

**Final
Initial Study/Mitigated Negative Declaration:
Sagehen Basin Old Forest Sensitive
Species Habitat Restoration Project**

Lead Agency

Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603
Contact: Matthew Daley, Senior Grants Analyst
530-823-4698

March 2014

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION FOR THE PROPOSED SAGEHEN BASIN OLD FOREST SENSITIVE SPECIES HABITAT RESTORATION PROJECT

Public Notice is hereby given that an Initial Study and Draft Mitigated Negative Declaration (IS/MND) is available for public review for the Sagehen Basin Old Forest Sensitive Species Habitat Restoration Project.

Project Location: The proposed project is located in the Sagehen Basin, Sagehen Experimental Forest, under the management and direction of the Pacific Southwest Research Station, Truckee Ranger District of the Tahoe National Forest, within the Little Truckee River and Middle Truckee River Watersheds, on the west side of State Route (SR) 89, approximately 10 miles north of Truckee, Nevada and Sierra Counties, California. Approximate Latitude / Longitude: 39.444479 / -120.249481.

Project Description: The National Forest Foundation is requesting \$349,140 in funding from the Sierra Nevada Conservancy's Proposition 84 Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Grant Program in order to do work in the Sagehen Experimental Forest to protect and enhance habitat, especially for Pacific marten, restore stand level ecology, and reduce fuel loads in the Sagehen Basin in the Basin Old Forest Sensitive Species Habitat Restoration Project area in the Sagehen Experimental Forest adjacent to the Tahoe National Forest. This project would alter fuel loads to return to the mixed severity fire regime, improve wildlife habitat and foraging grounds, improve watershed conditions, and encourage healthy forest ecological processes.

The proposed project would introduce stand variability and strategically enhance forest health through hand vegetation treatments like small tree cutting and piling as well as tree girdling. Existing pockets of mature cover and decadence will be maintained. Legacy trees, typically greater than 28 inches in diameter at breast height (DBH), would be preserved and trees surrounding a legacy tree would be removed to provide for adequate forest health. Snags and cover for nesting and denning habitat would be maintained for old forest sensitive species. Variable thinning would occur in order to meet canopy cover percentages, tree species composition, fire behavior, and structural heterogeneity. Thinning would occur through hand processes. Fire and fuel prescriptions (prescribed burning, pile burning) would be aimed at reducing hazardous surface and ladder fuels within the treatment units. All of the designations and treatments will vary in intensities depending on their topographic position on the landscape. The proposed project would treat approximately 2,621 acres of the 9,478-acre project area. The project would improve forest health, reduce fuel loading, and maintain and enhance existing old forest sensitive species habitat.

Document Adoption: The public comment period began January 3, 2014 and extended to February 3, 2014. The MND will be considered by the Sierra Nevada Conservancy Governing Board at a public meeting on March 13, 2014 located at the California Department of Food and Agricultural Auditorium, 1220 N Street, Sacramento, CA 95814.

Questions regarding the March 2014 Governing Board meeting may be provided to Matthew Daley, Senior Grants Analyst, at Matthew.Daley@sierranevada.ca.gov or at the following address:

Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603

MITIGATED NEGATIVE DECLARATION

Project Title: Sagehen Basin Old Forest Sensitive Species Habitat Restoration Project (SNC 773)

Project Location: The proposed project is located in the Sagehen Basin, Sagehen Experimental Forest, under the management and direction of the Pacific Southwest Research Station, Truckee Ranger District of the Tahoe National Forest, within the Little Truckee River and Middle Truckee River Watersheds, on the west side of State Route (SR) 89, approximately 10 miles north of Truckee, Nevada and Sierra Counties, California. Approximate Latitude / Longitude: 39.444479 / -120.249481.

Date: March 13, 2014

Project Applicant: National Forest Foundation

Lead Agency: Sierra Nevada Conservancy

Contact Person: Matthew Daley, Senior Grants Analyst, Sierra Nevada Conservancy, (530) 823-4698

Project Description: The National Forest Foundation is requesting \$349,140 in funding from the Sierra Nevada Conservancy's Proposition 84 Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Grant Program in order to do work in the Sagehen Experimental Forest to protect and enhance habitat, especially for Pacific marten, restore stand level ecology, and reduce fuel loads in the Sagehen Basin in the Basin Old Forest Sensitive Species Habitat Restoration Project area in the Sagehen Experimental Forest adjacent to the Tahoe National Forest. This project would alter fuel loads to return to the mixed severity fire regime, improve wildlife habitat and foraging grounds, improve watershed conditions, and encourage healthy forest ecological processes.

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Declaration: The Sierra Nevada Conservancy has determined that there is no substantial evidence that the above project, as mitigated, may have a significant effect on the environment and adopts a Mitigated Negative Declaration. The determination is based on the attached initial study and the following findings:

- a) *The project will not degrade environmental quality, substantially reduce habitat, cause a wildlife population to drop below self-sustaining levels, reduce the number or restrict the range of special-status species, or eliminate important examples of California history or prehistory.*
- b) *The project does not have the potential to achieve short-term, to the disadvantage of long-term, environmental goals.*
- c) *The project will not have impacts that are individually limited, but cumulatively considerable.*

- d) *The project will not have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.*
- e) *No substantial evidence exists that the project will have a negative or adverse effect on the environment.*
- f) *The project incorporates mitigation measures identified in the initial study and the Sagehen Project Environmental Assessment/Finding of No Significant Impact prepared by the Truckee Ranger District of the Tahoe National Forest.*
- g) *This mitigated negative declaration reflects the independent judgment of the lead agency.*

Submit questions to:

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1.0 INTRODUCTION

1.1 PROJECT INFORMATION

1. Project Title:

Sagehen Basin Old Forest Sensitive Species Habitat Restoration Project (SNC 773)

2. Lead Agency Name and Address:

Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603

3. Contact Person and Phone Number:

Matthew Daley, Program Coordinator (530) 823-4698

4. Project Location:

The proposed project is located in the Sagehen Basin, Sagehen Experimental Forest, under the management and direction of the Pacific Southwest Research Station, Truckee Ranger District of the Tahoe National Forest, within the Little Truckee River and Middle Truckee River Watersheds, on the west side of State Route (SR) 89, approximately 10 miles north of Truckee, Nevada and Sierra Counties, California. Approximate Latitude / Longitude: 39.444479 / -120.249481.

5. Project Sponsor's Name and Address:

National Forest Foundation
803 2nd Street, Suite 800
Davis, CA 95616

6. General Plan Designation:

Nevada County: Forest 160 Acres (FOR-160; 160-acre minimum parcel size);
Forest 640 Acres (FOR-640; 640-acre minimum parcel size)
Sierra County: Forest

7. Zoning:

Nevada County: FOR-160; FOR-640
Sierra County: FR (Forest)

8. Description of Project:

The National Forest Foundation is requesting \$349,140 in funding from the Sierra Nevada Conservancy's Proposition 84 Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Grant Program in order to do work in the Sagehen Experimental Forest to protect and enhance habitat, especially for Pacific marten, restore stand level ecology, and reduce fuel loads in the Sagehen Basin in the Basin Old Forest Sensitive Species Habitat Restoration Project area in the Sagehen Experimental Forest adjacent to the Tahoe National Forest. This proposed project would alter fuel loads to return to the mixed severity fire regime, improve wildlife habitat and foraging grounds, improve watershed conditions, and encourage healthy forest ecological processes.

The proposed project would introduce stand variability and strategically enhance forest health through hand vegetation treatments like small tree cutting and piling as well as tree girdling. Existing pockets of mature cover and decadence will be maintained. Legacy trees, typically greater than 28 inches in diameter at breast height (DBH), would be preserved and trees surrounding a legacy tree would be removed to provide for adequate forest health. Snags and cover for nesting and denning habitat would be maintained for old forest sensitive species. Variable thinning would occur in order to meet canopy cover percentages, tree species composition, fire behavior, and structural heterogeneity. Thinning would occur through hand processes, depending on site location and area sensitivity. Fire and fuel prescriptions (prescribed burning, pile burning) would be aimed at reducing hazardous surface and ladder fuels within the treatment units. All of the designations and treatments will vary in intensities depending on their topographic position on the landscape. The proposed project would treat approximately 2,621 acres of the 9,478-acre project area. The proposed project would improve forest health, reduce fuel loading, and maintain and enhance existing old forest sensitive species habitat. Refer to Section 2.0, below, for a detailed project description.

9. Surrounding Land Uses and Setting:

The proposed project is within the Sagehen Basin adjacent to the Tahoe National Forest. Several creeks are within the project area as well. The proposed project is primarily surrounded by forest land. The proposed project is in close proximity to the wildland urban interface where human habitation is mixed within areas of flammable wildland vegetation that extends out from private developed land into land under private, state, and federal jurisdictions. Nearby communities include Truckee, Sierraville, and Loyalton. There are also nearby recreational facilities such as campgrounds as well as Prosser Creek Reservoir, Boca Reservoir, Stampede Reservoir, and Independence Lake. The Sierra County General Plan also identifies a deer migration corridor west of the proposed project.

10. Other public agencies whose approval is required:

Pacific Southwest Research Station, Truckee Ranger District, Tahoe National Forest, United States Forest Service*

Northern Sierra Air Quality Management District (burn approval)

*Approved the Environmental Assessment/Finding of No Significant Impact (NEPA)

1.2 PROJECT BACKGROUND AND PREVIOUS ENVIRONMENTAL DOCUMENTATION

The Truckee Ranger District of the Tahoe National Forest acted as Lead Agency under NEPA in March 2013 and prepared an Environmental Assessment (EA) and adopted a Finding of No Significant Impact (FONSI) in May 2013. This Initial Study and Draft Mitigated Negative Declaration (IS/MND) relies on the *Sagehen Project Environmental Assessment/Finding of No Significant Impact* and the following related technical studies:

- Biological Evaluation, Amphibians, Reptiles, Fish, Invertebrates for the Sagehen Project (December 2012)
- Biological Evaluation for Sensitive Plants, Sagehen Project (October 2012)
- Biological Evaluation/Biological Assessment Terrestrial Wildlife, Sagehen Project (May 2013)
- Silviculture Specialist Report, Sagehen Project (October 2012)
- Weed Risk Assessment, Sagehen Project (October 2012)
- Fire/Fuels Specialist Report, Sagehen Project (February 2013)
- Fire/Fuels Report Addendum, Sagehen Project (April 2013)

- Sagehen Project Hydrology Report (February 2013)
- Soil Specialist Report, Sagehen Project (January 2013)
- Air Quality Report, Sagehen Project (February 2013)
- Economics Report for the Sagehen Project (October 2012)

2.0 PROJECT DESCRIPTION

The Sagehen Basin Old Forest Sensitive Species Habitat Restoration Project (proposed project) is located in the Sagehen Basin, Sagehen Experimental Forest, under the management and direction of the Pacific Southwest Research Station, Truckee Ranger District of the Tahoe National Forest, within the Little Truckee River and Middle Truckee River Watersheds, on the west side of State Route (SR) 89, approximately 10 miles north of Truckee, Nevada and Sierra Counties, California (Figure 2-1). One of the main outcomes of the collaborative process was the designation of a number of emphasis areas within the boundaries of the proposed treatment units. These emphasis areas became subunits within the treatment units where management would be focused and modified depending on the intent of each emphasis area. Emphasis areas 1-7, share the following common objectives: (1) Pacific marten habitat protection and/or enhancement, (2) stand level ecological restoration, and (3) fuels reduction. For emphasis area 8, the objectives were focused on aspen restoration and enhancement (Figure 2-2).

While it is preferred that prescribed and natural fire become two primary management tools over the long term in all the emphasis areas, interim steps are needed so that fuels may be reduced to a more natural level, allowing fire to occur as it would have if fuels had not built up to unnatural levels. In order to facilitate that, near term management goals include the use of silvicultural and fire/fuels prescriptions and treatment methods that can, to a certain extent, mimic the effects of natural fire. Once these treatments have been applied it is hoped that prescribed or natural fire could occur without heavy mortality and uncharacteristically severe effects. These prescriptions and treatment methods and how they apply to emphasis areas (subunits), are detailed in the sections below beginning with Section 2.2, Prescriptions and Treatments. Directly below are sections that explain the overall goals and treatment objectives for each emphasis area.

The Truckee Ranger District analyzed a larger project (Sagehen Project) within the NEPA EA/FONSI. The proposed project is smaller in size and does not include as many prescriptions. Only those prescriptions needed to the proposed project are discussed in Section 2.2, Prescriptions and Treatments, and Section 2.3, Prescription Metrics, below. Appendix A provides Standard Management Requirements (SRMs) for the larger Sagehen Project (Truckee Ranger District, May 2013); however, only the SRMs related to the proposed project, as defined by the Sierra Nevada Conservancy (SNC) for the purposes of the California Environmental Quality Act (CEQA), would be applied.

2.1 EMPHASIS AREAS

Each emphasis area within the proposed project boundary is represented by a different color on Figure 2-2. While the larger Sagehen Project contains seven emphasis areas, the proposed project contains five emphasis areas, as follows: 1 (green), 2 (blue), 4 (fuchsia), 5 (gray), and 6 (orange). These colors translate into subunits within the proposed treatment unit boundaries. For example, in treatment unit 282 is comprised of emphasis areas 2 (blue) and 6 (orange). It therefore has subunits 282-2 and 282-6.

For emphasis areas 1-7, a common set of metric categories were identified by the Truckee Ranger District to assess different post-treatment stand conditions, which would reflect the primary treatment objectives of that area. The metric categories used by the Truckee Ranger District include: (a) basal area retention, especially in trees greater than 20 inches diameter at breast height (DBH), (b) canopy cover, (c) snag density, (d) large and small down woody material, (e) short snag (or high stump) densities, (f) tree species composition, (g) dense cover areas (DCAs) with multiple tree ages, and early seral openings (ESOs), and (h) fire behavior modeled values under 90th percentile weather conditions, including flame lengths and predicted crown fire and associated larger tree mortality. Specific metrics are provided in details in Section 2.3, Prescription Metrics.

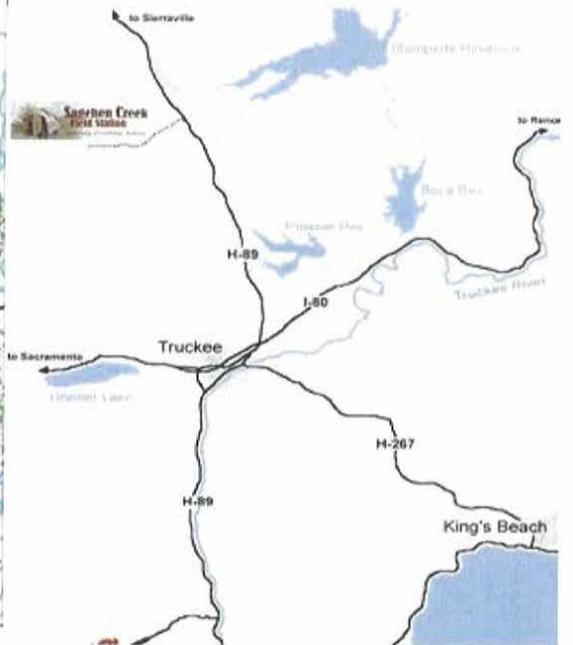
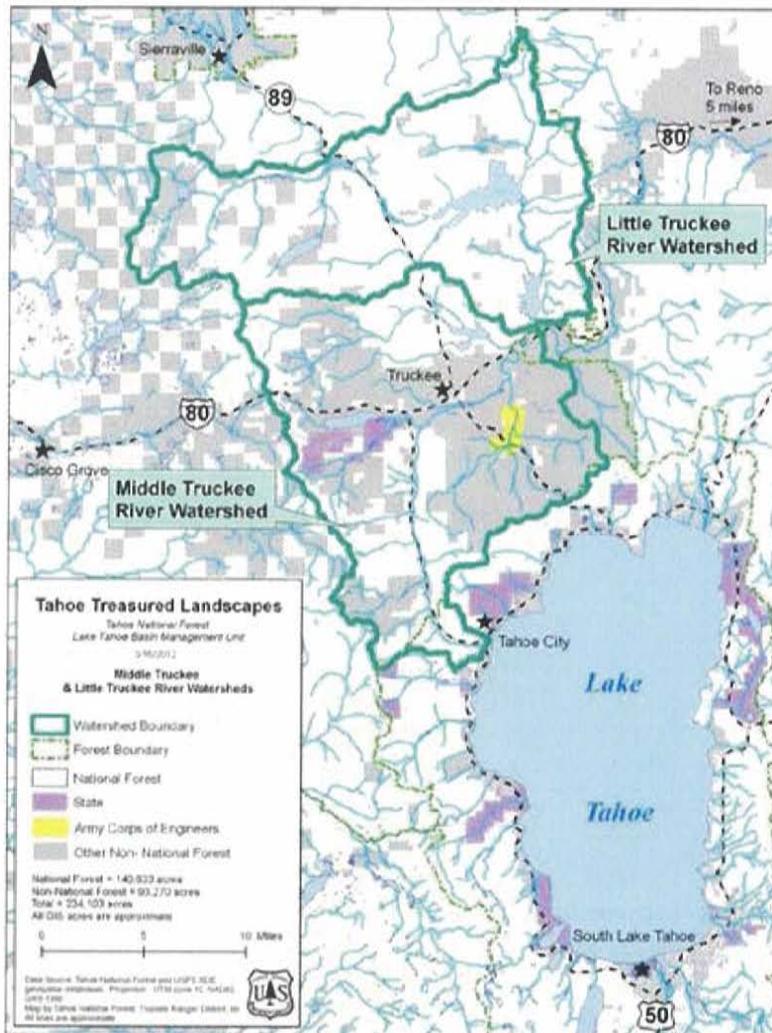


Figure 2-1. Project Vicinity and Location Maps
 (Source: National Forest Foundation and Tahoe National Forest)

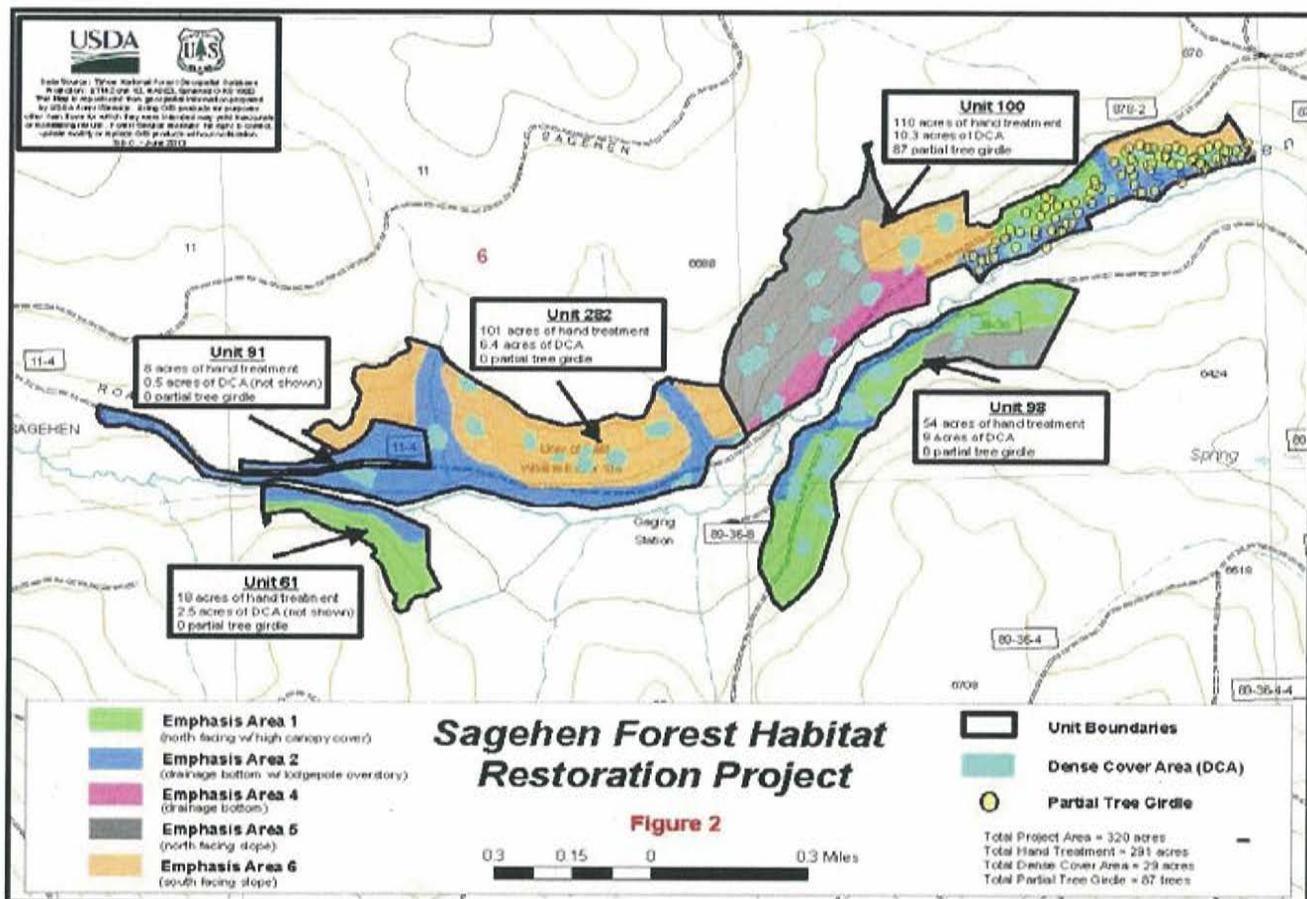


Figure 2-2. Proposed Project Detailed Treatment Locations
(Source: National Forest Foundation and Tahoe National Forest)

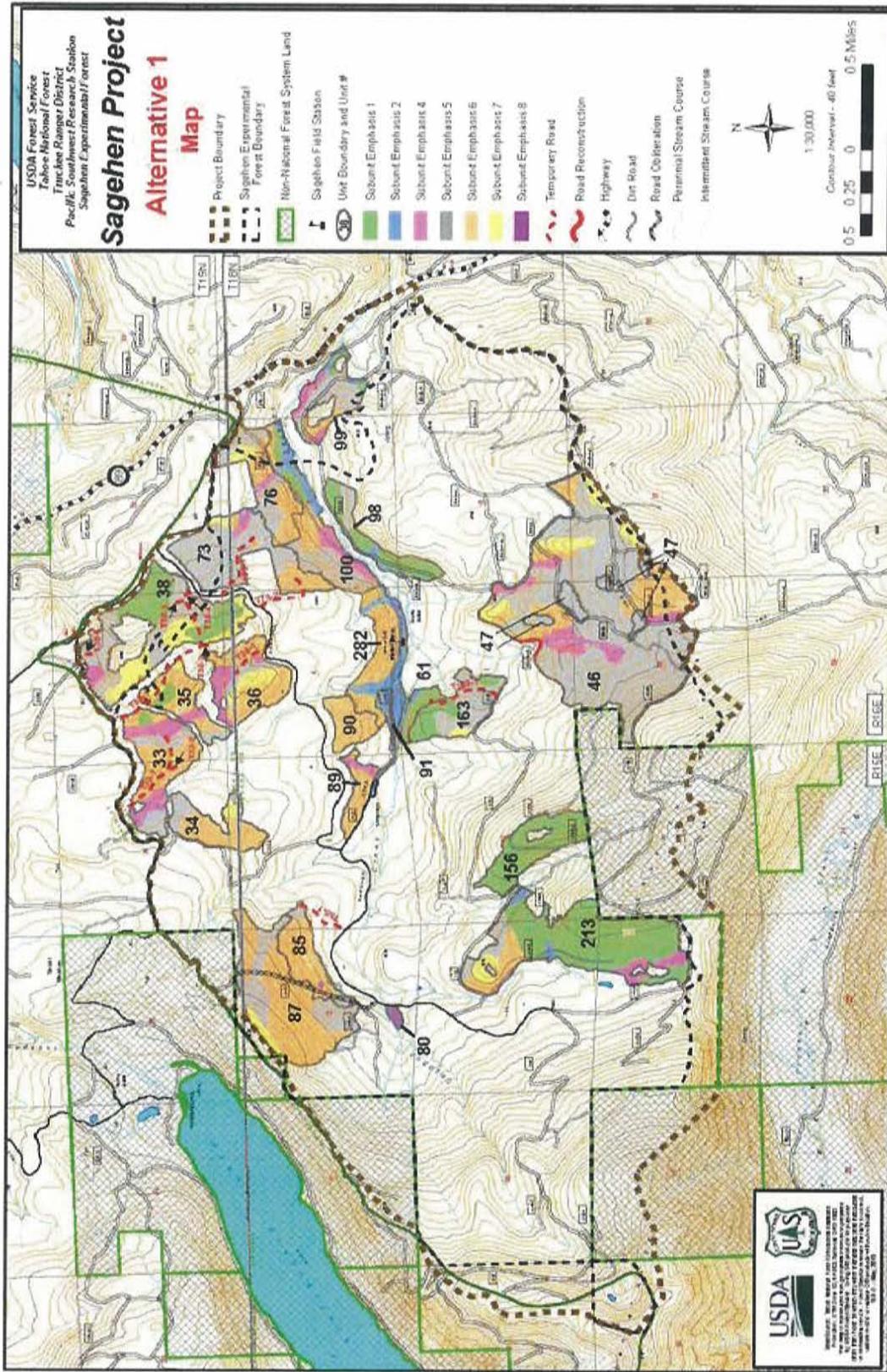


Figure 2-3. Truckee Ranger District Alternative 1 of the Sagehen Project as Identified in the EA/FONSI (Source: Truckee Ranger District)

The proposed project is part of the larger Sagehen Project, as analyzed by the Truckee Ranger District in the EA/FONSI (May 2013). The larger Sagehen Project is shown in Figure 2-3. All seven emphasis areas are described below and acreages are for the entire Truckee Ranger District Sagehen Project. The proposed project acreages are provided in Section 2.2, Prescriptions and Treatments, in Table 2-2.

