditions differ, based both on the MPC assigned in the Forest Plan, as well as the Potential Vegetation Group (PVG). PVGs are groups of habitat types (Steele et. al. 1981) that share similar environmental characteristics, site productivity, and disturbance regimes. These PVGs classify the landscape to provide a framework for studying succession or vegetation over time. The *Selected Alternative* completes active management activities within the following PVGs: PVG 2 – Warm, Dry Douglas-fir/Moist Ponderosa Pine; PVG 5 – Dry Grand Fir; and PVG 6 – Moist Grand Fir. These PVGs are described in greater detail in the Forest Plan (p. A-18 to A-19). For additional information regarding PVGs see Appendix A of the Forest Plan, Morgan and Parsons (2001), Mehl et. al. (1998), and Steele et. al. (1981).

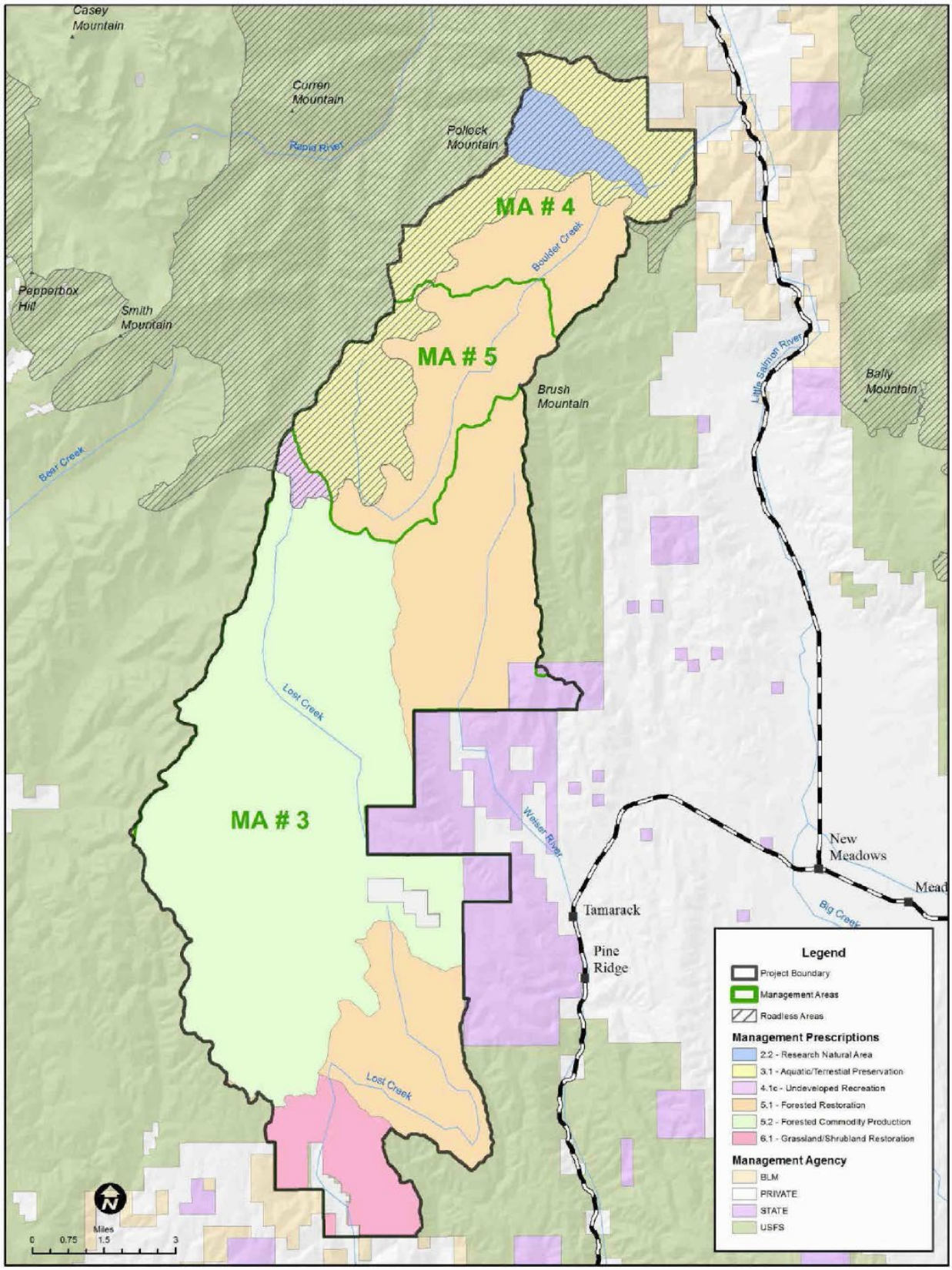
Table 10 displays the approximate acres that are "within MPC 5.2" versus "outside of MPC 5.2" by PVG in the project area: Figure 11 displays Management Areas and Management Prescription Categories in the Project Area. These are the MPCs and MAs assigned in the Forest Plan and are not changed by this decision.

Table 10. Acres by Potential Vegetation Group inside/outside MPC 5.2

Potential Vegetation Group (PVG)	Acres	
	Within MPC 5.2	Outside of MPC 5.2
2: Warm, Dry Douglas-fir	5,460	7,813
5: Dry Grand Fir	6,145	6,607
6: Moist Grand Fir	11,366	14,007
Other (includes grasslands/shrublands)	9,039	15,641
Total	**32,009**	**44,068**

The project was designed with consideration of the project purpose and need to conserve habitat for the species of greatest conservation concern, such as the northern Idaho ground squirrel (FEIS p. 15). While the purpose and need in the FEIS for forested vegetation emphasizes restoring habitat for the wildlife species of greatest conservation concern in the short-term, the *Selected Alternative* does not alter the long-term desired condition in the Forest Plan. As explained in the FEIS, the project purpose (FEIS p. 15) includes: "Move vegetation toward the desired conditions defined in the Forest Plan…" This decision does not change or modify the long-term desired conditions for vegetation specified in the Forest Plan in the project area nor does it preclude the desired conditions for MPC 5.2 from being achieved in the future. The Forest Plan allows numerous potential pathways to meet the long-term desired conditions specified in the Forest Plan, including for areas with a commodity production emphasis on lands allocated as within MPC 5.2.

Figure 11. Map of Management Areas and Management Prescription Categories in the Project Area



As described in the Forest Plan, *desired conditions*, synonymous with desired future conditions, are "…a portrayal of the land, resource, or social and economic conditions that are expected in 50-100 years if management goals and objectives are achieved. A vision of the long-term conditions of the land," (Forest Plan p. GL-9). The Forest Plan also acknowledges that there may be management direction in goals, objectives, standards, guideline driven by other resource concerns and which may drive short-term desired conditions at the project level (see page A-1 of the Forest Plan).

Appendix 5 further explains the rationale as to how the *Selected Alternative* would meet long-term desired conditions for all MPCs. In developing the LCBC project objectives, some of the Management Direction considered, in addition to that included in Appendix A of the Forest Plan, included:

- Threatened, Endangered , Proposed, and Candidate Species Objective 15 (TEOB15 on page III-9 of the Forest Plan) which states that we should maintain or restore vegetative conditions that contribute to the recovery of NIDGS habitat;
- Management Area 3 Standard 0339 (Forest Plan page III-132) which states that northern Idaho ground squirrels will receive priority consideration for management activities in their known habitat; &
- Timber Standard 0509 (page III-159) which states that for this planning period no regeneration harvest shall occur in MPC 5.1 portion of Boulder Creek.

On page A-1 of the Forest Plan it states, "In some cases, there may be exceptions to the vegetative desired conditions. These exceptions may occur as a result of management direction in other resource areas, or when site specific conditions are not appropriate for the desired conditions. Oftentimes, Management Area (MA) direction may have different, but overriding goals and objectives…All of this information needs to be considered when we design our projects. The desired conditions are general conditions that can be modified at the local or project level based on site-specific biophysical conditions."

As allowed for in the Forest Plan (Forest Plan p. A-1, Forest Plan III-31), the project-specific short-term objectives used for the analysis in Chapter 3 of the FEIS emphasizes restoration treatments aimed at meeting the project purpose and need for vegetation, wildlife habitat, reduction of risk of uncharacteristic and undesirable wildland fire, and watershed restoration (FEIS p. 15). My decision does not change MPC 5.2 allocated acres in the project area to any other MPC (e.g. MPC 5.1) either in the short-term or long-term. Nor does this decision add, delete or modify any standards or guidelines specified in the Forest Plan. Management Prescription Categories, standards, and guidelines in the project area remain as assigned in the Record of Decision for the Forest Plan (USDA Forest Service 2003). The decision is consistent with achievement of desired conditions for vegetation both within and outside of MPC 5.2 in the long-term contemplated by the Forest Plan.

The project is consistent with Forest Plan guideline VEGU01:

> During site/project-scale analysis, tradeoffs in the achievement of one or more of the vegetative components described in Appendix A may need to be considered. Current conditions of the vegetation may necessitate the need to move one component away from the desired condition in order to move another one toward the desired condition. In these situations, decisions should be based not only on which vegetative component is important to emphasize at any point in time to meet resource objectives, but also how to effectively move all components toward their desired condition over the long term. (Forest Plan III-31)

The long-term desired future conditions specified in the Forest Plan do not represent a static state; they are dynamic because the ecosystems we are working with are dynamic. As described in Appendix A of the Forest

Plan, achievement of the desired future conditions for forested vegetation, well distributed across the Forest is a long-term goal of Forest management (USDA 2003).

Compliance with All Forest Plan Standards and Guidelines

The *Selected Alternative* is consistent with all 2003 Forest Plan Standards and Guidelines. (LMRP Consistency Checklist, attached)

Compliance with Fire Standards and Guidelines

This decision does not change any MPC designations, nor does this decision change any standards, guidelines, or long-term desired conditions associated with vegetation, fire, or any other resource. The MPC designations are not altered or affected by this decision and remain the same as they are designated in the Forest Plan, including MPC 5.1 and 5.2. My decision will not amend any Forest Plan standards or deviate from any guidelines including Fire Standard 312 and Fire Guideline 313 which are applicable on ground in MPC 5.2 in the project area.

> Fire Standard 0312: "Wildland fire use is prohibited [in MPC 5.2]." (Forest Plan p. III-130)

No wildland fire use is proposed with this project, therefore Fire Standard 312 does not apply to this project. Wildland fire use is defined in the 2003 Forest Plan as: "The management of naturally ignited wildland fires to accomplish specific pre-stated resource management objectives in predefined geographic areas outlined in Fire Management Plans." (Forest Plan p. GL-41) This project is not a Fire Management Plan for the area.

> Fire Guideline 0309 [applicable to MPC 5.1]: "The full range of treatment activities, except wildland fire use, may be used to restore and maintain desired vegetation and fuel conditions. Salvage harvest may also occur."

This guideline is applicable and consistent with the Selected *Alternative*. No wildland fire use is proposed with this project.

Fire Guideline 0313 [applicable to MPC 5.2]: "Prescribed fire may be used to:

a) Maintain or restore desired vegetative conditions on unsuited timberlands; or

b) Maintain or restore desired fuel conditions for all vegetation types; or

c) Maintain desired vegetative conditions on suited timberlands within PVGs 2 through 10." (Forest Plan p. III-130)

This guideline is applicable and consistent with the Selected *Alternative*. See discussion above regarding consistency with Forest Plan desired future conditions.

Retention of Large Tree Size Class Including Old Forest/Old Forest Habitat/Old Growth

The definitions of *large tree size class*, *old forest*, and *old growth* used for this project are identical to those found in the Forest Plan. The use of *old forest habitat* terminology for this project is not from the Forest Plan, as there is no discussion or mention of *old forest habitat* in the Forest Plan; however, as explained below, the use of the term is not inconsistent with the Forest Plan. The following definitions for *large tree size class*, *old forest*, *old forest habitat*, and *old growth* were used in the design and analysis for this project:

> *Large tree size class* = the largest set of the "tree size class" defined in Appendix A of the Forest Plan. Tree size class is a categorization of trees for a vegetative unit (e.g. stand) to a descriptive class based on the largest trees that meet a set of criteria. Tree size class is determined by the size of the overstory trees.

The average diameter of trees in the overstory or uppermost tree layer determines the stand's tree size class. A canopy layer has a distinct break in height, and must have a non-overlapping canopy cover of at least ten percent. A few individual trees representing a distinctly different size class are not recognized as defining a distinct canopy layer if the total canopy cover of those trees is less than ten percent. To be classified as large tree size class, a stand must have at least ten percent canopy cover of trees that average at least twenty inches in diameter at breast height. (Forest Plan p. A-2).

Old Forest = is a component of the large tree size class, with the following general characteristics: variability in tree size that includes old, large trees with signs of decadence, increasing numbers of snags and coarse woody debris, canopy gaps, and understory patchiness. There are two broad types of old forest in the Southwest Idaho Ecogroup area – single-storied and multi-storied. Single-storied old forest is characterized by a single canopy layer of large or old trees. These stands generally consist of widely spaced, shade-intolerant species, such as ponderosa pine and western larch, which are adapted to nonlethal high frequency fire regime. Multi-storied old forest is characterized by two or more canopy layers, with large or old trees in the upper canopy. These stands can include both shade-tolerant and shade-intolerant species, and are typically adapted to mixed regime of both lethal and nonlethal fires. Because old forest characteristics have been aggregated into two basic categories, it is generally easier to identify, monitor, and compare the characteristics of these old forest types with desired vegetative conditions than it is with "old growth" (FEIS Vol. 2 p. 398 & Forest Plan p. GL-26).

Old Forest Habitat = is a more contemporary term for Old Forest (above). For the effects analysis to wildlife habitat for this project the two terms are synonymous.

Old Growth = is a defined set of forested vegetation conditions that reflect late-successional characteristics, including stand structure, stand size, species composition, snags and downed logs, and decadence. Minimum amounts of large trees, large snags, and coarse wood are typically required. Definitions of old growth generally vary by forest type, depending on the disturbance regimes that may be present. Also, within a given forest type, considerable variability can exist across the type's geographical range for specific ecological attributes that characterize late seral and climax stages of development. This variability among and within multiple often (10-20) forest types makes old growth characteristics difficult to identify, monitor, and compare to desired vegetative conditions (FEIS Vol 2 p. 398 & Forest Plan p. GL-26).

Further discussion regarding *old forest*, *old growth*, and the large tree size class can be found on pages A-2 to A5 and A-21 to A-23 of the Forest Plan. See section 1.2.3 of the Forested Vegetation Specialist Report (USDA Forest Service 2014) contained in the project record for further clarification regarding *old forest* versus *old forest habitat* for this project.

Forest Plan standard WIST01 has the goal, in part, of protecting wildlife habitat components found in the large tree size class. Page A-22 of the Forest Plan states, "The threshold to meet viability for large-tree-dependent terrestrial species has been determined to be 20 percent of the forest stands classified as being in the large tree size class. The 20 percent threshold has been adopted based on several references concerning viability and biodiversity needs for goshawk and other forest-dependent wildlife species that require one or more components of the large tree size class (Fahrig1997, Graham et al 1997, Graham et al 1999, Graham and Jain 1998, Reynolds et al 1992, Wisdom et al 2000). This threshold has been incorporated into the desired conditions for forested vegetation PVGs found in this appendix, and into Forest Plan management direction (Wildlife Resources) through the following standard (WIST01 on page III-26 of the Forest Plan) which reads:

WIST01 - Maintain at least 20 percent of the acres within each forested PVG found in a watershed (5th field HU) in large tree size class (medium tree size class for PVG 10, persistent lodgepole pine). Where analysis of available datasets indicates that the large tree size class (medium tree size class in PVG 10) for a potential vegetation group in a watershed (5th field HU), is less than 20 percent of the total PVG acres, management actions shall not decrease the current area occupied by the large tree size class, except when:

a) Fine or site/project scale analysis indicates the quality or quantity of large tree size class for a PVG within the 5th field HU would not contribute to habitat distribution or connective corridors for TEPCS and MIS species in short or long-term, *and*

b) Management actions that cause a reduction in the area occupied by the large tree size class would not degrade or retard attainment of desired vegetation conditions in the short or long-term as described in Appendix A, including snags and coarse woody debris.

The *Selected Alternative* is consistent with Forest Plan standard WIST01. The project has been designed to maintain all of the existing large tree size class (see Project Design Feature #4 in Appendix 1 of this document) and promote the development of additional large tree size class areas. In addition, there is currently greater than 20 percent of the acres in the large tree size class, in all of the PVGs proposed for management (i.e. 2, 5, & 6), in all three of the 5th field hydrologic units in the project area. The *Selected Alternative* maintains at least 20 percent of the acres within each forested PVG being considered for management in this project within the watersheds in which the project lies. For these reasons, the *Selected Alternative* is consistent with Forest Plan direction which is aimed at protecting existing areas that are in the large tree class for focal terrestrial species (FEIS Section 1.13.9, p. 37; FEIS Table 2-6, p. 109, also ROD Appendix 5). My decision does not change the Forest Plan definition of *old forest* or *old growth* and the *Selected Alternative* is consistent with standards and guidelines pertaining to the management of the large tree size class.

Old forest is a component of the large tree size class and is being retained and made more resilient across the project area/5th level HUCs. Species associated with old forest such as the white-headed woodpecker will benefit (Forest Plan, p. A-21; FEIS, p. 283). My decision protects the viability of old forest-dependent species (Summary tables, FEIS pp. 281-282; p. 394) including the white-headed woodpecker (FEIS p. 326), American three-toed woodpecker (Wildlife Technical Report p. 126), boreal owl (Wildlife Technical Report p. 136), fisher (FEIS p. 333), flammulated owl (FEIS p. 349), great gray owl (FEIS p. 357), northern goshawk (FEIS p. 365), and pileated woodpecker (FEIS pp. 340-341). For purposes of analysis, the definitions of old forest and old forest habitat may be used interchangeably in order to evaluate the potential effects to certain ecological conditions that exist in these ecotypes. However, for purposes of evaluating Forest Plan consistency, the definition of large tree size class in the Forest Plan is used. The consideration of ecological impacts in old forest and old growth ecotypes for purposes of the environmental analysis does not in any way alter the Forest Plan standard that is tied to tree class size.

