

DECISION MEMO

Big Trees Ecological Restoration and Protection Project

USDA Forest Service
American River Ranger District, Tahoe National Forest
Placer County, California
T.14N., R.13E., portions of Sections 18 and 19

Introduction

The Placer County Big Tree Grove Botanical Special Interest Area (Big Trees Grove) and surrounding area have been impacted by nearly a century of fire exclusion. This is evidenced by the accumulation of surface fuels, ladder fuels, the ongoing mortality of large pines, the influx of white fir in the understory, and the absence of giant sequoia regeneration. As such, the District is proposing to take an initial step in restoring the grove and surrounding old-growth forests to a more sustainable, natural, and resilient condition. The four primary objectives identified for the current project include:

1. Reduce surface and ladder fuels in and around the grove to minimize adverse effects in the event of a wildland fire.
2. Reintroduce low intensity fire where possible in order to begin the ecological restoration process.
3. Encourage regeneration of native giant sequoia.
4. Neutralize hazard trees along trails and other high use public areas.

It is important to note that the areas designated for treatment fall within the Placer Big Trees Grove Botanical Special Interest Area, as well as within a California spotted owl protected activity center (PAC). As such, the scope of management activities considered were limited to standard and guidelines for California spotted owl PACs (Standards and Guidelines 71 through 82) as identified in the *2004 Sierra Nevada Forest Plan Amendment (SNFPA) Record of Decision (ROD)* (pp. 59-61) and Forest Service Manual 2370 direction for activities within designated Special Interest Areas.

Location

The Big Trees Grove is located on the American River Ranger District of the Tahoe National Forest. Legal description is: SW 1/4, Section 18, T.14N., R.13E., Mount Diablo Base and Meridian. The grove is 24 driving miles east of Foresthill just off the Mosquito Ridge Road. This grove is the northern most and smallest Giant Sequoia grove in California. It has six large live specimens, one live sapling, and two down trees. There are 42 non-local sapling and pole size trees that survived from previous plantings. The seed source for these plantings was from other giant sequoia groves. The areas of the grove where these natural and planted sequoias exist encompass approximately two acres. The grove is located in the headwaters of a small perennial drainage that is a tributary to Mosquito Creek at an elevation of 5,200 feet. The next nearest

grove is the Calaveras grove about 60 air miles south of the Placer grove.

History

No one knows when the first Euro-American discovered the grove of *Sequoia gigantean* in Placer County. The first published reference to the grove was by Angel in *History of Placer County* in 1882. Angel provides this description:

There is a group of big trees, four or five in number, in Placer County, on the divide between the North Fork of the American River and Duncan Canon, east of Last Chance, and near a locality known as "Black Joe's Diggings." The largest of these trees was originally 300 feet in height, before it lost its top in a gale of wind. Several years ago the tree also fell, and is about thirty feet in diameter at the butt, tapering symmetrically to the top. The bark of these trees, unlike those of the Mariposa and other mammoth conifer, is quite thin, being but a few inches thick. The wood alone of the prostrate tree is thirteen feet in diameter, fifty feet up from the ground, and is soft and white, though at the same time susceptible to a high polish. They are doubtless all of their kind there is in the state, and never have been classified because of their isolated situation (Angel 1882:407).

Price (1893:17-22) in *Sierra Club Bulletin Vol. 1* provides details of his search for the trees of this grove:

Our first work was to search carefully about to find any outlying trees, if such there were. None could be discovered, and, in all probability, the six standing trees are all that remain of the North Grove of *Sequoia gigantea*.

Price (1893) provides this description of the grove:

Of the six standing trees, only two are of any great size, and these are not larger than some sugar pines. The largest tree in the grove, the one farthest to the south, is about one hundred and fifty yards from the group of four smaller trees on the north side of the creek. This tree is in a good state of preservation, with the exception of a slight burnt area at the base. It is thirty-three feet in circumference, four feet from the ground, and, taking account of the burn, it is close to twelve feet in diameter. Its height by the clinometer is two hundred and twenty feet. The other large tree, growing close to the creek, is the most beautiful in the grove. Ten feet in diameter, four feet from the ground, it rises, in a perfectly symmetrical column, to a height of two hundred and forty feet. The four other trees stand close together on the north side of the ravine. They are about one hundred and eighty feet high and three feet in diameter.

During his two visits in 1891, Price was told that an old gold miner by the name of Joe Matlock discovered the grove in 1855. Price started both of his journeys to the Big Trees from the Red Point Mine where he met Karl Hoffmann and later Thomas Ferguson (at Last Chance) and on the second visit Fred Schneider; it is likely that one of these gentlemen or Karl Hoffmann's

father who actually provided the information on Matlock. Price reported that the grove had long been known to the people in that section of the country as proved by the various dates from 1860 to 1890 cut into the bark of alders growing along the stream. Interestingly, Price observed that:

Small animal life was comparatively rare about the trees. I noticed only a few chipmunks sporting over the trunks, and a solitary gray squirrel. Birds, too, were surprisingly scarce; the inevitable jay, one red-tailed hawk and a few snowbirds make up the list.