2.1.1 Emphasis Areas 1 and 3

Emphasis areas 1 and 3 represent some of the high quality marten habitat currently existing within the Sagehen Basin (Table 2-1 provides definitions of high and moderate quality marten habitat within the Sagehen Basin). Emphasis area 1 (green) includes high value habitats on north facing slopes, on ridges, and on higher elevation south facing slopes (above 6,725 feet). Emphasis area 3 includes high value habitats on lower elevation south facing slopes; Emphasis area 3 is not shown separately on the Figures 2-2 and 2-3 because it is combined with Emphasis areas 1 or 2. High quality habitat for marten also exists outside the treatment unit emphasis areas, primarily along and south of Sagehen Creek and west of unit 46 (refer to Figure 2-3). There are also some scattered pockets of high value habitat north of Sagehen Creek. Because emphasis area 3 is very limited in total area, it was combined with either emphasis area 1 or emphasis area 2 (also high value marten habitat), whichever was closer. Therefore there is no mapped emphasis area 3 and there are no metrics assigned to it. Because numbers were already assigned to emphasis areas when emphasis area 3 was combined with others, re-numbering was not done. This discussion is intended to reduce confusion as to why emphasis area 3 is not shown on the map and why it will not be discussed further in this document. Within the treatment units, approximately 453 acres are identified as emphasis area 1.

Emphasis area 1 values vary above and below 6,725 feet (2,050m), especially on north and east facing slopes in the southwest portion of the Basin (south of Sagehen Creek and west of the Donner Fire area). Areas above 6,725 feet in the southwest portion of the Basin are of relatively higher importance to marten than areas below 6,725 feet and to areas above 6,725 feet in the northeast portion of the Basin. In general, martens in the upper basin (above 2,050 meters) preferred stands with larger trees than those in the lower basin, reflecting their affinity for old-growth red fir stands (Truckee Range District, *Environmental Assessment*, March 2013).

The primary goal is to manage emphasis area 1 for both the conservation and restoration of marten habitat values both in the near term and long term. Secondary and tertiary goals include ecological restoration and fuels reduction, respectively. To manage habitats for marten, this emphasis area would maintain relatively higher basal areas, specifically of larger trees, as compared to all the other emphasis areas. Some trees would likely be removed but basal areas would be lowered only to the extent to facilitate the faster creation of a higher proportion of trees greater than 20 inches DBH while at the same time retaining enough basal area and canopy cover to maintain the emphasis area as current high quality habitat. Of the designated emphasis areas, emphasis area 1 retains/recruits the highest number of snags, short snags/high stumps, and existing DCAs. This would maintain components and areas important for resting/denning martens and would ensure future recruitment of important habitat elements and areas. High amounts of large down wood material and high stumps are also important to provide foraging areas and rest sites. In addition, as compared to the rest of emphasis area 1, relatively higher basal areas, more DCAs, and a higher percentage of red fir and white fir are afforded higher prominence in the portions of the emphasis area above 6,725 feet in the southwest portion of the Basin due to the relatively higher habitat values present in this area. Another goal for emphasis area 1 is to maintain reasonable connectivity (i.e. cover from predators and access to adjoining areas) across the area. Recent evidence (Moriarty, pers. comm.) suggests that marten are vulnerable to predation if sufficient cover between preferred resting and foraging sites is lacking.

Even though the primary goal for this emphasis area is to manage for marten use, it is also very important to manage for stand level ecological restoration and a heterogeneous forest which will be more resilient to

fire and climate-induced stresses. Treatment objective ranges for basal area retention, canopy cover, percentage of the subunit in DCAs and/or ESOs, and tree species compositions help to ensure that a heterogeneous condition would result post treatment¹. Also, in order to address fuels reduction and the need to reduce the potential of uncharacteristically severe wildfire effects, treatment objectives that address ladder fuel removal, the spatial arrangement of areas where ladder fuels would not be removed, and the horizontal arrangement of fuels to break up continuous fuel beds help to address these concerns.

Table 2-1. Definitions of High and Moderate Quality Marten Habitat within the Sagehen Basin

Habitat	Forest Type	Size Class ¹	Canopy Closure ²
High Quality	Lodgepole Pine (LPN)	4, 5	M, D
	Montane Riparian (MRI)	5, 6	M, D
	Red Fir (RFR)	4, 5	M, D
	Subalpine Conifer (SCN)	4, 5	M, D
	Sierran Mixed Conifer (SMC) – Fir dominated stands only	5, 6	M, D
	White Fir (WFR)	4, 5, 6	M, D
Moderate Quality	Eastside Pine (EPN) – Higher lodgepole pine component only	4, 5, 6	P, M, D
	Eastside Pine (EPN)	5, 6	M, D
	Jeffrey Pine (JPN)	5, 6	M, D
	Lodgepole Pine (LPN)	4, 5	P
	Montane Riparian (MRI)	4	M, D
	Red Fir (RFR)	4, 5	P
	Subalpine Conifer (SCN)	4, 5	P
	Sierran Mixed Conifer (SMC) – Fir dominated stands only	4	M, D
	Sierran Mixed Conifer (SMC) – Pine dominated stands only	5, 6	M, D

Source: Truckee Ranger District, *Environmental Assessment*, March 2013.

¹ Size class in diameter at breast height (DBH) inches: 4 = 11"-24", 5 = >24", 6 = >24" with multi-layered canopy

² Canopy closure in percent: P=25-39%, M = 40-59%, D = 60-100%

2.1.2 Emphasis Areas 2 and 4

Emphasis areas 2 and 4 include the drainage bottoms that currently support high quality marten habitat (emphasis area 2, blue) and the drainage bottoms that do not currently support high quality marten habitat, i.e. the habitat does not currently meet the criteria described in Table 2-1 (emphasis area 4, fuchsia). As stated above, high quality habitat for marten also exists outside the treatment unit emphasis areas. Emphasis areas 2 and 4 include perennial stream courses and other intermittent and ephemeral drainages throughout the Basin. These locations tend to be relatively wet, retain moisture longer through the season, and generally support more dense and diverse vegetation conditions than the surrounding stands. Stream courses and other moist drainage bottom areas are known to be preferable habitat for many wildlife species. They tend to have more herbaceous vegetation cover and microhabitats, provide more escape

¹ Metrics are defined in Section 2.3, Prescription Metrics.

cover, are accessible to permanent water sources, and support a larger volume and diversity of vertebrates and invertebrates. Thus emphasis areas 2 and 4 intend to maintain and enhance these conditions. In cases where trees are encroaching on meadows or open herbaceous areas, the basal area/crown cover of trees would be reduced to maintain and/or restore meadow habitat as well as encourage herbaceous cover. By contrast, some drainages tend to be relatively dry and have fewer to no adjoining wet meadows or similar features. Under these conditions these areas still retain moisture for a longer period of the year than surrounding stands and tend to support denser vegetation and often larger trees. Under these circumstances the objective is to maintain higher basal areas and crown cover and a higher proportion of dense vegetation and structural diversity that these areas tend to provide. Within the treatment units, approximately 103 acres are identified as emphasis area 2 and 173 acres are identified as emphasis area 4.

The primary distinction between emphasis area 2 and emphasis area 4 is the consistent presence of greater than 11 inches DBH lodgepole pine as the dominant tree species in most of emphasis area 2 with an average canopy cover of 40% or more. Emphasis area 4 can include perennial and intermittent streams, as well as relatively wet (i.e., mesic) and relatively dry (i.e., xeric) ephemeral drainages with a variety of tree cover types. Overall, emphasis areas 2 and 4 are intended to provide higher basal areas of larger trees than the areas surrounding them except for emphasis area 1. They would provide relatively high canopy closures within the treed areas but would also allow enough light for well-developed herbaceous ground cover where sufficient water exists. In addition they would also have higher proportions of snags and short snags/high stumps which would provide resting sites, foraging features, and prey cover for martens. Because of their preferential use for foraging habitat, treatment objectives include the highest retention of large/small down wood components. The differences arise in emphasis area 4 because it includes not only perennial stream courses, but also many intermittent and ephemeral drainages which are highly variable in moisture conditions, vegetation types, position on slope, and aspect. More variation occurs in this emphasis area, thus treatment objectives are also more variable. Wetter conditions would have more downed logs and high stumps and would be composed of more lodgepole pine; while drier conditions would have less dead wood components and would trend on a scale more towards white and red fir and/or ponderosa or Jeffrey pine (depending on slope/aspect).

Even though the primary goal for these emphasis areas is to manage for marten use, especially foraging habitat, it is also very important to manage for stand level ecological restoration and a heterogeneous forest which will be more resilient to fire and climate-induced stresses. Treatment objective ranges for basal area retention, canopy cover, snag, down wood, and short snag densities, percentage of the subunit in DCAs and/or ESOs, and tree species compositions help to ensure that a heterogeneous condition would result post treatment. Also, in order to address fuels reduction and the need to reduce the potential of uncharacteristically severe wildfire effects, treatment objectives that address ladder fuel removal, the spatial arrangement of areas where ladder fuels would not be removed, and the horizontal arrangement of fuels to break up continuous fuel beds help to address these concerns.

2.1.3 Emphasis Area 5

Emphasis area 5 (gray) represents north facing slopes that are not currently high quality marten habitat. The primary goal in emphasis area 5 is to work towards stand level ecological restoration, followed by marten habitat enhancement and fuels reduction. In general the treatment objectives would move the area towards a more heterogeneous forest that would improve resilience to fire and climate induced stresses, while at the same time still providing habitat elements for old forest associated sensitive wildlife species, such as the marten, northern goshawk, and California spotted owl. This emphasis area is also present in some plantations (units 46, 76, 87, and 99). For the Sagehen Project, the objectives in these plantations² would be focused on the first steps of achieving a resilient heterogeneous forest. Some examples of this are retaining some young porcupine damaged trees that could grow into trees with split tops and other defects

² Sagehen Project's plantations were established in the 1960s and 1970s following the Independence and Donner Ridge wildfires. They are comprised of mostly planted Jeffrey and ponderosa pine.

suitable for nesting/resting structures, and retaining residual or legacy trees and areas that are sparsely treed – for plantations, these areas would become similar features to DCAs and ESOs. See Section 2.2, Prescriptions and Treatments, below for more detail.

For the remainder of emphasis area 5, outside of plantations, objectives include retaining individual trees, small groups of trees, retaining existing DCAs, and creating ESOs that can support younger cohorts of a variety of species. Due to the more northerly exposure, emphasis area 5 would support more basal area and canopy cover as compared to ridges and south facing slopes. However it would support less basal area and canopy cover than drainages, because of the more xeric conditions, and less than emphasis area 1 because of the objectives to maintain higher basal areas and canopy cover for high quality marten habitat. Overall however, treatment objectives specify that enough basal area, canopy cover, and habitat components such as snags, down wood, short snags, and DCAs would be retained to ensure that the emphasis area retains, or in plantations, facilitates the creation of, important habitat structures for wildlife and provides suitable habitat or moves the habitat towards suitability for old forest species. Also, as in emphasis areas 1, 2, and 4, to address fuels reduction and the need to reduce the potential of uncharacteristically severe wildfire effects, treatment objectives are designed that address ladder fuel removal, the spatial arrangement of areas where ladder fuels would not be removed, and the horizontal arrangement of fuels to break up continuous fuel beds. Within the treatment units, approximately 996 acres are identified as emphasis area 5.

2.1.4 Emphasis Areas 6 and 7

Emphasis area 6 (orange) represents vegetation types not identified as high value marten habitat on south facing slopes and emphasis area 7 (yellow) represents vegetation types not identified as high value marten habitat on ridges. In emphasis areas 6 and 7 where fuels reduction is the highest priority, treatments are designed to substantially modify wildfire behavior and reduce the potential of uncharacteristically severe wildfire effects. Although important in all the other emphasis areas, in emphasis areas 6 and 7 especially, the post treatment fire behavior is targeted to meet conditions for strategically placed area treatments (SPLATs). SPLATs are designed to achieve, under 90th percentile fire weather conditions, an average of a four foot flame length, that surface and ladder fuels would be removed as needed to meet less than 20 percent fire mortality in dominant and co-dominant trees, and that tree crowns would be thinned to meet less than 20 percent probability of initiation of crown fire.

The secondary priority of stand level ecological restoration in these areas is focused on facilitating conditions that would result under an active fire regime, which includes a more heterogeneous forest that is resilient to fire and climate induced stresses. Within the treatment units, approximately 740 acres are identified as emphasis area 6 and 150 acres are identified as emphasis area 7.

Overall, in emphasis areas 6 and 7, basal area and canopy cover would be lower than in emphasis areas 1-5. In emphasis area 6, basal area would be reduced to a level that would help increase the pace of tree growth so that a higher percentage of the basal area is in larger (greater than or equal to 20 inches DBH) trees in a shorter amount of time. In emphasis areas 6 and 7, the intent is produce stand conditions that are more similar to those that would have been produced under an active fire regime. A more heterogeneous forest would be created by retaining individual trees, with particular emphasis on tree species more suited to xeric environments, retaining small groups of trees, retaining DCAs, and creating ESOs that can support younger cohorts of a variety of species.

Emphasis areas 6 and 7 are also present in some plantations (units 46, 76, and 87, and emphasis area 6 in unit 99). In plantations, fuels reduction objectives to modify wildfire behavior and reduce severe wildfire effects can usually be achieved in a relatively short timeframe. For the Sagehen Project, the secondary objectives in these plantations would be focused on the first steps of achieving heterogeneous forest. Some examples of this are retaining some young porcupine damaged trees that could grow into trees with split tops and other defects suitable for nesting/resting structures, and retaining residual or legacy trees and areas

that are sparsely treed – for plantations, these areas would become similar features to DCAs and ESOs. See Section 2.2, Prescriptions and Treatments, for more detail.

In addition, the third priority of these areas is marten habitat. Because of their topographic position on drier south facing slopes and ridges, usually with shallower soils, it is unlikely these emphasis areas would develop high quality marten denning/resting habitat over the long term. The exposures and soils would likely preclude the development of dense, large treed fir stands. However these areas could provide for marten movement. Therefore the objectives include avoiding the creation of barriers to marten movement (i.e. large openings). Therefore enough basal area, canopy cover, and habitat components such as snags, down wood, and existing DCAs would be retained to allow marten movement in/through these emphasis areas.

2.1.5 Emphasis Area 8

Emphasis area 8 (purple) is unique in that its only goal is stand level ecological restoration of aspen stands. However this goal is solely focused on a small forest stand scale. This does not represent all aspen stands within the Basin. Where small aspen stands exist within the potential treatment units, the goal is to improve/restore the aspen stands. Under a more active fire regime, conifer encroachment into aspen stands would be minimized and the aspens would be able to reproduce through suckering. However, with a lack of fire disturbances, conifers are able to shade out aspens and impede successful reproduction. The only objectives considered in this emphasis area are minimizing direct conifer competition to existing aspens and to remove conifers to the extent that the aspen stand could expand appropriately to the extent site conditions would allow. Within the treatment units, approximately 6 acres are identified as emphasis area 8.

2.2 PRESCRIPTIONS AND TREATMENTS

As stated above, the U.S. Forest Service, Truckee Ranger District, has adopted an EA/FONSI for a larger project, the Sagehen Project, which would include various treatments. The Sagehen Project is much larger than the proposed project, as defined by the CEQA lead agency. Therefore, the larger project was analyzed under NEPA; however, the National Forest Foundation requested funding from SNC to allow for implementation of only a portion of the larger Sagehen Project. SNC therefore, has defined the proposed project for its consideration as only those areas that are shown in Figure 2-2, consistent with the National Forest Foundation application to SNC. The Project Description, therefore, only describes the treatments and prescriptions that would occur in the areas of the proposed project (refer to Table 2-2 and Figure 2-2).

The proposed project would apply a suite of integrated silvicultural and fire/fuels prescriptions within each treatment unit. Application of the prescriptions (via various treatment methods) would set the stage for achieving emphasis area treatment objectives, described below. Refer to Table 2-2 for the units of the proposed project to which each of the prescriptions applies.

Implementing the following silvicultural prescriptions involves careful consideration of fire: both the follow-up application of fire/fuels prescriptions as well as the stand structure conditions that would likely develop under an active fire regime. On-the-ground decisions about which individual trees and groups of trees to retain are made in light of (1) ensuring overall stand structure will remain intact following application of prescribed fire and (2) mimicking stand structures that would develop under an active fire regime.

The silvicultural prescriptions are set within the context of the existing stand's structure, tree species composition, and as compared to the emphasis area objectives for each subunit. For most units within the

larger Truckee Ranger District Sagehen Project, implementing the following silvicultural prescriptions involves applying each of the first five prescriptions in a step-wise fashion:

- The first step involves identifying both the dense cover areas (DCAs) and early seral openings (ESOs), and identifying their boundaries on the ground
- Next, the trees suitable for legacy tree treatments are identified and the surrounding trees proposed for removal are marked
- After this, the variable thinning prescription is anchored to DCAs, ESOs, and legacy tree treatments
- The suppressed cut prescription is applied to remove suppressed trees contributing to ladder fuels outside of DCAs
- Finally, in subunits where the current snag/short snag densities are substantially below desired densities, decadent feature enhancements (partial tree girdling and/or short snag creation) would be identified for implementation either by machinery or hand application.

All five of these prescriptions would be applied, in a step-wise fashion, for each identified unit. If there are no trees suitable for legacy tree treatment in a given unit, that prescription would be dropped during marking. The remaining two prescriptions, plantation thinning and aspen restoration are applied specifically to plantations and aspen stands, respectively.

While the Truckee Ranger District analyzed a larger project (the Sagehen Project), the proposed project is smaller in size (refer to Figure 2-2 for proposed project boundaries) and does not include as many Silvicultural prescriptions. Therefore, only those prescriptions that are identified in Table 2-2 are discussed in further detail below.

Table 2-2. Prescriptions and Method Summary for the Proposed Sagehen Basin Old Forest Sensitive Species Habitat Restoration Project (SNC 773)

Unit	Total Acres	Emphasis Area	Unit Emphasis Area Acres	Silvicultural Rx	Silvicultural Treatment Method	Fire/Fuels Rx	Fire/Fuels Treatment Method																																								
61	20	1	15	Variable Thin, Suppressed Cut, Dense Cover Area	Hand	Pile Burn RX Surface Fire Rx	Hand Pile Pile Burn Underburn																																								
		2	5					91	9	2	9	Variable Thin, Suppressed Cut, Dense Cover Area	Hand	Pile Burn Rx	Hand Pile Pile Burn	98	63	1	43	Variable Thin, Suppressed Cut, Dense Cover Area	Hand	Pile Burn Rx	Hand Pile Pile Burn	2	9	5	11	100	120	1	14	Variable Thin, Suppressed Cut, Dense Cover Area, Decadent Feature Enhancement	Hand	Pile Burn Rx Surface Fire Rx	Hand Pile Pile Burn Underburn	2	19	4	17	5	46	6	24	282	108	2	46
91	9	2	9	Variable Thin, Suppressed Cut, Dense Cover Area	Hand	Pile Burn Rx	Hand Pile Pile Burn																																								
98	63	1	43	Variable Thin, Suppressed Cut, Dense Cover Area	Hand	Pile Burn Rx	Hand Pile Pile Burn																																								
		2	9																																												
		5	11																																												
100	120	1	14	Variable Thin, Suppressed Cut, Dense Cover Area, Decadent Feature Enhancement	Hand	Pile Burn Rx Surface Fire Rx	Hand Pile Pile Burn Underburn																																								
		2	19																																												
		4	17																																												
		5	46																																												
		6	24																																												
282	108	2	46	Variable Thin, Suppressed Cut, Dense Cover Area	Hand	Pile Burn Rx Surface Fire Rx	Hand Pile Pile Burn Underburn																																								
		6	62																																												

Source: Truckee Ranger District, *Environmental Assessment*, March 2013.
Rx = Prescription

2.2.1 Silviculture Prescriptions

The following silviculture prescriptions would be used for the proposed project, as identified above in Table 2-2.

Dense Cover Areas (DCAs) and Early Seral Openings (ESOs)

Dense cover areas (DCAs) are small areas distributed within treatment units that provide continuous vertical and horizontal cover with a mixture of shrubs and trees along with large and small down wood, snags, and high stumps. DCAs would typically contain clumps of trees of various size classes as well as a variety of snag and down wood sizes. These existing DCAs, ranging in size from 0.25-1 acre, would contribute to/enhance within-stand horizontal and vertical structural diversity and provide important old forest and/or mid seral habitat elements. For example existing DCAs can be representative of multiple layered late seral conditions with high levels of decadence and dead wood. They can also represent a more mid seral condition with brush and a medium sized tree overstory that provide important hiding and resting cover for wildlife and provide foraging and/or movement cover for martens and other late seral species. ESOs would be comprised of dense young regenerating trees and/or shrubs to provide early successional habitat within larger stands managed for late successional or old forest habitat. ESOs, from 0.25-0.50 acre, would enhance within-stand age and species diversity as well as provide prey and foraging habitat for old forest associated wildlife species. Some DCAs are planned around small fens in units 46, 85, and 98. The area would encompass not only the fen but also some of the surrounding forest stand. Both vertical structural diversity and an early seral stage would be represented.

Two primary methods would be used to retain and create DCAs or ESOs: For DCAs, an area would be designated that has multiple wildlife habitat elements, such as large down woody material, a mixture of tree age classes (including solitary and groups of large trees), large snags, multiple tree canopy layers; and/or trees with features associated with wildlife use (for example, platforms, mistletoe brooms, forked tops, and cavities). No mechanical tree removal would be conducted in these "existing DCAs". For ESOs, by taking advantage of existing conditions, such as areas of sparse tree cover, thinner soils, or pockets of extensive tree mortality, openings would be created by removing most or all of the existing trees and either planting or allowing natural shrub and/or tree regeneration to create an ESO of early successional habitat.

Prescribed fire would be an important management tool within DCAs and ESOs. For DCAs comprised of multiple sizes of trees, snags, and down wood, prescribed fire would be carefully applied to maintain key habitat elements, particularly snags and down wood. While underburning in DCAs would likely result in some mortality of suppressed and subdominant trees, burning prescriptions would be designed to ensure the overall structure of the DCA would remain intact. For ESOs (regeneration areas), prescribed fire would be applied to regenerate shrubs and create suitable areas for shade-intolerant tree species to regenerate.

Variable Thinning

The variable thinning prescription is highly site-specific, set within the context of the existing stand's structure and tree species composition and would be administered by the Truckee Ranger District and the National Forest Foundation per the guidelines outlined below. In general, variable thinning involves selective removal and retention of individual codominant and subdominant trees and/or small groups of codominant and subdominant trees. Variable thinning would occur throughout the areas outside of dense cover areas, early seral openings, and legacy tree treatment areas, varying by the prescriptions designed for each emphasis area. Thinning would be conducted to meet treatment subunit level objectives of basal area, canopy cover, tree species composition, and fire behavior (as described in Section 2.3, Prescription Metrics), and to increase stand level structural heterogeneity. As stated above, and especially for a variable thinning prescription, implementation involves careful consideration of fire: both the follow-up application of prescribed fire, as well as the stand structure conditions that would likely develop under an active fire

regime. On-the-ground decisions about which individual trees and groups of trees to retain would be made by the Truckee Ranger District in light of (1) ensuring overall stand structure would remain intact following application of prescribed fire and (2) mimicking stand structures that would develop under an active fire regime.

Variable thinning objectives include: (a) enhancing stand heterogeneity (by retaining groups of larger trees that can provide valuable wildlife habitat and creating subtle openings by thinning around these groups), (b) reducing fuels, and (c) work towards stand level ecological restoration. The variable thinning approach is based on the GTR 220 principle that varying stem density according to potential fire intensity effects on stand structure can create horizontal heterogeneity inherent to these landscapes. As such, the variable thinning primarily focuses on removing ladder fuels, subdominant and codominant shade-tolerant trees (such as white fir), and some subdominant and codominant shade-intolerant trees (such as Jeffrey or ponderosa pine). It is not based on spacing guidelines but rather works within the context of the existing stand to emphasize retaining desired tree species compositions, basal areas, and desired stand structure elements (such as trees with some level of decadence or "defect").