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 will 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 submitted a 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 11 displays the species analyzed and determinations.

Table 11. Species analyzed in the 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*	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) were received from both USFWS and NMFS in April 2014. Both the USFWS and NMFS determine that the action will not jeopardize the continued existence of any ESA-listed species nor will the action result in destruction or adverse modification of critical habitat. In addition, the USFWS concurred the actions were not likely to adversely affect the Canada lynx and acknowledged the Forest Service's determination for wolverine. (Note: since the determination, the wolverine has been withdrawn from proposed for listing. The analysis and determination sufficiently cover its current status as a Forest Service sensitive species).

Both Agencies included Reasonable and Prudent Measures (RPMs), Terms and Conditions, and Conservation Requirements in their respective BOs that are incorporated as part of this decision (see Appendix 4 of this document). The USFWS and NMFS expected incidental take of some listed fish as identified in their respective BOs. The USFWS expected take in the form of harm and mortality will occur "on the subset of NIDGS (up to two adults/year) that will be incidentally hit by vehicles associated with the project travelling through occupied habitat..." As required in the Biological Opinion (BO), if the anticipated incidental take of NIDGS is exceeded, all project activities will cease and the Forest will immediately contact the Service to determine if consultation should be reinitiated.

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 will 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 (FEIS 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 will 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 will 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 will 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 may begin immediately following the signing of this Record of Decision pursuant 36 CFR 218.12.

CONTACT PERSON

Tawnya Brummett, the Acting 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:

Erin Phelps
New Meadows District Ranger
(208) 347-0301

T. B

TAWNYA BRUMMETT, Forest Supervisor
Payette National Forest

11/01/19

Date

LITERATURE CITED

See FEIS Appendix I for references cited in the ROD.

Appendix 1- Project Design Features

Table 12. 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.	Ensure movement toward desired tree size objectives defined in the Forest Plan.	High: Experience	Silviculturist Contract Administrator

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	Management actions are permitted in such stands as long as they will continue to meet the definition of a large tree size class stand.			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 conditions to meet stand objectives.	Moderate: Experience	Silviculturist Fire Management Specialist Silvicultural 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

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
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. Perennial Streams – flood-prone width or two site-potential tree heights (240 feet), whichever is greatest. Intermittent Streams – 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.

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
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 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	Maintain riparian processes and function.	High: experience, logic, Belt *et al.* 1992, McDade *et al.* 1990. Gregory *et al.* 1991.	Contract Administrator, Contract, Fisheries Biologist or Hydrologist.

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	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.			
11	No prescribed fire treatments (direct ignition or ladder fuel treatments) would occur within RCAs in the Boulder Creek. 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	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
	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 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	Minimize potential for fuel spill in stream.	High: Logic	Contract Administrator, contract provision, Fisheries Biologist, Hydrologist.

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	response plan be included in the contract to meet Idaho state BMPs.			
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	Limit detrimental disturbance (*e.g.* soil compaction, displacement and rutting) to soils.	High: Literature, USDA Forest Service 2002, USDA Forest Service 1981,	Soil Scientist Silviculturist / TMA Contract Administrator Silvicultural prescription Contract

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	ball when pressure is applied by hand. OR When the 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.		Garland 1983, Froehlich *et. al.* 1981 Froehlich *et. 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.*	Contract Administrator, Timber sale contract

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
			1983; Garland 1983.	
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. Ensure runoff is not channelized into skyline corridors from landing areas.	Reduce potential for erosion/rutting/DD in corridors and facilitate revegetation.	High; experience, local monitoring.	Contract Administrator Soil Scientist Hydrologist
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	Restore and stabilize committed soils back to productive condition.	High: Literature, Johnson 1995,	Silvicultural Prescription, Contract,

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	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.		Luce 1997, USDA Forest Service 1981	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 fish habitat. 40 CFR 112	Moderate: Experience.	Contract Contract Administrator
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 contamination 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

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
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 checklists will be submitted to Level 1 for each of the culverts that are removed or replaced.	Minimize sedimentation 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
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 sedimentation 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,	Minimize effects to water quality.	High: logic, experience	Contract Administrator

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	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.			
36	During culvert installation, Sedimat® or similar product would be placed within the channel to collect released fine sediments and minimize effects to 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.	Minimize sedimentation and effects to listed fishes and critical habitat.	High: Logic, Experience	Contract Administrator, Fisheries Biologist
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 sedimentation and effects to listed fishes and critical habitat.	High: logic, experience	Contract Administrator, Fisheries Biologist

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
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 used as such will need approval by the fish biologist or hydrologist. Adequate reconstruction to mitigate erosion concerns must occur before use.	Minimize sediment delivery to stream channels.	High: logic, experience	Contract Administrator, Hydrologist, Fisheries Biologist or qualified designees.

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
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.

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
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 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.	Minimize sediment delivery to stream channels and rehabilitate riparian areas. Reduce levels of TSRC	High: experience, logic. Burroughs and King 1989, Foltz 2007, local monitoring	contract provisions, Hydrologist, Fisheries Biologist
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	Minimize effects to listed fishes and fish habitat	High: Experience, logic	Contract provisions, Contract Administrator, Fisheries biologist, Hydrologist

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	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.			
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	
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 sedimentation, 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 will be stopped in any areas where previously unknown listed or sensitive fish, wildlife, or botanical species are discovered until a Fisheries Biologist,	Provide protection to threatened, endangered and sensitive species.	Moderate: Logic	WIGU07 Fisheries Biologist, Wildlife Biologist, Botanist, Sale

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	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).			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
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

[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
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 and road materials (e.g., gravel) in occupied 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	Mitigate potential effects to NIDGS from commercial product haul	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
	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).			
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 and flag 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
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.	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

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	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.			
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	Moderate-High: Research, literature, Forest Plan, agency direction, logic	Timber Sale Contract, Wildlife Biologist, TMA, Sale Administrator, Burn Plan, FMO
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	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

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	Record for nest site locations, PFA protocol and associated units.			
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 areas.	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
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

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
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 conditions	Retain old forest characteristic, such as legacy trees, snags, and coarse woody debris, appropriate for the forest type.	Unknown	Silvicultural prescription Silviculturist, Wildlife Biologist
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

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
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 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	Minimize impacts to permitted livestock activities	High; experience	Burn plan 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	Forest Plan standards and guidelines: Contract specifications

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
			past experience / professional judgment	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.			

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
80	The over-snow groomed routes would be signed with information about the logging operations and the 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 sedimentation	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

Appendix 2 - Legacy tree guidelines for ponderosa pine, western larch and Douglas fir

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)[4]. 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.

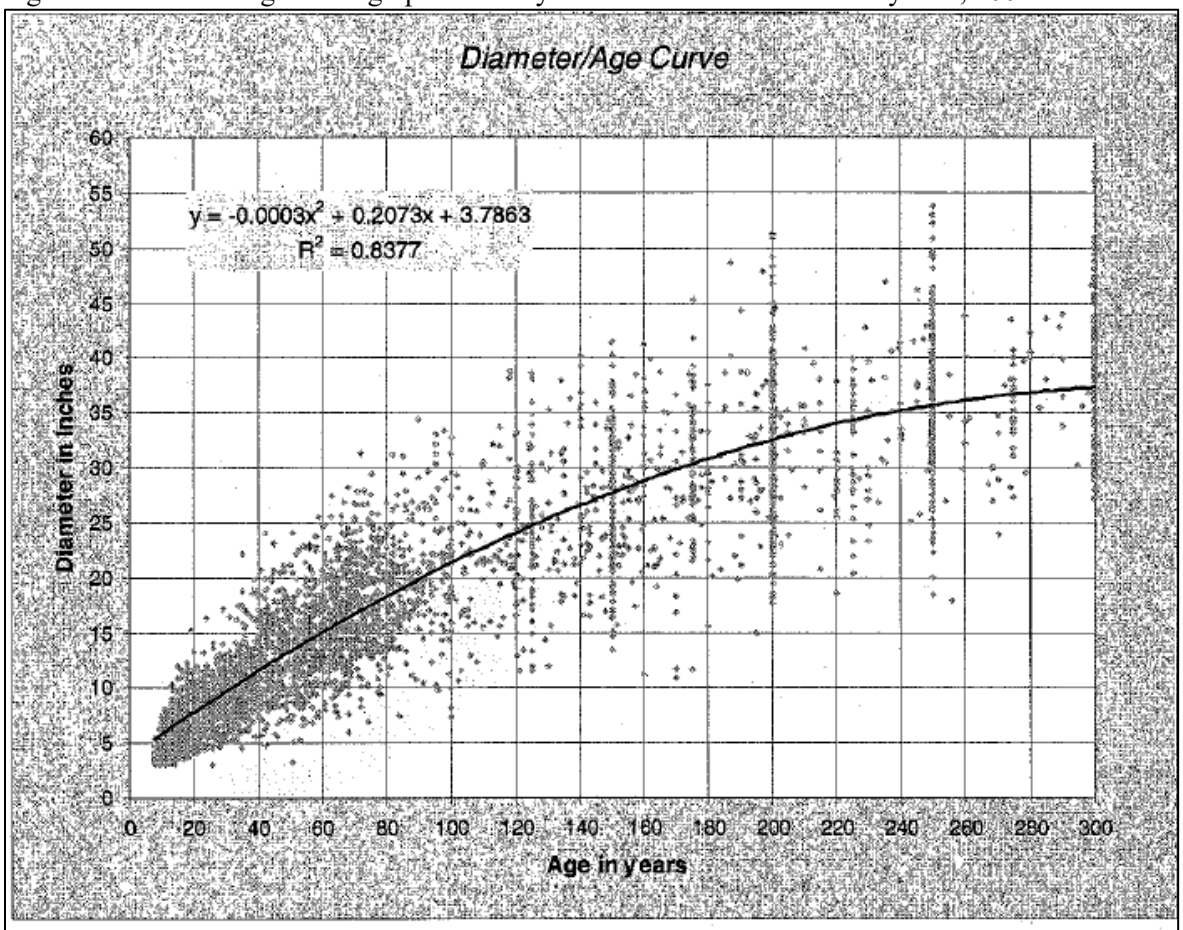
The intent of this guide is to aid in identification of trees that are greater than approximately 150-200 years in age and have survived previous disturbance events.

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. Figure 12 (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:

[4] Van Pelt, R. 2008. Identifying old trees and forests in eastern Washington. Washington State Department of Natural Resources. Olympia, WA. 166p.

Figure 12. Diameter/age curve graph from Payette National Forest Inventory data, 2004



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

This section was adapted from Van Pelt 2008, pages 75-94.

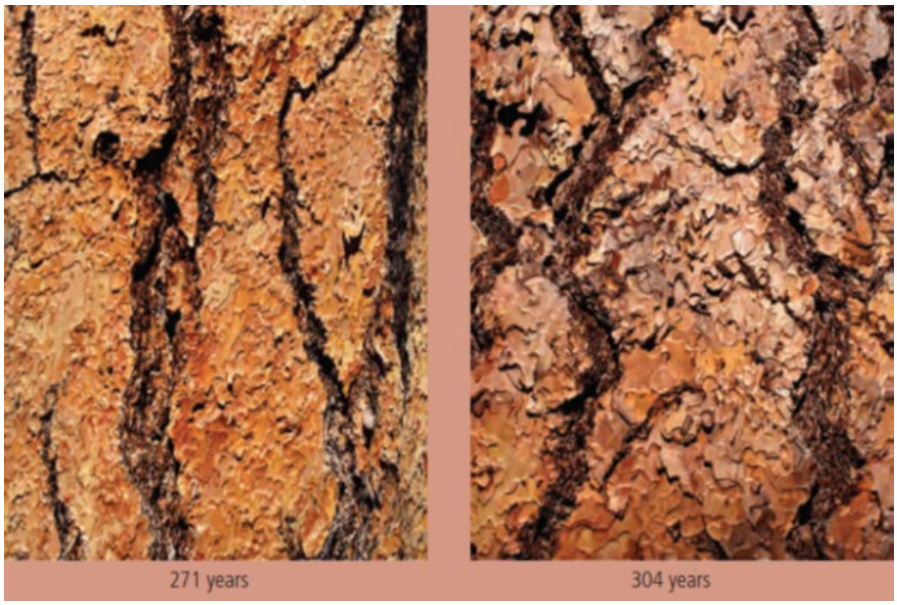
Legacy ponderosa pine tend to have little terminal leader growth, the top of the crown is generally flattened as the lateral branches reach the same height as the terminal, branches throughout the bole become larger in diameter, and lower branches tend to droop. Huckaby et al. (2003) noted that the majority 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. 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. 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. 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 (). In Figure 13 note residual charcoal in the center photo. Bark plates substantially wider than the fissures is an indication of old age (Figure 13).

Figure 14. Bark patterns on mature ponderosa pine

Figure 13. Bark patterns on old ponderosa pine



Ponderosa pine growth is whorl-based, like many members of the pine family. 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 15). Over time, branches in the lower crown die due to shading and the lower crown lifts as the tree grows taller (Figure 16).

Figure 15. Whorl-based branch growth on a young ponderosa pine

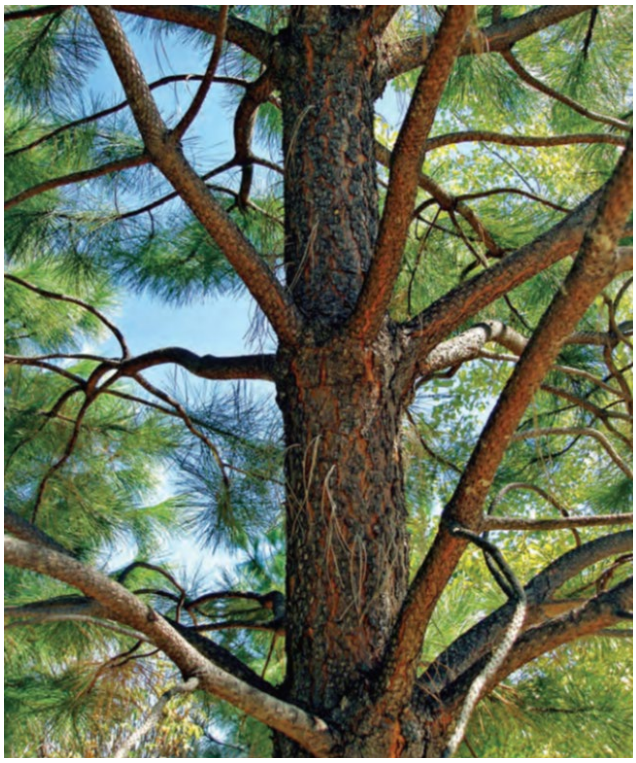


Figure 16. The whorl-based branch growth is visible below the receding crown of this ponderosa pine.

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 17). 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 19). Only in old age are the scars of original branches completely covered (Figure 18).

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. 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).

Figure 17. Old branch whorls are still visible decades after the branches have fallen off.

Figure 18. The rough and deeply furrowed bark of old trees shows no indication of where the original branches were located when the tree was younger.

Figure 19. A century may pass before bark growth completely obscures old branch locations.

Figure 20 is a graphic showing 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. Table 13 is the rating system for determining ponderosa pine legacy trees.

Figure 20. Ponderosa pine crown form and tree vigor on the Payette National Forest

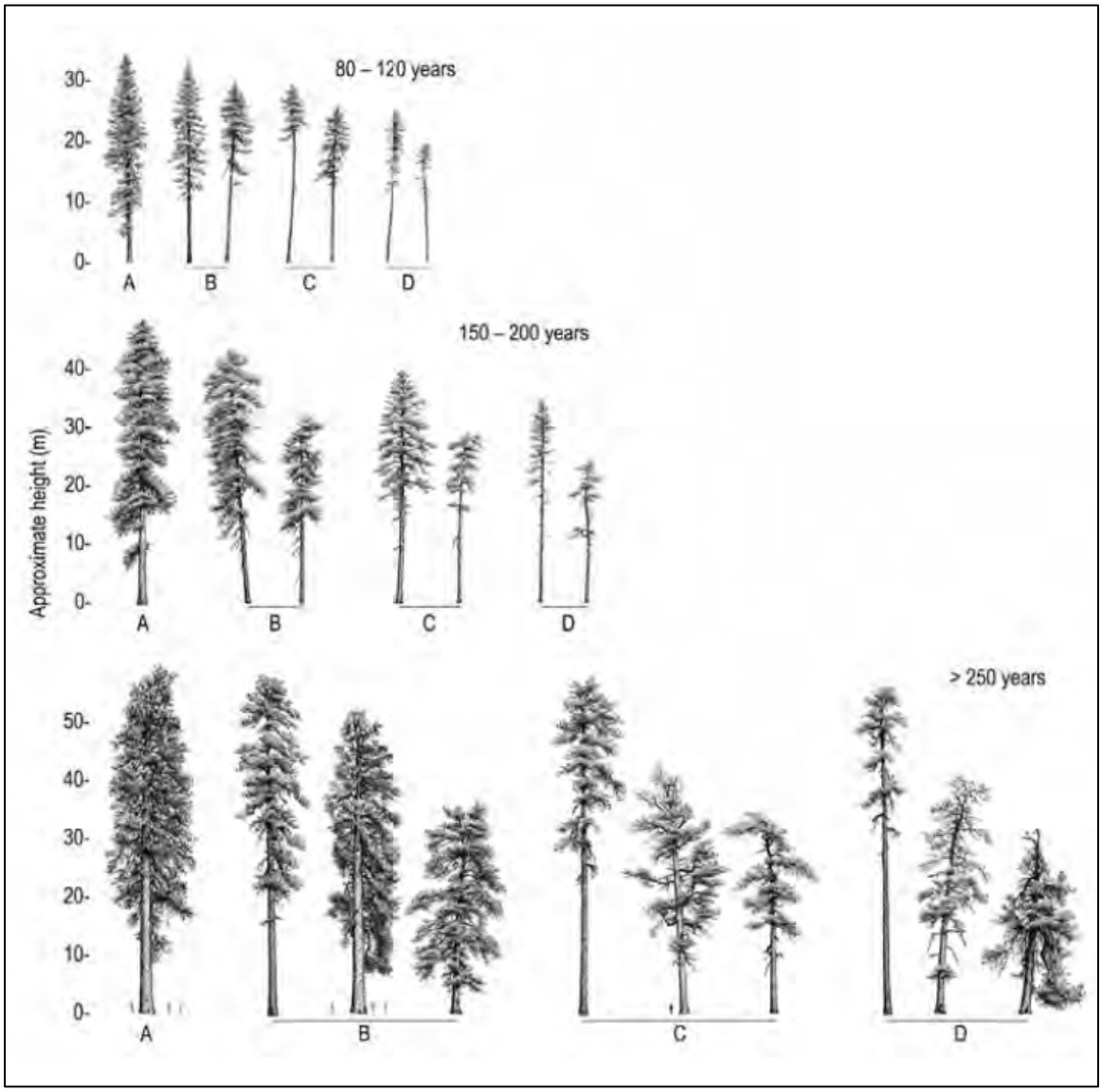


Table 13. Rating System for determining ponderosa pine legacy trees

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

This section was adapted from Van Pelt 2008, pages 95-118.

