

FOR ADMIN. USE ONLY
Amendments-date & S or M

TIMBER HARVESTING PLAN

STATE OF CALIFORNIA
DEPARTMENT OF FORESTRY
AND FIRE PROTECTION
RM-63 (02-03)

FOR ADMIN. USE ONLY

THP No. 1-14-079 SCR

Dates Rec'd **22** 22 2014

1. _____ 7. _____
2. _____ 8. _____
3. _____ 9. _____
4. _____ 10. _____
5. _____ 11. _____
6. _____ 12. _____

THP Name: **Scout Gulch THP**

(In the CDF FPS, this is "THP Description")

Date Filed **Aug 1 2014**

Date Approved **SEPT 30, 2014**

If this is a Modified THP, check box ☐ Date Expires **SEPT 29, 2019**

Extensions 1) ☐ **211**

One 2-year extension possible

This Timber Harvesting Plan (THP) form, when properly completed, is designed to comply with the Forest Practice Act (FPA) and Board of Forestry and Fire Protection rules. See separate instructions for information on completing this form. NOTE: The form must be printed legibly in ink or typewritten. The THP is divided into six sections. If more space is necessary to answer a question, continue the answer at the end of the appropriate section of your THP. If writing an electronic version, insert additional space for your answer. Please distinguish answers from questions by font change, **bold** or underline.

SECTION I - GENERAL INFORMATION

This THP conforms to my/our plan and upon approval, I/we agree to conduct harvesting in accordance therewith. Consent is hereby given to the Director of Forestry and Fire Protection, and his or her agents and employees, to enter the premises to inspect timber operations for compliance with the Forest Practice Act and Forest Practice Rules.

1. TIMBER OWNER(S) OF RECORD: Name: **Cal Poly Corporation**

Address: **Foundation Administration Building 15, 1 Grand Ave.**

City: **San Luis Obispo**

State: **CA** Zip: **93407**

Phone: **(805) 756-1131**

Signature _____

Starr Lee

Date **6/27/14**

NOTE: The timber owner is responsible for payment of a yield tax. Timber Yield Tax Information may be obtained at the Timber Tax Section, MIC: 60, State Board of Equalization, P.O. Box 942879, Sacramento, California 94279-0060; phone 1-800-400-7115; BOE Web Page at <http://www.boe.ca.gov>.

2. TIMBERLAND OWNER(S) OF RECORD: Name: **Cal Poly Corporation**

Address: **Foundation Administration Building 15, 1 Grand Ave.**

City: **San Luis Obispo**

State: **CA** Zip: **93407**

Phone: **(805) 756-1131**

Signature _____

Starr Lee

Date **6/27/14**

3. LICENSED TIMBER OPERATOR(S): Name: **Big Creek Lumber Company**
(If unknown, so state. You must notify CDF of LTO prior to start of operations)

Lic. No.: **A300**

Address: **3564 Highway 1**

City: **Davenport**

State: **CA** Zip: **95017**

Phone: **(831) 457-5042**

Signature _____

Robert Reynolds RPF#2636

Date **6/26/14**

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Scout Gulch THP

JUL 22 2014

Revised June 18th 2014

COAST AREA OFFICE
RESOURCE MANAGEMENT

4. PLAN SUBMITTER(S): Name: Cal Poly Corporation

Address: Foundation Administration Building 15, 1 Grand Ave.

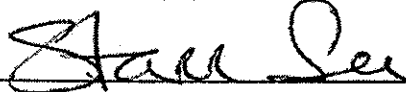
City: San Luis Obispo

State: CA Zip: 93407

Phone: (805) 756-1131

(Submitter must be from 1, 2, or 3 above. He/she must sign below. Ref. Title 14 CCR 1032.7 (a))

Signature



Date

6/27/14

Starr Lee

5. be a. List person to contact on-site who is responsible for the conduct of the operation. If unknown, so state and name must be provided for inclusion in the THP prior to start of timber operations.

Name: Harlan Tranmer

Address: 3564 Highway 1

City: Davenport

State: CA Zip: 95017

Phone: (831) 457-6390

- b. ☒ Yes ☐ No Will the timber operator be employed for the construction and maintenance of roads and landings during conduct of timber operations? If no, who is responsible?

c. Who is responsible for erosion control maintenance after timber operations have ceased and until certification of the Work Completion Report? If not the LTO, then a written agreement must be provided per 14 CCR 1050 (c).

Erosion control maintenance after timber operations have ceased and until certification of the Work Completion Report shall be the responsibility of the LTO. Following certification of the Work Completion Report, the plan submitter shall be responsible for erosion control maintenance.

14 CCR 916.9(p) – The erosion control maintenance period on permanent and seasonal roads and associated landings that are not abandoned in accordance with 14 CCR 923.8 shall be three years.

6. a. Expected date of commencement of timber operations:

☐ date of THP conformance, or ☒ 5 days from the date of THP approval (date)

- b. Expected date of completion of timber operations:

☒ 5 years from date of THP conformance, or ☐ (date)

7. The timber operation will occur within the:

☒ COAST FOREST DISTRICT

☒ Southern Subdistrict of the Coast F. D.

☐ SOUTHERN FOREST DISTRICT

☐ High use subdistrict of the Southern F. D.

☐ NORTHERN FOREST DISTRICT

☐ The Tahoe Regional Planning Authority Jurisdiction

☒ A County with Special Regulations, identify:
Santa Cruz

☒ Coastal Zone, no Special Treatment Area

☐ Special Treatment Area(s), type and identify:

☐ Other

8. Location of the timber operation by legal description: **DAVENPORT, USGS 7.5' Quadrangle 1997**
Base and Meridian: ☒ Mount Diablo ☐ Humboldt ☐ San Bernardino

Portions of the following Sections listed below

Section	Township	Range	Acreage	County	Assessor's Parcel Number (Optional)	Zoning
1 and 12	T10S	R4W	1	Santa Cruz	057-131-60	TP

The sections are projected in the Rancho Agua Puerca y Las Trancas.

TOTAL ACREAGE 1 (Logging Area Only)

Planning Watershed: CALWATER Version, Identification Number, and Name:

Calwater Version 2.2, #3304.110204, Scott Creek

9. ☐ Yes ☒ No Has a Timberland Conversion been submitted? If yes, list expected approval date or permit number and expiration date if already approved.
10. ☐ Yes ☒ No Is there an approved Sustained Yield Plan for this property? Number _____ Date app.
☐ Yes ☒ No Has a Sustained Yield Plan been submitted but not approved? Number _____ Date sub.
11. ☐ Yes ☒ No Is there a THP or NTMP on file with CDF for any portion of the plan area for which a Report of Satisfactory Stocking has not been issued by CDF?
If yes, identify the THP or NTMP number(s): _____
- ☐ Yes ☒ No Is there a contiguous even aged unit with regeneration less than five years old or less than five feet tall? If yes, explain. Ref. Title 14 CCR 913.1 (933.1, 953.1) (a)(4).
12. ☒ Yes ☐ No Is a Notice of Intent necessary for this THP?
☐ Yes ☒ No If yes, was the Notice of Intent posted as required by 14 CCR 1032.7 (g)?

The Notice of Intent was prepared and posted as required per 14 CCR 924.1, 926.3 and 1032.7.

13. RPF preparing the THP: Name Harlan Tranmer RPF Number: 2850
Address: 3564 Highway 1
City: Davenport State: CA Zip: 95017 Phone: (831) 457-6390

RPF preparing the THP: Name Steve Auten RPF Number: 2734
Address: 125 Swanton Road
City: Davenport State: CA Zip: 95017 Phone: (831) 458-5413

- a. ☒ Yes ☐ No I have notified the plan submitter(s), in writing, of their responsibilities pursuant to 14 CCR 1035 of the Forest Practice Rules.
- ☒ Yes ☐ No I have notified the timber owner and the timberland owner of their responsibilities for compliance with the Forest Practice Act and rules, specifically the stocking requirements of the rules and the maintenance of erosion control structures of the rules.
- b. ☒ Yes ☐ No I will provide the timber operator with a copy of the portions of the approved THP as listed in 14 CCR 1035 (f). If "no", who will provide the LTO a copy of the approved THP?

I will meet with the LTO prior to commencement of operations to advise of sensitive conditions and provisions of the plan pursuant to 14 CCR 1035.2.

c. I have the following authority and responsibilities for preparation and administration of the THP and timber operation. (Include both work completed and work remaining to be done):

The responsibility of THP preparation, layout, timber marking, plan review, and plan implementation is the sole responsibility of Harlan Tranmer, RPF #2850. RPF Tranmer has been retained by the plan submitter to provide professional advice to the LTO and timberland owner throughout timber operations, and to ensure that an RPF or supervised designee is present on the logging area at a sufficient frequency to know the progress of operations.

d. Additional required work requiring an RPF, which I do not have the authority or responsibility to perform:

No additional required work has been identified at this time.

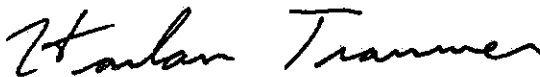
e. After considering the rules of the Board of Forestry and Fire Protection and the mitigation measures incorporated in this THP, I have determined that the timber operation:

☐ will have a significant adverse impact on the environment. (Statement of reasons for overriding considerations contained in Section III).

☒ will not have a significant adverse impact on the environment.

Registered Professional Forester: I certify that I, or my supervised designee, personally inspected the THP area, and this plan complies with the Forest Practice Act, the Forest Practice Rules and the Professional Foresters Law. If this is a Modified THP, I also, certify that: 1) the conditions or facts stated in 14 CCR 1051 (a) (1) - (16) exist on the THP area at the time of submission, preparation, mitigation, and analysis of the THP and no identified potential significant effects remain undisclosed; and 2) I, or my supervised designee, will meet with the LTO at the THP site, before timber operations commence, to review and discuss the contents and implementation of the Modified THP.

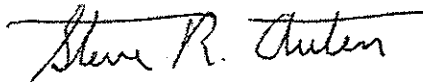
Signature



Date 6/18/14

Harlan Tranmer RPF# 2850

Signature



Date 6/18/14

Steve Auten RPF# 2734

Additional RPF responsibilities

The RPF or the designee of the RPF is present on the harvest area sufficient hours each week to know the operations' progress and advise the timber operator. The RPF informs the timber operator of potential environmental impacts and the mitigation measures to be taken to minimize such impacts.

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**COAST AREA OFFICE
RESOURCE MANAGEMENT**

4.1

10/1/14

SECTION II - PLAN OF TIMBER OPERATIONS

NOTE: If a provision of this THP is proposed that is different than the standard rule, the explanation and justification should normally be included in Section III unless it is clearer and better understood as part of Section II.

14.

a. Check the Silvicultural methods or treatments allowed by the rules that are to be applied under this THP. Specify the option chosen to demonstrate Maximum Sustained Production (MSP) according to 14 CCR 913 (933, 953) .11. If more than one method or treatment will be used show boundaries on map and list approximate acreage for each.

☐ Clearcutting _____ ac. ☐ Shelterwood Prep. Step _____ ac. ☐ Seed Tree Seed Step _____ ac.
☐ Shelterwood Seed Step _____ ac. ☐ Seed Tree Removal Step _____ ac.
☐ Shelterwood Removal Step _____ ac.

☒ Selection 1 _____ ac. ☐ Group Selection _____ ac. ☐ Transition _____ ac.

☐ Commercial Thinning _____ ac. ☐ Road Right of Way _____ ac. ☐ Sanitation Salvage _____ ac.

☐ Special Treatment Area _____ ac. ☐ Rehab. of _____ ac. ☐ Fuelbreak _____ ac.
Understocked Area

☐ Alternative _____ ac. ☐ Conversion _____ ac. ☐ Non-Timberland Area _____ ac.

Total acreage 1 _____ ac.: Explain if total is different from that in 8. MSP option chosen: (a) ☐ (b) ☐ (c) ☒

b. If Selection, Group Selection, Commercial Thinning, Sanitation Salvage or Alternative methods are selected the post harvest stocking levels (differentiated by site if applicable) must be stated. Note mapping requirements of 1034 (x) (12).

Site Class is III for the entire THP area.

In accordance with 14 CCR 913.8 (a) and 926.25(a)(3) Leave un-cut a well-distributed timber stand after timber operations have been completed on the logging area with:

- 1) 40% retention for trees DBH >18" (14 year re-entry allowed under 14 CCR 926.25(a)(1))
- 2) >60% retention for trees 14" – 18" DBH
- 3) >50% retention for trees 12 – 14" DBH
- 4) At least 75 square feet of basal area per acre in stems 1 inch or greater DBH
- 5) Leave trees shall be thrifty coniferous trees, which are dominant or co-dominant in crown class prior to timber harvesting or which have crowns typical of such dominant or co-dominant trees. They shall be free from significant damage caused by timber operations. No conifer shall be cut which is more than 22.9 m (75 feet) from a leave tree 30.5 cm (12 in.) DBH or larger located within the logging area.

Wildlife Retention Trees

Marking shall be conducted with consideration for wildlife tree retention using the following characteristics as a guide. Where feasible preference will be given to:

- Redwoods with boles having at least 75% defect,
- Trees with "goose-pen" boles (basal cavities) extending three feet or more above the ground level,
- Trees having cavities or hollows for hole nesting birds or stick nests,
- Stand alone granary trees,
- Stand alone Douglas-fir trees with "wolfy" branching structure, including large, spreading limbs and/or large crown,
- Douglas-fir trees significantly infected (50% or more of the tree visibly affected) with *Phelinus pini*,
- Hardwoods 24"+DBH, where present on site where not directly inhibiting growth of conifers. If 24" DBH trees are not available, next largest diameters on site can be utilized,
- Morphodite and deformed stem forms including dead, forked, reiterated, or flat tops, epicormic branching or platforms,
- Trees with loose slabs of bark, deeply fissured or cracked bark,
- Isolated or unique trees exhibiting multiple characteristics are preferred wildlife trees and should be retained unless removal is specifically needed to achieve management objectives on a high need basis, to address unavoidable safety hazards, or pertaining to infrastructure utilization.

The THP shall also adhere to MSP option (c)(2) which refers to 14 CCR 913.1 (c)(1)(A) and states: Retention of at least 15 square feet basal area on site I, II, III lands per acre of trees 18 inches DBH and larger. Seed trees must be of full crown, capable of seed production and representative of the best phenotypes available in the preharvest stand.

- c. ☐ Yes ☐ No Will evenage regeneration step units be larger than those specified in the rules (20 acres tractor, 30 acres cable)? If yes, provide substantial evidence that the THP contains measures to accomplish any of subsections (A) - (E) of 14 CCR 913 (933, 953) .1 (a) (2) in Section III of the THP. List below any instructions to the LTO necessary to meet (A) - (E) not found elsewhere in the THP. These units must be designated on map and listed by size.

Not Applicable

- d. Trees to be harvested or retained must be marked by or marked under the supervision of the RPF. Specify how the trees will be marked and whether harvested or retained.

Trees to be cut will be marked by the RPF or supervised designee prior to felling operations with a horizontal stripe of paint on at least two sides as well as a painted stump mark(s). Marking will focus on trees with defect first, while providing for spacing, release potential, aesthetics, and wildlife habitat. All operations will be conducted to minimize damage to residual conifer species. A sample mark covering at least 10 percent of the harvest area will be available for review on the PHI.

- ☐ Yes ☒ No Is a waiver of marking by the RPF requirement requested? If yes, how will LTO determine which trees will be harvested or retained? If yes and more than one silvicultural method, or Group Selection is to be used, how will LTO determine boundaries of different methods or groups?

- e. Forest products to be harvested:

Coast redwood sawlogs and hardwood fuelwood.

- f. ☐ Yes ☒ No Are group B species proposed for management?
☐ Yes ☒ No Are group B or non-indigenous A species to be used to meet stocking standards?
☐ Yes ☒ No Will group B species need to be reduced to maintain relative site occupancy of A species?

If any answer is yes, list the species, describe treatment, and provide the LTO with necessary felling and slash treatment guidance. Explain who is responsible and what additional follow-up measures of manual treatment or herbicide treatment are to be expected to maintain relative site occupancy of A species. Explain when a licensed Pest Control Advisor shall be involved in this process.

Though Group B species are not proposed for management, hardwoods that may have a significant negative effect on redwood sprouts may be removed. Redwoods and hardwoods to be cut shall be marked by the RPF or supervised designee. Hardwood removal may also occur when hardwoods are incidentally damaged during falling and yarding activities. This activity is not required to maintain site occupancy of Group A species, but will aid in promoting a healthy and thrifty uneven aged forest stand.

- g. Other instructions to LTO concerning felling operations:

1. The fallers shall consult with the RPF or supervised designee on any and all questionable tree marking.
2. Falling of trees across Class III watercourses will be allowed in the general logging season including the winter period for concerns of safety. If a cross felled tree impedes or could potentially impede the flow of a Class III watercourse in the winter period, the blockage or section of log shall be bucked out immediately by hand.
3. Arrows painted on trees indicate the direction to fall the tree.
4. A painted "S" or pink HARVEST BOUNDARY flagging on a tree indicates that no more trees are marked past that tree.
5. When falling near watercourses, fallers shall minimize canopy reduction by preserving hardwoods or unmarked conifers whenever possible.
6. There are no powerlines within or adjacent to the THP area.

- h. ☐ Yes ☒ No Will artificial regeneration be required to meet stocking standards?
- i. ☐ Yes ☒ No Will site preparation be used to meet stocking standards? If yes, provide the information required for a site preparation addendum, as per 14 CCR 915.4 (935.4, 955.4).
- j. If the rehabilitation method is chosen provide a regeneration plan as required by 14 CCR 913 (933, 953) .4 (b).

PESTS

15. a. ☒ Yes ☐ No Is this THP within an area that the Board of Forestry and Fire Protection has declared a Zone of Infestation or Infection, pursuant to PRC 4712 - 4718? If yes, identify feasible measures being taken to mitigate adverse infestation or infection impacts from the timber operation. See 14 CCR 917 (937, 957) .9 (a).

PITCH CANKER:

The THP is located within the Coastal Pitch Canker Zone of Infestation. Pitch Canker is caused by the fungus *Fusarium subglutinans*, sp. *pini*. Of the local trees only Monterey pine (*Pinus radiata*) show susceptibility outside the laboratory. No pine trees are proposed for harvest under this THP. Nevertheless, should any pine be damaged during timber operations, any resulting pine material shall be lopped and scattered at the site.

SUDDEN OAK DEATH:

The THP is located in Santa Cruz County, which is one of the 14 California counties in which plants infected with sudden oak death (*Phytophthora ramorum*) have been identified. There are no known occurrences of Sudden Oak Death in the THP area.

The approved THP shall function as the compliance agreement to allow for the removal of wood products for commercialization from the project area for one (1) year and if SOD mitigations change after that point, the THP will be amended to include the most current SOD information and mitigations. The RPF will be responsible for informing the LTO prior to the start-up of initial operations during any given year regarding current SOD hosts, regulated area, and operational requirements necessary to be in conformance with the compliance agreement. The California Oak Mortality Task Force monitors the distribution of sudden oak death and recommends Best Management Practices at <http://www.suddenoakdeath.org>.

1. Counties regulated for Sudden Oak Death at the time of plan submittal include: Alameda, Contra Costa, Humboldt, Lake, Marin, Mendocino, Monterey, Napa, San Mateo, Santa Clara, Santa Cruz, Solano, Sonoma, San Francisco, and Trinity.
2. Regulated hosts include: Redwood, Douglas-fir, coast live oak, tanoak, shreve's oak, Pacific madrone, and California bay (See Section III, item 15 for a complete host list).
3. Regulated hosts listed above may be removed from the THP area either as logs stripped of branches, hardwood rounds, or split firewood. No material from host plants less than four inches in diameter will be removed from the project area. No host foliage will be removed from the project area.
4. The LTO will visually inspect all vehicles leaving the project area to insure that the vehicles are free of host plant debris (leaves, twigs, and branches).
5. The approved THP will function as the compliance agreement to allow for the movement of host material within the regulated area.
6. No host material will be moved outside of the regulated area unless the destination is amended to the plan.

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AUG 08 2014

Revised August 6th 2014

- b. ☐ Yes ☒ No If outside a declared zone, are there any insect, disease or pest problems of significance in the THP area? If yes, describe the proposed measures to improve the health, vigor, and productivity of the stand(s).

Douglas-fir trees on the property suffer from *Phellinus pini* (a root and butt rot) as indicated by the exhibition of fruiting bodies on the boles of some of the trees. This fungus is a common sight within the Douglas-fir stands in the Southern Sub-district. It is present on the property, but its frequency does not appear to be unusually high.

HARVESTING PRACTICES

16. Indicate type of yarding system and equipment to be used:

- | GROUND BASED* | CABLE | SPECIAL |
|---|--|--|
| a. <input checked="" type="checkbox"/> Tractor, including end/long lining | d. <input type="checkbox"/> Cable, ground lead | g. <input type="checkbox"/> Animal |
| b. <input checked="" type="checkbox"/> Rubber tired skidder, Forwarder | e. <input type="checkbox"/> Cable, high lead | h. <input type="checkbox"/> Helicopter |
| c. <input type="checkbox"/> Feller buncher | f. <input type="checkbox"/> Cable, Skyline | i. <input type="checkbox"/> Other |

* All tractor operations restrictions apply to ground based equipment.

17. Erosion Hazard Rating: Indicate Erosion Hazard Ratings present on THP. (Must match EHR worksheets)

☒ Low ☒ Moderate ☐ High ☐ Extreme
If more than one rating is checked, areas must be delineated on map down to 20 acres in size (10 acres for high and Extreme EHRs in the Coast District).

18. Soil Stabilization: In addition to the standard waterbreak requirements describe soil stabilization measures or additional erosion control measures to be implemented and the location of their application. See requirements of 14 CCR 916.7 (936.7, 956.7), and 923.2 (943.2, 963.2) (m), and 923.5 (943.5, 963.5) (f).

GENERAL PROVISIONS FOR SOIL STABILIZATION AND EROSION CONTROL

1. Logging roads, landings or tractor roads shall not be used when visibly turbid water from the road, landing or tractor road (skid trail) or an inside ditch associated with the logging road, landing or tractor road may reach a watercourse or lake in amounts sufficient to cause a turbidity increase in Class I, II, III or IV waters.
2. Grading to obtain a drier running surface more than one time before reincorporation of any resulting berms back into the road surface is prohibited.
3. All skid trails utilized (existing or proposed) in the operation shall be outsloped to the extent possible (except where stated otherwise), waterbarred, and surfaced with tractor-crushed slash and debris where feasible following completion of use, or as otherwise specified in the plan. Where tractor-crushed slash is applied, minimum coverage will be 75%. In areas where slopes are too steep or there is a lack of slash and debris and tractor crushing is not feasible, hand trashing or another method of effective erosion control shall be implemented.
4. Ground based equipment shall utilize skid trails designated by the RPF, or supervised designee, for yarding operations.
5. Per 14 CCR 923.5(f), landings shall be sloped or ditched to prevent water from accumulating on the landings. Discharge points shall be located and designed to reduce erosion. Landing surfaces shall be treated prior to the onset of the winter period (if landings will not be utilized for winter period operations) with effective erosion control measures upon completion of operations. Refer to item 23, WINTER OPERATIONS, for protocol on landing use in the winter period.

6. Any constructed road, along with fillslopes, shall be treated with effective erosion control measures. In addition, any constructed road shall be outsloped where feasible and drained with water breaks or rolling dips as per 14 CCR 923.9(a).
7. Effective Erosion Control Measures may include, but are not limited to, seed, straw mulch, tractor crushed slash, hand placed slash, or rock.
8. Grass seeding for Effective Erosion Control purposes may include seeding at an application rate of 25 – 35 lbs. per acre at the discretion of the RPF or supervised designee. Barley, wheat, buckwheat, (excluding annual rye), or other species known to effectively control surface erosion may be used.
9. Straw material for the THP shall be rice straw. Straw coverage shall exceed 90% of the treated bared surface and any treated area that has been subject to reuse or has less than 90% surface cover shall be treated again prior to the end of timber operations.
10. During operations, the RPF, or supervised designee, shall flag the location of all waterbreaks on the truck roads prior to installation. Truck roads shall be outsloped where feasible. The waterbreak spacing shall meet the standard for Low and Moderate EHR and shall conform to 14 CCR 914.6(c), as depicted in the following table:

Table 1. Erosion Hazard Spacing for Waterbar Installation

14CCR 914.6(c) Maximum Distance Between Waterbreaks (in feet)				
Erosion Hazard Rating (EHR)	Roads or Trails <10%	Roads or Trails 11 - 25%	Roads or Trails 26 - 50%	Roads or Trails >50%
Low	300'	200'	150'	100'
Moderate	200'	150'	100'	75'

11. Where vegetation is not adequate to act as a sediment filter at waterbar or dip outlet locations, the LTO shall armor the road drainage outlets with slash or chunks of wood that are of adequate size to reduce the erosion potential.
12. Per 916.9(m) all tractor roads shall have drainage and/or drainage collection and storage facilities installed as soon as practical following yarding and prior to either (1) start of any rain which causes overland flow across, or along the disturbed surface within a WLPZ, or within any ELZ or EEZ designated for watercourse or lake protection, or (2) any day with a National Weather Service forecast of a chance of rain of 30 percent or more, a flash flood warning, or a flash flood watch.
13. Per 14 CCR 923.2 (m), sidecast or fill material extending more than 20 ft. in slope distance from the outside edge of a roadbed which has access to a watercourse or lake which is protected by a WLPZ shall be seeded, slash packed, planted, mulched, removed or treated as specified in the THP to adequately reduce soil erosion.
14. Per 14 CCR 923.5 (f)(4), Sidecast or fill material extending more than 20 ft. in slope distance from the outside edge of the landing and which has access to a watercourse or lake shall be seeded, slash packed, planted, mulched, removed, or treated as specified in the THP to adequately reduce soil erosion.
15. Per 14 CCR 916.9(o) The RPF has addressed potential erosion sites in the logging area through the road and skid trail mitigation sites located throughout the plan area.

GENERAL PROVISIONS FOR SOIL STABILIZATION IN THE WLPZ OR ELZ

16. Concurrent with use for log hauling, all traveled surfaces of logging roads in a WLPZ or within any ELZ or EEZ designated for watercourse or lake protection shall be treated for erosion control as needed to minimize soil erosion and sediment transport and to prevent the discharge of sediment into watercourses and lakes in quantities deleterious to the beneficial uses of water.
17. For areas disturbed within the WLPZ adjacent to Class II waters from May 1 through October 15, treatment shall be completed prior to the start of any rain that causes overland flow across or along the disturbed surface. For areas disturbed from October 16 through April 15, treatment shall be completed prior to any day for which a chance of rain of 30% or greater is forecast by the National Weather Service or within 10 days, whichever is earlier.
18. Areas that will be evaluated for the necessity of soil stabilization measures include:
- (A) Approaches to tractor road watercourse crossings between drainage facilities closest to the crossing
 - (B) Road cut banks and fill
 - (C) Any bared areas in the WLPZ or ELZ that are greater than 100 square feet
 - (D) Any other area of disturbed soil that threatens to discharge sediment into waters in amounts deleterious to the quality and beneficial uses of water.
 - (E) Landing surfaces
 - (F) Newly constructed road prisms

19. ☐ Yes ☒ No Are tractor or skidder constructed layouts to be used? If yes, specify the location and extent of use:
20. ☐ Yes ☐ No Will ground based equipment be used within the area(s) designated for cable yarding? If yes, specify the location and for what purpose the equipment will be used. See 14 CCR 914.3 (934.3, 954.3) (e).

Not applicable.

21. Within the THP area will ground based equipment be used on:

- a. ☐ Yes ☒ No Unstable soils or slide areas? Only allowed if unavoidable.
- b. ☐ Yes ☒ No Slopes over 65%?
- c. ☐ Yes ☒ No Slopes over 50% with high or extreme EHR?
- d. ☐ Yes ☒ No Slopes between 50% and 65% with moderate EHR where heavy equipment use will not be restricted to the limits described in 14 CCR 914 (934, 954) .2 (f) (2) (i) or (ii)?
- e. ☐ Yes ☒ No Slopes over 50% which lead without flattening to sufficiently dissipate water flow and trap sediment before it reaches a watercourse or lake?

If a. is yes, provide site specific measures to minimize effect of operations on slope stability below. Provide explanation and justification in section III as required per 14 CCR 914 (934, 954) .2 (d). CDF requests the RPF consider flagging tractor road locations if "a." is yes.

If b., c., d. or e. is yes:

- 1) the location of tractor roads must be flagged on the ground prior to the PHI or start of operations if a PHI is not required, and
- 2) you must clearly explain the proposed exception and justify why the standard rule is not feasible or would not comply with 14 CCR 914 (934, 954).

The location of heavy equipment operation on unstable areas or any use beyond the limitations of the standard rules must be shown on the map. List specific instructions to the LTO below.

22. ☐ Yes ☒ No Are any alternative practices to the standard harvesting or erosion control rules proposed for this plan? If yes, provide all the information as required by 14 CCR 914 (934, 954) .9 in Section III. List specific instructions to the LTO below.

WINTER OPERATIONS

23. a. ☒ Yes ☐ No Will timber operations occur during the winter period? If yes, complete "b, c, or d." State in space provided if exempt because yarding method will be cable, helicopter, or balloon.
- b. ☐ Yes ☒ No Will mechanical site preparation be conducted during the winter period? If yes, complete "d".
- c. ☐ I choose the in-lieu option as allowed in 14 CCR 914 (934, 954) .7 (c). Specify below the procedures listed in subsections (1) and (2), and list the site specific measures for operations in the WLPZ and unstable areas as required by subsection (3), if there will be no winter operations in these areas, so state.
- d. ☒ I choose to prepare a winter operating plan per 14 CCR 914 (934, 954) .7 (b).

WINTER PERIOD OPERATING PLAN

The winter period in Santa Cruz County, as defined in 14 CCR 926.18 is October 15 through April 15. However this THP is located in a watershed with listed anadromous salmonids and is subject to 14 CCR 916.9(l) which states that the extended wet weather period for watersheds known to support anadromous salmonids is from October 15th – May 1st. This winter operating plan divides the winter period into two periods; the fall period and the winter period which are described below.

The LTO shall review the plan with the RPF prior to the commencement of Winter Operations so that they may agree on the extent of operations, as well as prioritize the location and progression of operations.

1. Erosion Hazard rating: The EHR is Low and Moderate for the entire plan area. Refer to the Soil and EHR map at the end of Section II and the EHR worksheet located in Section V.
2. Mechanical site preparation methods: None
3. Yarding System: Ground based equipment operations are proposed for the winter period. *Operations shall not occur during the winter operating period within the Class I and II WLPZ.*
4. The Winter Operating Plan describes operations from October 15th to May 1st divided into two periods, the fall operating period and the winter operating period.
 - a. Fall operating period: October 16th through November 30th prior to accumulation of 1/4 inch of precipitation.
 - b. Winter operating period: Following accumulation of 1/4 inch of precipitation or December 1st (whichever occurs first) through May 1st. This period is also known as the wet season.
5. Erosion control facilities timing: During the winter period, erosion control structures will be installed:
 - a. Concurrent with completion of use per 14 CCR 914.6(b) or
 - b. As per 14 CCR 916.9(n)(6), for areas disturbed from October 15 to May 1, treatment shall be completed prior to any day for which a chance of rain of 30 percent or greater is forecast by the National Weather Service or within 10 days, whichever is earlier.
 - c. During the winter period, all erosion control materials, including but not limited to straw mulch, seed, wattles, or slash accumulations, shall be prepositioned in locations to allow for rapid and timely treatment application of erosion control measures described in Item 18.
6. Consideration of form of precipitation: Rain
7. Ground conditions: Tractor operations, timber falling, loading, and hauling shall only occur prior to the wet season and during periods of low antecedent soil wetness, when saturated soil conditions do not exist.
8. Silvicultural system: Single Tree Selection as per 14 CCR 913.8(a)

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9. All operations within the WLPZ and ELZ will be completed by November 15th or when ¼ inch of precipitation has accumulated after October 15th, whichever occurs first, with the exception of, lopping, tree planting, and erosion control.
10. The following are equipment limitations during the fall and winter periods:
- During the winter period, no timber falling, yarding, loading, or hauling will be conducted.
 - During the winter period, only lopping, planting, light vehicle access (pick-up trucks or smaller vehicles such as quad-runners), and erosion control structure installation is allowed.
 - During the fall operating period, all operations are allowed prior to ¼ inch of precipitation.
 - During the fall operating period, not more than two skid trails (refers only to trails > 300 feet in length) per piece of skidding equipment shall be open (i.e. not waterbarred) at any time.
 - As per 14 CCR 916.9(l)(3), logging roads, landings, and tractor roads shall not be used when sediment from the logging road, landing or tractor road surface is transported to a watercourse or drainage facility that discharges into a watercourse in amounts sufficient to cause a visible increase in turbidity in Class I, II, III, or IV watercourse.
 - As per 14 CCR 916.9(l)(4), logging roads and landings shall not be used for log hauling when saturated soil conditions result in the visible increase in turbidity specified in (e) above.
 - As per 14 CCR 916.9(k)(5), grading to obtain a drier running surface more than one time before reincorporation of any resulting berms back in to the road surface is prohibited.
 - All roads in the WLPZ that will be used following initial soil saturation in any winter period shall be rocked.
 - The RPF shall evaluate the condition of the currently rocked section of haul road to determine if additional rocking is necessary to maintain a competent running surface.
11. Known Unstable areas: There are no known unstable areas within the THP boundaries.

ROADS AND LANDINGS

24. Will any roads be constructed? ☐ Yes ☒ No, or reconstructed? ☐ Yes ☒ No. If yes, check items "a." through "g."
- Will any landings be constructed? ☐ Yes ☒ No, or reconstructed? ☐ Yes ☒ No. If yes, check items "h." through "k."
- | | |
|--|---|
| a. <input type="checkbox"/> Yes <input type="checkbox"/> No | Will new or reconstructed roads be wider than single lane with turnouts? |
| b. <input type="checkbox"/> Yes <input type="checkbox"/> No | Are logging roads proposed in areas of unstable soils or known slide-prone areas? |
| c. <input type="checkbox"/> Yes <input type="checkbox"/> No | Will new roads exceed a grade of 15% or have pitches of up to 20% for distances greater than 500 feet? Map must identify any new or reconstructed road segments that exceed an average 15% grade for over 200 feet. |
| d. <input type="checkbox"/> Yes <input type="checkbox"/> No | Are roads to be constructed or reconstructed, other than crossings, within the WLPZ of a watercourse? If yes, completion of THP Item 27 a. will satisfy required documentation. |
| e. <input type="checkbox"/> Yes <input type="checkbox"/> No | Will roads be located across more than 100 feet of lineal distance on slopes over 65%, or on slopes over 50% which are within 100 feet of the boundary of a WLPZ? |
| f. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Will any roads or watercourse crossings be abandoned? |
| g. <input type="checkbox"/> Yes <input type="checkbox"/> No | Are exceptions proposed for flagging or otherwise identifying the location or roads to be constructed? |
| h. <input type="checkbox"/> Yes <input type="checkbox"/> No | Will any landings exceed one half acre in size? If any landing exceeds one quarter acre in size or requires substantial excavation the location must be shown on the map. |
| i. <input type="checkbox"/> Yes <input type="checkbox"/> No | Are any landings proposed in areas of unstable soils or known slide prone areas? |
| j. <input type="checkbox"/> Yes <input type="checkbox"/> No | Will any landings be located on slopes over 65% or on slopes over 50% which are within 100 feet of the boundary of a WLPZ? |
| k. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Will any landings be abandoned? |
25. If any section in "item 24" above is answered yes, specify site-specific measures to reduce adverse impacts and list any additional or special information needed by the LTO concerning the construction, maintenance, and/or abandonment of roads or landings, as required by 14 CCR Article 12. Include required explanation and justification in THP Section III.

WATERCOURSE AND LAKE PROTECTION ZONE (WLPZ) AND DOMESTIC WATER SUPPLY PROTECTION MEASURES

26. a. ☒ Yes ☐ No Are there any watercourse or lakes which contain Class I through IV waters on or adjacent to the plan area? If yes, list the class, WLPZ or ELZ width, and protective measures determined from Table I and/or 14 CCR 916 (936, 956) .4 (c) of the WLPZ rules for each watercourse. Specify if Class III or IV watercourses have WLPZ, ELZ or both.
- b. ☒ Yes ☐ No Are there any watercourse crossings that require mapping per 14 CCR 1034 (x) (7)?

See crossing descriptions below.

- c. ☐ Yes ☒ No Will tractor road watercourse crossings involve the use of a culvert? If yes state minimum diameter and length for each culvert (may be shown on map).
- d. ☒ Yes ☐ No Is this THP Review Process to be used to meet Department of Fish and Game CEQA review requirements? If yes, attach the 1602 Addendum below or at the end of this Section II; provide the background information and analysis in Section III; list instructions for LTO below for the installation, protection measures, and mitigation measures; as per THP Form Instructions or CDF Mass Mailing, 07/02/1999, "Fish and Game Code 1603 Agreements and THP Documentation".

All suitable California Red-legged frog habitat shall maintain a 30 foot no-cut buffer; no equipment within the no-cut buffer, and trees shall be felled away from suitable habitat

Protection and Restoration of the Beneficial Functions of the Riparian Zone in Watersheds with Listed Anadromous Salmonids, per 14 CCR § 916.9.