Variable thinning would be applied using the following guidelines:

- Generally favor retention of pines over firs, especially in southerly facing areas and on ridges. In areas of more fir dominance, give retention preference to red fir over white fir. Retained groups of larger trees (described under the bullet below) may include fir trees. Overall the emphasis for retained groups of trees is preserving or enhancing desirable stand structure rather managing for any particular species composition.
- Retain groups of larger trees, generally comprised of five to ten (or more) trees of roughly similar size. Ideally, some of the retained trees should have desirable habitat features, such as forked or broken tops. Remove trees adjacent to these retained groups to improve the overall health and resiliency of the group to drought, insects and disease.
- Where a few (less than five) trees occur together, or where trees are scattered, retain the more vigorous trees by removing subdominant and, in some cases, codominant trees around them to reduce ladder fuels and competition for light, water, and nutrients.
- In areas of greater fir dominance where large trees tend to grow in more of a clumped nature, emphasize retaining clumps, or groups, of generally five to ten trees, and removing trees adjacent to these retained clumps to create small, variably shaped gaps.
- When making site-specific determinations on individual tree removal/retention preferences, vary the choices made so as to increase the variability at the micro-site scale.

Suppressed Cut

A suppressed tree is typically no larger than ten inches DBH (usually ranging between one and five inches DBH) and is a component of a stand's understory, where there is an overstory of dominant, codominant, and subdominant trees. Suppressed trees, in general, have little capacity to release (initiate increased growth rates), even if the overstory is removed. These trees often make up the lower levels of ladder fuels, and the suppressed tree layer combined with subdominant trees helps connect the forest floor into the crowns of dominant/codominant trees, which can increase fire severity and the potential for crown fire.

The suppressed cut would remove suppressed trees (down to one inch DBH for hand thinning and down to three inches DBH for mechanical thinning), as described above, within treatment units outside of dense cover areas. The suppressed cut prescription would not be applied within dense cover areas. This would retain a percentage of the suppressed tree size class within the treatment units, enhancing within-stand variability from a tree size standpoint. Suppressed tree removal outside dense cover areas would facilitate use of prescribed fire while helping to minimize the risks of crown fire by removing some ladder fuels.

Decadent Feature Enhancement

This prescription encompasses two different treatments; partial tree girdling and short snag creation. Partial tree girdling would occur inside and outside of DCAs and short snag creation would only occur in DCAs. Both treatments would only be applied in subunits where the current snag/short snag densities are substantially below desired densities. In all cases however, this prescription would not be applied in emphasis area 7. In some cases, just the partial tree girdling or the short snag creation would be applied in a given emphasis area (subunit) and in other cases both treatments would be applied; it depends on the existing conditions within the subunit.

Partial tree girdling would involve girdling (cutting off the bark layer deep enough to sever the tree's vascular system in the cambium) of individual trees 15-30 inches DBH. The bark layer would be removed in a 6-12 inch band covering approximately $\frac{1}{3}$ of the diameter of pine trees and $\frac{1}{2}$ of the diameter of fir trees. The goal of this treatment is to selectively wound and therefore weaken trees. These weakened trees would become more susceptible to environmental stresses, insect attack, and/or fungus/rot infection and therefore become snags likely before a neighboring, non-girdled tree would. By partially girdling and wounding trees, it is anticipated that the trees would become snags over a longer timeframe rather than die immediately, like what would happen if a tree were completely girdled.

The selection of trees for partial tree girdling would occur after the above four prescriptions had been applied (marked). Trees selected outside of DCAs for partial girdling would be trees already selected under the variable thinning prescription for removal. Therefore these trees would be accounted for when calculations of basal area removal and trees removed per acre are tallied, however they would be left on site. These trees would be among the largest trees available (under 30 inches DBH). Trees selected for partial girdling in DCAs would be designated based on the site specific conditions in the DCAs and would be trees that would provide needed habitat structure in the DCAs. Between 500 and 600 trees would be treated with partial tree girdling to enhance decadent features in the subunits over the long term.

Short snag creation involves cutting a tree (preferentially a white fir), on the outside edge, but within a DCA, at a height of 10-20 feet above the ground. The height would be based on the highest point a piece of machinery such as a feller buncher, could reach to cut the tree. The top of the tree would be felled into the interior of the DCA and left to contribute to down log densities. Trees selected for this treatment would be 15-30 inches DBH. The goal of this treatment is to immediately create snags at an intermediate height inside of DCAs. These short snags would be expected to provide suitable perches/rest sites and would be tall enough to be above typical snow levels, thus also providing an access route under the snow for wildlife. Between 100 and 150 trees inside of DCAs would be selected for the short snag creation treatment.

2.2.2 Silviculture Treatment Methods

Silvicultural prescriptions are often implemented using ground-based mechanized equipment or by hand. For the proposed project, and as shown in Table 2-2, hand treatment methods would be used in all areas of the proposed project.

Hand Thinning

Hand thinning is an activity that utilizes crews with chainsaws or handsaws that cut understory conifers less than 16 inches DBH to accomplish fuels reduction, marten habitat enhancement and restoration, and stand-level ecological restoration objectives set for the treatment unit. If hand felled material contributes to unacceptable fuel loading, this material may be hand piled outside the drip lines of desirable trees and burned when conditions permit a minimum amount of mortality.

2.2.3 Fire/Fuel Prescriptions

Fire/fuels prescriptions would be aimed at reducing hazardous surface and ladder fuels within the treatment units and providing conditions that would enable subsequent use of prescribed fire to maintain suitable fuels conditions. Fire/fuels prescriptions include prescribed surface fire as well as pile burning and lop and scatter prescriptions. The following fire/fuel prescriptions would be used for the proposed project, as identified above in Table 2-2.

Surface Fire Prescription

A surface fire is a fire that burns live and dead fuels at or near the surface of the ground, mostly by flaming combustion. A surface fire prescription is usually implemented by an underburn. Surface fire prescriptions are typically designed to consume surface and ladder fuels and to mimic fire that would occur in an active fire regime. Surface fire prescriptions can be applied under spring-like and fall-like conditions. Spring-like conditions are defined by relatively high live fuel moistures, high 1,000 hour size (“coarse woody debris”, three inches diameter and greater) fuel moistures, and soils that are relatively moist beneath the surface fuels. Under spring-like conditions, it is expected that surface fires would have moderate to high consumption of 1-100 hour size fuels (“fine woody debris”, ranging from 0.00-2.99 inches diameter) and minimal consumption of 1,000+ hour fuels with mortality primarily expected in subdominant tree size classes. Fall-like conditions are defined by relatively low live fuel moistures, lower 1000 hour fuel moistures, and drier soils with dry organic layers beneath the litter layer. Under fall-like conditions, it is expected that burning would be primarily surface fires with higher flame lengths, and faster burn times as compared to burning under spring-like conditions. It would have high consumption of 1-100 hour size fuels and moderate to high consumption of 1000+ hour fuels, and with mortality expected in subdominant and some codominant tree size classes. Depending on cycles of drought and wet weather, spring-like and fall-like conditions can occur throughout the year. For the Sagehen Project, spring-like condition surface fire prescriptions would be emphasized, however due to limited suitable burning conditions, surface fire prescriptions under fall-like conditions would be implemented in some cases. In these cases, extra measures to protect large dead wood, such as creating firelines around large logs/snags, would be implemented.

Pile Burn Prescription

A pile burn prescription is designed to remove surface fuels, both fuels generated from silvicultural treatments (activity fuels) and existing fuels on the ground. A pile burn prescription can be implemented by hand or by machinery (typically a grapple piler – see below). In general, small down wood is placed in piles for future burning. Pile location and size is dictated by existing conditions, however piles would be preferentially placed outside of sensitive areas such as riparian conservation areas and cultural resource sites. Piles of fuels typically are burned under fall-like conditions, in winter months, or during periods of low fire danger. This prescription removes surface fuels in the treatment units and is used to mimic underburning where sensitive areas prevent unit-wide application of underburning.

2.2.4 Fire/Fuel Treatment Methods

Often, the silvicultural treatment would partially achieve hazardous fuels reduction objectives, and, in the case of mastication, could fully achieve fuels reduction objectives. Most of the silvicultural treatments however would be followed by a fire/fuels treatment, aimed at reducing surface fuels and residual ladder fuels.

Prescribed fire constitutes much of the proposed follow-up fuels treatments for the Sagehen Project treatment units. Prescribed fire refers to any fire ignited by management actions to meet specific objectives. Prescribed fire can include underburning (intentionally set surface and ground fire) and burning

of hand and machine constructed piles. Associated activities include creating firelines to prevent fire spread from treatment units as well as prevent the site-specific ignition of key habitat components, such as snags and down logs.

The following fire/fuel treatment methods would be used for the proposed project, as identified above in Table 2-2.

Underburn

Underburning is a generalized term used when applying prescribed fire to large areas and is typically the treatment method for a surface fire prescription. Underburning targets surface fuels, some understory, and, in rare cases, larger trees. Surface fuels are the primary agent of fire spread. The objective is to apply controlled fire under optimum conditions where the treatment can modify fuel conditions to effectively reduce fire behavior and the corresponding intensity of a future wildfire. Within some areas proposed for burning, the goal of the treatment may be to consume a significant portion of the existing surface fuels that could cause high wildfire intensities, and/or the consume understory vegetation (ladder fuels) in order to reduce future fire severity and to create conditions that allow for future prescribed underburning opportunities. In other areas, underburning is used to create new growth of native shrub species and forage opportunities for wildlife. Underburning most closely mimics low- intensity fire that would occur in an active fire regime. Underburning, especially on south and west facing slopes, is typically conducted under spring-like conditions. A more mosaic burn pattern is created by underburning in spring-like conditions as compared to fall-like conditions; with some areas minimally burned and overall less fuel consumption. For the Sagehen Project proposal, underburning would be applied on a unit-wide basis, in other words, where underburning is proposed it would be conducted across the entire treatment unit and across all subunits (emphasis areas) within that treatment unit.

Hand Piling and Burning

After a hand or mechanical thin, residual activity fuels and some naturally occurring fuels are piled by hand into burn piles. Hand piles of fuels typically are burned under fall-like conditions, in winter months, or during periods of low fire danger.

2.3 PRESCRIPTION METRICS

Metrics for post-treatment stand structure elements and tree species composition have been developed to guide application of the silvicultural and fire/fuels prescriptions within each emphasis area. Post-treatment stand structure elements include: (a) basal area, particularly in trees greater than 20 inches DBH, (b) canopy cover, (c) snag density, (d) large and small down woody material, (e) short snag/high stump densities, (f) dense cover areas (DCAs) and early seral openings (ESOs), and (g) prescribed surface fire behavior, as indicated by spatial extent and intensity (tree mortality). The site-specifically defined values for the metrics for each subunit are grounded in the scientific literature as well as Forest Plan direction related to emphasis area objectives (Truckee Ranger District, March 2013). The following discussion encompasses the metrics for the entire Truckee Ranger District Sagehen Project, which includes the proposed project (Units 61, 91, 98, and 282).

Post-treatment metric values for each emphasis area represent a range of outcomes that would vary by subunit as prescriptions were applied within the context of the existing stand's structure and tree species composition. For example, although silvicultural and fire/fuels prescriptions for subunits 213-1 and 38-1 are designed to meet emphasis area 1 objectives, post-treatment stand conditions for subunit 213-1, which is occupied by a higher elevation mature red fir stand on a northwest-facing slope, would be different than those for subunit 38-1, which is occupied by a lower elevation mixed conifer stand on an east-facing slope.

The stand structure and species composition metrics apply at the subunit-scale. While these metrics can play out at other spatial scales (for example, microsite or landscape scales), they are meant to be applied at the subunit-scale. The silvicultural prescriptions would be applied in the step-wise fashion (as described in Section 2.2, Prescriptions and Treatments), with variable thinning decisions regarding which trees to retain made at generally a microsite scale by field marking crews. The stand structure and species composition subunit-scale metrics would serve to limit and define the tree marking decision space. Data on the defined metrics would be gathered and assessed during the layout and tree marking phase of the project, with adjustments made to tree marking as necessary to align with emphasis area treatment objectives.

The sections below summarize key similarities and differences between the metrics for each emphasis area.

Basal Area

Although site and stand-scale basal areas are relatively homogeneous, existing subunit-scale basal areas are quite variable, both within and between emphasis areas, ranging on average between 100 and 280 square feet per acre across all subunits. However, site conditions can exceed 280 square feet. Emphasis area treatment objectives would be expected to result in a 20 to 25 percent reduction in existing basal area levels at the subunit scale, with the lower end of the range (20 percent reduction) in emphasis area 1 subunits and the higher end (25 percent reduction) in emphasis area 7 subunits. Residual basal areas in emphasis areas 1 through 4 would typically range between 165 and 190 square feet per acre, but could go as high as 300 square feet in DCAs or similar existing dense areas retained in the variable thin prescription (such as groupings of large trees). While emphasis areas 5, 6, and 7 would typically range between 100 and 170 square feet per acre, there could be sites as low as 10 square feet in ESOs, and other areas that would exceed 170 square feet (such as in DCAs or similar existing dense areas retained in the variable thin prescription - groupings of large trees).

In summary, all ranges are presented as overall averages at the subunit level scale. Site-scale conditions influence the average subunit basal areas, but can be outside these ranges. Retained basal area would vary based on existing pre-treatment conditions coupled with emphasis area goals, and would contribute to the increase in site and stand variability. Mechanical thinning treatments would at minimum meet Forest Plan standards and guidelines for basal area retention and in many cases would exceed retention standards.

In addition, reductions in basal area would not be evenly distributed across tree size classes (trees less than ten inches DBH, trees between ten and 19.9 inches DBH, and trees between 20 and 29.9 inches DBH), however. All trees 30 inches DBH and larger would be retained within all treatment units. For all emphasis areas, silvicultural prescriptions focus on removing selected trees less than 20 inches DBH, guided by the emphasis area's treatment objectives. The majority of the retained basal area would be in the largest trees within each subunit; most trees 20 inches DBH and larger would be retained following application of the silvicultural and fire/fuels prescriptions. Data from the Sagehen Test Plots show that between 89 and 93 percent of trees between 20.0 and 29.9 inches DBH were retained following application of variable thinning, legacy tree treatment, dense cover area, and early seral opening prescriptions and, in the case one unit, a low intensity surface fire prescription. Similar outcomes would be expected for the Sagehen Project subunits.

Canopy Cover

Tree canopy cover retention would result from retaining basal area as described above. Canopy cover is a stand level average that indicates roughly the percentage of the forest floor that is vertically overtopped with tree canopy. The silvicultural and fire/fuels prescriptions are expected to result in varying canopy cover levels within each subunit. For emphasis area 1 through 5 subunits, canopy cover following application of silvicultural and fire/fuels prescriptions would on average be greater than 50 percent, with reductions of existing canopy cover ranging between 10 and 15 percent. For emphasis area 6 and 7 subunits, canopy cover following application of prescriptions would generally range on average between

40 and 50 percent. However in all emphasis areas, site canopy cover could go as high as 85 percent in DCAs or similar existing dense areas retained in the variable thin prescription (such as groupings of large trees), or as low as 20 percent in ESOs.

In summary, all canopy cover ranges are presented as overall averages at the subunit level scale. Site-scale canopy cover influences the average subunit canopy cover percentages, but can be outside these ranges. Retained canopy cover would vary based on existing pre-treatment conditions coupled with emphasis area goals, and would contribute to the increase in site and stand variability. Mechanical thinning treatments (only proposed for the larger Sagehen Project and not the proposed project) would meet (and, in many cases, exceed) Forest Plan standards and guidelines for canopy cover retention and in many cases exceed retention standards.

Snag Density

Snag density levels would be higher within emphasis areas 1 through 5 compared to emphasis areas 6 and 7. Large snags (greater than 15 inches DBH) would be retained within all subunits, regardless of emphasis area. Where currently available within emphasis area 1, 2 and 5 subunits, some decadent firs with declining crown characteristics would be retained for future snag recruitment. Where existing snag levels are low, particularly within the plantations, silvicultural prescriptions retain all snags greater than three inches DBH. Snag retention would meet (and, in many cases, exceed) Forest Plan standards and guidelines.

Snag density goals, especially in emphasis areas 1 and 2, would incorporate findings set forth in Spencer (1981) "Average densities (no. per ha) in known marten habitat was 46 snags (>20cm)". This converts to 18.6 snags per acre greater than 7.9 inches DBH, however this density was in clumps, not as an average across high quality marten reproductive habitat (pers. comm. Wayne Spencer, 2011). The management recommendation from Spencer (1981) of "At least 8 snags/ha \geq 38cm DBH, including at least 1 fir snag/ha 70 cm should be retained" (converted 3 snags per acre greater than or equal to 15 inches DBH, 0.4 fir snag per acre 28 inches DBH) is also incorporated into snag density goals in that all snags greater than 15 inches DBH would be retained and where snags numbers were low, snags would be created through the Decadent Feature Enhancement prescription (see below for subunits with this prescription applied). Emphasis area 1 and 2 long term objectives for snags greater than 15 inches DBH are 18 and 15 snags per acre respectively and the project goal is to move emphasis areas towards the long term objectives.

Silvicultural prescriptions for subunits 100-1 and 100-2 call for creating (via partial tree girdling) approximately two to three snags (each between 15 and 30 inches DBH) per acre outside DCAs and one snag (greater than 15 inches DBH) per acre within DCAs.

Hand-constructed fire lines would be placed around large snags before applying low intensity surface fire prescriptions. Each subunit's low intensity surface fire prescription (available in the project record) specifies the numbers of snags to be lined, based on existing numbers of large snags within the subunit. In emphasis area 1 and 2 subunits proposed for underburning, between 10 and 18 large snags per acre would be lined while in emphasis area 4, 5, 6, and 7 subunits, between 2 and 10 large snags per acre would be lined.

In treatment units where hand or grapple piling of fuels would be conducted, piles would be located a sufficient distance from large snags (greater than 15 inches DBH) to ensure the snags did not ignite during pile burning operations.

Down Woody Material

In all subunits, regardless of emphasis area, large down logs (larger than 15 inches diameter and ten feet long) would be retained during implementation of silvicultural treatments.

Fire/fuels prescriptions are designed to retain specified levels of down woody material, commensurate with emphasis area management objectives. In units proposed for application of low intensity surface fire following silvicultural treatments, the largest down logs per acre would be lined to protect them during underburning operations. Emphasis area 1 and 2 subunits to be underburned have the greatest quantities of large down logs to be lined prior to underburning, ranging from 15 to 20 large down logs to be lined per acre. In emphasis area 4, 5, 6, and 7 subunits generally three to seven large down logs per acre would be lined, with the exception of subunits 163-5, 163-7, and 213-4. In these subunits, approximately 15 to 20 large logs per acre would be lined prior to application of low intensity surface fire.

In treatment units proposed for grapple or hand piling, piles would be located a sufficient distance from large down logs to ensure the logs did not ignite during pile burning operations. In addition, piling would not be conducted on approximately 30 percent of the unit, allowing for retention of small down woody material.

In treatment units proposed for surface fire prescriptions (refer to Table 2-2 for information regarding the proposed project), approximately 30 percent of each unit's area would not be underburned. Small woody material would be retained in these unburned areas of the treatment units.

Snags/High Stumps

Short snags would be created in emphasis area 1 through 6 subunits with silvicultural prescriptions that include existing DCAs. These subunits are located outside the Sagehen Project's plantations. To create short snags, approximately two live trees per acre of DCA, greater than 15 inches DBH, would be cut at a height of ten to 20 feet above the ground. White fir would be the preferred cut species. Felled portions of these cut trees would be retained on site.

Dense Cover Areas and Early Seral Openings

Silvicultural prescriptions call for varying acreages of DCAs and/or ESOs within each subunit, based on emphasis area. (Note that DCAs and ESOs are not included in the plantation thinning prescription.) DCA/ESO acreages are calculated as a portion of each subunit's area, with the highest proportion in emphasis area 1 subunits. In emphasis area 1 subunits, DCAs and ESOs would occupy an average of 15 to 20 percent of the subunit area; in emphasis areas 2 and 6, DCAs and ESOs would occupy an average of five to ten percent of the overall subunit area; in emphasis areas 4 and 5, DCAs and ESOs would occupy an average of ten to 15 percent of the subunit area; and in emphasis area 7, DCAs and ESOs would occupy an average of one to five percent of the subunit area. Subunits 38-1, 73-5, and 213-1 would have the highest acreages of DCAs, ten, eight, and 15 total acres, respectively.

Tree Species Composition

Site-specific objectives for tree species composition are based on existing species composition within the subunits. Relative percentages of tree species to be removed vary by crown class (dominant, codominant, subdominant, and suppressed) within each subunit, as described in detail in the Project Record. Silvicultural prescriptions for all subunits outside plantations, regardless of emphasis area, would be primarily focused on removing suppressed trees (ranging from 50 to 90 percent removal of existing suppressed trees) and some removal of subdominant trees (ranging from ten to 30 percent removal of existing subdominant trees), depending on the existing species composition within the subunit. In general,

most dominant and codominant trees of all species would be retained, with some limited site-specific exceptions to provide for removal of three to ten percent of dominant/codominant white fir.

Because the plantations are predominantly comprised of Jeffrey pine, plantation thinning prescriptions are focused on retaining existing white fir and red fir as well as sugar pine and western white pines not infected with blister rust.

Prescribed Surface Fire Behavior

Two metrics are used to define targets for surface fire prescriptions: spatial extent of surface fire and intensity as indicated by the amount of tree mortality caused by surface fire. To facilitate application of surface fire prescriptions, underburning is proposed for entire treatment units (rather than individual subunits within treatment units). Hence, values for the prescribed surface fire metrics are applied at the treatment unit scale, and are the same for all emphasis areas.

The spatial extent for application of low intensity surface fire is approximately 70 percent of the area in a mosaic pattern within each treatment unit. (Table 2-2, above, displays the treatment units proposed for surface fire prescriptions within the proposed project.) Approximately 30 percent of the unit's area would remain in an unburned condition. Surface fire prescriptions would be designed to result in mortality of approximately 70 percent of trees less than three inches DBH and approximately five to 15 percent of trees greater than three inches DBH. Mortality in trees greater than three inches DBH would be primarily comprised of trees in subdominant crown classes, with occasional mortality of trees in the codominant crown class.

3.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- | | | |
|---|--|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agricultural and Forestry Resources | <input checked="" type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology / Soils |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology / Water Quality |
| <input type="checkbox"/> Land Use / Planning | <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise |
| <input type="checkbox"/> Population / Housing | <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Transportation / Traffic | <input type="checkbox"/> Utilities / Service Systems | <input type="checkbox"/> Mandatory Findings of Significance |

DETERMINATION: (TO BE COMPLETED BY THE LEAD AGENCY)

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



 Jim Branham, Executive Officer

3/13/14

 Date

4.0 EVALUATION OF ENVIRONMENTAL IMPACTS:

- 1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
- 2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
- 3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
- 4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).
- 5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
 - a) Earlier Analysis Used. Identify and state where they are available for review.
 - b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
- 6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
- 7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
- 8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
- 9) The explanation of each issue should identify:
 - a) the significance criteria or threshold, if any, used to evaluate each question; and
 - b) the mitigation measure identified, if any, to reduce the impact to less than significance.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a, c.) **Less Than Significant.** The proposed project area surrounds the University of California Berkeley Sagehen Creek Field Station, immediately west of State Route (SR) 89, and adjacent to Sagehen Road, as well as Forest Service Roads, such as Roads 11-4, 89-36-8, and 878-2. In addition, the proposed project site is near the Sagehen Creek Field Station, the University of California Wildlife Experiment Station, and there are campgrounds to the west of the proposed project. Proposed project activities include requiring fire lines around large snags before applying low intensity surface fire prescriptions. Understory burning would be modified to minimize the amount of overstory mortality and islands of unburned vegetation would be retained in the project area. Where feasible, burn piles would be located in areas where they would not be highly visible from Roads 11-4, 89-36-8, and 878-2. The proposed project would not be visible from SR-89, Sagehen Creek Field Station, the University of California Wildlife Experiment Station, and the campgrounds to the west.