In some ways, western larch fills the niche occupied by ponderosa pine in environments too cold for the pine to tolerate. 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).

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 21). Old trees, greater than 250 years, often develop the richly colored bark of a ponderosa pine (Figure 22). However, the bark transformation from young to mature to old is not as consistent, nor as predictable, as that of ponderosa pine. Ultimately, bark characteristics must be used with other characteristics to determine approximate tree age.

Figure 21. Mature western larch (left) will often have bark that is difficult to distinguish from Douglas-fir (right).

Figure 22. The bark of very old western larches (left) is often a mimic for ponderosa pine bark (right).

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. Depending on the stand's density, the crown base often will recede at a rate comparable to the height growth of the stand. 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. Larches often respond by producing epicormic branches below the base of the live crown. 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 23). The crowns of mature western larch are often a combination of original and epicormic branches, a pattern that becomes accentuated as trees age. 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 24).

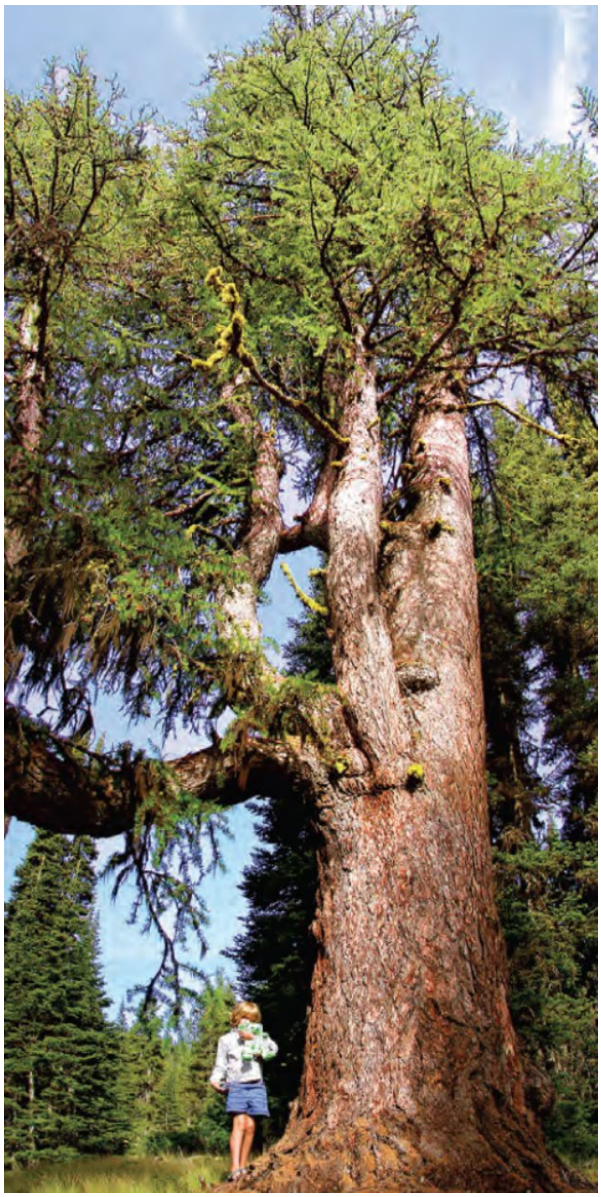
Figure 23. Epicormic branches develop below the main crown in a maturing western larch.

Figure 24. On mature western larch the graceful crown consists of original branches and an unmistakable radiating fan of epicormic branches adorn the base of the crown.

Crown complexity, arising from damage due to prolonged mistletoe infections or physical events, can assist in determining tree age (Figure 25). In a manner similar to the production of epicormic branches, larches have the ability to produce reiterated trunks following crown damage (Figure 25).

Figure 245. Large limbs with mature bark are a sign of an old tree. In this case, the twisted shape resulted from an old mistletoe infection.

Figure 25. Reiterated trunk formation in western larches. Old trees can recover from crown damage by producing secondary trunks, as illustrated here.



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 27). 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. Table 14 shows the rating system for determining western larch legacy tree.

Figure 26. Western larch crown form and tree vigor on the Payette National Forest.

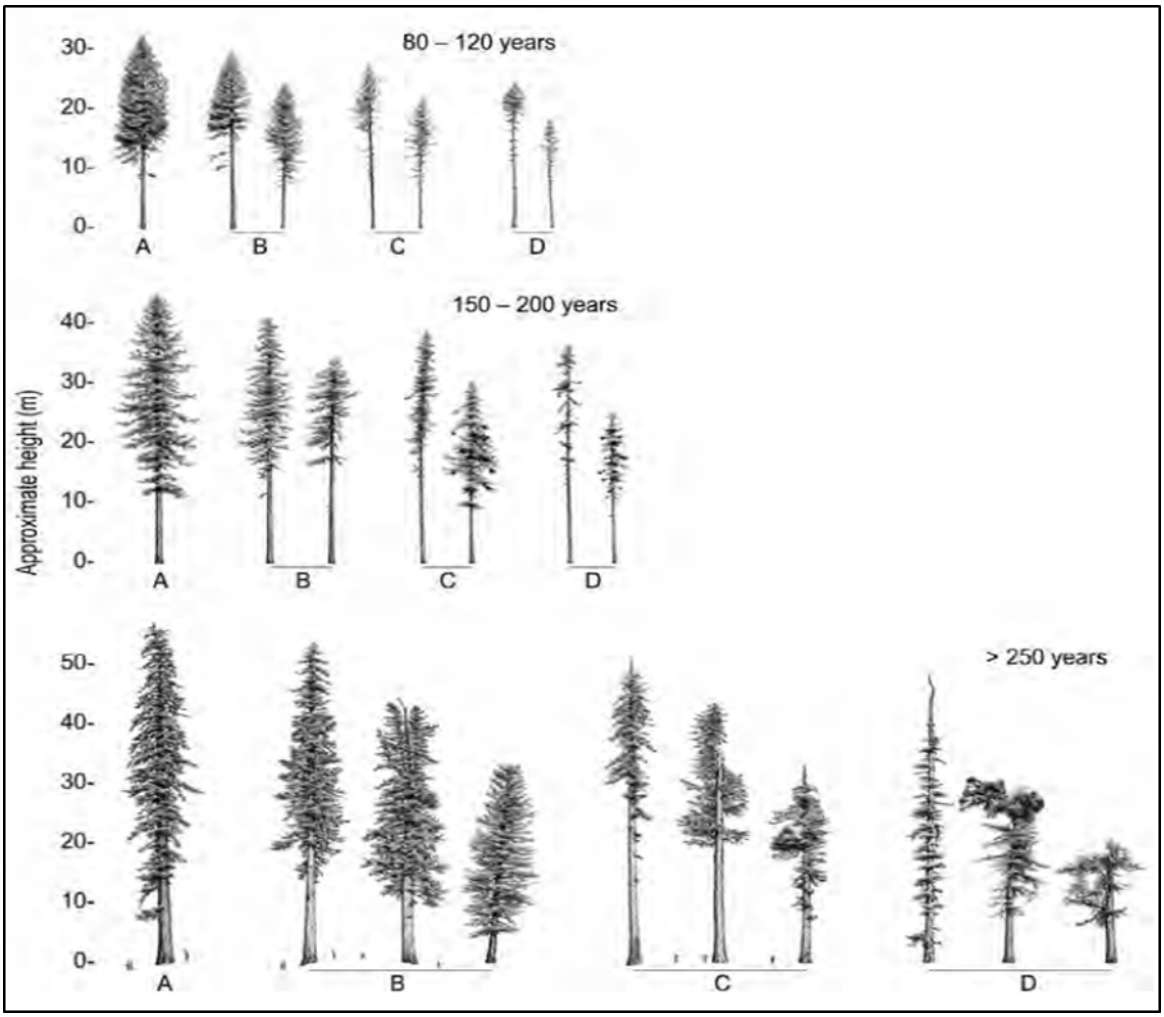


Table 14. Rating system for determining western larch legacy trees

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 section was adapted from Van Pelt 2008, pages 119-132.

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. Old Douglas-firs are very fire-resistant, due largely to the protective bark that develops with age. In contrast, the thin bark of young trees offers little protection, even with low-intensity fire. The thin bark begins to thicken and develop vertical fissures as trees mature. For the first 100 to 200 years, the bark is hard and bony, and usually brown to gray (Figure 27).

Figure 27. 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.

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 28) 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. In Douglas-fir, the lower crown begins to recede once a stand has achieved canopy closure. 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 29).

Figure 28. Hard, but thick bark is common on old Douglas-fir in the drier parts of its range.

Figure 29. 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.

Ultimately, branch scars are hidden by the continually expanding trunk after a period of several decades to more than a century. During that interval, the bark will be thinner at these spots than in the surrounding areas. 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. 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 30).

Figure 30. Epicormic branches. A fan of epicormic branches (visible at the base of the Douglas-fir crown) often indicates a tree in late maturity.

Crown profiles of Douglas-fir at three age classes and four vigor classes (A-D) are presented in Figure 32. As with ponderosa pine and western larch, variation in crown structure is a function of age, productivity, and crown damage. Naturally, not all of the trees in one series will advance to the next. 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.

In Figure 32 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.

Table **15** shows the rating system for determining Douglas-fir legacy trees.

Figure 31. Douglas-fir crown form and tree vigor on the Payette National Forest.

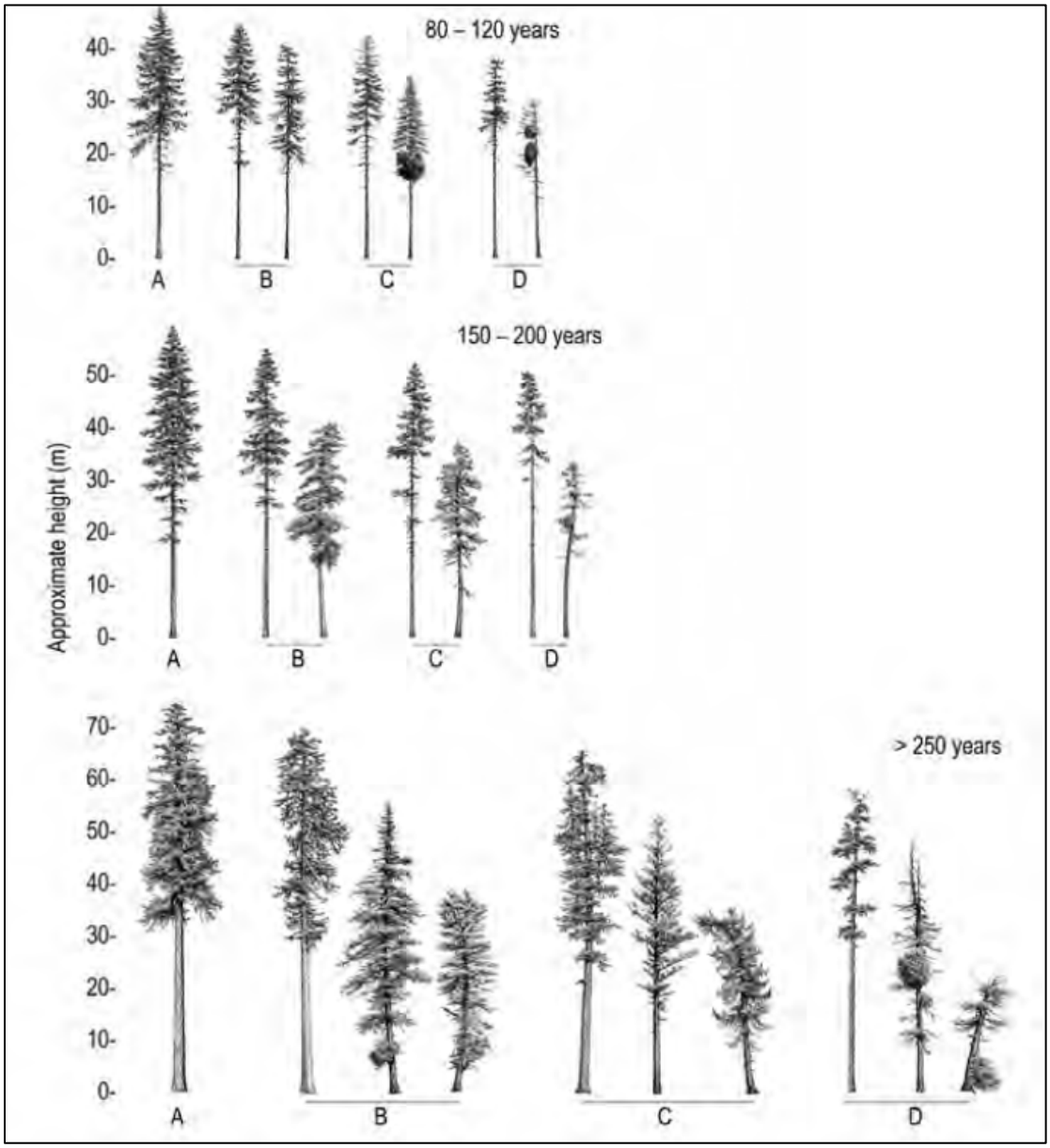


Table 15. Rating system for determining Douglas-fir legacy trees

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.

Appendix 3- Forest Response to Reviewing Officer's Recommendations (2019)

Table 16. Response of the Payette National Forest to the Objection Officer's Recommendation for objection points raised during the objection period in 2014. Some of the same issues were raised in 2019 and the 2014 review and response applies to those issues.

Forest Response to Reviewing Officer's Recommendations			
Objector	*Objection Point*	**Reviewing Officer's Recommendation**	**Forest Response**
2019 (Issues also submitted 2014) ***Alliance for Wild Rockies (AWR)***	*The Selected Action is not based upon completion of the Wildlife Conservation Strategy (WCS) Forest Plan Amendment process.*	I am instructing the Responsible Official to clarify in a whitepaper how the science of the Wildlife Conservation Strategy was incorporated into this project and how utilizing that science met the requirements of the current Forest Plan.	Whitepaper – Use of Information from the 2011 WCS DEIS, Project Record, Document # LCBC0150
	The DEIS was based upon grossly incomplete data, and it is not clear how the FEIS remedied those deficiencies, in violation of NEPA. The Forest used incomplete or premature data to support the proposals for road decommissioning/treatments.	I am instructing the Responsible Official to interpret and clarify GRAIP data, and review the response to comment 181 and clarify that future NEPA is not required for the implementation of this project.	FEIS Errata (attachment to ROD), Project Record, Document # LCBC1261
	The FEIS relies upon scientifically invalid methodologies for estimating past and project-related soil detrimental disturbance (DD).	I am instructing the Responsible Official to correct Appendix C of the Soils Specialist report.	Updated, Project Record, Document # LCBC0156
	The FEIS fails to adequately disclose analyses of cumulative effects, in violation of NEPA.	I am instructing the Responsible Official to clarify/strengthen the project documentation and decision for cumulative effects.	Specialist Reports: Project Record, Document #s 033-040
2019 (Issues also submitted 2014) ***Native Ecosystems Council (NEC)***	*The agency will violate the National Environmental Policy Act (NEPA), the National Forest Management Act (NFMA), the Administrative Procedures Act (APA), and the Endangered Species Act (ESA) by implementing the proposed project as defined in the draft Record of Decision, and the Final Environmental Impact Statement. The agency has misrepresented the purpose and*	I am instructing the Responsible Official to provide one central document that explains how the Forest looked at efficacy (recurring issue throughout objections) and then reference the record or document locations. Place this document in the record. I am also instructing the Responsible Official to	Whitepaper – Comparison of Alternatives – Meeting Project Objectives & Effects Tracked by Issue, Project Record, Document # LCBC0152 Whitepaper – Clarification of the Effects of the Lost Creek Boulder

Native Ecosystems Council (con't)	*the environmental effects of the project; the claimed purpose to log and burn to promote wildlife habitat is clearly false; this is demonstrated by at least 3 factors: the claimed benefits to the white-headed woodpecker are never[sic]. The agency has mislead the public in regards to both the supported with any evidence; the claims that habitat for many other sensitive wildlife species will be maintained is false; and the claimed benefits of prescribed burning to big game are never supported with any analysis. In addition, the agency is misleading the public in regards to a stated purpose to increase the amount of large tree forest structure as noted in the draft ROD at 34.*	clarify analysis of the white-headed woodpecker, and update the literature review. Recent studies have been published from the east Cascades (Washington and/or Oregon) that have documented white-headed woodpeckers nesting in partial cut forests.	Creek Project on Sensitive Wildlife Species, Project Record, Document # 147 Additional references added to record: A Conservation Assessment for the White-headed woodpecker (*Picoides albolarvatus*), Mellen-McLean et al. 2013, Document # LCBC0157
	The agency is failing to maintain habitat and viability of sensitive species and MIS in the project area as is required by the NFMA.	I am instructing the Responsible Official to clearly summarize why loss of habitat within the Project Area is not a concern and that the project area would continue to maintain habitat viability to support populations of species on the Forest.	Whitepaper – Clarification of the Effects of the Lost Creek Boulder Creek Project on Sensitive Wildlife Species, Project Record, Document # LCBC0147, Amended Wildlife Specialist Report, Project Record, Document # LCBC0039
	The proposed management of the Northern Idaho Ground Squirrel is misleading and fails to address significant problems.	I am instructing the Responsible Official to review and clarify the analysis of cumulative effects as it is related to livestock grazing.	Specialist Reports: Project Record, Document #s LCBC0033-040
2019 (Issues also submitted 2014) ***Idaho Sporting Congress (ISC)***	*The Forest is not in compliance with ESA for Lynx.*	I am instructing the Responsible Official to review/update effects of prescribed fire on lynx habitat and eliminate inconsistency between resources regarding changes in canopy cover or tree density related to prescribed burning; clarify the cumulative effects analysis and discussion of effects; add a discussion for reader understanding regarding how no effect was determined for snowshoe hare habitat, connectivity	Amended Wildlife Specialist Report, Project Record, Document # LCBC0039

