Bear Gulch #2 THP

JAG Summary

Proposed Timber Harvest Area
Approximately 370 acres.

Location and Topography
The THP is located approximately 7 miles east southeast of the community of Fort Bragg, CA. The legal description is portion of Sections 28, 29, 30, 32 & 33, T18N, R16W, Mount Diablo Base and Meridian.

From the lowest drainage to the highest ridgetop, elevation range from 120 feet at the far southwestern THP boundary (Unit A) adjacent the South Fork Noyo River to 920 feet at the far east boundary of harvest units G and H. Slopes are gentle to moderately steep. Overall, slopes are between 10 to 85 percent, averaging 25 to 45 percent. Dormant debris landslides were observed during field preparation; however, no active land sliding was observed. A geology report was created for this project.

Harvest History
According to JDSF’s historic logging information, the proposed THP area was harvested sometime during the 1920’s. Most of the old growth was removed utilizing steam donkey yarding machines. The historic Caspar Logging Railroad was located along current Road 300 and parallel for most of the Class I reach of Bear Gulch.

The 1996 Bear Gulch Timber sale entered harvest units A-C, E & G. A commercial thin was performed for the entire sale area, utilizing both tractor and suspended cable log pulling methods. Harvest units D & F are composed of unentered 2nd growth conifers, making up approximately 27 acres or 7% of the total plan area.

Watershed and Stream Conditions
The THP area lies within the Parlin Creek Planning Watershed. The plan lies north of the South Fork Noyo River, parallel with JDSF Road 300. Bear Gulch transects harvest units A and B and lies north of harvest units D and G. Both the South Fork Noyo River and Bear Gulch are Class I watercourses supporting anadromous fish.

Early harvesting activities in the drainage utilized railcar transportation systems, leaving the stream in a highly-modified condition, with moderate amounts of large wood debris and sediment introduced into stream channels from adjacent slopes. Existing skid trails transect slopes and are in good condition, largely due to common forest practices when the most previous 1996 harvest entry was performed. Watershed impacts appear to be most severe immediately adjacent to Class I watercourses, where the historic Caspar Logging Railroad was immediately adjacent and/or crossed the watercourse channel. Class I, II and Class III watercourses are currently downcutting through deposited material. Class II streams appear to be highly seasonal with little water present during the summer months. All stream zones are well shaded throughout their lengths, including areas throughout the watershed.

Vegetation and Stand Conditions
The stand is comprised of approximately 85-90-year-old unmanaged second growth redwood, Douglas-fir and sparse grand fir. Hardwood species include tanoak, golden chinquapin, pacific madrone, a few wax myrtle and very sparse bay laurel. A major constituent in the understory is tanoak and huckleberry. Very few old growth conifers were observed during sale preparation.

It appears a good effort to reduce poorly formed and slower growing conifers was conducted during the 1996 Bear Gulch commercial thinning harvest. Generally, dominant and codominant redwood trees are well spaced with healthy live-crowns. The lesser component of intermediate and suppressed redwood and larger older Douglas-fir and grand fir show signs of decline, evidenced by the presence of thinning crowns and fungal conk on Douglas-fir. It appears a high proportion of larger Douglas-fir stems are non-merchantable.

Redwood sprouts, Douglas-fir and grand fir seedlings make up a third-growth component throughout the stand. The presence and growth rates of third growth conifers greatly vary throughout. Generally, conifer regeneration in open areas are growing at a moderate rate, however are growing much slower when adjacent to residual conifers and competing understory vegetation.

Hardwoods were harvested during the 1996 Bear Gulch commercial thinning. Smaller diameter 20-year old tanoak sprouts are abundant throughout the plan area. This sprouting is in direct competition with regenerating conifers and expected to respond to improved growing conditions. Overall, hardwoods over 12 inches DBH make up a small
percentage (10%) of the total stand basal area.

**Timber Harvest Preparation**
Existing roads were identified during field preparation and will be used for log hauling. To date, silviculture and timber harvest boundaries have been established around all harvest units (A-H). All watercourses have been identified, with associated WLPZ and Class III ELZ’s flagged. Most 2.5 acre groups have been established. A sample mark of the single tree selection and variable retention silviculture areas are complete.