There would be no impacts to scenery from SR-89 or Sagehen Road, as the proposed project would not be visible due to the "walls" of trees, existing land forma, and distance from the roads to the proposed project area. Given the nature of the proposed project, to enhance forest health and forest processes, and the specific project Standard Management Requirements outlined by the Tahoe Ranger District, the proposed project would have a less than significant impact on surrounding roadways, private property, and campground. Proposed project impacts are considered less than significant. No mitigation is required.

b.) **Less Than Significant.** As part of the proposed project activities, buffer areas would be set up around any rock outcroppings and cultural resource sites. No ground disturbing activities would occur within cultural resource sites and any resources identified through consultation with Native American tribes, individuals, and other interested parties would be protected through avoidance. Therefore, the proposed project would have a less than significant impact on scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings. No mitigation is required.

d.) **No Impact.** The proposed project would include activities that would reduce fuel loads, improve wildlife habitat and watershed conditions, and encourage healthy forest processes. The proposed project would not introduce a new source of light of glare into the region. Therefore, no impact would occur. No mitigation is required.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. -- Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non- agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Result in the loss of forest land or conversion of forest land to non-forest use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

a-e.) **No Impact.** The proposed project site is within the Sagehen Experimental Forest adjacent to the Tahoe National Forest. The proposed project site does not contain Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or active agricultural operations. The proposed project involves forest land, but would not involve the loss of any forest land. The proposed project would benefit the forest as it would reduce fuel loads, improve wildlife habitat and watershed conditions, and encourage healthy forest processes. The proposed project does not include any changes that could result in conversion of any farmland to a non-agricultural use or forest land to non-forest land use. Accordingly, there would be no impact related to agricultural or forest resources. No mitigation is required.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

- | | | | | |
|---|--------------------------|-------------------------------------|-------------------------------------|--------------------------|
| a) Conflict with or obstruct implementation of the applicable air quality plan? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Expose sensitive receptors to substantial pollutant concentrations? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Create objectionable odors affecting a substantial number of people? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

a, b, d) **Less Than Significant with Mitigation Incorporation.** The proposed project is located within the Mountain Counties Air Basin within the jurisdiction of the Northern Sierra Air Quality Management District (NSAQMD). Prescribed burning would be conducted during fall, spring, or winter; the most favorable times in terms of smoke dispersion.

Air Quality can be severely impacted by particulate matter and other pollutants during large wildfire events. Fugitive dust caused by construction and use of unpaved roads can produce particulate matter 10 microns or less in diameter (PM₁₀). Dust generated by skidding, loading, and timber harvest activities also contributes to fugitive dust. Table 4-1 provides the towns, communities and highways in the vicinity of the proposed project. These areas could be affected by smoke if weather patterns produce a stable air mass and smoke is unable to vent into the upper atmosphere.

Table 4-1. Sensitive Receptors Identified within 17 Miles of Sagehen Project.

Town or Feature	Distance and Direction from the Sagehen Project Boundary
State Route 89	One (1) mile west
Truckee	Six (6) miles south
Sierraville	Ten (10) miles northwest
Loyalton	Seventeen (17) miles northwest

Source: Truckee Ranger District, *Air Quality Report*, January 2013.

The current attainment status for the Sierra and Nevada Counties are provided in Table 4-2.

Table 4-2. 2011 State and Federal Attainment Status.

Criteria Pollutant	State	Federal
Ozone (O ₃)	Sierra County: Unclassified Nevada County: Nonattainment	Sierra County: Unclassified/Attainment Nevada County: Nonattainment
PM ₁₀	Nonattainment	Unclassified
PM _{2.5}	Unclassified	Unclassified/Attainment
Carbon Monoxide (CO)	Unclassified	Unclassified/Attainment

Source: Truckee Ranger District, *Air Quality Report*, January 2013.

Prescribed burns would occur as part of the proposed project. The Truckee Ranger District would prepare a burn plan, to be approved by NSAQMD, and would obtain a burn permit from NSAQMD for the burn activities of the proposed project. The burn plan and the burn permit may be only for this proposed project, or may be prepared in conjunction with the larger Sagehen Project.

Burns would be conducted on authorized burn days only in consultation between the Truckee Ranger District, the NSAQMD, and California Air Resources Board (CARB). This consultation/coordination would follow the Smoke Management Guidelines for Agricultural and Prescribed Burning contained in Title 17 of the California Code of Regulations. These Smoke Management Guidelines became effective March 14, 2001 and are intended to provide for the continuation of agricultural burning, including prescribed burning, as a resource management tool, and provide increased opportunities for prescribed burning, while minimizing smoke impacts on the public (Truckee Ranger District, February 2013). Since smoke is made up of inhalable particulates (smoke particles that measure less than ten microns in size [PM₁₀], and of less than 2.5 microns in size [PM_{2.5}]) and ozone are public health hazards; prescribed burns would be planned during periods of unstable air, which would allow for proper ventilation. However, since prescribed underburns could last for several days or weeks there is the potential for recurring shifts in air masses toward more stable conditions. For this reason, all prescribed fire activities for the proposed project would be coordinated with NSAQMD (Truckee Ranger District, February 2013).

The objective of pile burning would be to reduce fuel loadings while protecting the residual overstory trees from damage caused by heat and flames. Pile burning could produce more particulate matter per acre than understory burning because the standing biomass would be cut and piled producing higher fuel loads. However, piled material is allowed to cure and can be ignited with lower fuel moistures, which ensures complete and efficient consumption and less particulate matter being produced. If fuel loading does not meet the desired condition after the biomass reduction is complete, than an understory burn is prescribed, this is predicted to produce fewer emissions because of the lighter fuel load.

By following the burn plan and NSAQMD requirements for burning and managing project activities, it is unlikely that emissions caused by the proposed project would exceed California Air Quality Standards for the Air Quality Management District. The PM_{2.5} atmospheric concentrations currently do not exceed national standards; however, emissions could exceed California Air Resources Board (CARB) standards if (1) weather conditions predicted by CARB meteorologists do not prevail, or (2) emissions do not disperse as predicted, and/or (3) emissions from other Air Quality Management District's adversely impact air quality in local districts. Forest Service and CARB smoke-dispersal forecasting would be used as part of the burn plan to reduce effects within the regulatory framework. Impacts are considered to be less than significant with the incorporation

of mitigation measures as well as the Standard Management Requirements (refer to Appendix A) (Truckee Ranger District, February 2012).

The use of the existing unpaved roads could potentially generate dust. The proposed project would incorporate mitigation measures as well as the Standard Management Requirements (provided in Appendix A) to reduce the effect of fugitive dust. While some mechanical equipment may be used, as depicted in Table 2-2, All silvicultural treatment methods would be by using hand held equipment. Therefore, the material would be mainly thinned by chainsaw. Piling of activity created slash and brush would be by hand or with a tractor. However, the proposed project would follow the Standard Management Requirements (refer to Appendix A). Therefore, fugitive dust and exhaust from proposed project activity equipment would have a less than significant impact on air quality. No mitigation measures are required.

In addition, the controlled use of prescribed fire in combination with the removal of forest material in the form of biomass and commercial sawlogs would result in a long-term improvement in air quality.

Mitigation Measures

AIR-1 The U.S. Forest Service, Truckee Ranger District prescribed fire planner would coordinate with the Air Quality Coordinator to design the burn plan and smoke management plan, approved by the Northern Sierra Air Quality Management District (NSAQMD). Burning permits would be acquired from the NSAQMD. The NSAQMD would determine days when burning activities are allowed. The California Air Resources Board (CARB) provides daily information on “burn” or “no burn” conditions. Burn plans prepared by the Truckee Ranger District would be designed and all fuel reduction burning would be implemented in a way to minimize particulate emissions. Prescribed fire implementation for the project would be coordinated daily and seasonally with other burning permittees both inside and outside the forest boundary to help meet air quality standards.

c.) **Less Than Significant with Mitigation Incorporation.** The combination of the proposed project with past, present and reasonably foreseeable projects from prescribed burning resulting from past practices, natural surface fuel buildup, and activities on federal, state, and private lands could result in cumulative impacts. Impacts to air quality from prescribed burning in the project area and adjacent areas during the last five years have been minimal and no Notice of Violation of air quality standards has been issued to the Tahoe National Forest during this period. The proposed project would not increase the amount of prescribed fire activities in the area above what has been implemented for the last five years. The proposed project would not impact air quality in the area when combined with ongoing and reasonably foreseeable future actions. In addition, other projects are required to comply with NSAQMD rules and guidelines. In addition, all prescribed fire activities are coordinated with NSAQMD and CARB and would be implemented under optimum conditions using the Standard Management Requirements and mitigation measure AIR-1 to prevent smoke concentrations from affecting local communities. Therefore, cumulative impacts are considered less than significant and no mitigation measures are required.

Mitigation Measure

Implement mitigation measure AIR-1.

- e.) **Less Than Significant.** As discussed above, the proposed project would include activities such as pile and understory burning. These activities would produce smoke that could impact a larger area. However, Forest Service and CARB smoke-dispersal forecasting would be used as part of the burn plan to reduce effects within the regulatory framework. The local communities that might potentially be impacted by prescribed fire smoke from the proposed project are Truckee and the surrounding vicinity of the southwest Sierra Valley. However, normal wind patterns will be carrying smoke to the northeast where communities and towns will not be impacted. Because of the Standard Management Requirements applied, and the coordination with the CARB, any impacts to odors would be less than significant. No mitigation is required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a.) **Less Than Significant.** The Tahoe National Forest contains many special status wildlife and plant species. However, proposed project activities have been designed to minimize any impacts to special status species. Large snags and downed logs provide nesting, resting, and sheltering structures for spotted owls, goshawk, and forest carnivore species and their prey, including cavity-nesting birds and small mammals. Downed logs provide nutrient cycling, maintain soil moisture and provide microclimates for fungi; and fungi are an important food source for small rodents which are the primary prey for many wildlife species. For the proposed project, the existing snags would be retained, except for snags that pose a hazard or snags that need to be removed for operability.

Noise from operating motorized equipment during project implementation, or smoke from prescribed burning, has the potential to directly affect wildlife by displacing individual animals from the vicinity of project treatment units. Noise disturbing effects are temporary, lasting several months during the year when they are implemented. If needed, limited operating periods are included in the management requirements to protect California spotted owl and northern goshawks that have active nests or roosts within 0.25 mile of project-related noise disturbances, to reduce the potential for disrupting breeding and reproduction in the project area.

The fuels treatments would reduce the shrub component immediately post-treatment, but within five years, shrubs would re-sprout. Newly sprouting shrubs provide high quality browse for deer, and shrub seeds and herbaceous vegetation provide food and shelter for rodents such as woodrats, mice and squirrels, which are prey species that support numerous sensitive species such as spotted owls, goshawk, marten, fisher, and the Sierra Nevada red fox. Studies have shown that small mammals (woodrats, deer mice) quickly repopulate burned areas, provided there are nearby unburned understory vegetation to provide source populations. Masticating and burning may reduce small mammal populations in the first year or two, but populations are expected to readily recover thereafter. Therefore, effects to small mammal populations are limited in scope, both spatially and temporally. Implementing projects using a variety of techniques (masticating, prescribed fire, hand cutting, thinning) varies the types of effects spatially throughout the watershed, and implementing projects with appropriated funding distributes these effects temporally, because not all projects in the watershed are fully funded in any given year (Truckee Ranger District, March 2013).

The Tahoe National Forest contains sensitive plant species as well. Pre-construction surveys would be implanted and sensitive plant species identified during the survey would be flagged and no ground –disturbing activities would be implemented within the flagged areas.

The proposed project would ultimately enhance forest heterogeneity at both the stand and landscape scale, reducing stand densities in certain locations, and modifying tree species composition. This would favor more fire resilient pines, result in less competition for soil moisture resources and light, and create a more heterogeneous landscape that would be better able to cope with drought stress, insect infestation, and disease outbreaks. With the proposed project Standard Management Requirements (refer to Appendix A), the proposed project would have a less than significant impact on special status wildlife and plant species. No mitigation measures are required.

- b, c.) **Less Than Significant.** The proposed project would include watershed restoration. Implementation of the proposed project would not affect the following special status species because the proposed project analysis area is outside the current and/or historic range of the species: California red-legged frog (U.S.F.W.S. Threatened), Foothill yellow-legged frog (Forest Service Sensitive), Lahontan Lake tui chub (Forest Service Sensitive), Hardhead (Forest Service Sensitive), Northwestern pond turtle (Forest Service Sensitive) and California floater mussel (Forest Service Sensitive) (Truckee Ranger District, March 2013).

Temporary/road construction and obliteration, stream crossing construction, activities within RCAs, felling of trees, burning activities, use of water drafting sites, and the application of a fungicide, such as Sporax, could result in impacts to riparian and wetland habitat and species; however, the proposed project includes Standard Management Requirements, specifically 13 (refer to Appendix A) and project design criteria that would minimize impacts. Proposed project design includes no ground disturbance activities during limited operating periods for species such as the mountain yellow legged frog, and aquatic biologists would review areas identified for treatment within 500 feet of occupies sites to determine if application of herbicides should be avoided.

Sedimentation could be slightly increased in some areas in the short term; however, treatments would follow Standard Management Requirements, provided in Appendix A, and the proposed project design. However, upon proposed project completion, it is anticipated that there would be a reduction in sediment delivery that could reduce fine sediment within the creeks in the project area. Burning prescriptions would be designed to minimize riparian disturbance. The amount of high soil burn severity is not expected to be concentrated in the RCAs because they would not be directly lit

and they tend to hold more moisture than surrounding areas. Piles identified for pile burning would be located outside of the RCAs.

Road maintenance and reconstruction could also increase sediment delivery in the short term; however, road maintenance within the proposed project area would be minimal. It is not anticipated that road maintenance would be required for the proposed project; however, in the event that road maintenance is determined necessary, Standard Management Requirements (refer to Appendix A), especially 19, 20, 21, and 22, would be incorporated to reduce the proposed project's impacts. At the end of project use, temporary roads would be sub-soiled and obliterated, and mulch and organic matter would be re-incorporated into the surface soils (Truckee Ranger District, March 2013).

Under the proposed project, the management objective of emphasis areas 2 and 4, which contain most of the RCA's and the major stream channels within treatment units, is to retain higher canopy cover, fuel moistures, and more snags and logs than the surrounding forest. These emphasis areas are designed to leave high basal area, encouraging continued shade to stream channels. At site-specific locations throughout both emphasis areas, some areas would not be treated, therefore not changing tree density. The high basal area of the treated areas, in combination with the untreated areas, would leave considerable trees within 125 feet of the water bodies that would provide shade.

While riparian habitat and riparian areas may have temporary impacts during restoration activities, the proposed project would improve riparian habitat health, improve water quality, reduce sedimentation, and improve the ultimate health of the watershed. Therefore, the proposed project would have a less than significant impact on riparian areas, riparian habitat and watersheds. No mitigation measures are necessary.

- d.) **Less Than Significant.** The proposed project would include noise during certain treatment activities as well as removal of trees and shrubs. However, snags and woody debris, riparian buffers, and maintenance of canopy closures, as well as canopy percentages for appropriate water temperatures within riparian areas, as outlined in the project description and the Standard Management Requirements (refer to Appendix A) would minimize any impacts to migratory species. Therefore, the proposed project would have a less than significant impact on migratory species. No mitigation measures are required.

- e-f.) **No Impact.** The proposed project would include activities that would reduce fuel loads, improve wildlife habitat and watershed conditions, and encourage healthy forest processes. The proposed project would not conflict with policies or ordinances protecting biological resources nor would it conflict with any adopted conservation plans. The Sagehen Basin Old Forest Sensitive Species Habitat Restoration Project would improve forest health, reduce fuel loading, and maintain and enhance existing forest. No impacts to recreation would occur. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a-d.) **Less Than Significant.** The proposed project would include activities that would reduce fuel loads, improve habitat and watershed conditions, and encourage healthy forest processes. The proposed project is not anticipated to result in ground-disturbing activities, as silvicultural prescriptions within the project areas would be limited to hand methods. Piles for pile burning would be placed outside of sensitive areas such as RCAs and cultural resource sites. The Truckee Ranger District found that the proposed project would not affect any cultural resources eligible for the National Register of Historic Places, nor would it cause the loss or destruction of any significant cultural resources. In addition, the proposed project design and Standard Management Requirements would help the proposed project avoid impacts to cultural resources, which includes flagging and avoiding any resources.

~~In the event of that an inadvertent effect of new discovery of previously unknown occurs during project implementation, the Truckee Ranger District would comply with the stipulations of These activities could result in ground disturbance that could impact cultural and paleontological resources; however, procedures from the *First Amended Regional Programmatic Agreement Among the USDA Forest Service, Pacific Southwest Region, California State Historic Preservation Officer, and Advisory Council on Historic Preservation Regarding the Process for Compliance with Section 106 of the National Historic Preservation Act for Undertakings on the National Forests of the Pacific Southwest Region* (Regional PA) would apply.~~ Impacts as a result of the proposed project would be less than significant; however, there is the potential to disturb previously unidentified resources or unknown human remains outside of a designated cemetery. Therefore, mitigation is required.

Ground disturbing activities are not anticipated to occur; however in the event that road maintenance is required, in is anticipated that activities would be surficial. It is not anticipated that paleontological resources would be disturbed as a result of the proposed project. Unique geologic or paleontological resources are not anticipated to occur, or be impacted, by the proposed project. Thus, the proposed project would have a less than significant impact to paleontological resources or rock outcrop; however, there is the potential to disturb previously unidentified paleontological resources. Therefore, mitigation is required.

Mitigation Measures

CULT-1 If human remains are discovered during construction or operational activities, further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California Health and Safety Code. The specific protocol, guidelines, and channels of communication

outlined by the Native American Heritage Commission, in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297), and Senate Bill 447 (Chapter 44, Statutes of 1987), shall be followed. Section 7050.5(c) shall guide the potential Native American involvement, in the event of discovery of human remains, at the direction of either the Sierra or Nevada County coroner. All reports, correspondence, and determinations regarding the discovery of human remains on the project site shall be submitted to the Sierra Nevada Conservancy and the Truckee Ranger District.

According to the California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and willful disturbance of human remains is a felony (Section 7052).

CULT-2 During any ground disturbance activities, if paleontological resources are encountered, all work within 25 feet of the find shall halt until a qualified paleontologist as defined by the *Society of Vertebrate Paleontology Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources* (2010), can evaluate the find and make recommendations regarding treatment. Paleontological resource materials may include resources such as fossils, plant impressions, or animal tracks preserved in rock. The qualified paleontologist shall contact the University of California Museum of Paleontology at the University of California, Berkeley regarding any discoveries of paleontological resources.

If the qualified paleontologist determines that the discovery represents a potentially significant paleontological resource, additional investigations and fossil recovery may be required to mitigate adverse impacts from project implementation. If avoidance is not feasible, the paleontological resources shall be evaluated for their significance. If the resources are not significant, avoidance is not necessary. If the resources are significant, they shall be avoided to ensure no adverse effects, or such effects must be mitigated. Construction in that area shall not resume until the resource appropriate measures are recommended or the materials are determined to be less than significant. If the resource is significant and fossil recovery is the identified form of treatment, then the fossil shall be deposited in an accredited and permanent scientific institution. Copies of all correspondence and reports shall be submitted to the Sierra Nevada Conservancy and the Truckee Ranger District.

CULT-3 If prehistoric or historic-era cultural materials are encountered during construction activities, all work in the immediate vicinity of the find shall halt until a qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist, can evaluate the significance of the find and make recommendations. Cultural resource materials may include prehistoric resources such as flaked and ground stone tools and debris, shell, bone, ceramics, and fire-affected rock as well as historic resources such as glass, metal, wood, brick, or structural remnants. If the qualified professional archaeologist determines that the discovery represents a potentially significant cultural resource, additional investigations may be required to mitigate adverse impacts from project implementation. These additional studies may include avoidance, testing, and evaluation or data recovery excavation.

If a potentially-eligible resource is encountered, then the qualified professional archaeologist, the Sierra Nevada Conservancy, and the Truckee Ranger District shall arrange for either 1) total avoidance of the resource or 2) test excavations to evaluate eligibility and, if eligible, total data recovery. The determination shall be formally documented in writing and submitted to the Sierra Nevada Conservancy and Truckee Ranger District as verification that the provisions for managing unanticipated discoveries have been met.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. GEOLOGY AND SOILS: Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a, d, e) **No Impact.** The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project would not expose people or structures to potential substantial adverse effects involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides. While the proposed project may remove some understory ladder fuel, the proposed project would ultimately improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest. Therefore, people residing, working, or recreating in the Sierra National Forest would not be exposed to potential seismic activity or landslides beyond the existing threat. No impacts to recreation would occur. No mitigation measures are required.

b-c.) **Less Than Significant.** The proposed project would include minimal ground disturbing activities, as the main ground disturbing activities would be as a result of pile and understory burns. However, there is the potential for soil erosion or loss of topsoil. The Standard Management Requirements provided in Appendix A, include measures that would help to reduce the potential for topsoil loss. In addition, the design of the proposed project includes maintaining woody debris and a percentage of the groundcover. Therefore impacts are considered less than significant. No mitigation is required.

In addition, given that the proposed project would provide for a healthier forest, the proposed project would not result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. The proposed project would have a less than significant impact in this regard and no mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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VII. GREENHOUSE GAS EMISSIONS: Would the project:

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

a-b.) **Less Than Significant.** Projected climate change impacts include temperature increases, sea level rise, changes in timing, location and quantity of precipitation and the increased frequency of extreme weather events such as heat waves, droughts and floods. The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. Prescribed burns would occur as part of the proposed project. The Truckee Ranger District would prepare a burn plan, to be approved by NSAQMD, and would obtain a burn permit from NSAQMD for the burn activities of the proposed project. The burn plan and the burn permit may be only for this proposed project, or may be prepared in conjunction with the larger Sagehen Project.

Burns would be conducted on days when atmospheric ventilation transports smoke and pollutants away from populated areas such as Truckee. Burns would be conducted on authorized burn days only in consultation between the Truckee Ranger District, NSAQMD, and CARB.

Completed fuel treatments notably sustained a forest's ability to continue to sequester carbon (Truckee Ranger District, May 2013). Moreover, less tree carbon loss following wildfire should be viewed in the context of the carbon sequestered from biomass and saw timber removal in treated areas before they encountered fire. The ultimate use of that removed biomass results in relatively long-term sequestration in building materials, and biomass burning for energy which supplants fossil fuels (Truckee Ranger District, May 2013).

The proposed project would include the use of hand tools and prescribed burns. Changes in combustion efficiency change the amount of CO₂ release per ton of fuel. The proposed project would improve forest health and reduce fuel load, which would reduce the risk of severe wildfire, thus reducing the release of additional CO₂ as a result of severe wildfire. Therefore, while the proposed project would increase CO₂, the release would occur over multiple years and would be smaller than the release by a large, severe wildfire. Impacts are considered less than significant. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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VIII. HAZARDS AND HAZARDOUS MATERIALS:

Would the project:

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

a-c.) **Less Than Significant.** The proposed project would include the use of fungicide on stumps to prevent root rot diseases. Fungicide applications would occur on stumps greater than 14 DBH and would occur more than 25 feet from running water. Use would be limited to periods when rain events are not predicted in the near future to allow for maximum absorption into the stump. The proposed fungicide applications would not occur ~~be applied~~ if it would affect historic properties ~~would be affected~~. The application of chemical treatments would be applied so that the application does not have the potential to affect access to or use of resources by Native Americans. In addition, the application of fungicide would not occur in streamside management zones and riparian management areas. The application areas are not located within 0.25 mile of a school. Fungicide application, storage, and disposal would be administered per the United States Environmental Protection Agency (U.S. EPA) rules and regulations and manufacturer guidelines. Standard Management Requirements (refer to Appendix A) would be implemented as part of the proposed project. The proposed project would have a less than significant impact to the area as a result of fungicide application. No mitigation measures are required.

- d-g.) **No Impact.** The proposed project is located within the Tahoe National Forest. It is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, nor would it create a hazard to the public. The proposed project is not within an airport or private airstrip plan area. The nearest public airports are the Truckee Tahoe Airport, approximately 10 miles south of the proposed project, and the Sierraville Dearwater Airport, approximately 11.5 miles north of the proposed project site.

The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage healthy forest processes. The proposed project would improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance healthy forest processes. Therefore, the proposed project area would not interfere with air traffic circulation nor would it interfere with an adopted emergency response plan or an emergency evacuation plan. The proposed project would thus, have no impact in this regard. No mitigation measures are required.

- h.) **Less Than Significant.** In general, wildfire ignitions are a mix of human caused and lightning. Dead fuel moistures can indicate a wildfire's ability to spread. Wildfires usually spread in a continuous flaming front. When the 10-hour fuel moisture (measured in dead fuels that are ¼ to 1 ¼ inches in diameter) drops below a rating of six, wind can throw embers ahead of the flaming front and start multiple small fires called spot fires. Generally the higher the wind speed, the further the spot fires occur from the main fire. As these spot fires burn together they cause the speed and intensity of the fire to increase dramatically. Multiple spot fires are an indication of extreme fire behavior. It is not uncommon for these conditions to exist during the height of the fire season every year (Truckee Ranger District, February 2013).

Prescribed fire operations, in the form of pile burning, can usually occur in the cooler months during periods of low fire danger, often beginning in late October and may continue until precipitation makes the fuels too wet to ignite, usually sometime in November, but as late as January in extremely dry years. Usually underburning does not start until some light precipitation occurs.

Altered fire frequencies caused by a century of fire suppression in forests characterized by a frequent low-intensity fire regime, coupled with prolonged drought and epidemic levels of insects and diseases, have coincided to produce extensive forest mortality and the eventual increase in fuels and has contributed to greater stand densities and an increase of crown fire potential. The fire regime is now shifting towards one of infrequent higher severity fires due to the increase in flammable vegetation and increasing fuel loads which has increased the potential for crown fire (Truckee Ranger District, February 2013).