Idaho Sporting Congress (cont.)		and roads discussion, and the relevance of no prescribed burning in the next 10 years to lynx; and corrected the language in Table WL-28 from NLAA (not likely to adversely affect) to NLTJ (not likely to jeopardize) as stated in the Wildlife Specialist Report.	
	The FEIS doesn't disclose or analyze impacts from grazing in the area.	I am instructing the Responsible Official to include more information to clarify the cumulative effects of grazing on sediment.	Specialist Reports: Project Record, Document #s LCBC0035, 038
	Discussion of the effects of grazing NIDGs was not provided in the FEIS within the project area.	I am instructing the Responsible Official to add to the analysis of cumulative effects to NIDGS in relation to livestock grazing. Include reference the *Diets of Northern Idaho Ground Squirrels and Cattle at Two Sites in Adams County*, Idaho in 2008, which is in the project record.	Amended Wildlife Specialist Report, Project Record, Document # LCBC0039
	The FS meeting FSH direction and WCF and Forest Plan Goals, objectives, standards and guidelines all depends on your undisclosed road enforcement and decommissioning program, your BOISED "estimation" model, and unknown and unanalyzed grazing impacts. These fail to meet the CWA and NFMA's standard of "Insuring" protecting for streams and riparian areas. The FEIS's claim that mere compliance with BMP's constitutes compliance with the CWA is erroneous.	I am instructing the Responsible Official to clarify language in the FEIS for compliance with the CWA and BMPs.	Whitepaper – Soil and Water Clarifications, Project Record, Document #s LCBC0153, 154, 155
	The FS must disclose through NEPA the efficacy of its proposals. That includes the ability of the agency to accomplish what it says it will do, and to say truthfully what it did ….Again, on the Payette, the FS claimed thousands of trees were dying from beetles, and fire, when they were not. The FS	I am instructing the Responsible Official to provide one central document that explains how the Forest looked at efficacy and then reference the record or document locations. Place this document in the record.	Whitepaper – Comparison of Alternatives – Meeting Project Objectives & Effects Tracked by Issue, Project Record, Document # LCBC0152

	knows of these instances, and were reminded of them in our DEIS Comments. They must disclose to the public these violations of law and policy, and explain how they can do this huge project without committing the same violations. Can they do projects this size competently?		
2019 Objection Issues			
AWR/NEC/ISC	*Issue 2: The wildlife conservation strategy amendment has never been completed as a Forest Plan Amendment. Thus implementation of this unfinished amendment for management of old forest habitat in the Lost Creek-Boulder Creek project is a violation of the National Forest Management Act.*	Present the "synonymously" statement for "old forest" and "old forest habitat" at the earliest occurrence, which is on p. 28 [of the FEIS] under "Wildlife section of Issues and Indicators."	Added statement indicating "beginning on p. 28 of the FEIS" to the final Errata, Appendix K, p. 410., Document # LCBC1261
		Assuming the changes from "old forest habitat" to "old forest" are made in the Old Forest subsection of the Wildlife Section for added clarity on top of the "synonymously" statement, either delete or explain the use of "old forest habitat" in "Large tree habitat can be a critical building block to restoring old forest habitat .... "	Revised in FEIS Appendix K, final Errata pp. 411, Document # LCBC1261
		Rephrase: "Currently, no stands have been identified in the project area that meet all attributes of the project objectives" that characterize old forest habitat as defined in proposed Forest Plan amendments (USDA Forest Service 2011, pp, E 23 to E 28). Or delete the sentence completely.	Revised in FEIS Appendix K, final Errata p. 411-412, Document # LCBC1261
		Change "definition" to "term" on pg. 61 of the record of decision.	Definition for old forest habitat is updated to say "term" on p. 62 of the final ROD; Document # LCBC1260

AWR/NEC/ISC	*Issue 3: The Forest Service is violating the National Forest Management Act by failing to complete a forest plan amendment for the change of management prescription categories in the project area because management direction will change.*	The final EIS (pg. 10) is still a source of confusion and was not corrected in the Errata circulated with the 2019 draft ROD. The Errata should include a statement for MPC 5.2 equivalent to the other MPCs presented, which would be: "Emphasis is on achieving sustainable resource conditions that support commodity outputs, particularly timber production in forested settings, and forage production in non-forested settings" (Forest Plan, pg. III-87). Adding this statement would make it clearer that MPC 5.2 was not being reallocated to MPC 5.1 by the decision. The MPC 5.2 description in the final EIS (pg. 10) also states, "this project will use desired conditions for MPC 5.1 in place of desired conditions for MPC 5.2," which could be interpreted that there is either a project-specific amendment needed to use other than MPC 5 .2 desired conditions or a plan-level amendment is needed to change the MPC from 5 .2 to 5 .1.	This section, FEIS Appendix K, final Errata, pp. 406-407 was edited to provide further clarification that the intent is not to modify the MPC in the long-term., and that the FEIS use of the short-term desired conditions for restoration (“i.e. outside MPC 5.2”) is allowed under the Forest Plan; Document # LCBC1261.
		The Errata (pg. 406) states that Appendix A of the Forest Plan contains "long-term desired conditions," but this same section also talks about the analysis utilizing "the short-term desired conditions for 'outside of MPC 5.2' regardless of the MPC assigned in the Forest Plan" and "managing to align more closely in the short-term with the HRV (e.g. using desired conditions for "outside of MPC 5.2 vs "within MPC 5.2"). Although it has the correct statement, "Applying this strategy for the LCBC project would not	Sentence added to FEIS Appendix K, final Errata, p. 407; Document # LCBC1261

		change the long-term desired conditions assigned in the Forest Plan," the other statements could possibly be misinterpreted to mean that there are short-term desired conditions that are being changed or waived, which would require a plan amendment to do so. Clarity could be provided to the paragraph by an insertion, "There are no short-term vegetation desired conditions in the Forest Plan, and the Forest Plan states that 'managers will have to choose among several approaches to maintain or trend toward desired conditions' (Appendix A, pg. A-1). The strategy for this project, of managing .... " The section may also benefit from replacing "short-term desired conditions" with "short-term project objectives." If doing so, it will be important to maintain "project objectives" as a phrase to avoid confusion with Forest Plan objectives, which cannot be changed without plan amendment. I am instructing the Forest to clarify the statements in the Errata prior to issuance of the final ROD.	
		The Errata should be corrected to note that Appendix A in the Forest Plan uses the phrase "Canopy Closure Class" for timberland resources, not "Canopy Cover Class."	Attachment E of the Forest Vegetation Specialist Report and Appendix J of Volume 2 of the LCBC FEIS provide clarification on this issue. The Forest Plan creates confusion regarding this terminology, as it uses “closure” and “cover” interchangeably. Page A-5 of the Forest plan labels a header as “canopy closure”, then uses the terms “closure” and “cover” interchangeably. The descriptions in Appendix A of the Forest Plan use the

			header Canopy Closure, but the definition is that of "Canopy Cover". Therefore the term Cover was used to attempt to minimize confusion throughout the LCBC documents. Language was added to FEIS Appendix K, final Errata p. 407, to aid in clarifying the use of the terms closure and cover as used in the Forest Plan versus in this FEIS; Document # LCBC1261

Appendix 4- Biological Opinions

USFWS Biological Opinion:

Excerpted from: *US Department of the Interior, US Fish and Wildlife Service. 2014. Lost Creek boulder Creek Landscape Restoration Project – Adams County, Idaho – Biological Opinion #01EIFW00-2014-F-0246 issued May 1, 2014.*

Reasonable and Prudent Measures

Bull Trout

The Service concludes that the following reasonable and prudent measure is necessary and appropriate to minimize the take of bull trout caused by the proposed action.

1. Minimize the potential for harassment of bull trout and disruption of riparian and aquatic habitat from project activities.

Northern Idaho Ground Squirrel

The Service concludes that the following reasonable and prudent measure is necessary and appropriate to minimize the take of NIDGSs caused by the proposed action.

2. Limit the potential for mortality of NIDGS and project related disturbance during vegetation treatment activities.

Terms and Conditions

The proposed action, including all described conservation measures and PDFs, will be implemented as described in the Assessment and proposed action section of this Opinion.

1a. The Forest shall ensure that final stream crossing replacement designs and the implementation schedules are reviewed and agreed upon by the Level 1 Team prior to implementation.

1b. All erosion and sediment control measures will be maintained until construction is complete in the area and disturbed areas are stabilized.

1c. Turbidity monitoring shall be conducted for at least 7 stream crossing installations, replacements, or removals to assess the intensity and duration of the turbidity plume and to ensure the extent of take is not exceeded. These 7 stream crossings shall be on fish- bearing streams and shall represent the range of conditions (e.g., size of stream, type of substrate, extent of construction work required) expected to be encountered during project implementation. Turbidity monitoring shall occur during cofferdam installation and removal activities. Turbidity readings shall be collected at the following locations: (1) Upstream of the project area; and (2) 600 feet downstream of the project area. Turbidity at the downstream sample location shall be recorded every 30 minutes until the plume has dissipated.

2a. Coordinate vegetation treatments with biologists monitoring NIDGS populations in the area to assure that the most current information is used to sequence activities in occupied NIDGS habitat.

2b. Where practical, store log and road materials and delay haul through occupied NIDGS habitat to September 1 to February 28, when NIDGSs are in hibernation. If this is not practical, impose the same PDFs on road material haul as those for log haul (e.g., speed limit restriction).

2c. Monitor and enhance the effectiveness of the education and enforcement programs designed to teach the public to keep dogs on leash and away from occupied NIDGS habitat (e.g., utilize the Cold Spring Campground host, add more signage, and/or develop a leash lending program).

Reporting and Monitoring Requirements

In order to monitor the impacts of incidental take, the Federal agency or any applicant must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [(50 CFR 402.14 (i)(3)].

1. The Forest shall provide a report detailing project implementation status and result of any applicable implementation and effectiveness monitoring (e.g., turbidity), and any bull trout or NIDGS surveys conducted in the project area annually. The report can be emailed to Allyson Turner (allyturner@fws.gov) or presented during Level 1 team meetings.
2. Upon locating dead, injured, or sick bull trout not anticipated by this Opinion, as a result of Project activities, such activities shall be terminated. Please notify the Service within 24 hours. Additional protective measures will be developed through discussions with the Service.
3. During project implementation, promptly notify the Service of any emergency or unanticipated situations arising that may be detrimental for bull trout and NIDGSs relative to the proposed activity.

Conservation Recommendations

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery programs, or to develop new information on listed species.

The Service has the following conservation recommendations:

1. Continue to monitor for the presence of bull trout in the Lost Creek subwatershed in an attempt to broaden the understanding of bull trout use in the subwatershed (and if found, reinitiate consultation for the subject action). Where present, we also recommend you complete surveys to ascertain bull trout densities in various reaches.
2. Continue to identify and implement restoration actions in the Weiser and Little Salmon River Watersheds.
3. Use native plants for revegetating disturbed areas.
4. If straw is used for stabilizing disturbed areas ensure it is certified weed free.
5. Preserve all "Legacy trees" during vegetation treatments.
6. Limit treatment in RCAs in Lost Creek to preserve streamside shading to balance the needs of NIDGS, the objectives of the project, and native fish.
7. In the Lost Creek subwatershed, maintain a one percent or less increase in estimated clearcut area as you propose in the Boulder Creek subwatershed.
8. Document and report to the Service any anthropogenic sources of disturbance to NIDGS or their habitat (e.g., off road OHV use, shooting, domestic dog nuisances, etc.).
9. Maintain a strong Forest law enforcement presence in the Lost Valley area due to anticipated increases in recreation use to assure that closures to benefit NIDGSs are effective.

NMFS Biological Opinion:

Excerpted from: *US Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service. 2014. Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the Lost Creek boulder Creek Landscape Restoration Project, Boulder Creek Watershed, HUC 170602100501, – Adams County, Idaho Biological Opinion #WCR-2014-445 issued April 14, 2014.*

Reasonable and Prudent Measures and Terms and Conditions

"Reasonable and prudent measures" (RPM) are nondiscretionary measures to minimize the amount or extent of incidental take (50 CFR 402.02) "Terms and conditions" implement the RPMs (50 CFR 402.14). These must be carried out for the exemption in section 7(o)(2) to apply. The PNF and the COE have the continuing duty to regulate the activities covered in this ITS where discretionary Federal involvement or control over the action has been retained or is authorized by law. The protective coverage of section 7(o)(2) will lapse if the PNF or COE fail to exercise their discretion to require adherence to terms and conditions of the ITS, or to exercise that discretion as necessary to retain the oversight to ensure compliance with these terms and conditions. Similarly, if any applicant fails to act in accordance with the terms and conditions of the ITS, protective coverage will lapse.

NMFS believes that full application of PDFs and mitigation measures included as part of the proposed action, together with use of the RPMs and terms and conditions described below, are necessary and appropriate to minimize the likelihood of incidental take of listed species due to completion of the proposed action.

The PNF and COE (for those measures relevant to the CWA section 404 permit) shall comply with the following RPMs:

1. Minimize the potential for incidental take resulting from implementation of the proposed action.
2. Ensure completion of a monitoring and reporting program to confirm that the terms and conditions in this ITS were effective in avoiding and minimizing incidental take from permitted activities and ensuring incidental take is not exceeded.

To be exempt from the prohibitions of Section 9 of the ESA, the PNF and COE shall fully comply with PDFs and mitigation measures described as part of the proposed action and the following terms and conditions that implement the RPMs described above[5] . Partial compliance with these terms and conditions may invalidate this take exemption, result in more take than anticipated, and lead NMFS to a different conclusion regarding whether the proposed action will result in jeopardy or the destruction or adverse modification of designated critical habitats.

1. To implement RPM 1, the PNF and COE (for those measures relevant to the CWA section 404 permit) shall ensure that:
   a. The proposed action, including all described conservation measures and PDFs, will be implemented as described in the BA and proposed action section of this Opinion.
   b. At least a three pass method is employed when electroshocking to ensure the greatest level of fish salvage, unless previously approved by the appropriate Level 1 Team to perform fewer passes.

[5] The PNF or COE may implement directly, or include as contract/permit requirements, the terms and conditions that are relevant to their specific authorities.

c. In addition to not conducting instream work for crossing installation/removal activities after August 15, instream work shall not be conducted prior to July 15 on streams that provide suitable steelhead spawning habitat within 600 feet downstream from the crossing locations.

2. To implement RPM 2 (monitoring and reporting), the PNF and COE (as relevant to the CWA section 404 permit) shall ensure that:

a. All captured, handled, injured, and killed ESA-listed fish shall be identified, counted, and recorded.

b. Turbidity monitoring shall be conducted for at least seven stream crossing installations, replacements, or removals to assess the intensity and duration of the turbidity plume and to ensure the extent of take is not exceeded. These seven stream crossings shall be on fish-bearing streams and shall represent the range of conditions (e.g., size of stream, type of substrate, extent of construction work required) expected to be encountered during project implementation. Turbidity monitoring shall occur during cofferdam installation and removal activities. Turbidity readings shall be collected at the following locations: (1) Immediately upstream of the project area in a location representative of background conditions; and (2) 600 feet downstream of the project area. Turbidity at the downstream sample location shall be recorded every 30 minutes until the plume has dissipated.

c. A post-project report summarizing the results of the monitoring above shall be submitted to NMFS by December 31 of the year in which activities were implemented. The post-project report shall also include a statement on whether all the terms and conditions of this Opinion were successfully implemented.

d. The post-project report shall be submitted to:

Snake Basin Area Office Director
National Marine Fisheries Service
Attn: NWR-2014-445
10095 W Emerald St.
Boise, Idaho 83704

e. NOTICE: If a steelhead or salmon becomes sick, injured, or killed as a result of project-related activities, and if the fish would not benefit from rescue, the finder should leave the fish alone, make note of any circumstances likely causing the death or injury, location and number of fish involved, and take photographs, if possible. If the fish in question appears capable of recovering if rescued, photograph the fish (if possible), transport the fish to a suitable location, and record the information described above. Adult fish should generally not be disturbed unless circumstances arise where an adult fish is obviously injured or killed by proposed activities, or some unnatural cause. The finder must contact NMFS Law Enforcement at (206) 526-6133 as soon as possible. The finder may be asked to carry out instructions provided by Law Enforcement to collect specimens or take other measures to ensure that evidence intrinsic to the specimen is preserved.

Conservation Recommendations

Section 7(a)(l) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Specifically, conservation recommendations are suggestions regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information (50 CFR 402.02). The following recommendations are discretionary measures that NMFS believes are consistent with this obligation and therefore should be carried out by the specified Federal agencies:

1. To mitigate the effects of climate change on ESA-listed salmonids, the PNF and COE should follow recommendations by the ISAB (2007) to plan now for future climate conditions by implementing protective tributary, mainstem, and estuarine habitat measures; as well as protective hydropower mitigation measures. In particular, implement measures to protect or restore riparian buffers, wetlands, and floodplains; remove stream barriers; and to ensure late summer and fall tributary streamflows.
2. The PNF should monitor and assess the effectiveness of the fish passage improvement projects by surveying for upstream habitat utilization by ESA-listed fish post project completion.
3. The PNF should continue to monitor and assess the recreational uses in the Boulder Creek subwatershed. Where heavy recreational uses are having adverse effects on RCAs and instream habitat, the PNF should develop and implement plans (e.g., closures, educational programs, and/or restoration actions) to reduce or eliminate those adverse effects.
4. The PNF should follow the BMPs outlined in the following guidance document: *The use of treated wood products in aquatic environments: Guidelines to West Coast NOAA Fisheries staff for ESA and EFH consultations in the Alaska, Northwest and Southwest Regions* (NMFS 2009).