Tractor yarding methods will be utilized in the same locations as the 1996 timber sale, increasing cable yarding areas where the topography allows.

A 2018 reconnaissance cruise was performed in all harvest units. The table below illustrates the cruise information.

<table>
<thead>
<tr>
<th>Species</th>
<th>QMD (per acre)</th>
<th>Trees (per acre)</th>
<th>Basal Area (sq.ft./acre)</th>
<th>Gross Conifer Volume (bd.ft./acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Redwood</td>
<td>26.2</td>
<td>62.3</td>
<td>234</td>
<td>55,000</td>
</tr>
<tr>
<td>Douglas-fir</td>
<td>25.3</td>
<td>13.0</td>
<td>45</td>
<td>14,700</td>
</tr>
<tr>
<td>Grand fir</td>
<td>18.7</td>
<td>3.4</td>
<td>7</td>
<td>1,600</td>
</tr>
<tr>
<td>Handwoods</td>
<td>15.3</td>
<td>24.5</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>Conifer Totals</td>
<td>25.8</td>
<td>78.7</td>
<td>286</td>
<td>71,300</td>
</tr>
</tbody>
</table>

Stand estimates were derived from a reconnaissance cruise (111 plots) at an intensity of 1 plot per 2.5 acres outside WLPZ’s.

According to the resource inventory information approximately 75-80% of the total conifer board foot volume is composed of redwood. Hardwoods compose approximately 10% of the total basal area.

**Silvicultural**
The entire 370-acre harvest area lies within JDSF’s “Matrix” landscape allocation. Harvest Unit A is adjacent to the “Late-seral development” landscape.

**Variable Retention (Harvest Unit A = 93 acres)**
Variable retention will be used to create a two-age stand. The plan proposes to use the dispersed retention strategy, implementing JDSF’s option A criteria for conifer retention of at least 50 ft²/acre for a “high” residual conifer basal area. Conifers under 14” DBH is not proposed for harvest. Hardwoods and tanoaks larger than 22” DBH will be retained. No point within the dispersed retention units shall be greater than 300’ from a retention tree.

**Selection Units (portion Harvest Unit A and H = 40 acres)**
Single tree selection will be implemented, targeting approximately 30-35% of pre-harvest BA. The targeted residual conifer basal area, as averaged throughout the stand is approximately 185-200 ft²/acre. Trees will be selected individually with the focus on reducing competition between residual trees and increasing sunlight to promote increased growth rates to understory third growth conifers and newly created redwood stump sprouts. Trees with superior spacing, live crown ratios, form and high vigor will be considered for retention. Hardwood trees will be harvested where they are directly competing with residual conifers.

**Group Selection (Harvest Units B-G (= 237 acres)**
This silviculture allows for conifer thinning between groups. JDSF’s option A criteria for thinning between groups includes conifer retention of at least 160 ft²/acre between created group openings. Trees will be selected adjacent to groups in harvest units B, C, E and G. Harvest units D and F were unentered from the previous 1996 Bear Gulch Timber sale, where trees will be selected to be thinned in all areas between groups. Selecting harvest trees adjacent to groups will allow an opportunity to thin conifers and reduce edge effect within created openings.

No more than 20% of the area designated for group selection harvest (excluding WLPZ’s) will be made up of group openings, where each opening will not exceed 2.5 acres. Establishing logical group opening locations will consider topography, harvesting operations and planning for future group locations.
**Hardwood Management & Tree Planting**
Herbicide treatment for hardwood control measures is not proposed. Mechanical felling of hardwoods will be conducted within the variable retention silviculture area and all created group openings, followed by planting redwood seedlings in areas that both improve conifer stocking and meet the forest practice rule stocking standards.

**Watercourse Protection**
Class I, II and III watercourses will have protection measures consistent with JDSF’s Forest Management Plan and that comply with the Forest Practice Rules.