The direct effect of the proposed project is the reduction of high-severity and high-intensity fires within the treated stands. The combination of treatment strategies (silvicultural and prescribed fire) that include surface, ladder, and crown fuel treatments reduce surface flame lengths, moderate fire severity across the landscape, and reduce the potential for active and passive crown fire within the project area. Removal of trees can reduce the potential for crown fires but this is dependent on surface fuel loading. These treatments may have a desired effect on fire behavior especially on steep slopes and in places with extenuating topography or road system circumstances. In addition, reducing flame lengths through the proposed project would create more resilient conditions where fire acts in a role closer to its natural disturbance process. These treatments would also create heterogeneous forest stand conditions that would be expected to develop with active fire conditions, thus providing for healthy forest processes (Truckee Ranger District, February 2013).

All pile and prescribed fire activities would be coordinated with NSAQMD and would be implemented under optimum conditions using best available control measures (such as the Standard Management Requirements provided in Appendix A) to prevent smoke concentrations from affecting local communities. The proposed project would only burn piles that have a good base to keep the pile from toppling and would have enough distance between piles to prevent premature ignition during burning. Fire would be allowed to creep between piles while maintaining a burn intensity that would minimize tree bole scorch height or mortality of the retained trees and would be ignited using a pattern that would allow animals to escape fire. Fire-lines and existing roadways would be used to manage prescribed fire operations. Controls are set forth with the design of the proposed project, as well as requirements from the Tahoe National Forest, Sagehen Experimental Forest, and the NSAQMD. Therefore, the threat that the prescribed fires and burn piles would burn beyond the delineated area is low.

An indirect effect of the proposed project is the increased fire resilience of the landscape, which is the ability of the forest to withstand the effects of wildfires (passive and active crown fire) under 90th percentile weather conditions (Truckee Ranger District, March 2013).

Given the proposed project's outcome in reducing ladder fuel, fire intensity, and flame height, and increasing fire resilient conditions to the project area, the proposed project would have a less than significant impact on wildfires. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a, c, d, f.) **Less Than Significant.** The proposed project would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage healthy forest processes. Many of the proposed activities would reduce runoff and erosion, which would ultimately improve water quality.

The Middle Truckee River has been listed by the State of California as being "water quality limited" for sediment under Section 303(d) of the Clean Water Act. Sagehen Creek proper and the Little Truckee River within the Saddle Meadow Drainage and Prosser Creek Drainage area are tributaries to the Middle Truckee River main stem. The Truckee River and all of its tributaries have been listed as impaired waterbody (303(d)) within the Clean Water Act for high amounts of sediment based on a study reporting heavy sediment levels in the main stem of the Middle Truckee River. However, all of the run-off from the drainage areas proposed for treatment under the

proposed project flow through reservoirs prior to entering into the main stem of the Middle Truckee River. Because these drainages report to reservoirs prior to entering the Middle Truckee River main-stem any sediment becomes trapped in the reservoir, and thus there is no threat of sediment reaching the Middle Truckee River from the proposed project (Truckee Ranger District, February 2013).

The proposed project would be required to meet water quality requirements as identified in a Waiver for Timber Harvest from the Lahontan Regional Water Quality Control Board.

The proposed project is not anticipated to implement ground disturbing activities, thus minimizing erosion potential. The silvicultural treatments would be implemented by hand methods, which include the use of handsaws and chainsaws to cut understory conifers that are less than 16 inches DBH. The felled material would be piled by hand and then pile burn prescriptions would be implemented (Truckee Ranger District, March 2013).

Fungicide applications would overlap RCAs; however, fungicide use is restricted and would not be applied within 25 feet of running water. Standard Management Requirements would be applied (refer to Appendix A). Therefore, this treatment is not expected to have an impact (Truckee District, March 2013) on water quality in the short-term or long-term timeframes. It is also not expected to affect riparian vegetation because Standard Management Requirements (refer to Appendix A) and proposed project design, specify the location and use of fungicides. No effect would be expected in other proposed areas because they are not in proximity to water or riparian vegetation.

The proposed project would restore the area and would improve watershed, riparian and forest health. Proposed project activities could impact water quality, as discussed above; however, the proposed project activities and Standard Management Requirements provided in Appendix A, would ensure a less than significant impact during project implementation. Therefore, the impacts to water quality would be less than significant. No mitigation measures are required.

- b.) **No Impact.** The proposed project would restore the area and would improve watershed, riparian and forest health. No water supply would be required for the proposed project. Road maintenance would not be included as part of the proposed project. Thus, the proposed project would not impede groundwater recharge. There would be no impact to water supply as a result of the proposed project. No mitigation measures are required.
- e.) **No Impact.** While the proposed project would include activities that would maintain, repair, or reconstruct segments of existing roadways, the proposed project would not result in an increase in runoff and would not contribute to polluted runoff. Fungicide applications would be limited to periods when rain events are not predicted in the near future to allow for maximum absorption into soils. No fungicide application would occur within 25 feet of running water. The proposed project would not impact runoff amount or runoff water quality. No mitigation measures are required.
- g-j.) **No Impact.** The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage healthy forest processes. The proposed project would not introduce houses or businesses to the area. Therefore, the proposed project would not introduce people, houses, or other structures to a 100-year flood hazard area, would not redirect a 100-year flood event, would not introduce people or structures to an area that would flood, including flooding from a failed dam or levee, and would not introduce people or structures to an area that would experience inundation from seiche or tsunami. In addition, the threat of a mudflow would not be any greater than the existing conditions. Therefore, the proposed project would have no impact in this regard. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-c.) **No Impact.** The proposed project would include activities that would reduce fuel loads, improve wildlife habitat and watershed conditions, and encourage healthy forest processes. No changes in land use designations or zoning would occur as a result of the proposed project. The proposed project would not physically divide an established community. The proposed project would enhance the forest health, thus the proposed project would not conflict with any conservation plans for the Sagehen Experimental Forest and the Tahoe National Forest. No impact would occur as a result of the proposed project. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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XI. MINERAL RESOURCES: Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Result in the loss of availability of a locally- important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

a-b.) **No Impact.** The proposed project would include activities that would reduce fuel loads, improve wildlife habitat and watershed conditions, and encourage healthy forest processes. No changes in land use would occur as a result of this proposed project. Therefore the proposed project would not result in the loss of available known mineral resources. No impacts to mineral resources would occur as a result of the proposed project. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. NOISE: Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a, b, d.) **Less Than Significant.** The proposed project would increase noise levels temporarily during activities such as hand thinning. However, the proposed project design and Standard Management Requirements for the proposed project, as outlined in Appendix A, would result in impacts that are less than significant. In addition, the anticipated mechanical equipment used for proposed project activities are not anticipated to result in excessive groundborne vibration levels, as all treatments would be conducted by hand. No large equipment is anticipated to be used within the proposed project area. Activities would be temporary in nature, as they would cease upon project completion. Standard Management Requirements (refer to Appendix A) include noise criteria, mainly with respect to disturbance of special status species. Therefore, the proposed project would have a less than significant impact. No mitigation measures are required.

c.) **No Impact.** The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage healthy forest processes. While temporary noise would occur as a result of the hand thinning and other restoration treatments, these noise increases would be temporary in nature and would cease upon project completion. Therefore, the proposed project would not permanently increase ambient noise levels above existing noise levels. No mitigation measures are required.

e, f.) **No Impact.** The proposed project is not located within an airport land use plan or in the vicinity of a private airstrip. The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage healthy forest processes. The proposed project would not expose people to excessive noise levels as a result of the proximity to an airport or private airstrip. No impacts to recreation would occur. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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XIII. POPULATION AND HOUSING: Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

a-c.) **No Impact.** The proposed project would include activities that would reduce fuel loads, improve wildlife habitat and watershed conditions, and encourage healthy forest processes. No changes in land uses would occur as a result of the proposed project. The proposed project does not include the development of new homes or businesses. The proposed project would not displace existing homes or people. No impacts would occur as a result of the proposed project. No mitigation measures are required.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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XIV. PUBLIC SERVICES

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire Protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police Protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a.) **No Impact.** The proposed project would include activities that would reduce fuel loads, improve wildlife habitat and watershed conditions, and encourage healthy forest processes. The proposed project would not result in an increase need for public services. While pile and understory burning are an element of the proposed project, the Truckee Ranger District and National Forest Foundation would provide appropriate staff for these proposed project activities. Thus, the proposed project would not result in an increase need for fire protection. The proposed project would improve forest health, reduce fuel loading, and maintain and enhance existing forest processes. No impacts to public services would occur. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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XV. RECREATION

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

a-b.) **No Impact.** The proposed project would include activities that would reduce fuel loads, improve wildlife habitat and watershed conditions, and encourage healthy forest processes. The proposed project would not increase the use of existing neighborhood and regional parks, nor would it increase the use of the Experimental Forest or adjacent National Forest. The proposed project would not require the expansion or construction of recreational facilities. The proposed project would improve forest health, reduce fuel loading, and maintain and enhance existing forest processes. No impacts to recreation would occur. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. Transportation / Traffic: Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-f.) **No Impact.** The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage healthy forest processes. A temporary increase in traffic may occur while crews are being move to the project area or out of the project area. However, because of the nature of the proposed project activities, it is not anticipated that the proposed project would conflict with applicable plans, ordinances, policy establishing measures, congestion management plans or programs, or policies or programs regarding alternative transportation (public transit, bicycles, or pedestrian facilities).

The proposed project would improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance healthy forest processes. Thus, the proposed project would not impact air traffic patterns.

The proposed project would maintain roadways within the project area. No reconstruction is anticipated within the proposed project area. Therefore, the proposed project would not increase hazards due to design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). No mitigation measures are required.

The proposed project would improve forest health and processes, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest. This would improve emergency access to the Sierra National Forest in case of wildfire or other forest emergency. No impacts from the proposed project would occur. No mitigation measures are necessary.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-g.) **No Impact.** The proposed project would include activities that would reduce fuel loads, improve wildlife habitat and watershed conditions, and encourage healthy forest processes. The proposed project would not require wastewater treatment, water supply, or solid waste disposal, as the proposed project does not include utilities and service systems. The proposed project would improve forest health, reduce fuel loading, and maintain and enhance existing forest processes. No impacts to utilities and service systems would occur. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

- a.) **Less Than Significant.** The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage healthy forest processes. The proposed project activities as described in Section 2.0, Project Description, as well as the Standard Management Requirements provided in Appendix A³, would improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest health. Temporary impacts would be less than significant. No mitigation measures are required.
- b.) **Less Than Significant.** The proposed project would improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance healthy forest processes. While air quality and greenhouse gas emissions could result in cumulative impacts as a result of the proposed project, prescribed burns would occur over multiple years, under the coordination and guidance of the NSAQMD. The proposed project would reduce the threat of severe wildfire, and, therefore, long term impacts would not be cumulatively considerable. Impacts are considered less than significant.
- c.) **Less Than Significant.** The proposed project would improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance healthy forest processes. While smoke would occur during prescribed burns, overall impacts to human beings would be beneficial in nature, as wildfire threat and severity would be reduced as a result of the reduction in ladder fuels. Therefore, impacts would be less than significant.

³ Standard Management Requirements are part of the proposed project activities. Appendix A provides all Standard Management Requirements for the larger Truckee Ranger District Sagehen Project.

5.0 RESPONSE TO COMMENTS

5.1 PURPOSE

As defined by Section 15050 of the California Environmental Quality Act (CEQA) Guidelines, the Sierra Nevada Conservancy (SNC) is serving as "Lead Agency," for preparation of the Mitigated Negative Declaration (MND) for the Basin Old Forest Sensitive Species Habitat Restoration Project (proposed project). The Final MND presents the environmental information and analyses that have been prepared for the proposed project, including comments received addressing the adequacy of the Initial Study (IS)/Proposed MND and responses to those comments. The Final IS/MND, which includes these responses to comments, the Draft IS, and the technical appendices, will be used by the SNC Governing Board in the decision-making process for the proposed project.

5.2 ENVIRONMENTAL REVIEW

The SNC prepared and distributed the IS/Draft MND, dated January 2014, for the proposed project (State Clearinghouse [SCH] No. 2014012006). The IS/MND was circulated for a 30-day review period which began on January 3, 2014 and extended to February 3, 2014. SNC received three (3) written comment letters and no verbal comments on the IS/MND. The agency that has commented on the Draft IS/MND is listed in Table 5-1, *Public Comments Received on the Draft IS/MND*.

Table 5-1. Public Comments Received on the Draft IS/MND

Letter/Comment No.	Commenter	Commenter Type
1	Governor's Office of Planning and Research – State Clearinghouse	State
2	California Department of Forestry and Fire Protection	State
3	California Water Boards – Central Valley Regional Water Quality Control Board	State

Pursuant to State CEQA Guidelines Section 15074, the SNC Governing Board shall consider the IS/MND together with any comments received during the public review process. The SNC Governing Board shall adopt the proposed MND only if it finds on the basis of the whole record, including the IS and public comments, that there is no substantial evidence that the proposed project would have a significant effect on the environment and that the MND reflects the lead agency's independent judgment and analysis. The responses to comments are contained in this chapter, Chapter 5, *Response to Comments*, of this IS/MND. A copy of the numbered comment letter and a lettered response to each comment is provided in Section 5.4, *Response to Comments*, of this chapter.

5.3 REVISIONS TO THE DRAFT IS/MND

Revisions made to the text of the IS/MND are shown within this document. Clarifications to this IS/MND text are shown with underlining and text removed from the IS/MND is shown with ~~strikeout~~. No revisions to the IS/MND were made as a result of the public comment period.

5.4 RESPONSE TO COMMENTS

The letter comments received on the Draft IS/MND are addressed in their entirety in this section. Each comment contained in the letter has been assigned a reference code. The responses to reference code comments follow the letter. Three (3) written comment letters was received and no verbal comments were received during the public comment period.

Comment Letter 1



Edmund G. Brown Jr.
Governor

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit



Keri Alex
Director

February 4, 2014

Matthew Daley
Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603

Subject: Sagehen Basin Old Forest Sensitive Species Habitat Restoration Project
SCH#: 2014012006

Dear Matthew Daley:

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on February 3, 2014, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

"A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse



Enclosures

cc: Resources Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 325-3018 www.opr.ca.gov

Notice of Completion & Environmental Document Transmittal
 Mail to: State Clearinghouse, P.O. Box 2044, Sacramento, CA 95812-3044 (916) 445-6613
 For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

2014012006

Project Title: Sagehen Basin Old Forest Sensitive Species Habitat Restoration Project
 Lead Agency: Sierra Nevada Conservancy Contact Person: Matthew Dalry
 Mailing Address: 1821 Blocker Drive, Suite 205 Phone: 530 873-4598
 City: Auburn Zip: 95603 County: Placer

Project Location: County Nevada and Sierra City/Township/County: Truckee Zip Code: 96161
 Cross Street: Sage Hen Road west of State Route 69 "N" "W" Total Acres: 320
 Acreage of roads (depress, ditches and service) _____
 Section: _____ Township: _____ Range: _____
 Assessor's Parcel No. _____ Waterways: Sagehen Creek School: N/A
 Water 2 Miles: State Hwy # 69 Railway: N/A Airport: Truckee Tahoe Airport

Document Type:
 CEQA: NFP Draft EIR NEPA NOI Other Joint Document
 Early Conc Supplemental/Subsequent EIR EA Final Document
 Neg Dec (Wine SCH No.) Draft EIS Other _____
 Mit Neg Dec Other _____

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 JAN 02 2014
 12:21 PM
 STATE CLEARINGHOUSE

Local Action Type:
 General Plan Update Specific Plan Rezoning Amendment
 General Plan Assessment Master Plan Precourt Redevelopment
 General Plan Element Planned Unit Development Land Division (Subdivision, etc.) Initial Permit
 Community Plan Site Plan Other: _____

Development Type:
 Residential: Units _____ Acres _____ Employees _____
 Office: Sq. Ft. _____ Acres _____ Employees _____
 Commercial: Sq. Ft. _____ Acres _____ Employees _____
 Industrial: Sq. Ft. _____ Acres _____ Employees _____
 Educational: _____
 Recreational: _____
 Water Facilities: Type _____
 Transportation: Type _____
 Mining: Mineral _____
 Power: Type _____ MW
 Waste Treatment: Type _____
 Hazardous Waste: Type _____
 Other: Habitat Restoration _____

Project Issues Discussed in Document:
 Aesthetic/Visual Fiscal Recreation/Trials Vegetation
 Agricultural Land Flood Plain/Flooding Schools/Universities Water Quality
 Air Quality Forest Land/Forest Hazard Septic System Wetland/Riparian
 Archeological/Historical Geologic/Seismic Sewer Capacity Growth Encroachment
 Biological Resources Utilities Solid Waste Land Use
 Cultural Resources Noise Toxic Hazardous Cumulative Effects
 Coastal Zone Population/Housing Balance Traffic/Circulation Other: _____
 Drainage/Absorption Public Services/Utilities Other: _____
 Economic/Job Public Services/Utilities Other: _____

Present Land Use/ zoning/General Plan Designation:
 See page 3
 Project Description: (please use a separate page if necessary)
 The National Forest Foundation is requesting \$149,140 in funding from the Sierra Nevada Conservancy's Proposition 64 Sale of the National Forest Foundation to request funding for the National Forest Foundation's Proposition 64 Sale Program in order to do work in the Driving Water, Water Quality and Supply, Flood Control, River and Coastal Protection Grant Program in order to do work in the Driving Water, Water Quality and Supply, Flood Control, River and Coastal Protection Grant Program in order to do work in the Sagehen Experimental Forest to protect and enhance habitat, especially for Pacific marten, restore stand level ecology, and reduce fuel loads in the Sagehen Basin in the Basin Old Forest Sensitive Species Habitat Restoration Project area in the Sagehen Experimental Forest adjacent to the Tahoe National Forest. This project would alter fuel loads to return to the natural severity fire regime, improve wildlife habitat and foraging grounds, improve watershed conditions, and encourage healthy forest ecological processes. (continued on page 3).

State Clearinghouse Contact: YC
 (916) 445-6613
 State Review Began: 1.3.2014
 SCH COMPLIANCE: 7.3.2014

- Project Sent to the following State Agencies
- | | |
|---|--|
| <input checked="" type="checkbox"/> Resources | State/Consumer Svcs |
| <input checked="" type="checkbox"/> Boating & Waterways | General Services |
| <input checked="" type="checkbox"/> Coastal Comm | Cal EPA |
| <input checked="" type="checkbox"/> Colorado Rte. Bd | <input checked="" type="checkbox"/> ARB: ALL Projects |
| <input checked="" type="checkbox"/> Conservation | <input checked="" type="checkbox"/> ARB: Transportation Projects |
| <input checked="" type="checkbox"/> CDFW # <u>2</u> | <input checked="" type="checkbox"/> ARB: Major Industrial Projects |
| <input checked="" type="checkbox"/> Delta Protection Comm | <input checked="" type="checkbox"/> SWRCB: Div. Financial Assist |
| <input checked="" type="checkbox"/> Cal Fire | <input checked="" type="checkbox"/> SWRCB: Wtr Quality |
| <input checked="" type="checkbox"/> Historic Preservation | <input checked="" type="checkbox"/> SWRCB: Wtr Rights |
| <input checked="" type="checkbox"/> Parks & Rec | <input checked="" type="checkbox"/> Reg. WOCEB # <u>525</u> |
| <input checked="" type="checkbox"/> Central Valley Flood Prot. | <input checked="" type="checkbox"/> Toxic Sub. Cal-CTC |
| <input checked="" type="checkbox"/> Bay Area & Dev Comm | <input checked="" type="checkbox"/> Yuba/Elk Corrections |
| <input checked="" type="checkbox"/> DVR | Corrections |
| <input checked="" type="checkbox"/> Cal EMA | |
| <input checked="" type="checkbox"/> Resources, Recycling and Recovery | |
| <input checked="" type="checkbox"/> Bus Transp. Hours | Independent Comm |
| <input checked="" type="checkbox"/> Aeronautics | Energy Commission |
| <input checked="" type="checkbox"/> CHP | <input checked="" type="checkbox"/> NIMC |
| <input checked="" type="checkbox"/> Caltrans # <u>24</u> | <input checked="" type="checkbox"/> Public Utilities Comm |
| <input checked="" type="checkbox"/> Trans. Planning | <input checked="" type="checkbox"/> State Lands Comm |
| <input checked="" type="checkbox"/> Housing & Com. Dev. | <input checked="" type="checkbox"/> Tahoe Reg. Plan Agency |
| <input checked="" type="checkbox"/> Food & Agriculture | <input checked="" type="checkbox"/> Sierra Nevada Conservancy |
| <input checked="" type="checkbox"/> Public Health | Conservancy |

Please note State Clearinghouse Number (SCH#) on all Comments
2014012006
 SCH#: _____
 Please forward all comments directly to the Lead Agency
 AGENCY: SI
 (Revised: 1.14.14)

Response to Comment Letter 1: Governor's Office of Planning and Research – State Clearinghouse (February 4, 2014)

- A. Thank you for your comment. The participation of the State Clearinghouse in the public review of this document is appreciated. The commenter states that the State Clearinghouse distributed the Draft IS/MND for selected agencies to review; in compliance with the California Environmental Quality Act (CEQA). Comment letters were received from the California Department of Forestry and Fire Protection (CAL FIRE) (January 7, 2014) and the Central Valley Regional Water Quality Control Board (CVRWQCB) (January 31, 2014), and were attached to the comment letter. Both the CAL FIRE and CVRWQCB letters are provided below. Responses to the CAL FIRE letter are provided in Comment Letter 2. Responses to the CVRWQCB letter are provided in Comment Letter 3. The comments have been noted for the record and will be provided to the Sierra Nevada Conservancy Governing Board for consideration. No further response or change to the Draft IS/MND is necessary.

Comment Letter 2

State of California

The Natural Resources Agency

Memorandum

To: Doug Wenham, Chief
Northern Region
Department of Forestry and Fire Protection

*clear
2/3/14
e*

Date: January 7, 2014
R13

Attention: Environmental Coordinator
Nevada-Yuba-Placer Unit

Telephone: (916) 653-4995

From: Department of Forestry and Fire Protection
Chris Browder, Deputy Chief
Environmental Protection

Subject: Environmental Document Review

Project Name: Sagehen Basin Old Forest Sensitive Species Habitat Restoration Project
SCH #: 2014012006
Document Type: Mitigated Negative Declaration

Potential Area(s) of Concern: Fire Protection?; Need for THP?
Other:
MANDATED DUE DATE: 2/3/2014

The above referenced environmental document was submitted to State Headquarters, Environmental Protection for review under the California Environmental Quality Act (CEQA) or the National Environmental Policy Act (NEPA). The proposed project, located within your Unit/Program Area, may have an impact upon the Department's fire protection and/or natural resource protection and management responsibilities or require the Department's permits or approval. Your determination of the appropriate level of CAL FIRE involvement with this project is needed. Please review the attached document and address your comments, if any, **to the lead agency** prior to the due date. Your input at this time can be of great value in shaping the project. If your Unit's Environmental Coordinator is not available, please pass on to another staff member in order to meet the mandated deadline.

Please submit comments directly to the lead agency before the mandated due date with copy to the State Clearinghouse (P.O. Box 3044, Sacramento, CA 95812-3044).

No Comment - explain briefly on the lines below.

Project exists on USFS land. NEPA has been done to validate project implementation.

RECEIVED

Name and Title of Reviewer: *Jeff Dowling FORI*
Phone: (530) *587-8926* Email: *jeff.dowling@fire.ca.gov*
Note: Please complete this form and return it, with a copy of any comments, for CAL FIRE's records to: Ken Nehoda or Chris Browder, Deputy Chief, Environmental Protection, P.O. Box 944246, Sacramento CA 94244-2460.

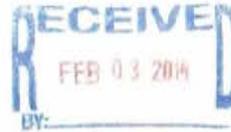
JAN 24 2014

STATE CLEARING HOUSE

***Response to Comment Letter 2: California Department of Forestry and Fire Protection
(CAL FIRE) (January 7, 2014)***

- A. Thank you for your comment. The participation of CAL FIRE in the public review of this document is appreciated. The commenter notes that the proposed project is within U.S. Forest Service land and that the National Environmental Policy Act (NEPA) process was completed for the proposed project. The comment raises no issue with the adequacy of the Draft IS/MND. The comment is noted for the record and will be provided to the Sierra Nevada Conservancy Governing Board for consideration. No further response or change to the Draft IS/MND is necessary.

Comment Letter 3



Central Valley Regional Water Quality Control Board

31 January 2014

Matthew Daley
Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603

CERTIFIED MAIL
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COMMENTS TO REQUEST FOR REVIEW FOR THE MITIGATED NEGATIVE DECLARATION, SAGEHEN BASIN OLD FOREST SENSITIVE SPECIES HABITAT RESTORATION PROJECT, SCH NO. 2014012006, NEVADA AND SIERRA COUNTY

Pursuant to the State Clearinghouse's 3 January 2014 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Mitigated Negative Declaration* for the Sagehen Basin Old Forest Sensitive Species Habitat Restoration Project, located in Nevada and Sierra County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml.