Wilson in 1912 provides a description of the location, altitude, the surrounding flora, and the grove. In regards to past land use Wilson comments, "At various times prospectors have located claims in this vicinity and have claimed these trees, but the claims have been abandoned and the trees are still on public land in the Tahoe National Forest."

Forest Supervisor Bigelow (1936) provides a brief description of a visit to the Big Trees in 1920:

Aug. 14 – Met Big Tree party from Auburn at Westville at about 9 AM went with them. Stopped at Robinson Flat R.S. and at Duncan Peak Lookout with party. Went on to Greek Store and ate lunch and in PM went to the North Grove of Big Trees and measured them and then named them. Returned to Greek Store for the night. Had a large campfire with 28 members of the party round it. Had talks by leading men of the County and Forest Assistant George Lyons and I talked to them on the Forest Service and State Cooperation and on the Big Trees.

Lardner and Brock (1924:224) provide information that the grove was located in 1860:

As early as 1860, or before, it was known that Placer County had some of the "Big Trees," *Sequoia gigantea*, growing in her upper mountain sections. It is claimed that an Englishman, hunting near Last Chance, about 1860, discovered the grove and measured the largest standing tree with the ramrod of his shotgun. It is also asserted that in the spring of 1862 excessive rains made the ground very soft, and the largest tree, now called "Roosevelt," fell. Many of our citizens have long known of the existence of this grove, having seen the trees while hunting in the high mountains.

A more thorough discussion of the visit as provided earlier by Bigelow (1936) is provided by W. B. Lardner (Lardner and Brock 1924:224-228). On August 14, 1920, boosters from the Auburn Commercial Club visited the grove led by state Senator W. B. Lardner. A committee of five was appointed to name the trees by the forest supervisor. At that time the three largest trees standing measured 10', 8' 10", and 4' 10" in diameter. In order of size, from largest to smallest, the trees were named "Pershing", "Joffre", and "Haig", respectively, for the commanders of the United States, French, and British forces in World War I. The fourth largest measured 4' 6" in diameter and was named "Lardner" for the state senator. The larger of the two fallen trees was named Theodore Roosevelt. The committee named the grove the "Placer County Group of Big Trees". The other two smaller trees were unnamed and not measured. These same two trees were reported to be 4' 7" and 2' in diameter as described in an article by Biswell (1975).

The Joffre Tree is on the bank of a small creek and the Pershing is a little farther upstream on a north-facing slope a short distance from the creek. The other four trees form a close group near the creek on the north side of the drainage. There are two down trees which may have blown over between 1860 and 1880.

Interestingly, in 1892 the entire township was withdrawn from mineral entry. Based on a single visit and subsequent report by Eugene F. Weigel (USDI – Weigel:1892), in October 1892 the Secretary of the Interior (USDI:1892) in a letter to the Commissioner of the General Land Office declared “Upon the report, a copy of which is herewith enclosed, I have to direct that you shall reserve from public entry township 14 north, range 13 east, California.” In 1935 160 acres were set-aside as the Big Tree Public Service Site (USDA - Forest Service 1935). According to the USDA –Forest Service (1963) Big Trees Grove Management Plan, the area in 1949 was reclassified as a recreation area under Federal Regulation U-3 (b). At this time it was renamed “Placer County Big Tree Grove”. In 1980 the mineral withdrawal was vacated except for 160 acres around the grove. In 1993 an additional 40 acres was withdrawn to provide a minimal 1,000-foot buffer around the trees (USDA-Forest Service: 1993). With the signing of the Tahoe National Forest Land and Resource Management Plan (1990), 346 acres around the grove was designated as the “Placer County Big Tree Botanic Area” (Special Interest Area).

A brief history of planting giant sequoia seedlings within the Big Trees Grove is described in USDA –Forest Service (1963), Appendix I. The Native Sons of the Golden West made the earliest planting in 1928. About 10 small trees were planted in the draw which crosses the grove. The U.S Forest Service did the next planting in 1949. About 50 seedlings were planted over a 5 acre area in the grove.

Parn notes that there are four sapling size trees in the area of these 1928 and 1949 plantings. The records are poor in regards to tracking the success of these planting. However, three trees are thought to be original planted trees whereas one tree is considered a natural regeneration as verified through genetic testing.

In 1951 the Auburn Lions Club, in cooperation with the U.S Forest Service, cleared an area with a small bulldozer just to the east the group of four natural sequoias. Potted seedlings were planted. The seed source was from the Mountain Home Grove (USDA –Forest Service: 1963). In 2000, a Forest Service survival exam confirmed that 38 trees were still living.