CHANNEL ZONE REQUIREMENTS PER 14 CCR § 916.9(e):

1. There shall be no timber operations within the channel zone with the following exceptions:
- (B). Actions necessary for the construction, reconstruction, removal, or abandonment of approved watercourse crossings.
- (C). Actions necessary for the protection of public health, safety and general welfare. This includes actions necessary to protect infrastructure facilities including, but not limited to, roads, bridges, powerlines, utilities, water drafting structures, homes, and other legally permitted structures.
- (E). Class III watercourses consistent with CCR § 916.9 subsection (h)(7).

This THP shall comply with WLPZ/ELZ measures per 14 CCR § 916.9(g) – (h) as applicable:

CLASS I WATERCOURSES WITH CONFINED CHANNELS IN WATERSHEDS IN THE COASTAL ANADROMY ZONE:

1. No trees shall be harvested within the Class I WLPZ.
2. The Class I WLPZ shall be clearly identified on the ground by the RPF who prepared the plan, or his designee, with paint, flagging, or other suitable means, prior to the PHI.
3. Class I WLPZ widths shall be at a minimum of 100 feet from the Watercourse Transition Line.

CLASS II WATERCOURSES:

Note: There are no WLPZ springs in or within 100 feet of the THP area.

Class II WLPZ Widths as per 14 CCR § 916.5:

<30%	30-50%	>50%
50 Feet	75 Feet	100 Feet

1. The Class II WLPZ shall be clearly identified on the ground by the RPF who prepared the plan, or designee, with paint, flagging, or other suitable means, prior to the PHI.

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2. To ensure retention of shade canopy filter strip properties and the maintenance of wildlife values described in 14 CCR 916.4(b), trees within the WLPZ shall be marked by the RPF or supervised designee prior to the PHI.
3. No equipment will be operated within the WLPZ unless explained and justified in this THP.
4. No salvage logging shall occur within the Class II WLPZ as part of this THP.
5. Retain all trees within the Class II WLPZ that meet the following criteria:
 - a. all trees located within the channel zone;
 - b. all trees that have boles that overlap the edge of the channel zone; and
 - c. all trees with live roots permeating the bank or providing channel grade control, with the following exception:
 - i. 1/3 of the stems of redwoods with live roots permeating the bank or providing channel grade control may be harvested.
6. Where sufficient spacing exists prior to harvesting, retained redwood trees greater than or equal to 12 inches dbh shall not be spaced more than 25 feet apart.
7. A minimum of 80% overstory canopy shall be maintained within the channel zone. If 80% overstory canopy is not present within the channel zone, the existing overstory canopy within the channel shall not be reduced. Throughout the remainder of the WLPZ, at least 50% of the total canopy covering the ground shall be left in a well-distributed, multistoried stand composed of a diversity of species similar to that found prior to the start of operations. The residual overstory canopy shall be composed of at least 25% of the existing overstory conifers.
8. No more than 1/3 of the conifers 18" dbh or larger may be harvested.

CLASS III WATERCOURSES:

There are no Class III watercourses in or adjacent to the THP area.

WATERCOURSE CROSSINGS

Crossing X1 is a permanent rocked road to be used for hauling which crosses a Class II watercourse. The existing crossing consists of a culvert that is approximately 5 feet in diameter. The culvert is functioning but is rusted and has begun to collapse. The road surface is 20 feet wide. The stream channel is 16 feet wide at the top of the bank and the stream bed is 8 feet below the road surface. The active channel is only four feet wide and 6-12 inches deep. The size of the stream channel is due to downcutting through deep alluvium that was in place prior to the first logging conducted in the early 1900s.

The watercourse was observed during the heaviest rainfall event of the winter of 2013-2014. Flow was estimated to be less than 1 cubic foot per second. There is no flow in late summer/early fall. The Class II designation is due to small perennial pools which were 8 inches deep or less in early spring of 2014. If the watercourse is flowing at the time of crossing replacement, install a coffer dam upstream of the culvert and route the flow through a pipe through the work area.

Replace the culvert with a 30 foot long corrugated metal arch pipe culvert 5 foot high by 7 feet wide at the widest point at the bottom (70 inch diameter culvert, squashed). Place the culvert *approximately 8 inches below stream grade (provided that there are no obstructions to excavations such as bed rock)* and align it with the stream channel. Compact fill in 1 foot lifts. The fill over the culvert will be 2.5-3 feet deep at the shallowest point.

Install a critical dip in the road on the downhill side of the culvert. The road on the other side of the culvert is already raised which will prevent flow from the road from entering the stream channel. Rock the road surface within the WLPZ at least 2 inches deep.

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Armor the culvert inlet *and* outlet with rip-rap or larger rock keyed into place from the channel to the top of the culvert. Cover bare soils with straw and seed (excluding annual rye) or other native vegetation. An adequate trash rack is already located up stream.

Refer to the Crossing X1 Diagram at the end of this Section.

Information required by Fish and Game Code 1611 is located in Section III.

27. Are site specific practices proposed in-lieu of the following standard WLPZ practices?

- a. ☒ Yes ☐ No Prohibition of the construction or reconstruction of roads, construction or use of tractor roads or landings in Class I, II, III, or IV watercourses, WLPZs, marshes, wet meadows, and other wet areas except as follows:
- (1) At prepared tractor road crossings.
 - (2) Crossings of Class III watercourses which are dry at time of timber operations.
 - (3) At existing road crossings.
 - (4) At new tractor and road crossings approved by Department of Fish and Game.
- b. ☐ Yes ☒ No Retention of non-commercial vegetation bordering and covering meadows and wet areas?
- c. ☐ Yes ☒ No Directional felling of trees within the WLPZ away from the watercourse or lake?
- d. ☐ Yes ☒ No Decrease of width(s) of the WLPZ(s)?
- e. ☐ Yes ☒ No Protection of watercourses which conduct class IV waters?
- f. ☒ Yes ☐ No Exclusion of heavy equipment from the WLPZ except as follows:
- (1) At prepared tractor road crossings.
 - (2) Crossings of Class III watercourses which are dry at time of timber operations.
 - (3) At existing road crossings.
 - (4) At new tractor and road crossings approved by Department of Fish and Game.
- g. ☐ Yes ☒ No Establishment of ELZ for Class III watercourses unless sideslopes are <30% and EHR is low?
- h. ☐ Yes ☒ No Retention of at least 50% of the overstory canopy in the WLPZ?
- i. ☐ Yes ☒ No Retention of at least 50% of the understory in the WLPZ?
- j. ☐ Yes ☒ No Are any additional in-lieu or any alternative practices proposed for watercourse or lake protection?

NOTE: A yes answer to any of items "a." through "j." constitutes an in-lieu practice. If any item is answered yes, refer to 14 CCR 916 (936, 956).1 and address the following for each item checked yes:

1. The RPF shall state the standard rule;
2. Explain and describe each proposed practice;
3. Explain how the proposed practice differs from the standard practice;
4. The specific location where it shall be applied, see map requirements of 14 CCR 1034 (x) (15) and (16);
5. Provide in THP Section III an explanation and justification as to how the protection provided is equal to the standard rule and provides for the protection of the beneficial uses of water, as per 14 CCR 916 (936, 956) .1 (a). Reference the in-lieu and location to the specific watercourse to which it will be applied.

27 a. and f.

Mitigation Point M1: Skidding is proposed within the Class I WLPZ for approximately 150 feet. The WLPZ portion of the skid trail is on an existing rocked road which will be reroaked following operations. The road gradient is flat.

Explanation and justification are provided in Section III.

28. a. ☒ Yes ☐ No Are there any landowners within 1000 feet downstream of the THP boundary whose ownership adjoins or includes a class I, II, or IV watercourse(s) which receives surface drainage from the proposed timber operations? If yes, the requirements of 14 CCR 1032.10 apply. Proof of notice by letter and newspaper should be included in THP Section V. If No, "28 b." need not be answered.
- b. ☒ Yes ☐ No Is an exemption requested of the notification requirements of 14 CCR 1032.10? If yes, an explanation and justification for the exemption must appear in THP Section III. Specify if requesting an exemption from the letter, the newspaper notice or both.
- c. ☐ Yes ☒ No Was any information received on domestic water supplies that required additional mitigation beyond that required by standard Watercourse and Lake Protection rules? If yes, list site specific measures to be implemented by the LTO.

An exemption is requested of the newspaper notification because there is no additional information to be obtained regarding domestic water sources within 1,000 feet downstream of the THP boundary. There is only one landowner other than Cal Poly within 1000 feet downstream of the THP. The owner of parcel # 057-131-61 was contacted by telephone by the RPF and was notified by mail per 14 CCR 1032.10. The landowner stated that he does not have a domestic uptake downstream of the THP boundary.

29. ☐ Yes ☒ No Is any part of the THP area within a Sensitive Watershed as designated by the Board of Forestry and Fire Protection? If yes, identify the watershed and list any special rules, operating procedures or mitigation that will be used to protect the resources identified at risk?

HAZARD REDUCTION

30. a. ☒ Yes ☐ No Are there roads or improvements which require slash treatment adjacent to them? If yes, specify the type of improvement, treatment distance, and treatment method.
- b. ☐ Yes ☒ No Are any alternatives to the rules for slash treatment along roads and within 200 feet of structures requested? If yes, RPF must explain and justify how alternative provides equal fire protection. Include a description of the alternative and where it will be utilized below.

Treatment of logging slash shall comply with 14 CCR 917.2 and 917.4 and be completed prior to April 1st of the year following its creation. The LTO is responsible for lopping and distributing logging slash in designated areas so that no part of it remains more than 30 inches above the ground. Concentrations of slash created by the proposed operation in the logging area and on landings will be spread on the bared soil surfaces of skid trails and landings in the logging area.

There are no public roads within or adjacent to the THP area.

31. ☐ Yes ☒ No Will piling and burning be used for hazard reduction? See 14 CCR 917.1-.11, 937.1-.10, or 957.1-.10, for specific requirements. Note: LTO is responsible for slash disposal. This responsibility cannot be transferred.

BIOLOGICAL AND CULTURAL RESOURCES

32. a. ☒ Yes ☐ No Are any plant or animal species, including their habitat, which are listed as rare, threatened or endangered under federal or state law, or a sensitive species by the Board, associated with the THP area? If yes, identify the species and the provisions to be taken for the protection of the species.
- b. ☐ Yes ☒ No Are there any non-listed species which will be significantly impacted by the operation? If yes, identify the species and the provisions to be taken for the protection of the species.

The following measures shall be incorporated into the plan to avoid impacts to rare, threatened, endangered, and/or sensitive species. A CNDDDB query was conducted utilizing species information from the current CDF&W RareFind 3.1.1 GIS database, issued March 31, 2013. The CNDDDB report is included in Section V. A full discussion of the scoping process, elaboration on species discussed below, elaboration on species not warranting inclusion in Section II, and mitigation development used in the preparation of this THP is located in Section III, Addendum to Item 32.

AMPHIBIANS

California Red-Legged Frog (*Rana aurora draytonii*)

Limited habitat for the California red-legged frog (CRLF) exists within the THP area. No CRLF breeding habitat is present in or adjacent to the THP area. However, Scott Creek and some of its tributaries are occupied by the CRLF. See Section III for the full analysis. Protection measures for CRLF are outlined below.

This THP falls under USFWS Take Avoidance Scenario IV, utilizing take avoidance measures modified for this specific site. The suitable habitat in the THP area is marginal CRLF shall be protected by limiting winter period operations as described under Item 23. Specifically, timber falling, equipment operations and log hauling are prohibited throughout the THP area during the wet season as defined in the Winter Period Operating Plan and when saturated soil conditions exist. Aquatic habitat is protected by operational restrictions within WLPZs and ELZs as described under Item 26. Operations are limited to daylight hours as described under Item 38.

Trees shall not be felled into the WLPZ.

Prior to commencement of operations the LTO and crew shall be provided information about the CRLF by the RPF. The intent of the meeting shall be to educate the LTO and crew on the CRF in order to avoid harm to the species during timber operations. The meeting shall include:

- 1. A physical description of CRLF with color photograph showing identifying features.*
 - 2. A brief description of the life history of CRLF*
 - 3. Information on suitable breeding habitat located within or adjacent to the THP*
 - 4. Direction to contact the RPF immediately if a CRLF or potential CRF is identified*
- Each day, prior to hauling activities, the RPF or LTO shall visually inspect the area to be operated on that day for CRLF.*
 - Any sightings of CRLF reported to the RPF by the LTO shall be disclosed to CAL-FIRE and DFG. The RPF shall disclosed any and all take avoidance measures being implemented to avoid take of the individual.*

FISH

Steelhead Trout – Central California Coast ESU (*Oncorhynchus mykiss irideus*)

Steelhead are present in Scotts Creek located approximately 100 feet downstream of the project area. This species is federally listed as threatened. There is no potential habitat for steelhead within the THP area, as no Class I streams or Class II streams with sufficient pools are located within the THP area. Specific erosion control mitigations have been designated within the THP area to minimize sediment transport to a higher order watercourse. There will not be negative effects on downstream steelhead trout from the proposed harvest operations.

Coho salmon – Central California ESU (*Oncorhynchus kisutch*)

This species is federally listed as threatened, and state listed as endangered. There is no potential habitat for coho salmon within the THP area, as no Class I streams or Class II streams with sufficient pools are located within the THP area. Coho salmon are present approximately 100 feet downstream of the THP area. Coho numbers in the Scotts Creek system are routinely augmented by routine releases from the Kingfisher Flat hatching and rearing facility located on Big Creek. Mitigation measures to protect the beneficial uses of water are proposed. Specific erosion control mitigations have been designated within the THP area to minimize sediment transport to a higher order watercourse. There will not be negative effects on downstream coho salmon from the proposed harvest operations.

BIRDS

Nest Protection Measures:

All nesting bird species are protected by the Migratory Bird Treaty Act. Fish and Game Code 3503.3 states that "It is unlawful to take, possess, or destroy any birds in the orders of Falconiformes or Strigiformes (birds-of-prey) or to take, possess or destroy the nest of eggs of any such bird except as otherwise provided by this code or any other regulation adopted pursuant thereto".

Harm to active nests will be avoided to the extent possible through the diligent nest searches conducted by the RPF and supervised designee during timber marking as well as the timber fallers, prior to falling each tree. If nests are located which have indicators of current nesting activity, active operations shall cease in the vicinity within 150 feet for passerines (songbirds) and 300 feet for raptors. The LTO shall notify the RPF and, in consultation with a qualified biologist, a determination of the nesting status and species shall be made and appropriate protection measures formulated. The sighting will be reported to

CALFIRE and CDFW along with measures being implemented to avoid take of the individual. Activities in the vicinity shall not commence until approved by the agencies.

If an occupied nest of a *CDFG species of concern*, *Board of Forestry species of special concern* or raptor is discovered during timber operations, the LTO shall immediately protect the nest, screen, and perch trees. Vegetation disturbing activities within 300 feet (or applicable protection measures as per 14 CCR 919.2 and 919.3) of the occupied nest shall be suspended and a qualified wildlife biologist shall be consulted. The sighting will be reported to CALFIRE and CDFW along with measures being implemented to avoid take of the individual. Buffer Zones may be modified upon recommendation of the qualified wildlife biologist based on site specific factors such as topography, stand density, and type of adjacent operations.

Marbled murrelet

A pre-consultation was conducted with the CDFW regarding 4 potentially suitable habitat trees near the THP area. These trees are referred to and mapped as numbers 1-4 in the consultation located in Section V.

Trees 1 and 3 are considered potentially suitable habitat trees. These trees have not been surveyed. As recommended by CDF&W, these trees shall be avoided with a 50 foot buffer within which no vegetation modification will occur and a 300 foot buffer within which no operations will be conducted between March 24th and September 15th. The 50 foot buffer is outside of the THP boundary. The 300 foot buffer will be flagged with "Special Treatment Area" flagging.

Trees 2 and 4 were determined to be unsuitable habitat and will not be harvested because they are outside of the THP boundary.

To avoid attracting predators of murrelets, timber operations personnel will be instructed to pack out all garbage and food scraps and dispose of them in animal-proof containers and to consume food inside their vehicles when feasible.

MAMALS

Townsend's Big-eared Bat

There are two potentially suitable habitat trees on the edges of the THP boundary that have not been surveyed. These trees are referred to as trees 1 and 3 in the CDF&W consultation and shall be avoided with a 50 foot buffer within which no vegetation modification will occur and a 300 foot buffer within which no operations will be conducted between March 15th and September 1st. The 50 foot buffer is outside of the THP boundary. *Although the 300 foot buffer is outside of the THP area it will be flagged with "Special Treatment Area" flagging because it is adjacent to the THP. Refer to the CDF&W consultation in Section V.*

PLANTS

Plant Survey

A seasonally appropriate plant survey of the THP area has been conducted by botanical consultant Jim West. A complete plant list is included in Section V of the THP. No special status plant species or communities were found during the survey. The survey is discussed in greater detail in Section III.

General Listed Plant Protection Measures

If any federal- or state-listed rare, threatened or endangered plants are detected, an Equipment Exclusion Zone (EEZ) shall be established around the outside edge of all occurrences prior to any further operations within 100 feet of the detected plants. Timber falling in the vicinity of listed plants will be done directionally away from listed plants. Following consultation with a qualified botanist, the protection measures may be reduced if the adjustment is deemed appropriate by the botanist in cooperation with the CDF&W. Within 30 days of the detection, the RPF shall amend the following information into the THP:

1. A map of the location and description of the shape and area(s) of each occurrence area and the EEZ.
2. The number of individual plants in each occurrence area. If occurrence is greater than 100 plants, estimate the number of individuals.
3. The estimated percent of plants in reproductive condition and percent of seedlings in each

occurrence area.

4. A description of the associated species, aspect, topography, and soils of each occurrence area.
5. The estimated percentage of cover of tree layer, shrub layer, and bare mineral soil of each occurrence area.
6. A description of the current conditions controlling the hydrologic regime of each occurrence area.
7. A description of the foreseeable activities and post-harvest stand condition within 50 feet of each occurrence.
8. A copy of a CNDDB field form which has been completed and submitted to the California Natural Diversity Database.

33. ☐ Yes ☒ No Are there any snags which must be felled for fire protection or safety reasons? If yes, describe which snags are going to be felled and why.

All snags shall be left standing with the exception of those that pose a threat to the safety of harvest operations. No snags that pose a safety threat have been identified by the RPF at this time.

34. ☐ Yes ☒ No Are any Late Succession Forest Stands proposed for harvest? If yes, describe the measures to be implemented by the LTO that avoid long-term significant adverse effects on fish, wildlife and listed species known to be primarily associated with late succession forests.
35. ☐ Yes ☒ No Are any other provisions for wildlife protection required by the rules? If yes, describe.
36. a. ☒ Yes ☐ No Has an archaeological survey been made of the THP area?
- b. ☒ Yes ☐ No Has a current archaeological records check been conducted for the THP area?
- c. ☐ Yes ☒ No Are there any archaeological or historical sites located in the THP area? Specific site locations and protection measures are contained in the Confidential Archaeological Addendum in Section VI of the THP, which is not available for general public review.
37. ☐ Yes ☒ No Has any inventory or growth and yield information designated "trade secret" been submitted in a separate confidential envelope in Section VI of this THP?
38. Describe any special instructions or constraints that are not listed elsewhere in Section II.

Hours of Operation:

The operation of chainsaws and other power-driven equipment shall be restricted to the hours between 7:00 am and 7:00 pm, and shall be prohibited on Saturdays, Sundays and nationally designated legal holidays except Columbus Day. There are no occupied dwellings within 300 feet of the THP area.

Log hauling on public roads is not permitted on Saturdays, Sundays, or on those days which are nationally designated legal holidays except Columbus Day.

Contents of Plan per 14 CCR 926.23:

All private roads proposed for use are appurtenant. No road or bridge construction is proposed.

Caution Log Truck Signs:

"Caution: Log trucks" signs shall be placed on Swanton Road, one on each side of Purdy Ranch Road which leads to the harvest area. Signs shall also be placed a minimum of ½ mile apart in visible locations on Swanton Road so that motorists can easily see them from both directions. Signs shall extend to within ¼ mile of Highway 1.

Haul Route:

Trucks will leave the project area and turn right onto Swanton Road (a public road), heading in a northbound direction. Near the northern end of Swanton Road, trucks will turn off of the county road into the property of Big Creek Lumber Company. Alternatively, trucks will turn left onto Swanton Road toward Highway 1, then turn right onto Highway 1 going north approximately 6 miles to the Big Creek sawmill.

School buses do not travel on Swanton Road.

Scout Gulch THP
2014

PART OF PLAN

19

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SEP 30 2014

COAST AREA OFFICE
RESOURCE MANAGEMENT

Dust Abatement

Per 14 CCR 923.4(h) During timber operations, road running surfaces in the logging area shall be treated as necessary to prevent excessive loss of road surface material by, but not limited to, rocking or watering. *The water will be trucked from the Big Creek saw mill or from Swanton Pacific Ranch both of which are well sources. No drafting from watercourses is proposed.*

Public Safety

Prior to commencement of operations, signs will be posted at all developed trails and roads leading into areas where timber operations are to occur notifying people that entry into the area is prohibited for safety reasons due to timber operations. The RPF shall advise the Plan Submitter to make their best effort to notify anyone with the potential to enter the THP area to avoid areas where operations are occurring until further notification.

Commencement of Timber Operations Notification

The person responsible for notifying CalFire of the commencement of timber operations is the RPF or the LTO. Notification will be by phone or email as listed below.

CalFire, Felton office, CZU, phone: (831) 335-6740

Email: cherie.alver@fire.ca.gov

DIRECTOR OF FORESTRY AND FIRE PROTECTION

This Timber Harvesting Plan conforms to the rules and regulations of the Board of Forestry and Fire Protection and the Forest Practice Act:

By:

Dominik Schwab
(Signature)

(Date) *September 30th, 2014*

Dominik Schwab
(Printed Name)

(Title) *Forester II*



Scout Gulch THP Operations Map

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COAST AREA OFFICE
RESOURCE MANAGEMENT

SEC1

T10S R4W

WLPZ
ROAD

WLPZ
ROAD

SEC12

SCOTT'S CREEK

SWANTON ROAD

PURDY RANCH ROAD



Legend

- THP Boundary
- Permanent Road
- Seasonal Road
- Skid trail
- Class I Watercourse
- Class II Watercourse
- Class III Watercourse
- Crossing
- Existing Landing
- Mitigation Point

1 inch = 200 feet

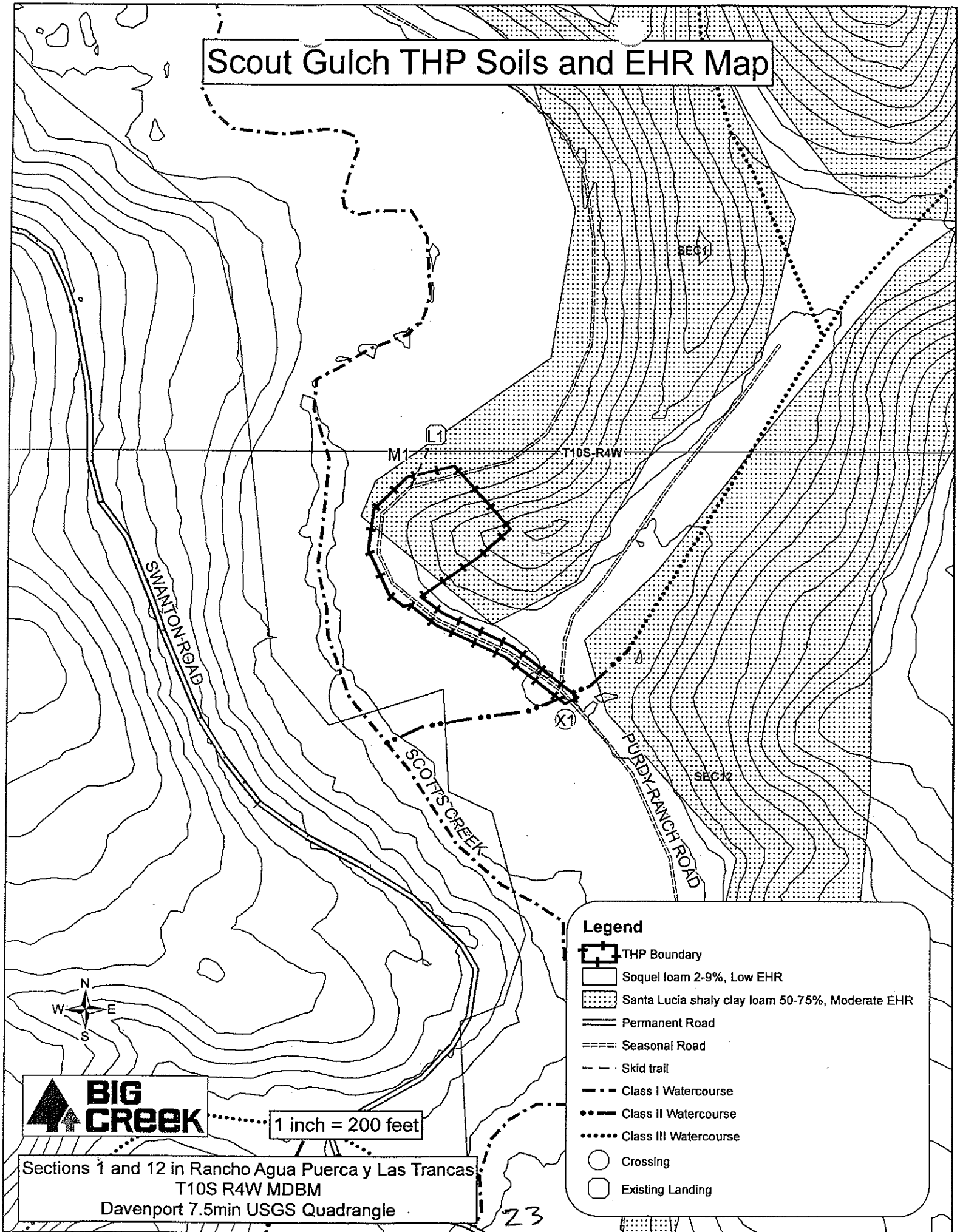


PART OF PLAN

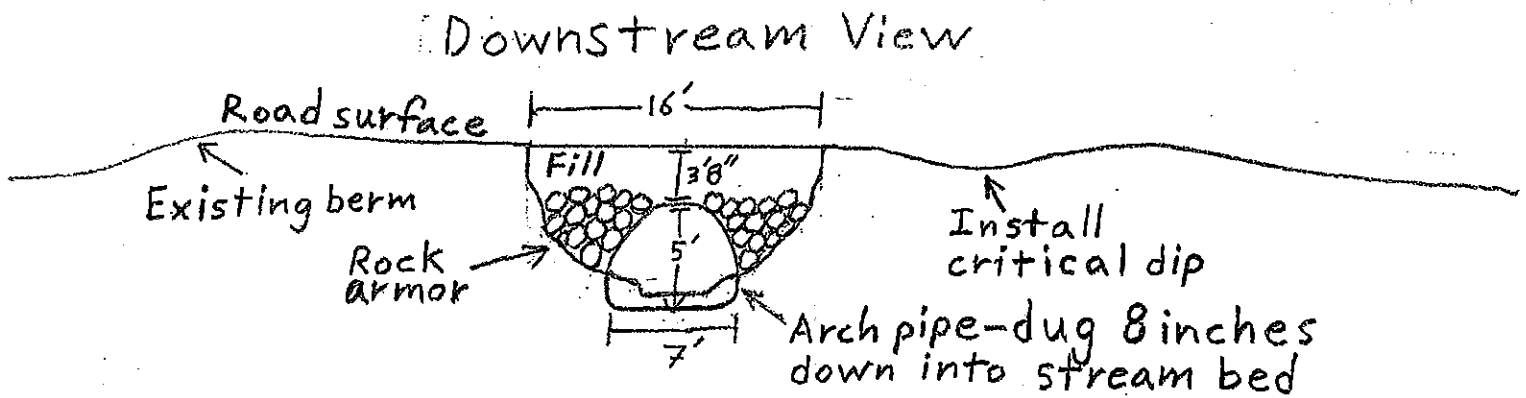
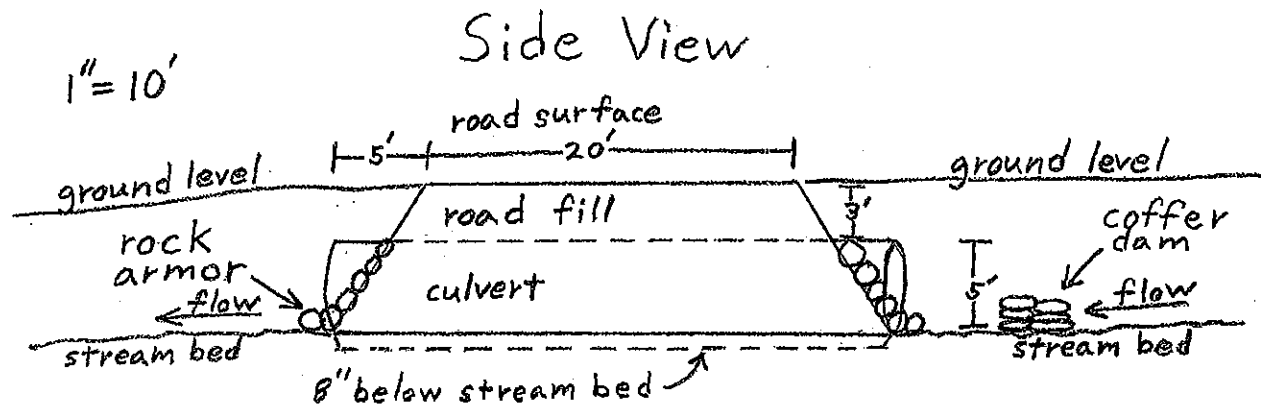
Sections 1 and 12 in Rancho Agua Puerca y Las Trancas
T10S R4W MDBM
Davenport 7.5min USGS Quadrangle

revised 9/29/14

Scout Gulch THP Soils and EHR Map



Crossing X1



PART OF PLAN

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AUG 22 2014

COAST AREA OFFICE
RESOURCE MANAGEMENT

Scout Gulch THP Appurtenant Road Map

SEC 1

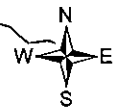
T10S-R4W

SEC 12

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AUG 08 2014

COAST AREA OFFICE
RESOURCE MANAGEMENT



Legend

- Property Boundary
- THP Boundary
- Public Road / Permanent Road
- Appurtenant Road / Seasonal Road
- Skid trail
- Class I Watercourse
- Class II Watercourse
- Class III Watercourse
- Crossing
- Existing Landing
- Mitigation Point



1 inch = 200 feet

Sections 1 and 12 in Rancho Agua Puerca y Las Trancas
T10S R4W MDBM
Davenport 7.5min USGS Quadrangle

24.1

PART OF PLAN

Section III

PLAN ADDENDUM

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SECTION III - PLAN ADDENDUM

The Scout Gulch THP project area is similar in characteristics to most coast redwood forests in the southern portion of the redwood range. Below is a more descriptive assessment of specific characteristics to the Scout Gulch THP project area per 14 CCR 1034 jj.

Soils

Information obtained to determine soil characteristics was taken from the Soil Survey of Santa Cruz County, California, USDA Soil Conservation Service in cooperation with University of California, Agriculture Experiment Station, 1980. The Soils and EHR Map is included in Item 38, Section II. The project area contains two soil types. The flat gulch bottom where most of the operations will be conducted is classified as Soquel loam. The sides of the gulch which comprise the outer edges of the THP area are classified as Santa Lucia shaly clay loam which is usually considered a rangeland soil. Within the THP area it is the transition zone between the alluvium gulch floor and the range/oak woodland and pine stands upslope. A brief description of each soil type is provided below.

Cooper, Clark and Associates 1974, did not map any unstable features near the THP area.

Santa Lucia shaly clay loam, 50-75% slopes: This soil is found on hills and mountains with elevations ranging from 100-1,800 feet. It is formed on material weathered from siliceous shale and is well drained. The permeability is moderate with fractured shale at a depth of 38 inches. The mean annual precipitation is about 30 inches with 1.5 to 4.5 inches of available water capacity. Nearly all areas of this soil are rangeland with a few home sites.

Soquel loam, 2 to 9% slopes: This very deep, moderately well drained soil is on plains. It formed from alluvium. Elevation ranges from 20 to 1,000 feet. The mean annual precipitation is about 30 inches. The surface layer is very dark grayish brown and brown, while the underlying material is brown, neutral silt loam. Permeability is moderately slow. Effective rooting depth is 60 inches. This soil is well suited for the production of Douglas-Fir.

Topography

The THP area is located at the bottom of a small valley. Most of the THP area is on an alluvial flat deposited prior to the original timber harvest; around 1900. Elevations range from 120 to 180 feet. The THP area drains to Scott's Creek by way of an unnamed tributary. The sides of the valley are moderately steep; between 30% and 65%. No unstable areas have been observed.

Vegetation

The forest is predominantly second growth redwood (*Sequoia sempervirens*) with interspersed Douglas-fir (*Pseudotsuga menziesii*). The northwest edge of the valley contains Coast live oak (*Quercus agrifolia*), Canyon oak (*Quercus chrysolepis*) and Shreve oak (*Quercus parvula* var. *shrevei*). The upper slopes of the southeast aspect are populated with a hybrid of Monterey pine (*Pinus radiata*) and knobcone pine (*Pinus attenuata*). Large bay trees (*Umbellularia californica*) dominate the riparian zone with big leaved maple (*Acer macrophyllum*) also being present. The property was first logged between 1906 and 1922. Almost all of the old growth trees were harvested. There is one residual dominant tree near the THP area. The dominant trees average 24 to 32 inches in diameter. Crown closure is highly variable ranging from 50 to 100 percent.

A wildfire that occurred in 2009 entered the THP area but did not burn completely through it. Some of the trees were blackened at their base but appear to be relatively unaffected. Bay trees however, are still falling over presumably from the affects of the fire and many of those are resprouting. The additional light

from the falling bay trees and light let in from the sides where brush was eliminated by the fire (mostly outside of the THP area) and possibly chemical changes to the soil from the fire have allowed a diverse understory to flourish. The dominant plant species include; Himalayan blackberry (*Rubus armeniacus*), poison-oak (*Toxicodendron diversilobum*), horse tail (*equisetum*), hedge nettle (*Stachys bullata*), vetch (*Vinca sp.*), forget-me-not (*Myosotis latifolia*), wild cucumber (*Marah fabaceus*), and bull thistle (*Cirsium vulgare*), carex (*Carex sp.*), and various grasses.

Exotic species are present in the area at moderate levels but do not appear to be spreading. The botanical consultant has been monitoring this particular area for many decades. He was not concerned about expansion of exotic species resulting from timber operations. In his opinion the native species dominated the site to a degree that would prevent a shift toward non-natives in the event of a disturbance. The most pervasive exotic plant species on the site include Himalayan blackberry (*Rubus armeniacus*), forget-me-not (*Myosotis latifolia*) and bull thistle (*Cirsium vulgare*).

Stand Conditions

The entire property and nearly the entire watershed were clearcut between 1906 and 1922. The majority of the project area is uncut second growth redwood with Douglas-fir and Monterey pine/knobcone pine on the edges of the THP. The redwoods are generally in clumps while the Douglas-firs are scattered individuals. *Phellinus pini* is often present in Douglas-fir stands of this age but largely absent in and adjacent to this THP. Madrones, bay trees, and maples are also present. Redwood regeneration is moderate to low although there are many basal sprouts on burned tree bases. Those sprouts are not likely to grow into dominant trees due to the lack of sun light. Douglas-fir regeneration is moderate.

The proposed project area has no snags at this time. Some trees have recently fallen probably due to effects of the 2009 fire. Trees continue to succumb to effects of the fire. If dead standing trees are present at the time of operations they will be retained standing unless deemed a safety hazard. Hardwoods and conifers that exhibit habitat characteristics, as described in THP Section II, Item 14, shall be retained as biological legacies to provided for and maintain structural complexity throughout the project area.

Watershed Conditions and Stream Conditions

The project area lies in the Scott Creek planning watershed, which drains to the Ocean. Scott Creek watershed (Calwater #3304.110204) is approximately 8,804 acres. The watershed is approximately 29.3 square miles and the mainstem channel is approximately 12 miles long. 7.5 miles are potentially accessible to migrating salmonids (Bulger, 1998). The stream originates between Eagle Rock and Blooms Creek between 1,600 and 2,000 feet elevation in the Santa Cruz mountains and flows southwestward for about five miles to a point near Gianone Hill and the Old Seaside School where the orientation turns southeastward for another five miles to enter the Pacific Ocean at the Scott Creek lagoon. The THP is approximately 100 feet from Scott Creek.

Scott Creek is a Class I watercourse and one of the least disturbed streams in the Santa Cruz Mountains. The current stream condition of Scott Creek is detailed in the "Baseline Instream Watershed Assessment", completed in 1998 by biologist John Bulger, (Bulger, 1998). This assessment compares the stream morphology and conditions found on Scott Creek with "target" conditions put forth by the National Marine Fisheries Service. An excerpt from this report follows: "Natural background levels of embeddedness and fine sediment loading are unknown for streams in the Santa Cruz Mountains, but are liable to comparatively high. Comprised largely of recent unstable sandstone parent material (CWDR, 1982), erosive processes in these mountains are abetted by one of the highest rainfall intensities on the west coast (Ranz, 1968). It is therefore doubtful that embeddedness and fine sediment levels on lower gradient streams in this region would ever be much below the suggested target levels."

Significant flood events occurred in the watershed in 1955, 1940, 1982, and 1998.

In Scott Creek and in the THP tributary stream banks are heavily vegetated with a wide variety of understory species. The overstory is dense with a wide variety of tree species. Large wood levels are high. Bay trees are still falling as a result of the 2009 fire and being recruited into the channel.