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Karl E. Lendley ScD, P.E., CHAB | Pamela C. Clinebon P.E., BCES, Occurrence Officer
11200 Sun Center Drive #200, Rancho Cordova, CA 95670 | www.waterboards.ca.gov/centralvalley



Phase I and II Municipal Separate Storm Sewer System (MS4) Permits¹

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/.

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 97-03-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

¹ Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

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Clean Water Act Section 401 Permit – Water Quality Certification

If an USACOE permit, or any other federal permit, is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

Waste Discharge Requirements

If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project will require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml.

Low or Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Dewatering and Other Low Threat Discharges to Surface Waters* (Low Threat General Order) or the General Order for *Limited Threat Discharges of Treated/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and Other Limited Threat Wastewaters to Surface Water* (Limited Threat General Order). A complete application must be submitted to the Central Valley Water Board to obtain coverage under these General NPDES permits.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0074.pdf

For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0073.pdf

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Sagehen Basin Old Forest Sensitive Species
Habitat Restoration Project
Nevada and Sierra County

- 4 -

31 January 2014

If you have questions regarding these comments, please contact me at (916) 464-4684 or
tcleak@waterboards.ca.gov.



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Trevor Cleak
Environmental Scientist

cc: State Clearinghouse Unit, Governor's Office of Planning and Research, Sacramento

**Response to Comment Letter 3: Central Valley Regional Water Quality Control Board
(January 31, 2014)**

- A. Thank you for your comment. The participation of the Central Valley Regional Water Quality Control Board (RWQCB) in the public review of this document is appreciated. The commenter discusses their responsibility in protecting the quality of surface and groundwater and provides information on the different permits that are issued under CVRWQCB.

The commenter is referred to the subsection *Hydrology and Water Quality* provided on page 41 of Chapter 4, *Evaluation of Environmental Impacts*, of this IS/MND. The Truckee Ranger District analyzed a larger project (Sagehen Project) within the NEPA EA/FONSI that is within both the Central Valley RWQCB and the Lahontan RWQCB jurisdictions. The Sagehen Basin Old Forest Sensitive Species Habitat Restoration Project (proposed project) is located in the Sagehen Basin, Sagehen Experimental Forest, which is within the Lahontan RWQCB. The proposed project is required to meet water quality requirements as identified in a Waiver for Timber Harvest from the Lahontan Regional Water Quality Control Board (2009 Timber Waiver)⁴. Compliance with the 2009 Timber Waiver will result in the protection of water quality. The 2009 Timber Waiver requirements include, but are not limited to total maximum daily load (TMDL) limits, expedited permitting for forest fuel hazard reduction efforts, prohibiting waste (i.e., petroleum products, soil, silt, sand, rock,, felled trees, slash, sawdust, and bark) from being discharged to surface waters, and monitoring any equipment for leaks in order to prevent spills into surface waters. The proposed project is not anticipated to result in ground disturbing activities, and by using hand thinning methods to reduce fuel loads will minimize erosion potential. In addition, the proposed project includes Standard Management Requirements (as provided in Appendix A of this IS/MND), that would further protect water quality within the project boundaries. If it is determined that the proposed project is indeed within the Central Valley RWQCB and additional permits are required, beyond what is set forth in the Waiver for Timber Harvest, the Truckee Ranger District will obtain all required permits. The comment is noted for the record and will be provided to the Sierra Nevada Conservancy Governing Board for consideration. No further response or change to the Draft IS/MND is necessary.

⁴ Board Order No R6T-2009-0029, Conditional Waiver of Waste Discharge Requirements for Waste Discharges Resulting From Timber Harvest and Vegetation Management Activities in the Lahontan Region for Modoc, Lassen, Plumas, Sierra, Nevada, Placer, El Dorado, Alpine, Mono, Inyo, San Bernardino, Kern, and Los Angeles Counties (2009 Timber Waiver).

6.0 DISTRIBUTION LIST

- National Forest Foundation
Vance Russell, Director of CA Programs
803 2nd Street, Suite A
Davis, CA 95616
- Nevada County Board of Supervisors
Donna Landi, Clerk of the Board
950 Maidu Avenue, Suite 200
Nevada City, CA 95959
- Sierra County Board of Supervisors
100 Courthouse Square, Room 11
P.O. Drawer D
Downieville, CA 95936
- Truckee PUD
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11570 Donner Pass Road
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- Kristie Boatner
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Truckee, CA 96161
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7.0 PREPARERS

Matthew Daley, Senior Grants Analysts, Sierra Nevada Conservancy

Christa Redd, Senior Environmental Planner, Kimley-Horn and Associates, Inc.

Nicole Marotz, Senior Environmental Planner, RBF Consulting, a M. Baker International Company

Appendix A

Standard Management Requirements

STANDARD MANAGEMENT REQUIREMENTS

The following Standard Management Requirements (SMRs) were prepared by the Truckee Ranger District as part of the Environmental Assessment and Finding of No Significant Impact (EA/FONSI) adopted in May 2013 for the Sagehen Project. The SMRs cover the larger Truckee Ranger District Sagehen Project; this proposed project is a part of the larger Sagehen Project. Therefore, while there are many SMRs listed below, not all would be required under the proposed project. Only the SMRs related to Units 61, 91, 98, 100, and 282 and the proposed project as defined by SNC for the purposes of CEQA would be applied (refer to Chapter 2.0, Project Description). The SMRs are considered part of the proposed project activities.

Standard Management Requirements (SMRs)									
SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date	
1	All Units	All Areas	Aquatic Resources, Soils/Hydrology	All	<p>Implement Best Management Practices (BMPs): These practices are required to meet the regional policy and to be consistent with the provisions of the 1981 Management Agency Agreement between the State Water Resource Control Board (SWRCB) and the Forest Service as the designated Water Quality Management Agency (WQMA) on National Forest System Lands. See SMRs 22-24 for special provisions for the Lahontan Regional Water Quality Control Board (LRWQCB) jurisdiction. The Riparian Conservation Objective (RCO) analysis contains a table to display the relationship of the Riparian Conservation Areas (RCAs) and the Water Body Buffer Zones (WBBZs). Site-specific BMPs and management requirements, unit layout, careful implementation and monitoring of BMP implementation are the primary means of minimizing impact in this project area. Some BMPs in this list are applied during the preliminary project design and therefore are not referenced</p>	<p>1.20 erosion control structure maintenance 1.21 accepting erosion control measures 2.1 travel management planning and analysis 2.2 general guidelines for the location and design of roads 2.3 road construction and reconstruction 2.4 road maintenance and operations 2.5 water source development and utilization 2.6 road storage 2.7 road decommissioning 2.8 stream crossings 2.10 parking and staging areas 2.11 equipment refueling and servicing 2.12 aggregate borrow areas 2.13 erosion control plans (roads and other activities)</p>		Aquatics Biologist, Hydrologist, Soil Scientist, TSA, Vegetation Officer	As applicable prior to, during, and after all management activities

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date	
					<p>directly in the SMRs below.</p> <p>1.1 timber sale planning process</p> <p>1.2 timber harvest unit design</p> <p>1.3 erosion hazard for timber harvest unit design</p> <p>1.4 designated protection areas on sale area maps</p> <p>1.5 limited operating period of timber sale activities</p> <p>1.6 protecting unstable lands</p> <p>1.8 streamside management zone designation</p> <p>1.9 tractor-loggable ground</p> <p>1.10 tractor skidding design</p> <p>1.12 log landing location</p> <p>1.13 timber sale erosion prevention and control measures</p> <p>1.14 special erosion - prevention - disturbed lands</p> <p>1.16 log landing erosion control</p> <p>1.17 erosion control on skid trails</p> <p>1.18 meadow protection during timber harvesting</p> <p>1.19 stream course and aquatic protection</p>	<p>5.2, 5.3, 5.6 limitations on tractor operations</p> <p>5.4 revegetation of surface disturbed areas</p> <p>5.7 pesticide use planning process</p> <p>5.8 pesticide application according to label directions and applicable legal requirements</p> <p>5.9 pesticide application monitoring and evaluation</p> <p>5.10 pesticide spill contingency planning</p> <p>5.11 cleaning and disposing of pesticide containers and equipment</p> <p>5.12 streamside and wet area protection during pesticide application</p> <p>6.2 water quality and formulating fire prescriptions</p> <p>6.3 prescribed burning and protection of water quality</p> <p>7.1 watershed restoration</p> <p>7.2 conduct floodplain hazard analysis and evaluation</p> <p>7.3 protection of wetlands</p> <p>7.4 Forest and Hazardous Substance Spill Prevention Control and Countermeasure (SPCC) Plan</p> <p>7.8 cumulative off-site watershed effects</p>			
2	All Units	All Areas	Aquatic Resources,	All	Emphasis for Riparian Conservation Area (RCA) Protection: Contract administrators and operators will be educated on the importance of	1.1, 1.2, 1.4, 1.8,	Aquatics Biologist,	As applicable prior to, during, and	

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
3	All Units, 156	All Areas	Soils/Hydrology		<p>minimizing impact while working within the RCA. Units with RCAs having known areas with restricted operations regarding sensitive sites will be identified for review with contract administrators and operators. Contract maps will be reviewed prior to bid to ensure sensitive areas are adequately represented on the map or on the ground. Stream courses and their respective protection limits (tractor keep out - TKO) are shown on the sale area map and/or are flagged on the ground.</p> <p>Equipment Operations - Uplands: Equipment will minimize turning that results in ground disturbance. Equipment will be used on slopes no greater than 30% with short pitches up to 200 feet on up to 35% slope. Short pitches over 35% slope may be agreed to on a site-specific basis, after appropriate interdisciplinary review.</p> <p>Grapple Piling: Grapple piling will be conducted to minimize excessive turning and to maintain undisturbed duff over 20% of the unit area.</p> <p>Soil Dryness Criteria: 1) Equipment rated as low-ground-pressure, which is defined as equipment applying an average ground pressure of 8.0 or less pounds per square inch design load, is restricted to main skid trails until the soil is dry to a depth of 4 inches. 2) Equipment rated as high-ground-pressure equipment which is defined as equipment applying an average ground pressure of 8.0 or greater pounds per square inch design load, is restricted to main skid roads until the soil is dry to a depth of 10 inches. See SMR 24.</p> <p>Benched logging systems: Avoid benched skid trails, landings, and temporary roads. One benched landing is expected to be needed in unit 156. Prior to determining placement, an onsite review will be conducted in this unit with the hydrologist to confirm placement is in the best available location for operability, to minimize resource impacts and to develop required resource protection measures. No other benched temporary roads or landing needs were identified during the IDT process. If, during operations a need for a bench system is identified, then appropriate specialists will be consulted and the necessary mitigations will be implemented.</p>	1.18, 1.19, 7.1, 7.3.	Hydrologist, Soil Scientist, TSA, Vegetation Officer	after all management activities
			Soils/Hydrology	Mechanical			1.1, 1.2, 1.9, 1.10, 1.12, 1.13, 2.7, 5.2, 5.3, 5.6	Hydrologist, Soil Scientist, TSA, Vegetation Officer
4	All Units	All Areas	Aquatic Resources, Soils/Hydrology	Mechanical/Hand	<p>Equipment Operations in RCAs: Within RCAs, all equipment operations should be limited to slopes \leq 20% if the slope is directly above, and runs continuously down to a drainage feature. If the slope is $>$ 20%, but does not slope directly into the creek, the 30% rule with no short pitches to 35% as stated in "Equipment Operations - Upland" SMR 3 should be followed. Do not track up and down drainage pathways and minimize all</p>	1.1, 1.2, 1.8, 1.9, 1.10, 1.12, 1.13, 1.17, 1.19, 2.2, 2.5, 2.6,	Aquatics Biologist, Hydrologist, Soil Scientist, TSA,	Contract Prep, Contract Layout, Implementation, post-implementation

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
					<p>equipment movement through swales. Equipment will avoid seasonally wet areas, but will be allowed to reach into the TKO of these locations to meet site objectives. When equipment is operating inside RCAs near the hydrologic feature, minimize ground disturbance with short perpendicular entries into the RCA. Backblade any berms created by equipment that could concentrate water within areas with topographically low relief (flat) areas. Equipment will not cross seasonal streams except at pre-approved designated crossings. Within RCAs all bare ground resulting from equipment operations will be mulched to standards. When operating in WBBZs all bare ground will be mulched.</p> <p>Grapple Piling and Fuel Piling: No hand, grapple or any type of natural or activity fuel piling (temporary or permanent) will occur in the WBBZ, or within the 100 year flood plain. Piling may occur in the RCA outside of WBBZ where existing landings occur in the RCA or where pre-approved landings occur in the RCA. Grapple piling will follow the same or greater distance restrictions as mechanical operations on wetland features drainages and perennial streams (fish bearing or non-fish bearing), as described in SMRs 2, 17, and 18. Along ephemeral streams and drainages, grapple piling will be maintained a minimum of 25 feet away from the break in slope on all topographically defined drainages. Piling will occur as far away from the drainage as feasible. Avoid creating large piles at the apex of broad swales and locate piles well outside of drainage pathways.</p> <p>Soil Dryness Criteria: Specific harvesting equipment restrictions relating to dry soil are as follows: The operation of tracked equipment within stream and meadow RCAs, and seasonally wet areas shall only be allowed when soils are dry as defined in SMR 24 to 10 inches. Exceptions will be allowed in specific locations in the RCA, in which the hydrologist or soil scientist determine that equipment access when soils are dry to less than 10 inches would not cause resource damage. Tractor, vehicle or equipment operations off-road at approved crossings within approved areas of Water Body Buffer Zones operations must be limited to when soils are dry to a minimum depth of 12 inches.</p> <p>Soil Type Restrictions: All equipment operations will not operate over Aquoll and Boroll soil or Cryumbrepts-wet soil. This addresses the criteria for operations in water body buffer zones required for Category 6 timber waiver criteria, because with the 25 foot buffer from riparian vegetation and the commitment for no operations over Aquoll and Boroll soil or Cryumbrepts wet, and the cover the scenario where an equilibrated watertable at 2 feet might be present. In other words we do not operate</p>	<p>2.8, 2.10, 2.13, 5.2, 5.3, 5.6, 7.1, 7.2, 7.3</p>	<p>Vegetation Officer</p>	

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
5	All Units	All Areas	Aquatic Resources, Soils/ Hydrology	Mechanical	<p>over soils with an equilibrated water table at 2 feet under mechanical harvest activities.</p> <p>Reference SMRs 1 and 22-24 for BMPs and measures implemented to meet LRWQCB requirements.</p> <p>Equipment Operations in RCAs (continued): Within the RCA adjacent to perennial streams and special hydrologic features, a variable Tractor Keep Out (TKO) area will be provided based on hydrologic features, and under consultation with the aquatics biologist/ hydrologist/soil scientist during unit layout and contract administration. In general, these TKO areas are designated to be a minimum of 25 feet from a riparian feature as identified by presence of a wet soil type (associated with flood plain, springs or meadows), scour, riparian vegetation, slope break to channel etc. Seasonal drainages not having these features will implement a 25 foot TKO. Widths will increase along incised channels and where the slope to the channel increases. On fens, springs and streams with riparian vegetation, a minimum 25 foot TKO from riparian vegetation will be maintained. The TKO will be increased where hydrologic features merge or drainage becomes complex, where wet soils are present, or as needed to protect spring hydrology.</p> <p>Tractor operations will be excluded from the meadows according to the TKO identified in the field and as identified on the sale area maps. The TKO will be flagged on the ground based on hydrologic features or as mapped and described above. Slash or other material created from activities will be removed from the 100-year floodplain.</p> <p>Reference SMRs 1 and 22-24 for BMPs and measures implemented to meet LRWQCB requirements.</p>	<p>1-1, 1-2, 1-4, 1-8, 1-9, 1-10, 1-13, 1-16, 1-18, 1-19, 2-8, 2-10, 2-13, 5-2, 5-3, 5-6, 7-1, 7-2, 7-3</p>	<p>Aquatics Biologist, Hydrologist, Soil Scientist, TSA, Vegetation Officer</p>	

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date																																							
6	All Units	All Areas	Soils / Hydrology	Mechanical	<p>Skid Trail Use: Keep skid trail grades as gentle as possible, avoid straight up and down the slope skidding over distances greater than 200 feet. Skid trail patterns shall be agreed to in advance of felling and main skid trails shall be flagged on the ground in advance of felling. Needed main skid trails will be constructed in advance of skidding. Main skid trails will be spaced no less than 75 feet apart, except when converging. Additional skid trails may be agreed upon when soil conditions permit. Harvest operations will be confined to designated main skid trails until soil conditions are dry. Dry soil is defined as soil that when sampled from a specified depth below the surface and placed in the hand and squeezed, the hand shows no significant moisture stains and follows the dryness criteria in SMR 24. Existing skid trails will be used whenever possible except when they do not meet other resource protection measures.</p> <p>Erosion Hazard Rating (EHR) Table: Skid Trail Spacing</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th colspan="4" style="text-align: center;">Roads</th> </tr> <tr> <th rowspan="2" style="text-align: center;">% Slope</th> <th colspan="3" style="text-align: center;">Erosion Hazard Rating</th> </tr> <tr> <th style="text-align: center;">1-6 Low</th> <th style="text-align: center;">6-7 Med.</th> <th style="text-align: center;">9-10 High</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1-6</td> <td style="text-align: center;">400</td> <td style="text-align: center;">350</td> <td style="text-align: center;">300</td> </tr> <tr> <td style="text-align: center;">7-9</td> <td style="text-align: center;">300</td> <td style="text-align: center;">250</td> <td style="text-align: center;">200</td> </tr> <tr> <td style="text-align: center;">10-14</td> <td style="text-align: center;">200</td> <td style="text-align: center;">175</td> <td style="text-align: center;">150</td> </tr> <tr> <td style="text-align: center;">15-20</td> <td style="text-align: center;">150</td> <td style="text-align: center;">120</td> <td style="text-align: center;">90</td> </tr> <tr> <td style="text-align: center;">21-40</td> <td style="text-align: center;">90</td> <td style="text-align: center;">70</td> <td style="text-align: center;">50</td> </tr> <tr> <td style="text-align: center;">41-61</td> <td style="text-align: center;">50</td> <td style="text-align: center;">40</td> <td style="text-align: center;">25</td> </tr> <tr> <td style="text-align: center;">15</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Guidelines for Waterbars Tractor Skid Trails on Roads</p>	Roads				% Slope	Erosion Hazard Rating			1-6 Low	6-7 Med.	9-10 High	1-6	400	350	300	7-9	300	250	200	10-14	200	175	150	15-20	150	120	90	21-40	90	70	50	41-61	50	40	25	15				1.2, 1.9, 1.10, 1.13, 5.2, 5.3, 5.6	Hydrologist, Soil Scientist, TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation
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7	All Units	All Areas	Aquatic Resources, Soils/Hydrology	Mechanical	<p>Skid Trails in RCAs: Main skid trails will be located outside of the RCAs wherever possible. Do not track up and down drainage pathways and minimize all equipment movement through swales. Avoid locating skid trails parallel to streams when working within RCAs in the near stream zone. Temporary ephemeral stream crossings for skid trails will use brush mats, dips or corduroy. If soil is placed on a crossing for a drivable surface, use filter cloth under the soil to prevent soil from entering stream. Collect soil in filter cloth or otherwise remove soil off site when dismantling the drivable surface structure. Crossing materials will be removed as soon as possible following the treatment and will be implemented by October 15th of that year. All crossing materials on seasonal channels that consist of additional fill will be removed</p>	1.2, 1.8, 1.9, 1.10, 1.13, 1.19, 2.8, 2.10, 2.13, 5.2, 5.3, 5.6, 7.2, 7.3	Aquatics Biologist, Hydrologist, Soil Scientist, TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation, post-implementation																																							

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
					immediately after use when operating after October 15th of that year.			
8	All Units	All Areas	Soils/Hydrology	Mechanical	<p>Skid Trails for Seasonal Erosion Control: All skid trails over 30% slope will be mulched. Skid trails will have waterbars spaced according to soil maximum EHR and slope per SMR 6. Implement mulching of skid trails using slash, certified weed free rice, straw or wood chips, whichever is available, on soils with very high EHR, and where the residual % ground cover does not meet the ESC requirements as described in the Soil Specialists Report for the Sagehen Project. Mulch will be a minimum of 2 inches to a maximum of 4 inches in depth within WBBZs outside of the 100-year floodplain. This requirement may be modified after an on-site inspection by the soil scientist or hydrologist. If slash is used for mulch, the fuels officer will be involved prior to and during implementation.</p>	1.2, 1.9, 1.10, 1.13, 1.20, 1.21, 2.13, 5.2, 5.3, 5.6	Fuels Officer, Hydrologist, Soil Scientist, TSA, Vegetation Officer	Implementation, post-implementation
9	All Units	All Areas	Aquatic Resources, Soils/Hydrology	Mechanical	<p>Skid Trail Post-implementation in RCAs: For special conditions with low gradient skid trails within RCAs, berms will be pulled back rather than have water bars placed, as approved by the TSA in coordination with a soil scientist or hydrologist. Mulch all skid trail crossings in RCAs, outside of the 100-year floodplain.</p>	1.2, 1.8, 1.9, 1.10, 1.13, 1.19, 1.20, 1.21, 2.8, 2.13, 5.2, 5.3, 5.6, 7.3	Aquatics Biologist, Hydrologist, Soil Scientist, TSA, Vegetation Officer	Implementation, post-implementation
10	All Units	All Areas	Soils / Hydrology	Mechanical	<p>Landing Construction: Utilize existing landings where possible, new and existing landing locations potentially used are shown in the Sagehen Project Record. Locate all new landings off of main public travel corridors outside of the WBBZ. Landing Locations: landing locations shall be carefully planned to minimize the number needed, and will consider site-specific factors such as topography, watershed and other resource protection concerns, and contract operational needs. For landings that service more than 15 acres of harvest, Purchaser shall stage-log by felling, skidding and removing of included timber in two or more separate operations to limit landing size. Where using existing landings that need to be increased in size for biomass and chip van access the landings will be extended in size away from drainages. If impact may not be minimized the operator will consider feasibility of moving biomass in the upcoming year when biomass can be stored off-site.</p> <p>Where site-specific resource protection concerns are not otherwise limiting, the number of landings should not exceed 1 landing per 30 acres. To minimize the number of landings, utilize roads for skidding unless site</p>	1.1, 1.2, 1.10, 1.12, 1.13, 1.16, 2.10, 2.11	Hydrologist, Soil Scientist, TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
11	All Units	All Areas	Aquatic Resources, Soils/Hydrology	Mechanical	<p>conditions rule this out due to possible safety or resource protection concerns.</p> <p>Landings in RCAs: No new landings will be located within an RCA unless deemed necessary by the interdisciplinary team; when feasible, preferably choose existing landings outside of the RCA. No new landing locations have been identified as needed within RCAs. All existing landings in RCAs will be subsoiled and mulched unless a hydrologist/soils scientist determines it is not necessary. If construction or relocation of a landing within an RCA appears to be necessary, consult with the appropriate resource specialist to ensure potential impacts are mitigated. Biomass, logs, tree tops and logging slash will not be landed such that they obstruct drainages or enter the TKO or WBBZ as is applicable based on LRWQCB stream classification.</p>	1.1, 1.2, 1.10, 1.12, 1.13, 1.16, 1.19, 2.10, 2.13, 7.2, 7.3	Aquatics Biologist, Hydrologist, Soil Scientist, TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation, post-implementation
12	All Units	All Areas	Soils/Hydrology	Mechanical	<p>Landings & Skid Trails Post-Implementation: Subsoil with a winged subsoiler on landings and the first 100 feet from the landing's primary skid trails. Subsoiling other skid trails in highly compacted areas will be evaluated on a site by site basis. The need for the tilling of skid trails would be reviewed by a soil scientist or hydrologist, and the timber sale administrator, and would be restricted to areas on slopes less than 25%, where residual trees would not be excessively damaged (root tearing leaving areas open to disease) and on those trails that do not contain excessive rocks unless otherwise agreed with the hydrologist/soil scientist. Subsoiling will always be performed perpendicular to any slope.</p>	1.12, 1.13, 1.16, 1.17, 1.21, 2.10, 2.13	Hydrologist, Soil Scientist, TSA, Vegetation Officer	Implementation, post-implementation
13	All Units	All Areas	Soils/Hydrology, Vegetation Mgmt	Mechanical/Hand	<p>Application of Sporax® will follow all state and federal rules and regulations as they apply to pesticides, including the Sporax® label requirement. Sporax® will not be applied within 25 feet of running water. Sporax® will be applied to all pine stumps ≥ 14 inch diameter within 4 hours of creation. Sporax® will not be applied during periods of sustained rain. A Pesticide Use Proposal (FS-2100-2) for the application of Sporax® has been completed and approved, and will be present in the project file and contract. In addition, the project file and contract will include a spill plan tiered to the Forest Spill Plan. Mountain yellow legged frog Individuals have been sighted in areas associated with unit 61 (Emphasis areas 1 and 2), unit 91 (Emphasis area 2), and unit 213 (Emphasis areas 1, 2, 4, and 6). Unit 213 has the potential to cut trees greater than 14 inches DBH, therefore Sporax® may be applied. An Aquatics biologist will review areas within 500 feet of occupied sites of MYLF to determine if application of Sporax® should be avoided.</p>	1.19, 5.7, 5.8, 5.9, 5.10, 5.11, 5.12, 7.2, 7.3, 7.4	Aquatics Biologist, Hydrologist, Soil Scientist, TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
14	All Units	All Areas	Aquatic Resources, Soils/Hydrology	Mechanical/Road	<p>Water Sources:</p> <ul style="list-style-type: none"> Use an approved water source for obtaining water. Water drafting sites in the project area will be established on permanently flowing streams that have sufficient flow to avoid depletion of pool habitat. Where streams are the sole water source, drafting would be allowed until stream flows reach 2 cfs. Below 2cfs, drafting would only be allowed in previously developed off-site water impoundments and according to guidelines as outlined in the Tahoe National Forest Land and Resource Management Plan (LRMP). Install screens on water intake lines to prevent entrainment of biota. To avoid impacts to Mountain Yellow-Legged Frog, identify all drafting sites to be used for project implementation, and report these to the aquatic biologist to allow the implementation of the mitigation measures listed in SMR 31. Do not overfill tanks when collecting water as this can lead to increased sedimentation to the stream channel. Do not back water trucks beyond the established access developed to access the water source. If use of water source creates sediment movement on access route. Apply clean crushed gravel or other means to control sediment, and maintain water quality. If a water drafting source within the 100-year floodplain is not currently rocked, and added controls are needed to prevent sediment from washing into the water source, use straw bales, staked waddles or other methods to filter sediment. 	1.19, 1.20, 1.21, 2.4, 2.5, 2.11, 2.13	Aquatics Biologist, Road Engineer, TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation
15	All Units	All Areas	Soils/Hydrology	Mechanical/Road	<p>Have an approved Spill Prevention Control and Countermeasure plan.</p> <ol style="list-style-type: none"> Plan for appropriate equipment refueling and servicing sites during project planning and design. Allow temporary refueling and servicing only at approved locations, which are well away from water or riparian resources, outside of RCAs. Develop or use existing fuel and chemical management plans (for example, spill prevention control and countermeasures (SPCC), spill response plan, emergency response plan) when developing the management prescription for refueling and servicing sites. Provide training for all personnel handling fuels and chemicals in their proper use, handling, storage, and disposal. Avoid spilling fuels, lubricants, cleaners, and other chemicals during 	1.1, 1.2, 2.4, 2.10, 2.11, 2.13, 7.4	TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation, post-implementation