Please notify NMFS if the PNF or COE carry out these recommendations so that we will be kept informed of actions that minimize or avoid adverse effects and those that benefit listed species or their designated critical habitats.

Essential Fish Habitat Conservation Recommendations

NMFS believes that the following four Conservation Recommendations are necessary to avoid, mitigate, or offset the impact of the proposed action on EFH. These Conservation Recommendations are a non-identical set of the ESA Terms and Conditions.

1. The PNF and COE should ensure the proposed action, including all described conservation measures and PDFs, are implemented as described in the BA and this Opinion.
2. The PNF should ensure the contractors install all erosion control and water management controls before the end of the operating season to minimize sediment delivery to streams.
3. The PNF should require the contractors to inspect the condition of all roads used for vegetation management activities during the life of the project. If sediment delivery is occurring, then the PNF should ensure adjustments/maintenance are performed to minimize the delivery of sediment to streams.
4. As road and recreational improvements are made, the PNF should continue to monitor and assess the recreational uses in the Boulder Creek subwatershed. Where heavy recreational uses are adversely affecting EFH, the PNF should develop and implement plans (e.g., closures, educational programs, and/or restoration actions) to reduce or eliminate those adverse effects.

Appendix 5 - Forested Vegetation Consistency Summary

Summary of Project Consistency with Appendix A of Forest Plan

This attachment has been included to provide further clarification regarding the effects of the *Selected Alternative* in the Lost Creek – Boulder Creek (LCBC) project area. More specifically, this document has been included to summarize statements made in the FEIS and project record regarding the consistency of the *Selected Alternative* with the 2003 Forest Plan desired conditions in the long-term.

The following excerpts from the Forest Plan are included here to provide a summary of direction and guidance found in the Forest Plan regarding desired conditions for forested vegetation:

- Desired conditions, also called desired future conditions, are, "…a portrayal of the land, resource, or social and economic conditions that are expected in 50-100 years if management goals and objectives are achieved. A vision of the long-term conditions of the land." (Forest Plan page GL-9).
- "Desired Conditions are descriptions of how Forest resources should look and function to provide diverse and sustainable habitats, settings, goods, and services. Taken together, the desired conditions should present an integrated vision of properly functioning Forest that supports a broad range of biodiversity and social and economic opportunity." (Forest Plan pg. III-2).
- While "...management objectives in" the Forest Plan "...are generally to be achieved within the planning period (the next 10 to 15 years)..." "Desired conditions and goals are more timeless in nature. For certain resources, the desired conditions may already exist, in which case the short and long term goal may be to maintain those conditions over time. In other cases, there may be short term impediments to achieving desired conditions, but the long term goal is to move resources toward those conditions. One example would be a desired condition of having more large ponderosa pine trees and snags in specific vegetation types. The Forest can retain existing large trees over the short term planning period, but to achieve the desired condition of more trees may take much longer due to the extended time needed for trees to grow to a large size" (Forest Plan page III-3).
- "VEGU01 – During site/project-scale analysis, tradeoffs in the achievement of one or more of the vegetative components described in Appendix A may need to be considered. Current conditions of the vegetation may necessitate the need to move one component away from the desired conditions in order to move another one toward the desired condition. In these situations, decisions should be based not only on which vegetative component is important to emphasize at any point in time to meet resource objectives, but also how to effectively move all components toward their desired condition over the long term" (Forest Plan page III-31).
- "Desired conditions do not represent a static state; they are dynamic because of the ecosystems we are working with are dynamic. The desired conditions are not something that every acre of the Forest at every point in time will possess – There will always be spatial and temporal variability. However, achievement of desired conditions, well distributed across the planning unit, is a long term goal of Forest management" (Forest Plan page A-1).
- "In some cases, there may be exceptions to the vegetative desired conditions. These exceptions may occur as a result of management direction in other resource areas, or when site specific conditions are not appropriate for the desired conditions. Oftentimes, Management Area (MA) direction may have different, but overriding goals and objectives. Each Management Prescription Category (MPC) may also have a different theme as to how we would achieve desired conditions. All of this information needs to be considered when we design our projects. The desired conditions are general conditions that can be modified at the local or project level based on site-specific biophysical conditions" (Forest Plan page A-1).

- "Although current conditions may prevent us from obtaining desired condition for quite some time, over a longer period (perhaps more than 100 years) management actions should result in forested vegetation that is approaching Forest-wide desired conditions for tree size classes, when all of the 5th field HUs are averaged together" (Forest Plan page A-5).

The desired conditions for vegetation differ, based both on the Management Prescription Category (MPC) assigned in the Forest Plan, as well as the Potential Vegetation Group (PVG). PVGs are groups of habitat types (Steele et. al. 1981) that share similar environmental characteristics, site productivity, and disturbance regimes. These PVGs classify the landscape to provide a framework for studying succession or vegetation over time. The *Selected Alternative* completes active management activities within the following PVGs: PVG 2 – Warm, Dry Douglas-fir/Moist Ponderosa Pine; PVG 5 – Dry Grand Fir; and PVG 6 – Moist Grand Fir. These PVGs are described in greater detail in the Forest Plan (p. A-18 to A-19). For additional information regarding PVGs see Appendix A of the Forest Plan, Morgan and Parsons (2001), Mehl et. al. (1998), and Steele et. al. (1981). See Table 17.

Table 17. Acres of land "within MPC 5.2", "outside of MPC 5.2", non-Forest Service, and total Forest Service within the Project Area

PVG	Acres			
	Within MPC 5.2	**Outside of MPC 5.2**	**Non-FS lands**	**Total NFS lands**
2	5,460	7,813	901	13,273
5	6,145	6,607	13	12,752
6	11,366	14,007	851	25,373
Other (includes grasslands/shrublands)	9,039	15,641	673	24,680
Total	**32,009**	**44,068**	**2,439**	**76,078**

As described in the FEIS and project record, the short-term desired conditions used for the forested vegetation analysis, in the FEIS, are different than the long-term desired conditions, contained in the Forest Plan, for the portion of the project area allocated to MPC 5.2 in the Forest Plan. See Figure **32** and Figure **33**.

As stated in the Forest Plan, "In some cases, there may be exceptions to the vegetative desired conditions. These exceptions may occur as a result of management direction in other resource areas…" and this direction may be different and sometimes overriding. For this project, some exceptions to the general forested vegetation desired future conditions, resulting from other resource areas (e.g. wildlife) management direction in the Forest Plan, in the LCBC project area that should be noted include:

- TEOB15 (Forest Plan page III-9): Maintain or restore vegetative conditions that contribute to the recovery of northern Idaho ground squirrel (NIDGS) habitat. See additional management area direction for NIDGS in MA 2, 3, & 5;
- Management Area 03 Standard 0339 (Forest Plan page III-132): the NIDGS will receive priority consideration for all management activities that occur within their known occupied habitat…; &
- Wildlife Guidelines 0341 & 0442 (Forest Plan pages III-133 & III-149): 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.
- Timber Standards 0457 & 0509 (Forest Plan pages III-150 & III-159): For this planning period, salvage and intermediate treatments are allowed, but regeneration harvests are prohibited.

Figure 32. Map of management areas (MAs), management prescriptions, and inventoried roadless areas

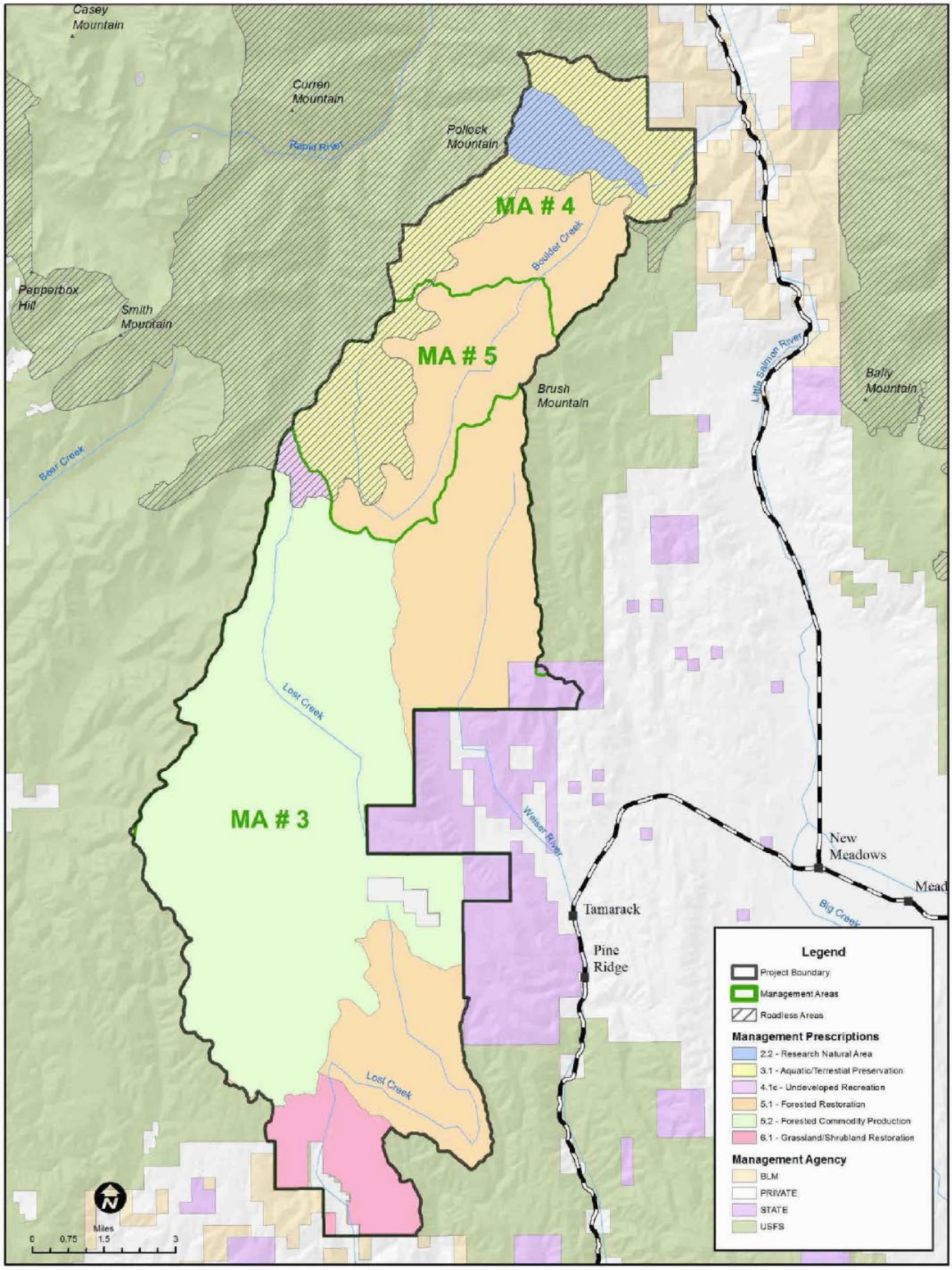
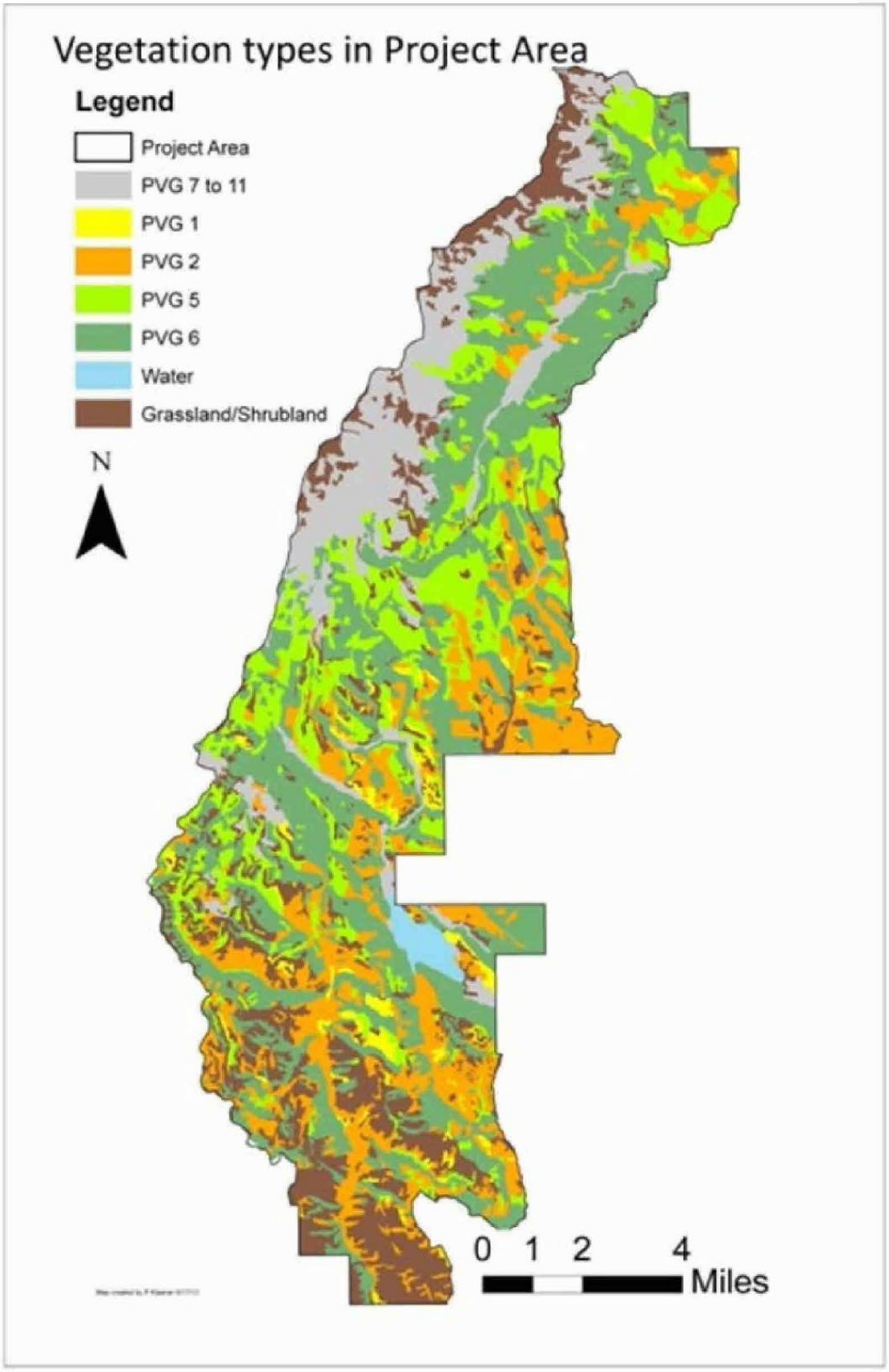


Figure 33. Map of Potential Vegetation Groups (PVGs) in the project area



Approximately 32,000 acres of the project area are allocated to MPC 5.2, per the Forest Plan, within the project area. In these MPC 5.2 areas, the "within MPC5.2" desired conditions contained in Appendix A of the Forest Plan apply in terms of Forest Plan consistency in the long-term. This use of short-term desired conditions in the FEIS, based on other resource area management direction contained in the Forest Plan, caused some confusion, as it could be interpreted that the project was intended to modify the long-term desired conditions from the Forest Plan, which was not the intent. The objective of using the desired conditions for "outside of MPC 5.2" in the FEIS, even in areas that are allocated to MPC 5.2 in the Forest Plan, was to design the project to emphasize conservation of habitat for wildlife species of greatest conservation concern in the short-term, while still allowing the Forest to achieve the "within MPC 5.2" long-term desired conditions in areas that are allocated to MPC 5.2 in the Forest Plan. This approach does not modify the long-term desired conditions for vegetation that are provided in the Forest Plan.

The following summary tables display conditions at three different time scales:

- the existing/current condition,
- a short-term projection - immediate post-treatment of the Selected Alternative, and
- a long-term projection - (approximately 30-50 years post treatment – approximately 35-60 years after signing of decision) of the Selected Alternative

Existing vegetative characteristics were determined utilizing the 2004 strata data layer that were updated in 2012 based on aerial imagery, past treatment data, field surveys conducted in 2012 and the Wesley Fire remotely sensed data, overflights, & field reconnaissance. Immediate post treatment vegetative characteristics were projected based on treatment descriptions of the draft Selected Alternative. This is the dataset that was utilized for the 2014 LCBC FEIS.

Long-term (30 to 50 year) post treatment vegetative characteristics were projected based on a review of available information contained in the project record that were utilized to draw conclusions during the analysis and decision-making process for LCBC in 2014. This data/information included things that were in the project record for LCBC in 2014, such as: past forest inventory data (Payette National Forest 1982, Payette National Forest 1987, USDA Forest Service 1994 & USDA Forest Service 2004); the Forested Vegetation Specialist Report for LCBC (Klasner 2014), growth monitoring plot data (USDA Forest Service 2002 & USDA Forest Service 2004b); and review of modelling completed for the Klasner 2012 document.

These past inventory data sets, growth monitoring plot data sets, model runs, and other information were used to determine appropriate timeframes to move stands into the next larger tree size class (TSC) and/or canopy cover class (CCC) based on anticipated growth, mortality, regeneration, etc.