In 1992 there were 10 seedlings planted from seed collected from the Placer Grove trees. These plantings were done in two areas to the east of the grove. Five were planted over the ridge top to the east and another group of five was planted in a drainage feeding Spruce Creek. Three of the seedlings survived on the ridge planting and are one to two feet tall. One seedling survived in the drainage and is about one foot tall. A Forest Service survival exam in 2000 confirmed their existence.

Vegetation Inventory

Inventory. The Placer Big Trees grove inventory (1999) was completed to measure and document existing condition of live and dead vegetation. The process described in "Forest Inventory and Analysis User's Guide" (FIA), USDA - Forest Service, Pacific Southwest Region, was used as the basis for the inventory design and data collection standards. The inventory design was slightly modified for use as described in "Integrated Resource Inventory Design for Giant Sequoia Groves on the Sequoia National Forest", May 1998 by Lew Jump.

A total of 20 FIA plots were located on a square grid spacing of 585 feet. These plots inventoried the 140-acre mini watershed, which contains the grove of seven giant sequoia specimens and two down trees. None of the sequoias were encountered with the plots. All seven of the natural live giant sequoia grove trees and the two down trees in the grove were measured separately from the inventory plots. Measurements were taken at 4½ feet high and on the uphill side of each standing tree. The down logs were measured at 4½ feet above the root collar.

The following data describes the vegetative condition that existed in and around the grove in 1999. No management activities or natural events (e.g., wildfire) have occurred since the inventory was conducted. It is assumed that stand density and tree mortality has increased since this data was collected.

1999 Inventory Results. The Pershing tree was 0.3 inch larger than reported in 1920. The Joffre tree was two inches larger, the Haig tree 7.1 inches larger, and the Lardner tree 8.5 inches larger. The Pershing tree had been reported to be 225 feet tall and the Joffre tree to be 250 feet. Their heights were measured to be less than this with this inventory. The measured heights using a clinometer and loggers tape were 206 and 230 respectively.

The seven existing natural giant sequoia trees fall within three main age groups. Due to the size of the two largest trees, no accurate age could be determined but were estimated to be 1,000 years old. Each of the smaller diameter group of four trees was nearly 400 years old and the natural sapling was around 100 years old. The smaller group of four natural giant trees was in the same age range as some of the oldest other conifer species in the grove area.

The non-local giant sequoia trees are contained in the Lions Club and other miscellaneous plantings. These trees range from 2.5 to 17 inches dbh with the average diameter around 12 inches dbh. Heights ranged from 10 to 80 feet with the dominant and co-dominant trees ranging from 50 to 80 feet. One of the non-local giant sequoias was only a few feet tall and in a shrub like condition.

Within the 140 acre watershed, the dominant species by percentage of live trees was white fir (65%) and sugar pine (16%). The area also contained nine percent Douglas fir. The other percentage of conifer and hardwood species was seven percent incense cedar, two percent ponderosa pine, and less than one percent California black oak. The average number of live trees per acre was 508. The most prevalent was white fir with 333 trees per acre. White fir makes up 57 percent of all live trees in the intermediate to suppressed canopy position. The average square feet of basal area per acre were 267. The higher basal area per acre was clustered in the five to 19

inches dbh classes (88 square feet of basal area per acre) and the 40-54 inches dbh classes (71 square feet of basal area per acre). The percentage of live trees in the one to four inches dbh class was 59 percent or 300 trees per acre. The number of trees by five inches dbh class rapidly dropped down until about the 25 to 29 inches dbh class where they measured consistently from one to three trees per acre in each of the larger dbh classes. The largest live tree encountered in the inventory was a 71 inches dbh Douglas fir.

The stand basal area weighted tree age was 224 years. Trees greater than 30 inches dbh ranged from 214 years old to 450 years old. Trees smaller than 30 inches dbh ranged from 48 years old to 154 years old.

Average stand height was 108 feet. Most of the trees were in the greater than 30 inches dbh classes averaged 150 feet or greater in height. Most trees range from 60 to 100 feet in the 10 to 29 inches dbh classes with those trees less than 10 inches dbh ranging from 10 to 40 feet in height.

There was an average of seven snags per acre greater than eight inches dbh. About two snags per acre were greater than 30 inches dbh and five snags per acre less than 30 inches dbh. There was an average of 27 square feet of basal area per acre. Approximately 16 square feet of basal area per acre was in the 30 inches and greater dbh classes and 11 in the less than 30 inches dbh classes.

There was an average of 20 down logs 10 inches and greater per acre. There were 14 down logs per acre in the 10 inches to 23 inches diameter classes and six down logs per acre in the 24 inches and greater diameter classes.

The main forest vegetation cover was mixed conifer species. The other vegetation covers are shrubs, hardwoods, forbs and grasses. The dominant shrubs were shrub tanoak, greenleaf manzanita, western azalea, snowberry, bear clover, pinemat manzanita, and bracken fern. A thesis written by Shawna L. Martinez in 1995 called "Plant Species Diversity and Vegetation Patterns Associated with Placer County Big Tree Grove and Northern *Sequoiadendron giganteum* Groves in California" gives a comprehensive plant list for the grove area.