**Class I’s**
- Class I Water Lake Protection Zone (WLPZ) is 150 feet
- Core Zone is a 30-foot no-cut from the WTL.
- Minimum 240 sq. ft. conifer basal area/acre retention and between 0 and 100 feet 13 largest conifers per 330 feet of stream channel. Maintain a minimum 80% of canopy cover between 0 and 100 feet and 70% cover between 100 and 150 feet.

**Class II-L’s**
- Class II Water Lake Protection Zone (WLPZ) is 100 feet
- Core Zone is a 30-foot no-cut from the WTL.
- Minimum 240 sq. ft. conifer basal area/acre retention and the 13 largest conifers per 330 feet of stream channel. Maintain a minimum 70% of canopy cover.

**Class II-L > 1000’ from Class I; Class II-S; Springs; Seeps; and Wet Areas**
- Class II WLPZ is 100 feet and Springs/Seeps WLPZ is 50-75 feet,
- Core Zone is a 15-foot no-cut from the WTL.
- Inner Zone area will focus on thinning from below.
- Minimum 240 sq. ft. conifer basal area/acre retention.

**Class III Watercourses**
- Class III watercourses have 30 to 50-foot Equipment Limitation Zones where ground based equipment will be limited. Except for the necessary removal of trees for safe cable yarding operations, no harvest shall occur within the channel zone.

**Roads and Harvest Systems**
Most of the roads were constructed as part of the 1996 Bear Gulch timber sale. Road 300 follows the same course as the historic Caspar Logging Railroad. Main roads within and adjacent to the plan area include JDSF Forest Roads 300, 305, 332, 330D and 301. Appurtenant roads include a segment of road 330 and 300 from the sale area to McGuire’s pond.

New road construction will include only 80 feet of seasonal road. This road construction is necessary to allow logging trucks to encroach from Road 301 to Road 300, allowing loaded logs trucks to travel west to east along appurtenant Road 300. All other roads are existing temporary, seasonal and permanent roads. Existing roads are in stable condition, requiring improvements due to inadequate culvert sizing, rusting culverts, and/or associated exiting and potential erosion. A few watercourses require new crossing construction along Road 300 to capture drainage of hydrologically connected watercourses. Approximately 1,500 feet of Road 332B is proposed for abandonment. Road abandonment work includes the removal of a Class II and a Class III watercourse crossing and installation of oversized waterbars.

**SENSITIVE RESOURCES**

**Northern Spotted Owl (NSO)**
The plan contains habitat suitable for NSO (*Strix occidentalis caurina*). Historic NSO activity center 550 is located just within ¼ mile, but outside 1,000 feet of the plan boundary. A two-year survey for the NSO began in 2018.

**Marbled Murrelet (MAMU)**
There are no MAMU habitat areas within ¼ mile of the THP area.
Botany
A botanical survey was performed beginning of spring 2018. Oregon goldthread (*Coptis laciniata*) is known to occur along the banks of the South Fork Noyo River, adjacent harvest units A and B. There were no other listed plant species was found.

Demonstration and Research Values
The THP will result in a range of stand density reductions in close proximity and with reasonable year-round access to facilitate research. The THP area in will provide a demonstration of silviculture methods and provide stand conditions within a portion of the Parlin Creek watershed with a recent history of similar harvesting techniques. Creation of a variety in stand conditions will maintain a post-harvest management regime, including a mix of even and uneven aged harvest units that will support opportunities for future research.

The plan lies within JDSF that is unavailable for herbicide use for reducing hardwood composition for the purpose of maintaining relative site occupancy of conifers vs. hardwoods. The proposed silviculture demonstrates how logging disturbance through combination of tree feeling and yarding effect 20-year hardwood spout composition within a range of silviculture prescriptions, without the use of herbicide hardwood control methods.

The plan will demonstrate increase growth and vigor of multi-aged stands.

The plan will demonstrate maintenance of aesthetic quality along Road 300 and within the view shed of a nearby campground.

Recreational and Aesthetic Considerations
Campgrounds exist within 1,000 feet of the logging area. The nearest THP boundary is just outside 300 feet and across the South Fork Noyo River from the “Roundhouse” campground.

Summary
The Bear Gulch #2 THP harvest methods, silviculture, fuel treatments, and species protection is consistent with the guidelines in the Forest Management Plan.