# UPPER HARE CREEK 2013 THP

Area: Approximately 280 acres

Silvicultural Prescription: Selection

Harvesting Systems: Approximately 70% (196 acres) of the THP will be cable-yarded, and 30% (84 acres) will be tractor-yarded.

| Pre-harvest Basal Area | Post-harvest Basal Area |
|---|---|
| Conifer: 215 $ft^2$ | Conifer: 140 $ft^2$ |
| Harwood: 12 $ft^2$ | Hardwood: 10 $ft^2$ |

**Stand Description**

Topography
The THP is located within the Hare Creek Planning Watershed. The THP is located approximately 5 miles southeast of Fort Bragg, CA. The legal description is Sections 26, 27, 34, 35 and 36, T18N, R17W, MDB&M. The elevation ranges from 200 feet to 920 feet above sea level. The slopes range from gentle to very steep. Steeper slopes, up to approximately 80%, will be cable yarded. The aspect of harvest units is variable, with a general aspect that trends to the north.

Vegetation and Stand Conditions
Most of the THP area consists of a dense, managed second-growth stand of conifer and hardwood trees approximately 80-90 years old with an understory that is generally open except for a thick huckleberry shrub cover that occupies sites dominated by hardwoods. Sword fern, redwood sorrel and bracken fern are common on upland sites.

A thinning from below occurred throughout the designated THP area in 1977. Then in 1993, approximately 20% of the area was logged with group selection. No thinning occurred between group openings.

Timber site for conifer species is classified as Site I and II (approximately 2% is Site I and 98% is Site II) throughout the plan area.

Watershed and Stream Conditions
The harvest plan is adjacent to Hare Creek which drains into the Pacific Ocean. Early harvesting activities in the drainage utilized tractors to yard the logs downslope to a railroad system located near the river. The stream is generally well shaded, but with elevated sediment loads. The watershed is exhibiting signs of recovery as the shade levels increase, large woody debris is recruited, and fine sediment is flushed from the system. Large woody debris was added to the mainstream in 1999 as part of a study project conducted by CAL FIRE and DFG. The smaller tributary channels upstream of the Class I watercourse are intermittent. Those that support non-fish aquatic life are generally low gradient with little or no surface flow during the dry period. Numerous large soil pipes have been observed in these channel bottoms. These are likely the result of early steam donkey yarding which utilized streams as yarding corridors. The smallest watercourses are primarily ephemeral and appear stable. Substantial evidence of active downcutting was not observed in the higher gradient streams that occur on steeper slopes.

Planned Silviculture
Single tree Selection will be implemented to initiate the conversion of the relatively evenaged stand to an uneven-aged condition. Approximately 35% of the preharvest conifer basal area (BA) will be removed and about 10-15% of the preharvest hardwood BA less than 20 inches DBH will be removed. This will help reduce competition from hardwoods while retaining the largest hardwoods for ecological values.

Throughout the harvest area management will focus on reducing competition between codominant crown classes. Spacing, live crown ratios and tree vigor will be the primary factors considered in identifying retention trees. Additionally, trees with unique structural characteristics will be retained when feasible.

Smaller, well growing intermediate trees will be retained to contribute to vertical diversity and when combined with regeneration, a multilayered stand will result. Some harvesting will occur in these intermediate classes but will likely be limited to trees of poor form.

No trees will be marked for harvest within the group openings of 1993.

**Demonstration and Research Values**

Individual tree selection in a stand comprised of 80-90 year old second growth. Harvesting to promote growth and structure development and maintain growth of understory conifers.

**Watercourse Protection**

Class I and II watercourse protections zones will be managed to create late-seral forest characteristics.