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
16	All Units	All Areas	Fuels Mgmt, Soils/Hydrology, Vegetation Mgmt, Wildlife	All	<p>handling and transporting.</p> <p>Ground cover requirements for all activities: To protect against accelerated erosion and hydrophobicity and to maintain long-term soil productivity, the following guidelines should be applied during the planning and implementation of fuels treatments and vegetation management.</p> <p>Downed Large Wood Requirements. Where grapple piling is proposed, maintain downed wood retention adequate to contribute to organic matter while attaining desired conditions as described in the Sagehen EA. Retain large downed wood as prescribed by emphasis area while meeting fuels objectives (small areas of heavier concentrations that are not continuous on the landscape).</p> <p>Provide for downed wood retention per emphasis area prescription. All down logs greater than 15 inches diameter and 10 feet long will be retained. Crushing of logs with equipment will be avoided. Target down log levels post fuels treatments range from 15-20 logs per acre in emphasis areas 1 and 2 and 3-7 logs per acre in the other emphasis areas. In areas not meeting downed wood requirements, incorporate burn prescription measures such as liming, and contract requirements to maintain existing downed logs (preference to spring burn prescription).</p> <p>Ground Cover – Monitoring. The following are used as a general guide that will be practically implemented and assessed using random implementation monitoring and focused monitoring of areas of concern, through the BMEPEP monitoring program. If the minimum effective soil cover requirements are not being met (i.e. ground cover requirements are not shown to be effective in controlling erosion) management practices should be reviewed and adjusted as needed to achieve soil cover objectives, and mitigation measures such as mulching will be implemented as needed to reduce soil erosion.</p> <p>General Ground Cover Requirements Outside of RCAs (post-implementation of all treatments to meet Standards and Guides and SMRs)</p> <ul style="list-style-type: none"> On soils with low to moderate erosion hazard ratings (0-25% slope), maintain 45% ground cover. On soils with high erosion hazard ratings (25-50 % slope), maintain 55% ground cover. On soils with very high hazard ratings (greater than 50% slopes), 	1.9, 1.13, 1.16, 1.17, 1.20, 1.21, 2.13, 5.4, 6.2, 6.3	Fuels Officer, Hydrologist, Soil Scientist, TSA, Vegetation Officer, Wildlife Biologist	Project Design, Contract Prep, Contract Layout, Implementation, post-implementation

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
17	All Units	All Areas	Aquatic Resources, Fuels Mgmt, Soils/Hydrology, Vegetation Mgmt, Wildlife	All	<ul style="list-style-type: none"> maintain 70% ground cover. SMR 8 regarding mulch depth requirements also applies. 			
					<p>Ground Cover Requirements Within the RCAs. Mulching will occur over bare ground created by management activities within the RCA with particular attention paid near the hydrologic feature. Upland areas of the RCA will meet the General Ground Cover requirements within the RCAs.</p> <ul style="list-style-type: none"> On soils with low to moderate erosion hazard ratings (0-25% slope), maintain 70% ground cover. On soils with very high erosion hazard ratings (greater than 25% slope), maintain 75% ground cover. In near stream zones for perennial streams and intermittent streams or seasonally wet areas with riparian and meadow features, approximately 75% ground cover will be required. Large patches of bare ground will be mulched. Within Water Body Buffer Zones, ground cover should meet an average of 2 inches in depth and a maximum of 4 inches with 90% ground cover. Mulch will be required on endline drag channels that exceed 4 inches depth on greater than 5% slopes in RCAs and 10% slopes on adjacent uplands where endlining is required. See SMR 26 regarding weed-free requirement of mulch. SMR 8 regarding mulch depth requirements also applies. 	<p>1.9, 1.13, 1.20, 1.21, 2.13, 5.4, 6.2, 6.3, 7.2, 7.3</p>	<p>Aquatics Biologist, Fuels Officer, Hydrologist, Soil Scientist, TSA, Vegetation Officer, Wildlife Biologist</p>	<p>Contract Prep, Contract Layout, Implementation, post-implementation</p>
18	All Units, 46, 76	All Areas	Aquatic Resources, Fuels Mgmt, Sensitive Plants, Soils/Hydrology, Vegetation Mgmt, Wildlife	Pile Burning/ Underburn	<p>Burn Prescriptions in RCA</p> <ul style="list-style-type: none"> Design prescribed fire treatments to minimize disturbance of ground cover and riparian vegetation in RCAs. No active ignitions for underburning would occur within 25 feet of riparian vegetation and 50 feet from fens. Down wood will be retained based on site conditions to achieve riparian conservation objectives and ground cover requirements. If logs need to be removed from channels to achieve fuel objectives the hydrologist or soil scientist will be consulted. No active ignitions for prescribed burns in Waterbody Buffer Zones but broadcast burns can creep into these areas. No hand piling or burning would occur within 25 feet from riparian vegetation and stream channels or within meadows. The fire prescription should target the lowest possible soil temperature increase for the shortest duration of time. The fire prescription should target the highest duff layer moisture levels consistent with the fuel reduction and soil cover objectives. 	<p>1.8, 1.19, 2.13, 6.2, 6.3, 7.2, 7.3</p>	<p>Aquatics Biologist, Botanist, Fuels Officer, Hydrologist, Soil Scientist, TSA, Vegetation Officer, Wildlife Biologist</p>	<p>Contract Prep, Contract Layout, Implementation, post-implementation</p>

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
19	All Units	All Areas	Soils/Hydrology		<ul style="list-style-type: none"> Avoid burning road drainage outlets, such as waterbars and rolling dips, and out sloped roads within RCAs. If such areas do get burned, consider mitigations measures such as mulching to reduce sediment transport. If fire from underburning threatens to burn riparian vegetation and aquatic habitat, and/or the ground cover objectives will not be achieved, then the fire would be controlled or extinguished using minimally ground-disturbing methods and/or water application. No active ignition or pile burning within 50 feet of fens and springs. This distance may need to be increased depending on ground conditions to prevent burning through wetland features. Fire creep is allowed but not encouraged. Burning shall be conducted under conditions that facilitate low intensity surface fire. If needed to achieve burn objectives and fen protection objectives, prior to burning, slash remaining from prior logging activities will be modified around the fen to ensure objectives can be met. Prescribed fire prescriptions surrounding springs, fens and wet meadows will avoid application during periods of extended drought conditions. Underburn prescriptions in mastication units will favor soil moisture conditions of 20% soil moisture (soil is not wet, but is cool by touch) when possible. To prevent effects to MYLF consult the aquatics biologist about, or do not allow the use of foam during prescribed burning activities within RCAs. <p>Erosion Prevention Measures in activity areas : Erosion control work is inspected prior to the end of the normal operating season to determine whether the work is adequate. Additional measures will be applied when needed to meet water quality standards.</p> <p>Erosion Control Plan: All phases of project implementation will include a BMP checklist that will be developed based on the measures described in the Sagehen Project Environmental Assessment Appendix A, Standard Management Requirements (SMRs). The project SMRs are considered to be a part of this erosion control plan, and will be kept on site during implementation and be incorporated into an applicable check list. Any ground disturbing activities that are determined to fall outside of the exemption from the requirement to prepare an erosion control plan, will have additional information including maps, illustrations, and wet weather operations as deemed necessary and described under BMP 2.13</p>	1.1, 1.3, 1.13, 1.14, 1.16, 1.17, 1.19, 1.20, 1.21, 2.4 2.8, 2.13, 7.2, 7.3	Hydrologist, Road Engineer, Soil Scientist, TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation, post-implementation

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
					<p>of the Erosion Control Handbook.</p> <p>Vegetation Management: All necessary erosion control measures for logging operations will be implemented as soon as possible after logging operations cease in the area and prior to runoff producing rainfall. All erosion prevention measures will be implemented by October 15th. For harvest activities continuing beyond October 15th, erosion control measures on active sites will be implemented at the first opportunity.</p> <p>Roads: Erosion control measures are implemented by the end of the normal operating season, (usually October 15 for this area) and kept current when road construction occurs outside that period. Stabilization of fills and completion of winterization is required by October 15. This includes the removal of temporary culverts, culvert plugs, diversion dams, or elevated stream crossing causeways. It also includes installation and/or removal of crossdrains, energy dissipators, sediment basins, berms, debris racks, mulching, or other items needed to control erosion. Other preventive measures include the removal of debris, obstructions, and spoil materials from channels and floodplains.</p>			
20	All Units	All Areas	Soils/Hydrology	Road	<p>Road Management</p> <p>Coordination with Road Engineer: Before pulling equipment from the sale area, the TSA will coordinate a review period with the road engineer to ensure road features (drainage, surface, etc.) achieve road management objectives.</p> <p>Repair and maintain up to 23 miles (miles determined by GIS and are approximate) of roads, that provide access for the</p> <p>Sagehen Project. This work includes: grading, clearing, ditch and culvert cleaning and repair. The repair work associated with these projects is the maintenance work to repair and restore the road to accommodate the planned traffic and be consistent with the existing traffic service level, water quality objectives, and Road Management Objectives.</p> <p>Low water crossings on Class I and II drainages on existing roads will incorporate additional measures during haul to prevent sediment transport from increased travel through drainages. This may include additional rock and culvert installations based on site conditions. A 1-ft covering of weed-free straw mulch will be placed between the natural channel and imported fill so no additional fill remains in the existing channel. Fill will be removed to the previous existing dip configuration by 10/15 or the first opportunity after this date if conditions allow operations</p>	<p>1.1, 1.14, 1.19, 1.21, 2.2, 2.4, 2.5, 2.7, 2.8, 2.12, 2.13</p>	<p>Hydrologist, Road Engineer, Soil Scientist, TSA</p>	<p>Contract Prep, Contract Layout, Implementation, post- implementation</p>

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
					<p>to continue past this date as described below.</p> <p>Road Dust Abatement: Water will be used on major transportation routes for dust abatement.</p> <p>Ephemeral Stream Crossings on Temporary Roads</p> <ul style="list-style-type: none"> • Crossings will be designed to provide measures to pass flows, and may include extra protection measures, such as gravel, culverts or drainage controls when needed. Typically, the flow volume through these crossings is low and there is a low risk of significant precipitation during the operating period. Wet weather clauses are included to limit operations in inclement weather, when soils deform or compact, and road rutting and deformation become significant. Temporary crossings will be removed the same season they are installed, and removal will occur no later than October 15th of the season of installation. • Temporary roads crossing ephemeral drainages will be designed to pass flow using drainage dips, waterbars or culverts when needed. Removal of temporary roads on ephemeral drainages will include re-establishing drainage passage, mulching, and pulling outside berms to restore overland flows. See "Temporary Roads" for more design elements regarding ephemeral crossings. <p>Traffic Control During Wet Periods: Hauling on all roads would be restricted to the dry season when roads are stable. No Winter Hauling will be conducted, although some operations may continue past 10/15 to 11/30 if conditions permit as determined by the soil scientist/hydrologist and TSA. Hauling on all roads would be restricted to the dry season when roads are stable, or as per the 9/95 Wet Weather/Winter Hauling/Logging Guidelines if that option is implemented.</p>			
21	All Units	All Areas	Soils/Hydrology	Road	<p>Temporary Roads (including previously-tilled temporarily used roads):</p> <ul style="list-style-type: none"> • Only temporary roads identified in the NEPA process will be reused. If additional roads are necessary, the hydrologist will be notified and appropriate documentation and remedial action will be incorporated. • If it is determined that additional stream crossings are needed on temporary roads, they must be approved by the interdisciplinary team. • In unit 163, the temporary road will be closed when not in use for project activities (blocked, bermed, or otherwise closed to public 	<p>1.1, 1.6, 1.14, 1.19, 2.1, 2.2, 2.4, 2.6, 2.7, 2.8, 2.12, 2.13, 7.1, 7.2, 7.3</p>	Hydrologist, Road Engineer, Soil Scientist, TSA	Implementation, post- implementation

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date	
22	All	All Areas	Soils/Hydrology		<p>access).</p> <p>Design Criteria:</p> <ul style="list-style-type: none"> • Temporary road design and location will follow the following principles: Temporary roads will follow previously-used road beds where available and appropriately located. • Use rolling dips and an out-sloped road template. • Limit the amount of temporary road construction by maximizing the skidding distance. • Minimize the length and width of the roads. Avoid unstable areas where there is potential for mass soil erosion. • During implementation of the proposed action or action alternatives, if vehicles stir up fines in dry streambeds or where needed for support during project activities, additional clean 1" gravel will be added to the crossing surface. • Use weed-free straw 1-foot deep under gravel as a barrier between native soils and the gravel within the 100-year floodplain so the material can be removed after use. <p>Restoration (also see SMR 41 for specific actions):</p> <ul style="list-style-type: none"> • Excess materials placed in drainage ways would be removed from drainages after use. • Decommission all temporary roads. Temporary roads will be decommissioned according to Renewable Resources Planning Act (16 USC 1608): appropriately draining the road to establish a hydrologically neutral state, pulling berms (particularly including the mineral soil) and re-establishing the natural contour in necessary areas. Particular attention will be paid to roads within the RCA or when crossing drainages. • Where needed, mulch will be applied to control erosion. Subsoil temporary roads where determined to be necessary after review by a soils scientist or hydrologist. • Decommissioned temporary roads in RCAs will be mulched to control erosion, but mulch will not be placed in the 100 year flood plain. • Block or otherwise prevent long-term access over temporary roads, where needed to deter unauthorized use, place logs and logging slash over the first 200 feet. 				
							Aquatics	As applicable prior	

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
	Units				<p>addition to the following requirements, SMRs 3, 6, 7, 8, 11, 14, 18, 21 and 41 detail measures taken in Waterbody Buffer Zones and 100-year floodplains to insure consistency with LRWQCB requirements.</p> <p>Mechanical equipment: Equipment will only operate on dry soils as defined by the LRWQCB. See SMR 24 detailing work in WBBZs.</p> <p>Activities Conducted Under Category 6: Activities conducted under Category 6 will follow the eligibility requirements and conditions as described in Board Order No. R6T-2009-0029 Condition Waiver of Waste Discharge Requirements for Waste Discharges Resulting from Timber Harvest and Vegetation Management in the Lahontan Region (e.g. 2009 Timber Waiver). The required monitoring and reporting conditions would also be followed as described in the Order.</p> <p>Activities Conducted Under Category 4: Activities conducted under Category 4 will follow the eligibility requirements and conditions as described in 2009 Timber Waiver. The required monitoring and reporting conditions would also be followed as described in the Order.</p> <p>Hand Piles Operating Under Category 2: Piles will not be located within 100-year floodplain of any watercourse. No piles will be located within 25 feet of Waterbody Buffer Zones. No more than 10% of the area within the WBBZ shall be covered in piles. This condition means less than 10% of the WBBZ area is subject to vegetation management activities.</p> <p>Note: activities not following these requirements will apply for an applicable category.</p> <p>Temporary Roads: For temporary roads the proposed action will meet the criteria of Appendix N for the Lahontan Timber Waiver Waste Discharge Prohibition Exemption Information, Page 6 of 6 (Attachment N) Board Order No. R6T-2009-0029 Adopted May 14, 2009. Activities for temporary roads will meet all the following conditions:</p> <ol style="list-style-type: none"> Temporary stream crossings are constructed with clean cobbles or logs. If sand or soil is used as running surface, BMPs must be in place (e.g. filter cloth, brow logs) to prevent discharge of earthen materials to surface waters. Stream crossings are completely removed at the end of operations, or prior to the winter period (as defined in Attachment A of the Timber Waiver), whichever is sooner. Eligibility criteria and conditions of applicable Waiver Category are 		Biologist, Fuels Officer, Hydrologist, Road Engineer, Soil Scientist, TSA, Vegetation Officer	to, during, and after all management activities

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
					met.			
23	All Units	All Areas	Soils/Hydrology	All	<p>Lahontan Regional Water Quality Control Board (LRWQCB)(Cont'd)</p> <p>100-Year Floodplains, based on the definition in the 2009 LRWQCB timber waiver Attachment A, are areas determined based on delineations completed or approved by the U.S. Army Corps of Engineers, the Federal Emergency Management Agency, or an individual qualified to make floodplain delineations. If these agencies have not completed formal delineations, the Water Board staff may agree to the use of best professional judgment; field verification by staff may be needed. These areas include land adjacent to waterbodies that extend to the outer perimeter of lands which experience flooding or are inundated with water during 100-year flood events. At a minimum, dischargers shall designate the 100-year floodplain area to encompass the bed and bank of any ephemeral drainage course. If other indicators are present such as wet vegetation on terraces, or other high water indicators, such as stranded debris, these should also be taken into consideration. For cases of unconfined channels, other indicators may need to be considered.</p> <p>The following would apply to all Waiver Categories with Provisions for 100-Year Floodplains:</p> <p>No piling or burning of piles will occur in 100-year floodplains. No new landings will be located in 100-year floodplains.</p> <p>No existing landings are located in 100-year floodplains</p> <p>No equipment will enter 100-year flood plains except at existing roads and crossings. Chips or masticated material will not be placed within the 100 year flood plain.</p> <p>Prohibited discharges to 100-year floodplains do not occur if activities meet a, or b, and c. below:</p> <ol style="list-style-type: none"> a. Chips or masticated material is incorporated into the soil, or b. Chips or masticated material do not exceed an average of two inches in depth, with a maximum of four inches, and c. Eligibility criteria and conditions of applicable Waiver Category are met. 		<p>Aquatics Biologist, Fuels Officer,</p> <p>Hydrologist, Road Engineer</p> <p>Soil Scientist, TSA, Vegetation Officer</p>	As applicable prior to, during, and after all management activities

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
					<p>Administration maps so that units with noxious weed sites in close proximity can be avoided, to prevent contamination of equipment and adjacent areas. Two occurrences of musk thistle are known in T19N, R16E, Section 32. One is in the NE ¼ of the SW ¼ and the other is in the SW ¼ of the NW ¼. Musk thistle and tall whitetop are known in the NE ¼ of the SW ¼ of Section 29 (T19N, R16E). See Tahoe National Forest GIS Library to find the most recent Invasive Plant Inventory layer.</p> <p>Any materials for erosion control including gravel or straw bales should be weed free certified (although it is not proposed to bring in any materials at this time).</p> <ol style="list-style-type: none"> 1. Prevention/Cleaning: Require all off-road equipment and vehicles (Forest Service and contracted) used for project implementation to be weed-free. The location of equipment's most recent operation shall be disclosed and off-road equipment should be cleaned prior to moving onto Sale Area when equipment is known to be from a potentially infested area. Off-road equipment shall be cleaned prior to moving from a unit shown to be infested with noxious weeds on Sale Area Map. Cleaning is not required for vehicles that will stay on the roadway. 2. Prevention/Road Construction, Reconstruction, and Maintenance: All earth-moving equipment, gravel, fill, or other materials need to be weed free. Use onsite sand, gravel, rock, or organic matter where possible. 3. Prevention/Revegetation: Use weed-free equipment, mulches, and seed sources. Avoid seeding in areas where revegetation will occur naturally, unless noxious weeds are a concern. Save topsoil from disturbance and put it back to use in onsite revegetation, unless contaminated with noxious weeds. 4. Prevention/Staging Areas: Do not stage equipment, materials, or crews in noxious weed infested areas where there is a risk of spread to areas of low infestation. 5. Small infestations identified during project implementation will be evaluated and hand treated or "flagged and avoided" according to the species present and project constraints. If larger infestations are identified after implementation, they should be isolated and avoided with equipment (and equipment washed as in # 1 above). 6. Monitoring: Monitor for noxious weed invasion after timber sale implementation and after piles are burned. 			
27	34, 38,	All Areas	Non-Native	Underburn	Shrub Patches: To guard against widespread cheatgrass invasion and to		Botanist, Fuels	Implementation,

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
	39, 46, 47, 61, 73, 76, 89, 90, 100, 163, 282		Plants, Sensitive Plants, Wildlife		protect important shrub communities for forage production, avoid ignition in shrub patches that are 1/2 acre or larger. Underburning of up to 30% of these shrub patches is acceptable. The shrub communities of concern include low sagebrush flats, mountain big sagebrush communities on flats and within openings on south facing slopes, and bitterbrush communities. When masticating, only target manzanita, snowbrush and white thorn species. Only target remaining species if they are within the drip line of a leave tree or have the potential to act as ladder fuels.		Officer, Wildlife Biologist	post-implementation
28	All Units	All Areas	Cultural Resources	All	Archaeological and historic sites: Site Specific. Special Protection Measures. Any archaeological sites not evaluated prior to logging will be considered as being eligible for the National Register and will be protected. Archaeologist will be consulted during layout of units that have been identified during project reconnaissance. The areas of concern identified during project reconnaissance will be flagged. These areas will be avoided during logging.		Archaeologist, TSA, Vegetation Officer	As applicable prior to, during, and after all management activities
29	All Units	All Areas	Cultural Resources	Pile Burning/ Underburn	Cultural Resources: Protect known archaeological sites during prescribed fire activities as designated by archaeologist. All polygon features will not be burned. Some linear features may be burned as designated by archaeologist. This will include hand removal of fuels from sites, and piling and burning fuels outside of sites as needed.		Archaeologist, Fuels Officer	As applicable prior to, during, and after all management activities
30	80, 85	8	Cultural Resources	All	Protect aspens with historical carvings: Any aspens found with historical carvings and needing protection will be identified prior to the start of aspen treatment operations and these trees will be protected.		Archaeologist, TSA, Vegetation Officer	As applicable prior to, during, and after all management activities
31	All Units	All Areas	Aquatic Resources	All	Mountain yellow-legged frog: 1. To reduce the potential of impacts to mountain yellow-legged frog (MYLF) where sightings establish the presence of MYLF, implement the following management requirements: <ul style="list-style-type: none"> • Within RCAs noted by the aquatic biologist as MYLF habitat or breeding areas, require no ground disturbing activities during the limited operating period (LOP) of November 30 to May 30. This LOP is needed to avoid possible interference with MYLF during a time when they may move away from stream courses. 2. To avoid impacts to MYLF, identify all drafting sites to be used, in conjunction with the proposed action, and report these to aquatic	1.5, 1.19, 2.5	Aquatics Biologist, TSA, Vegetation Officer	As applicable prior to, during, and after all management activities