Fuel loading of down woody material from the FIA inventory was 20.66 tons per acre. The District fuels specialist conducted a separate inventory at the same inventory plots using the Brown's Planer Intercept method. This method showed 28.08 tons per acre of down woody material. Neither of these methods includes the duff layer.

Based on inventory results, the stand is growing at a rate of 3.1 square feet of basal area per acre per year; therefore, estimates for current (2012) stand density can be drawn from this data.

Discussion. Forest health conditions in the grove are declining primarily due to overstocking in the under story. The competing vegetation of trees and shrubs is stressing the associated old growth conifers, preventing natural giant sequoia regeneration, and presenting ladder fuels, which threaten the old growth conifers, including the natural giant sequoias should a wildland fire occur. This can be attributed to the lack of naturally occurring low intensity fires that had

been prevalent throughout the Sierra Nevada prior to intense fire suppression activities over the past 50 to 100 years. These low intensity fires would have naturally reduced stocking in the stand. The lack of fire has left the grove with an overstocking of small shade tolerant trees, primarily white firs that are less than 100 years old. Eighty four percent of the trees (425/acre) were in the one to nine inches in diameter group with 57 percent of these trees being white fir in the intermediate and suppressed position. This has created a risk of a catastrophic wildland fire in the area that could kill the existing naturally occurring giant sequoia trees.

Non-local giant sequoias have been planted in the grove. Although there is a chance the non-local genes will cross pollinate with the local population, reproductive maturity usually does not appear before 150 to 200 years, cross pollination is not an issue at this time.

Several studies have provided the foundation for identifying the desired conditions in giant sequoia groves, especially the role of canopy gaps and fire in giant sequoia regeneration (Piirto and Rogers 1999; Meyer and Safford 2011).

Fire History

Naturally ignited, low intensity fires were a frequent occurrence in and around the Big Trees Grove prior to Euro-American settlement. Today the grove and botanical area, as well as the majority of surrounding national forest land are severely departed from the conditions that existed throughout the majority of the giant sequoias growth.

Information on past fire occurrence and fire return intervals (FRIs) were collected by the USDA Forest Service, Pacific Southwest Region Ecology Program; the Pacific Southwest Region Remote Sensing Lab; and The Nature Conservancy-California. Pre-euroamerican FRIs were determined from an exhaustive review of the fire history literature, expert opinion, and vegetation modeling. Contemporary FRIs were calculated using the California Interagency Fire Perimeters database (Safford et. al., 2011). Fire locations, historic and current FRIs, and degree of FRI departure in the Placer Grove area are located in the project record file.

Prior to Euro-American settlement, the Big Trees Grove had a Mean Reference Fire Return Interval (MRFRI) ranging from approximately nine to 15 years (Table 1) (Payne 2000) with more than 90 percent of the surrounding landscape burning less than every 16 years (Biggie Ecological Landscape Assessment, Fig. 9). According to the Fire Return Interval Departure (FRID) Map (Biggie Ecological Landscape Assessment, Fig. 10), the majority of the surrounding landscape shows a significant departure from the historic fire return interval with most fires occurring in this area over 82 years ago. The last fire to scar identified on the sampled trees was 116 years ago (Payne 2000). As a result, forests in the project area have an abundance of high density stands and substantial surface and ladder fuel accumulations.

Table 1. Point Fire Scar Samples (Payne 2000)

Tree 1 (n = 10)	Tree 2 (n = 14)	Tree 3 (n = 9)	Tree 4 (n = 11)	Tree 5 (n = 14)
1896 fire scar	1896 fire scar	1896 fire scar	1896 fire scar	1895 fire scar
1884 fire scar	1884 fire scar	1884 fire scar	1884 fire scar	1874 fire scar
1874 fire scar	1874 fire scar	1874 fire scar	1874 fire scar	1865 fire scar
1859 fire scar	1859 fire scar	1865 fire scar	1865 fire scar	1851 fire scar
1851 fire scar	1851 fire scar	1859 fire scar	1859 fire scar	1844 fire scar
1844 fire scar	1844 fire scar	1851 fire scar	1851 fire scar	1820 fire scar
1832 fire scar	1832 fire scar	1844 fire scar	1844 fire scar	1804 fire scar
1820 fire scar	1820 fire scar	1832 fire scar	1820 fire scar	1794 fire scar
1794 fire scar	1794 fire scar	1741 pith	1806 fire scar	1784 fire scar
1678 pith ¹	1784 fire scar		1764 fire scar	1750 fire scar
	1778 fire scar		1686 pith	1735 fire scar
	1750 fire scar			1726 fire scar
	1726 fire scar			1711 fire scar
	1630 pith			1632 pith
Mean 12.75	Mean 14.17	Mean 9.14	Mean 14.67	Mean 15.33

While the Big Trees Grove has not hosted a wildfire for at least 100 years, four large fires have occurred in the area surrounding the botanical area in the last 25 years. The Big Fire (1987) burned 1,035 acres in seven days. The Star Fire (2001) burned 16,464 acres in twenty days. The Ralston Fire (2006) burned 8,423 acres in twelve days. The Peavine Fire (2008) burned 581 acres in fourteen days. Like any vegetation fire, these fires burned with varying degrees of intensity, depending on changing fuel, weather and topographical features. Roughly 53 percent of the Star Fire was characterized as high intensity, stand replacing wildfire.