A few other key points regarding these summary tables include:

- Only three PVGs are included in these summary tables (and in the FEIS) as no vegetation management activities in the other PVGs are included in any of the alternatives analyzed, nor in the *Selected Alternative*. In addition, the other PVGs all represent less than 2% of the project area, except for PVG 7 which is primarily located in an Inventoried Roadless Area (IRA) and no vegetation management activities are proposed in the IRA as a part of the LCBC project.
- The projections are only for the vegetative components for which there are different desired conditions depending upon the MPC assigned in the Forest plan. The remaining components (e.g. – species composition, snags, coarse woody debris) have identical desired future conditions in the Forest Plan; the FEIS contains disclosures of how the project effects those vegetative components and are not further discussed here. The components that have different desired conditions based on MPC are tree size class and canopy cover class:
    - Tree Size Class (TSC)
        - Desired conditions are specified at three different spatial scales for TSC:
            - Forestwide;

- outside of MPC 5.2; and
- within MPC 5.2.; and

▪ The difference in the Forest Plan for TSC only apply to the Grass/Forb/Shrub/Seedling (GFSS) and large TSCs, not any of the other size classes (i.e. sapling, small, or medium). Tables A-2, A-3, & A-4 in the Forest Plan provide these different desired condition.

o Canopy Cover Class (CCC)

▪ Desired conditions are specified at two scales for CCC and only applies to areas in the large TSC:

- outside of MPC 5.2; and
- within MPC 5.2.

▪ The difference only applies in Potential Vegetation Groups (PVGs) 2 and 5, as the desired conditions are identical in PVG 6 for CCC. See tables A-5 & A-6 in the Forest Plan for these tables.

Table 18 displays the different desired conditions for the different spatial scales (i.e. Forestwide, within MPC 5.2 and outside of MPC 5.2) by PVG as described in Appendix A of the Forest Plan. The current conditions are also included in this table:

Table 18. Desired future conditions for different spatial scales

Metric	PVG	Desired Future Condition (%)			Existing (%)		
		By MPC		Forestwide	By MPC		Forestwide
		In 5.2	Outside 5.2		In 5.2	Outside 5.2	
Grass/Forb/Shrub/Seedling (GFSS) Tree Size Class	2	5-7	4-5	5-7	1	0	1
	5	4-7	3-4	3-7	1	0	0
	6	8-9	7-8	7-9	0	1	1
Large Tree Size Class	2	30-58	59-80	30-80	29	24	26
	5	33-65	66-84	33-84	46	62	54
	6	20-27	28-56	20-56	34	43	39
Low Canopy Cover Class In the Large Tree Size Class	2	4-24	74-94	n/a	12	6	n/a
	5	3-23	25-45	n/a	10	15	n/a
	6	0-20	0-20	n/a	0	3	n/a
Moderate Canopy Cover Class In the Large Tree Size Class	2	76-96	6-26	n/a	76	64	n/a
	5	77-97	55-75	n/a	55	46	n/a
	6	80-100	80-100	n/a	49	57	n/a

The following six tables (Tables 19-24) summarize how Tree Size Class (TSC) and Canopy Cover Class (CCC) respond through time to the activities in the *Selected Alternative.* These tables provide a comparison of the responses to the desired conditions that are assigned in the Forest Plan. Therefore, there are three sets of desired conditions for Tree Size Class (i.e. Forestwide, within MPC 5.2, and outside of MPC 5.2) and two sets of desired conditions for Canopy Cover Class (i.e. within MPC 5.2, and outside of MPC 5.2) displayed in these tables. The following assumptions were used when projecting TSC and CCC transitions.

Assumptions regarding TSC transition:

o Individual tree measurements from forest inventories in 1979, 1991, & 2001 indicate that individual trees on the Payette National Forest can reach 20 inches in diameter at breast height (DBH) as fast as 35-40 years, others may take in excess of 200 years to reach this diameter (USDA FS 2002: page 22 - Graph 9).

- For a stand to move into the next larger TSC, there must be a minimum of 10% canopy cover of trees within that TSC (Forest Plan page A-2).
- Post treatment projections of TSC assumed that TSC would increase in all stands, except for strata 41 & 42 in the 30-50 timeframe. While this could slightly over predict the abundance of stands within the large TSC, due to an assumption of no disturbance (e.g. wildfire, insects, etc.), the general trends in TSC distribution are considered accurate.
- Inventory data indicates that managed stands can reach the large TSC in as little 90 years (USDA FS 1994: page 35 – Graph 35).
- Strata descriptions (USDA FS 2004), inventory data (USDA FS 1999 page 7 & USDA FS 2004a page 8) & FVS modelling indicate that the:
  - GFSS and sapling TSC stage typically last less than 30 years.
  - Transition to the small TSC typically occurs somewhere around 20-30 years of age. The assumption for this analysis is 60 years.
  - Transition to the medium TSC can vary but based on site productivity, stand management history, etc., but can occur in less 50-90 years. The assumption for this analysis is 90 years.
  - Transition to the large TSC typically occurs in 90-130 years. The assumption for this analysis is 120 years.

Assumptions regarding CCC transition:

- For immediate post-treatment CCC, areas receiving vegetative treatments were assigned as identified in Alternative B with the intensity of Alternative D as described in the 2019 draft ROD for the draft Selected Alternative. In areas deferred from treatment and/or prescribed fire only in Alternative B, the CCC was left as the same as existing.
- For 30-50 year post treatment CCC projections, all low & moderate CCC areas projected to increase to the next higher CCC except:
  - Strata 41 remained as low, due to the low productivity of these sites.
  - Strata 42 remained as moderate, due to the low productivity of these sites.
  - Areas treated for NIDGS to a low CCC, were maintained in a low CCC due to intensity of treatments.
  - Areas in Working Group 3 & 9 remained in the immediate post treatment CCC. This is due to the low productivity of these sites.

These assumptions were based on a review of modelling, inventory data, and other information referenced/contained in the project record from 2014 ((USDA Forest Service 1994, 2002, 2004 & 2004; Klasner 2012, 2014, & 2014; and Payette National Forest 2002, 2004, & 2004).

In the following tables, a red/green/black color code applies:

- **RED** font indicates a deficit in comparison to the desired conditions;
- **GREEN** font indicates an overabundance in comparison to the desired conditions; and
- **BLACK** font indicates the metric is within the desired range.

Table 19. PVG 2 – Tree Size Class: Desired, Existing, Immediate Post Treatment, & 30-50 year Post Treatment Conditions

PVG 2 (acres) Desired Future Conditions

TSC	All MPCs	in 5.2	outside 5.2
Total acres	13,273 [1]	5,460	7,813
GFSS	664-929	273-382	312-391
Sapling	398-929	164-382	234-547
Small	664-2,787	273-1,147	391-1,641
Medium	929-4,646	382-1,911	547-2,735
Large	3,982-10,618	1,638-3,167	4,610-6,250

PVG 2 (%) Desired Future Conditions

TSC	All MPCs	in 5.2	outside 5.2
GFSS	5-7	5-7	4-5
Sapling	3-7	3-7	3-7
Small	5-21	5-21	5-21
Medium	7-35	7-35	7-35
Large	30-80	30-58	59-80

1 - PVG 2 total acres = 14,174 acres . Non-FS acres = 901. Non-FS lands are not used in calculations in these tables.

PVG 2 (acres) Existing Condition

TSC	All MPCs	in 5.2	outside 5.2
GFSS	71	36	35
Sapling	64	63	1
Small	2,719	881	1,838
Medium	6,979	2,919	4,060
Large	3,439	1,560	1,879

PVG 2 (%) Existing Condition

TSC	All MPCs	in 5.2	outside 5.2
GFSS	1%	1%	0%
Sapling	0%	1%	0%
Small	20%	16%	24%
Medium	53%	53%	52%
Large	26%	29%	24%

PVG 2 (acres) Immediate Post Treatment

TSC	All MPCs	in 5.2	outside 5.2
GFSS	71	36	35
Sapling	64	63	1
Small	2,719	881	1,838
Medium	6,979	2,919	4,060
Large	3,439	1,560	1,879

PVG 2 (%) Immediate Post Treatment

TSC	All MPCs	in 5.2	outside 5.2
GFSS	1%	1%	0%
Sapling	0%	1%	0%
Small	20%	16%	24%
Medium	53%	53%	52%
Large	26%	29%	24%

PVG 2 (acres) 30-50 years post treatment

TSC	All MPCs	in 5.2	outside 5.2
GFSS	-	-	-
Sapling	71	36	35
Small	64	63	1
Medium	4,006	1,540	2,466
Large	9,132	3,821	5,311

PVG 2 (%) 30-50 years post treatment

TSC	All MPCs	in 5.2	outside 5.2	Future trend (next 30-50 years)
GFSS	0%	0%	0%	decrease
Sapling	1%	1%	0%	
Small	0%	1%	0%	
Medium	30%	28%	32%	decrease
Large	69%	70%	68%	increase

Used: VegTreatments_RCA_20140409_w_MPC as dataset for queries

As displayed in Table 19, there are approximately 13,300 acres of PVG 2 on Forest Service (FS) lands in the project area (of which approximately 5,500 acres are within MPC 5.2 and 7,800 are outside of MPC 5.2). The project area is currently deficit in the GFSS & sapling TSCs regardless of the desired conditions (i.e. forestwide, within MPC 5.2, or outside MPC 5.2) applied. Currently, in the small TSC, conditions are within the desired ranges for the forestwide and within MPC 5.2 desired conditions. Outside of MPC 5.2, there is a slight overabundance (3% above) the high end of the desired range (5-21%). The medium TSC is overabundant regardless of the desired conditions as there is currently 52-53% in this TSC regardless of the desired conditions for each area. The large TSC is slightly deficit, currently 26% for the project area and at 29% within MPC5.2 (the bottom end of the desired range is 30% for both of these desired conditions). The large TSC is currently considerably deficit (24% versus the desired 59-80%) outside of MPC 5.2.

The immediate post treatment effect would be no change as the treatments are being designed to retain enough trees within the largest TSC present in each stand to maintain at, or above, 10% canopy cover.

Projections for 30-50 years after treatment indicate that the GFSS, sapling, and small TSCs would be deficit regardless of the desired conditions. The medium TSC would be within or very near desired conditions regardless of the desired conditions. While the large TSC would be within the desired ranges when compared to the forestwide and outside MPC 5.2 desired conditions, there would be an overabundance of the large TSC within MPC 5.2 after enough stands grow into this TSC.

The trends for after the 30-50 year projection is that stands would continue to grow into the next larger TSCs. Over time, this would result in reductions in the abundance of the GFSS, sapling, small, and medium TSCs, while the large TSC would continue to become more abundant, which would likely occur within this 30-50 year timeframe.

The *Selected Alternative* would not preclude the attainment of the desired conditions in PVG 2 related to TSC as the anticipated deficit of the GFSS, sapling, small, and medium TSCs could be remedied by converting portions of the large TSC to a smaller size class. Converting stands to a smaller TSC could be easily completed by implementing stand replacing treatments that reduce the canopy cover of trees greater than 20 inches DBH to less than 10% which would create stands that meet the criteria of GFSS, sapling, or small TSC depending on the size and canopy cover of residual trees in the stand. A reduction in TSC could be accomplished by reducing trees over 20 inches DBH to less than 7-11 trees/acre, which could be accomplished in future planning documents by implementing treatments such as stand replacing prescribed burns, clearcuts, or seed tree cuts. This reduction in TSC could also occur due to unplanned/unforeseeable disturbance events such as wildfire or bark beetle epidemics. As acknowledged in the Forest plan, it is much easier to reduce the TSC of a stand versus rapidly increasing the TSC as it takes time for trees to grow. Therefore, an approach that manages for the large TSC to be at the high end or creates an overabundance of the large TSC, such as the *Selected Alternative,* leaves more options for the Forest to be successful in the long-term in achieving the desired conditions by promoting and maintaining the large TSC distributions at or above the desired ranges that can be easily converted to smaller TSCs in future NEPA decisions.

Based on modelling (utilizing FVS), forest inventory/strata/growth plot datasets, and professional experience, if a stand is set back to the GFSS TSC it would take anywhere from 80-175+ years to attain the large TSC metric, whereas a stand can be converted from a large TSC to a GFSS TSC within a day through planned or unplanned events such as wildfire, clearcut, or seed tree harvest. This alternative does not preclude the attainment of the TSC desired conditions for any of the desired conditions (i.e. forestwide, within MPC 5.2 or outside MPC 5.2) within the project area. Instead, the *Selected Alternative* allows more options to meet the desired conditions by retaining some excess Large TSC to respond to the variety of objectives in the Forest Plan (e.g. wildlife, timber production, wildfire resiliency, recreation, etc.) versus an alternative that transitions more of the area into the GFSS TSC during this entry.

Table 20. PVG 2 – Canopy Cover Class: Desired, Existing, Immediate Post Treatment, & 30-50 year Post Treatment Conditions

PVG 2 (acres)	Desired Future Conditions[1]		
CCC	All MPCs	in 5.2	outside 5.2
Low	n/a	66-760	3,411-5,875
Moderate	n/a	1,245-3,039	277-1,625
High	n/a	0	0
Desired Range in LTSC	n/a	1,638-3,167	4,610-6,250

PVG 2 (%)	Desired Future Conditions		
CCC	All MPCs	in 5.2	outside 5.2
Low	n/a	4-24	74-94
Moderate	n/a	76-96	6-26
High	n/a	0	0

PVG 2 (acres)	Existing Condition		
CCC	All MPCs	in 5.2	outside 5.2
Low	292	180	112
Moderate	2,435	1,231	1,204
High	712	149	563
TOTAL ACRES IN LTSC	3,439	1,560	1,879

PVG 2 (%)	Existing Condition[2]		
CCC	All MPCs	in 5.2	outside 5.2
Low	8%	12%	6%
Moderate	71%	79%	64%
High	21%	10%	30%

PVG 2 (acres)	Immediate Post Treatment		
CCC	All MPCs	in 5.2	outside 5.2
Low	2,099	1,130	969
Moderate	912	399	513
High	428	31	397
TOTAL ACRES IN LTSC	3,439	1,560	1,879

PVG 2 (%)	Immediate Post Treatment[2]		
CCC	All MPCs	in 5.2	outside 5.2
Low	61%	72%	52%
Moderate	27%	26%	27%
High	12%	2%	21%

PVG 2 (acres)	30-50 years post treatment		
CCC	All MPCs	in 5.2	outside 5.2
Low	859	767	92
Moderate	6,052	2,303	3,749
High	2,221	751	1,470
TOTAL ACRES IN LTSC	9,132	3,821	5,311

PVG 2 (%)	30-50 years post treatment[2]			
CCC	All MPCs	in 5.2	outside 5.2	Future trend (next 30-50 years)
Low	9%	20%	2%	decrease
Moderate	66%	60%	71%	decrease
High	24%	20%	28%	increase

1 - Desired Future Condition acreages for CCC would vary depending upon the amount of large TSC (LTSC) at the given time scale. The acreages listed in this table are based on the desired ranges of the LTSC and the related desired ranges for the CCC distributions within the LTSC for this PVG and MPC specified in the Forest Plan. So for example, in PVG 2, "within MPC 5.2": there are 14,174 acres of of PVG 2 in the project area; 901 acres of these are not on FS lands, 5,460 are within MPC 5.2, and 7,814 are outside of MPC5.2.; Within MPC 5.2, the desired range of the LTSC is 30-58%, which equates to 1,638 to 3,167 acres. So, to calculate the range of acres of Desired Future Conditions for CCC within MPC 5.2: the low end of the Desired CCC acres is equal to the of the low end of the desired LTSC acres (i.e. 1,638) times the low end of the desired percent range (i.e. 4%). So, 1,638 x 0.04 = 66 acres.; the high end of the Desired CCC acres is equal to the of the high end of the desired LTSC acres (3,167) times the high end of the desired percent range (i.e. 24%). So, 3,167 x 0.24 = 760 acres. For this eaxmple, the desired range of acres in PVG 2, within MPC 5.2, in the low CCC is 66 to 760 acres (or 4-24% of the desired range of acres of the LTSC [1,638-3,167 acres]). Therefore, the range of acres shown in this table is the broadest range of desired acreages possible based on desired LTSC ranges for the PVG and MPC.

2 - The percentages listed in the existing condition, immediate post treatment, and 30-50 year post treatmen ttime scales are based on the actual number of acres in the LTSC. This is notable because, if there is a deficit or overabundance of the LTSC from the desired range in percentages, the acres may actually still be in the desired range (and vice versa in regards to percentages and acres). For example, in PVG 2, "outside of MPC 5.2" at the existing condition time scale there is 64% in the moderate CCC while the desired range is 6-26%. In contrast, the acres of moderate CCC (i.e. 1,204) are within the desired range (i.e. 277-1,625). This is primarily due to the deficit (i.e. existing 1,879 acres vs desired 4,610-6,250 acres) of the LTSC at this time scale, which results in an overabundance of this CCC when calculating the percentage of the moderate CCC. This is worth noting, because in order to determine different pathways to succesfully meet the desired future conditions for all vegetative components, we need to look both at the percentages and acres of each vegetative component (e.g. TSC & CCC) to determine viable pathways that will set up future decisionmakers to achieve the desired results.

and promoting the desired tree species compositions in both the short and long-term as described in the FEIS.

As displayed in Table 20, there are approximately 3,400 acres of the large TSC of PVG 2 on FS lands in the project area at the existing and immediate post treatment time scale and 9,100 acres of the large TSC at the 30-50 year time scale.

Of the existing and immediate post treatment acres of large TSC, 1,600 are within MPC 5.2 and 1,900 are outside of MPC 5.2. Currently, the low and moderate CCCs are within the desired ranges within MPC 5.2. The high CCC within MPC 5.2 is currently at 10% which is above the desired 0% in this CCC. Outside of MPC 5.2, the low and moderate CCCs are outside of the desired ranges, due to an overabundance of the moderate and high CCCs and a deficit of the low CCC. For example, the moderate CCC currently has 64% in the moderate CCC versus the 6-26% that is desired.

The immediate post treatment effect would be a decrease in the high and moderate CCCs and an increase in the low CCC both within and outside of MPC 5.2. While this would move closer to the desired conditions outside of MPC 5.2, within MPC 5.2, this would create an overabundance of the low CCC (72% versus the desired 4-24%).

This overabundance of the low CCC within MPC 5.2 would help in shifting the species compositions closer to the desired conditions (as described in the species composition analysis in the FEIS (See pgs. 128 & 146-148 in the FEIS), as well as, aid in restoration efforts associated with the northern Idaho ground squirrel (NIDGS). Approximately 800 acres of treatments in PVG 2 (500 acres of which are currently in the large TSC) would be designed to achieve low CCC conditions to aid in the recovery of the NIDGS. These acres are within or immediately adjacent to the 4th Rock and Butter Gulch existing populations of NIDGS.