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
					<p>biologist, to allow the implementation of the following mitigation measures:</p> <ul style="list-style-type: none"> Prior to use each year, water drafting sites where frog habitat is present, a survey will be conducted by an aquatics biologist to determine if frogs are present. <p>If MYLF is found to be present, the biologist will determine whether water drafting mitigations measures are needed. Use of any water source on the Sale Area will be agreed to in writing. Drafting sites shall be located to minimize sediment and maintain riparian resources, channel condition, and MYLF habitat. Use suction strainers with screens less than 2 mm in size. Place draft suction strainer in a bucket to avoid substrate and amphibian disturbance. Draft from deepest water source, near bottom.</p>			
					<p>3. To prevent effects to MYLF consult the aquatics biologist about, or do not allow the use of foam during prescribed burning activities within RCAs.</p> <p>4. Individuals have been sighted in areas associated with unit 61(Emphasis areas 1 &2), unit 91 (Emphasis area 2), and unit 213 (Emphasis areas 1, 2, 4, & 6). Units 61 & 91 are proposed for hand treatment. Hand treatment units will cut trees 14 inches DBH or less, and Sporax® would not be applied to stumps. Unit 213 has the potential to cut trees greater than 14 inches DBH; therefore Sporax® may be applied. An Aquatics biologist will review areas within 500 ft of occupied sites of MYLF to determine if application of Sporax® should be avoided.</p> <p>5. If wetting rain (>.25 inch) occurs during, or within two weeks prior to treatment, a biologist should survey treatment units and temporary roads within .25 mile of RCAs. If species are present, determine appropriate mitigation measures to reduce the risk of direct effects to individuals.</p>			
32	33, 34, 35, 36, 38, 39, 156, 163	All Areas	Wildlife	All	<p>Northern Goshawk Limited Operating Periods: A LOP will be in effect from February 15 to September 15 for Units 33, 34, 35, 36, 38, 39, and 163. This LOP may be modified by the wildlife biologist if surveys determine nesting will not be affected within ¼ mile of the proposed activities.</p> <p>California Spotted Owl Limited Operating Periods: A LOP will be in effect from March 1 to August 15 for Units 156 and 163. This LOP may be modified by the wildlife biologist if surveys determine nesting will not be</p>	1.5	Fuels Officer, TSA, Vegetation Officer, Wildlife Biologist	As applicable prior to, during, and after all management activities

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
					affected within ¼ mile of the proposed activities.			
33	All Units	All Areas	Aquatic Resources, Sensitive Plants, Wildlife	All	TES species: If any Federally threatened, endangered, proposed, or Forest Service sensitive species previously unknown in the project area are detected or found nesting within 0.25 miles of project activities, appropriate mitigation measures would be implemented based on input from the aquatic biologist, botanist, and/or wildlife biologist. Measures can include, but are not limited to, flagging and avoiding a plant site, implementing a species specific LOP, or designating a protected activity center.	1.5	Aquatics Biologist, Botanist, Fuels Officer, TSA, Vegetation Officer, Wildlife Biologist	As applicable prior to, during, and after all management activities
34	All Units	All Areas	Wildlife	All	Nests/Denning Structures: If large stick nests or signs of active denning are observed in or near trees that are designated for removal or in down logs, the occurrence and location should be reported to the wildlife biologist to determine the need for further review.		Fuels Officer, TSA, Vegetation Officer, Wildlife Biologist	As applicable prior to, during, and after all management activities
35	All Units	All Areas	Wildlife	Mechanical/Road	30 inch DBH Trees: Avoid the felling of trees 30 inches DBH or greater during the implementation of temporary roads, skid trails and landings, to maintain large tree wildlife habitat. If this is not possible, the wildlife biologist would be consulted.		Road Engineer, TSA, Vegetation Officer, Wildlife Biologist	Contract Layout, Implementation
36	All Units, 163, 213	All Areas	Soils, Wildlife	Mechanical/Hand, Pile Burning/Underburn	Snag Retention: Large snags (greater than 15 inches DBH) would be retained within all subunits, regardless of emphasis area. Where currently available within emphasis area 1, 2 and 5 subunits, some decadent fir with declining crown characteristics would be retained for future snag recruitment. Where existing snag levels are low, particularly within the plantations, silvicultural prescriptions retain all snags greater than three inches DBH. Underburn and Snags: Hand-constructed fire lines would be placed around large snags before applying low intensity surface fire prescriptions. Each subunit's low intensity surface fire prescription (available in the project record) specifies the numbers of snags to be lined, based on existing numbers of large snags within the subunit. In emphasis area 1 and 2 subunits proposed for underburning, between 10 and 18 large snags per acre would be lined while in emphasis area 4, 5, 6, and 7 subunits, between 2 and 10 large snags per acre would be lined. Pile burn and Snags: In treatment units where hand or grapple piling of fuels would be conducted, piles would be located a sufficient distance from large snags (greater than 15 inches DBH) to ensure the snags did not		Fuels Officer, TSA, Vegetation Officer, Wildlife Biologist	Contract Layout, Implementation, post-implementation

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
					<p>ignite during pile burning operations.</p> <p>Down Woody Material: In all subunits, regardless of emphasis area, the largest available down logs (larger than 15 inches diameter and ten feet long) would be retained during implementation of silvicultural treatments (mechanical thinning or mastication). Crushing of large down logs with machinery would be avoided.</p> <p>Underburn and Woody Material: In units proposed for application of low intensity surface fire following silvicultural treatments, the largest down logs per acre would be lined to protect them during underburning operations. In emphasis area 1 and 2 subunits, line 15 to 20 large down logs per acre prior to underburning. In emphasis area 4, 5, 6, and 7 subunits, line 3-7 large down logs per acre, with the exception of subunits 163-5, 163-7, and 213-4. In these subunits, approximately 15 to 20 large logs per acre would be lined prior to application of low intensity surface fire. In treatment units proposed for surface fire prescriptions, approximately 30 percent of each unit's area would not be underburned. Small woody material would be retained in these unburned areas of the treatment units.</p> <p>Pile Burn and Woody Material: In treatment units proposed for grapple or hand piling, piles would be located a sufficient distance from large down logs to ensure the logs did not ignite during pile burning operations. In addition, piling would not be conducted on approximately 30 percent of the unit, allowing for retention of small down woody material.</p>			
37	33, 34, 35, 36, 38, 73, 85, 89, 90, 100, 163, 213	All Areas	Wildlife	Mechanical/ Hand	<p>Decadent feature enhancement - Two different treatments; partial tree girdling and short snag creation. Partial tree girdling would occur inside and outside of DCAs and short snag creation would only occur in DCAs. Both treatments would only be applied in subunits where the current snag/short snag densities are substantially below desired densities.</p> <p>Partial tree girdling would involve girdling (cutting off the bark layer deep enough to sever the tree's vascular system in the cambium) of individual trees 15-30 inches DBH. The bark layer would be removed in a 6-12 inch band covering approximately 1/3 of the diameter of pine trees and 1/2 of the diameter of fir trees. The selection of trees for partial tree girdling would occur after the DCA and ESO, legacy tree treatment, variable thinning and suppressed cut prescriptions had been applied (marked). Trees selected outside of DCAs for partial girdling would be trees already selected under the variable thinning prescription for removal. Trees selected for partial girdling in DCAs would be designated based on the site specific conditions</p>		Fuels Officer, TSA, Vegetation Officer, Wildlife Biologist	Contract Layout, Implementation, post-implementation

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
					<p>in the DCAs and would be trees that would provide needed habitat structure in the DCAs.</p> <p>Short snag creation involves cutting a tree (preferentially a white fir), on the outside edge, but within a DCA, at a height of 10-20 feet above the ground. The height would be based on the highest point a piece of machinery such as a feller buncher, could reach to cut the tree. The top of the tree would be felled into the interior of the DCA and left to contribute to down log densities. Trees selected for this treatment would be 15-30 inches DBH.</p>			
38	All Units	All Areas	Air Quality	Pile Burning/ Underburn	<p>Air Quality: The fuels officer will coordinate with the Air Quality Coordinator to design the waste fire plan. Burning permits would be acquired from the Northern Sierra Air Quality Management District. The Air Quality District would determine days when burning is allowed. The California Air Resources Board (CARB) provides daily information on "burn" or "no burn" conditions. Burn plans will be designed and all fuel reduction burning will be implemented in a way to minimize particulate emissions. Prescribed fire implementation will coordinate daily and seasonally with other burning permittees both inside and outside the forest boundary to help meet air quality standards.</p>		Fuels Officer	Implementation, post-implementation
39	76, 282	2, 4	Aquatic Resources, Fuels Mgmt, Soils/Hydrology	Hand	<p>Treatment in RCA: Some trees will be hand felled into the intermittent channel to provide channel stability. An aquatic biologist or hydrologist will work with hand crews to determine the distribution and placement of trees. This action would be designed to be consistent with the LWQCB Wildlife Habitat Exemption category as well as all LWQCB provisions (particularly SMRs 22 and 23) stated previously in this appendix. The coarse woody debris marking and potential handfelling actions would not exceed a total of 5 acres in size, would be implemented by manual methods, and would not involve the use of mechanical or tracked equipment.</p>	1.8, 1.19	Aquatics Biologist, Fuels Officer, Hydrologist, TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation
40	213	2, 4	Aquatic Resources, Soils/Hydrology	Mechanical	<p>Marking of RCA: Hydrologist and/or aquatic biologist will assist in the marking and layout of RCAs in emphasis areas 2 and 4 in unit 213.</p>	1.2, 1.8, 1.18, 1.19, 5.2, 5.3, 5.6, 7.2, 7.3	Aquatics Biologist, Hydrologist, TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation
41	85, 87	All Areas	Sensitive Plants, Soils/Hydrology	Road	<p>Watershed Restoration/Road Decommissioning:</p> <ul style="list-style-type: none"> Watershed improvements were assessed, identified and 	1.8, 1.19, 2.3, 2.4,	Botanist, Hydrologist,	Contract Prep, Contract Layout,

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
					<p>incorporated into the proposed action.</p> <ul style="list-style-type: none"> All required state and federal permitting processes, such as CEQA, water quality and 404 permits would be compiled with prior to implementation of stream and wetland restoration. The CEQA scoping, document development, noticing and public review will occur prior to obtaining the necessary prohibition exemptions, and address the required basin plan criteria. (BMP 7.1) <p>Road 11-5, Action 1: Approximately one mile of this road would be obliterated following its use for vegetation treatment activities. This road would be reopened to access and treat units 85 and 87 for approximately one mile. Upon completion of the treatments in these units, this segment of road would be obliterated. Road obliteration would consist of re-contouring the roadbed to a hydrologically neutral state. This also includes emphasizing protection and neutral landscape configuration above fens, designing drainage to match natural patterns, reducing compaction (sub-soiling), blocking the closed portions from future access, and mulching or otherwise providing slash and soil organic matter to control erosion.</p> <p>Road 11-5, Action 2: On the section of road 11-5 below the obliteration work described in Action 1 above, where the road crosses through a fen and aspen stand, the road and its associated culvert system would be removed and full restoration measures would be implemented. The existing elevation of the culvert is placed subgrade, such that the water in the fen is draining at an accelerated rate and resulting in an ongoing reduction in fen size. Restoration measures would include filling the culvert alignment and reshaping the roadbed to support the function and hydrology of the fen (currently approximately 1.2 acres). Revegetation activities would be implemented and may include local seed and/or small plugs of sedge mat or other local vegetation obtained adjacent to the fen. Mulching would be provided as needed to control erosion and stabilize the site.</p>	2.7, 2.8, 2.13, 5.4, 7.1, 7.2, 7.3	Road Engineer Soil Scientist, TSA, Vegetation Officer	Implementation, post-implementation
42	61, 163	All Areas	Sensitive Plants, Soils/Hydrology	Pile Burning/ Underburn	<p>Prescribed Fire and the Mason Fen: (Downslope from Units 61 and 163) prior to performing prescribed burns the residual amounts of downed woody debris will be assessed to determine whether additional fuel modification is necessary to achieve the following objectives. Accumulation of downed woody debris shall be discontinuous from the edge of the 50 foot buffer to the edge of the fen, or soil moisture in the 50 foot buffer will be high enough to prevent a fast spreading flaming surface fire, a slow moving smoldering surface fire would be acceptable. Soil</p>	1.8, 1.19, 6.2, 6.3, 7.2, 7.3	Botanist, Fuels Officer, Hydrologist, Soil Scientist, TSA, Vegetation Officer	Implementation, post-implementation

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
43	46, 61, 80, 85, 98, 99, 163	All Areas	Sensitive Plants, Soils/Hydrology	All	moisture in fens will be high enough to limit the burning of peat. If necessary, water will be brought to the site and be available to maintain objectives. Ground disturbing methods of fire suppression will be avoided within the 50 foot fen buffer and inside the fen. Also see SMR 42.			
					Fens: Fen areas are located within units 46, 85 and 98 and downstream from units 61 and 163. Other units with fens in close proximity are units 80 and 99. Five fens without known sensitive plant occurrences are located in unit 85. Implement a 25' Tractor Keep Out (TKO) along the periphery of all fens in these areas. The silviculturist has worked with the botanist and hydrologist or soil scientist to extend this as a "no treatment zone" outside the fen area to areas as needed to maximize protection of the fens. A botanist and/or hydrologist will also be present to assist in marking and layout around the fens. For fens in Units 46, 85, 98, and 99, post "Flag and Avoid" mitigations with Tractor Keep Out signs to prevent tractors from operating within 25 feet of the riparian edge of the wet features/fens. The fen areas are located in southwestern edge of 85 and three fens are present in the central portion of 46 within emphasis area 4 and in the central portion of unit 98. Place density cover patches around fens within unit 98.	1.8, 1.19, 7.2, 7.3	Botanist, Hydrologist, TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation
44	80, 85	8	Fuels Mgmt, Sensitive Plants, Soils/Hydrology, Vegetation Mgmt, Wildlife	Pile Burning/ Underburn	Pile Burning in Aspen: Excess remaining project-generated slash would be removed and hand piled outside of the aspen root footprint as determined by botanist or hydrologist, and burned to reduce slash to a level that would not inhibit the aspen suckering response. The location of the piles to be burned would be advised by the hydrologist to maintain water quality and would not be within 25 feet of riparian vegetation.			
					Mountain Yellow-legged Frog Limited Operating Period (LOP): To reduce the potential of impacts to mountain yellow-legged frog (MYLF), on stream in 80-8, add a 200 foot limited operating period (LOP) buffer to the standard Riparian Conservation Area (RCA). Within the combined RCA and LOP buffer, no ground disturbing activities would be permitted during the LOP of November 30 through May 30. This LOP is needed to avoid possible interference with MYLF during a time when they may move away from stream courses. To prevent effects to MYLF consult the aquatic biologist about, or do not allow the use of foam during prescribed burning activities within RCAs.	1.8, 1.19, 6.2, 6.3, 7.2, 7.3	Botanist, Fuels Officer, Hydrologist, TSA, Vegetation Officer	Implementation, post-implementation
45	80	8	Aquatic Resources, Fuels Mgmt, Vegetation Mgmt	All				
						1.5, 1.8, 1.19, 6.2, 6.3	Aquatics Biologist, Fuels Officer, TSA, Vegetation Officer	Contract Prep, Contract Layout, Implementation

Standard Management Requirements (SMRs)

SMR Number	Unit	Emphasis Area	Concern	Treatment Activity	Includes Best Management Practices (BMPs) and Resource Protection Measures (RPMs)	BMP Number	Responsible Person(s)	Due Date
46	46	4	Sensitive Plants, Soils/Hydrology	Pile Burning/ Underburn	Emphasis area 4 in plantations: Stop ignitions within 25 feet of emphasis area 4 boundary from emphasis areas 5 or 6. Allow but minimize (do not encourage) fire creep into emphasis area 4 in unit 46.	1.8, 1.19, 6.2, 6.3, 7.2, 7.3	Botanist, Fuels Officer, Hydrologist, Soil Scientist, TSA, Vegetation Officer	Implementation, post-implementation

DURING CONSTRUCTION AND GROUND-DISTURBING ACTIVITIES MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MONITORING REQUIREMENTS AND PROCEDURES

The California Environmental Quality Act (CEQA) was amended in 1989 to add Section 21081.6, which requires a public agency to adopt a monitoring and reporting program for assessing and ensuring compliance with any required mitigation measures applied to a proposed development. As stated in Section 21081.6 of the Public Resources Code,

“... the public agency shall adopt a reporting or monitoring program for the changes to the project which it has adopted, or made a condition of project approval, in order to mitigate or avoid significant effects on the environment.”

Section 21081.6 provides general guidelines for implementing mitigation monitoring programs and indicates that specific reporting and/or monitoring requirements, to be enforced during project implementation, shall be defined prior to final adoption of the Initial Study/Mitigation Monitoring and Reporting Program (IS/MND).

The mitigation monitoring table below lists those mitigation measures that may be included as conditions of approval for the project. To ensure that the mitigation measures are properly implemented, a monitoring program has been devised which identifies the timing and responsibility for monitoring each measure. The applicant (National Forest Foundation) will have the primary responsibility for implementing the measures, and the Pacific Southwest Research Station, Truckee Ranger District of the Tahoe National Forest will have the primary responsibility for monitoring and reporting the implementation of the mitigation measures. The Sierra Nevada Conservancy (SNC) will have the secondary responsibility monitoring and reporting the implementation of the mitigation measures.

**Sagehen Basin Old Forest Sensitive Species Habitat Restoration Project (SNC 773)
Mitigation Monitoring and Reporting Program**

Mitigation Measure	Responsible Party or Parties	Timing for Mitigation Measure	Method of Verification	Verification of Compliance (Date/Initials)
I. Aesthetics				
The proposed project would not result in significant adverse impacts related to aesthetic resources. No mitigation is required.				
II. Agricultural Resources				
The proposed project would not result in significant adverse impacts related to agricultural resources. No mitigation is required.				
III. Air Quality				
AIR-1	The U.S. Forest Service, Truckee Ranger District prescribed fire planner would coordinate with the Air Quality Coordinator to design the burn plan and smoke management plan, approved by the Northern Sierra Air Quality Management District (NSAQMD). Burning permits would be acquired from the NSAQMD. The NSAQMD would determine days when burning activities are allowed. The California Air Resources Board (CARB) provides daily information on "burn" or "no burn" conditions. Burn plans prepared by the Truckee Ranger District would be designed and all fuel reduction burning would be implemented in a way to minimize particulate emissions. Prescribed fire implementation for the project would be coordinated daily and seasonally with other burning permittees both inside and outside the forest boundary to help meet air quality standards.	Sierra Nevada Conservancy; U.S. Forest Service (Pacific Southwest Research Station, Truckee Ranger District); Northern Sierra Air Quality Management District	Prior to Issuance of Grading or Building Permits; During Construction and Ground-Disturbing Activities	Onsite Inspection Separate Submittal – reports, studies, plans
IV. Biological Resources				
The proposed project would not result in significant adverse impacts related to biological resources. No mitigation is required.				
V. Cultural Resources				
CULT-1	If human remains are discovered during construction or operational activities, further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California Health and Safety Code. The specific protocol,	Sierra Nevada Conservancy; U.S. Forest Service (Pacific Southwest Research Station, Truckee Ranger District);	During Construction and Ground-Disturbing	Onsite Inspection Separate Submittal - reports, studies, plans

**Sagehen Basin Old Forest Sensitive Species Habitat Restoration Project (SNC 773)
Mitigation Monitoring and Reporting Program**

Mitigation Measure	Responsible Party or Parties	Timing for Mitigation Measure	Method of Verification	Verification of Compliance (Date/Initials)
<p>guidelines, and channels of communication outlined by the Native American Heritage Commission, in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297), and Senate Bill 447 (Chapter 44, Statutes of 1987), shall be followed. Section 7050.5(c) shall guide the potential Native American involvement, in the event of discovery of human remains, at the direction of either the Sierra or Nevada County coroner. All reports, correspondence, and determinations regarding the discovery of human remains on the project site shall be submitted to the Sierra Nevada Conservancy and the Truckee Ranger District.</p> <p>According to the California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and willful disturbance of human remains is a felony (Section 7052).</p>	<p>Project Contractor; Qualified Archaeologist</p>	<p>Activities</p>		
<p>CULT-2</p> <p>During any ground disturbance activities, if paleontological resources are encountered, all work within 25 feet of the find shall halt until a qualified paleontologist as defined by the Society of Vertebrate Paleontology Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (2010), can evaluate the find and make recommendations regarding treatment. Paleontological resource materials may include resources such as fossils, plant impressions, or animal tracks preserved in rock. The qualified paleontologist shall contact the University of California Museum of Paleontology at the University of California, Berkeley regarding any discoveries of paleontological resources.</p> <p>If the qualified paleontologist determines that the discovery represents a potentially significant</p>	<p>Sierra Nevada Conservancy; U.S. Forest Service (Pacific Southwest Research Station, Truckee Ranger District); Project Contractor; Qualified Paleontologist</p>	<p>During Construction and Ground-Disturbing Activities</p>	<p>Onsite Inspection Separate Submittal - reports, studies, plans</p>	

**Sagehen Basin Old Forest Sensitive Species Habitat Restoration Project (SNC 773)
Mitigation Monitoring and Reporting Program**

Mitigation Measure	Responsible Party or Parties	Timing for Mitigation Measure	Method of Verification	Verification of Compliance (Date/Initials)
<p>paleontological resource, additional investigations and fossil recovery may be required to mitigate adverse impacts from project implementation. If avoidance is not feasible, the paleontological resources shall be evaluated for their significance. If the resources are not significant, avoidance is not necessary. If the resources are significant, they shall be avoided to ensure no adverse effects, or such effects must be mitigated. Construction in that area shall not resume until the resource appropriate measures are recommended or the materials are determined to be less than significant. If the resource is significant and fossil recovery is the identified form of treatment, then the fossil shall be deposited in an accredited and permanent scientific institution. Copies of all correspondence and reports shall be submitted to the Sierra Nevada Conservancy and the Truckee Ranger District.</p>				
<p>CULT-3 If prehistoric or historic-era cultural materials are encountered during construction activities, all work in the immediate vicinity of the find shall halt until a qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist, can evaluate the significance of the find and make recommendations. Cultural resource materials may include prehistoric resources such as flaked and ground stone tools and debris, shell, bone, ceramics, and fire-affected rock as well as historic resources such as glass, metal, wood, brick, or structural remnants. If the qualified professional archaeologist determines that the discovery represents a potentially significant cultural resource, additional investigations may be required to mitigate adverse impacts from project implementation. These additional studies may include avoidance, testing,</p>	<p>Sierra Nevada Conservancy; U.S. Forest Service (Pacific Southwest Research Station, Truckee Ranger District); Project Contractor; Qualified Archaeologist</p>	<p>During Construction and Ground-Disturbing Activities</p>	<p>Onsite Inspection Separate Submittal - reports, studies, plans</p>	

**Sagehen Basin Old Forest Sensitive Species Habitat Restoration Project (SNC 773)
Mitigation Monitoring and Reporting Program**

Mitigation Measure	Responsible Party or Parties	Timing for Mitigation Measure	Method of Verification	Verification of Compliance (Date/Initials)
<p>and evaluation or data recovery excavation.</p> <p>If a potentially-eligible resource is encountered, then the qualified professional archaeologist, the Sierra Nevada Conservancy, and the Truckee Ranger District shall arrange for either 1) total avoidance of the resource or 2) test excavations to evaluate eligibility and, if eligible, total data recovery. The determination shall be formally documented in writing and submitted to the Sierra Nevada Conservancy and Truckee Ranger District as verification that the provisions for managing unanticipated discoveries have been met.</p>				
VI. Geology and Soils	The proposed project would not result in significant adverse impacts related to geology or soils. No mitigation is required.			
VII. Greenhouse Gas Emissions	The proposed project would not result in significant adverse impacts related to greenhouse gas emissions. No mitigation is required.			
VIII. Hazards and Hazardous Materials	The proposed project would not result in significant adverse impacts related to hazards and hazardous materials. No mitigation is required.			
IX. Hydrology and Water Quality	The proposed project would not result in significant adverse impacts related to hydrology and water quality. No mitigation is required.			
X. Land Use and Planning	The proposed project would not result in significant adverse impacts related to land use and planning. No mitigation is required.			
XI. Mineral Resources	The proposed project would not result in significant adverse impacts related to mineral resources. No mitigation is required.			
XII. Noise	The proposed project would not result in significant adverse impacts related to noise. No mitigation is required.			

**Sagehen Basin Old Forest Sensitive Species Habitat Restoration Project (SNC 773)
Mitigation Monitoring and Reporting Program**

Mitigation Measure	Responsible Party or Parties	Timing for Mitigation Measure	Method of Verification	Verification of Compliance (Date/Initials)
XIII. Population and Housing				
The proposed project would not result in significant adverse impacts related to population and housing. No mitigation is required.				
XIV. Public Services				
The proposed project would not result in significant adverse impacts related to public services. No mitigation is required.				
XV. Recreation				
The proposed project would not result in significant adverse impacts related to recreation. No mitigation is required.				
XVI. Transportation				
The proposed project would not result in significant adverse impacts related to transportation. No mitigation is required.				
XVII. Utilities and Service Systems				
The proposed project would not result in significant adverse impacts related to utilities and service systems. No mitigation is required.				