General

Two trails in the grove were constructed by inmate crews stationed at Greek Store during the summer of 1968. The Big Trees road was constructed in 1970 along with the beginning of the recreation complex of a parking lot, restroom facility (flush toilets), and picnic area.

No known logging has taken place in the grove area. Periodic hazard tree removals have occurred around recreational facilities and trails.

The soils in the grove watershed are of the Jocal, Hurlbut, Mariposa, and Deadwood series. The grove location is on the Mariposa-Jocal complex. Jocal series consists of deep and very deep, well drained soils. Mariposa soils are shallow and moderately deep, and have a thin surface layer.

The grove area has several perennial streams with an abundance of dogwood and alder along these streams.

Decision

I have made the decision to treat approximately 198 acres of Tahoe National Forest System Land in the and around the Placer Big Trees Grove (see Attachment A for maps). Only hand thinning

¹ Pith, as used in Table 1 means the core of the tree and the first tree ring date.

techniques will be used to treat the area. The project includes the following activities:

1. **Hand Thinning Followed by Prescribed Burning.** Hand thinning followed by prescribed burning will be used to treat surface and ladder fuels on 78 acres (all within a California spotted owl protected activity center [PAC] and 61 acres within a northern goshawk PAC). White fir, incense cedar, and Douglas fir, less than 6 inches diameter at breast height [dbh] and growing within 25 feet of another tree will be hand cut and either piled or lopped and scattered, followed by a low intensity area burn. Concentrations of small diameter trees that are at least 25 feet away from retention trees will be thinned to an average spacing of 25 feet (+/- 25 percent). All giant sequoia will be retained (natural and planted), as well as all ponderosa pine and sugar pine.

As part of prescribed burning preparation and containment activities, handline construction, tree pruning, and cutting of small diameter trees (less than 6 inches dbh) may also be necessary to protect important elements of owl habitat. Additionally, trees greater than 40 inches dbh, trees with cat-face scars, and all giant sequoias will have a 2-foot radial clearing of duff and vegetation away from their boles in order to provide additional protection during prescribed burning treatments.

Activity generated fuel located within 50 to 100 feet of the Grove Trail and the Forestview Trail will be hand piled prior to prescribed burning. Piles will not be constructed within 30 feet of the Grove Trail.

2. **Hand Thinning, Piling and Pile Burning.** Hand thinning material less than 6 inches dbh, piling and pile burning will occur on approximately 38 acres (none within a spotted owl PAC but 30 acres within a goshawk PAC). These activities are similar to those listed above; except prescribed burning activities will be limited to burning the piles created during hand thinning.
3. **Fuelbreak Creation.** In addition to the prescription listed in activity #1 (above), further efforts will be made to create a shaded fuelbreak (77 acres total; 47 acres within a spotted owl PAC and 39 acres within a goshawk PAC) along a dominant ridge that begins near the turnoff to Big Trees, and continues south and west above a large portion of the Forest View Trail. The fuelbreak will be constructed by disrupting the continuity of surface and ladder fuels by cutting trees and brush less than 6 inches dbh, limbing up branches of residual trees, piling cut material, and burning the piles.
4. **16-48 Roadside Fuels Treatments.** Approximately 0.7 mile of the 16-48 roadside has been identified for surface and ladder fuels reduction treatments. Vegetation up to 6 inches dbh and within 150 feet of each side of the road will be hand thinned and either piled and burned or chipped.
5. **Hazard Trees Neutralization.** Hazard trees will be neutralized around the Big Trees parking lot, along the two trails (Grove Trail and Forestview Trail) and along the 16-48 road. The material generated from falling the hazard trees will be limbed, piled, and burned, boles will be left in place.

6. **Targeted Giant Sequoia Regeneration.** One of the key objectives is to encourage regeneration of native giant sequoia within the grove. In order for natural regeneration to occur, bare mineral soil must be created. Two strategic locations have been identified to accomplish giant sequoia regeneration. The areas identified are existing openings (approximately ¼ acre) adjacent to the Pershing tree. These areas will be manually cleared of most brush. The resulting materials will be piled within the clearing so that localized spots of bare mineral soil will be created during pile burning. The two areas will be monitored for several subsequent years to see if natural regeneration is successful. If regeneration fails to occur, seedlings propagated from the genetically native trees may be planted. Site preparation for planting the seedlings will be limited to hand-grubbing to remove competing vegetation within a 5-foot radius of the seedling.