The THP tributary is a Class II watercourse from the confluence with Scott Creek to approximately 50 feet upstream from crossing X1 where it becomes a Class III. The Class II section of the stream holds four very small shallow pools. In the month of March the largest pool was 4 feet wide by 4 feet long and 8 inches deep. Above crossing X1, the stream has almost vertical stream banks where the stream has cut down through the alluvium; held in place by dense vegetation. Further downcutting is unlikely as the gradient to the confluence is very low. The upper reaches have very small channels. Most of the flow seems to be percolating through the substrate.

Plan Addendum Item # 15

Regulated *Phytophthora ramorum* Hosts of Concern when Filing Timber Harvest Documents

Plants on the federal *P. ramorum*-Regulated Host list should be addressed by Registered Professional Foresters (RFPs) in harvest documents. These plants are: naturally infected by *P. ramorum*; found in California's forests; and have had Koch's postulates completed, documented, reviewed, and accepted. Further details on regulated plants and plant parts can be found at <http://www.aphis.usda.gov/ppq/ispn/pramorum/>.

Plants on the federal *P. ramorum* Associated Host list are regulated in nurseries only and not in wildland settings; therefore, they do not have to be addressed by RPFs.

Note: As new hosts are found, they will be added to the host or associated host list. As Koch's postulates are successfully completed on associated hosts, they will be reclassified as hosts. As neither list is static, it is important to check for updates frequently.

<u>Scientific Name</u>	<u>Common Name</u>
<i>Acer macrophyllum</i>	Bigleaf maple
<i>Adiantum aleuticum</i>	Western maidenhair fern
<i>Adiantum jordanii</i>	California maidenhair fern
<i>Aesculus californica</i>	California buckeye
<i>Arbutus menziesii</i>	Madrone
<i>Arctostaphylos manzanita</i>	Manzanita
<i>Frangula californica</i> (= <i>Rhamnus californica</i>)	California coffeeberry
<i>Frangula purshiana</i> (= <i>Rhamnus purshiana</i>)	Cascara
<i>Heteromeles arbutifolia</i>	Toyon
<i>Lithocarpus densiflorus</i>	Tanoak
<i>Lonicera hispidula</i>	California honeysuckle
<i>Maianthemum racemosum</i> (= <i>Smilacina racemosa</i>)	False Solomon's seal
<i>Pseudotsuga menziesii</i> var. <i>menziesii</i>	Douglas-fir
<i>Quercus agrifolia</i>	Coast live oak
<i>Quercus chrysolepis</i>	Canyon live oak
<i>Quercus kelloggii</i>	California black oak
<i>Quercus parvula</i> var. <i>shrevei</i>	Shreve's oak
<i>Rhododendron</i> spp.	Rhododendron (including azalea)
<i>Rosa gymnocarpa</i>	Wood rose
<i>Sequoia sempervirens</i>	Coast redwood
<i>Trientalis latifolia</i>	Western starflower
<i>Umbellularia californica</i>	California bay laurel/pepperwood
<i>Vaccinium ovatum</i>	Evergreen huckleberry

Plan Addendum Item # 26 d.

Regarding crossing X1:

Culvert sizing was done using both the Magnitude and Frequency Method for 100-year flood flow and the Rational Method for 100-year flood flow. The larger of the two results was 70 inches for the Rational Method. Refer to Section V for the calculations.

Fish and Game Code 1611. (a) An entity that submits a timber harvesting plan in accordance with Section 4581 of the Public Resources Code or directly to the department is deemed to have given the notification required by Section 1602, as long as the following information is included in the plan:

(1) The volume, type, and equipment to be used in removing or displacing any one or combination of soil, sand, gravel, or boulders.

Approximately 35 cubic yards of soil will be temporarily excavated and replaced as new crossing fill using an excavator or backhoe.

(2) The volume of water, intended use, and equipment to be used in any water diversion or impoundment, if applicable.

The crossing should be dry at the time of replacement. If flow is present at the time of crossing replacement all flow will be impounded above the culvert using a coffer dam and routed through a pipe through the work area or pumped around the work area through hoses. The coffer dam or other artificial obstruction constructed shall only be built from materials which do not contain soil or fine sediment such as sandbags.

- Openings in perforated plate or woven wire mesh screens shall not exceed 3/32 inches (2.38 millimeters). Slot openings in wedge wire screens shall not exceed 1/16 inches (1.75 millimeters).
- The screen surface shall have at least 2.5 square feet of openings submerged in water.
- The drafting operator shall regularly inspect, clean, and maintain screens to ensure proper operation whenever water is drafted.

(3) The equipment to be used in road or bridge construction.

There is no road or bridge construction proposed. The crossing will be replaced using the following: excavator, backhoe, log loader, dump truck, bull dozer, water truck.

(4) The type and density of vegetation to be affected and an estimate of the area involved.

Approximately 900 square feet will be disturbed including the road surface. Road edges and stream banks are heavily vegetated with ferns, hedge nettle and other native riparian vegetation.

(5) A diagram or sketch of the location of the operation that clearly indicates the stream or other water and access from a named public road. Locked gates shall be indicated and the compass direction shall be shown.

Refer to the diagram and the Operations Map in Item 38 at the end of Section II. The locked gate is at the intersection of Seaside Creek Road and Swanton Road.

(6) A description of the period of time in which operations will be carried out.

The date on which the term of an agreement issued pursuant to this section begins shall be the date timber operations first commence.

Plan Addendum Item # 27 a. and f.

Explanation for Mitigation Point M1:

M1 is a skid trail in the Class I WLPZ. No grading is required to establish this trail. The topography of the area of the proposed trail is flat. The WLPZ portion of the skid trail is on an existing rocked road which will be rerocked following operations. The remainder of the trail will be through a grass field which is flat and will not require grading in order to establish it. The grassland portion of the trail will be reseeded with grass (excluding annual rye).

Justification for Mitigation Point M1:

Use of the proposed skid trail at point M1 will have the least impact of any yarding method for that area. To minimize ground disturbance, most of the trail will be on an existing road surface and all of the trail will be on flat ground. The alternative would involve building new skid trail on steep slopes and locating the landing within the nearby Boy Scout camp and or in heavy vegetation within the WLPZ. The proposed trail is across the outer edge of the WLPZ. The entire width of the WLPZ is on flat ground. The area between the trail and the watercourse transition line is heavily vegetated and can serve as an adequate filter strip if suspended sediment were to flow in that direction. The proposed treatment of newly bared soils with grass seed and straw and adding extra rock to the existing road shall provide for the prevention and minimization of sediment to the watercourse thereby protecting the beneficial uses of water at least equal to the standard rule.

Plan Addendum Item #28 b.

Explanation and Justification

An exemption is requested of the newspaper notification requirements of 14 CCR 1032.10. The only landowner other than Cal Poly within 1,000 feet downstream of the project boundary is the landowner of parcel 057-131-61. The owner was contacted by telephone by the RPF requesting information on domestic water supply sources and the required letter was sent. The owner stated that he does not have a domestic uptake downstream of the THP boundary. The plan submitter owns almost all of the land within 1,000 feet downstream of the property and actively monitors the stream and adjacent land. The RPF has observed the stream channel within 1,000 feet downstream and found no evidence of water drafting or apparatus for any other purpose. There are no residences within eyesight of this stretch of stream except for the owner of 057-131-61. There is no municipal water uptake between the THP and the ocean. Therefore there is no further information on domestic water sources to be obtained.

Plan Addendum Item #32

Scoping

The scoping process for the THP involved the identification of species and habitats that could be impacted on or offsite by the proposed project. CNDDDB maps, CWHR version 8.2, Board of Forestry sensitive species, and on-the-ground assessments were used to query species that might occur in or near the proposed project area. Once species were queried, support information was obtained from the "Resources Used in the Scoping process," listed below.

A determination was made based on habitat requirements and species characteristics as to the realistic likelihood that the species would occur in the project area or could potentially be affected by the proposed operations. Each species was evaluated to decide the true applicability of the query results based on literature search, field experience, and on the ground knowledge of the property. In general, it is important to keep the following points in mind about the proposed project when thinking about the possible effects or implications for plants, animals, and their associated habitats:

- a. This is a selective timber harvest. This is not a significant landscape-altering project. This means that any plant or animal currently occupying the proposed project area has an extremely high likelihood of continuing to occupy that area.
- b. The skid trail and road network that is being proposed for use during operations is mostly an existing infrastructure and is well suited to the topography, utilizing flat ground and ridgelines wherever possible.

Resources Used in the Scoping Process

1. CDF&W Natural Diversity Database GIS layers and RareFind Version 3.1.1, February 1st, 2014. CNDDDB was queried for species and habitat types within 5 miles of the proposed project area on March 14th, 2014.
2. The California Wildlife Habitat Relationships System (version 8.2). The CWHR queried species based on county, habitat elements, and listed species (includes all possible listings).
3. The California Native Plant Society website was used to assist in identification of habitat types where plant species of concern, state listed, or federally listed might be located. The website address is <http://cnps.org/>.
4. Lyons, Kathleen and Mary Beth Cuneo-Lazaneo, *Plants of the Coast Redwood Region*, Shoreline Press, Soquel, California, 2003.
5. The UC Jepson Herbarium website was used to gather information about some species. The website address is <http://ucjeps.berkeley.edu/>
6. The University and Jepson Herbaria, UC Berkeley. The website was used to gather information about some species identified in THP scoping. Retrieved from <http://ucjeps.berkeley.edu/>, accessed 3/21/2014.
7. Calflora. Website. Search for information on individual listed species identified in THP scoping. Retrieved from www.calflora.org, accessed 3/20/2014.
8. *California's Wildlife Volume I, II, and III (Amphibians and Reptiles, Birds, and Mammals)*. From the Department of Fish and Game. May 1988, November 1990, and April 1990.
9. Behler and King, *National Audubon Society Field Guide to North American Reptiles and Amphibians*, 1996.
10. Robbins, Bruun, and Zim, *A Guide to Field Identification Birds of North America*, 1983.
11. Suddjian, David, *Profiles of Selected Birds of Management Concern In Forests of the Santa Cruz Mountains*, August 2000.
12. U.S. Fish & Wildlife Service, California Red-legged Frog Take Avoidance Scenarios, March 25, 2008.
13. Becker, Gordon S. and Isabelle J. Reining, *Steelhead/Rainbow Trout (Oncorhynchus mykiss) Resources South of the Golden Gate, California*. October 2008.
14. National Marine Fisheries Service. *Final Recovery Plan for Central California Coast coho salmon Evolutionarily Significant Unit*. National Marine Fisheries Service, Southwest Region, Santa Rosa, California. 2012.
15. Fellers, G. M., and E. D. Pierson. 2002. *Habitat use and foraging behavior of Townsend's big-eared bat (Corynorhinus townsendii) in coastal California*. Journal of Mammalogy 83:167-177.
16. Mazurek, M. J. 2004. *A maternity roost of Townsend's big-eared bats (Corynorhinus townsendii) in coast redwood basal hollows in northwestern California*. Northwestern naturalist 85:60-62.
17. Pearson, O. P., M. R. Koford, and A. K. Pearson. 1952. *Reproduction of the lump-nosed bat (Corynorhinus rafinesquei) in California*. Journal of Mammalogy 33:273-320.
18. Pierson, E. D., W. E. Rainey, and D.M. Koontz. 1991. *Bats and mines: experimental mitigation for Townsend's big-eared bat at the McLaughlin Mine in California*. Pp. 31-42, in Issues and technology in the management of impacted wildlife, Snowmass, CO. April 8-10, 1991, Proceedings, Thorne Ecological Institute.
19. Tipton, V. M. 1983. *Activity patterns of a maternity colony of Plecotus townsendii virginianus*. Bat Research News 24:56-57.
20. U.S. Fish & Wildlife Service. Website search for individual listed species identified in THP scoping. Retrieved from <http://www.fws.gov/endangered/>, accessed 3/20/2014.
21. U.S. Fish & Wildlife Service. *San Francisco Garter Snake. 5-Year Review: Summary and Evaluation*. Sacramento Field Office. September 2006.
22. Personal correspondence with Jim West, botanist and Swanton Road resident, April 2014
23. Hamey, Nadia. *Swanton Pacific Ranch NTMP*. Obtained from Big Creek Lumber. 2013.

Species listed as threatened or endangered under federal or State law or listed as sensitive by the Board of Forestry with possible presence in the project area are discussed below and also with protection measures described in Section II, Item 32. CDF&W Species of Concern with possible presence in the project area are discussed below.

FISH

Coho Salmon (*Oncorhynchus kisutch*) – Central California Coast ESU

Central California Coast ESU coho salmon are listed as federally and state endangered. In the greater Scott Creek watershed, approximately 14.1 miles of stream are accessible to salmonids. The size of the coho spawning run in the Scott Creek system varies from year to year. Statistically reliable population estimates are not available for this population. Coho salmon numbers in the Scott Creek system are augmented by releases from the Kingfisher Flat hatching and rearing facility located on Big Creek. This facility is operated by the Monterey Bay Salmon and Trout Project (www.mbstp.org).

Within the vicinity of the NTMP, coho salmon occupy the Scotts Creek mainstem, and the lower reaches of Mill Creek, Big Creek, Little Creek, and Queseria Creek, which are tributary to Scott Creek. Coho salmon use the Scott Creek tributaries up to natural migration barriers, upstream of the THP. The THP area does not contain habitat for coho.

Coho spawning usually occurs during December and January in the Scott Creek watershed, and the embryos hatch after 2-3 months of incubation in the stream gravels. Hatchlings remain in the gravel until their yolk sacs have absorbed, typically within 10 weeks of hatching. The emerging fry form schools and inhabit shallow water at the stream margins or elsewhere. As they mature, the parr establish territories in pools, requiring deeper water in low gradient stream sections (<3%) as they grow larger. Optimal rearing habitat is considered to consist of heavily shaded, deep (>1 m) pools with some overhead cover. At between 14-18 months of age, the parr undergo smoltification in preparation for outmigration and life at sea. Outmigration occurs during late spring and early summer.

Steelhead (*Oncorhynchus mykiss*) – Central California Coast ESU

The Central California Coast ESU steelhead is listed as federally threatened. In the Scott Creek system, the bulk of the upstream steelhead migration and spawning occurs from January through March or April. Time to hatching is about 30 days. The fry generally emerge from the gravel 4 to 6 weeks after hatching and move to shallow water where there is suitable cover at the stream margins. As parr grow, feeding stations are established, most frequently in riffles or deeper runs, and occasionally in pools. Estuaries at the mouths of coastal streams are particularly important rearing areas for larger juveniles. Steelhead remain in their natal stream for 1 to 7 years prior to migrating out to sea.

Coho Salmon and Steelhead Mitigations:

To avoid incidental take of coho salmon and steelhead, the following mitigations are proposed.

1. Canopy retention standards as discussed under Item #26 of the THP.
2. Limitations on use of heavy equipment in the WLPZ as discussed under Item #26 of the THP.
3. Treatment of roads, skid trails, and landings near watercourses as discussed under Item #27 of the THP.
4. Soil stabilization as discussed under Item #18 of the THP.
5. Winter operating restrictions as discussed under Item #23 of the THP.

BIRDS

Scoping

The likely presence of listed bird species was investigated using the California Natural Diversity Database (CNDDB), California Wildlife Habitat Relationships (CWHR) version 8.2, and ground assessments and consultations performed by the RPF. Discussion of these and species identified as sensitive by the Board of Forestry are provided below.

Sensitive Bird Species

Suitable habitat for raptors can be found in the project area. The project area is small enough that all

trees were assessed for raptor nests and none are present within or immediately adjacent to the THP area. No old growth trees will be cut in this harvest. No snags will be cut, except in cases where they pose a threat to safety, as described in Item 14. In general, if an occupied nest of a listed (ESA, CESA, CDF, CDF&W) species of the orders Falconiformes (vultures, hawks, and falcons) or Strigiformes (Owls) is suspected or detected operations will cease in the immediate vicinity of the nest and CDF&W will be consulted. For unlisted species, the THP will comply with Fish and Game Code section 3503.5. For listed species, site specific mitigations will be developed per the Forest Practice Rules in consultation with the appropriate regulatory agency personnel and amended to the plan.

Mitigations should include but are not limited to the following:

1. Seasonal buffer of appropriate size, as required per 14 CCR 919.3
2. Protection of the nest tree, screening trees, perch trees, and replacement trees

Fish and Game Code 3503.3 states that *"It is unlawful to take, possess, or destroy any birds in the orders of Falconiformes or Strigiformes (birds-of-prey) or to take, possess or destroy the nest of eggs of any such bird except as otherwise provided by this code or any other regulation adopted pursuant thereto"*.

Marbled murrelet (*Brachyramphus marmoratus*)

The marbled murrelet is listed as endangered under CESA and as federally threatened in Washington, Oregon, and California. Marbled murrelets inhabit near-shore marine waters where they feed on small fish and invertebrates, but during the breeding season adults fly inland to nest in mature conifer forests within 50 miles of the ocean. The southernmost breeding population of marbled murrelets in North America occurs in association with the Santa Cruz Mountains. This is also the smallest and most isolated population, separated from the northern California murrelet population by a distance of 300 miles.

The nearest known occupied stands are 1.4 miles to the east, 1 mile to the northwest and 2.7 miles north of the project area. Surveys were conducted in and nearby the project area in 1999 and 2000 by John Bulger. Although there were several detections he concluded that the birds were flying to and from habitat farther upstream and that the survey area was not only not occupied but did not contain sufficient nesting habitat.

Protocol level surveys were conducted in the Lower Scott Creek stand by biologist John Bulger in 2000 and 2001 and there were no detections. Bulger accompanied CDFG representative Stacy Martinelli on a site visit consultation in 2001.

The stand consists of second growth redwood, Douglas-fir, Monterey/knobcone pine, and hardwoods. There is one residual redwood tree near the project area. The average mature tree size is approximately 26 inches in DBH. This area burned in the 2009 Lockheed fire. The mature trees survived the fire but it left the stand relatively exposed; canopy cover is approximately 50 to 70%. The forest transitions to grass land and oak woodland upslope of the proposed harvest boundary. Downstream habitat consists of a horse pasture and riparian forest along Scott Creek.

There are two suitable habitat trees near the THP area that have not been surveyed. These trees shall be protected in accordance with the CDFW pre-consultation recommendations located in Section V. Refer to Section II, Item 32 for specific protection measures and Item 38 for the Wildlife Protection Measures Map.

Osprey (*Pandion haliaetus*)

The osprey is a CDF&W Species of Special Concern and a CDF Sensitive Species. The osprey is a bird of large rivers, lakes, and coasts, where it preys almost exclusively on fish. Ospreys nest on rock pinnacles and in the tops of snags, live trees, or similar artificial structures near water. Nests are large, conspicuous, and easily located. Throughout the osprey's range, when available, snags surrounded by water are preferred as nest sites. Nests usually are built in very close proximity to water, but if nesting sites are in short supply, they may occasionally be found up to a mile from water. Osprey nesting habitat is not present within the THP area. Snags will be retained except as described in Section II, item 14. Scott Creek may provide a food source for Ospreys.

American Peregrine Falcon (*Falco peregrinus anatum*)

The American peregrine falcon (*Falco peregrinus anatum*) has been delisted by State and Federal agencies but is still a Board of Forestry Sensitive Species. Peregrine falcons occur in a variety of habitats, but require open areas for foraging. Food consists almost exclusively of birds that are caught on the wing. While tree nesting has been recorded for this species, nesting usually occurs on ledges and cavities in rock formations. Ledges and rock formations and foraging habitat are not present within the THP boundary.

Sharp-shinned Hawk (*Accipiter striatus*)

The Sharp-shinned hawk is a CDF&W Species of Special Concern. Sharp-shinned hawks typically nest in relatively dense stands of second growth conifers but may use mixed broadleaf evergreen forests in some areas. The nest is constructed of small twigs and can be a substantial platform usually situated on a horizontal limb against the bole of the tree. The nests are usually constructed fresh but nests of other species are occasionally refurbished. Small birds make up the bulk of the diet. This species forages in a range of forested and lightly forested habitats. The breeding period for the sharp-shinned hawk is April through August and the breeding period peaks late May-July. No nest sites have been found in the project area.

Cooper's Hawk (*Accipiter cooperii*)

The Cooper's hawk is a CDF&W Species of Special Concern. Cooper's hawks occur in fairly open montane and low woodland areas. Nesting is most often associated with broadleaf woodlands or mixed conifer-broadleaf forests and dense surrounding cover is preferred in the vicinity of the nest site. Nests typically are built in broadleaf trees, although conifers are also used. Cooper's hawks show a greater tendency to re-use previous nests than do sharp-shins. The diet is composed chiefly of small birds, although small mammals, reptiles, and amphibians are also taken. The nesting and breeding time for Cooper's hawks is March-August with the peak times being May-July. No nest sites have been found in the project area.

Golden Eagle (*Aquila chrysaetos*)

The golden eagle is a CDF&W Species of Special Concern and a CDF Sensitive Species. Golden eagles require wide-open country for foraging, and prey predominantly on jackrabbits and ground squirrels. Nests typically are built on cliffs throughout the range of this species, however in the oak/grass savannas of the California coast ranges, most nests are built in trees, principally oaks, cottonwoods, and sycamores. Suitable foraging areas are present within the BAA and near the project area. No nests of this species are present in or adjacent to the THP area. Golden eagle nests are immense, and are fairly easily spotted.

Great Blue Heron and Great Egret (*Ardea herodias* and *A. alba*)

Great blue heron and great egret rookeries are listed as Sensitive by CDF. These species nest colonially (occasionally solitarily), usually in live or dead deciduous trees within or adjacent to marshes, swamps, lakes or larger rivers. Both species build large platform-type stick nests. Foraging habitat consists of the full range of wetland and open aquatic habitats. Both species feed principally on fish and other vertebrates, although they will also hunt mice and frogs in wet meadows or grasslands after rains. Suitable foraging habitat is present within the BAA and near the project area. There are no Heron nests within or adjacent to the THP area.

Bald Eagle (*Haliaeetus leucocephalus*)

Bald eagles forage near ocean shores, bays, fresh-water lakes, and larger streams. The eagles build large stick nests in large dominant trees. They nest most frequently in stands with less than 40% canopy cover but usually have some foliage covering the nest. Nests 50 to 200 feet above ground and usually below the crown. The eagles feed primarily on fish but will also feed on other birds and small mammals. Suitable habitat is present within the BAA and the THP area. The birds are easily spotted and have not been seen near the THP area. Bald Eagles are very uncommon in the Santa Cruz mountains.

White-tailed kite (*Elanus leucurus*)

This species is listed as California fully protected. Habitat includes rolling foothills and valley margins with scattered oaks and river bottoms or marshes. No occurrence has been reported by CNDDDB within 5 miles of the project boundary. Provisions provided in THP Section II, Item 32 will provide protection for this species.

Vaux's Swift (*Chaetura vauxi*)

The Vaux's swift is a CDFG Species of Special Concern (nesting only). The species generally occurs in association with conifer forests that have at least some mature characteristics. Vaux's swifts nest and roost in hollow snags or in senescing live trees with heartwood decay. Nest and roost trees are usually more than 20 inches in diameter and frequently have broken tops. Pileated woodpeckers excavate most of the cavities used for nesting. The species feeds aerially on small insects, often over water, but also over grasslands and forested areas. It roosts communally in hollow trees or chimneys. Vaux's swifts may be present in the THP. Snags and basal hollows will be retained in the proposed harvest.

Purple Martin (*Progne subis*)

The purple martin is a California Species of Special Concern (nesting only). It is a rare and localized breeder in a variety of open forest types in California; it may no longer nest in Santa Cruz County. Tall, old snags with woodpecker holes are required for nesting. Martins often forage over water. The species, if present in the THP area, is not expected to be detrimentally affected by harvest operations because snags will be retained.

Olive-sided Flycatcher (*Contopus cooperi*)

The olive-sided flycatcher is a California Species of Special Concern. It occurs primarily in coniferous forests, frequently perching atop tall trees or snags from which it hawks insects. It prefers forests with open canopies, and often occurs in association with openings or edges. Nests are built in trees. Olive-sided flycatchers occur as a breeding species in the Scott Creek watershed and are absent (migrates) in winter. Suitable nesting and foraging habitat is present in the THP area. Due to its association with open canopies, selective harvesting as proposed under this THP would be expected to either maintain or enhance overall habitat quality for this species.

Yellow Warbler (*Dendroica petechia brewsteri*)

The yellow warbler is a California Species of Special Concern (nesting only). Yellow warblers are found primarily in riparian habitats dominated by deciduous trees such as alders, willows, maples, sycamores, and cottonwoods. Suitable habitat for yellow warblers is present in the THP area and along Scott Creek. The broadleaf riparian habitat type potentially occupied by this species will not be significantly affected by harvest operations.

Loggerhead Shrike (*Lanius ludovicianus*)

The loggerhead shrike is a Federal Endangered Species and a California Species of Special Concern (nesting only). This species resides in a variety of open grassland and scrub habitats where it hunts insects and small vertebrates. It does not inhabit forests. Nests are built in shrubs or small trees. Loggerhead shrikes are known to occur within the watershed in appropriate habitat during the fall and winter months. Due to its open-habitat affinities, timber harvest operations are not expected to affect loggerhead shrikes.

Burrowing Owl (*Athene cunicularia*)

The burrowing owl is a CDFW Species of Special Concern (nesting and wintering in Santa Cruz County). It occurs in grassland and desert habitats, where it uses ground squirrel burrows for nesting and roosting. The species has been nearly extirpated as a breeder in Santa Cruz County, and is a rare, localized winter resident. Burrowing owls have been seen on the grass lands in the BAA. There is no grass land in the THP area.

Long-eared Owl (*Asio otus*)

The long-eared owl is a CDFG Species of Special Concern (nesting only). In California long-eared owls typically inhabit dense tree or shrub thickets within or adjacent to open habitat areas, which are favored

for hunting. The species occurs less commonly in conifer forests or mixed conifer/broadleaf forests. Rodents comprise the bulk of the diet. Long-eared owls use abandoned nests of corvids, hawks, and squirrels for nesting. Nests tend to have dense surrounding cover and are located either in a tree or in a thicket of tall shrubs, often found near water. This is a very secretive and highly nocturnal species. It is non-migratory at this latitude. Because long-eared owls tend to hunt in open-areas, timber harvest operations are unlikely to affect foraging habitat for this species. Nesting has not been documented within or near the project area, but suitable habitat may be present.

Western Screech Owl (*Otus kennicottii*), Northern Pygmy Owl (*Glaucidium gnoma*), Northern Saw Whet Owl (*Aegolius acadicus*)

These three species are small owls that inhabit forested areas and nest in woodpecker holes and natural cavities in snags. Nests typically are difficult to find. No old growth trees will be cut in this harvest. No snags will be cut, except in cases where they pose a threat to safety, as described in Item 14.

Any of these three species may nest in the THP area. Timber harvest operations are unlikely to significantly affect breeding habitat for these species because the critical habitat element (i.e. snags) will be retained, as directed by the Forest Practice Rules.

Northern Spotted Owl, Northern goshawk, and California Condor are not present in the Santa Cruz Mountains.

MAMALS

Bats

Six bat species that are either CDFW or USFWS Species of Concern potentially occur in association with coniferous forest habitats of the THP area. These include pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), long-eared myotis (*Myotis evotis*), fringed myotis (*M. thysanodes*), long-legged myotis (*M. volans*), and Yuma myotis (*M. yumaensis*). Bat species distribution and abundance within the Scott Creek watershed is not well known. Of principal concern with regard to timber harvesting is the potential loss of tree roosting and nursery sites. These include basal hollows of fire-scarred trees and cavities or other hollows in snags. Because these habitat elements will be retained during harvesting, no significant impacts are anticipated for bats.

Townsend's big-eared bat (*Cornorhinus townsendii*)

The Townsend's big-eared bat (COTO) is a candidate for listing under the California Endangered Species Act. COTO is most common in mesic environments, but are found in a variety of habitats including coastal conifer and broad-leaf forests. In California, this species is known to roost in limestone caves, lava tubes, mine tunnels, buildings, and other man-made structures (Williams 1986). The majority of cave, mine and building roosts examined in California are fairly spacious, at least 30 m (98 ft) in length, with the roosting area located at least 2 m (6.5 ft) above ground, and a roost opening at least 15 cm by 62 cm (6 inches by 24 inches) (Pierson et al. 1991).

This species has also been found roosting in large basal hollows of old growth redwood trees (Fellers and Pierson 2002, Mazurek 2004). Known maternity roosts in basal hollows have an average dbh of 9 ft. The internal roost areas were spacious, and the roost entrances were several feet in height, usually greater than 10 feet, with dome-like roost ceilings occurring above the top of the entrance (Mazurek 2004). Basal hollow roosts have been found in redwood trees with a minimum dbh of approximately 4 ft, but these were daytime roosts used by single males (Fellers and Pierson 2002).

Maternal colonies form between March and June and pups are born between May and July (Pearson et al. 1952). Young begin to disperse in September and October (Pearson et al. 1952, Tipton 1983).

There are no mine shafts, caves, abandoned structures or large basal hollows in the THP area and none were detected within 300 feet of the THP boundary. Two trees with basal hollows are adjacent to the THP area. These trees are protected by a no-harvest buffer and a seasonal restriction buffer as

recommended by the CDFW and described in Section II, Item 32. A copy of the CDFW preconsultation recommendations is located in Section V.

Pallid bat (*Antrozous pallidus*)

This species is a California Species of Special Concern. Its habitat includes deserts, grasslands, shrublands, woodlands, and forests. Pallid bats are most common in open, dry habitats with rocky areas for roosting. In contrast to the bat's preferred habitat the THP area is a moderately dense forest with no rocky areas.

San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*)

This species is a California Species of Special Concern. It is thought to prefer forest types with moderate overstory canopy and moderate to dense understory. This species also requires nest building material. Currently, the forest within the THP area has a moderately closed canopy. Selection silviculture harvesting will create a slightly more open canopy. Woodrat nests will be avoided where feasible during timber marking and skid trail flagging.

American Badger (*Taxidea taxus*)

The American badger is a California Species of Special Concern. In California, Badgers occupy a diversity of habitats, the principle requirements including sufficient food, friable soils, and relatively open, uncultivated ground. Grasslands, savannas, and mountain meadows near timberline are preferred. Badgers have been seen within the watershed and the BAA. Threats to Badgers include agricultural and urban development, as well as rodent poisoning. Badgers prey primarily on burrowing rodents such as gophers and make their homes in larger burrows as well. Proposed operations are not anticipated to negatively impact Badgers since harvesting will occur in a forested area and will not alter the grassland habitat.

Ringtail (*Bassariscus astutus*)

The ringtail is a California Fully Protected Species. Ringtails are highly nocturnal and occur in forest and shrub habitats. Refuge and nesting sites include snags, hollow trees and logs, caves, burrows, and abandoned woodrat nests. The species is primarily carnivorous. Ringtail distribution and abundance in the Santa Cruz Mountains is poorly known. Suitable habitat may be present within the THP area. Timber harvest operations are not expected to significantly impact foraging or nesting habitat for this species because key habitat elements noted above will be retained throughout the THP area.

AMPHIBIANS

California Red-Legged Frog (*Rana aurora draytonii*)

California red-legged frogs (CRLF) are a federally threatened species, and a CDF&W Species of Concern. These amphibians are found in lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. CRLFs require 11-20 weeks of permanent water for larval development, and access to estivation habitat.

The CNDDDB data base records show numerous detection locations of (CRLF) within five miles of the project area including all of Scott Creek. Refer to the CRLF Occurrence Map in Section V. According to the USFWS definition, "suitable habitat" is present in the THP area in the form of a Class II watercourse. However, breeding habitat for the CRLF is not present in the THP area as the Class II watercourse flows are very low even at peak flows and the pools in the Class II channel are only 8 inches deep in the early spring. There are no ponds within or near the THP area.

The Class I WLPZ road/skid trail is in the outer 20 feet of the WLPZ. No landing, road, or skid trail construction is proposed. No trees will be harvested from any WLPZ. Operations for this THP will last for 2 or 3 days at the most and 2 or three loads of logs (total) will be hauled at the most.

RECEIVED

PART OF PLAN

37

AUG 08 2014

Revised August 8, 2014

**COAST AREA OFFICE
RESOURCE MANAGEMENT**

California red-legged frogs and their habitats are ubiquitous in the Scott Creek watershed. Virtually all ponds and reservoirs in the area are occupied by red-legged frogs, and most support breeding.¹ Scott Creek and some of its tributaries are also occupied by red-legged frogs. In these streams, red-legged frogs are almost exclusively associated with deep (>2 feet) pools. Red-legged frog presence has been documented in Scott Creek from the estuary upstream continuously for at least 5 miles. A large proportion of the frogs inhabiting the streams are juveniles that disperse to the creek after metamorphosing at breeding ponds. Whereas most juveniles are likely to be year-round residents of the creek and adjacent riparian habitats, adult red-legged frogs use the streams principally as summer habitat, and then move upslope to breeding ponds for the winter. No breeding has been documented on any of the local streams.

Although this species is highly dependent on aquatic habitats, it is able to reside in both riparian and upland habitats when precipitation and ambient moisture conditions allow. During the dry summer months, red-legged frogs rarely are found more than 10 feet from water. With the onset of winter rains (October/November), most red-legged frogs move into terrestrial habitats adjacent to their aquatic home site, where they reside nearly continuously at distances of up to 300 feet from water until breeding activities commence.² Some adults reside at breeding sites the year around, while others disperse to and from breeding sites, residing at streams or other permanent aquatic habitats during the summer months. California red-legged frogs have been documented migrating overland between aquatic sites that are separated by distances as great as two miles. These overland movements occur at night, usually during or following rains.

This THP complies with the intent of USFWS Take Avoidance Scenario III utilizing take avoidance measures modified for this specific site. Suitable habitat is present in the THP area although breeding habitat is not present. CRLF shall be protected by limiting winter period operations as described under Item 23. Specifically, timber falling, yarding, loading and log hauling are prohibited during the wet season. Aquatic habitat is protected by operational restrictions within WLPZs and ELZs as described under Item 26. Operations are limited to daylight hours as described under Item 38.

California Tiger Salamander (*Ambystoma californiense*)

Listed as California Threatened. The California tiger salamander is most commonly found in annual grass habitat, but also occurs in grassy understory of valley-foothill hardwood habitats, and uncommonly along stream courses in valley-foothill riparian habitats. It needs underground refuge in burrows or subsurface openings. The species occurs from near Petaluma, Sonoma Co., east through the Central Valley to Yolo and Sacramento counties and south to Tulare Co., and from the vicinity of San Francisco Bay south at least to Santa Barbara Co. One isolated population is known to exist at Gray Lodge Wildlife Management Area, Butte Co. They occur at elevations up to 1,054 m. Prime habitat in California is annual grassland, but seasonal ponds or vernal pools are crucial to breeding. Permanent ponds or reservoirs are sometimes used as well. No occurrences of this species were displayed within the BAA in the CNDDDB. No habitat is present within the project boundaries but grass and oak woodland habitat is present near the THP area.

REPTILES

San Francisco Garter Snake (*Thamnophis sirtalis tetrataenia*)

Listed as Federally Endangered and California Endangered. This subspecies of common garter snake, the San Francisco garter snake (SFGS) is primarily associated with ponds and at wet areas which hold water far enough into the summer months to sustain breeding populations of prey species. The SFGS, throughout its life stages feed on various species of frogs, including Pacific tree frogs, California Red-Legged Frogs, Bullfrogs and their tadpoles. In the late spring and early summer months, the SFGS's activity level peaks, as they emerge from their hibernacula, located primarily in upland brush fields and grasslands, where sufficient numbers of rodent holes exist to provide shelter throughout the cooler winter months. For the remainder of the year the SFGS remains in a relatively close proximity to aquatic foraging habitats which provide enough food resources for the summer months as well as provide adequate solar radiation for proper thermoregulation.

¹ Data are from unpublished surveys conducted by John Bulger, 1997-2006. Also available in the CNDDDB.

² Bulger, J.B., N.J. Scott Jr., and R.B. Seymour. 2003. Terrestrial activity and conservation of adult California red-legged frogs *Rana aurora draytonii* in coastal forests and grasslands. *Biological Conservation* 110: 85-95.

The CNDDDB shows occurrences near the THP area but they are generalized polygons. According to the USFWS the range is only as far south as Waddell Creek which is approximately 1.7 miles from the THP area. There are no ponds within or near the THP. The Class II tributary has pools which were measured in the spring time at 8 inches deep and 4 feet wide by 4 feet long.

Coast Horned Lizard (*Phrynosoma coronatum frontale*)

The coast horned lizard is a California Species of Special Concern. The species generally occurs in habitats with exposed sand substrates or unconsolidated soils that support scrub vegetation. It forages on ants. Coast horned lizards are not known to occur in the Scott Creek watershed, and suitable habitat is probably lacking within the THP area.

California Legless lizard (*Anniella pulchra*)

The California legless lizard is a California Species of Special Concern. The silvery and black forms of the California legless lizard were formerly considered separate subspecies. Both forms occur primarily in coastal sand dunes, although the silvery legless lizard is also found at inland sites in association with sandy soils through which it can burrow. Legless lizards are fossorial and feed on small invertebrates. No suitable habitat is present within the THP area.

Western Pond Turtle: (*Clemmys marmorata*)

The Western Pond Turtle is a California Species of Special Concern. Western Pond Turtles most frequently inhabit streams, rivers, and sloughs. They avoid fast moving shallow water and prefer concentrated pools and backwater areas. Turtles are uncommon in heavily shaded areas. The nesting season occurs from April –August. Nests may be more than ¼ of a mile from water in exposed upland locations with sandy banks or grassy open fields. This type of habitat is not present in the THP area. There are no ponds near the THP area. CNDDDB shows presence of the turtles in Waddell Creek which is approximately 1.7 miles from the THP area.