The projections for 30-50 years post treatment depicted in Table 21 indicate that there would be approximately 9,100 acres of the large TSC in PVG 2 (of which 3,800 acres are within MPC 5.2 and 5,300 are outside of MPC 5.2. Within MPC 5.2, ingrowth (e.g. natural regeneration) and widening of residual tree crowns would be expected and result in a reduction of the low CCC at this time scale. In 30-50 years, the CCC distributions would move closer to the desired conditions within MPC 5.2, but there would likely still be a slight overabundance of the low CCC. Although, it should be noted that the *Selected Alternative* is optimistic on the number of acres that would be treated intensively. A reduction of 30-60% of the number of acres of commercial treatment is usually realized once all of the Project Design Features are applied. So this overabundance would not likely be as large as portrayed in the table and would likely not exist at all within MPC 5.2.

After the 30-50 year projection the same trends in CCC would be anticipated, which is that canopy cover accretion would continue as trees continue to grow and natural regeneration continues. This is expected to exacerbate the overabundance of the high CCC. So, even though there is an overabundance of the low CCC created in the short term within MPC 5.2, in the mid to long-term this overabundances is expected to move to within desired ranges. The creation of this overabundance of the low canopy cover class will also aid in maintaining

Table 21. PVG 5 – Tree Size Class: Desired, Existing, Immediate Post Treatment, & 30-50 year Post Treatment Conditions

PVG 5 (acres)	Desired Future Conditions		
TSC	*All MPCs*	*in 5.2*	*outside 5.2*
Total acres	*12,752* [1]	*6,145*	*6,607*
GFSS	383-892	246-430	198-264
Sapling	383-892	184-430	198-642
Small	510-2,805	246-1,352	264-1,454
Medium	892-3,826	430-1,844	642-1,982
Large	4,208-10,712	2,028-3,994	4,361-5,550

PVG 5 (%)	Desired Future Conditions		
TSC	*All MPCs*	*in 5.2*	*outside 5.2*
GFSS	3-7	4-7	3-4
Sapling	3-7	3-7	3-7
Small	4-22	4-22	4-22
Medium	7-30	7-30	7-30
Large	33-84	33-65	66-84

1 - PVG 5 total acres = 12,765 acres . Non-FS acres = 13. Non-FS lands are not used in calculations in these tables.

PVG 5 (acres)	Existing Condition		
TSC	*All MPCs*	*in 5.2*	*outside 5.2*
GFSS	38	38	-
Sapling	47	20	27
Small	1,240	989	251
Medium	4,489	2,273	2,216
Large	6,938	2,824	4,114

PVG 5 (%)	Existing Condition		
TSC	*All MPCs*	*in 5.2*	*outside 5.2*
GFSS	0%	1%	0%
Sapling	0%	0%	0%
Small	10%	16%	4%
Medium	35%	37%	34%
Large	54%	46%	62%

PVG 5 (acres)	Immediate Post Treatment		
TSC	*All MPCs*	*in 5.2*	*outside 5.2*
GFSS	38	38	-
Sapling	47	20	27
Small	1,240	989	251
Medium	4,489	2,273	2,216
Large	6,938	2,824	4,114

PVG 5 (%)	Immediate Post Treatment		
TSC	*All MPCs*	*in 5.2*	*outside 5.2*
GFSS	0%	1%	0%
Sapling	0%	0%	0%
Small	10%	16%	4%
Medium	35%	37%	34%
Large	54%	46%	62%

PVG 5 (acres)	30-50 years post treatment		
TSC	*All MPCs*	*in 5.2*	*outside 5.2*
GFSS	-	-	-
Sapling	38	38	-
Small	47	20	27
Medium	2,253	1,449	804
Large	10,414	4,637	5,777

PVG 5 (%)	30-50 years post treatment			
TSC	*All MPCs*	*in 5.2*	*outside 5.2*	*Future trend (next 30-50 years)*
GFSS	0%	0%	0%	decrease
Sapling	0%	1%	0%	
Small	0%	0%	0%	
Medium	18%	24%	12%	decrease
Large	82%	75%	87%	increase

As displayed in Table 21, there are approximately 12,800 acres of PVG 5 on FS lands in the project area (of which approximately 6,100 acres are within MPC 5.2 and 6,600 are outside of MPC 5.2). The project area is currently deficit GFSS & sapling TSC regardless of the desired conditions (i.e. forestwide, within MPC 5.2, or outside MPC 5.2). Currently, in the small TSC, conditions are currently within the desired ranges for all three sets of desired conditions. The medium TSC is overabundant at all three spatial scales. The large TSC is slightly deficit (at 62% versus 66%) when compared to the desired conditions for outside MPC 5.2, but within the desired ranges at the forestwide and within MPC 5.2 desired conditions.

The immediate post treatment effect would be no change as the treatments are being designed to retain enough residual trees within the largest tree size class present at or above 10% canopy cover.

The 30 to 50 year projections indicate that, as trees continue to grow, the GFSS, sapling, and small TSC would be deficit regardless of the area. The medium TSC would be anticipated to be in excess of the desired conditions regardless of the spatial scale. While the large TSC would be within the desired ranges when compared to the forestwide desired conditions, there would be an overabundance of the large TSC within MPC 5.2 and outside MPC 5.2 as stands continue to grow into this TSC.

In the long-term, the desired conditions could be met by converting portions of the medium and large TSCs to the GFSS, sapling, & small TSCs. This could be easily completed by implementing silvicultural treatments (e.g. regeneration harvest, stand replacing prescribed burns, etc.) that reduce the canopy cover of trees greater than 12 inches DBH to less than 10%.

Based on modelling (utilizing FVS), forest inventory datasets, and professional experience, if a stand is set back to the GFSS TSC it would take anywhere from 80-150+ years to attain the large TSC metric in PVG 5, whereas a stand can be converted to the GFSS stage within minutes through planned or unplanned events such as wildfire, clearcut, or seed tree harvest. The *Selected Alternative* does not preclude the attainment of the desired conditions for any of the desired conditions (i.e. forestwide, within MPC 5.2 or outside MPC 5.2) within the project area in the mid to long term. Instead, the *Selected Alternative* allows options to meet the long-term desired conditions in the Forest Plan while considering the variety of other management direction in the Forest Plan (e.g. wildlife, timber production, wildfire resiliency, recreation, etc.).

As acknowledged in the Forest plan, it is much easier to reduce the TSC of a stand versus rapidly increasing the TSC as it takes time for trees to grow. Therefore, an approach that manages for the large TSC to be at the high end or creates an overabundance of the large TSC, such as the *Selected Alternative,* leaves more options for the Forest to be successful in the long-term in achieving the desired conditions by promoting and maintaining the large TSC distributions at or above the desired ranges that can be easily converted to smaller TSCs in future NEPA decisions. This approach also allows for impacts from unforeseeable events (such as wildfire) to occur with less potential for having these events to preclude the Forests ability to achieve the long-term desired conditions.

Table 22. PVG 5 – Canopy Cover Class: Desired, Existing, Immediate Post Treatment, & 30-50 year Post Treatment Conditions.

PVG 5 (acres)	Desired Future Conditions		
CCC	All MPCs	in 5.2	outside 5.2
Low	n/a	61-919	1,090-2,498
Moderate	n/a	1,562-3,874	2,399-4,163
High	n/a	0	0
Desired Range in LTSC	n/a	2,028-3,994	4,361-5,550

PVG 5 (%)	Desired Future Conditions		
CCC	All MPCs	in 5.2	outside 5.2
Low	n/a	3-23	25-45
Moderate	n/a	77-97	55-75
High	n/a	0	0

PVG 5 (acres)	Existing Condition		
CCC	All MPCs	in 5.2	outside 5.2
Low	893	275	618
Moderate	3,423	1,540	1,883
High	2,622	1,009	1,613
TOTAL ACRES IN LTSC	6,938	2,824	4,114

PVG 5 (%)	Existing Condition[2]		
CCC	All MPCs	in 5.2	outside 5.2
Low	13%	10%	15%
Moderate	49%	55%	46%
High	38%	36%	39%

PVG 5 (acres)	Immediate Post Treatment		
CCC	All MPCs	in 5.2	outside 5.2
Low	4,077	2,175	1,902
Moderate	1,866	594	1,272
High	995	55	940
TOTAL ACRES IN LTSC	6,938	2,824	4,114

PVG 5 (%)	Immediate Post Treatment[2]		
CCC	All MPCs	in 5.2	outside 5.2
Low	59%	77%	46%
Moderate	27%	21%	31%
High	14%	2%	23%

PVG 5 (acres)	30-50 years post treatment		
CCC	All MPCs	in 5.2	outside 5.2
Low	1,324	825	499
Moderate	5,882	2,937	2,945
High	3,208	875	2,333
TOTAL ACRES IN LTSC	10,414	4,637	5,777

PVG 5 (%)	30-50 years post treatment[2]			
CCC	All MPCs	in 5.2	outside 5.2	Future trend (next 30-50 years)
Low	13%	18%	9%	decrease
Moderate	56%	63%	51%	decrease
High	31%	19%	40%	increase

1 - Desired Future Condition acreages for CCC would vary depending upon the amount of large TSC (LTSC) at the time. The acreages listed in this table are based on the desired ranges of the LTSC and the related desired ranges for the CCC distributions within the LTSC for this PVG and MPC. So for example, In PVG 5: there are 12,765 acres of of PVG 5 in the project area; 13 acres of these are not on FS lands, 6,145 are "within MPC 5.2", and 6,607 are "outside of MPC 5.2". "Outside of MPC 5.2", the desired range for the LTSC is 66-84% of the 6,607 acres, which equates to a desired range of 4,361-5,550 acres. So, to calculate the range of acres of the low CCC for "outside of MPC 5.2": the low end of the Desired low CCC acres is equal to the of the low end of the desired LTSC acres (i.e. 4,361) times the low end of the desired percent range (i.e. 25%). So, 4,361 x 0.25 = 1,090 acres.; the high end of the Desired low CCC acres is equal to the of the high end of the desired LTSC acres (i.e. 5,550) times the high end of the desired percent range (i.e. 45%). So, 5,550 x 0.45 = 2,498 acres. For this example, the desired range of acres in PVG 5, "outside of MPC 5.2", in the low CCC is 1,090-2,498 acres (or 25-45% of the desired range of acres of the LTSC [4,361-5,550 acres]). Therefore, the range of acres shown in this table is the broadest range of desired acreages possible based on desired LTSC ranges for the PVG and MPC specified in the Forest Plan Desired Future Conditions.

2 - The percentages listed in the existing condition, immediate post treatment, and 30-50 year post treatment time scales are based on the actual number of acres in the LTSC. This is notable because, if there is a deficit or overabundance of the LTSC from the desired range in percentages, the acres may actually still be in the desired range (and vice versa in regards to percentages and acres). For example, in PVG 5, "within MPC 5.2" at the 30-50 year post treatment time scale there is only 63% in the moderate CCC while the desired range is 77-97%. In contrast, the acres of moderate CCC (i.e. 2,937) are within the desired range (i.e. 1,562-3,874). This is primarily due to the overabundance (i.e. 4,637 vs 3,994 acres) of the LTSC at this time scale, which results in a deficit of this CCC when calculating the percentage of the moderate CCC. This is worth noting, because in order to determine if and how future managers will have opportunities to meet the desired future conditions, we need to look both at the percentages and acres to determine how well the Selected Alternative sets up future decisionmakers to achieve the desired results.

As displayed in Table 22, there are approximately 6,900 acres of the large TSC of PVG 5 in the project area on FS lands at the existing and immediate post treatment time scale and 10,400 acres of the large TSC at the 30-50 year time scale.

Of the existing and immediate post treatment acres of large TSC, 2,800 are within MPC 5.2 and 4,100 are outside of MPC5.2. Currently, the low CCC is within the desired ranges within MPC 5.2. The moderate CCC is deficit and the high CCC within MPC 5.2 in excess of the desired range. Outside of MPC 5.2, the low and moderate CCCs are below the desired ranges, due to an overabundance of the high CCC. For example, the moderate CCC currently has 46% in the moderate CCC versus the 55-75% that is desired.

The immediate post treatment effect would be a decrease in the high and moderate CCCs and an increase in the low CCC both within and outside of MPC 5.2. This would create an excess of the low CCC within and outside of MPC 5.2. This overabundance would aid in maintaining and promoting early seral tree species both in the short and long term (e.g. 50-100 years).

The projections for 30-50 years post treatment indicate that there would be approximately 10,400 acres of the large TSC in PVG 5 (of which 4,600 acres are within MPC 5.2 and 5,800 are outside of MPC 5.2. Within MPC 5.2, ingrowth (e.g. natural regeneration) and widening of residual tree crowns would be expected and result in a reduction of the low CCC at this time scale. In 30-50 years, the CCC distributions would move to within the desired range within MPC 5.2 and would be deficit outside of MPC 5.2.

After the 30-50 year projection the same trends in CCC would be anticipated, which is that canopy cover accretion would continue as trees continue to grow and natural regeneration continues. While the assumption with this is that there will be mortality due to density related competition, the projection does not include unforeseeable/unpredictable events such as insect epidemics, windthrow, wildfire or other natural disturbance agents that could affect how well (or not) conditions will align with the desired conditions . Nor does this assume future management activities (that would need to be planned in future NEPA documents) such as non-commercial thinning, commercial harvest, or prescribed fire.

Due to the dynamic nature of forested vegetation, canopy cover can, and frequently does, relatively rapidly increase. Most of the treatments in the large TSC in PVG 5 in the *Selected Alternative* would reduce canopy cover to 30-35% after the commercial, non-commercial and prescribed fire treatments are implemented. The breakpoint for the low CCC versus the moderate CCC is 40%. Therefore, many of these stands that are shifted into the low CCC immediately post treatment only need to gain 5 to 10 percent in canopy cover to move into the moderate CCC. This amount of increase in canopy cover has been observed to occur in 5 to 10 years and modelling indicates that this increase in canopy cover will occur in less than 20 years on the vast majority of these sites. This indicates that while a short-term creation of an overabundance in the low CCC, intended to promote and maintain desired conditions for tree species compositions and to aid in the conservation of wildlife habitat for species of greatest conservation concern, will recover relatively rapidly and move into the desired range, and in the case of "outside MPC 5.2 desired conditions to a condition where there is a deficit of the low CCC in the mid to long-term. The *Selected Alternative* will also create conditions that are more resilient to unforeseeable events (e.g. wildfire), which will aid in achieving the full set of desired conditions for forested vegetation specified in the Forest Plan in the long-term.

Table 23. PVG 6 – Tree Size Class: Desired, Existing, Immediate Post Treatment, & 30-50 year Post Treatment Conditions

PVG 6 (acres)	Desired Future Conditions		
TSC	*All MPCs*	*in 5.2*	*outside 5.2*
Total acres	*25373* [1]	*11,366*	*14,007*
GFSS	1,776-2,284	909-1,023	980-1,121
Sapling	1,776-2,284	796-1,023	980-1,261
Small	2,791-6,851	1,250-3,069	1,541-3,782
Medium	4,567-9,134	2,046-4,092	2,521-5,043
Large	5,075-14,209	2,273-3,069	3,922-7,844

PVG 6 (%)	Desired Future Conditions		
TSC	*All MPCs*	*in 5.2*	*outside 5.2*
GFSS	7-9	8-9	7-8
Sapling	7-9	7-9	7-9
Small	11-27	11-27	11-27
Medium	18-36	18-36	18-36
Large	20-56	20-27	28-56

1 - PVG 6 total acres = 26,224 acres . Non-FS acres = 851. Non-FS lands are not used in calculations in these tables.

PVG 6 (acres)	Existing Condition		
TSC	*All MPCs*	*in 5.2*	*outside 5.2*
GFSS	216	45	171
Sapling	231	113	118
Small	6,990	3,182	3,808
Medium	7,986	4,142	3,844
Large	9,951	3,884	6,067

PVG 6 (%)	Existing Condition		
TSC	*All MPCs*	*in 5.2*	*outside 5.2*
GFSS	1%	0%	1%
Sapling	1%	1%	1%
Small	28%	28%	27%
Medium	31%	36%	27%
Large	39%	34%	43%

PVG 6 (acres)	Immediate Post Treatment		
TSC	*All MPCs*	*in 5.2*	*outside 5.2*
GFSS	216	45	171
Sapling	231	113	118
Small	6,990	3,182	3,808
Medium	7,986	4,142	3,844
Large	9,951	3,884	6,067

PVG 6 (%)	Immediate Post Treatment		
TSC	*All MPCs*	*in 5.2*	*outside 5.2*
GFSS	1%	0%	1%
Sapling	1%	1%	1%
Small	28%	28%	27%
Medium	31%	36%	27%
Large	39%	34%	43%

PVG 6 (acres)	30-50 years post treatment		
TSC	*All MPCs*	*in 5.2*	*outside 5.2*
GFSS	-	-	-
Sapling	216	45	171
Small	231	113	118
Medium	7,131	3,299	3,832
Large	17,795	7,908	9,887

PVG 6 (%)	30-50 years post treatment			
TSC	*All MPCs*	*in 5.2*	*outside 5.2*	*Future trend (next 30-50 years)*
GFSS	0%	0%	0%	
Sapling	1%	0%	1%	
Small	1%	1%	1%	
Medium	28%	29%	27%	decrease
Large	70%	70%	71%	increase

As displayed in Table 23 there are 25,400 acres of PVG 6 on FS lands in the project area (of which approximately 11,400 acres are within MPC 5.2 and 14,000 are outside of MPC 5.2). The project area is currently deficit GFSS & sapling TSC regardless of the desired conditions (i.e. forestwide, within MPC 5.2, or outside MPC 5.2). Currently, in the small & medium TSC, conditions are currently within or just slightly above (e.g. 28% versus 27% above within MPC 5.2 in medium TSC) for all sets of desired conditions. The large TSC is within the desired ranges for the forestwide and outside MPC 5.2 desired conditions, but is slightly above the desired conditions for within MPC 5.2.

The immediate post treatment effect would be no change as the treatments are being designed to retain enough trees within the largest tree size class at or above 10% canopy cover.