- *Class I Water Lake Protection Zone (WLPZ)* is 150 feet, 0 to 30 feet no-cut* from the watercourse transition line, 30 to 100 feet 80% canopy retention, 100 to 150 feet 70% canopy retention. Minimum 240 sq. ft. conifer basal area/acres retention and the 13 largest conifers per 330 feet of stream channel
  **No-cut WLPZ allows for the exception of harvesting cable corridor trees where needed*

- *Class II WLPZ* is 100 feet; 0 to 30 feet no-cut* from the watercourse transition line
  Minimum 240 sq. ft. conifer basal area/acre retention and the ten largest conifers per 330 feet (13 for large class II streams) of stream channel
  **No-cut WLPZ allows for the exception of harvesting cable corridor trees where needed*

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

*Springs and Seeps*

- Natural springs and seeps that may provide habitat for non-fish aquatic species are provided the same protection as Class II watercourses

Roads

Road layout is ongoing; however, it is anticipated that approximately three quarters to one mile of new seasonal road construction primarily on the ridgetop will be necessary to provide access for cable logging on steeper slopes as well as ground-based operations on more gentle ground. At least one road segment will have an average gradient of approximately 15-20%. Any road segment on slopes over 50% will use full bench construction.

Recreational Considerations

- No campgrounds or official hiking trails are located in the area
- Nearby and adjacent forest roads are available for public recreational access, including hiking, bicycle riding and equestrian use
  - Harvesting of trees immediately adjacent to existing roads will be limited
- For public safety, area closed signs will be posted. These signs will be posted at all points where roads enter the area of timber operations.

Aesthetic Considerations

The THP area is visible from JDSF Road 500. Road 500 is part of the designated Road and Trail Corridor and as such, any harvesting proposed near the road is designed to retain and/or improve aesthetic values (near and/or long-term) and maintain shade canopy where it currently exists.

Marbled Murrelet

There is no known Marbled Murrelet habitat within 0.25 miles of the THP boundary.

Northern Spotted Owl

The plan contains habitat suitable for Northern Spotted Owl (NSO) (*Strix occidentalis caurina*). There is no recorded NSO activity center within the plan boundary or within 0.25 miles of the plan boundary. Northern Spotted Owl surveys will be conducted as required by protocol and appropriate buffers provided if NSO are found.

Invasive Weeds

Minimum road widths will be maintained to reduce the potential for invasive weed dispersal. Most of the proposed roads will be slash compacted post-harvest which should reduce the potential of invasive weeds.

# Upper Hare THP

## Preliminary Map

Sec 26, 27, 34, 35, 36
T18N R17W MDB&M
USGS 7.5 min Quadrangle:
Noyo Hill 1991

THP is Selection Silviculture
Contour Interval = 40'

Map Point
Existing Landing
Spring / Seep
Gate
Helicopter Landing (emergency use only)
Unstable Area
Tractor Yarding (all other areas Cable Yarding)
High EHR (all other areas Moderate EHR)
Site Class I (all other areas Site Class II)