Rubber Boa (*Charina bottae*)

The Rubber Boa is a California Threatened Species. Food consists primarily of small mammals and lizards. Found in montane forests habitats including red fir, ponderosa pine, hardwood, hardwood-conifer, Douglas-fir, redwood, mixed conifer and riparian. Also found in montane chaparral and wet meadow habitat. It is considered an extremely secretive snake seeking cover in rotting logs, pieces of bark, boards, rocks, and other surface debris. The boa burrows through loose soil or decaying vegetation. Usually found in the vicinity of streams or wet meadows or within or under surface objects with good moisture-relating properties such as rotting logs. The snake's activity is crepuscular and nocturnal. No snags or large woody debris of any kind are proposed for removal as a part of the proposed plan. No records of rubber boas are found within 5 miles of the project area on CNDDDB maps.

TERRESTRIAL NATURAL COMMUNITIES

Monterey Pine Forest (*pinus radiata*)

Monterey pine is a CNPD 1B.1 listed plant. This pine species is well suited to the coastal region in and around Ano Nuevo and generally can be found on dry coastal bluffs in this region. Monterey pine forests are located near the project area. Adjacent to the THP area, are pines which appear to be hybrids of Monterey pine and knobcone pine. No pines will be harvested under this THP.

Northern Interior Cypress Forest

No listing status has been provided for this habitat type. The nearest occurrence is approximately 2.4 miles to the southwest in the CDF&W Bonny Doon Ecological Reserve. The stand is located on soils generated from sandstone parent material. There are no cypress trees in the THP area.

INSECTS

Monarch butterfly (*Danaus plexippus*)

This species has been provided no special listing status. Winter roosting habitat consists primarily of Eucalyptus groves, and occasionally Monterey pines, along coastal California from Mendocino Co. to Baja California. Winter roosting occurs directly adjacent to the coast. One occurrence was reported by CNDDDB within the BAA. Monterey pines will not be harvested under this THP.

PLANTS

A botanical survey has been conducted by botanical consultant Jim West for the THP area. The entire THP area was covered in the survey. No special status plant species were detected in the project area. RPF Harlan Tranmer accompanied the botanist on the survey and prepared the plant list which is included in Section V. Mr. Tranmer has completed college courses in plant taxonomy, dendrology, and horticultural plant identification and has previously conducted botanical surveys. Special status plants and plant communities identified in scoping are discussed below.

Santa Cruz microseris (*Stebbinoseris dicipiens*)

Santa Cruz microseris is an annual herb, endemic to California, that grows in open areas with loose or disturbed soil, usually derived from sandstone, shale, or serpentine, on seaward slopes. The CNPS lists it on List 1B, but it is not listed federally or by the state of California. This species can be found in broadleaved upland forests, closed-cone coniferous forests, chaparral, coastal prairie, and coastal scrub. This plant has been found in the BAA near the project area but was not found during the botanical survey.

Santa Cruz Clover (*Trifolium buckwestiorum*) – Listed and CNPS List 1B.1. Habitat consists of coastal prairie, broadleaved upland forest and cismontane woodland. Prefers moist grassland within the 60 – 545 elevation band. This plant has been found near the project area. It was not seen in the project area during the botanical survey.

Bent-flowered fiddleneck (*Amsinckia lunaris*) - Listed CNPS 1B.2. Habitat consists of cismontane woodland and valley and foothill grasslands. Reported elevation band ranges from 50 – 500 meters. This plant has been found near the project area but was not found in the project area during the botanical survey.

Anderson's manzanita (*Arctostaphylos andersonii*) – Listed CNPS 1B.2. This species has not been listed by the state or federal agencies. Habitat includes broadleaved upland forests, chaparral, and north coast coniferous forests. This plant has been found at the far edges of the BAA but was not found during the botanical survey.

Schreiber's manzanita (*Arctostaphylos glutinosa*) – Listed as CNPS 1B.2. Habitat for this species consists of closed cone coniferous forest and chaparral. This species prefers diatomaceous shale outcrops and is often associated with Knobcone pine. Known elevation ranges are reported from 170 – 690 meters above sea level. This plant has been found near the project area but was not in the project area during the botanical survey.

Ohlone manzanita (*Arctostaphylos ohloneana*) - CNPS 1B.1 This manzanita is only known to exist in the northern end of Ben Lomond Mountain entirely within property owned by Lockheed Martin. The shrubs grow on Monterey shale ridges in maritime chaparral plant communities. Its' associates include *Pinus attenuata* and several other rare *Arctostaphylos* species. This species is within the BAA but not near the project area and was not found during the botanical survey.

Pajaro Manzanita (*Arctostaphylos pajaroensis*) - Listed CNPS 1.1. Occupies chaparral laden slopes that support sandy soils from 30 – 760 meters above sea level. This species has been found at the far edge of the BAA but was not found during the botanical survey.

Santa Cruz Mountains pussypaws (*Calyptridium parryi* var. *hesseae*) – Listed as CNPS 1B.1. General habitat for this species consists of chaparral and cismontane woodland. Microsite habitat includes sandy or gravelly openings at an elevation range from 305-1530 meters above sea level. This plant has been found at the far edges of the THP but was not found during the botanical survey.

San Francisco collinsia (*Collinsia multicolor*) – Listed CNPS 1B.2. Habitat consists of coniferous forest and coastal scrub. Prefers soils generated from decomposed shale (mudstone) mixed with humus. Reported elevational ranges from 30 – 250 meters above sea level. This plant has been found near the project area but was not detected during the botanical survey.

Elongate copper moss (*Mielichhoferia elongate*) – Listed CNPS 2B.2. Habitat is cismontane woodland. The moss grows on very acidic, metamorphic rock or substrate. The moss has been documented within the BAA but relatively far from the project area and was not found during the botanical survey.

Franciscan thistle (*Cirsium andrewsii*) – Listed CNPS 1B.2. Habitat is coastal bluff scrub, broadleaved upland forest, coastal scrub, and coastal prairie. It is sometimes found in serpentine seeps. This plant has been recorded within the BAA but not near the project area. The project area and surrounding area do not contain the preferred habitat. The thistle was not found during the botanical survey.

White-rayed pentachaeta (*Pentachaeta bellidoiflora*) - Listed CNPS 1B, Federal Endangered, California Endangered. Habitat for this species consists of valley foothill and grasslands. White Rayed Pentachaeta prefers open rocky slopes and grassy areas with soil derived from serpentine parent material. The plant has been found at the edge of the BAA. Habitat is limited in the project area. This plant was not found during the botanical survey.

San Francisco campion (*Silene verecunda* ssp. *verecunda*) – San Francisco campion is a CNPS 1B.2 Listed plant. Habitats for this plant include coastal scrub, valley and foothill grasslands, coastal bluff scrub, chaparral and coastal prairie. This plant has been found within the BAA. Habitat for this species within the project area is not favorable. It was not found during the botanical survey.

Kellogg's horkelia (*Horkelia cuneata* ssp. *sericea*) – Listed as CNPS List 1B.1. Habitat includes closed cone coniferous forests, chaparral and areas of costal shrubs. Most commonly associated with openings on old dune sites and coastal sandhills within the 10 to 200 meter elevation band. This plant has been found in the BAA. Habitat within the project area is not favorable. It was not detected during the botanical survey.

Pine Rose (*Rosa pinetorum*) - Listed CNPS 1B.2. Habitat consists of closed cone coniferous forest within the elevation band of 2 – 300 meters above sea level. Marginal habitat is located adjacent to the project area. This species has been found within the BAA but not near the project area and was not found during the botanical survey for this THP.

Santa Cruz Mountains beardtongue (*Penstemon rattanii* var. *kleef*) – Listed CNPS 1B.2. Habitat consists of lower montane coniferous forests and chaparral. Prefers sandy shale slopes and is found along the ecotones of forest/bushlands. Reported elevations range from 400 - 1100 meters above sea level. This species has been found near the project area but was not found during the botanical survey.

SECTION IV

CUMULATIVE IMPACTS ANALYSIS

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I. PROJECT ALTERNATIVES ANALYSIS

The following is a list of potential alternatives to the proposed project and an analysis of each in terms of its impact on the ownership and surrounding watershed. It is important to realize that some of these alternatives do not reflect the landowner's objectives as stated below.

The landowner's objectives for the lands encompassed within the proposed project boundaries are to implement forest management prescriptions and operations to provide for the long-term sustained yield of forest products, while implementing additional management strategies for the protection and conservation of water quality, wildlife habitat and other associated public trust resources. These goals are consistent with the purpose and permitted uses of TPZ under state law and Santa Cruz County rules and ordinances. Accomplishment of the landowners' goals is largely dependent on the ability of these ownerships to provide economic support by producing an acceptable financial return. Proposed management activities are designed to maintain and enhance the beneficial uses of water, including quality and quantity, while conserving archaeological and historical resources, terrestrial habitats, and biodiversity. In addition, the forest management strategies selected by the timberland owners will provide for the long term sustained yield of high quality timber products, enhance regional and local employment and markets, and will improve overall forest health, while reducing the hazard to public or private holdings and resources adjacent to the proposed project from wildfire. These goals demonstrate the need for this proposed project.

A. NO PROJECT ALTERNATIVE:

Under this alternative, the land and timber resource would be left in its current condition with no active harvesting of the timber resource occurring. While this alternative would satisfy those who would oppose timber harvesting on this ownership, it does little to improve upon the legacy of land use. Land capable of producing a quality resource in perpetuity would not be utilized for the benefit of humankind.

B. OPEN SPACE/CONSERVATION EASEMENT ALTERNATIVE:

Under this alternative, the entire ownership or portions of it would be sold to a land trust organization or placed under a conservation easement. This action would not necessarily preclude harvesting. Many conservation trust organizations use periodic harvests as a means of obtaining revenue for future acquisitions and operating costs. Likewise, the terms of conservation easements can be somewhat flexible. In the interest of creating a more "park-like" or "old growth" appearance, trust organizations might use periodic, silviculturally-targeted harvests to emphasize the increased growth of larger trees. Similarly, the terms of a conservation easement might be written to allow for harvesting.

Open space purchases of recent years have been premised on land use for recreational purposes. Mountain biking, hiking, and other forms of outdoor recreation seem to be acceptable uses of large tracts of forest as far as the local public is concerned. As illustrated in the purchase of the Gray Whale Ranch in Santa Cruz County, recreationists can be tapped to help pay for the purchase. The effect of intense recreation on a land resource is not benign however, and must be considered as well. As in any land use, a management plan outlining potential impacts and mitigations including a philosophical discussion of the use would be necessary.

Payments to landowners and tax breaks resulting from conservation easements are considerable incentives to landowners burdened with debt. This is particularly true should the landowner wish to pass the land on to the next generation. This alternative certainly has merit, but is an unlikely and unnecessary choice given the landowner's desire for flexibility over time to achieve their management goals. The land covered by this THP is unlikely to be desirable to conservation organizations as it is small, surrounded by small residential parcels, is accessed only by a one lane private road, and contains no known high conservation value resources.

C. PUBLIC PARK ADDITION ALTERNATIVE:

This alternative would see the expansion of Santa Cruz County Parks or California State Parks to include all or a portion of the property. The alternative assumes that the County or the State has the financial and/or political wherewithal to purchase the ownership (or a portion of it) and a substantial desire to make such a deal happen. Indeed, the potential for this to be a viable alternative lies in the fervor of the constituency of County or State government and their willingness to contribute tax or bond money to potential land acquisition. There is currently no known interest in purchasing this land to create a public park.

If such an acquisition were to happen, infrastructure would need to be developed for recreation and emergency access. The degree of maintenance and improvement would be dependent upon the management of the park system.

Park acquisition would not fulfill the goals of the landowner. The property, in recent history, has been analyzed for use as productive timberland. Under the direction of the current ownership, the property has the potential to flourish under an active management scheme in which stewardship of the land is the central and demonstrated theme.

D. THP AS PROPOSED ALTERNATIVE:

This alternative would allow for the implementation of sound forest management within the property. The successful outcome of this one proposed harvest would provide a valued and valuable resource to the local economy, and contribute to the long-term productivity of the land. This alternative accounts for the protection of water quality, wildlife, soils, and various aesthetic concerns while promoting sustainable forestry and the provision of local wood products for local markets.

This is the only alternative desirable to the landowner and is the reason for the preparation of this THP.

E. ALTERNATIVE LAND USE

All of the proposed THP area is forested except for a small area around a storage shed where there is a gap in the forest. The tree cover and topography preclude agricultural use.

There is no perennial flowing water in the THP area. Development of ground water for domestic purposes could be an alternative land use. It is not known however whether there is sufficient quality or quantity of water to develop a successful water purveyor operation; however, it is unlikely. Certain aspects of water procurement may not be amenable to the agencies that regulate domestic water supplies. There could be some impact to Scott Creek with reduction of flow.

F. ALTERNATIVE TIMING OF THE PROJECT:

The winter period is from October 15th through May 1st in the Scott Creek watershed which contains "Listed Anadromous Salmonids". The THP proposes low-impact operations including logging and erosion control throughout the winter period in order to protect soil and water resources. Due to other restrictions including the timeline associated with obtaining a Waiver of Waste Discharge Requirements from the Central Coast Regional Water Quality Control Board, the window available for conducting harvest operations is further limited. Availability of contractors to conduct the operation is limited. The amount of board feet sawmills are willing to purchase in a given year is limited. Alternative timing is not an option given these regulatory and logistical restrictions.

G. ALTERNATIVE SITE:

This alternative does not apply well to a timber harvesting plan that is written and intended for a specific property. Conducting a timber harvesting plan on an alternative site would not meet the needs of the landowners or their desire for a harvest on their property. The landowner does not own any other property available for timber harvest.

H. ALTERNATIVE SILVICULTURE OR YARDING:

An alternative silviculture would be reduced levels of harvesting which would not accomplish the goal of increasing regeneration and tree growth rates and reducing wood defect and fire hazard while recovering a valuable resource. Even-age silviculture is not allowed in the Southern Sub-district of the Coast Forest District, nor is it consistent with the landowners' objectives.

The yarding method proposed for this harvest is tractor yarding. Other yarding methods available could include skyline cable, helicopter, balloon, or animal logging. All of these options are more expensive and would increase costs beyond an acceptable level for the landowner. Helicopter logging is not necessary, as the combination of slope, terrain, and existing infrastructure lends itself to the yarding methods proposed. Also, for a relatively small job, it would not be feasible to bring a helicopter to the Santa Cruz Mountains from out of the area. Balloon logging contractors are not widely available, and they would most likely be limited by time and weather, as balloon logging is a slower yarding method and it is very sensitive to inclement weather. Slopes and slope deflection are not sufficient to facilitate cable yarding.

II. CUMULATIVE IMPACTS ASSESSMENT CHECKLIST

A. Watershed Study Area

The watershed study area chosen for analysis of potential cumulative impacts resulting from this proposed THP is the Scott Creek Planning Watershed (Calwater version 2.2 watershed #3304.110204) which includes approximately 8,804 acres. The lower reach of Scott Creek travels through and captures the flow from the Little Creek Watershed. The entire THP is within the Scott Creek planning watershed.

B. Does the watershed study area contain any past, present, or reasonably foreseeable probable future projects?

Yes. The watershed has a rich history of human activity. Notable projects that have had an

impact on the beneficial uses of water include past timber harvesting, livestock grazing, agriculture, road building and residential development.

Outside of the forested extent of the watershed, much of the range land is used for cattle grazing. Ownership in the watershed is primarily made up of large landowners including Big Creek Lumber, Lockheed Martin, and Cal Poly Corporation (Swanton Pacific Ranch). The predominant land use in the watershed is timber production with simultaneous management for wildlife and watershed values. There is minimal residential development and rural development is primarily in the valley bottom with a few structures in the surrounding hills.

Much of the watershed was logged by the San Vicente Lumber Company between 1908 and 1922. The logging technique at that time was clearcut and burn, leaving the ground relatively unvegetated. The wood was in high demand to rebuild San Francisco following the 1906 earthquake.

In the last ten years, eight timber harvest plans have been completed and one went unlogged within the watershed study area. These plans encompass 709 acres in the watershed, approximately 8% of the watershed area. The following list includes all THPs and NTMPs in the Watershed Assessment Area in the past 10 years.

Year	Harvest Doc Number	Silviculture	Yarding	Completion Status	Completion Date	Acres
2001	1-01-335-SCR	Selection	Cable System	Completed	08/16/2011	21
2001	1-01-335-SCR	Selection	Tractor or Skidder	Completed	08/16/2011	94
2002	1-02-101-SCR	Selection	Balloon or Helicopter	Completed	10/19/2007	87
2002	1-02-101-SCR	Selection	Cable System	Completed	10/19/2007	57
2002	1-02-101-SCR	Selection	Tractor or Skidder	Completed	10/19/2007	263
2008	1-08-079-SCR	No Harvest Area	Tractor or Skidder	Completed	10/27/2011	4
2008	1-08-079-SCR	Selection	Tractor or Skidder	Completed	10/27/2011	96
2008	1-08-079-SCR	Selection	Tractor or Skidder	Unlogged		88

With this 1 acre proposed THP included, the total acreage under harvest plan would be 710 acres which is still 8% of the planning watershed.

C. Are there any continuing significant adverse impacts from past land use activities that may add to the impacts of the proposed project?

Yes. A number of legacy roads exist in the watershed from previous logging activities. Legacy roads may contribute sediment to watercourses as they are generally not maintained and they disrupt the natural drainage of a hillside. These roads have generally healed over through re-vegetation and cut-bank sloughing.

Residential land use and maintenance of related access roads will likely continue to be problematic within the watershed. Many stream crossings in the watershed modify channel morphology and continued road maintenance and construction in the watershed have the potential to impact the beneficial uses of water.

This THP includes plans to reduce the potential for deleterious amounts of sediment to enter Scott Creek at crossing X1.

D. Will the proposed project, as presented, in combination with past, present, and reasonably foreseeable probable future projects identified in Parts B and C above, have a reasonable potential to cause or add to significant cumulative impacts in any of the following resource subjects?

	Yes after mitigation (a)	No after mitigation (b)	No reasonable potential significant effects (c)
1. Watershed	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Soil Productivity	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Biological	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Recreation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Visual	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Traffic	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Noise	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Air Quality	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9. Fire Hazard	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10. Carbon	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

(a) "Yes after mitigation" means that potential significant adverse impacts are left after application of the forest practice rules and mitigation or alternatives proposed by the plan submitter.

(b) "No after mitigation" means that any potential for the proposed timber operation to cause significant adverse impacts has been substantially reduced or avoided by mitigation measures or alternatives proposed in the THP and/or application of the Forest Practice Rules.

(c) "No reasonable potential significant effects" means that the operations proposed in the THP do not have a reasonable potential to join with the impacts of any other project to cause significant cumulative adverse effects.

E. If column (a) is checked above in Part D, describe why the expected impacts cannot be feasibly mitigated or avoided and what mitigation measures or alternatives were considered to reach this determination.

F. If column (b) is checked above in Part D, describe what mitigation measures have been selected which will substantially reduce or avoid reasonable potential significant cumulative impacts except for those mitigation measures or alternatives mandated by application of the rules of the Board of Forestry.

The Forest Practice Rules for the Southern Subdistrict of the Coast Forest District including the Santa Cruz County Rules shall be adhered to in the mitigation of potential impacts. The rules under 14 CCR 916.9 "Protection and Restoration of the Beneficial Functions of the Riparian Zone in Watersheds with Listed Anadromous Salmonids" shall also be adhered to. The specific rule-related mitigations are described in the THP. Finally, plan-specific mitigations as described in Sections II and III will substantially reduce or avoid reasonable potential significant cumulative impacts to the point of insignificance.

G. A brief description of the assessment areas used for each resource subject is contained in the analysis of each resource that follows.

H. The following individuals, organizations, and records were consulted in the assessment of potential cumulative impacts.

1. Baseline Instream and Watershed Assessment: Scott Creek, Santa Cruz County, California. Prepared for Big Creek Lumber Company. By John Bulger. September 1998.
2. Cooper Clark and Associates. *Preliminary Map of Landslide Deposits in Santa Cruz County, California*. 1974.
3. U.S. Department of Agriculture Soil Conservation Service. *Soil Survey of Santa Cruz County, California*. August 1980.
4. Cafferata, P., Spittler T., Wopat M., Bundros G., Flanagan S., California Department of Forestry and Fire Protection. California Forestry Report No. 1. *Designing Watercourse Crossings for Passage of 100-year Flood Flows, Wood, and Sediment*. February 2004.
5. U.S. Geologic Survey, Davenport 7.5-minute quadrangle. 1997.
6. California State Water Resources Control Board. *2010 Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report)*.
7. Northwest Information Center. *Archaeological/Historical Records Check Response*. Sonoma State University. April 9th, 2014.
8. Cal Fire Forest Practice Program. California Forest Practice Rules 2014. Compiled from Title 14, California Code of Regulations, Chapters 4, 4.5 and 10. 2014.
9. Forest Practice Watershed Mapper. <http://frap.fire.ca.gov/>, accessed May 29th, 2014.

Also refer to Resources Used in the Scoping Process located in the Plan Addendum Item 32 in Section III of this THP.

III. CUMULATIVE WATERSHED IMPACTS ASSESSMENT

A. Watershed Impacts Assessment Area

The watershed study area chosen for analysis of potential cumulative impacts resulting from this proposed THP is the Scott Creek Planning Watershed. Which is one of "Calwater version 2.2 Planning Watersheds" delineated by the State of California as areas that can be realistically assessed for potential cumulative impacts. Scott Creek Planning Watershed encompasses approximately 8,804 acres. The 1 acre project area is not a significant percentage of the Scott Creek watershed.

The entire THP area drains to Scott Creek which drains to the Pacific Ocean.

B. Beneficial Uses of Water within Assessment Area

The known on-site and downstream beneficial uses of water that could be affected by the project are wildlife uses including anadromous fish and amphibian populations, ground water recharge, agriculture, and recreation.

C. Current Stream Channel Conditions

1. Are there any Class II or larger streams that flow through or adjacent to the project area that will receive runoff from areas disturbed by project activities?

Yes, the THP area contains a Class II watercourse which is a tributary to Scott Creek. Scott Creek is approximately 150 feet from the THP boundary.

If yes, indicate the condition of the Class II or larger stream channels that are within or adjoin the project area. Use High (H), Medium (M), or Low (L) to rate the relative impactedness of the stream channel.

Gravel Embeddedness	L
Pool Filling	L
Aggrading	M
Bank Cutting	L
Bank Mass Wasting	L
Down Cutting	L
Scouring	L
Debris Clearing	L
Debris Jamming	M
Canopy Reduction	L
Recent Flooding	M

2. Are there any current stream channel conditions outside the project area, but within the watershed assessment area, that are contributing to a reduction in the beneficial uses of water?

The effect of residential development (including roaded access and septic system leaching) on the stream channel conditions is unknown, although there are relatively few residents in the WAA. It can be speculated that some effect has occurred from roads that have not been properly maintained in close proximity to creeks. Swanton Road is located in close proximity to Scott Creek for approximately 2.5 miles. Other native surface and rocked roads are located throughout the watershed on private property. It is possible that there are agricultural operations ongoing in the watershed that may or may not be affecting the stream channels and waters within the streams.

3. Are there any known current stream channel conditions outside the assessment area that are contributing to a reduction in the beneficial uses of water?

Little Creek Watershed includes the lower reach of Scott Creek. Conditions in Little Creek watershed are similar to those within the WAA although it includes much more row crop agriculture and commercial grazing much of which is adjacent to the Scott Creek riparian corridor. These activities have the potential to contribute to reduction of beneficial uses of water.

The construction of the Highway 1 bridge at the mouth of Scotts Creek has constrained the outflow from the brackish water lagoon. This modification has stopped the natural movement of the channel from year to year. The formation and subsequent breakdown of a sandbar on the ocean side of the bridge is a critical event for many species, allowing fresh and salt water mixing and opening the transportation corridor. For example, anadromous salmonids must wait for the berm to be broken to move between fresh and salt water habitats.

D. Past Projects

Past projects within the assessment area include road construction and maintenance, timber harvests, farming and ranching, residential development, and recreation.

Based upon knowledge of watershed conditions on and off the project area, have past projects within the assessment area resulted in any of the following impacts?

1. Increased sediment inputs that have embedded gravels, filled pools, or caused channel aggradation within any portion of the stream system?

Legacy logging has undoubtedly contributed sediment to the stream system. Following logging in the early 1900s, the surrounding hills were devoid of vegetation and had been burned-over. With no ground cover to hold the soil in place, erosion likely moved sediment downhill until rapid succession revegetated the slopes.

A small amount of cattle grazing has taken place on the valley flats and foothill rangeland adjacent to Scotts Creek. Cattle use in the watershed is managed and has not significantly increased sediment inputs into the stream system.

Unsurfaced residential access roads may also contribute sediment to portions of the stream system.

2. Increased channel down cutting or bank erosion as a result of increased flows, sediment transport, or other channel modifications?

Downcutting has occurred within the watershed as a result of natural processes and possibly to some unknown level associated with increased peak flows associated with legacy effects. Deposition of sediment from historic logging and failures from steep streamside slopes has left sediment accumulations that meandering stream flows erode and transport downstream. High flows accelerate bank erosion on certain stretches of the channel.

3. Increased water temperatures resulting from canopy removal along stream channels?

Increased water temperatures resulting from canopy removal along stream channels are not known to be a problem. Even in relatively highly developed areas, much of the overstory forest canopy has been retained. Further, the areas within the planning watershed that are managed timberland have stringent stream channel canopy retention standards as required by the Forest Practice Rules.

4. Increased inputs of unstable organic debris to streams or lakes?

No recognizable increase in the input of unstable organic debris has occurred.

5. Removal of large organic debris leading to loss of pool habitat?

No debris removal is known to have occurred in or near the THP area and little removal appears to have occurred within the remainder of the assessment area since the cessation of removal by the County and State governments.

6. Chemical inputs to a stream or lake?

Chemical inputs related to septic systems may have entered streams within the assessment area from residential developments. Petroleum based chemicals from paved surfaces are most likely washing into the stream system. The extent to which this occurs is unknown as is the distance such inputs would be transported.

E. Potential On-site Effects

Based on conditions and knowledge of the impacts of similar past projects, what is the potential for the project to cause the following effects? Use High, Medium or Low.

1. Channel or bank erosion?

Low

2. Streamside or inner gorge mass wasting that could directly enter a stream channel?

Low

3. Debris flows or torrents that could move directly into the stream from side slopes, swales, small channels, roads, landings, or skid trails?

Low

4. Debris flows or torrents caused by debris jams?

Low

5. Side slope mass wasting that directs surface runoff into gullies, swales, or small channels connected to the stream system?

Low

6. Sheet, rill, or gully erosion that could be discharged into the stream from roads, landings, or skid trails (including all disturbed areas from the top of the cut to the bottom of the fill)?

Low

7. Sheet, rill, or gully erosion from harvesting or site preparation that could enter the stream system?

Low

8. Openings created by the project along streams that could result in substantially increased stream temperatures?

Low

9. Increased amounts of small organic debris in streams or lakes as a result of the project?

Low

10. Movement of roadway chemicals, machinery fuels, pesticides, nutrients released by burning, or other chemicals into streams or lakes as a result of the project?

Low

11. Increased peak flows as a result of vegetation removal, snow accumulation in new openings, or more efficient runoff routing created by the project?

Low

12. Inputs of large organic debris in streams or lakes as a result of the project?

Low

13. Extraction of large organic debris from streams or lakes as a result of the project?

Low

14. Loss of future organic debris as a result of streamside timber harvesting?

Low

F. Future Projects

Future projects within the assessment area will likely include timber harvests, continued crop farming and livestock grazing, continued repair and maintenance of roads conducted by the County of Santa Cruz and private landowners, and possibly recreational development of public and private trails. Future residential and commercial development in the watershed is uncertain but not likely to happen on a large scale. Unpermitted illegal development on a small scale is slightly more likely.

Information on projects of this nature is difficult to come by as they may not be scheduled yet. The County of Santa Cruz website did not list any Environmental Impact Reports (EIRs) that are currently under review in the Scott Creek Planning Watershed.

Based upon the knowledge of current watershed conditions, the effects of past projects, and accounting for currently proposed mitigation measures, are the identified future projects likely to result in:

1. Increased sediment inputs that will fill pools, embed stream gravels, or cause channel aggradation in some portion of the stream system?

Increased sediment inputs are not expected as timber, agricultural, recreational, and road related projects have increasing awareness of how to avoid and mitigate such inputs and no large scale projects in the watershed are anticipated. There are likely to be continued sediment inputs from culvert problems, cutbank failures, and road surfaces on County and private roads. Recreational motorcycle and bicycle use during the wet winter months also occurs, and this can mobilize sediment and disable erosion control structures in forested watersheds.

2. Increased channel down cutting or bank erosion from increased flow, sediment transport, or other stream modifications?

No. With the anticipated lack of development and increasing efforts to reduce environmental impacts, adverse stream modifications are not expected to increase although some are sure to continue.

3. Additional openings along stream channels that could result in unacceptable increases in water temperature?

No. With the lack of anticipated development and the existence of stream protection regulations, future projects are not expected to increase stream temperatures.

4. New inputs of organic debris to streams or lakes?

No new inputs are anticipated.

5. Extraction of large organic debris from streams or lakes?

No, given the new awareness surrounding large woody material in streams, future extractions are unlikely.

6. Chemical inputs to streams or lakes?

An increase in such inputs is dependent upon sensitivity of landowners and residents to the effects of their actions. Public information campaigns in Santa Cruz County regarding "Household Hazardous Wastes" may, over time, help to alleviate chemical stressors on streams and lakes. An increase is unlikely if significant development does not occur.

G. Interactions

Considering the combined impacts upon the beneficial uses of water described in the previous sections, what is the potential for developing adverse cumulative watershed effects in the assessment area as a result of: (Use High, Medium or Low)

1. The proposed project combined with the ongoing effects of past projects, but without the expected impacts of future projects?

Low

2. The proposed project combined with the effect of past projects and the expected impacts of future projects listed in Part F?

Low

If the answer to both questions is "Low", go to Part H and check the line labeled, "No (after mitigation)" or "No (no reasonable potential significant effects)" as appropriate.

H. Impacts Evaluation

Will the proposed project, as presented, in combination with the impacts of past and future projects, as identified in Parts C through F and with the interactions rated in Part G above, have a reasonable potential to cause or add to significant cumulative impacts to watershed resources?

Yes (after mitigation)

☐

No (after mitigation)

☒

No (no reasonable potential significant effects)

☐

If the answer is, "No" and either or both of the questions in Part G are rated "Medium," describe the reasons for reaching this conclusion. This section may also be used to describe situations in which the proposed project, as described and mitigated, will result in positive effects on watershed conditions and existing cumulative watershed impacts.

The proposed project is quite small meaning that; no steep slopes are involved, there is only one skid trail and landing, and only one dense redwood grove will be thinned. A failing Class II watercourse crossing will be upgraded and sized for a 100 year flood event.

IV. CUMULATIVE SOIL PRODUCTIVITY IMPACT ASSESSMENT

Cumulative soil productivity impacts occur when the combined impacts of a sequence of management activities produce a significant reduction in soil productivity. Those impacts may occur as part of past projects and as the likely impacts of future projects.

Impact significance must also be considered relative to the soil productivity potential of the area in question. Losses that can be considered acceptable on highly productive lands may be unacceptable or even exceed the productive potential of lower site lands. For example, productivity reductions from loss of growing space associated with development of roads and skid trails necessary for timber management on high site lands may be greater than the total unit-area productivity of a poor site.

A. Soil Productivity Impacts Assessment Area

The soil productivity impacts assessment area is the proposed project area.

B. Soil Productivity Resources Assessment

Site factors to be assessed for cumulative soil productivity impacts include organic matter loss, surface soil loss, soil compaction, and growing space loss. The potential impact of successive management activities must be assessed for each of those factors individually and in combination and the overall impact classed as significant when:

1. The area disturbed by proposed timber operations will exceed that required by the silvicultural and harvest systems approved for use under the proposed THP, including unnecessary duplication of existing skid trails, roads, landings, yarding disturbance, and mechanical site preparation.

There is only one landing and one skid trail proposed for use and neither will require grading. The proposed silvicultural method, single-tree selection, will retain the continuity of tree cover and therefore minimize disturbance. Site preparation is not proposed following the harvest.

2. The amount of organic matter loss and soil displacement with use of the proposed silvicultural and harvesting systems will substantially exceed that of other feasible systems.

Organic matter loss and soil displacement will be minimal under the proposed harvest system. There is only one landing and one skid trail proposed for use and neither will require grading. Lopping and other erosion control standards associated with the WLPZ road use and crossing replacement will be met or exceeded in an effort to increase soil preservation.

3. The amount of compaction and puddling with use of the proposed silvicultural and harvesting systems will substantially exceed that of other feasible systems under the soil moisture conditions expected at the time of the proposed operations.

Heavy equipment operations will only occur in the dry season and extended dry periods during the wet season. Harvesting will not occur when excessive puddling and compaction could possibly result. The existing roads are already well compacted and effectively drained due to decades of use.

4. The combined loss of soil productivity from loss of growing space, organic matter loss, soil displacement and soil compaction from the proposed operations will substantially exceed that of other feasible combinations of silvicultural and harvesting systems.

The selection silviculture system in combination with tractor yarding on existing skid trails, long-lining, and small-scale cable yarding are all ideally suited for the project area and will work well to prevent soil impacts such as growing space loss, organic matter loss, soil displacement and soil compaction. Soil resource conservation has improved dramatically as a result of this combination of silvicultural and harvest systems, which have been used successfully in the Santa Cruz Mountains for many years.

C. Impacts Evaluation

Will the proposed project, as presented, alone or in combination with impacts of past and future projects have a reasonable potential to cause or add to significant cumulative soil productivity impacts as a result of:

	Yes after mitigation	No after mitigation	No reasonable potential significant effects
1. Organic Matter Loss	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Surface Soil Loss	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Soil Compaction	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Growing Space Loss	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Combination of above	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

V. CUMULATIVE BIOLOGICAL IMPACTS ASSESSMENT

A. Biological Impacts Assessment Area

The biological impacts assessment area (BAA) for animal and plant species is the project area and the area within a five mile radius of the project. Refer to the Watershed Assessment Area and Biological Assessment Area Map in Section V. This assessment area accounts for mobile species that may move in and out of the project area. This also reflects an area in which birds' nests could be found for birds that are foraging or roosting in the plan area, or conversely for birds living within the plan area, and foraging or roosting in the surrounding area. Many of the plant and animal species found in the plan area will stay within the assessment area, due to biologic constraints or due to the fact that much of the environment surrounding the BAA is fairly heavily developed, and therefore inhospitable to many animal species. Finally, the project area and the area within five miles of the project boundary is a reasonable area to assess for impacts to plant species because most seed and pollen transport will occur within this area. Seed and pollen transport for different plants may rely on wind, water, insects, animals, birds, and other natural forces to move genetic material.

B. Biological Resource Inventory

1. Identify any of the following categories of species known or suspected to occur in the biological assessment area for each: rare, threatened or endangered; species of special concern established by the BOF; sensitive species.

The following lists of species are discussed in detail in Section III, under the Plan Addendum to Item #32. Species with listing status and possible presence in the project area are also discussed in Section II, under Item #32.

AMPHIBIAN

California Red-Legged Frog (*Rana aurora draytonii*)

California Tiger Salamander (*Ambystoma californiense*)

REPTILE

Western pond turtle (*Emys marmorata*)

San Francisco Garter Snake (*Thamnophis sirtalis tetrataenia*)

Rubber Boa (*Charina bottae*)

Coast Horned Lizard (*Phrynosoma coronatum frontale*)

California Legless lizard (*Anniella pulchra*)

FISH

Coho Salmon (*Oncorhynchus kisutch*) – Central California Coast Evolutionary Significant Unit

Steelhead (*Oncorhynchus mykiss irideus*) – Central California Coast Distinct Population Segment

BIRDS

Marbled murrelet (*Brachyramphus marmoratus*)

Osprey (*Pandion haliaetus*)

American Peregrine Falcon (*Falco peregrinus anatum*)

Sharp-shinned Hawk (*Accipiter striatus*)

Cooper's Hawk (*Accipiter cooperii*)

Golden Eagle (*Aquila chrysaetos*)

Great Blue Heron (*Ardea herodias*)

Bald Eagle (*Haliaeetus leucocephalus*)

White-tailed kite (*Elanus leucurus*)

Vaux's Swift (*Chaetura vauxi*)

Purple Martin (*Progne subis*)

Olive-sided Flycatcher (*Contopus cooperi*)

Yellow Warbler (*Dendroica petechia brewsteri*)

Loggerhead Shrike (*Lanius ludovicianus*)

Burrowing Owl (*Athene cunicularia*)

Long-eared Owl (*Asio otus*)

Western Screech Owl (*Otus kennicottii*)

Northern Pygmy Owl (*Glaucidium gnoma*)

Northern Saw Whet Owl (*Aegolius acadicus*)

ANIMALS

Townsend's big-eared bat (*Cornorhinus townsendii*)
Pallid bat (*Antrozous pallidus*)
San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*)
Santa Cruz kangaroo rat (*Dipodomys venustus venustus*)
San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*)
American badger (*Taxidea taxus*)
Ringtail (*Bassariscus astutus*)

TERRESTRIAL AND AQUATIC NATURAL COMMUNITIES

Monterey Pine Forest (*pinus radiata*)
Northern Interior Cypress Forest

INSECTS

Monarch butterfly (*Danaus plexippus*)

PLANTS

Santa Cruz Clover (*Trifolium buckwestiorum*)
Bent-flowered fiddleneck (*Amsinckia lunaris*)
Anderson's manzanita (*Arctostaphylos andersonii*)
Schreiber's manzanita (*Arctostaphylos glutinosa*)
Pajaro manzanita (*Arctostaphylos pajaroensis*)
Ohlone manzanita (*Arctostaphylos ohloneana*)
Pajaro Manzanita (*Arctostaphylos pajaroensis*)
Santa Cruz Mountains pussy paws (*Calyptridium parryi* var. *hesseae*)
San Francisco collinsia (*Collinsia multicolor*)
Elongate copper moss (*Mielichhoferia elongate*)
Franciscan thistle (*Cirsium andrewsii*)
San Francisco campion (*Silene verecunda* ssp. *verecunda*)
Kellogg's horkelia (*Horkelia cuneata* var. *sericea*)
Santa Cruz Mountains beardtongue (*Penstemon rattanii* var. *kleei*)
White-rayed Pentachaeta (*Pentachaeta bellidiflora*)
Pine rose (*Rosa pinetorum*)
Santa Cruz microseris (*Stebbinoseris diciptiens*)

2. Identify any other wildlife or fisheries resource concerns known or suspected to occur within the biological assessment area.