The 30 to 50 year projections indicate that, as trees continue to grow, the GFSS, sapling, and small TSC would be deficit regardless of the desired conditions. The medium TSC would be anticipated to be within desired conditions regardless of the DCs. While the large TSC would be overabundant for all three sets of desired conditions, with the most dramatic overabundance being with the MPC 5.2 areas (70% versus the desired 20-27%). PVG 6 contains some of the most productive habitat types on the Forest (Steele et al. 1981) so this overabundance of the large TSC is not unexpected.

In the long term, the desired conditions could be met by converting portions of the medium and large TSCs to the GFSS, sapling, & small TSCs. This could be easily completed by implementing treatments that reduce the canopy cover of trees greater than 12 inches DBH to less than 10%.

Based on modelling (utilizing FVS), forest inventory datasets, and professional experience, if a stand that is set back to the GFSS development stage would take anywhere from 60-150+ years to attain the large TSC metric in PVG 6, whereas a stand can be converted to the GFSS stage within minutes through planned or unplanned events such as wildfire, clearcut, or seed tree harvest. The *Selected Alternative* does not preclude the attainment of the desired conditions for any of the desired conditions (i.e. forestwide, within MPC 5.2 or outside MPC 5.2) within the project area in the mid to long term. Instead, the *Selected Alternative* allows options to meet the desired conditions in the Forest Plan and the variety of other management direction contained in the Forest Plan (e.g. wildlife, timber production, wildfire resiliency, recreation, etc.).

As acknowledged in the Forest plan, it is much easier to reduce the TSC of a stand versus rapidly increasing the TSC as it takes time for trees to grow. Therefore, an approach that manages for the large TSC to be at the high end or creates an overabundance of the large TSC, such as the *Selected Alternative,* leaves more options for the Forest to be successful in the long-term in achieving the desired conditions by promoting and maintaining the large TSC distributions at or above the desired ranges that can be easily converted to smaller TSCs in future NEPA decisions. This approach also allows for impacts from unforeseeable events (such as wildfire) to occur with less potential for having these events to preclude the Forests ability to achieve the long-term desired conditions.

Table 24. PVG 6 – Canopy Cover Class: Desired, Existing, Immediate Post Treatment, & 30-50 year Post Treatment Conditions

PVG 6 (acres)	Desired Future Conditions[1]		
CCC	All MPCs	in 5.2	outside 5.2
Low	0-2,842	0-614	0-1,569
Moderate	4,060-14,209	1,818-3,069	3,138-7,844
High	0	0	0
Desired Range in LTSC	5,075-14,209	2,273-3,069	3,922-7,844

PVG 6 (%)	Desired Future Conditions		
CCC	All MPCs	in 5.2	outside 5.2
Low	n/a	0-20	0-20
Moderate	n/a	80-100	80-100
High	n/a	0	0

PVG 6 (acres)	Existing Condition		
CCC	All MPCs	in 5.2	outside 5.2
Low	196	15	181
Moderate	5,358	1,888	3,470
High	4,397	1,981	2,416
TOTAL ACRES IN LTSC	9,951	3,884	6,067

PVG 6 (%)	Existing Condition[2]		
CCC	All MPCs	in 5.2	outside 5.2
Low	2%	0%	3%
Moderate	54%	49%	57%
High	44%	51%	40%

PVG 6 (acres)	Immediate Post Treatment		
CCC	All MPCs	in 5.2	outside 5.2
Low	3,654	1,876	1,778
Moderate	3,578	1,087	2,491
High	2,719	922	1,797
TOTAL ACRES IN LTSC	9,951	3,885	6,066

PVG 6 (%)	Immediate Post Treatment[2]		
CCC	All MPCs	in 5.2	outside 5.2
Low	37%	48%	29%
Moderate	36%	28%	41%
High	27%	24%	30%

PVG 6 (acres)	30-50 years post treatment		
CCC	All MPCs	in 5.2	outside 5.2
Low	250	239	11
Moderate	6,724	3,780	2,944
High	10,822	3,891	6,931
TOTAL ACRES IN LTSC	17,796	7,910	9,886

PVG 6 (%)	30-50 years post treatment[2]			
CCC	All MPCs	in 5.2	outside 5.2	Future trend (next 30-50 years)
Low	1%	3%	0%	decrease
Moderate	38%	48%	30%	
High	61%	49%	70%	increase

1 - Desired Future Condition acreages for CCC would vary depending upon the amount of large TSC (LTSC) at the given time scale. The acreages listed in this table are based on the desired ranges of the LTSC and the related desired ranges for the CCC distributions within the LTSC for this PVG and MPC specified in the Forest Plan. So for example, in PVG 2, "within MPC 5.2": there are 25,373 acres of of PVG 6 in the project area; 851 acres of these are not on FS lands, 11,366 are within MPC 5.2, and 14,007 are outside of MPC5.2.; Within MPC 5.2, the desired range of the LTSC is 20-27%, which equates to 2,273-3,069 acres. So, to calculate the range of acres of Desired Future Conditions for low CCC within MPC 5.2: the low end of the Desired low CCC acres is equal to the of the low end of the desired LTSC acres (i.e. 2,273) times the low end of the desired percent range (i.e. 0%). So, 2,273 x 0.0 = 0 acres.; the high end of the Desired low CCC acres is equal to the of the high end of the desired LTSC acres (3,069) times the high end of the desired percent range (i.e. 20%). So, 3,069 x 0.20 = 614 acres. For this eaxmple, the desired range of acres in PVG 6, within MPC 5.2, in the low CCC is 0 to 614 acres (or 0-20% of the desired range of acres of the LTSC [2,273-3,069 acres]). Therefore, the range of acres shown in this table is the broadest range of desired acreages possible based on desired LTSC ranges for the PVG and MPC.

2 - The percentages listed in the existing condition, immediate post treatment, and 30-50 year post treatmen ttime scales are based on the actual number of acres in the LTSC. This is notable because, if there is a deficit or overabundance of the LTSC from the desired range in percentages, the acres may actually still be in the desired range (and vice versa in regards to percentages and acres). For example, in PVG 6, "within MPC 5.2" at the 30 to 50 year post treatment time scale there is 48% in the moderate CCC while the desired range is 80-100%. In contrast, the acres of moderate CCC (i.e. 3,780) are above the desired range (i.e. 1,818-3,069). This is primarily due to the overabundance (i.e. existing 7,910 acres vs desired 1,818-3,069 acres) of the LTSC at this time scale, which results in a deficit of this CCC when calculating the percentage, but an overabundance when looking at the acres, of the moderate CCC. This is worth noting, because in order to determine different pathways to succesfully meet the desired future conditions for all vegetative components, we need to look both at the percentages and acres of each vegetative component (e.g. TSC & CCC) to determine viable pathways that will set up future decisionmakers to achieve the desired results.

As displayed in Table 24, there are approximately 10,000 acres of the large TSC of PVG 6 on FS lands in the project area at the existing and immediate post treatment time scale and 17,800 acres of the large TSC at the 30-50 year time scale.

Of the existing and immediate post treatment acres of large TSC, 3,900 are within MPC 5.2 and 6,100 are outside of MPC5.2. Currently, the low CCC is in all areas. The moderate CCC is deficit and there is an excess of the high CCC both within and outside of MPC 5.2. The high CCC within MPC 5.2 is currently at 51% which is above the desired 0% in this CCC.

The immediate post treatment effect would be a decrease in the high and moderate CCCs and an increase in the low CCC both within and outside of MPC 5.2. This would create an excess of the low CCC both within and outside of MPC 5.2. Although this excess is expected to rapidly decrease as most of the treatments would only reduce the canopy cover within stands to 30-35% and these stands are anticipated to gain canopy cover which would move them into the moderate CCC once the stand canopy cover is at 40%. In addition, as stated earlier, once the Project Design Features are applied, it is anticipated that the amount of treatment acres will be quite a bit below what is allowed in the *Selected Alternative*. It should also be reemphasized that the *Selected Alternative* likely overstates the number of acres that would be treated intensively. So this overabundance would not likely be as large as portrayed in the table and would likely not exist at all within MPC 5.2.

This creation of an overabundance of the low CCC would help in shifting the species compositions closer to the desired conditions (as described in the species composition analysis in the FEIS (See pgs. 128 & 146-148 in the FEIS), as well as, aid in restoration efforts associated with the family of wildlife species including the white-headed woodpecker and flammulated owl.

The projections for 30-50 years post treatment depicted in Table 25 indicate that there would be approximately 17,800 acres of the large TSC in PVG 6 (of which 7,900 acres are within MPC 5.2 and 9,900 are outside of MPC 5.2. Within MPC 5.2, ingrowth (e.g. natural regeneration) and widening of residual tree crowns would be expected and result in a reduction of the low CCC at this time scale. In 30-50 years, the CCC distributions in the low CCC would be at the bottom end of the desired range (e.g. in MPC 5.2 only 3% would be in the low CCC while the desired rage is 0-20%). Outside of MPC 5.2 the high CCC distributions would be even further from the desired ranges in the long-term. This is primarily due to the design of the project in the Boulder Creek watershed which has a high proportion of PVG 6, has some of the most productive growing sites in the project area, is an Aquatic Conservation Strategy watershed, and has listed anadromous fish species present. Due to management direction related to fisheries and watershed contained in the Forest Plan the areas outside of MPC 5.2 will likely be further from the desired conditions for vegetation in the long-term in PVG 6 unless future management activities occur under future NEPA decisions. After the 30-50 year projection the same trends in CCC would be anticipated, which is that canopy cover accretion would continue as trees continue to grow and natural regeneration continues.

In summary, while the *Selected Alternative* does create a short-term overabundance of the low CCC in PVG 6, primarily intended to aid in maintaining and promoting desired tree species compositions in the mid to long-term, canopy cover is anticipated to rapidly move into the moderate CCC ranges in many of the areas treated by the *Selected Alternative* as most of the treatments in PVG 6 will only reduce canopy cover to the high end of the low CCC. Future management will be necessary to reduce canopy cover again in order to be successful in the long-term achievement of the desired conditions, but the *Selected Alternative* will be a short to mid-term step in the correct direction related to CCC desired conditions.

In the short-term (immediate post treatment), the *Selected Alternative*:

1) Does not have measureable effects on Timber Size Class (TSC) distributions.
2) Creates an overabundance of the low Canopy Cover Class (CCC), within the large TSC, in all Potential Vegetation Groups (PVGs) and Management Prescription Categories (MPCs), except PVG 2, "outside of MPC 5.2".
    a. The rationale for creating this overabundance is to:
        i. improve the desired early seral tree species that benefit from lower tree densities as they are relatively shade intolerant;
        ii. enhance NIDGS habitat; &
        iii. improve growth rates to increase the abundance of the large TSC in PVGs and MPCs that are currently short large TSC (i.e. PVG 2 – all MPCs & PVG 5 – outside of MPC5.2).
3) Retains an overabundance of the high CCC, within the large TSC, in all PVGs and all MPCs.
    a. 2-30% is retained in the high CCC versus the desired 0%. This high CCC is generally retained due to other resource concerns (e.g. wildlife, economic, hydrology, fisheries).
4) Improves the tree species composition distributions by reducing the relative amounts of overabundant late seral, relatively fire intolerant, shade tolerant tree species such as grand fir and subsequently retaining greater abundance of tree species that are below the desired ranges (i.e. western larch, aspen, ponderosa pine).

In the long-term, 30 to 50+ years, the *Selected Alternative*:

1) Increases the abundance of the large TSC, but does not address the shortage of the smallest TSCs (e.g. Grass Forb Shrub Seedling (GFSS) & sapling TSCs).
    a. This allows future managers to have options that could easily and rapidly be manipulated to move TSC, CCC, and tree species composition distributions into the desired ranges specified in the Forest Plan.
        i. In comparison, a strategy that manages TSCs with lower amounts in the large TSC can make it more challenging to meet the desired ranges as the only thing that can create more large TSC is time, as it is necessary for enough trees in a given stand to grow to an average of 20 inches in diameter for the TSC to increase.
        ii. In contrast, a strategy that maintains the large TSC in or above the desired ranges (which is what the Selected Alternative would do) allows managers to rapidly manipulate the TSC distributions by killing (e.g. cutting/harvesting, burning, girdling) enough large trees to reduce the TSC to a smaller size class (e.g. GFSS, sapling, small TSC).
2) Results in CCC distributions that have too much canopy cover within the large TSC (i.e. greater overabundances of the high CCC than in the short term).
    a. This is due to the dynamic nature of the ecosystems in which the project lies. While the short-term result is an overabundance of the low CCC, in the long-term, natural regeneration and growth of existing trees would result in CCC distributions moving toward the moderate and high CCCs with many of the PVG/MPC combinations, having the low CCC underrepresented or at the low end of the desired range. In order to move toward the long-term desired conditions in the Forest Plan, continued management would

be necessary to increase and/or maintain the amount of the low CCC within the large TSC in all PVG/MPC combinations.

3) Results in species compositions that would more closely meet long-term desired conditions than if the Selected Alternative had not been implemented. Species composition would need continued management in the future to keep more shade tolerant species from outcompeting the less shade tolerant species.
    a. Initially, regeneration of the desired tree species would be skewed toward early seral tree species (both natural and artificial regeneration). As these tree species (e.g. aspen, western larch, and ponderosa pine) need more sunlight and bare mineral soil to be successful at initially regenerating and lower stand densities to be successful once established.
    b. Over time, natural regeneration of trees would be expected with a greater amount of late seral, shade tolerant tree species (e.g. grand fir) anticipated as stand conditions become denser in time.
4) In order to meet the long-term, desired future conditions specified in the Forest Plan, additional vegetation management activities, not approved in this Record of Decision, would be necessary. These activities could include activities such as: managing wildfires for resource benefit (where permitted in the Forest Plan), prescribed burning, non-commercial thinning, and commercial timber harvest. This management strategy could include the following for moving towards the long-term desired future conditions for the vegetative components that are described in Appendix A of the Forest Plan:
    a. Manipulate TSC distributions to more closely align with the desired future conditions, with an emphasis on reducing a portion of the large TSC into smaller TSCs (e.g. GFSS & sapling TSC).
        i. This could be rapidly completed by management activities such as: regeneration harvest/logging (e.g. clearcutting with reserves, seed tree harvest, etc.); prescribed burning at high intensities/severities; girdling large diameter trees.
        ii. These treatments could also aid in manipulating the CCC distributions. For example, if a specific CCC (i.e. low, moderate, or high) is overabundant and the large TSC is within or above the desired ranges, the regeneration treatments could target stands in the CCC that is overabundant in order to shift the CCC distributions into the correct categories.
    b. Manipulate CCC distributions to more closely align with the desired future conditions, with an emphasis on treatments that maintain and/or increase the abundance of the low CCC in all PVGs and MPCs. These treatments would also need to reduce the abundance of the high CCC in all PVGs and MPCs when not in conflict with other Forest Plan goals, objectives, standards and guidelines.
    c. Increase the relative abundance of desired early seral tree species (i.e. western larch, aspen, ponderosa pine).
        i. This would be accomplished by reducing densities, completing silvicultural treatments that would result in regeneration (natural or artificial) of the desired tree species.

In summary, forested vegetation is dynamic: trees will grow; trees will die; natural regeneration will occur; and unplanned events, such as wildfire, insect outbreaks, and windthrow will occur at unforeseeable, unpredictable timeframes. We can manipulate stands to be more resilient/resistant to these

natural disturbances and to more rapidly meet a set of specific objectives, but some components are easier to change in a short period of time than others. For example, while reducing the abundance of the large TSC can occur rapidly (e.g., stand replacing wildfire or clearcut), increasing the abundance of the large TSC cannot be changed as rapidly. For example, it can take in excess of 120 years for a GFSS TSC stand to move into the large TSC category, and some components of wildlife habitat can take in excess of 200 years to develop from a GFSS TSC stage.

The Forest Plan acknowledges the dynamic nature of the ecosystems and the temporal limitations imposed by the current vegetative conditions, and on the ability to alter certain vegetative components in the short-term. It also recognizes a variety of resource objectives, from maintaining and improving wildlife habitat to production of merchantable timber, that these objectives are not always congruent, and therefore that tradeoffs need to be made to find the appropriate balance, while continuing to progress toward the long-term desired conditions enumerated in the Forest Plan.

The *Selected Alternative* would result in some of the vegetative components moving away from the long-term desired future conditions in the short-term, but would allow for all of the vegetative components (e.g. TSC, CCC, tree species compositions, snags, coarse woody debris) to be achieved in the mid to long-term (e.g. 30-50+ years) depending on unforeseeable events such as natural disturbance (e.g. wildfire) and future management decisions (e.g. in future NEPA documents).

For example, in the short-term the *Selected Alternative* would result in an overabundance of the low CCC in most of the PVG/MPC combinations. In the long-term, this would result in conditions that allow future managers the ability to more successfully meet the long-term desired future conditions for all of the forested vegetation components specified in the Forest Plan. For example, by reducing the density in stands and giving preference to the retention of healthy, vigorous early seral tree species, such as western larch and aspen, as well as completing silvicultural treatments, such as patch cuts where western larch will be planted, in the short term, future managers will have a greater abundance of these tree species to select from in future decisions, and the CCC distributions in combination with abundance of the large TSC would allow a better opportunity for these future managers to meet all three of these vegetative components (e.g. TSC, CCC, & species composition) distributions in the 30-50 year timeframe.

The *Selected Alternative* would also create a condition in 30-50 years where all of the PVG/MPC combinations are either within or above the desired ranges for large TSC distributions. As mentioned above, this path allows future managers opportunities to rapidly shift TSC distributions to meet the Forest Plan desired conditions in the long term (which is defined as 50-100 years for forested vegetation (see Forest Plan page GL-9) versus a strategy that maintains TSCs below or at the low end of the long-term desired ranges. Consistent with the purpose and need for this project, my decision approves these trade-offs due to short and long term benefits to wildlife species dependent on mid-elevation, dry ponderosa pine forests, including the white-headed woodpecker, a sensitive and Management Indicator Species (MIS). (FEIS p. 9). In addition, these tradeoffs will allow the Forest to effectively move all components toward their desired vegetative conditions in the long-term.

End of Document