The following management requirements (Table 2) will reduce or prevent potentially adverse effects to forest resources.

Table 2. Management requirements designed to reduce or prevent adverse effects.

Potential Resource(s) Affected	Management Requirements Designed to Reduce or Prevent Adverse Effects	Responsible Person(s)
Botany	Rare plant occurrences (i.e. slender wintergreen [<i>Gaultheria ovatifolia</i>], long-bracted wintergreen [<i>Pyrola asarifolia</i> subspecies <i>bracteata</i>], and an unidentified moonwort and liverwort) along the permanent tributary of Big Mosquito Creek that runs through the Big Trees Grove will be flagged and project activities will be avoided in these areas.	Biologist, Layout/contract Specialist, and Implementation Team
Botany	Burn piles will be constructed on open ground or where shrub-form tan oak occurs rather than on existing mahala mat (<i>Ceanothus prostratus</i>) where feasible.	Biologist, Layout/contract Specialist, and Implementation Team
Recreation and Public Use	Provide for public safety and education by posting signs to inform public of project activities (i.e., thinning and prescribed burning). Also post notice on Tahoe National Forest website prior to treatments. Keep information current.	Layout/Contract Specialist, Fuels Specialist and Recreation Specialist
Recreation and Public Use	Protect all improvements including water system, signs, barriers, or bridges, etc. If any barriers or improvements are removed to facilitate activities, they must be re-installed in the same location and manner immediately following vegetation management operations.	Layout/Contract Specialist, Fuels Specialist and Recreation Specialist
Recreation and Public Use	Repair or replace damaged improvements caused by vegetation management operations and coordinate with recreation staff prior to beginning any repairs.	Layout/Contract Specialist, Fuels Specialist and Recreation Specialist
Recreation and Public Use	No hand piles shall be placed within 30 feet of the Big Trees Grove Trail or Forest View Trail. Prioritize burning of piles, so that piles within view of the trails are burned first.	Layout/Contract Specialist, Fuels Specialist and Recreation Specialist
Recreation and Public Use	Prescribed burning containment lines will be rehabilitated immediately following containment.	Layout/Contract Specialist, Fuels Specialist and Recreation Specialist

Potential Resource(s) Affected	Management Requirements Designed to Reduce or Prevent Adverse Effects	Responsible Person(s)
Recreation and Public Use	Hazard trees shall be felled away from designated roads, trails and picnic sites so that improvements remain open. Boles shall not be left in designated picnic sites or walkways.	Layout/Contract Specialist, Fuels Specialist and Recreation Specialist
Silviculture	Apply borax fungicide to all cut conifer stumps to prevent development of infection centers of annosus root disease.	Layout/Contract Specialist and Implementation Team
Watershed, Soils, and Aquatic Resources	<p>To reduce the potential for adverse cumulative watershed effects, implement state certified 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 Service Lands.</p> <p>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 of the BMPs in this list are applied during the preliminary project design stage and therefore are not referenced directly in the MRs below.</p> <p>2.11 equipment refueling and servicing 5.7 pesticide use planning process 5.8 pesticide application according to label directions and applicable legal requirements 5.9 pesticide application monitoring and evaluation 5.10 pesticide spill contingency planning 5.11 cleaning and disposing of pesticide containers and equipment 5.12 streamside and wet area protection during pesticide application 5.13 controlling pesticide drift during spray application 6.1 fire and fuels management activities 6.2 water quality and formulating fire prescriptions 6.3 prescribed burning and protection of water quality 7.3 protection of wetlands 7.4 Forest and Hazardous Substance Spill Prevention Control and Countermeasure (SPCC) Plan 7.8 cumulative off-site watershed effects</p>	Hydrologist, Layout/contract Specialist, and Fuels Implementation Team
Watershed and Aquatic Resources	<p>Applications of Sporax® will follow all State and Federal rules and regulations, including product label requirements as they apply to pesticides and BMPs for pesticide use:</p> <ul style="list-style-type: none"> Sporax will not be applied to within 25 feet of surface water. Sporax will be applied to all conifer stumps within 4 hours of felling. Sporax will not be applied during periods of sustained rain. <p>Prior to the Decision being signed, a Pesticide Use Proposal (FS-2100-2) for the application of Sporax needs to be completed and approved, and be present in the Project File and Contract. In addition, the Project File and Contract should include a spill plan tiered to the Forest Spill Plan.</p>	Hydrologist, Layout/contract Specialist, and Fuels Implementation Team