There are no further wildlife or fisheries resource concerns known or suspected to occur within the biological assessment area.

3. Describe the pre-project condition of the biological resources inventoried within the biological assessment area. Describe the anticipated post-project condition of those biological resources after completion of the proposed project.

Lands within the BAA are very rural with relatively large ownerships and land use consisting mostly of agriculture and timber production, and recreation. Large areas of the BAA are inaccessible or otherwise unused. Vegetation consists of dense second growth conifer forests, oak woodlands, grasslands, and some brush lands. Streams in the biological assessment area

have been somewhat impacted by settlement patterns in the last century and a half, but they've also retained much of their surrounding vegetation, natural banks, sufficient flows for many aquatic species, and a general lack of major impoundments.

With the above in mind, the pre-project conditions of biological resources are good. Conifer and hardwood forest covers the project area and provides habitat for many species of organisms. Anadromous fish are present in Scott Creek within the assessment area. Native plants dominate the landscape although there are clear impacts from the introduction of non-native invasive species.

The anticipated post-project conditions are the same: good habitat for plants and animals, dominated by native vegetation types, and no degradation to Scott Creek.

C. Evaluation of Watershed Inputs Related to Integrity of Fishery

The following is an evaluation of the 5 watershed inputs (sediment, nutrients, wood, temperature, water quality):

1. *Sediment*

Sediment delivery to Scott Creek is largely episodic and typical of both managed and unmanaged watersheds in the region. Natural background embeddedness conditions in the Santa Cruz Mountain watercourses is most likely high due to the unstable sandstone and mudstone parent material of the mountains combined with one of the highest rainfall intensity ratings on the west coast. The stream substrate is primarily cobbles, boulders and decomposed granite. Overall, pool filling is minimal in Scott Creek.

The mitigation measures in this THP should prevent sediment delivery. The road proposed for use will be rocked in the WLPZ. The Class II crossing will be upgraded and the inlet and outlet armored with rock. All bare soils will be straw mulched, or seeded to reduce the transport of surface fines.

2. *Nutrients*

Due to the high density of trees found in the watershed assessment area, especially near streams, leaf litter does not appear to be a limiting factor for watershed organisms. Overall, canopy closure over the stream is high. It appears as though leaf drop and the subsequent introduction of nutrients into the system is, at the very least, adequate to support resident animal populations and macroinvertebrates found within the creek.

Harvest intensities within the WLPZ are subject to the canopy retention provisions of the Forest Practice Rules under 14 CCR 916.9 "Protection and Restoration of the Beneficial Functions of the Riparian Zone in Watersheds with Listed Anadromous Salmonids." As such, it is anticipated that no reduction of current nutrient inputs will occur as a result of harvest operations.

3. *Large Woody Material*

The presence of large woody material within the stream system is moderate. Large woody material recruitment will be neither aided nor hampered by the proposed project, as there will

be very little harvesting near watercourses. Also, there are no Class I watercourses within the THP area, and these are the watercourses where large woody material is most valuable, as it provides habitat structure for fish. While Class II and III watercourses could potentially move large wood to Scott Creek but this process would occur slowly, as the Class II watercourse in the THP area has a very narrow channel and low flows. Consideration will be given to recruitment of large woody material while the RPF is tree marking in order to maximize the potential for recruitment of this material to the stream system.

4. Temperature

Streamside canopy is one of the biggest influences on water temperature in small, upland forest streams. Streamside canopy is generally dense throughout the project area and downstream to Scott Creek. No impacts to streamside canopy, or water temperature in general, are expected from this project, because no harvesting in the WLPZ is proposed in this THP.

5. Water Quality

There are no Clean Water Act 303(d) designated reaches within the Watershed Assessment Area. Scotts Creek is one of the healthiest riparian systems in the county and levels of chemical contamination are likely quite low. Industry is absent from the majority of the watershed. The areas surrounding the THP are primarily rural properties, farms, and commercial timberland. Lockheed Martin facilities are located at the top of Ben Lomond Mountain, approximately 4 miles from the THP area. Agricultural operations in the downstream reaches of Scott Creek are organically grown row crops. Big Creek and other timber companies operating within the watershed do not use chemical fertilizers or pesticides in forestry operations.

D. Habitat Condition

Describe the pre-project condition of the following habitat components within the biological assessment area and in the immediate vicinity outside the assessment area. Rate each: 0-none, 1-well below average, 2-below average, 3-average, 4-above average, 5-well above average. Consider "average" to be the typical forest in the Santa Cruz Mountains.

Habitat Components	Pre-Project		Post-Project
	On-site	Off-site	On-site
Snags	2	3	3
Nest Trees	3	3	3
Down Woody Debris	3	3	4
Multistoried Canopy	2	3	3
Road Density	3	3	3
Hardwoods	3	3	3
Late Seral Stage	0	0	0
Continuity Late Seral Stage	0	0	0

E. Significant Wildlife Areas

1. Are there any of the following significant wildlife areas located within the biological assessment areas or in the immediate vicinity outside the assessment area?

	On-site	Off-site
Deer Fawning Areas	Yes	Yes
Deer Migrating Corridors	Yes	Yes
Deer Winter Range	Yes	Yes
Deer Summer Range	Yes	Yes
Wetlands	Yes	Yes
Riparian Areas	Yes	Yes

2. Will the project significantly affect the use of those areas by wildlife?

The deer habitat, wetlands and riparian areas will be completely unaffected, though deer forage could improve as a result of the temporary openings created by the harvest. Significant change is unlikely due to the relatively small size of the THP.

F. Other Projects

Identify and discuss the effects of the following projects within the biological assessment area that might interact with the effects of the proposed project.

1. Past and future projects in the biological assessment area under the control of the timber owner or timberland owner that did or could cause a significant impact on biological resources.

There are no past or future projects in the biological assessment area under the control of the timberland owners that did cause or would cause a significant impact on biological resources.

2. Past and future projects planned or expected within the biological assessment area not under the control of the timber owner or timberland owner that did or could cause a significant impact to biological resources

There can be no doubt that the clear-cut and burn harvests in the early 1900s bore significant effects to the biological resources within the assessment area.

Residential and agricultural development in the assessment area has surely rendered an effect. Development within the assessment area is not anticipated to significantly increase over time.

Timber harvesting will likely continue on the lands nearby the THP area. The biological impacts expected are similar to those anticipated for this THP project – that is, none are foreseen to be significant to biological resources based on the silviculture proposed, the logging systems proposed, and the mitigations to be implemented.

G. Interactions

In consideration of the biological resources inventoried and their interactions as defined above, is the potential high, medium, or low for developing significant cumulative effects to the biological resources within the assessment area as a result of:

1. The proposed project combined with the future effects of past projects without the impacts of future projects?

Low

2. The proposed project combined with the effects of past projects and the expected impacts from future projects listed in Part F?

Low

H. Impacts Evaluation

Based upon the information presented and all other available resources, is the proposed project likely to produce significant adverse cumulative effects to the biological resources within the biological resources assessment area?

No, the proposed project will not produce significant adverse cumulative effects to the biological resources within the assessment area. The mitigations identified in the operational portion of this THP in combination with the silvicultural method and use of existing infrastructure will serve to protect the biological resources within the assessment area.

Will the proposed project, as presented, have a reasonable potential to cause or add to significant cumulative impacts to biological resources within the biological resources assessment area?

Yes (after mitigation)	<input type="checkbox"/>
No (after mitigation)	<input checked="" type="checkbox"/>
No (no reasonable potential significant effects)	<input type="checkbox"/>

VI. CUMULATIVE RECREATION IMPACTS ASSESSMENT

A. Recreational Impacts Assessment Area

The recreational assessment area designated for the purposes of this THP shall be the project area and the area within 300 feet of the project boundaries. The recreational assessment area chosen for analysis of potential cumulative impacts represents the area that may be impacted by the proposed project. All of the land surrounding the project is private with no public access.

B. Recreational Resources Inventory

1. Identify the recreational activities involving significant numbers of people within the recreational assessment area.

A Boy Scout Camp is located adjacent to the THP area. The camp is used infrequently.

2. Identify any recreational Special Treatment Areas as defined by the Board of Forestry rules within the recreational assessment area.

There are no STAs within the recreational assessment area.

C. Change in Recreational Resources

Discuss whether the project will significantly alter the recreational opportunities within the recreational assessment area.

Operations will not occur while the scouts are using the camp. The scout leaders have been notified of the submission of this THP. Due to the small size of the THP and the proposed selection silviculture, no impact to recreation is expected. The scouts access the camp using the crossing that is proposed for upgrading. Without upgrading the crossing it would fail, preventing use of the camp.

D. Other Projects

Identify and discuss other projects within the recreational assessment area that might interact with the effects of the proposed project.

1. Any past or future projects within the recreational assessment area that are under the control of the timber owner or timberland owner that will impact recreational opportunities identified in Part A.

None known.

2. Any known future projects planned or expected in the recreational assessment area that are not under control of the timber owner or timberland owner that will impact recreational opportunities identified in Part A.

None known.

E. Impacts Evaluation

Will the proposed project as presented have a reasonable potential to cause or add to significant cumulative impacts to recreational resources?

Yes (after mitigation)	<input type="checkbox"/>
No (after mitigation)	<input type="checkbox"/>
No (no reasonable potential significant effects)	<input checked="" type="checkbox"/>

VII. CUMULATIVE VISUAL IMPACTS ASSESSMENT

A. Visual Impacts Assessment Area

The visual impacts assessment area is that portion of the proposed project area readily visible to significant numbers of people who are no further than three miles away from the project area (14 CCR 912.9). Outside of this distance the selective harvest method will not be discernable to people viewing the project area.

The project area is in the bottom of a valley and out of sight from any buildings and public roads.

B. Visual Resources Inventory

1. Identify any Special Treatment Areas designated by the Board of Forestry for their visual value within the visual assessment area.

Swanton Road is designated as a county scenic road for its visual value. The project is not visible from Swanton Road or any other public road.

2. Describe how far the proposed project is from the nearest point that significant numbers of people can view the project.

The project area is hidden by topographic features and trees outside of the THP area. Significant numbers of people do not have access to the private road that will provide a close-up view of the project area.

3. Identify the manner in which the public identified in Parts A and B will view the proposed project.

Only the landowners to the north who have a right-of-way, their guests, and the Boy Scouts will see the harvest area. The road is adjacent to the harvest area.

C. Change in Visual Resources

Discuss the probability of the project changing the visual setting viewed by the public as a result of vegetation removal, creation of slash and debris or soil exposure.

The proposed project will have a minor change on the visual setting viewed by adjacent landowners, their guests, and the Boy Scouts. Stumps and slash lopped near to the ground and generally more sunlight through the trees would be visible to a limited extent upon the completion of proposed operations, but only from close range. Selection harvests as carried out in the Southern Sub-district of the Coast Forest District generally result in imperceptible changes in the visual setting.

D. Other Projects

Identify and discuss other projects in the visual assessment area that might interact with the effects of the proposed project.

1. Any past and future projects in the visual assessment area that are under the control of the timber owner or the timberland owner that could interact to cause a significant change in any identified visual resource.

None known.

2. Known future projects in the visual assessment area that are not under the control of timber owner or timberland owner that could interact with any identified visual resource.

There are no known future projects in the assessment area. Cal Poly could utilize the area for educational or recreational purposes, constructing a trail for instance. The landowner to the north is Big Creek Lumber Company who could utilize an area from which the harvest area is visible.

E. Impacts Evaluation

Will the proposed project have a reasonable potential to cause or add to significant cumulative impacts to visual resources?

Yes (after mitigation)

☐

No (after mitigation)

☐

No (no reasonable potential significant effects)

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VIII. CUMULATIVE TRAFFIC IMPACTS ASSESSMENT

A. Traffic Impacts Assessment Area

The traffic impacts assessment area includes all public and private roads necessary for crew travel, log hauling, and equipment transport. The traffic area was chosen as it represents the sum of all private and public roads that will be used over the course of this operation.

1. Identify any public roads to be used for transporting logs.

Loaded log trucks will leave the project area by traveling along Purdy Ranch Road (private) to Swanton Road. Trucks will then turn right onto Swanton Road and follow it to the sawmill. Alternatively, trucks will turn left onto Swanton Road toward Highway 1, then turn right onto Highway 1 going north approximately 6 miles to the Big Creek sawmill.

2. Identify any public roads that have not been used recently for the transport of logs.

Swanton Road is used every few years for hauling logs.

3. Identify any public roads to be used to transport logs that have existing traffic or maintenance problems.

Use of Swanton Road is moderate to light. Log trucks can turn onto Swanton Road easily with adequate visibility of and for oncoming traffic. The road surface is in generally good condition. Turn radii, road gradient, and visibility are adequate on Swanton Road.

Highway 1 can be somewhat busy with tourist traffic. Log trucks will be staged as necessary to avoid the heaviest traffic.

B. Activity Levels

Discuss how the log trucks used on the project will change the amount of traffic on public roads, especially during heavy traffic conditions.

A total of between 2 and 6 loads would be trucked from the proposed project, possibly all of them within one day. There will be no log hauling on the weekends and holidays. Though each public segment of the haul route bears the potential for traffic problems, these traffic problems will likely occur most often during weekends and holidays when tourists frequent the area. Log trucks will be no more than a minor inconvenience to motorists, at most slowing only the fastest traffic.

C. Other Projects

Identify and discuss other projects in the traffic assessment area that might interact with the effects of the proposed project.

1. Other past or future projects on lands under the control of the timber owner or timberland owner that will add significantly to traffic on public roads during the period the roads are used by log trucks from the proposed project.

None are known.

2. Any known future projects not under the control of the timber owner or timberland owner that will impact public road traffic during the period that the roads are being used by log trucks from the proposed project.

None are known.

D. Impacts Evaluation

Will the proposed project as presented have a reasonable potential to cause or add to significant cumulative impacts to traffic on public roads?

Yes (after mitigation)

☐

No (after mitigation)

☒

No (no reasonable potential significant effects)

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IX. CUMULATIVE NOISE IMPACTS ASSESSMENT

A. Noise Impacts Assessment Area

The noise impacts assessment area shall include the area with 3,000 feet of the THP harvest boundary, slightly over ½ mile. This area shall be assessed for the potential significant impacts from short term use of chainsaws and heavy equipment.

Identify neighbors and the public interface in the assessment area.

The project area is surrounded by rural properties. There are very few homes within the assessment area as most of it consists of ranch land or timberland. Although Swanton Road is public, there are no public open spaces within the assessment area. Active operations and any Boy Scout Camp use will be coordinated by the RPF. The camp is owned by the submitter of this THP.

B. Activity Levels

Discuss how operations will change the amount of noise in the assessment area.

Harvesting is moderately frequent in this area. Noise levels in the assessment area will be elevated for the short duration of the harvest. The operation of chainsaws and all other power equipment is anticipated to be significantly audible within 500 feet of the activity center. Operations will last approximately 1 week.

No operations shall occur within 300 feet of an occupied dwelling prior to 8:00 am or on Saturdays, Sundays, or nationally designated legal holidays. More than 300 feet from any occupied legal dwelling, operations shall be restricted to the hours between 7:00 a.m. and 7:00 p.m., and shall be prohibited on Saturdays, Sundays and nationally designated legal holidays, except Columbus Day.

C. Other Projects

Identify and discuss other projects in the noise assessment area that might interact with the effects of the proposed project.

The background noise level in the assessment area is generally low. Neighbors may use chainsaws or other power equipment to work on their property periodically. Infrequent traffic to and from the residences may periodically increase the ambient noise level in the area. Cal Fire helicopter fly-overs may occasionally occur throughout the fire season to survey for smoke or during a response to a fire.

D. Impacts Evaluation

Will the proposed project as presented have a reasonable potential to cause or add to significant cumulative impacts to noise levels in the assessment area?

The proposed project will not significantly add to noise impacts in the assessment area. The operation will be at a significant distance from homes and cabins allowing topography and vegetation to block or filter noise. Utilizing selection silviculture will perpetuate the presence of tall trees which aid in absorbing potential noise impacts. Operations are anticipated to last for 1 week or less.

Yes (after mitigation)	<input type="checkbox"/>
No (after mitigation)	<input type="checkbox"/>
No (no reasonable potential significant effects)	<input checked="" type="checkbox"/>

X. CUMULATIVE AIR QUALITY IMPACTS ASSESSMENT

A. Air Quality Impacts Assessment Area

The air quality impacts assessment area includes the proposed project area, which is the area where air quality impacts from planned operations have the potential to occur.

B. Activity Levels

Few aspects of the proposed operation have the potential to negatively impact air quality within the assessment area. Generation of dust is one potential impact; however, measures in Section II under Item 38 are designed to minimize conditions that would lead to dust. Per Item 38, haul roads will be watered to maintain them in a reasonably dust-free condition during use. Dust created in the movement of tractors quickly dissipates within the forest. The haul road has a rocked surface.

C. Other Projects

No other projects are anticipated within the assessment area that have the potential to cumulatively impact air quality.

D. Impacts Evaluation

Will the proposed project as presented have a reasonable potential to cause or add to significant cumulative impacts to air quality in the assessment area?

Yes (after mitigation)

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No (after mitigation)

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No (no reasonable potential significant effects)

☐

XI. CUMULATIVE FIRE HAZARD IMPACTS ASSESSMENT

A. Fire Hazard Impacts Assessment Area

The fire hazard impacts assessment area includes the extent of the THP area. This is the area where the landowner has the prospect of manipulating the vertical and horizontal distribution of vegetation. Suppression efforts on the recent Lockheed Fire in the Santa Cruz Mountains were remarkably aided by infrastructure proposed for use and upgrading in this THP. The behavior of that fire changed and became more manageable as it entered managed timberland due to the altered vertical and horizontal distribution of fuels. The maintained infrastructure was invaluable for getting equipment and crews to the scene in an expedient manner.

Throughout the Santa Cruz Mountains, including within the assessment area, Cal-Fire administers fire suppression services regardless of ownership. The long-term continuous suppression effort has contributed to a buildup of fuels across the landscape over time. Within the context of the mosaic of vegetation and access, the management of this property is a positive factor for potential future fire concerns.

B. Activity Levels

The proposed management under this THP will alter the distribution of fuels within the harvest area. Single-tree selection silviculture, as described in Section II under Item 14, has the potential to reduce the vertical and horizontal continuity of fuels, thereby reducing the ladder fuels and the potential for "crowning". Residual logging slash from operations has the potential to increase surface fuels immediately following operations; however, the hazard posed by slash decreases rapidly as the material drops needles and small branches and starts to decompose. Proposed hazard reduction measures described in Section II under Item 30 will address treatment of surface fuels. Concentrations of slash shall be treated no later than April 1st of the year following creation. Slash created by timber operations shall be lopped so that no portion of it remains more than 30 inches above the ground.

C. Other Projects

Other projects within the assessment area that have the potential to impact fire hazard include mowing, brush removal, and maintenance of high voltage powerlines and access routes.

Fire history work done in the Santa Cruz Mountains within the distribution of coast redwood trees suggests that fires were very frequent prior to the displacement of Native Americans in the mid-1800s. (Stephens and Fry, 2005) The ethnographic literature supports the notion that Native Americans were responsible for the majority of the fires in the coastal forests (Lewis 1973, Boyd 1999). Many studies revealed that fire occurred at least once per decade, and sometimes several times per decade. Most of these fires are thought to have been "surface fires", meaning they burned fuels on the ground surface and did not ignite the tree canopies. The forest structure is thought to have been far more open than the current forest structure. These pre-European forests had a larger component of old growth, with very tall trees and towering tree canopies. There were far fewer trees per acre and the individual tree boles were spaced much further apart. There was less vertical and horizontal continuity of fuels than in modern unmanaged stands. These conditions made it more conducive for redwood and Douglas-fir trees to survive the surface fires.

In contrast, the second growth forests on the property today have vastly different stand conditions. These stands originated from the extensive clearcutting around the turn of the century. Practices of the day typically involved burning the area after falling to facilitate easier log yarding. The second growth forest regenerated after the logging and burning exhibits a dramatic structural change from the old growth redwood that had been present beforehand. Multiple tree species in the southern redwood region regenerate by coppice sprout including redwood, tanoak and madrone. After a disturbance such as the expansive clearcutting in the San Lorenzo River watershed, multiple times more stems per stump regenerated after the harvest. With the increase in the sheer number of stems present, the horizontal and vertical continuity is increased and surface fuels accumulate more rapidly. Without surface fires or hands-on management, in-growth of young trees, often tolerant of the shade and competition, increase continuity of the canopy (horizontally and vertically), leading to hazardous fuel conditions that are difficult to remedy without intensive vegetation treatments.

Natural fires are also suppressed in modern times, so spreading fires occur much less frequently. Evidence of the last wildfire to burn through the THP area is visible on the outer bark of large redwood trees in the project area. The scarcity of low-intensity fires on the landscape causes surface fuels to accumulate and prolific regeneration does not get thinned out. Introducing prescribed fire to the property is not a likely possibility due to the risk and liability involved. Re-introduction of fire would also not be a sound management decision unless pre-fire fuel treatments were implemented first and significant resources were expended constructing fire lines, monitoring conditions, and enlisting capable crews.

There is no hope of acceptably mitigating fire hazard by doing nothing and letting nature take its course. The more time that elapses in these dense forests, during the era of fire suppression, the more fuel accumulates and the worse the fire hazard becomes. The actions proposed in this THP are intended to keep the forest healthy and therefore more resistant to devastating wildfires. Harvest operations will entail thinning the overstory trees to decrease continuity of the tree crowns, which decreases the potential for crown fire to spread from tree to tree. THP operations will also decrease the continuity of ladder fuels by killing and knocking down hardwoods and brush during operations. The height of these fuels as well as limbs and tops of the harvested trees will be lopped to reduce the height of flammable material.

Lopping the slash and distributing it on bared soil surfaces reduces the potential for erosion subsequent to the harvest operation. The slash is dead fuel material, which inherently contributes to the fire hazard for a few years following the harvest. However, the slash provides valuable nutrient cycling for the soil and having it cut up in pieces and packed close to the ground keeps it moist and hastens decomposition. The harvest helps mitigate the fire hazard by altering the vegetation arrangement through economical means. Periodic harvesting removes hazardous brush from the mid-canopy and condenses it in a moisture-retaining layer on the forest floor.

Marking prescriptions proposed in this THP focus on increasing vigorous growth in the forest, while considering the balance of wildlife goals, which seek to maintain structurally complex and often defective trees. The harvest aims to retain the best residual crop trees and maintain and improve biological diversity. Most snags on the property will be saved. Snags pose a risk to fire hazard, however they are a desired component of a healthy ecosystem. This plan proposes an operation which balances a variety of objectives from different disciplines to responsibly manage the forest. Short term increases in fire hazard may result immediately after operations as the slash dries, however the short-term increase in hazard will subside and the health and vigor of the forest will be improved.

D. Impacts Evaluation

Will the proposed project as presented have a reasonable potential to cause or add to significant cumulative impacts to fire hazard in the assessment area?

Yes (after mitigation)	<input type="checkbox"/>
No (after mitigation)	<input checked="" type="checkbox"/>
No (no reasonable potential significant effects)	<input type="checkbox"/>

XII. CUMULATIVE ATMOSPHERIC CARBON IMPACTS ASSESSMENT

A. Carbon Emissions:

Operations associated with timber harvesting and forest product removal will result in carbon emissions from equipment use. The exhaust from tractors and log trucks will emit carbon monoxide during operational hours for the duration of harvesting operations. Equipment exhaust levels are equivalent to those of equipment on construction sites commonly found throughout the state. Logging truck exhaust is similar to all commercial diesel trucks used throughout the state. Carbon will also be slowly released post-harvest by the brush and slash material left onsite as it slowly decomposes.

B. Carbon Sequestration:

The active process of carbon sequestration is closely linked to the rate of tree growth. Trees with higher growth rates will be actively capturing more atmospheric carbon than those with slower growth rates. The mature timber stands of this project are approximately 100 years old. Where site quality and timber density allows, the overstory canopy has closed and growth has slowed well below its level of culminating mean annual increment. The proposed harvest will

open the canopy and increase the rate of growth for the stand. This will increase the rate of sequestration for atmospheric carbon.

C. Catastrophic Emissions Prevention:

The most severe carbon emission occurring on forested landscapes is from catastrophic wildfires. This project will reduce potential for such events by reducing the loads of large fuels and altering the horizontal and vertical continuity of fuels. The maintenance of road and trail infrastructure will allow quick access for firefighting crews to large areas. The fire protection impacts are discussed at greater length in section XI above.

D. Impacts Evaluation

The increased rate of growth that will result from the proposed project will allow the stand to absorb more carbon from the atmosphere. Fire hazard reduction measures will reduce potential for catastrophic carbon release from the forest from wildfire. While there will be some short term emissions and release of carbon from the proposed operations, the long term increase in sequestration rates will more than offset those impacts. Worksheets with numeric estimates of Project Carbon Accounting are provided in Section V.

E. Will the proposed project as presented have a reasonable potential to cause or add to significant atmospheric carbon cumulative impacts in the assessment area?

Yes (after mitigation)

No (after mitigation)

No (no reasonable potential significant effects)

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XIII. DETERMINATION OF POTENTIAL FOR CUMULATIVE IMPACT

A. Introduction

The following is a concise summary of the subjects discussed within the context of this assessment. The questions and answers are intended to summarize the findings of each specific section of analysis.

1. Will the project adversely affect a threatened or endangered species of animal or plant or the habitat of the species?

No. Refer to THP Section II, Items 14 and 32 and THP Section III, Plan Addendum to Item 32 for measures that will mitigate any impacts on threatened or endangered plant or animal species or their habitats.

2. Will the project interfere significantly with the movement of any resident or migratory fish or wildlife?

No. Refer to THP Section II, Items 18, 23, 26, 27 and 32, and THP Section III, Plan Addendum to Item 32 for measures that address maintenance of downstream healthy fish and aquatic habitat.

3. Will the project significantly degrade water quality including temperature, chemical composition, pH, and color?

No. The THP has limited area in close proximity to watercourses and proposes light selection harvesting in the watercourse and lake protection zones such that canopy will not be reduced to a level that would cause significant increases in water temperature. Other water quality objectives including chemical composition, pH, and color will not be compromised by the proposed project. Refer to THP Section II, Items 18, 23, 26, 27, and 32 for specific measures to ensure protection of the beneficial uses of water.

4. Will the project contaminate a domestic water supply?

No. As stated in #3 above, mitigations are proposed to protect the downstream beneficial uses of water. Operations, including proposed road upgrades, are intended to improve the quality of water in streams on the project area.

5. Will the project cause significant flooding, erosion or siltation?

No. Refer to THP Section II, Item 18.

6. Will the project have a significant, demonstrable, negative aesthetic effect as viewed from areas of high public use such as roads and parks?

No. The project area is not visible to significant numbers of people. Refer to THP Section II, Items 14 and 16 for a description of the proposed silviculture, which leaves an intact forest in place and the proposed yarding methods, which minimize disturbance.

7. Will the project significantly increase the long-term ambient noise levels for the adjoining areas?

No. Operations associated with this THP are remote and will last for only a short duration, likely lasting only one week.

8. Will the project violate ambient air quality standards?

No. Haul roads will be watered to maintain them in a reasonably dust-free condition during use. Dust created in the movement of tractors quickly dissipates within the forest.

9. Will the project create a potential public health hazard or involve the use of, production or disposal of material, which poses a hazard to human, animal or plant populations in the area?

No. No impact to public health hazard shall result from this proposed project.

10. Will the project disrupt or adversely affect a prehistoric or historic archaeological site or property of historic or cultural significance to a community, ethnic, or social group?

No. Refer to THP Section II, Item 36 and THP Section VI.

11. Will the project conflict with established recreational, educational, religious or scientific uses of the area?

No. The implementation of this THP will not interfere with any established uses of the property.

12. Will the project disrupt or divide the physical arrangement of an established community?

No.

13. Will the project cause an increase in traffic that is significant in relation to the existing traffic load and capacity of the public road system or as it interferes with the scheduled school bus traffic and commute traffic?

No. Refer to Section II, Item 38 for mitigation measures to minimize the impact of operations on the flow of traffic. Per Item 38, log hauling on public roads shall be prohibited on weekends and nationally designated legal holidays, except Columbus Day, "Caution Log Truck" signs shall be posted at the point where trucks enter the public roadway, and speed limits of 10 and 15 miles per hour are in effect on private roads.

14. Will the project interfere with emergency response or emergency plans?

No. See THP Section II, Item 38 and THP Section IV, Traffic Impacts Assessment.

15. Will the project increase fire hazard significantly?

No. During the harvest operation there is an increased risk of ignition; however, at the same time, the risk of spread is considerably reduced because people and equipment are on-site and available for fire suppression. Proposed silvicultural treatments in the THP area will decrease horizontal and vertical continuity of fuels by reducing the number of mature trees per acre. Following log removal, surface fuels will be treated further by tractor crushing or lopping with chainsaws to within 30 inches of the mineral soil layer. These treatments reduce ladder fuels and speed decomposition by increasing ground contact. Proposed operations will not exacerbate the potential wildfire problem in the area that has been created by many decades of fire suppression which has led to increased fuel loading across the landscape.

16. Will the project lead to potentially harmful chemical impacts within the harvest area?

No. There are no chemical applications proposed in this THP.

17. Will the project contribute carbon to the atmosphere?

The project will allow for more sequestration of carbon from the atmosphere over the long term due to improvements in forest health and will reduce potential for catastrophic carbon release from the forest by fire. Logs that are removed from the forest will be milled into boards that will likely be used to build structures thereby storing the sequestered carbon. While there will be some short term emissions and release of carbon from the proposed operations, the long term increase in sequestration rates will more than offset those impacts.

B. Cumulative Impacts Assessment

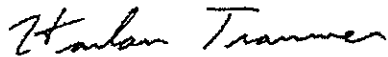
In consideration of the Forest Practice Rules, mitigation measures proposed in this plan, the discussions above, and the field review of similar harvest operations in the Santa Cruz Mountains which demonstrate that timber harvesting, as proposed here, did not cause any significant adverse environmental impact, I have concluded that the proposed operation will not have a significant adverse impact on the environment or watershed, and will in fact have a positive impact in many respects.

SECTION V

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I hereby certify that noticing per 14 CCR 926.3 (Santa Cruz County) has been carried out for the proposed Timber Harvest Plan. The addresses on the enclosed list were mailed a Notice of Intent to Harvest Timber/Domestic Water Supply Inquiry on 6/24/2014. An exemption from the newspaper notification was requested. A notice and map was hung in a conspicuous location at the entrance to Purdy Ranch Road where it intersects Swanton Road.



Harlan Tranmer, RPF #2850

SPACE FOR COURT CLERK'S FILING STAMP

Proof of Publication

(2015.5 C.C.P.)

STATE OF CALIFORNIA]

SS

COUNTY OF SANTA CRUZ]

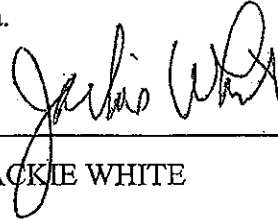
Public Notice

I, THE UNDERSIGNED, DECLARE:

That I am over the age of eighteen and not interested in the herein-referenced matter; that I am now, and at all times embraced in the publication herein mentioned was, a principal employee of the printer of the Santa Cruz Sentinel, a daily newspaper printed, published and circulated in the said county and adjudged a, newspaper of general circulation by the Superior Court of California in and for the County of Santa Cruz, under Proceeding No. 25794; that the advertisement (of which the annexed is a true printed copy) was published in the above-named newspaper on the following dates, to wit: July 11, 2014.

I DECLARE under penalty of perjury that, the foregoing is true and correct to the best of my knowledge.

This 11th day of July, 2014, at Santa Cruz, California.


JACKIE WHITE

PART OF PLAN

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AUG 08 2014

COAST AREA OFFICE
RESOURCE MANAGEMENT

Advertising Order Confirmation

07/08/14 3:10:36PM
Page 1 of 3

Santa Cruz Sentinel

<u>Ad Order Number</u> 0005236002	<u>Customer</u> BIG CREEK LUMBER/CLASS.	<u>Payer Customer</u> BIG CREEK LUMBER/CLASS.	<u>PO Number</u>
<u>Sales Rep.</u> jwhite	<u>Customer Account</u> 2040233	<u>Payer Account</u> 2040233	<u>Ordered By</u> Kristin Lovett
<u>Order Taker</u> jwhite	<u>Customer Address</u> ATTN: ACCOUNTS PAYABLE, 3564 HIGHWAY 1 DAVENPORT CA 95017-9707 USA	<u>Payer Address</u> ATTN: ACCOUNTS PAYABLE, 3564 HIGHWAY 1 DAVENPORT CA 95017-9707 USA	<u>Customer Fax</u>
<u>Order Source</u>	<u>Customer Phone</u> 831-457-5017	<u>Payer Phone</u> 831-457-5017	<u>Customer Email</u>

<u>Current Queue</u> Ready	<u>Invoice Text</u>	<u>Ad Order Notes</u>
<u>Tear Sheets</u> 0	<u>Blind Box</u>	<u>Promo Type</u>
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PART OF PLAN

RECEIVED

AUG 08 2014

COAST AREA OFFICE
RESOURCE MANAGEMENT

72.2

Advertising Order Confirmation

07/08/14

Customer

BIG CREEK LUMBER/CLASS.

NOTICE OF INTENT TO HARVEST TIMBER

A Timber Harvesting plan (THP) has been submitted to the California Department of Forestry and Fire Protection. The earliest possible date the Department may approve the plan is: **August 21st, 2014.** Questions or concerns regarding this specific THP or laws and rules governing timber operations should be directed to the CDF Regional Office listed below, so that public input may be incorporated into an Official Response Document.

707) 576-2959
www.mt.com

California Department of Forestry and Fire Protection
San Mateo Santa Cruz Ranger Unit
6059 Highway 9 (P.O. Drawer F-2)
Fresno, CA 95018
(831) 335-8740

[illegible][illegible]

一、**總論**
 二、**基本情況**
 三、**主要成績**
 四、**存在問題**
 五、**經驗教訓**
 六、**今後打算**
 七、**附錄**
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Abstract

72.3

PART OF PLAN

AUG 08 2014

COAST AREA OFFICE
RESOURCE MANAGEME



June 24th, 2014

Dear Neighbor,

Enclosed is a legally required Notice of Intent to Harvest Timber/Domestic Water Supply Inquiry. The intent of this document is to let you know that Big Creek Lumber Company is in the process of preparing a Timber Harvest Plan (THP) for a neighboring property located along a tributary to Scott Creek and along Seaside Creek Road (otherwise known as Purdy Ranch Road) in Santa Cruz County, California. Timber harvesting is one of the most highly regulated land uses in California. Each THP is reviewed by a number of state agencies and there are opportunities for public input during this process. I am the Registered Professional Forester (RPF) for this project. If you have any questions about this project, or timber harvesting in general, please let me know. I would welcome any comments or questions you might have.

I have also enclosed a Cal Fire fact sheet that describes timber harvest regulations in the Santa Cruz Mountains. The fact sheet explains how you can provide public comment during the review of this project. If you have any questions about these documents, please let me know.

Big Creek Lumber Company has been sustainably harvesting redwoods for more than sixty five years in the Santa Cruz Mountains. Only single-tree selective harvesting is allowed in the Santa Cruz Mountains. This harvest method permits thinning, but does not allow clearcutting.

We understand that neighbors frequently have questions and concerns when a timber harvest is proposed in their area. Big Creek Lumber is committed to establishing and maintaining open communication with local residents. Our forestry staff is readily available to answer any questions you may have. Please don't hesitate to contact me at (831) 457-6390 or harlant@big-creek.com.

Sincerely,

Harlan Tranmer, RPF #2850

NOTICE OF INTENTION TO HARVEST TIMBER / DOMESTIC WATER SUPPLY INQUIRY

A Timber Harvesting Plan (Plan) or Amendment has been submitted to the California Department of Forestry & Fire Protection (CAL FIRE). CAL FIRE will be reviewing the proposed timber operation for compliance with State law and rules of the Board of Forestry and Fire Protection. The following briefly describes the proposed timber operation and where and how to get more information. **THIS NOTICE WITH MAP IS BEING PROVIDED PRIOR TO SUBMISSION OF THE THP SO THAT THE PLAN SUBMITTER MAY BE ADVISED OF SURFACE DOMESTIC WATER SUPPLIES TAKEN FROM WATERCOURSES WITHIN 1,000 FEET DOWNSTREAM OF THE PROPOSED HARVEST.** Please send such information to the forester listed at the bottom of the page within 10 days of the postmarked date of the notice of inquiry. In accordance with the timeline stated under Public Resources Code Section 4582.7, you may submit written public comments on the Plan or Amendment for CAL FIRE to consider.