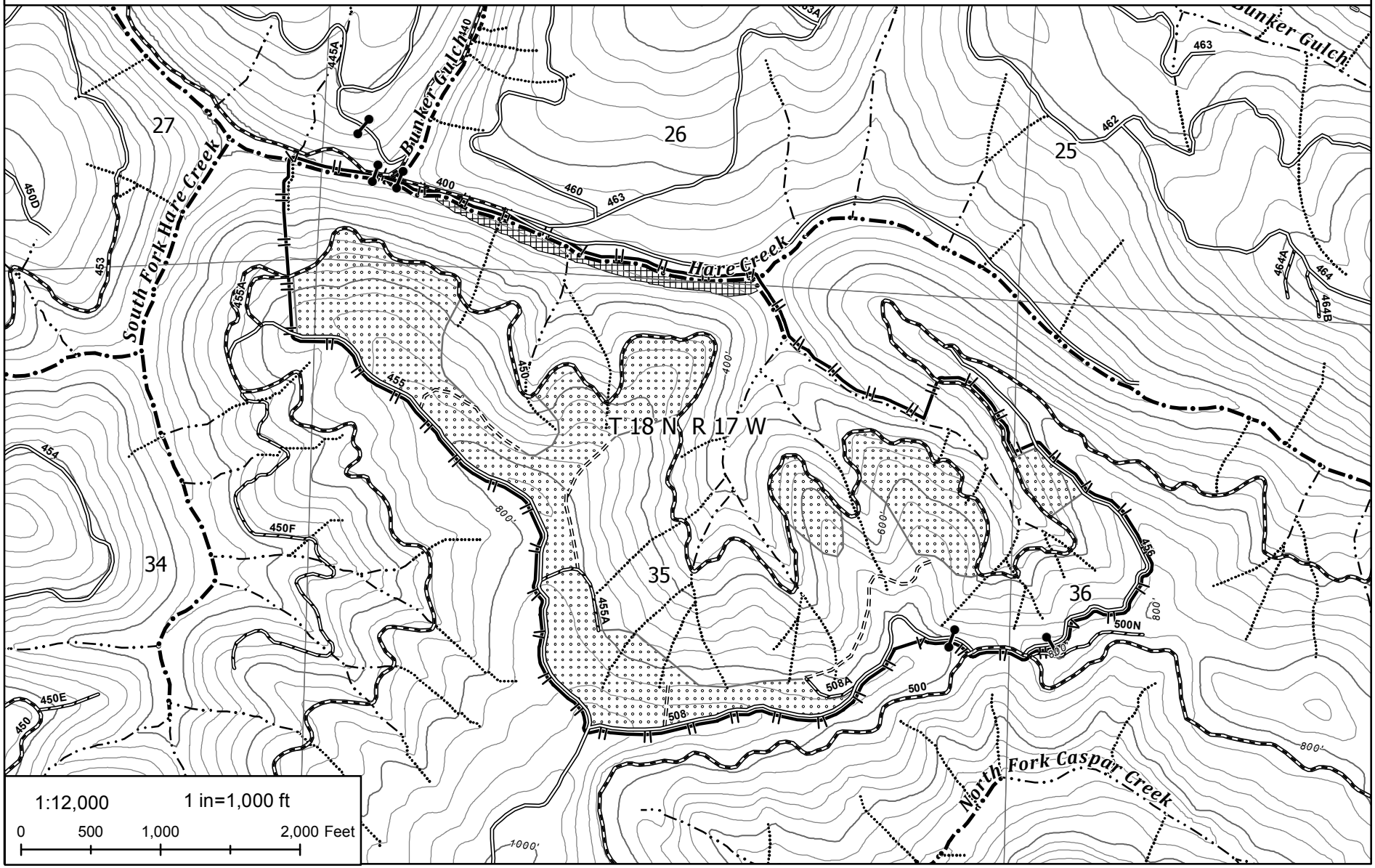
THP Boundary
Watercourse Class Transition
Class II L 1,000' Transition
Class I Watercourse (salmonoid spawning & rearing habitat)
Class II L Watercourse
Class II S Watercourse
Class III Watercourse

Utility Line
Proposed Seasonal Road
Existing Permanent Road
Existing Seasonal Road
Existing Temporary Road
Road > 200' & >15% Grade

NOTE: Permanent and seasonal roads considered "public"

JACKSON DEMONSTRATION STATE FOREST
3/26/2012 Headley

**DRAFT VERSION: Not all symbology included in map detail. Legend & map elements are subject to additions & removals.**



# UNIT (FRI) Summary Report Uppper_Hare_Creek for trees >=11 DBH

| SPECIES | TPA | TPA SE | BA | BA SE | QMD | BF Vol./Acre Gross | BF Gross SE | BF Vol./Acre Net | CF Vol./Acre | CF Vol SE |
|---|---|---|---|---|---|---|---|---|---|---|
| Young Redwood | 55.8 | 10.48 | 168.6 | 28.39 | 23.5 | 33,837.2 | 6,177.0 | 32,595. | 5,975.0 | 1,052.93 |
| Young Douglas-fir | 11.4 | 4.41 | 42.9 | 11.81 | 26.3 | 14,755.7 | 3,843.1 | 13,946. | 2,290.3 | 599.02 |
| Grand Fir | 0.6 | 0.00 | 2.9 | 0.00 | 28.5 | 1,229.9 | 0.0 | 1,095.9 | 166.7 | 0.00 |
| Tanoak | 12.6 | 9.54 | 12.9 | 10.09 | 13.7 | 703.8 | 569.9 | 0.0 | 280.9 | 226.48 |
| **Conife** | 67.8 | 11.12 | 214.3 | 29.83 | 24.1 | 49,822.7 | 7,059.4 | 47,637.6 | 8,431.9 | 1,174.86 |
| **Hardwood** | 12.6 | 9.54 | 12.9 | 10.09 | 13.7 | 703.8 | 569.9 | | 280.9 | 226.48 |
| **Grand Total** | 80.4 | 14.21 | 227.1 | 30.93 | 22.8 | 50,526.5 | 7,038.1 | | 8,712.8 | 1,179.79 |