Potential Resource(s) Affected	Management Requirements Designed to Reduce or Prevent Adverse Effects	Responsible Person(s)
	BMP 5.7, 5.8, 5.9, 5.10, 5.11 and 5.12.	
Watershed, Soils, and Aquatic Resources	<p>Ground cover requirements for all activities: To protect against accelerated erosion and hydrophobicity, to maintain long-term soil productivity, and protect sensitive plants, the following guidelines should be applied during the planning and implementation of fuels treatments and timber management.</p> <p><u>Ground Cover - Monitoring</u> 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 BMPEP 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><u>Ground Cover Requirements Within the RCAs</u> 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 60% 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 vegetation, approximately 75% ground cover will be required. <p><u>General Ground Cover Requirements Outside of RCAs</u></p> <ul style="list-style-type: none"> • On soils with low to moderate erosion hazard ratings (0-35% slope), maintain 50% ground cover. • On soils with high erosion hazard ratings (25-50 % slope), maintain 60% ground cover. • On soils with very high hazard ratings (greater than 50% slopes), maintain 75% ground cover. <p>BMP 6.1, 6.2, and 6.3.</p>	Hydrologist, Layout/contract Specialist, and Fuels Implementation Team
Watershed, Soils, and Aquatic Resources	<p>Burn Prescriptions</p> <p><u>Hand Pile and Burn</u> No hand piling then burning of the piles will occur within 25 feet of riparian vegetation and stream channels.</p> <p><u>Burn Prescriptions in RCA</u></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 	Hydrologist, Layout/contract Specialist, and Fuels Implementation Team

Potential Resource(s) Affected	Management Requirements Designed to Reduce or Prevent Adverse Effects	Responsible Person(s)
	<p>feet of riparian vegetation. 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.</p> <ul style="list-style-type: none"> • No hand piling or burning would occur within 25 feet from riparian vegetation and stream channels. • In the Sequoia regeneration area, hand piles would be well spaced and not greater than 5 feet in diameter. After the piles are burned the burned area would be raked to break up soil hydrophobicity. • 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. • 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 springs. This distance may need to be increased depending on ground conditions to prevent burning through wetland features. <p>BMP 6.2 and 6.3</p>	
Wildlife	A California spotted owl limited operating period (LOP; March 1 to August 15) will apply to project-related chainsaw use, chipping, or prescribed burning within ¼ mile of spotted owl PAC PLA0002. The spotted owl LOP may be lifted until the start of the next breeding season (March 1) if protocol surveys determine that spotted owls associated with PLA0002 are not nesting or the LOP may be reduced in spatial extent to include only the area within ¼ mile of the current year's (e.g. 2013) PLA0002 activity center.	Biologist, Layout/contract Specialist, and Implementation Team
Wildlife	A northern goshawk limited operating period (February 15 to September 15) will apply to project-related chainsaw use, chipping, or prescribed burning within ¼ mile of goshawk PAC D54T19. The goshawk LOP may be lifted until the start of the next breeding season (February 15) if protocol surveys determine that goshawks associated with D54T19 are not nesting or the LOP may be reduced in spatial extent to include only the area within ¼ mile of the current year's (e.g. 2013) D54T19 nest site.	Biologist, Layout/contract Specialist, and Implementation Team
Wildlife	The District Wildlife Biologist (or a designated biologist) will examine hazard trees identified for neutralization 15 inches diameter at breast height (dbh) or greater to determine whether any are especially valuable to wildlife (e.g. have a nest cavity) and, if so, make recommendations for the retention of individual trees (e.g. posting hazard tree awareness signs and monitoring hazard trees for changes in conditions).	Biologist, Layout/contract Specialist, and Implementation Team
Wildlife	Detections of threatened, endangered, or sensitive (TES) species prior to or during project implementation will be reported to the District	Biologist, Layout/contract

Potential Resource(s) Affected	Management Requirements Designed to Reduce or Prevent Adverse Effects	Responsible Person(s)
	Wildlife Biologist for development of a recommendation regarding how to protect a discovered TES species in accordance with management direction for the Tahoe National Forest.	Specialist, and Implementation Team

Decision Framework

Timber stand and wildlife habitat improvements by means of manual small stem removal and prescribed burning are categorically excluded from documentation in an Environmental Assessment (EA) or and Environmental Impact Statement (EIS) under 36 CFR 220.6(e)(6), *“Timber stand and/or wildlife habitat improvement activities that do not include the use of herbicides or do not require more than 1 mile of low standard road construction.”* Artificial regeneration of the two designated areas is categorically excluded from documentation in an EA or an EIS under 36 CFR 220.6(e)(5), *“Regeneration of an area to native tree species, including site preparation that does not involve the use of herbicides or result in vegetation type conversion.”* In addition to fitting these categories, the following resource conditions were considered in determining whether a cause-effect relationship exists between the proposed activities and the potential effects on established resource conditions (36 CFR 220.6 (b)(1)):