This notice applies to (select one below):

- ☒ New Timber Harvesting Plan ☐ Amendment to an Approved Timber Harvesting Plan

Applicant Information (Timberland Owner(s), Registered Professional Forester who prepared the plan and Plan Submitter should match those listed in the plan or amendment.)

1. The name(s) of the Timberland Owner(s) where timber operations are to occur: Cal Poly Corporation
2. Registered Professional Forester who prepared the plan or amendment: Harlan Tranmer RPF# 2850
Registered Professional Forester Phone (optional): 831-457-6390
3. The name of the Plan or Amendment Submitter: Cal Poly Corporation

Project Summary (County, legal description, acres proposed to be harvested and treatments to be used should match those listed in the plan or amendment.)

4. Location of the proposed timber operation (county, legal description, approximate direction & approximate distance of the timber operation from the nearest community or well-known landmark):
Santa Cruz County, A portion of Sections 1 and 12, T10S R4W MDB&M, Rancho Agua Puerca y Las Trancas, Davenport USGS 7.5' Quadrangle.
The THP area is approximately 5.5 miles northwest of the town of Davenport.
5. The name of, and distance from, the nearest perennial stream and major watercourse flowing through or downstream from the timber operation:
Scott Creek is approximately 100 feet to the west of the THP boundary. An unnamed perennial watercourse flows through the THP and is a tributary to Scott Creek.
6. Acres proposed to be harvested: 1
7. The regeneration methods and intermediate treatments to be used: Selection as per 14 CCR 913.8 (a) and 14 CCR 926.25(a)(2).
8. ☐ Yes ☒ No Is there a known overhead power line, except lines from transformers to service panels, within the plan area?

Public Information: The review times allowed for CAL FIRE to review the proposed timber operation are variable in length, but limited. To ensure CAL FIRE receives your comments please read the following:

The estimated earliest possible date CAL FIRE may APPROVE the Plan or Amendment is: August 21st, 2014
(This date is 15 calendar days from receipt of the Plan or Amendment by CAL FIRE, except in counties for which special rules have been adopted where the earliest date is 45 calendar days after receipt.)

NOTE: THE ESTIMATED EARLIEST APPROVAL DATE IS PROBABLY NOT THE ACTUAL APPROVAL DATE. Normally, a much longer period of time is available for public comment and preparation of CAL FIRE's responses to public comments. Please check with CAL FIRE, prior to the above listed date, to determine the actual date that the public comment period closes.

The public may review, or purchase a copy of, the Plan or Amendment at the CAL FIRE Review Team Office shown below. The cost to obtain a copy is 37 cents for each page, \$2.50 minimum per request. The cost to obtain a copy of this plan or amendment is: \$12.10
(to be completed by CAL FIRE upon receipt of plan).

Questions or concerns regarding this plan should be directed to the CAL FIRE Review Team Office shown below or emailed to SantaRosaPublicComment@fire.ca.gov for incorporation into an Official Response Document. Please include the plan number on all correspondence.

Forest Practice Program Manager
CAL FIRE
135 Ridgway Avenue
Santa Rosa, CA 95401
(707) 576-2959

The plan may be viewed online at ftp://thp.fire.ca.gov/THPLibrary/North_Coast_Region

A map showing the approximate boundary of the THP area, a map legend, and scale is attached to help in locating where the proposed timber operation may occur. The approximate property lines have been flagged for review where truck roads, tractor roads, or harvest areas are within 100 feet of the property line. Once CAL FIRE has received the plan, it will be reviewed to determine whether it can be filed. If the department files the plan, you will be notified by mail of the THP or amendment number and the filing date of the plan. You will be notified in a separate mailing of any public hearing. You should inquire with CAL FIRE for the date of the Review Team Meeting. If you would like to contact the Registered Professional Forester who prepared the plan or amendment, please call Harlan Tranmer at the Big Creek Forestry Office at (831) 457-6390.

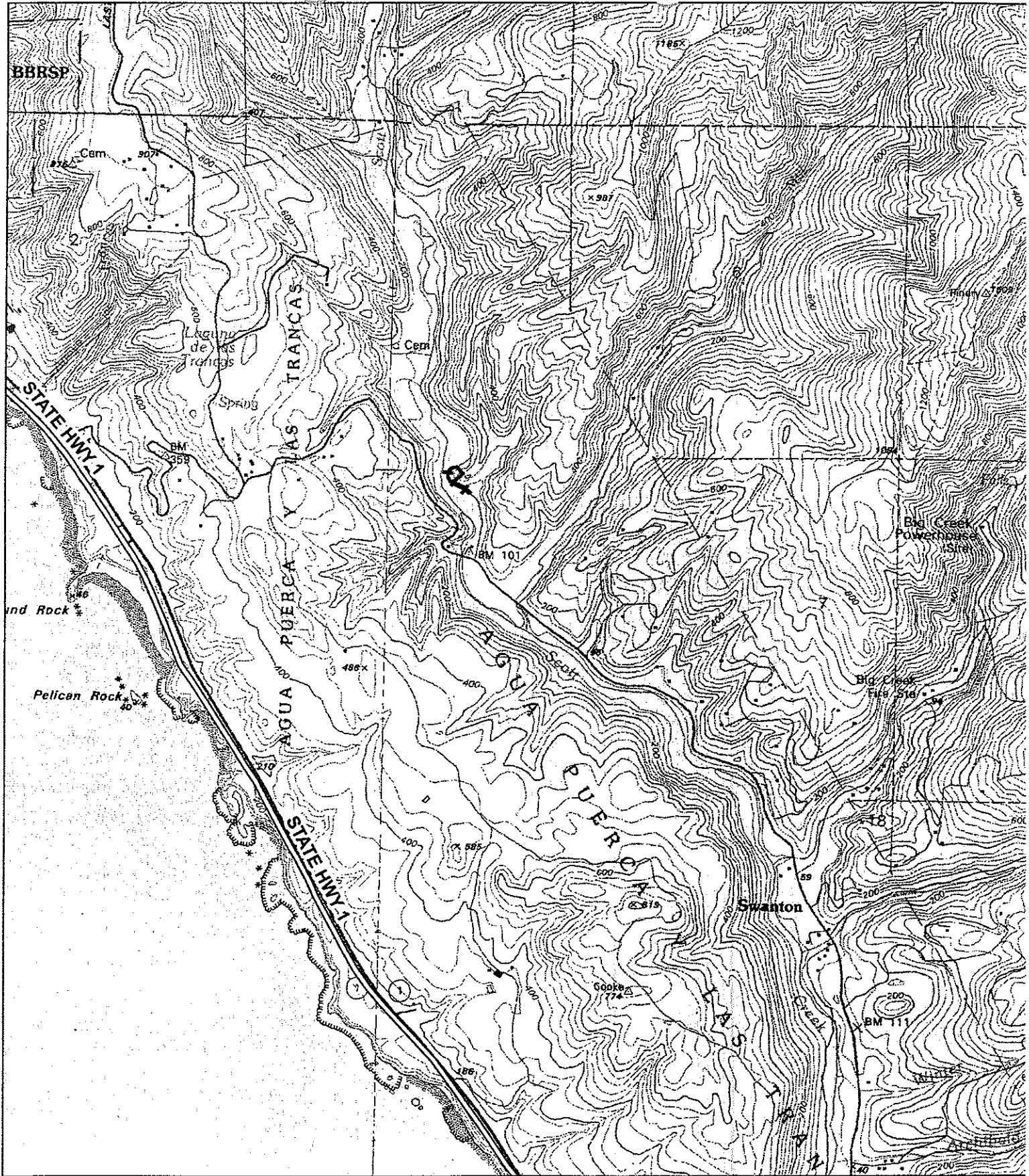
For CAL FIRE Use Only

Timber Harvest Plan Number:

Date of Receipt:

1-14-079 SCR 74

Scout Gulch THP Project Location Map



1 inch = 2,000 feet

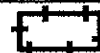


0 1,000 2,000 Feet



1:24,000

Davenport, Calif. Quadrangle
THP in Sections 1 and 12 T10S R4W MDB&M
Rancho Agua Puerca y Las Trancas
Santa Cruz County, California



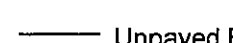
THP Boundary



Highway 1



Paved Road



Unpaved Road



SPACE FOR COURT CLERK'S FILING STAMP

Proof of Publication

(2015.5 C.C.P.)

STATE OF CALIFORNIA]

SS

COUNTY OF SANTA CRUZ]

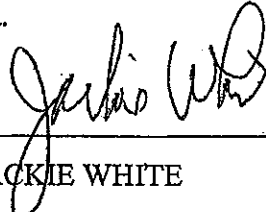
Public Notice

I, THE UNDERSIGNED, DECLARE:

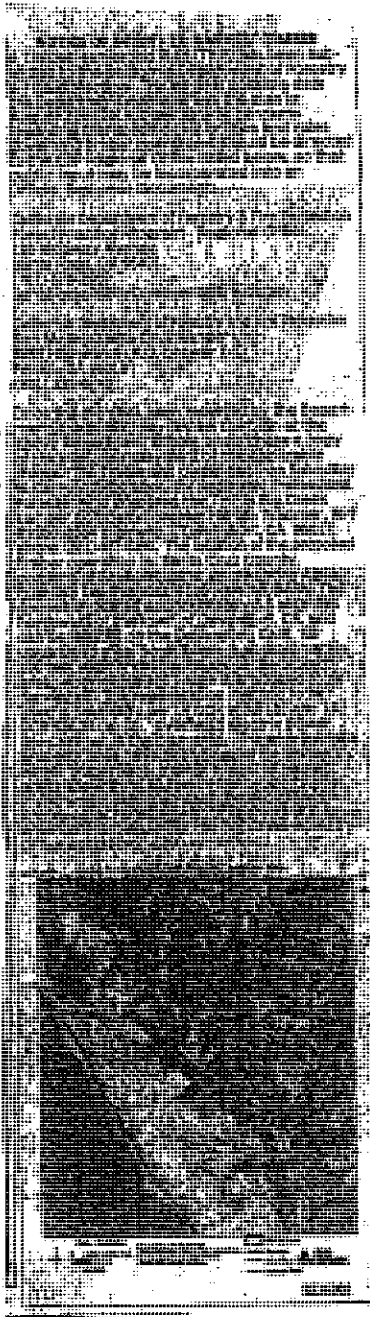
That I am over the age of eighteen and not interested in the herein-referenced matter; that I am now, and at all times embraced in the publication herein mentioned was, a principal employee of the printer of the Santa Cruz Sentinel, a daily newspaper printed, published and circulated in the said county and adjudged a newspaper of general circulation by the Superior Court of California in and for the County of Santa Cruz, under Proceeding No. 25794; that the advertisement (of which the annexed is a true printed copy) was published in the above-named newspaper on the following dates, to wit: July 11, 2014.

I DECLARE under penalty of perjury that, the foregoing is true and correct to the best of my knowledge.

This 11th day of July, 2014, at Santa Cruz, California.



JACKIE WHITE





DEPARTMENT OF FORESTRY AND FIRE PROTECTION
San Mateo/Santa Cruz Unit
P.O. Drawer F-2
FELTON, CA 95018
(831) 335-6740
Website: www.fire.ca.gov



FACT SHEET ON TIMBER HARVEST REGULATION IN THE SANTA CRUZ MOUNTAINS

The enclosed Notice of Intent/Domestic Water Supply Inquiry ("Notice") is to inform you that either a Timber Harvesting Plan (THP) or a Nonindustrial Timber Management Plan (NTMP) is being prepared by a licensed forester for a private landowner whose property is near your property. **Although the forester has not yet submitted the THP/NTMP to the California Department of Forestry and Fire Protection (CAL FIRE) for review, this FACT SHEET will clarify both how and when you can obtain information about the proposed timber operation and how you may participate in the review process once the plan has been accepted for filing by CAL FIRE.**

The forester is required to mail a copy of the enclosed Notice to owners of property within 300 feet of the property where timber harvesting is proposed, to the owners of property adjoining private roads proposed to be used for trucking logs, and to other owners within 1000 feet downstream of the harvest boundary **prior to the THP/NTMP being submitted to CAL FIRE.** If helicopter operations are proposed in Santa Cruz County, the forester must notify additional people. **If after receiving this Notice you want more information about the THP/NTMP, you should wait approximately 15 calendar days to allow time for the THP/NTMP to arrive at the CAL FIRE Region Office and copies to be sent to CAL FIRE Felton before calling CAL FIRE.** Prior to this time, CAL FIRE will *not* have any information about the THP/NTMP. You should contact the private forester as soon as possible if there are concerns which you believe should be **included in the THP/NTMP.**

California's forest practice regulations, comprised of more than 1,000 regulations, are the most stringent and comprehensive to be found anywhere in the nation. They govern all aspects of the commercial harvest of forest products including the licensing of timber operators, preparation of timber harvesting plans, cutting intensity, harvest practices, road construction, erosion control, stream and watershed protection, hazard reduction, and fire protection. In addition, special local rules address such things as hours of work, traffic safety, and erosion control maintenance. Regulations for our area prohibit clear cutting. Only selective harvesting is permitted allowing just a portion of the standing timber to be cut.

The state's forest practice regulations are enforced by CAL FIRE. Enforcement includes the interdisciplinary environmental review by local (including water districts), state and federal agencies of all written harvest plans and inspection of both active and completed harvest operations to ensure compliance with the regulations. All harvest plans are prepared by a Registered Professional Forester (RPF), licensed to practice in the state, which also is responsible for on-the-ground supervision of harvest activities.

There are several ways you may learn more about this THP/NTMP and participate in its evaluation:

1. **Approximately 15 days from the date of the enclosed Notice, you may wish to confirm the availability of the THP/NTMP by calling the CAL FIRE Felton office at (831) 335-6740.** Once CAL FIRE has received the THP/NTMP, you may obtain information, review the THP, or
2. purchase a copy of it by writing CAL FIRE (P.O. Drawer F-2; Felton, CA 95018) or calling (831) 335-6740. You may also download a copy of the plan at our FTP site at:

<ftp://thp.fire.ca.gov/THPLibrary/North Coast Region/>

You will need the THP number assigned to this plan to download a copy. That number can be obtained at the Felton office.

3. During the minimum 45 day review period, CAL FIRE may hold a public hearing on the harvest plan. **If a hearing is scheduled, you will be notified of the time and place in a separate mailing within a few weeks.** The purpose of the hearing is to give you an opportunity to provide any information, especially site-specific factors, you believe CAL FIRE should consider when evaluating the proposed plan. Examples include the location of water lines, uptakes, and landslides; local traffic patterns, etc. No decision regarding the THP/NTMP is made at this public hearing. CAL FIRE's responsibility is to document the concerns that are presented.
4. **If you are unable to attend a scheduled public hearing, please send us your comments in writing. *Written comments receive the same consideration as testimony received at the public hearing.*** Written comments should be addressed to Leslie Markham at 135 Ridgway Avenue; Santa Rosa, CA 95401, where the official THP/NTMP documents are maintained, or sent via email to SantaRosaPublicComment@fire.ca.gov. The Santa Rosa office sends a copy of all public correspondence to the Felton office so that it can be considered during the review of the THP/NTMP.
5. Review of the THP/NTMP is carried out by CAL FIRE and representatives from the Department of Fish and Wildlife, Regional Water Quality Control Board, California Geological Survey, local water districts, and County Planning Department. The review includes a field inspection of the proposed operation called the Preharvest Inspection (PHI) and Preharvest Inspection Reports which discuss the THP/NTMP's provisions and make recommendations, where necessary, to ensure that the THP/NTMP conforms to the rules. These reports are discussed at the 2nd Review Team Meeting (chaired by CAL FIRE) at which time "Review Team Recommendations" are developed. These final recommendations, along with all CAL FIRE and other agency documents, and any public correspondence received at the Felton office, are submitted to CAL FIRE's regional office in Santa Rosa, where the Director's representative makes the final decision on the THP/NTMP. You may review these documents at the FTP site (see above) or at the CAL FIRE Felton office. Please call the CAL FIRE Felton office to confirm availability and any cost if you wish a printed copy from Felton.

If you have questions, please contact the RPF who will be submitting the THP/NTMP or contact a CAL FIRE forester at the Felton office (831) 335-6740.

Sincerely,

Scotty Jalbert
Unit Chief
CAL FIRE San Mateo & Santa Cruz Unit

By: Richard Sampson
Division Chief-Resource Management
RPF #2422

Carren E. Wilson
466 Swanton Rd.
Davenport, CA 95017

Wallace J. & Dana C. Nichols
460 Swanton Rd. #C
Davenport, CA 95017

Susan Gianone Hawes
577 Swanton Rd.
Davenport, CA 95017

Paul L. & Barbara E. Brown
573 Swanton Rd.
Davenport, CA 95017

Richard E. Alderson
P.O. Box 166
Hakalau, HI 96710

Bruce A. & Marcia Mc Dougal
P.O. Box J
Davenport, CA 95017

Heather Mc Dougal
P.O. Box 288
Davenport, CA 95017

Frank & Barbara E. Mc Crary
3564 Highway 1
Davenport, CA 95017

* Mathers J. Rowley Jr.
482 Swanton Rd.
Davenport, CA 95017

Neal Coonerty, Supervisor
County of Santa Cruz
701 Ocean St., Room 500
Santa Cruz, CA 95060

Pacific Elementary School
P.O. Box H
Davenport, CA 95017

*All are within 300' except Supervisor and school.
* = within 1,000' down stream*

PLAN SUBMITTER RESPONSIBILITY ACKNOWLEDGEMENT

(As per 14 CCR § 1035)

Plan Submitter

Name: Starr Lee (Cal Poly Corporation)

Street Address/PO Box: Building 15 City: San Luis Obispo Zip Code: 93407

Telephone Number: (831) 756 - 1451

I have read and understand my responsibilities as Plan Submitter as described under 14 CCR § 1035. I certify that I have fulfilled my legal obligation as stated in the forest practice rules and agree to fulfill my responsibility as the plan submitter as it pertains to this plan.

☒ Yes ☐ No I have retained the services of an RPF to provide professional advice to the LTO and timberland owner upon request throughout active timber operations regarding: (1) the plan, (2) the forest practice rules, (3) and other associated regulations pertaining to timber operations.

☐ Yes ☐ No I have authorized the timberland owner to perform the services of a professional forester, understanding that the services will be provided personally on lands owned by the timberland owner.

Plan Submitter's Signature: Starr Lee

TIMBERLAND OWNER RESPONSIBILITY ACKNOWLEDGEMENT

(As 14 CCR § 1035(d)(2)(B))

Timberland Owner

Name: Starr Lee (Cal Poly Corporation)

Street Address/PO Box: Building 15 City: San Luis Obispo Zip Code: 93407

Telephone Number: (831) 756 - 1451

I have read and understand my responsibilities as timberland owner as described under 14 CCR § 1035(d)(2)(A)-(C). I certify that I have fulfilled my legal obligation as stated in the forest practice rules, and agree to fulfill my responsibilities as the timberland owner as it pertains to this plan.

I understand that I have been authorized by the plan submitter to perform the services of a professional forester pursuant to the Landowner exception in PRC § 757, and such services will be personally performed only on those lands that I own.

Timberland Owner's Signature: Starr Lee

1035 Plan Submitter Responsibility

The plan submitter, or successor in interest, shall:

- (a) Ensure that an RPF conducts any activities which require an RPF.
- (b) Provide the RPF preparing the plan or amendments with complete and correct information regarding pertinent legal rights to, interests in, and responsibilities for land, timber, and access as these affect the planning and conduct of timber operations.
- (c) Sign the THP certifying knowledge of the plan contents and the requirements of this section.
- (d) (1) Retain an RPF who is available to provide professional advice to the LTO and timberland owner upon request throughout the active timber operations regarding:
 - (A) the plan,
 - (B) the Forest Practice Rules, and
 - (C) other associated regulations pertaining to timber operations,
- (2) The plan submitter may waive the requirement to retain an RPF to provide professional advice to the LTO and timberland owner under the following conditions:
 - (A) the plan submitter provides authorization to the timberland owner to provide advice to the LTO on a continuing basis throughout the active timber operations provided that the timberland owner is a natural person who personally performs the services of a professional forester and such services are personally performed on lands owned by the timberland owner;
 - (B) the timberland owner agrees to be present on the logging area at a sufficient frequency to know the progress of operations and advise the LTO, but not less than once during the life of the plan; and
 - (C) the plan submitter agrees to provide a copy of the portions of the approved THP and any approved operational amendments to the timberland owner containing the General Information, Plan of Operations, THP Map, Yarding System Map, Erosion Hazard Rating Map and any other information deemed by the timberland owner to be necessary for providing advice to the LTO regarding timber operations.
- (3) All agreements and authorizations required under 14 CCR § 1035(d)(2) shall be documented and provided in writing to the Director to be included in the plan.
- (e) Within five working days of change in RPF responsibilities for THP implementation or substitution of another RPF, file with the Director a notice which states the RPF's name and registration number, address, and subsequent responsibilities for any RPF required fieldwork, amendment preparation, or operation supervision. Corporations need not file notification because the RPF of record on each document is the responsible person.
- (f) Provide a copy of the portions of the approved THP and any approved operational amendments to the LTO containing the General Information, Plan of Operations, THP Map, Yarding System Map, Erosion Hazard Rating Map and any other information deemed by the RPF to be necessary for timber operations.
- (g) Notify the Director prior to commencement of site preparation operations. Receipt of a burning permit is sufficient notice.

**REGISTERED PROFESSIONAL FORESTER (RPF) RESPONSIBILITY
ACKNOWLEDGEMENT**

(As per Section 1035.1 Title 14, CCR)

RPF Certified to Provide Professional Advice:

Name: Harlan Tranmer

Street Address/PO Box: 3564 Highway 1 City: Davenport Zip Code: 95017

Telephone Number: (831) 457-6390 RPF Number: 2850

As of January 1, 2001, I have read and understand my responsibility as RPF, as described under 14 CCR 1035.1(a-g). I agree to fulfill my responsibilities as an RPF as they pertain to this plan.

☒ Yes ☐ No I have been retained as the RPF, available to provide professional advice to the licensed timber operator and timberland owner upon request throughout the active timber operations regarding: (1) the plan, (2) the forest practice rules, (3) and other associated regulations pertaining to timber operations.

RPF Signature: _____

Harlan Tranmer

RPF Certified to Provide Professional Advice:

Name: Steve Auten

Street Address/PO Box: 125 Swanton Road City: Davenport Zip Code: 95017

Telephone Number: (831) 458-5413 RPF Number: 2734

As of January 1, 2001, I have read and understand my responsibility as RPF, as described under 14 CCR 1035.1(a-g). I agree to fulfill my responsibilities as an RPF as they pertain to this plan.

☒ Yes ☐ No I have been retained as the RPF, available to provide professional advice to the licensed timber operator and timberland owner upon request throughout the active timber operations regarding: (1) the plan, (2) the forest practice rules, (3) and other associated regulations pertaining to timber operations.

RPF Signature: _____

Steve R. Auten

ESTIMATED SURFACE SOIL EROSION HAZARD STATE OF CALIFORNIA
BOARD OF FORESTRY

I. SOIL FACTORS				FACTOR RATING BY AREA			SOIL TYPES
A. SOIL TEXTURE	Fine	Medium	Coarse	A	B	C	A= 169 Santa Lucia shaly clay loam 50-75% slope B= 171 Soquel Loam, 2-9%
1. DETACHABILITY Rating	Low	Moderate	High	8	17		
	1-9	10-18	19-30				
2. PERMEABILITY Rating	Slow	Moderate	Rapid	3	2		
	5-4	3-2	1				

B. DEPTH TO RESTRICTIVE LAYER OR BEDROCK

Rating	Shallow	Moderate	Deep	5	4	
	1"-19"	20"-39"	40"-60"			
	15-9	8-4	3-1			

C. PERCENT SURFACE COARSE FRAGMENTS GREATER THAN 2 MM IN SIZE INCLUDING ROCKS OR STONES

INCLUDING ROCKS CRYSTALS									
Rating	Low	Moderate	High	3	5		FACTOR RATING BY AREA		
	(-) 10-39%	40-70%	71-100%				A	B	
	10-6	5-3	2-1						
SUBTOTAL⇒							19	28	

II. SLOPE FACTOR

Slope Rating	5-15%	16-30%	31-40%	41-50%	51-70%	71-80%(+)	20	2	
	1-3	4-6	7-10	11-15	16-25	26-35			

III. PROTECTIVE VEGETATIVE COVER REMAINING AFTER DISTURBANCE

Rating	Low	Moderate	High	3	3	
	0-40%	41-80%	81-100%			
	15-8	7-4	3-1			

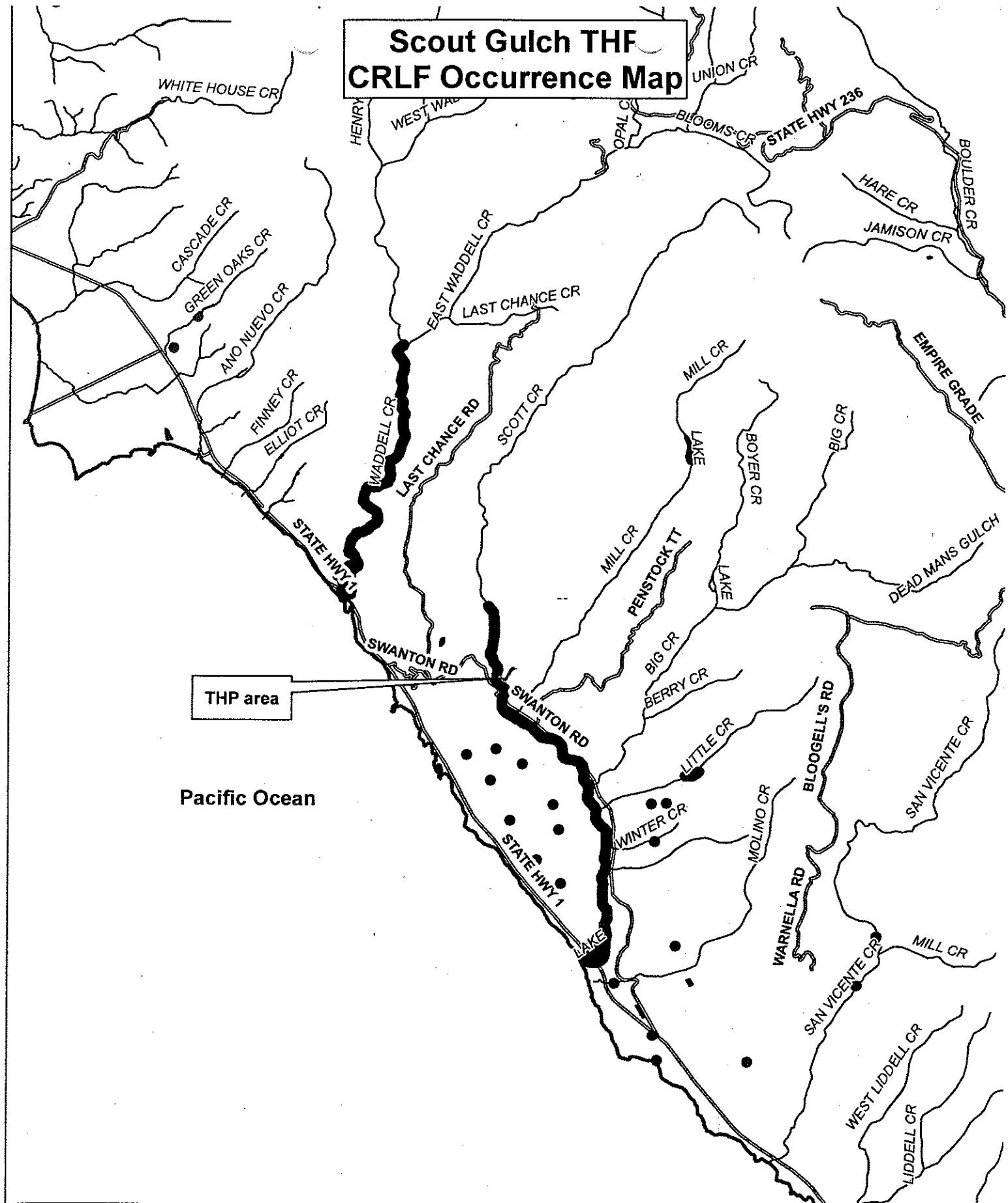
IV. TWO YEAR, ONE-HOUR RAINFALL INTENSITY (Hundredths Inch)

Rating	Low	Moderate	High	Extreme	15	15	
	(-) 30-39	40-59	60-69	70-80(+)			
	1-3	4-7	8-11	12-15			
TOTAL SUM OF FACTORS⇒					57	48	

EROSION HAZARD RATING

<50	50-65	66-75	>75	M	L	
LOW (L)	MODERATE (M)	HIGH (H)	EXTREME (E)			

Scout Gulch THF CRLF Occurrence Map



- THP Boundary
- Roads
- Watercourse
- CNDDDB CRLF Occurrence
- Coast Line

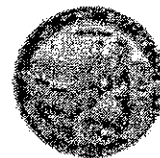
Davenport, Calif. Quadrangle
 THP in Sections 1 and 12 T10S R4W MDB&M
 Rancho Agua Puerca y Las Trancas
 Santa Cruz County, California
 1 inch = 7,000 feet





State of California -- The Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Bay Delta Region
7329 Silverado Trail
Napa, CA 94558
(707) 944-5500
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director



May 5, 2014

Mr. Harlan Tranmer
Big Creek Lumber Company
3564 Highway 1
Davenport, CA 95060
harlant@big-creek.com

Dear Mr. Tranmer:

Subject: Marbled Murrelet and Townsend's Big-eared Bat Pre-Consultation for the Proposed Scout Gulch Timber Harvesting Plan, Cal Poly Corporation Ownership, Scott Creek Watershed, Santa Cruz County

This letter responds to your request for a marbled murrelet (*Brachyramphus marmoratus*) and Townsend's big-eared bat (*Corynorhinus townsendii*) consultation with the California Department of Fish and Wildlife (CDFW) for the Scout Gulch Timber Harvesting Plan (THP, not yet filed). The marbled murrelet is listed as state endangered pursuant to Fish and Game Code 2050 *et seq.*, federally threatened pursuant to Title 16, United States Code 1531 *et seq.*, and is a sensitive species as defined by Title 14, California Code of Regulations (14 CCR) § 895.1. Marbled murrelet consultations for THPs are required pursuant to 14 CCR § 919.11 where there is evidence of an active marbled murrelet nest site in or adjacent to the project site, or where the project has the potential to impact the marbled murrelet. The Townsend's big-eared bat is currently listed as a candidate species under the California Endangered Species Act (CESA). Therefore, Timber Harvest Plans must contain operational provisions that avoid take as defined by and consistent with the candidate status of this species under CESA.

The marbled murrelet is a small seabird which, in California, uses coastal coniferous forests from Del Norte to Santa Cruz counties during the breeding season (March 24 to September 15). Marbled murrelets have been documented nesting in mature, old-growth forests as well as younger forest stands with late-seral elements such as large trees with moss-covered limbs >6 inches wide or limb defects (McShane *et al.* 2004). Mature conifer stands often have a complex tree crown structure with gaps in the canopy which allow access by adult murrelets to and from nest platforms during parental incubation exchanges and chick feeding (Ralph *et al.* 1995).

In California, Townsend's big-eared bat is found throughout most of the state, from the inland deserts, to coastal redwood forests, in oak woodlands, and lower to mid-elevation mixed coniferous-deciduous forests (CDFW 2013). Natural roost sites include caves and large old-growth trees with basal hollows. Maternity roost entrances are at least 6 inches high and 12 inches wide, and heights of roosts range from 8 to 16 feet, with an area large enough to permit flight (Pierson and Rainey 1998). Roosting structures often contain multiple openings. The species prefer dome-like areas where heat or cold is trapped (warm pockets for maternal roosting, cold pockets for hibernation). Townsend's big-eared bat is a colonial species with maternity colonies forming between March and June. Females aggregate in the spring at

nursery sites and give birth to one young in late spring or early summer, peaking in late May. These nursery colonies, comprised of adult females and their young, remain intact until the young are independent in late summer or early fall (Pierson and Rainey 1998). Young begin to fly in 2 ½ to 3 weeks after birth and are fully weaned within 6 weeks (Zeiner et al. 1988).

Both marbled murrelet and Townsend's big-eared bat are highly sensitive to disturbance from sights and sounds of human activity in or near nesting/roosting locations. For the murrelet, disturbance may reach the level of take when project-generated sound exceeds ambient nesting conditions by 20 to 25 decibels, when project-generated sound added to ambient conditions exceeds 90 decibels, or when human activities occur within a visual line-of-sight distance of 40 meters or less from a nest (USFWS 2006). For bats, human intrusion into a roost can be damaging to a population, particularly during the maternity season when females are aggregated and rearing defenseless young. A simple entry into a maternity roost can cause a colony to abandon or move to an alternate roost (Pierson and Rainey 1998), resulting in take. Sound and visual disturbance effects have not been extensively studied, but are estimated by CDFW to be similar to impacts seen for nesting birds.

Project Location and Description

The proposed 10-acre THP area (Figures 1 and 2) is located in northern Santa Cruz County, California (T10S, R4W, Section 1 & 2, MDB&M; Davenport 7.5' USGS quad map). The THP area is a part of the Swanton Pacific Ranch, which is owned by the Cal Poly Corporation. The THP area is located directly east of Scott Creek and an unnamed Class II and Class III tributary runs through the middle of the THP area into Scott Creek, a tributary to the Pacific Ocean. The project area is approximately 1.1 air miles and approximately 3.5 drainage miles from the Pacific Ocean. The entire THP area drains into Scott Creek.

The plan area contains a stand of second-growth conifers with scattered hardwoods. Dominant species include coast redwood and Douglas-fir with lesser amounts of Monterey pine and hardwood species. This stand was thinned in the 1960s and was burned in the 2009 Lockheed fire. Although the mature trees survived the fire, the stand was left relatively exposed. Canopy cover is approximately 50 to 70%. The forest transitions to grassland and oak woodland upslope of the proposed harvest boundary. Downstream habitat consists of a horse pasture and riparian forest along Scott Creek. The THP proposes to manage the property under single tree selection silviculture utilizing ground-based yarding.

Marbled Murrelet Background

Suitable habitat for the marbled murrelet can be found in the nearby watersheds of Waddell Creek, Scott Creek, Mill Creek, Big Creek, and Little Creek. Known marbled murrelet nesting habitat is located within 1.5 miles to the north and 2.5 miles northwest (Big Basin State Park) and 6.0 miles to the east (Henry Cowell State Park), of the proposed THP area. Both Henry Cowell Redwoods State Park and Big Basin Redwoods State Park are designated as Critical Habitat for the marbled murrelet by the U.S. Fish and Wildlife Service (USFWS).

Marbled murrelets have also been detected in the nearby Waddell Creek, East Waddell Creek, Scott Creek, and Big Creek watersheds. These detections have been made on State Parks and Big Creek Lumber Company property (California Natural Diversity Database, CNDDDB). Various

stands located north of Scout Gulch, approximately one to three miles from the proposed THP area, have been deemed occupied by marbled murrelets based on surveys conducted by John Bulger from 1997 to 2000 (CDFW 2002a-c).

Sites with "presence" are those sites where there have been at least one murrelet detection (i.e., the sighting or hearing of one or more birds), while "occupied sites" are sites where murrelets have been observed exhibiting sub canopy behaviors (i.e. flying below, thru, into, or out of the forest canopy within or adjacent to a site of potential habitat), which indicate that the site has some importance for breeding or important social behaviors (Evans Mack 2003). According to observation records from the CNDDDB, nine stands with either marbled murrelet presence or occupancy have been confirmed within a five-mile radius of the proposed THP area and an additional eleven sites (not yet surveyed) have been determined to be suitable habitat. As stated in CDFW's Marbled Murrelet Survey Protocol Guidelines (CDFW 2003), once a site has been determined to be occupied by murrelets, it shall be considered occupied indefinitely. There are no stands within a five-mile radius of the proposed THP area that have been recently surveyed without detections.

Marbled Murrelet Habitat Assessment

On February 5, 2014, CDFW Environmental Scientist Julie Coombes conducted a field assessment of the proposed THP area. The purpose of the field assessment was to determine if suitable marbled murrelet habitat is present in the proposed THP area and to assess the proposed projects risk of adversely affecting marbled murrelets.

The proposed THP area is composed of second-growth conifers with scattered hardwoods. CDFW inspected stands that you identified within the proposed THP (Figure 2) for the presence of suitable marbled murrelet habitat. Approximately four scattered residual conifers were inspected. Two of these trees are located along the north side of Boy Scout Camp Road and the other two trees are located southeast of the unnamed Class III watercourse flowing through the plan area. Boy Scout Camp Road is proposed as a haul route for the THP.

Unsuitable Habitat

As discussed above, CDFW observed four potential habitat trees within the THP area. CDFW determined two of those trees to be unsuitable habitat. A single large diameter Douglas-fir (Tree #2, Figure 2) was observed adjacent to the unnamed Class III watercourse flowing through the THP area. The tree has four limbs varying from 6 to 12 inches in diameter about 100 feet above the ground. All of the limbs slope upward and are exposed with minimal cover and moss growth. Due to the low density and quality of nesting platforms and lack of protection from adverse weather conditions, as of the date of the inspection, this Douglas-fir does not contain suitable marbled murrelet nesting habitat.