All plots within preliminary THP boundary

2005 FRI Height equations and 1989 Calibrated Volume equations used

# of Plots 28

# FRI Stand Table (Average Stems per Acre) Uppper_Hare_Creek

28 plots

| | DBH | Young RW | Old RW | Young D-fir | Old D-Fir | Grand Fir | Western Hemlock | Bishop Pine | Other conifers | **Conifer Subtotal** | TO | Other Hardwood | **TOTAL** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 6 | 14.6 | | | | | | | | 14.6 | | | 14.6 |
| | 8 | 3.9 | | | | | | | | 3.9 | 4.0 | | 7.9 |
| | 10 | 10.5 | | | | | | | | 10.5 | 10.5 | | 21.0 |
| **Subtotal** | | 29.0 | | | | | | | | 29.0 | 14.5 | | 43.4 |
| | 12 | 5.5 | | 1.8 | | | | | | 7.3 | 7.3 | | 14.6 |
| | 14 | 12.0 | | 2.5 | | | | | | 14.6 | 2.8 | | 17.3 |
| | 16 | 6.1 | | | | | | | | 6.1 | 2.0 | | 8.2 |
| **Subtotal** | | 23.6 | | 4.4 | | | | | | 28.0 | 12.1 | | 40.1 |
| | 18 | 5.7 | | | | | | | | 5.7 | | | 5.7 |
| | 20 | 3.3 | | | | | | | | 3.3 | | | 3.3 |
| | 22 | 1.7 | | | | | | | | 1.7 | | | 1.7 |
| **Subtotal** | | 10.6 | | | | | | | | 10.6 | | | 10.6 |
| | 24 | 2.7 | | 1.9 | | | | | | 4.6 | 0.5 | | 5.1 |
| | 26 | 2.4 | | 1.1 | | 0.4 | | | | 3.9 | | | 3.9 |
| | 28 | 3.3 | | 1.0 | | | | | | 4.3 | | | 4.3 |
| **Subtotal** | | 8.4 | | 4.1 | | 0.4 | | | | 12.8 | 0.5 | | 13.3 |
| | 30 | 3.5 | | 0.9 | | | | | | 4.4 | | | 4.4 |
| | 32 | 2.8 | | 0.8 | | 0.3 | | | | 3.8 | | | 3.8 |
| | 34 | 3.0 | | 0.2 | | | | | | 3.2 | | | 3.2 |
| **Subtotal** | | 9.3 | | 1.9 | | 0.3 | | | | 11.4 | | | 11.4 |
| | 36 | 2.0 | | 0.6 | | | | | | 2.6 | | | 2.6 |
| | 38 | 0.7 | | 0.5 | | | | | | 1.3 | | | 1.3 |
| | 40 | 0.5 | | 0.7 | | | | | | 1.1 | | | 1.1 |
| **Subtotal** | | 3.2 | | 1.8 | | | | | | 5.0 | | | 5.0 |
| | 42 | | | 0.1 | | | | | | 0.1 | | | 0.1 |
| | 44 | 0.4 | | 0.1 | | | | | | 0.5 | | | 0.5 |
| | 46 | 0.6 | | | | | | | | 0.6 | | | 0.6 |
| **Subtotal** | | 1.0 | | 0.3 | | | | | | 1.3 | | | 1.3 |
| | 48+ | 0.4 | | | | | | | | 0.4 | | | 0.4 |
| **Subtotal** | | 0.4 | | | | | | | | 0.4 | | | 0.4 |
| **TOTAL** | | 85.6 | 0.0 | 12.4 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | | 27.0 | 0.0 | 125.6 |
| | | | | | | | | | **Conifer Total** | 98.6 | | | |