- (1) *Federally listed threatened or endangered species or designated critical habitat, species proposed for Federal listing or proposed critical habitat, or Forest Service sensitive species.* The Big Trees Ecological Restoration and Protection Project was modified and mitigations (management requirements) adopted in consideration of plant and wildlife resources, in accordance with Forest Plan direction. The primary project modification was to use a 6-inch upper diameter limit, rather than a larger upper diameter limit, for tree thinning. This was done to maintain suitable habitat within a protected activity center for a California spotted owl, which is a Forest Service sensitive species. The project includes mitigations such as avoiding project activities in rare plant populations located adjacent to the creek (a perennial tributary to Big Mosquito Creek) that runs through the Big Trees grove and implementing limited operating periods for California spotted owl and northern goshawk for specific proposed project activities (e.g. chipping). Please refer to the project description and management requirements for full details regarding the project design and mitigations and to the biological assessment, biological evaluations, and management indicator species report for more details regarding species analyzed for this project. Given the project design and adopted mitigations no extraordinary circumstances exist for plant or wildlife resources.
- (2) *Flood plains, wetlands, or municipal watersheds.* There are no flood plains, wetlands or municipal watershed within the project area.
- (3) *Congressionally designated areas, such as wilderness, wilderness study areas, or national recreation areas.* There are no congressionally designated areas such as wilderness, wilderness study areas, or national recreation areas within the project area.

The Big Trees Botanical Special Interest Area is an administratively designated area.

- (4) *Inventoried roadless areas or potential wilderness areas.* There are no inventoried roadless areas or potential wilderness areas within the project area.
- (5) *Research natural areas.* There are no research natural areas within the project area.
- (6) *American Indian or Alaska Native religious or cultural sites.* There are no known American Indian religious or traditional cultural sites within the project area.
- (7) *American Indians religious or cultural sites, and Archaeological sites, or historic properties or areas.* Heritage Resource Reconnaissance Report R2012051700053 documents inventory results and management requirements for this project. There are no known archaeological sites within the project area. If sites are identified during implementation, they will be flagged for avoidance and the provisions as outlined in the First Amended Regional Programmatic Agreement among the U.S.D.A. Forest Service, Pacific Southwest Region California State Historic Preservation Officer, and Advisory Council on Historic Preservation, Attachment B, I. A. B. C. D. and E. of the Standard Protection Measures will be followed. When these protection measures are effectively applied, the Forest will have taken into account the effect of these undertakings on historic properties.

Even though the majority of the project area is within a California spotted owl PAC and a Botanical Special Interest Area, the mere presence of one or more resource conditions identified above and in 36 CFR 220.6(b) does not preclude use of categorical exclusions. The categorical exclusions (36 CFR 220.6(e)(6) and 36 CFR 220.6(e)(5)) are appropriate in this situation because the interdisciplinary team of resource specialists (Hydrologist, Soil Scientist, Wildlife Biologist, Botanist, Archaeologist, Silviculturist, Recreation Specialist, Vegetation Management Officer, Fuels Specialist, District Ranger, and Environmental Coordinator) took a hard look at the potential effects of the proposed treatments on these resources, as well as many others, and determined that the effects of implementing these activities will be of limited context and intensity and will not result in environmental effects to either the physical or biological components of the environment.

My decision will not threaten a violation of Federal, State, or local law and is consistent with the *Tahoe National Forest Land and Resource Management Plan* as amended by the SNFPA ROD (2004). These activities comply with the National Forest Management Act, Endangered Species Act, Clean Water Act, Migratory Land Birds Act, National Historic Preservation Act, among others. Reports completed for this project include a Borax Evaluation Report, Noxious Weeds Risk Assessment, Heritage Resource Reconnaissance Report, Biological Evaluation for Plants and Animals, Biological Assessment for Plants and Animals, and a Management Indicator Species Report.

Public Involvement

The public involvement aspect of this project began in September 2011 when informal emails were sent to potentially interested parties to determine interest in the project. There was an overall general support for the project. In June, 2012 a formal letter containing the proposal was sent to the six interested parties that responded to the SOPA (listed in January 2012) and

previous emails sent to solicit interest in the project. Three responses were received and their input considered in project design.

Administrative Review or Appeal Opportunities

Legal notice in the *Auburn Journal* newspaper (November 27, 2012) and a subsequent 30-day comment period for this proposal was provided pursuant to the March 19, 2012 order issued by the U. S. District Court for the Eastern District of California in Case No. CV F 11-679 LJO DLB, which enjoined the Forest Service from implementing 36 CFR 215.4(a) and 215.12(f). One interested party submitted substantive comments in a timely manner and has standing to appeal. Appeal regulations in 36 CFR 215 will be followed in the event of an appeal.

Contact Person

For additional information concerning this decision, please contact Kalie Crews, District NEPA Coordinator, American River Ranger District, 22830 Foresthill Rd, Foresthill, CA 95631. Phone: 530-478-6254 or email: kcrews@fs.fed.us.

Responsible Official


CHRIS FISCHER
District Ranger

Date 11/8/13

Attachment A: Project Map

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