A single large diameter Monterey pine (Tree #4, Figure 2) was observed adjacent to Boy Scout Camp Road. The tree has a few suitably sized limbs (6 to 10 inches wide) about 100 feet above the ground that are exposed with no moss growth. Additionally, the tree lacks overhead and lateral foliage, leaving the nesting platforms exposed. The forest stand canopy closure does not

offer adequate protection against significant wind effects and predators. It was determined that as of the date of the inspection, this Monterey pine does not contain suitable marbled murrelet nesting habitat.

Although Tree #2 and #4 do not support suitable marbled murrelet nesting habitat at this time, the habitat elements could provide such habitat in the future. Large diameter mature trees are often part of a highly fragmented landscape. Retention of these legacy trees maintain and promote the development of structural complexities that provide nesting, shelter, and foraging habitat to a variety of wildlife species (Mazurek and Zielinski 2004).

CDFW recommends that Tree #2 and #4 be retained as wildlife trees. CDFW also recommends the protection of screen trees and overlapping canopy trees to promote and recruit special habitat elements. Screen trees protect wildlife trees by reducing wind, providing shade to potential nest sites, and reducing exposure to nest predators. The location of these trees should be conveyed to the Licensed Timber Operator to insure retention, and nearby harvested trees should be directionally felled to avoid damage to these mature trees.

Suitable Habitat

CDFW determined two of the four potential habitat trees to be suitable habitat. A single large diameter redwood (Tree #1, Figure 2) was observed southeast of the unnamed Class III watercourse flowing through the THP area. The tree has a cluster of five limbs approximately 8 inches in diameter about 70 feet up, with suitable platforms against the bole of the tree covered with epiphytic growth. Canopy cover is moderate with foliar cover from the redwood itself and adjacent screen trees providing protection from predators and significant wind effects.

A single large diameter redwood (Tree #3, Figure 2) was observed north of Boy Scout Camp Road along the boundary of the proposed THP area. The tree was observed to contain a fork in the bole about 70 feet up that forms a large platform. The limbs are 6 to 10 inches in diameter and although foliar cover surrounding platforms was low to moderate and moss growth was limited, the surrounding canopy appeared to be sufficient to offer adequate protection against wind. Based on the presence of suitably-sized limbs, overhead and lateral foliar cover, epiphytic growth, and the potential accessibility of the tree by murrelets using the Scotts Creek flyway, CDFW determined that the two redwood trees (Tree #1 and #3) are suitable habitat.

Marbled Murrelet Visual and Noise Harassment Buffer

CDFW has conducted a noise disturbance analysis for the proposed THP according to the USFWS guidelines (USFWS 2006). CDFW has incorporated this guidance to determine noise harassment buffers for suitable murrelet habitat within or in proximity to the proposed THP. The auditory (and visual) disturbance effects analysis for marbled murrelets was developed to revise criteria for determining when disturbance to marbled murrelets would rise to a level of "take," and provides a methodology to simplify the analysis of the effects of noise disturbance on murrelets. The analysis identified the dominant pre-project noise levels for areas where murrelets could be present during the breeding season.

According to the Federal sound level categories, ground-based activities conducted as part of the proposed THP have the potential to generate noise levels considered "High" (81 to 90 decibels; dB) and "Very High" (91 to 100 dB). Helicopter operations, as well as truck horn use, are considered "Extreme" (101 to 110 dB) action-generated sounds. Types of equipment that fall under the "High" category include a tractor, front-end loader, chainsaw, log loader, backhoe, road grader and dump truck. "Very high" sound levels are produced by equipment such as logging trucks using compression or "jake" brakes, yarder whistles, and from activities such as felling of large residual trees and door slamming.

The proposed THP area is located in an area of the watershed that experiences a moderate influence of human activities. Human-generated noise levels associated with Swanton Road includes light vehicular traffic on paved surfaces and recreational activities such as those associated with small parks, bike paths and residences. The federal guidance document defines ambient sound as typical sound levels experienced on a "daily or more frequent basis." Consequently, pre-project sound levels within potentially suitable murrelet habitat adjacent to the proposed THP area are categorized as "Low."

A noise minimization buffer around suitable habitat trees should be required from March 24 to September 15 in order to avoid auditory disturbance of murrelets potentially nesting in the proposed THP area. For all identified suitable habitat in the Scotts Creek watershed, the required buffer is 300 feet for sound levels that fall under the category of "High," "Very High" and "Extreme" categories.

Corvid Predation

CDFW recommends that measures be taken within the THP area to avoid attracting predators of murrelets as result of timber harvesting operations. Ravens, crows, and jays, which have large home ranges, are known predators of marbled murrelet eggs and nestlings (Marzluff and Neatherlin 2006). CDFW recommends that the plan submitter instruct all timber harvesting operators that all garbage and food scraps shall be packed out and disposed of in animal-proof containers. Workers, when feasible, should consume food inside their vehicles. These measures shall apply for harvesting activities occurring during the marbled murrelet breeding season outside the seasonal disturbance buffer.

Townsend's Big-eared Bat Habitat Assessment

Suitable Habitat

CDFW determined two large diameter redwood trees (Tree #1 and #3) to be suitable habitat for Townsend's big-eared bat. A single large diameter redwood (Tree #1, Figure 2) was observed southeast of the unnamed Class III watercourse flowing through the THP area. The tree was inspected and observed to contain a 10-foot high basal hollow opening that is 3 feet wide. The tree has a few crevices inside the hollow and an interior roof height of approximately 15 feet. A single large diameter redwood (Tree #3, Figure 2) was observed north of Boy Scout Camp Road along the boundary of the proposed THP area. The tree was inspected and observed to contain two basal hollow openings on either side of the tree. The openings are approximately seven feet and nine feet high and the tree has a few crevices inside the hollow with an interior roof height averaging 11 feet. Based on the presence of basal hollows with suitably-sized

entrances, a large enough dome-like area to permit flight and provide temperature control, and the potential accessibility of the tree by bats using Scout Gulch for foraging, CDFW determined that the two redwood trees (Tree #1 and #3) are suitable habitat.

Based on CDFW observations during the field inspection on February 5, 2014, the proposed Scout Gulch THP does support suitable Townsend's big-eared bat habitat. CDFW recommends a noise minimization buffer of 300 feet around the suitable habitat trees from March 15 to September 1 in order to avoid physical and auditory disturbance of Townsend's big-eared bats potentially roosting in the two trees.

Recommendations

To avoid "take" or adversely affecting marbled murrelets and Townsend's big-eared bat during timber harvesting operations, the following conditions should be incorporated into the THP as enforceable conditions:

1. The two residual redwood trees, Tree #1 and #3, as indicated on the attached map (Figure 2), shall be considered suitable marbled murrelet habitat, and a permanent 50-foot no-cut buffer shall be established around these trees.
2. The residual Douglas-fir tree and Monterey pine, Tree #2 and #4, as indicated on the attached map (Figure 2), shall be retained as wildlife trees. The screen trees and overlapping canopy trees shall be retained to promote and recruit lateral foliar coverage of suitable nesting platforms.
3. During the marbled murrelet breeding season, from March 24 to September 15, no timber harvesting activities, including felling, yarding, skidding, hauling, site preparation, or road, skid trail, landing and watercourse construction and maintenance shall occur within 300 feet of the two residual redwood trees.
4. During the marbled murrelet breeding season, use of "jake" or compression brakes and truck horns, and truck door slamming shall not occur within 1,320 feet of the two potential murrelet nest redwood trees.
5. To avoid attracting ravens, crows, and jays, which are known nest predators of marbled murrelets, timber harvesting crews shall pack out all litter and food scraps. Food shall be consumed inside vehicles.
6. During the Townsend's big-eared bat roosting season, from March 15 to September 1, no timber harvesting activities, including felling, yarding, skidding, hauling, site preparation, or road, skid trail, landing and watercourse construction and maintenance shall occur within 300 feet of the residual Douglas-fir and Monterey pine trees.
7. Prior to timber harvesting, the RPF shall inform all timber harvesting crews of the above recommendations through a pre-project meeting.

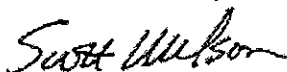
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CDFW requests that the above recommendations remain in effect during the life of the THP and/or until protocol-level marbled murrelet and/or Townsend's big-eared bat surveys are performed, and written approval is obtained from CDFW.

Consultation with CDFW will be required if the location and boundary lines of the proposed THP area are modified, or if CDFW receives any new information regarding marbled murrelet or Townsend's big-eared bat occurrences near the proposed plan area. CDFW's evaluation and recommendations are consistent with recovery objectives and goals of the Marbled Murrelet Recovery Plan (USFWS 1997). Appropriate avoidance and mitigation measures are currently being evaluated by CDFW for Townsend's big-eared bat. The recommendations in this report apply to this THP alone. Additional or modified measures may be recommended for future THPs.

If you have questions or comments, please contact Ms. Julie Coombes, Environmental Scientist, at (707) 944-5529 or julie.coombes@wildlife.ca.gov; or Ms. Randi Adair, Senior Environmental Scientist (Supervisory), at (707) 944-5596 or randi.adair@wildlife.ca.gov.

Sincerely,



Scott Wilson
Regional Manager
Bay Delta Region

Attachments

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Appendix A. Marbled Murrelet Survey Information

Known Occupied Stands

Figure 1 shows the approximate locations of the stands with known marbled murrelet occupancy within a 5-mile radius of the proposed Scout Gulch THP area. These stands, and past surveys pertaining to them, are described in Table 1, below. As stated in CDFW's Marbled Murrelet Survey Protocol Guidelines (CDFW, 2003), once a site has been determined to be occupied by murrelets, it shall be considered occupied indefinitely.

Table 1. Known Occupied Stands

Stand Name	Distance to proposed THP	Land Ownership	Watershed	MAMU Habitat Description	Survey Information and Results	Reference
Upper Scott Creek Stand 1	2.7 miles north	Big Creek Lumber Company and State Parks	Scott Creek	Uncut old-growth stand of redwood and Douglas-fir lies in the upper portion of Scott Creek.	Occupied; audio-visual surveys conducted in 1997 by Mr. John Bulger.	CDFW marbled murrelet consultation letter dated September 12, 2002
Upper Scott Creek Stand 2	2.5 miles north	Big Creek Lumber Company and State Parks	Scott Creek	Stand lies in upper Scott Creek. Scattered large diameter trees contain stout branches capable of supporting nests.	Occupied; audio-visual surveys conducted in 1999 and 2000 by Mr. John Bulger.	CDFW marbled murrelet consultation letter dated September 12, 2002
Lair Gulch Stand	1.2 miles northwest	Big Creek Lumber Company	Scott Creek	Suitable nesting habitat is located in the upper two-thirds of Lair gulch.	Occupied; audio-visual surveys conducted in 2000 by Mr. John Bulger.	CDFW marbled murrelet consultation letter dated September 12, 2002

Known Presence Stands

Figure 1 shows the approximate locations of stands with known marbled murrelet presence within a 5-mile radius of the proposed THP area. These stands, and past surveys pertaining to them, are described in Table 2, below.

Table 2. Known Presence Stands

Stand Name	Distance to proposed THP	Land Ownership	Watershed	MAMU Habitat Description	Survey Information and Results	Reference
Upper Scott Creek Stand 3	0.4 miles north	Big Creek Lumber Company	Scott Creek	Suitable nest trees along the mainstem of Scott Creek.	Presence; audio-visual surveys conducted in 1999 and 2000 by Mr. John Bulger; above canopy detection.	CDFW marbled murrelet consultation letter dated September 12, 2002

Rancho Del Oso Stand 1	2.4 miles northwest	Rancho Del Oso Family Trust	Waddell Creek	Suitable nesting habitat comprised of six very large old-growth redwoods.	Presence; audio-visual surveys conducted in 1988; sub-canopy behavior detected but considered a fly-through. Audio-visual surveys conducted in 2009 and 2010; above canopy detection.	CDFW marbled murrelet consultation letter dated December 22, 2009 and March 9, 2012
Rancho Del Oso Stand 2	2.5 miles northwest	Rancho Del Oso Family Trust	Waddell Creek	Suitable nesting habitat comprised of approximately 23 scattered residual conifers containing nest platforms.	Presence; audio-visual surveys conducted in 2009 and 2010; above canopy detection.	CDFW marbled murrelet consultation letter dated December 22, 2009 and March 9, 2012
Rancho Del Oso Stand 3	3.2 miles northwest	Rancho Del Oso Family Trust	Waddell Creek	Suitable nesting habitat comprised of one old-growth Douglas-fir and approximately four potential nest trees.	Presence; audio-visual surveys conducted in 2009 and 2010; above canopy detection.	CDFW marbled murrelet consultation letter dated December 22, 2009 and March 9, 2012
Bannister Gulch Stand	2.2 miles north	Big Creek Lumber Company and State Parks	Scott Creek	Suitable nesting habitat comprised of second-growth conifers with scattered residual old-growth trees.	Presence; audio-visual surveys conducted in 2001 and 2002 by Mr. John Bulger; above canopy detection.	CDFW marbled murrelet consultation letter dated September 12, 2002
General Smith Stand	2.2 miles east	Cal Poly State University	Little Creek	Stand lies at headwaters of Berry Creek. Comprised of residual redwood and Douglas-fir trees containing nesting platforms.	Presence; audio-visual surveys conducted in 2002 and 2003 by Mr. John Bulger; 2 above canopy detections in 2002.	CDFW marbled murrelet consultation letter dated March 29, 2007

Suitable, Not Surveyed Stands

Figure 1 shows the approximate locations of the non-surveyed, suitable habitat marbled murrelet stands within a 5-mile radius of the proposed THP area. These stands, and past inspections pertaining to them, are described in Table 3, below.

Table 3. Suitable, Not Surveyed Stands

Stand Name	Distance to proposed THP	Land Ownership	Watershed	MAMU Habitat Description	Reference
Lehi Stand		Lehi	Scott Creek	Suitable habitat, not surveyed; Stand lies in the extreme southwest portion of property ownership and upslope of Scott Creek. The 10-acre stand consists of a residual, large-diameter redwood and Douglas-fir trees with suitable platforms scattered throughout second-growth.	CDFW marbled murrelet consultation letter dated May 1, 2003
Upper Mill Creek Stand 1	2.1 miles northeast	Lockheed	Scott Creek	Suitable habitat, not surveyed; Stand lies east of Mill Creek. Contains late-seral characteristics, old-growth redwood and Douglas-fir trees with suitable platforms and dense foliar coverage.	CDFW marbled murrelet consultation letter dated May 6, 2011 and June 16, 2011
Upper Mill Creek Stand 2	2.4 miles northeast	Lockheed	Scott Creek	Suitable habitat, not surveyed; Stand lies downstream of a pond along the mainstem of Mill Creek. Habitat contains late-seral characteristics and old-growth redwood and Douglas-fir trees with suitable platforms.	CDFW marbled murrelet consultation letter dated May 6, 2011 and June 16, 2011
Boyer Creek & Powerhouse Grade Stand 1	2.5 miles northeast	Lockheed	Big Creek	Suitable habitat not surveyed; Stand lies along Boyer Creek. Old-growth Douglas-fir and redwood trees with large limbs covered with epiphytic growth and moderate to dense overhead and lateral foliar cover.	CDFW marbled murrelet consultation letter dated May 6, 2011 and June 16, 2011
Boyer Creek & Powerhouse Grade Stand 2	2.7 miles northeast	Lockheed	Big Creek	Suitable habitat, not surveyed; Stand lies west of Big Creek. Old-growth redwoods with few Douglas-firs were observed in a canyon comprised of late-seral habitat and nesting platforms.	CDFW marbled murrelet consultation letter dated May 6, 2011 and June 16, 2011
Boyer Creek & Powerhouse Grade Stand 3	2.2 miles northeast	Lockheed	Big Creek	Suitable habitat, not surveyed; Stand lies along upper Big Creek at confluence with Boyer Creek. Several large redwood trees supporting nesting platforms south of the Boyer Creek pond.	CDFW marbled murrelet consultation letter dated May 6, 2011 and June 16, 2011
Deadman Gulch Stand 1	4.7 miles northeast	RMC Pacific Materials Inc. (CEMEX)	Big Creek	Suitable habitat, not surveyed; Stand lies in the upper reaches of Deadman Gulch. Approximately 15 mature Douglas-firs were observed supporting large limbs covered with epiphytic growth and dense amounts of overhead and lateral foliar cover.	CDFW marbled murrelet consultation letter dated February 18, 2009

Deadman Gulch Stand 2	4.6 miles northeast	RMC Pacific Materials Inc. (CEMEX)	Big Creek	Suitable habitat, not surveyed; Stand lies west of the upper reaches of Deadman Gulch. Several scattered residual conifers supporting very large-sized mossy limbs, adequately covered with overhead and lateral foliage.	CDFW marbled murrelet consultation letter dated February 18, 2009
Warrenella Road Stand	5.0 miles east	RMC Pacific Materials Inc. (CEMEX)	Big Creek	Suitable habitat, not surveyed; Stand lies within 50 feet of Warrenella Road. Twelve large-diameter Douglas-fir trees with multiple, large-sized, moss-covered limbs of adequate size to support a murrelet nest.	CDFW marbled murrelet consultation letter dated February 23, 2007
Scott Creek Stand	0.3 miles south	Cal Poly State University	Little Creek	Suitable habitat, not surveyed; Stand lies along the mainstem of the lower reaches of Scott Creek. Redwood and Douglas-fir trees with suitable nesting platforms.	CDFW marbled murrelet consultation letter dated July 22, 2002 and March 29, 2007
Little Creek Stand	1.6 miles southeast	Cal Poly State University	Little Creek	Suitable habitat, not surveyed; Stand lies in the lower reaches of Little Creek. Redwood and Douglas-fir trees with suitable nesting platforms.	CDFW marbled murrelet consultation letter dated July 22, 2002 and March 29, 2007

Stands Determined "Not Suitable" During Prior Consultations

Habitat deemed unsuitable for marbled murrelet nesting may develop into suitable habitat over time; therefore, sites inspected by CDFW during pre-consultations and determined to be not suitable for marbled murrelet nesting at the time of consultation are subject to re-evaluation after a period of five years. There are no stands within a 5-mile radius of the proposed THP area that have been recently inspected or re-evaluated and deemed not-suitable.

Probable Absence Stands

CDFW's Marbled Murrelet Survey Protocol Guidelines state that surveys that reveal probable non-occupancy remain valid for three years after completion of the surveys. There are no stands within a 5-mile radius of the proposed THP area that have been recently surveyed without detections.

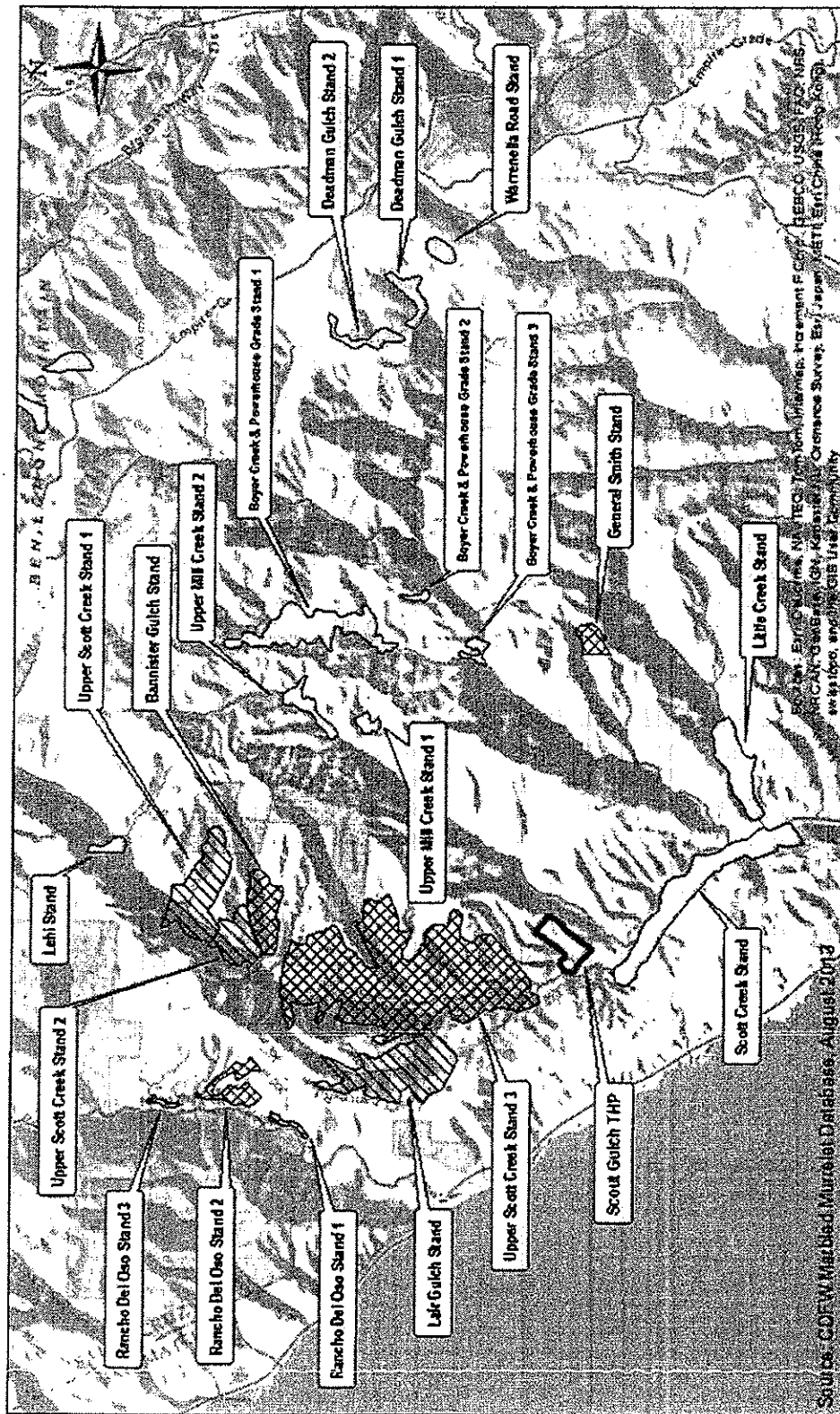
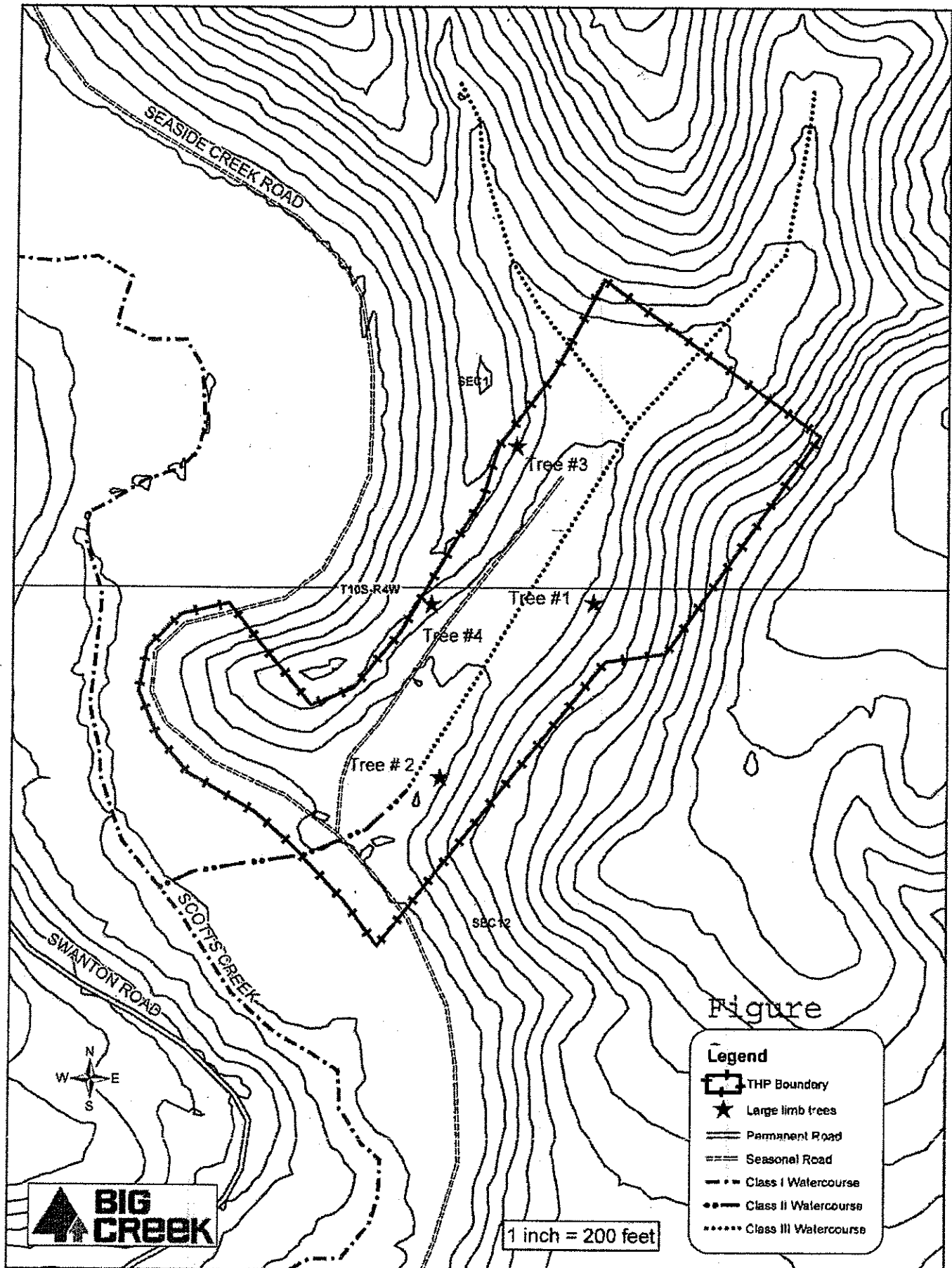


Figure 1. Scout Gulch THP and Marbled Murrelet Habitat Assessment Stands

Figure 2: Scout Gulch THP Marbled Murrelet Habitat Assessment



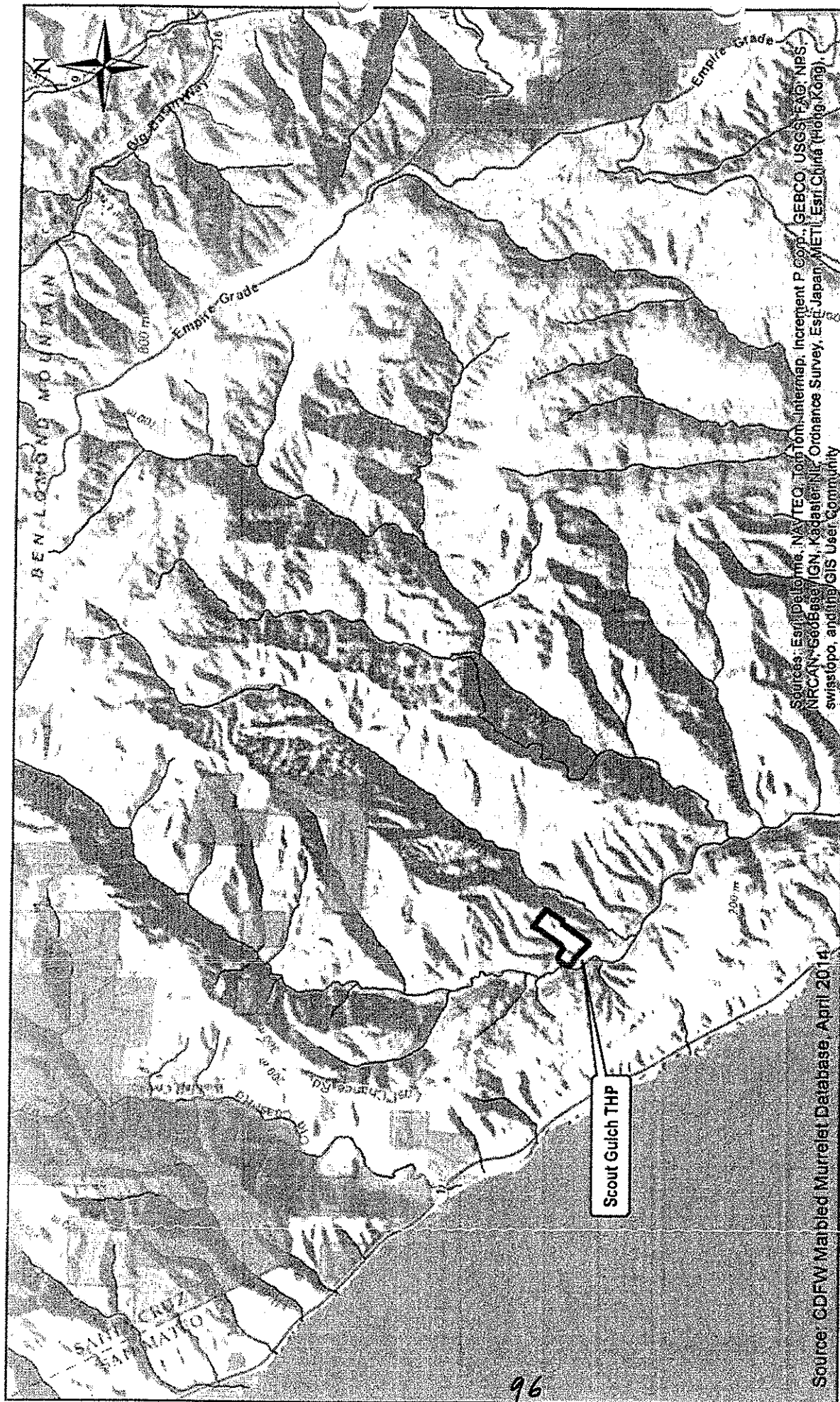
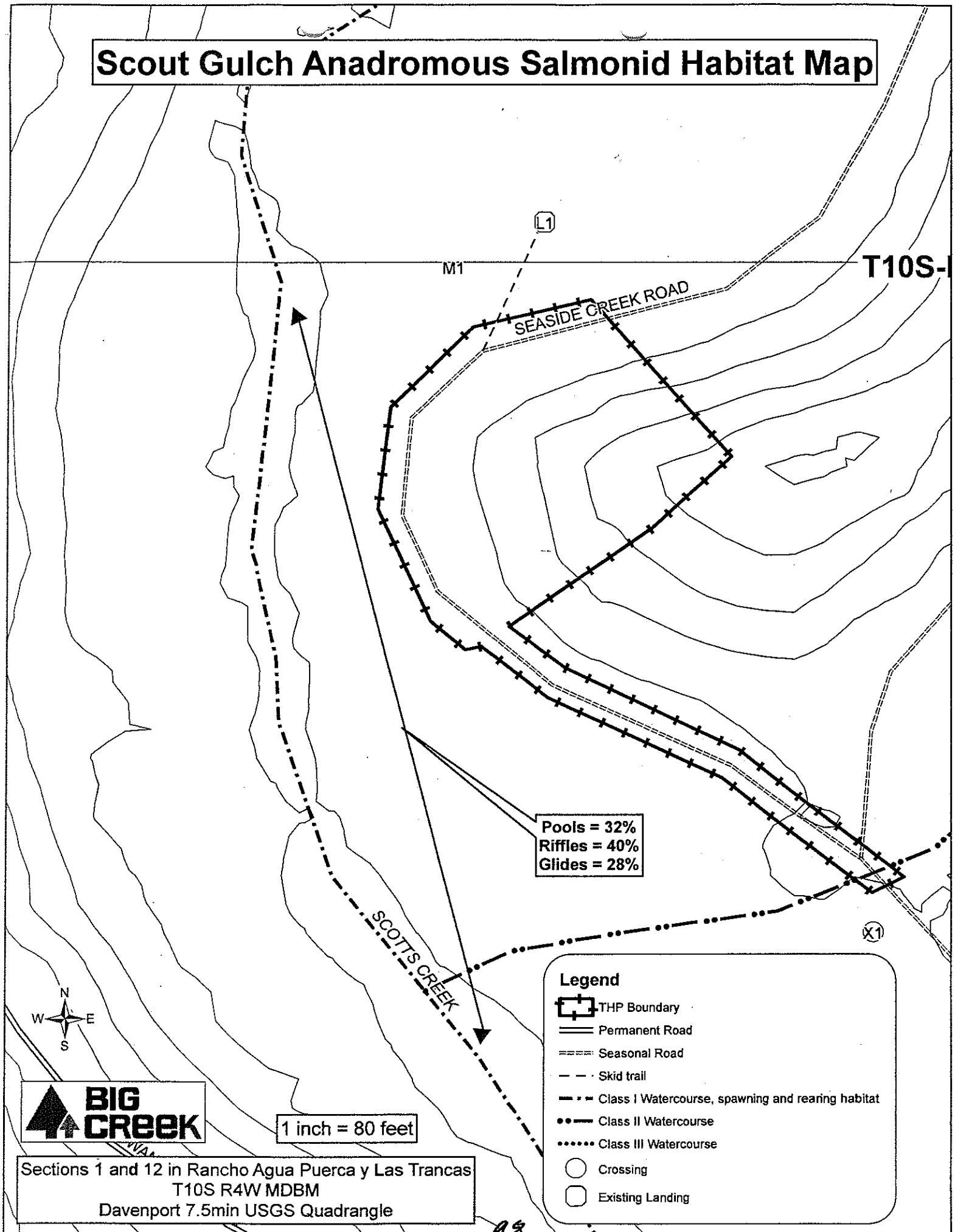


Figure 1. Scout Gulch THP Location

MAMU Critical Habitat (USFWS)

- Big Basin Redwoods State Park
- Henry Cowell Redwoods State Park

Scout Gulch Anadromous Salmonid Habitat Map



SPECIES SUMMARY REPORT

1=Federal Endangered 3=California Endangered 7=California Species of Special Concern 11=BLM Sensitive
2=Federal Threatened 4=California Threatened 8=Federally-Proposed Endangered 12=USFS Sensitive
5=California Fully Protected 9=Federally-Proposed Threatened 13=CDF Sensitive
6=California Protected 10=Federal Candidate 14=Harvest

Note: Any given status code for a species may apply to the full species or to only one or more subspecies or distinct population segments.

ID	SPECIES NAME	STATUS													
A001	CALIFORNIA TIGER SALAMANDER	2						7							
A007	CALIFORNIA NEWT							7							
A012	COMMON ENSATINA							7			11	12			
A028	WESTERN SPADEFOOT							7			11				
A043	FOOTHILL YELLOW-LEGGED FROG							7			11	12			
A046	BULLFROG													14	
A071	CALIFORNIA RED-LEGGED FROG	2						7							
B051	GREAT BLUE HERON												13		
B052	GREAT EGRET												13		
B059	BLACK-CROWNED NIGHT HERON									11					
B076	WOOD DUCK													14	
B105	COMMON MERGANSER													14	
B110	OSPREY												13		
B111	WHITE-TAILED KITE					5									
B113	BALD EAGLE		3			5							13		
B124	FERRUGINOUS HAWK									11					
B126	GOLDEN EAGLE					5				11		13			
B138	WILD TURKEY													14	
B140	CALIFORNIA QUAIL							7						14	
B141	MOUNTAIN QUAIL													14	
B240	MARbled MURRELET		2	3									13		
B251	BAND-TAILED PIGEON													14	
B255	MOURNING DOVE													14	
B269	BURROWING OWL							7		11					
B272	LONG-EARED OWL							7							
B279	BLACK SWIFT							7							
B281	VAUX'S SWIFT							7							
B309	OLIVE-SIDED FLYCATCHER							7							
B338	PURPLE MARTIN							7							
B342	BANK SWALLOW					4									
B353	AMERICAN CROW													14	
B368	BEWICK'S WREN							7							
B410	LOGGERHEAD SHRIKE		1					7							
B417	HUTTON'S VIREO							7							
B430	YELLOW WARBLER							7							
B483	SPOTTED TOWHEE							7							
B499	SAVANNAH SPARROW			3				7							
B505	SONG SPARROW							7							
M001	VIRGINIA OPOSSUM													14	
M003	VAGRANT SHREW							7							
M006	ORNATE SHREW		1					7							
M018	BROAD-FOOTED MOLE							7							
M023	YUMA MYOTIS										11				

SPECIES SUMMARY REPORT

1=Federal Endangered 2=Federal Threatened 3=California Endangered 4=California Threatened 5=California Fully Protected 6=California Protected 7=California Species of Special Concern 8=Federally-Proposed Endangered 9=Federally-Proposed Threatened 10=Federal Candidate 11=BLM Sensitive 12=USFS Sensitive 13=CDF Sensitive 14=Harvest

Note: Any given status code for a species may apply to the full species or to only one or more subspecies or distinct population segments.

ID	SPECIES NAME	STATUS													
M025	LONG-EARED MYOTIS												11		
M026	FRINGED MYOTIS												11		
M029	WESTERN SMALL-FOOTED MYOTIS												11		
M033	WESTERN RED BAT							7						12	
M037	TOWNSEND'S BIG-EARED BAT							7					11	12	
M038	PALLID BAT							7					11	12	
M042	WESTERN MASTIFF BAT							7					11		
M045	BRUSH RABBIT		1		3									14	
M047	DESERT COTTONTAIL													14	
M051	BLACK-TAILED JACKRABBIT							7						14	
M077	WESTERN GRAY SQUIRREL													14	
M078	EASTERN FOX SQUIRREL													14	
M095	CALIFORNIA POCKET MOUSE							7							
M102	NARROW-FACED KANGAROO RAT							7							
M104	HEERMANN'S KANGAROO RAT		1		3		5								
M117	DEER MOUSE							7							
M127	DUSKY-FOOTED WOODRAT		1					7							
M134	CALIFORNIA VOLE		1		3			7				11			
M146	COYOTE													14	
M147	RED FOX					4						12		14	
M149	GRAY FOX													14	
M152	RINGTAIL						5								
M153	RACCOON													14	
M157	LONG-TAILED WEASEL													14	
M160	AMERICAN BADGER							7						14	
M161	WESTERN SPOTTED SKUNK							7						14	
M162	STRIPED SKUNK													14	
M163	NORTHERN RIVER OTTER							7				11			
M165	MOUNTAIN LION							7							
M166	BOBCAT													14	
M176	WILD PIG													14	
M181	MULE DEER													14	
M233	LARGE-EARED WOODRAT							7							
R004	WESTERN POND TURTLE							7				11	12		
R029	COAST HORNED LIZARD							7				11	12		
R036	WESTERN SKINK							7				11			
R043	CALIFORNIA LEGLESS LIZARD							7					12		
R046	RUBBER BOA					4							12		
R048	RINGNECK SNAKE												12		
R053	STRIPED RACER			2		4									
R057	GOPHER SNAKE							7							
R059	CALIFORNIA MOUNTAIN KINGSNAKE							7					12		
R061	COMMON GARTER SNAKE		1		3		5	7							

California Department of Fish and Game
Natural Diversity Database
Selected Elements by Element Code - Landscape
Scout Gulch 5 mile radius

Element Code	Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank	CNPS	CDFG
1 AABH01022	Rana draytonii	California red-legged frog	Threatened	Threatened	G2G3	S2S3		SC
2 ABNME03041	Laterallus jamaicensis coturniculus	California black rail		Threatened	G4T1	S1		
3 ABNNB03031	Charadrius alexandrinus nivosus	western snowy plover	Threatened	Threatened	G3T3	S2		SC
4 ABNSB10010	Athene culicularia	burrowing owl			G4	S2		SC
5 ABNUA01010	Cypseloides niger	black swift			G4	S2		SC
6 ABPAU08010	Riparia riparia	bank swallow		Threatened	G5	S2S3		
7 ABPBX1201A	Geothlypis trichas sinuosa	saltmarsh common yellowthroat			G5T2	S2		SC
8 ABPBXB0020	Agelaius tricolor	tricolored blackbird			G2G3	S2		SC
9 AFCHA02034	Oncorhynchus kisutch	coho salmon - central California coast ESU	Endangered	Endangered	G4	S2?		
10 AFCHA0209G	Oncorhynchus mykiss irideus	steelhead - central California coast DPS	Threatened	Threatened	G5T2Q	S2		
11 AFCQN04010	Eucyclogobius newberryi	tidewater goby	Endangered	Endangered	G3	S2S3		SC
12 AMACC08010	Corynorhinus townsendii	Townsend's big-eared bat		Candidate Threatened	G3G4	S2S3		SC
13 ARAAD02030	Emys marmorata	western pond turtle			G3G4	S3		SC
14 ARADB3613B	Thamnophis sirtalis tetrataenia	San Francisco garter snake	Endangered	Endangered	G5T2	S2		
15 CARA2632CA	North Central Coast Short-Run Coho	North Central Coast Short-Run Coho			GNR	SNR		
16 CTT52110CA	Northern Coastal Salt Marsh	Northern Coastal Salt Marsh			G3	S3.2		
17 CTT52200CA	Coastal Brackish Marsh	Coastal Brackish Marsh			G2	S2.1		
18 CTT83130CA	Monterey Pine Forest	Monterey Pine Forest			G1	S1.1		
19 CTT83220CA	Northern Interior Cypress Forest	Northern Interior Cypress Forest			G2	S2.2		
20 IICOL02101	Cicindela hirticollis gravida	sandy beach tiger beetle			G5T2	S1		
21 ILEPP2010	Danaus plexippus	monarch butterfly			G5	S3		
22 IMBIV27020	Margaritifera falcata	western pearlshell			G4G5	S2S3		
23 NBMUS4Q022	Melichthoferia elongata	elongate copper moss			G4	S2	2B.2	
24 PDAST2E050	Cirsium andrewsii	Franciscan thistle			G2	S2.2	1B.2	
25 PDAST6E050	Stebbinsoseris decipiens	Santa Cruz microseris			G2	S2.2	1B.2	
26 PDAST6E0D0	Microseris paludosa	marsh microseris			G2	S2.2	1B.2	
27 PDAST6X030	Pentachaeta bellidiflora	white-rayed pentachaeta			G1	S1	1B.1	
28 PDBOR01070	Amsinckia lunaris	bent-flowered fiddleneck	Endangered	Endangered	G2?	S2?	1B.2	
29 PDBOR0V061	Plagiobothrys chorisianus var. chorisianus	Choris' popcornflower			G3T2Q	S2.2	1B.2	
30 PDBOR0V080	Plagiobothrys diffusus	San Francisco popcornflower		Endangered	G1Q	S1	1B.1	
31 PDBRA16010	Erysimum ammodophilum	sand-loving wallflower			G2	S2.2	1B.2	
32 PDCAROU213	Silene verecunda ssp. verecunda	San Francisco campion			G5T2	S2.2	1B.2	

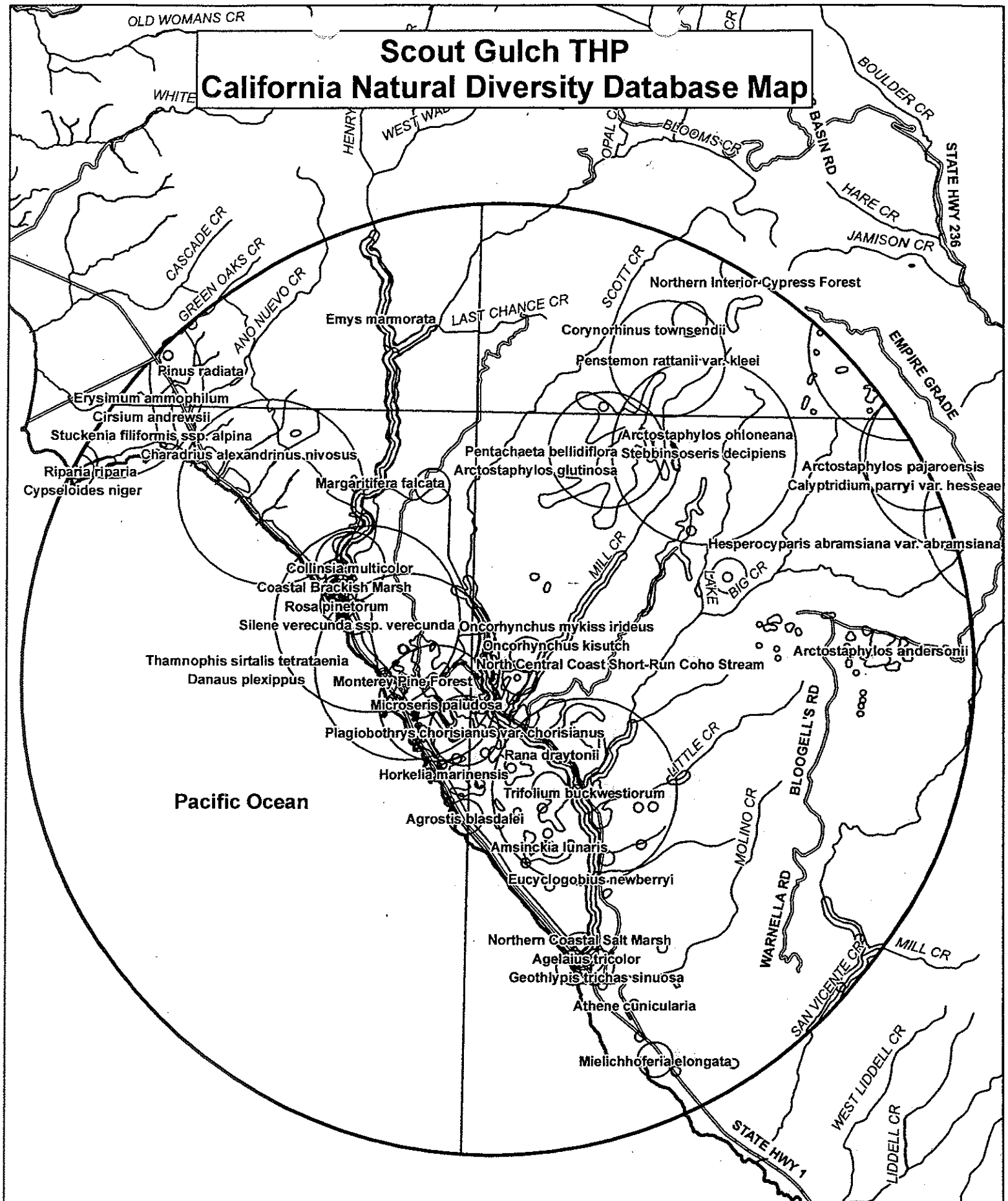
California Department of Fish and Game
Natural Diversity Database
Selected Elements by Element Code - Landscape
Scout Gulch 5 mile radius

Element Code	Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank	CNPS	CDFG
33 PDERI04030	Arctostaphylos andersonii	Anderson's manzanita			G2	S2?	1B.2	
34 PDERI040G0	Arctostaphylos glutinosa	Schreiber's manzanita			G1	S1	1B.2	
35 PDERI04100	Arctostaphylos pajaroensis	Pajaro manzanita			G1	S1	1B.1	
36 PDERI042Y0	Arctostaphylos ohloneana	Ohlone manzanita			G1	S1	1B.1	
37 PDFAB402W0	Trifolium buckwestorum	Santa Cruz clover			G2	S2	1B.1	
38 PDPOR09052	Calyptridium parryi var. hesseae	Santa Cruz Mountains pussypaws			G3G4T2	S2	1B.1	
39 PDROS0W043	Horkelia cuneata var. sericea	Keilogg's horkelia			G4T2	S2?	1B.1	
40 PDROS0W0B0	Horkelia maritensis	Point Reyes horkelia			G2	S2.2	1B.2	
41 PDROS1J0W0	Rosa pinetorum	pine rose			G2Q	S2.2	1B.2	
42 PDSCR0H0B0	Collinsia multicolor	San Francisco collinsia			G2	S2.2	1B.2	
43 PDSCR1L5B1	Penstemon rattanii var. kleei	Santa Cruz Mountains beardtongue			G4T2	S2.2	1B.2	
44 PGCUP04081	Hesperocyparis abramsiana var.	Santa Cruz cypress	Endangered	Endangered	G1T1	S1	1B.2	
45 PGPIN040V0	Pinus radiata	Monterey pine			G1	S1	1B.1	
46 PMLILOV010	Fritillaria agrestis	stinkbells			G3	S3.2	4.2	
47 PMPOA04060	Agrostis biasdalei	Biasdale's bent grass			G2	S2	1B.2	
48 PMPOT03091	Stuckenia filiformis ssp. alpina	slender-leaved pondweed			G5T5	S3	2B.2	

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Scout Gulch THP

California Natural Diversity Database Map



THP Boundary

Biological Assessment Area (5 mile radius)

CNDDDB shape

Roads

Watercourse

Coast Line

Davenport, Calif. Quadrangle
THP in Sections 1 and 12 T10S R4W MDB&M
Rancho Agua Puerca y Las Trancas
Santa Cruz County, California
1 inch = 7,000 feet



BIG CREEK

Santa Cruz County General Plan

THREATENED, ENDANGERED OR ANIMALS OF SPECIAL CONCERN IN SANTA CRUZ COUNTY Updated 3/1/94

SPECIES	STATE/FEDERAL LISTING	SPECIES OF SPECIAL CONCERN	KEY
SPIDERS AND RELATIVES			STATE
Dolloff Cave Spider	C2		SE State listed Endangered
Santa Cruz Telemachus Spider	C2		ST State listed Threatened
Empire Cave Pseudoscorpion	C2		SCE State candidate Endangered
GASTROPODS			SCT State candidate Threatened
California Brackish Water Snail	C2		
INSECTS			FEDERAL
Barbate (Mt. Herman) June Beetle	C2		FE Federally listed Endangered
Opler's Longhorn Moth	2R		FT Federally listed Threatened
Monarch Butterfly (wintering sites)	†		FPE Federally proposed Endangered
FISHES			FPT Federally proposed Threatened
Coho (Silver) Salmon		Yes	
Tidewater Goby	C2	Yes	C1 Sufficient data to support Federal listing
AMPHIBIANS AND REPTILES			C2 Listing may be warranted, but data insufficient to support Federal listing.
Santa Cruz Long-toed Salamander	SE/FE		
California Red-legged Frog	C2	Yes	1R Recommended for C1 status by U.S. Fish and Wildlife Service (USFWS).
Western Pond Turtle		Yes	
San Francisco Garter Snake	SE/FE		2R Recommended for C2 status by USFWS
Horned Lizard		Yes	
BIRDS			
Bank Swallow	ST		
Black-crowned Night Heron		Yes	† Species fall into one or more categories:
Black-shinned Hawk		Yes	• Biologically rare, very restricted in distribution or declining throughout their range.
Black Swift		Yes	• Species closely associated with a habitat that is rapidly declining in California.
Brown Pelican	SE/FE		• California population(s) are threatened with extirpation.
Burrowing Owl		Yes	
California Least Tern	SE/FE		
Cooper's Hawk		Yes	
Double Crested Cormorant		Yes	
Golden Eagle		Yes	
Ferruginous Hawk		Yes	
Marbled Murrelet	SCT/FPT		
Martin		Yes	
Osprey		Yes	
Peregrine Falcon	SE/FE		
Purple Martin		Yes	
Sharp-shinned Hawk		Yes	
Spotted Owl		Yes	
Tricolored Blackbird	C2	Yes	
Western Snowy Plover	FT	Yes	
Western Yellow Billed Cuckoo	SE		
Willow Flycatcher	SCE		
Yellow Breasted Chat		Yes	
Yellow Warbler		Yes	
MAMMALS			
American Badger		Yes	
Monterey Ornate Shrew	C2	Yes	
Northern (Stellar) Sea Lion	FT		
Santa Cruz Harvest Mouse	C2	Yes	
Southern Sea Otter	FT		

Appendix B: Sensitive Habitat Plant and Animal Species

CALIFORNIA STATE PLANT SPECIES OF CONCERN FOUND IN SANTA CRUZ COUNTY - RARE AND/OR ENDANGERED Updated 3/1/94					
	SCIENTIFIC NAME	COMMON NAME	STATE/ FEDERAL STATUS	LOCATION	THREAT
	<i>Agrostis agrostiglumis</i>	Awned bentgrass	C1	Small colony on bluff near Greyhound Rock	
	<i>Agrostis blaisdalei</i>	Blaisdale's bentgrass	C2	Few colonies in coastal grasslands, mostly Swanton/Greyhound Rock areas.	Threatened in part by agricultural conversion.
	<i>Amsinckia lunata</i>	Bent-flowered fiddleneck		Small colonies on slopes in Swanton area.	No immediate threat?
	<i>Arabis blepharophylla</i>	Coast rock cress	C3c	One colony near Eagle Rock, purchased by Sempervivus Fund.	No immediate threat.
	<i>Arctostaphylos glutinosa</i>	Schreiber's manzanita	C2	Chalk ridges NE of Swanton, most of habitat owned by Lockheed.	Up to 1/3 population removed for fire suppression. Possible long-term threat from fire suppression.
	<i>Arctostaphylos hookeri</i> esp. <i>hookeri</i>	Hooker's manzanita		Maritime chaparral in San Andreas/Calabasas area.	Threatened by residential development and competing exotics, especially Eucalyptus.
X?	<i>Arctostaphylos pajaroensis</i>	Pajaro manzanita		Collected in same area as <i>A. hookeri</i> , probably always rare in Santa Cruz Co.	Threats same as <i>A. hookeri</i> if not already extirpated in Santa Cruz County.
E	<i>Arctostaphylos sibirica</i>	Silver leaved manzanita	CE/C2	Zayante sandhills and Bonny Doon	Residential development and sand quarrying. Large population in Bonny Doon protected.
X	<i>Arenaria paludicola</i>	Marsh sandwort	CE/C1	Only colony at Camp Evers marsh in Scotts Valley habitat destroyed for golf course and trailer park.	Habitat destroyed.
	<i>Calyptidium parryi</i> var. <i>hesseae</i>	Santa Cruz Mtns pussypaws		Rare, few locations in sandy chaparral north of Watsonville, reported in Ben Lomond Mtn and Zayante sandhills.	More information needed on occurrences and threats
X	<i>Campanula californica</i>	Swamp harebell	C2	Only colony at Camp Evers marsh in Scotts Valley habitat destroyed for golf course and trailer park.	Habitat destroyed.
	<i>Campanula exilis</i>	Chaparral harebell		Two small colonies in Zayante sandhills.	No immediate threat?
	<i>Castilleja latifolia</i>	Monterey Indian paintbrush		Coastal dunes at Sunset Beach State Park and Pajaro Dunes.	Most of population removed by residential development. Threatened by invasive exotics - European beachgrass and iceplant.
	<i>Ceanothus rigidus</i>	Monterey ceanothus	C2	Few plants in maritime chaparral in Calabasas area.	Threatened by residential development, competing exotics and fire suppression.
	<i>Chorizanthe pungens</i> var. <i>hartwegiana</i>	Ben Lomond Spineflower	FE	Zayante sandhills and Bonny Doon	Mining
	<i>Chorizanthe pungens</i> var. <i>pungens</i>	Monterey spineflower	C1	Sunset Beach and probably a few other sandy areas in south County but no recent collections.	More information needed on occurrences.
	<i>Chorizanthe robusta</i> var. <i>robusta</i>	Robust spineflower	FE	Found in a few sandy places in midcounty and Sunset Beach areas.	No immediate threat?
E	<i>Chorizanthe robusta</i> var. <i>hartwegii</i>	Hartweg's spineflower	C1	Restricted to a few flower fields in Scotts Valley	Threatened by proposed housing and golf course development.
KEY E = Endemic to Santa Cruz County X = Extirpated in Santa Cruz County † = Presumed extinct STATE/ FEDERAL STATUS: CE = State listed as Endangered CR = State listed as Rare CC = Candidate for State listing PE = Proposed as Endangered FE = Federally listed as Endangered C1 = Sufficient data to support federal listing C2 = Threat and/or distribution data insufficient to support federal listing C3c = Determined too widespread and/or not threatened for federal listing					

Santa Cruz County General Plan

CALIFORNIA STATE PLANT SPECIES OF CONCERN FOUND IN SANTA CRUZ COUNTY - RARE AND/OR ENDANGERED Updated 3/1/94

	SCIENTIFIC NAME	COMMON NAME	STATE/ FEDERAL STATUS	LOCATION	THREAT
	<i>Collinsia franciscana</i>	San Francisco collinsia		A few colonies on slopes in Greyhound Rock and Swanton areas.	No immediate threat.
	<i>Cupressus abramsiana</i>	Santa Cruz cypress	CE/FE	Isolated groves in chaparral at Bonny Doon, Eagle Rock, Bracken Brae and above Smith Grade.	Some loss due to residential and vineyard development. Two colonies are publically owned.
X?	<i>Cypripedium fasciculatum</i>	Clustered lady's slipper	C3c	Formerly reported near Glenwood and Boulder Creek. No recent records.	Presumed extirpated in Santa Cruz County, possibly due to collecting.
	<i>Elymus californicus</i>	California bottlebrush grass	C3c	Isolated colonies in openings in woodlands in Swanton area and a few mild county areas.	Most colonies not threatened at this time.
E	<i>Eriogonum nudum decurrens</i>	Zayante buckwheat		Zayante sandhills and a few sandy areas in south county.	Reduced by mining and residential development, but common in remaining habitat.
	<i>Erysimum amorphilum</i>	Coast wallflower	C2	Secondary coastal dunes at Sunset Beach and south to Monterey Co.	Threatened by iceplant
	<i>Erysimum franciscanum</i>	San Francisco wallflower	C2	Few small colonies on sandy bluffs in Greyhound Rock area; population is at the southern limit of its range.	Threatened by competition from iceplant
E	<i>Erysimum teretifolium</i>	Santa Cruz wallflower	CE/C1	Zayante sandhills and a small colony in Bonny Doon	Significantly reduced by quarrying. 2-3 populations protected, but largest population threatened by quarrying.
X?	<i>Fritillaria agrostis</i>	Stinkbellis	C3c	Reported between Santa Cruz and Soquel, no recent records.	Probably lost long ago to agricultural and urban development.
	<i>Grindelia latifolia latifolia</i>	Coastal gumplant		Common in saltmarsh at Pajaro estuary and other places along the coast.	More common than originally considered; may be candidate for delisting.
E	<i>Gnaphalium zayanteense</i>	Zayante everlasting		Zayante sandhills	Probably much reduced by quarrying
	<i>Holocarpha macradenia</i>	Santa Cruz tarplant	CE/C1	A few colonies remaining in Watsonville area, Soquel/Live Oak area and at Graham Hill Rd.	Possibly all are currently or potentially threatened by various developments.
	<i>Horkelia cuneata ssp sericea</i>	Wedge leaved horkelia	C2	Coastal grasslands in Greyhound Rock area and possibly elsewhere	Probably much reduced by agriculture
	<i>Horkelia marinensis</i>	Pt. Reyes horkelia	C2	Native grasslands along Empire Grade	No immediate threat?
X?	<i>Lilium rubescens</i>	Redwood lily		Reported to occur south to Santa Cruz County. No recent records.	
	<i>Lomatium parvifolium</i>	Small leaved lomatium		A few found in maritime chaparral NW of Watsonville	Still extant? Possible threat from residential development.
	<i>Malacothamnus arcuatus</i>	Arcuate bushmallow		Few in chaparral near Big Basin	No immediate threats?
	<i>Microseris decipiens</i>	Santa Cruz microseris	C2	Few colonies in Greyhound Rock/Swanton area.	No immediate threats?

KEY E = Endemic to Santa Cruz County

X = Extirpated in Santa Cruz County

† = Presumed extinct

STATE/
FEDERAL
STATUS:

CE = State listed as Endangered

CR = State listed as Rare

CC = Candidate for State listing

FE = Federally listed as Endangered

C1 = Sufficient data to support federal listing

C2 = Threat and/or distribution data insufficient to support federal listing

C3c = Determined too widespread and/or not threatened for federal listing

Appendix B: Sensitive Habitat Plant and Animal Species

CALIFORNIA STATE PLANT SPECIES OF CONCERN FOUND IN SANTA CRUZ COUNTY - RARE AND/OR ENDANGERED Updated 3/1/94					
	SCIENTIFIC NAME	COMMON NAME	STATE/ FEDERAL STATUS	LOCATION	THREAT
E?	<i>Mimulus ruttanil</i> ssp <i>decurtatus</i>	Santa Cruz County monkeyflower		Chaparral borders in Zayante sandhills	Probably reduced by mining and residential development.
	<i>Monardella undulata</i> var <i>undulata</i>	Curly leaved coyote mint		Zayante sandhills	Much reduced by mining and residential development.
X?	<i>Pedicularis dudleyi</i>	Dudley's lousewort	CR/C3c	Reported from redwood forest at San Lorenzo River and Aptos, but no recent records.	
	<i>Penstemon ruttanil</i> ssp <i>klei</i>	Santa Cruz Mountains beardtongue		Few small populations in Nisene Marks State Park and Ben Lomond Mountain.	No immediate threats?
	<i>Pentstemon bellidiflora</i>	White rayed pentstemon	CC/C2	Big Basin Quadrangle	
	<i>Perideridia gairdneri</i> ssp <i>gairdneri</i>	Gairdner's yampoh	C2	Colonies on native terrace grasslands, mostly midcounty area, some in Swanton area.	Much reduced by agriculture and urban development; remaining colonies threatened.
	<i>Pinus radiata</i>	Monterey pine		Only native groves in Swanton area.	Possible threats due to disease and genetic pollution by artificially planted hybrids.
	<i>Piperia elongata</i> ssp <i>michaelsii</i>	Michael's rein orchid		Few colonies along north coast.	Some reduction due to trampling, otherwise numbers mysteriously decreasing.
	<i>Plagiobothrys chorizanus</i> var <i>chorizanus</i>	Chorist's popcornflower		Scattered colonies in wet places, north coast grasslands, etc.	
†	<i>Plagiobothrys diffusus</i>	San Francisco popcornflower	CE/C2	Presumed extinct, since rediscovered in grassland near Swanton and other places near Santa Cruz and Scotts Valley.	Most colonies threatened by housing development.
	<i>Quercus lobata</i>	Valley oak		Best grove near corner of Zayante and Quail Hollow Rds, small groves and individual trees scattered throughout San Lorenzo Valley and other areas.	Future of main grove is uncertain.
X?	<i>Ranunculus lobbii</i>	Lobb's aquatic buttercup		Reported to be found in ponds and marshes south to central Santa Cruz County. No recent records.	
	<i>Ribes divaricatum</i> var <i>puberulum</i>	Straggly gooseberry		Fairly common in moist, brushy areas.	No significant threats.
	<i>Sanicula hoffmannii</i>	Hoffmann's sanicle	C3c	Several colonies in Last Chance Rd area.	No immediate threats?
	<i>Silene verucunda</i> ssp <i>verucunda</i>	San Francisco campion	C2	Mudstone outcrops in Greyhound Rock area.	No immediate threats?
	<i>Stylocline amphibola</i>	Mt Diablo cottonweed		Scattered colonies on mudstone outcrops mostly in Greyhound Rock area, some in Scotts Valley area.	Scotts Valley colonies threatened by housing and golf course development.
	<i>Trifolium grayi</i>	West's clover		Colonies at isolated grasslands at Scotts Valley and a few other inland areas.	Threatened by housing and golf course development.
<p>KEY E = Endemic to Santa Cruz County STATE/ X = Extirpated in Santa Cruz County FEDERAL † = Presumed extinct STATUS:</p> <p>CE = State listed as Endangered FE = Federally listed as Endangered CR = State listed as Rare C1 = Sufficient data to support federal CC = Candidate for State listing listing C2 = Threat and/or distribution data insufficient to support federal listing C3c = Determined too widespread and/or not threatened for federal listing</p>					

Botanical survey plant list

for the Scout Gulch THP and adjacent area.

2014

Common name	Scientific name
Trees	
Arroyo willow	Salix lasiolepis
California bay	Umbellularia californica
Coast live oak	Quercus agrifolia
Coast redwood	Sequoia sempervirens
Douglas-fir	Pseudotsuga menziesii
Monterey pine	Pinus radiata
 Shrubs and vines	
California hazelnut	Corylus cornuta ssp. californica
Coffeeberry	Frangula californica
Himalayan blackberry	Rubus ursinus
Poison-oak	Toxicodendron diversilobum
Toyon	Heteromeles arbutifolia
Western burning bush	Euonymus occidentalis
 Ferns and horsetails	
Bracken fern	Pteridium aquilinum
Chain fern	Woodwardia fimbriata
Goldback fern	Pentagramma triangularis
Maidenhair fern	Adiantum capillus-veneris
Polypody	Polypodium sp.
Sword fern	Polystichum munitum
Western lady fern	Athyrium femina
 Grasses Sedges and Rushes	
Common rush	Juncus patens
Alaska onion grass	Melica subulata
California canarygrass	Phalaris brachystachys
Coast carex, slough sedge	Carex obnupta
Columbia brome	Bromus vulgaris
Veldt grass	Ehrharta
 Flowering herbs	
Baneberry	Actaea rubra
Bedstraw	Galium sp.
Bolander's pea	Lathyrus vestitus
Bull thistle	Cirsium vulgare
California figwort, bee plant	Scrophularia californica

PART OF PLAN

107.1

RECEIVED

AUG 22 2014

COAST AREA OFFICE
RESOURCE MANAGEMENT

Botanical survey plant list

California strawberry
chickweed
Coltsfoot
Dichondra
Douglas' iris
English plantain
Forget-me-not
Geranium
Gray's clover
Hairy cat's-ear
Hedge-nettle
Hound's-tongue
Italian thistle
Meadow rue
Milk maids, popseed
Miner's lettuce
Nemophila
Nemophila
Nightshade
Oso berry
Parsnip
Poison hemlock
Red elderberry
Red flowering currant
Rhubarb
Slim solomon
Snowberry
Soaproot
Spreading gooseberry
Star flower
Sweet Cicely
Tarweed
Thimbleberry
Trillium
Vetch
Wild cucumber
Wintercress
Wood sorrel (non native)

Fragaria californica
Cerastium
Petasites frigidus
Dichondra
Iris Douglasiana
Plantago lanceolata
Myosotis latifolia
Geranium
Trifolium grayi
Hypochaeris radicata
Stachys bullata
Cynoglossum grande
Carduus sp.
Thalictrum
Cardamine californica
Claytonia parviflora
Nemophila parviflora
Nemophila pedunculata
Solanum
Oemleria cerasiformis
Heracleum maximum
Conium maculatum
Sambucus racemosa
Ribes sanguineum
Rumex crispus
Smilacina stellata
Symphoricarpos sp.
Chlorogalum pomeridianum
Ribes divaricatum
Trientalis latifolia
Myrrhis odorata
Madia
Rubus parviflorus
Trillium ovatum
Vicia sp.
Marah fabaceus
Barbarea
Oxalis

PART OF PLAN

RECEIVED

AUG 22 2014

COAST AREA OFFICE
RESOURCE MANAGEMENT

Magnitude and Frequency Method for 100-year flood flow							100-yr flood flow Q100 (cfs)
Crossing	Area (acres) A	Basin maximum elevation (ft)	Crossing elevation (ft)	Area (mi²) A	Precipitation (in/yr) P	Elevation (ft/1000) H	Central Coast (CC)
CP	161	1000	110	0.252	33	1	110

Magnitude & Frequency Q_{100} equation	
(CC)	$Q_{100} = 19.7 (A)^{0.88} (P)^{0.84} (H)^{-0.33}$

Rational Method for 100-year flood flow							
$T_c = 60((11.9 \times L^3)/H)^{0.385}$				$Q_{100} = CIA$			
Crossing	Channel length (to top of basin) (mi) L	Elevation difference (ft) H	Concentration time (min) Tc	Runoff coefficient C	Precipitation (in/hr) I	Area (acres) A	100-yr flood flow (cfs) Q100
CP	1.1	890	13	0.4	1.6	161	103

		Magnitude and Frequency Method		Rational Method	
Crossing	Headwater Depth to Pipe Diameter Ratio (HW/D)	Cubic feet per second (cfs)	*Culvert Diameter (inches)	Cubic feet per second (cfs)	*Culvert Diameter (inches)
CP	0.67	110	65	103	70

*Capacity Nomograph with a projecting pipe (type 3) used to determine the needed Culvert Size

This worksheet addresses the sequestration and emissions associated with the project area's balance of harvest, inventory, and growth plus any emissions associated with site preparation. Complete the input for Steps 0-8 on this worksheet.

109

Project Carbon Accounting: Harvesting Emissions												
This worksheet addresses the non-biological emissions associated with the project area's harvesting activities. Complete the input for Steps 9 - 14 on this worksheet.												
Harvest Periods	Felling Operations	Production per Day	Emissions Associated with Yards and Loaders	Emissions Associated with Tractors and Skidders	Emissions Associated with Helicopters			Landing Saws	Trucking Emissions			
	Assumption: (1) 25 gallons gasoline per MHP harvested; (2) 3.31 pounds carbon per MHP harvested; (3) 1.81 metric tonnes per MHP harvested	MHP (or species) felled per day Chained to landing	Assumption: (1) 25 gallons diesel per day per piece of equipment; (2) 11.2 pounds carbon per gallon (2020) to convert to metric tonnes; (3) 1.81 metric tonnes per MHP harvested CO2 equivalent/Production per Day	Assumption: (1) 25 gallons diesel per day per piece of equipment; (2) 11.2 pounds carbon per gallon (2020) to convert to metric tonnes; (3) 1.81 metric tonnes per MHP harvested CO2 equivalent/Production per Day	Assumption: (1) 25 gallons gasoline per MHP harvested; (2) 3.31 pounds carbon per MHP harvested; (3) 1.81 metric tonnes per MHP harvested CO2 equivalent/Production per Day	Assumption: (1) 18 gallons gasoline per MHP harvested; (2) 3.31 pounds carbon per MHP harvested; (3) 1.81 metric tonnes per MHP harvested CO2 equivalent/Production per Day		Assumption: Round Trip Level Load weight from below, to compute the without 180 gallons dieselhour * 1.2 pounds carbon/gallon = 1.81 metric tonnes carbon/3.07 conversion to metric tonnes carbon dioxide equivalent				
Non Inventory, Growth, and Harvest (Time of Harvest)	Completed Metric Tonnes CO2 equivalent per MHP harvested Applies to all species whether harvested or treated	Step 9: Enter the estimated volume of material landed in a day	Step 10: Enter the estimated volume of equipment in use per day for each harvest entry	Step 11: Enter the estimated volume of equipment in use per day for each harvest entry	Step 12: Enter the estimated volume of equipment in use per day for each harvest entry	Completed: Helicopter CO2 equivalent per Acre Harvested (metric tonnes)	Completed: Landing Saws CO2 equivalent per Acre Harvested (metric tonnes)	Completed: Trucking Emissions per MHP/Truck Step 13: Enter Estimated Round Trip Level Load weight				
0	(0.02)	10	-1	-0.06	-0.53	0	0.00	Steps 13 and 14 below Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
14	(0.01)	5	-0.07	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
28	(0.02)	7	-0.11	-0.08	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
42	(0.01)	5	-0.07	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
56	(0.02)	7	-0.08	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
70	(0.01)	5	-0.07	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
84	(0.02)	7	-0.08	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
98	(0.01)	5	-0.07	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
112	(0.02)	7	-0.08	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
126	(0.01)	5	-0.07	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
140	(0.02)	7	-0.08	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
154	(0.01)	5	-0.07	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
168	(0.02)	7	-0.08	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
182	(0.01)	5	-0.07	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
196	(0.02)	7	-0.08	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
210	(0.01)	5	-0.07	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
224	(0.02)	7	-0.08	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
238	(0.01)	5	-0.07	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
252	(0.02)	7	-0.08	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
266	(0.01)	5	-0.07	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
280	(0.02)	7	-0.08	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
294	(0.01)	5	-0.07	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
308	(0.02)	7	-0.08	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
322	(0.01)	5	-0.07	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
336	(0.02)	7	-0.08	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
350	(0.01)	5	-0.07	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
364	(0.02)	7	-0.08	-0.35	-0.55	0	0.00	Step 13: Enter Skidder MHP/Truck Step 14: Enter Estimated Round Trip Level Load weight				
378	(0.01)	5	-0.07	-0.35	-0.55	0	0.00	Step 1				

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Project Carbon Accounting: Harvested Wood Products and Processing Emissions

This worksheet addresses the non-biological emissions associated with the project area's harvesting activities. Complete the input for Steps 15- 18 on this worksheet.

Harvest Periods	Quantity of Forest Carbon Delivered to Mills				Non-Biological Emissions Associated with Mills	Quantity of Forest Carbon Remaining Immediately After Milling (Mill Efficiency)			Long-Term Sequestration in Wood Products	
	Conifer Percentage Delivered to Mills	Hardwood Percentage Delivered to Mills	Conifer CO ₂ e Delivered to Mills / Acre	Hardwood CO ₂ e Delivered to Mills / Acre		Computed, Remaining CO ₂ e equivalent after Milling Efficiency for Conifers	Computed, Remaining CO ₂ e equivalent after Milling Efficiency for Hardwoods	Computed, CO ₂ e Equivalent Tonnes in Conifer Wood Products in Use 100 Year Weighted Average / Acre and Landfill	Computed, CO ₂ e Equivalent Tonnes in Hardwood Wood Products in Use 100 Year Weighted Average / Acre	
from Inventory, Growth, and Harvest Page (Time of Harvest as years from project approval)	Step 15. Insert the percentage of conifer trees harvested that are subsequently delivered to sawmills	Step 16. Insert the percentage of hardwoods harvested or treated that are subsequently delivered to sawmills	Computed: The merchantable portion determined by the conversion factors (Sampson, 2002) on the Inventory, Growth, and Harvest worksheet. This is multiplied by the percent delivered to mills to reflect the carbon delivered to mills.	Computed: The merchantable portion determined by the conversion factors (Sampson, 2002) on the Inventory, Growth, and Harvest worksheet. This is multiplied by the percent delivered to mills to reflect the carbon delivered to mills.	Assumption: 20 kilowatt (mill energy use) / (0.05 metric tonnes/foot hour) * mbf processed Calculated: The CO ₂ e associated with processing the logs at this mill	The difference between carbon delivered to mills and carbon remaining after milling is assumed to be emitted immediately			Estimate: The weighted average carbon remaining in use at year 100 is 46.3%	
	0	0%	0%	0.00		The efficiency rating from mills in California is 0.87 (DOE 1995b) for conifers			Estimate: The carbon in landfills at year 100 is 29.8% of the initial carbon produced in wood products.	
	14	99%	0%	37.03		24.81	0.00	18.83	0.00	0.00
	28	99%	0%	18.51		12.40	0.00	9.44	0.00	0.00
	42	99%	0%	25.92		17.36	0.00	13.21	0.00	0.00
	56	99%	0%	18.51		12.40	0.00	9.44	0.00	0.00
	70	99%	0%	25.92		17.36	0.00	13.21	0.00	0.00
	0	0%	0%	0.00		0.00	0.00	0.00	0.00	0.00
	0	0%	0%	0.00		0.00	0.00	0.00	0.00	0.00
	0	0%	0%	0.00		0.00	0.00	0.00	0.00	0.00
Sum of emissions associated with processing of lumber					-0.97	Sum of CO ₂ e equivalent in wood products			73.82	0.00